GE
Industrial Solutions

WORLDWIDE PARTNER

Controls and Power Electronics ED.04

For industrial applications

GE imagination at work

A

Contactors and thermal overload relays

Efficor - Global contactors

Compact starter either with thermal overload relay or manual motor starter.

A.2

Series EA - Minicontactors

Three pole minicontactors
7A (AC3)
16A (AC1)

A.42

Series M - Contactors

3 and 4P (4NO, 2NO+2NC, 4NC)
6, 9 and 12A (AC-3)
20A (AC-1) Control circuit AC and DC

A.44

Series CL - Contactors

3 and 4P (4NO, 2NO+2NC) 9 to 105A (AC-3) 25 to 140A
(AC-1) AC, DC and with electronic module

A.52

Series CK - Contactors

3 and 4P (4NO) 150 to 825A (AC-3)
200 to 1250A (AC-1)
AC, DC and with electronic module

A.62

Series MTO - Thermal overload relays

For minicontactors series M from 0.11 to 14A

A.68

Series RT - Thermal overload relays

For contactors series CL and CK from 0.16 to 850A
Class 10A, 10, 20, 30

A.70

Series RE - Electronic overload relays

For contactors series CL from 0.1 to 150A

A.74

EntelliPro

Intelligent motor management relay

A.76

Series CSCN - Contactors for capacitors switching

A.144

Series 390.R - Clapper contactors

40A to 800A (AC-3)
45A to 1200A (AC-1)

A.150

B

Plug-in relays and auxiliary contactors

Series PRC - Plug-in relays

Miniature plug-in relays
Standard 8-11 pin plug-in relays
Interface relay

B.2

Series M - Auxiliary contactors

Ith = 16A

B.8

Series RL - Auxiliary contactors

Ith = 20A

B.14

C

Motor protection devices

Surion - Manual motor starter

Thermal and magnetic protection - Magnetic protection only
Setting ranges from 0.1 to 63A

C.2

Series SFK - Motor protection circuit breaker

Thermal and magnetic protection of AC and DC motors
Setting ranges from 0.1 to 25A

C.32

D

Applications

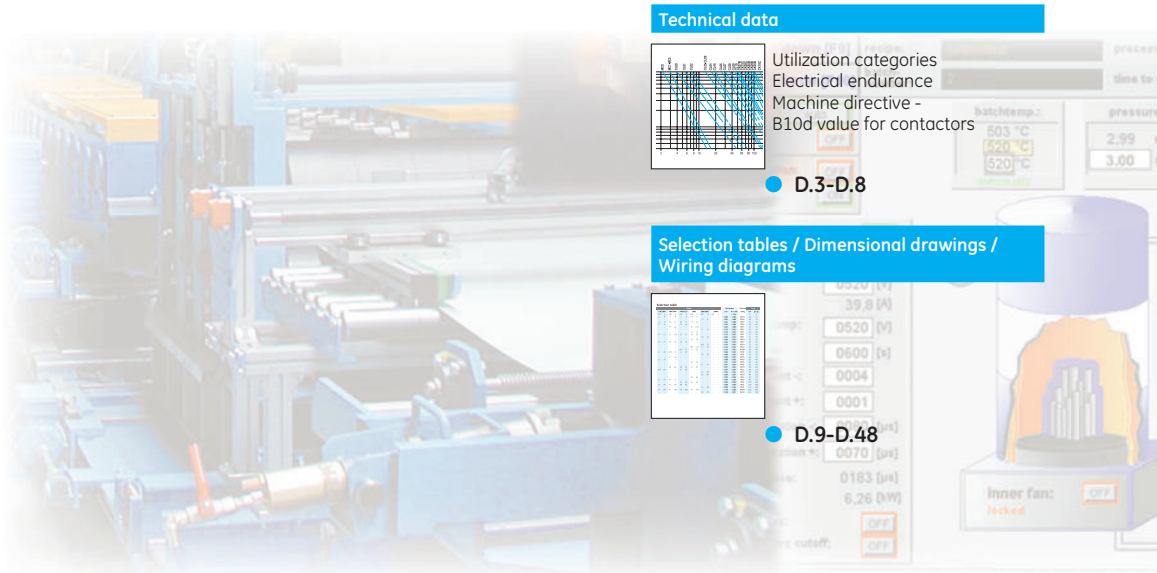
Technical data

Utilization categories
Electrical endurance
Machine directive - B10d value for contactors

D.3-D.8

Selection tables / Dimensional drawings / Wiring diagrams

D.9-D.48



E

Main switches

Series ML

Standard programme
Main switches and emergency-stop switches for machinery

enclosed switches

E.4

Switches for photovoltaic applications

To isolate the solar panels from the inverter, from 16 to 100Adc

E.13

F

Control and signalling units

Series P9 - Panel mounting - Units Ø 22 mm

F.8

Series P9 - Base mounting

F.23

Series P9 - Push-button stations / Equipped boxes

F.24-F.25

Series P9 - Common accessories

F.30

Series 077 - Units Ø 30 mm

F.42

Series 105 - Signalling devices

F.57

G

Electronic relays and limit switches

Series NMV - Multivoltage relays

22.5mm module
Direct supply voltage (24-240V AC/DC)
With transformer

G.2

Series D - Single voltage electronic timers

45mm module
Direct supply voltage

G.3

Limit switches

Series IS and IM
Metal and thermoplastic limit switches
Series IUG
Thermoplastic limit switches
Series IZ
Miniature thermoplastic limit switches
Series 114FCT
Three pole limit switches

G.22

Pressure switches

Series 115

G.36

H

Speed drive units

VAT20

Single-phase or three-phase digital inverters for controlling the speed of three-phase induction AC motors from 0.2 to 2.2 kW IP20 or IP65

H.2

VAT200

From 0.4 to 2.2kW at 200V, single phase power supply
From 0.4 to 7.5kW at 200V, three phase power supply
From 0.75 to 11kW at 400V, three phase power supply

H.8

AF6 drives

Drives designed for general purpose applications

H.18

I

Softstarters

ASTAT S - Soft starter

Small soft starter with integral by-pass

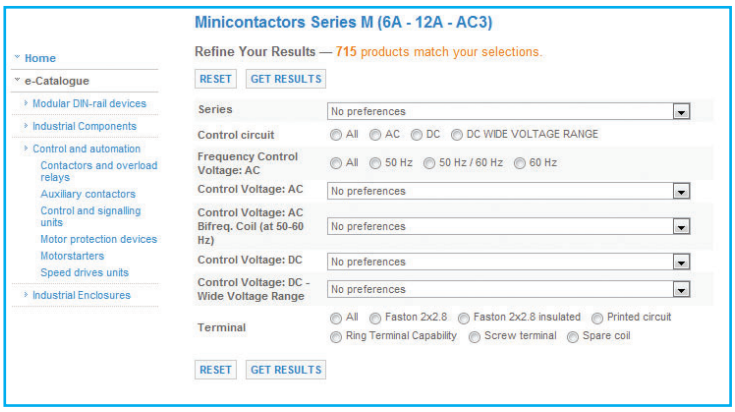
I.3

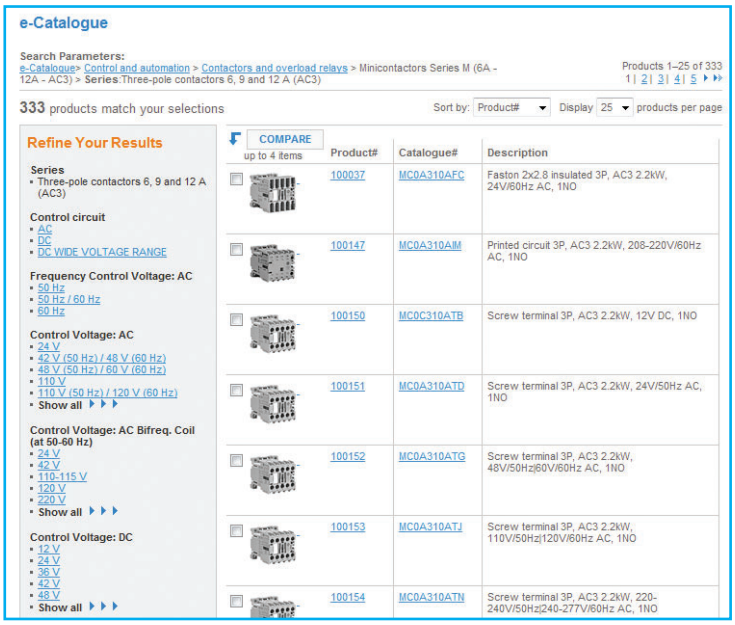
ASTAT XT - Digital soft starter

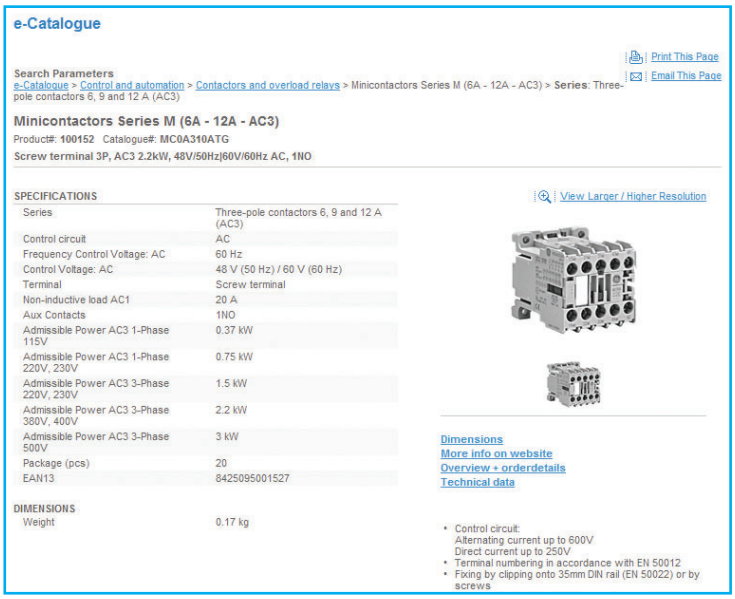
Digital soft starter for 3 phase standard induction motors

I.8

Visit www.ge.com/ex/industrialsolutions and click on e-catalogue







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- All product info is available to download, print or e-mail
- Always the latest up-to-date info

- Use the **Quick-search** using a **part number** or **keyword**
- Find a product by using the **parametric search**, simply enter the technical characteristics you are looking for
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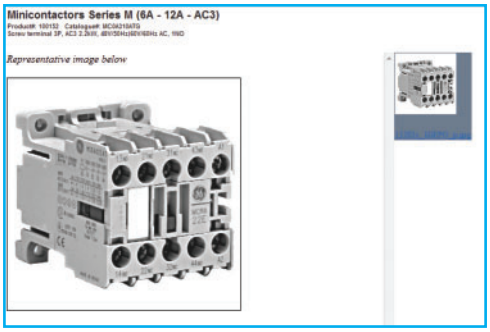
- **High resolution images** are available by clicking on the small product image
- Product pages contain all available data: **technical specifications, dimensional and CAD drawings, product descriptions**, ...
- The data also displays the **available functions and accessories** for each product

High resolution images available



Most reliable technology

- Standard materials for food & beverage and transportation purposes ... complying the latest rail standards
- Highest reliable product performance for worldwide applications
- Energy efficient design ... ecological mindset

Best electrical endurance
Electrical endurance > 1.7 million operations
AC3 category at rated current

Reliability data per standard EN ISO 13849-1
EC09-12 $2x10^6$ops
EC18-25 $1.7x10^6$ops
EC32-40 $1.37x10^6$ops

Widest temperature operation
from -40°C to +55°C
Suitable for extreme temperatures

Reduced flammability risk and lower toxicity
For demanding applications as lifts, appliances and transportation

Lowest noise production: 32dBA
Perfect answer to demanding applications like hospitals

Compliant with International standards for plastic parts
NF 16-101 & NF 16-102
DIN 5510.2
Safe ecological plastic for all applications

Only one frame covering 9 up to 40A series
Three different depths
- Depth 1: 9A up to 18A
- Depth 2: 25A
- Depth 3: 32A up to 40A

High installation benefits

- Smart, various wiring and connectivity technologies ... fast assembly of starter solutions
- Smaller product dimensions for panel design and motor control centers ... integrated auxiliary contacts in standard product
- Modular and compact motor starter solutions

Best in class

- Highest B10d data as per ISO.13849-1
- Optimized power per size
- Lower number of stock keeping units ... reducing stock complexity for distributors, panelbuilders and OEM customers
- Outstanding range of power contactors and motor starter solutions ... including wide range of accessories

Standards

IEC/EN 60947-1
IEC/EN 60947-4-1
IEC/EN 60947-5-1
EN 50005
UL 508
CSA 22.2/14
VDE 0660/102

Approvals

(1) In progress

New

Compact starter

Significant space reduction in the cabinet: Compact starter either with thermal overload relay or manual motor starter.

Starter mounting plates for friendly maintenance (easy removal of MMS Surion and/or contactor).
Busbar systems and wiring kits allow safe cabling avoiding mistakes, guaranteeing finger safe protection up to 6kV.

Contactor with manual motor starter
Link module for compact starter
Full coil access at the bottom

Contactor with thermal overload relay
Uniformity in compact design
Thermal overload relay mounted direct to the contactor.
All connections available

ven efficient

in global contactors

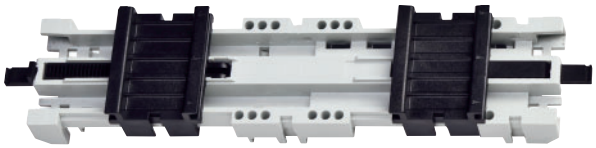
efficor™

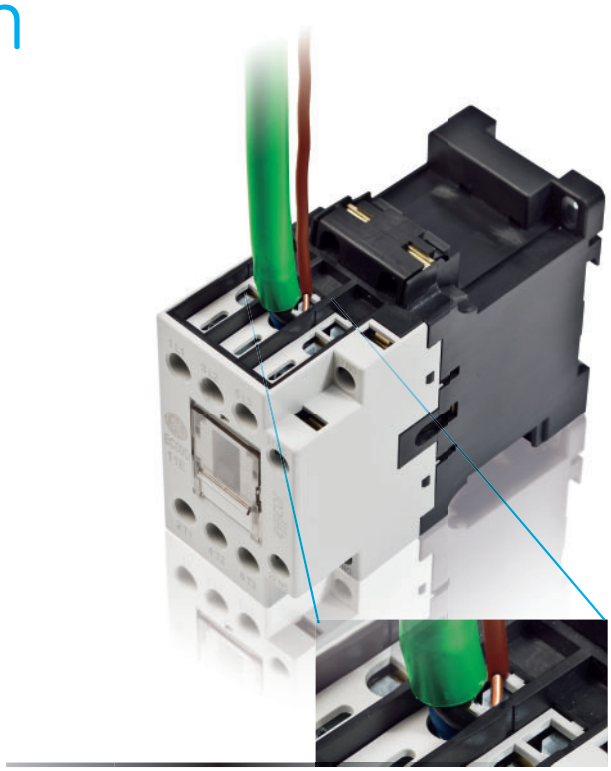
New

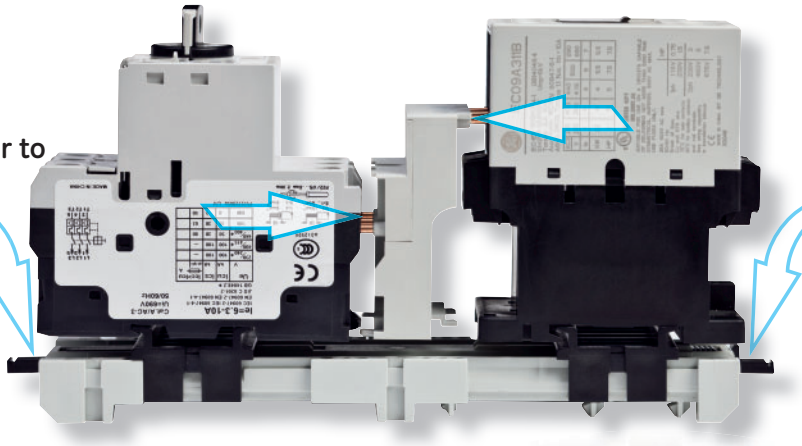
Secure connection

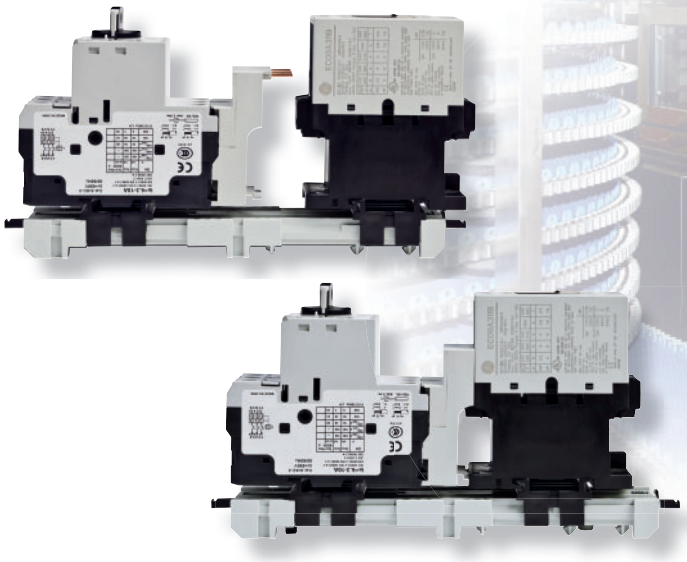
Smart connectivity

- Design of intelligent base plate









New

Time saving

Double box terminals

Identical torque (2.2 Nm) **for 9A up to 40A contactors**.
No need for different screwdrivers.

- Double box clamps for the whole range
- Cables from 0.75mm² up to 16mm² in the same box clamps terminal for 4kW up to 18.5kW.
- No risk for loosing cables
- Avoid temperature rising on the small cable

No tools needed

Mounting or dismounting the contactors on/from the DIN-rail can be done without tools.
Even for the mounting of accessories and auxiliaries to the contactor no tools are required.

Quick assembly of direct online starter

- User friendly design of link modules and base plates to combine manual motor starter and contactor.
- Smart busbar systems and wiring kits.

Easy identification

Self explanatory description of the catalogue number is an important advantage

Example: **EC 09 A 3 11 B 230**

EC: Means **E**fficor **C**ontactor range
09: 9A in AC3 application
A: **Type of control voltage**
A stands for AC
D stands for DC
3: **Number of main poles**
3 stands for 3 poles
4 stands for 4 poles
B stands for 2NO + 2NC
11: Number of auxiliary contacts built-in **1**NO and **1**NC
B: **Type of terminal**
B stands for Box terminal
R stands for Ring terminal
230: Coil voltage
W: **End character for DC contactors**
W stands for Wide voltage and built-in diode
L stands for Low consumption

Main advantages

New

3 pole contactors - Double box terminals

Max. operating current		Admissible power AC3				Electrical endurance	Aux. cont.		Control circuit						
									AC			DC			
Not inductive load AC1 A	Motors <440V 3Ph 50/60Hz AC3 A	220-230V kW HP	380-400V kW HP	440V kW HP	500V kW HP	Cat. AC3 Operations	NO	NC	Voltage	Cat. no.	Ref. no.	Voltage	Cat. no.(1)	Ref. no.	Pack
25	**9**	2.2 3	**4** **5.5**	4 5.5	5.5 7.5	1.7x10⁶	1	1	12	EC09A311B012	**267001**	12	EC09D311B012W	**267085**	5
							1	1	24	EC09A311B024	**267002**	24	EC09D311B024W	**267086**	5
							1	1	42	EC09A311B042	**267003**	36	EC09D311B036W	**267087**	5
							1	1	48	EC09A311B048	**267004**	48	EC09D311B048W	**267088**	5
							1	1	110	EC09A311B110	**267005**	60	EC09D311B060W	**267089**	5
							1	1	120	EC09A311B120	**267006**	72	EC09D311B072W	**267090**	5
							1	1	208	EC09A311B208	**267007**	110	EC09D311B110W	**267091**	5
							1	1	230	EC09A311B230	**267008**	125	EC09D311B125W	**267092**	5
							1	1	240	EC09A311B240	**267009**	230	EC09D311B230W	**267093**	5
							1	1	400	EC09A311B400	**267010**	250	EC09D311B250W	**267094**	5
							1	1	440	EC09A311B440	**267011**	440	EC09D311B440W	**267095**	5
							1	1	480	EC09A311B480	**267012**	24	EC09D311B024L	**267096**	5
							1	1	500	EC09A311B500	**267013**	48	EC09D311B048L	**267097**	5
							1	1	575	EC09A311B575	**269075**	110	EC09D311B110L	**267098**	5
							1	1	600	EC09A311B600	**267014**	230	EC09D311B230L	**267099**	5
25	**12**	3 4	**5.5** **7.5**	5.5 7.5	7.5 10	1.7x10⁶	1	1	12	EC12A311B012	**267015**	12	EC12D311B012W	**267100**	5
							1	1	24	EC12A311B024	**267016**	24	EC12D311B024W	**267101**	5
							1	1	42	EC12A311B042	**267017**	36	EC12D311B036W	**267102**	5
							1	1	48	EC12A311B048	**267018**	48	EC12D311B048W	**267103**	5
							1	1	110	EC12A311B110	**267019**	60	EC12D311B060W	**267104**	5
							1	1	120	EC12A311B120	**267020**	72	EC12D311B072W	**267105**	5
							1	1	208	EC12A311B208	**267021**	110	EC12D311B110W	**267106**	5
							1	1	230	EC12A311B230	**267022**	125	EC12D311B125W	**267107**	5
							1	1	240	EC12A311B240	**267023**	230	EC12D311B230W	**267108**	5
							1	1	400	EC12A311B400	**267024**	250	EC12D311B250W	**267109**	5
							1	1	440	EC12A311B440	**267025**	440	EC12D311B440W	**267110**	5
							1	1	480	EC12A311B480	**267026**	24	EC12D311B024L	**267111**	5
							1	1	500	EC12A311B500	**267027**	48	EC12D311B048L	**267112**	5
							1	1	575	EC12A311B575	**269076**	110	EC12D311B110L	**267113**	5
							1	1	600	EC12A311B600	**267028**	230	EC12D311B230L	**267114**	5
32	**18**	4 5.5	**7.5** **10**	7.5 10	10 13.5	1.7x10⁶	1	1	12	EC18A311B012	**267029**	12	EC18D311B012W	**267115**	5
							1	1	24	EC18A311B024	**267030**	24	EC18D311B024W	**267116**	5
							1	1	42	EC18A311B042	**267031**	36	EC18D311B036W	**267117**	5
							1	1	48	EC18A311B048	**267032**	48	EC18D311B048W	**267118**	5
							1	1	110	EC18A311B110	**267033**	60	EC18D311B060W	**267119**	5
							1	1	120	EC18A311B120	**267034**	72	EC18D311B072W	**267120**	5
							1	1	208	EC18A311B208	**267035**	110	EC18D311B110W	**267121**	5
							1	1	230	EC18A311B230	**267036**	125	EC18D311B125W	**267122**	5
							1	1	240	EC18A311B240	**267037**	230	EC18D311B230W	**267123**	5
							1	1	400	EC18A311B400	**267038**	250	EC18D311B250W	**267124**	5
							1	1	440	EC18A311B440	**267039**	440	EC18D311B440W	**267125**	5
							1	1	480	EC18A311B480	**267040**	24	EC18D311B024L	**267126**	5
							1	1	500	EC18A311B500	**267041**	48	EC18D311B048L	**267127**	5
							1	1	575	EC18A311B575	**269077**	110	EC18D311B110L	**267128**	5
							1	1	600	EC18A311B600	**267042**	230	EC18D311B230L	**267129**	5
45	**25**	7.5 10	**11** **15**	12 16	15 20	1.5x10⁶	1	1	12	EC25A311B012	**267043**	12	EC25D311B012W	**267130**	1
							1	1	24	EC25A311B024	**267044**	24	EC25D311B024W	**267131**	1
							1	1	42	EC25A311B042	**267045**	36	EC25D311B036W	**267132**	1
							1	1	48	EC25A311B048	**267046**	48	EC25D311B048W	**267133**	1
							1	1	110	EC25A311B110	**267047**	60	EC25D311B060W	**267134**	1
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							1	1	230	EC25A311B230	**267050**	125	EC25D311B125W	**267137**	1
							1	1	240	EC25A311B240	**267051**	230	EC25D311B230W	**267138**	1
							1	1	400	EC25A311B400	**267052**	250	EC25D311B250W	**267139**	1
							1	1	440	EC25A311B440	**267053**	440	EC25D311B440W	**267140**	1
							1	1	480	EC25A311B480	**267054**	24	EC25D311B024L	**267141**	1
							1	1	500	EC25A311B500	**267055**	48	EC25D311B048L	**267142**	1
							1	1	575	EC25A311B575	**269078**	110	EC25D311B110L	**267143**	1
							1	1	600	EC25A311B600	**267056**	230	EC25D311B230L	**267144**	1
60	**32**	9 12	**15** **22**	15 22	18 25	1.5x10⁶	0	0	12	EC32A300B012	**267057**	12	EC32D300B012W	**267145**	1
							0	0	24	EC32A300B024	**267058**	24	EC32D300B024W	**267146**	1
							0	0	42	EC32A300B042	**267059**	36	EC32D300B036W	**267147**	1
							0	0	48	EC32A300B048	**267060**	48	EC32D300B048W	**267148**	1
							0	0	110	EC32A300B110	**267061**	60	EC32D300B060W	**267149**	1
							0	0	120	EC32A300B120	**267062**	72	EC32D300B072W	**267150**	1
							0	0	208	EC32A300B208	**267063**	110	EC32D300B110W	**267151**	1
							0	0	230	EC32A300B230	**267064**	125	EC32D300B125W	**267152**	1
							0	0	240	EC32A300B240	**267065**	230	EC32D300B230W	**267153**	1
							0	0	400	EC32A300B400	**267066**	250	EC32D300B250W	**267154**	1
							0	0	440	EC32A300B440	**267067**	440	EC32D300B440W	**267155**	1
							0	0	480	EC32A300B480	**267068**	24	EC32D300B024L	**267156**	1
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							0	0	575	EC32A300B575	**269079**	110	EC32D300B110L	**267158**	1
							0	0	600	EC32A300B600	**267070**	230	EC32D300B230L	**267159**	1
60	**40**	11 15	**18.5** **25**	22 30	25 34	1.5x10⁶	0	0	12	EC40A300B012	**267071**	12	EC40D300B012W	**267160**	1
							0	0	24	EC40A300B024	**267072**	24	EC40D300B024W	**267161**	1
							0	0	42	EC40A300B042	**267073**	36	EC40D300B036W	**267162**	1
							0	0	48	EC40A300B048	**267074**	48	EC40D300B048W	**267163**	1
							0	0	110	EC40A300B110	**267075**	60	EC40D300B060W	**267164**	1
							0	0	120	EC40A300B120	**267076**	72	EC40D300B072W	**267165**	1
							0	0	208	EC40A300B208	**267077**	110	EC40D300B110W	**267166**	1
							0	0	230	EC40A300B230	**267078**	125	EC40D300B125W	**267167**	1
							0	0	240	EC40A300B240	**267079**	230	EC40D300B230W	**267168**	1
							0	0	400	EC40A300B400	**267080**	250	EC40D300B250W	**267169**	1
							0	0	440	EC40A300B440	**267081**	440	EC40D300B440W	**267170**	1
							0	0	480	EC40A300B480	**267082**	24	EC40D300B024L	**267171**	1
							0	0	500	EC40A300B500	**267083**	48	EC40D300B048L	**267172**	1
							0	0	575	EC40A300B575	**269080**	110	EC40D300B110L	**267173**	1
							0	0	600	EC40A300B600	**267084**	230	EC40D300B230L	**267174**	1

(1) End character: **W** = Wide voltage and built-in diode
L = Low consumption

New

4 pole contactors - Double box terminals

Max. operating current		Admissible power AC1				Electrical endurance	Power cont.		Control circuit						
									AC			DC			
Not inductive load AC1 A	Motors <440V 3Ph 50/60Hz AC3 A	220-230V kW	380-400V kW	440V kW	500V kW	Cat. AC1 Operations	NO	NC	Voltage	Cat. no.	Ref. no.	Voltage	Cat. no.[1]	Ref. no.	Pack
25	12	9.5	**16.5**	18	21.5	$4x10^5$	4	0	12	EC12A400B012	**267175**	12	EC12D400B012**W**	**267231**	5
							4	0	24	EC12A400B024	**267176**	24	EC12D400B024**W**	**267232**	5
							4	0	42	EC12A400B042	**267177**	36	EC12D400B036**W**	**267233**	5
							4	0	48	EC12A400B048	**267178**	48	EC12D400B048**W**	**267234**	5
							4	0	110	EC12A400B110	**267179**	60	EC12D400B060**W**	**267235**	5
							4	0	120	EC12A400B120	**267180**	72	EC12D400B072**W**	**267236**	5
							4	0	208	EC12A400B208	**267181**	110	EC12D400B110**W**	**267237**	5
							4	0	230	EC12A400B230	**267182**	125	EC12D400B125**W**	**267238**	5
							4	0	240	EC12A400B240	**267183**	230	EC12D400B230**W**	**267239**	5
							4	0	400	EC12A400B400	**267184**	250	EC12D400B250**W**	**267240**	5
							4	0	440	EC12A400B440	**267185**	440	EC12D400B440**W**	**267241**	5
							4	0	480	EC12A400B480	**267186**				
							4	0	500	EC12A400B500	**267187**	24	EC12D400B024**L**	**267242**	5
							4	0	575	EC12A400B575	**269081**	48	EC12D400B048**L**	**267243**	5
							4	0	600	EC12A400B600	**267188**	110	EC12D400B110**L**	**267244**	5
							4	0				230	EC12D400B230**L**	**267245**	5
															
32	18	12	**22**	23	27.5	$6x10^5$	4	0	12	EC18A400B012	**267189**	12	EC18D400B012**W**	**267246**	5
							4	0	24	EC18A400B024	**267190**	24	EC18D400B024**W**	**267247**	5
							4	0	42	EC18A400B042	**267191**	36	EC18D400B036**W**	**267248**	5
							4	0	48	EC18A400B048	**267192**	48	EC18D400B048**W**	**267249**	5
							4	0	110	EC18A400B110	**267193**	60	EC18D400B060**W**	**267250**	5
							4	0	120	EC18A400B120	**267194**	72	EC18D400B072**W**	**267251**	5
							4	0	208	EC18A400B208	**267195**	110	EC18D400B110**W**	**267252**	5
							4	0	230	EC18A400B230	**267196**	125	EC18D400B125**W**	**267253**	5
							4	0	240	EC18A400B240	**267197**	230	EC18D400B230**W**	**267254**	5
							4	0	400	EC18A400B400	**267198**	250	EC18D400B250**W**	**267255**	5
							4	0	440	EC18A400B440	**267199**	440	EC18D400B440**W**	**267256**	5
							4	0	480	EC18A400B480	**267200**				
							4	0	500	EC18A400B500	**267201**	24	EC18D400B024**L**	**267257**	5
							4	0	575	EC18A400B575	**269082**	48	EC18D400B048**L**	**267258**	5
							4	0	600	EC18A400B600	**267202**	110	EC18D400B110**L**	**267259**	5
							4	0				230	EC18D400B230**L**	**267260**	5
															
45	25	17	**29**	32	39	$6.5x10^5$	4	0	12	EC25A400B012	**267203**	12	EC25D400B012**W**	**267261**	5
							4	0	24	EC25A400B024	**267204**	24	EC25D400B024**W**	**267262**	5
							4	0	42	EC25A400B042	**267205**	36	EC25D400B036**W**	**267263**	5
							4	0	48	EC25A400B048	**267206**	48	EC25D400B048**W**	**267264**	5
							4	0	110	EC25A400B110	**267207**	60	EC25D400B060**W**	**267265**	5
							4	0	120	EC25A400B120	**267208**	72	EC25D400B072**W**	**267266**	5
							4	0	208	EC25A400B208	**267209**	110	EC25D400B110**W**	**267267**	5
							4	0	230	EC25A400B230	**267210**	125	EC25D400B125**W**	**267268**	5
							4	0	240	EC25A400B240	**267211**	230	EC25D400B230**W**	**267269**	5
							4	0	400	EC25A400B400	**267212**	250	EC25D400B250**W**	**267270**	5
							4	0	440	EC25A400B440	**267213**	440	EC25D400B440**W**	**267271**	5
							4	0	480	EC25A400B480	**267214**				
							4	0	500	EC25A400B500	**267215**	24	EC25D400B024**L**	**267272**	5
							4	0	575	EC25A400B575	**269083**	48	EC25D400B048**L**	**267273**	5
							4	0	600	EC25A400B600	**267216**	110	EC25D400B110**L**	**267274**	5
							4	0				230	EC25D400B230**L**	**267275**	5
															
60	32	22.5	**39.5**	43	52	$8x10^5$	4	0	12	EC32A400B012	**267217**	12	EC32D400B012**W**	**267276**	1
							4	0	24	EC32A400B024	**267218**	24	EC32D400B024**W**	**267277**	1
							4	0	42	EC32A400B042	**267219**	36	EC32D400B036**W**	**267278**	1
							4	0	48	EC32A400B048	**267220**	48	EC32D400B048**W**	**267279**	1
							4	0	110	EC32A400B110	**267221**	60	EC32D400B060**W**	**267280**	1
							4	0	120	EC32A400B120	**267222**	72	EC32D400B072**W**	**267281**	1
							4	0	208	EC32A400B208	**267223**	110	EC32D400B110**W**	**267282**	1
							4	0	230	EC32A400B230	**267224**	125	EC32D400B125**W**	**267283**	1
							4	0	240	EC32A400B240	**267225**	230	EC32D400B230**W**	**267284**	1
							4	0	400	EC32A400B400	**267226**	250	EC32D400B250**W**	**267285**	1
							4	0	440	EC32A400B440	**267227**	440	EC32D400B440**W**	**267286**	1
							4	0	480	EC32A400B480	**267228**				
							4	0	500	EC32A400B500	**267229**	24	EC32D400B024**L**	**267287**	1
							4	0	575	EC32A400B575	**269084**	48	EC32D400B048**L**	**267288**	1
							4	0	600	EC32A400B600	**267230**	110	EC32D400B110**L**	**267289**	1
							4	0				230	EC32D400B230**L**	**267290**	1
															

(1) End character: **W** = Wide voltage and built-in diode
L = Low consumption

2NO - 2NC contactors - Double box terminals

Max. operating current		Admissible power AC3				Electrical endurance	Power cont.		Control circuit						
									AC			DC			
Not inductive load AC1 A	Motors <440V 3Ph 50/60Hz AC3 A	220-230V kW HP	380-400V kW HP	440V kW HP	500V kW HP	Cat. AC3 Operations	NO	NC	Voltage	Cat. no.	Ref. no.	Voltage	Cat. no.(1)	Ref. no.	Pack
25	12	3 4	**5.5** ***7.5***	5.5 *7.5*	7.5 *10*	1.7x10⁶	2	2	12	EC12AB00B012	**267291**	12	EC12DB00B012W	**267347**	5
							2	2	24	EC12AB00B024	**267292**	24	EC12DB00B024W	**267348**	5
							2	2	42	EC12AB00B042	**267293**	36	EC12DB00B036W	**267349**	5
							2	2	48	EC12AB00B048	**267294**	48	EC12DB00B048W	**267350**	5
							2	2	110	EC12AB00B110	**267295**	60	EC12DB00B060W	**267351**	5
							2	2	120	EC12AB00B120	**267296**	72	EC12DB00B072W	**267352**	5
							2	2	208	EC12AB00B208	**267297**	110	EC12DB00B110W	**267353**	5
							2	2	230	EC12AB00B230	**267298**	125	EC12DB00B125W	**267354**	5
							2	2	240	EC12AB00B240	**267299**	230	EC12DB00B230W	**267355**	5
							2	2	400	EC12AB00B400	**267300**	250	EC12DB00B250W	**267356**	5
							2	2	440	EC12AB00B440	**267301**	440	EC12DB00B440W	**267357**	5
							2	2	480	EC12AB00B480	**267302**				
							2	2	500	EC12AB00B500	**267303**	24	EC12DB00B024L	**267358**	5
							2	2	575	EC12AB00B575	**269115**	48	EC12DB00B048L	**267359**	5
							2	2	600	EC12AB00B600	**267304**	110	EC12DB00B110L	**267360**	5
							2	2				230	EC12DB00B230L	**267361**	5
32	18	4 *5.5*	**7.5** ***10***	7.5 *10*	10 *13.5*	1.5x10⁶	2	2	12	EC18AB00B012	**267305**	12	EC18DB00B012W	**267362**	5
							2	2	24	EC18AB00B024	**267306**	24	EC18DB00B024W	**267363**	5
							2	2	42	EC18AB00B042	**267307**	36	EC18DB00B036W	**267364**	5
							2	2	48	EC18AB00B048	**267308**	48	EC18DB00B048W	**267365**	5
							2	2	110	EC18AB00B110	**267309**	60	EC18DB00B060W	**267366**	5
							2	2	120	EC18AB00B120	**267310**	72	EC18DB00B072W	**267367**	5
							2	2	208	EC18AB00B208	**267311**	110	EC18DB00B110W	**267368**	5
							2	2	230	EC18AB00B230	**267312**	125	EC18DB00B125W	**267369**	5
							2	2	240	EC18AB00B240	**267313**	230	EC18DB00B230W	**267370**	5
							2	2	400	EC18AB00B400	**267314**	250	EC18DB00B250W	**267371**	5
							2	2	440	EC18AB00B440	**267315**	440	EC18DB00B440W	**267372**	5
							2	2	480	EC18AB00B480	**267316**				
							2	2	500	EC18AB00B500	**267317**	24	EC18DB00B024L	**267373**	5
							2	2	575	EC18AB00B575	**269116**	48	EC18DB00B048L	**267374**	5
							2	2	600	EC18AB00B600	**267318**	110	EC18DB00B110L	**267375**	5
							2	2				230	EC18DB00B230L	**267376**	5
45	25	7.5 *10*	**11** ***15***	12 *16*	15 *20*	1.5x10⁶	2	2	12	EC25AB00B012	**267319**	12	EC25DB00B012W	**267377**	5
							2	2	24	EC25AB00B024	**267320**	24	EC25DB00B024W	**267378**	5
							2	2	42	EC25AB00B042	**267321**	36	EC25DB00B036W	**267379**	5
							2	2	48	EC25AB00B048	**267322**	48	EC25DB00B048W	**267380**	5
							2	2	110	EC25AB00B110	**267323**	60	EC25DB00B060W	**267381**	5
							2	2	120	EC25AB00B120	**267324**	72	EC25DB00B072W	**267382**	5
							2	2	208	EC25AB00B208	**267325**	110	EC25DB00B110W	**267383**	5
							2	2	230	EC25AB00B230	**267326**	125	EC25DB00B125W	**267384**	5
							2	2	240	EC25AB00B240	**267327**	230	EC25DB00B230W	**267385**	5
							2	2	400	EC25AB00B400	**267328**	250	EC25DB00B250W	**267386**	5
							2	2	440	EC25AB00B440	**267329**	440	EC25DB00B440W	**267387**	5
							2	2	480	EC25AB00B480	**267330**				
							2	2	500	EC25AB00B500	**267331**				
							2	2	575	EC25AB00B575	**269117**				
							2	2	600	EC25AB00B600	**267332**				
60	32	9 *12*	**15** ***22***	15 *22*	18 *25*	1.5x10⁶	2	2	12	EC32AB00B012	**267333**	12	EC32DB00B012W	**267392**	1
							2	2	24	EC32AB00B024	**267334**	24	EC32DB00B024W	**267393**	1
							2	2	42	EC32AB00B042	**267335**	36	EC32DB00B036W	**267394**	1
							2	2	48	EC32AB00B048	**267336**	48	EC32DB00B048W	**267395**	1
							2	2	110	EC32AB00B110	**267337**	60	EC32DB00B060W	**267396**	1
							2	2	120	EC32AB00B120	**267338**	72	EC32DB00B072W	**267397**	1
							2	2	208	EC32AB00B208	**267339**	110	EC32DB00B110W	**267398**	1
							2	2	230	EC32AB00B230	**267340**	125	EC32DB00B125W	**267399**	1
							2	2	240	EC32AB00B240	**267341**	230	EC32DB00B230W	**267400**	1
							2	2	400	EC32AB00B400	**267342**	250	EC32DB00B250W	**267401**	1
							2	2	440	EC32AB00B440	**267343**	440	EC32DB00B440W	**267402**	1
							2	2	480	EC32AB00B480	**267344**				
							2	2	500	EC32AB00B500	**267345**				
							2	2	575	EC32AB00B575	**269118**				
							2	2	600	EC32AB00B600	**267346**				

(1) End character: **W** = Wide voltage and built-in diode
L = Low consumption

New

Auxiliary contactors - Double box terminals - Ith 20A

Contacts		Control circuit						
		AC			DC			
NO •3 •4	NC •1 •2	Voltage	Cat. no.	Ref. no.	Voltage	Cat. no.(1)	Ref. no.	Pack
4	0	12	ECACA440B012	**268140**	12	ECACD440B012W	**268210**	5
4	0	24	ECACA440B024	**268141**	24	ECACD440B024W	**268211**	5
4	0	42	ECACA440B042	**268142**	36	ECACD440B036W	**268212**	5
4	0	48	ECACA440B048	**268143**	48	ECACD440B048W	**268213**	5
4	0	110	ECACA440B110	**268144**	60	ECACD440B060W	**268214**	5
4	0	120	ECACA440B120	**268145**	72	ECACD440B072W	**268215**	5
4	0	208	ECACA440B208	**268146**	110	ECACD440B110W	**268216**	5
4	0	230	ECACA440B230	**268147**	125	ECACD440B125W	**268217**	5
4	0	240	ECACA440B240	**268148**	230	ECACD440B230W	**268218**	5
4	0	400	ECACA440B400	**268149**	250	ECACD440B250W	**268219**	5
4	0	440	ECACA440B440	**268150**	400	ECACD440B440W	**268220**	5
4	0	480	ECACA440B480	**268151**				
4	0	500	ECACA440B500	**268152**	24	ECACD440B024L	**268221**	5
4	0	575	ECACA440B575	**268673**	48	ECACD440B048L	**268222**	5
4	0	600	ECACA440B600	**268153**	110	ECACD440B110L	**268223**	5
4	0				230	ECACD440B230L	**268224**	5
3	1	12	ECACA431B012	**268154**	12	ECACD431B012W	**268225**	5
3	1	24	ECACA431B024	**268155**	24	ECACD431B024W	**268226**	5
3	1	42	ECACA431B042	**268156**	36	ECACD431B036W	**268227**	5
3	1	48	ECACA431B048	**268157**	48	ECACD431B048W	**268228**	5
3	1	110	ECACA431B110	**268158**	60	ECACD431B060W	**268229**	5
3	1	120	ECACA431B120	**268159**	72	ECACD431B072W	**268230**	5
3	1	208	ECACA431B208	**268160**	110	ECACD431B110W	**268231**	5
3	1	230	ECACA431B230	**268161**	125	ECACD431B125W	**268232**	5
3	1	240	ECACA431B240	**268162**	230	ECACD431B230W	**268233**	5
3	1	400	ECACA431B400	**268163**	250	ECACD431B250W	**268234**	5
3	1	440	ECACA431B440	**268164**	400	ECACD431B440W	**268235**	5
3	1	480	ECACA431B480	**268165**				
3	1	500	ECACA431B500	**268166**	24	ECACD431B024L	**268236**	5
3	1	575	ECACA431B575	**268674**	48	ECACD431B048L	**268237**	5
3	1	600	ECACA431B600	**268167**	110	ECACD431B110L	**268238**	5
3	1				230	ECACD431B230L	**268239**	5
2	2	12	ECACA422B012	**268168**	12	ECACD422B012W	**268240**	5
2	2	24	ECACA422B024	**268169**	24	ECACD422B024W	**268241**	5
2	2	42	ECACA422B042	**268170**	36	ECACD422B036W	**268242**	5
2	2	48	ECACA422B048	**268171**	48	ECACD422B048W	**268243**	5
2	2	110	ECACA422B110	**268172**	60	ECACD422B060W	**268244**	5
2	2	120	ECACA422B120	**268173**	72	ECACD422B072W	**268245**	5
2	2	208	ECACA422B208	**268174**	110	ECACD422B110W	**268246**	5
2	2	230	ECACA422B230	**268175**	125	ECACD422B125W	**268247**	5
2	2	240	ECACA422B240	**268176**	230	ECACD422B230W	**268248**	5
2	2	400	ECACA422B400	**268177**	250	ECACD422B250W	**268249**	5
2	2	440	ECACA422B440	**268178**	400	ECACD422B440W	**268250**	5
2	2	480	ECACA422B480	**268179**				
2	2	500	ECACA422B500	**268180**	24	ECACD422B024L	**268251**	5
2	2	575	ECACA422B575	**268675**	48	ECACD422B048L	**268252**	5
2	2	600	ECACA422B600	**268181**	110	ECACD422B110L	**268253**	5
2	2				230	ECACD422B230L	**268254**	5
1	3	12	ECACA413B012	**268182**	12	ECACD413B012W	**268400**	5
1	3	24	ECACA413B024	**268183**	24	ECACD413B024W	**268401**	5
1	3	42	ECACA413B042	**268184**	36	ECACD413B036W	**268402**	5
1	3	48	ECACA413B048	**268185**	48	ECACD413B048W	**268403**	5
1	3	110	ECACA413B110	**268186**	60	ECACD413B060W	**268404**	5
1	3	120	ECACA413B120	**268187**	72	ECACD413B072W	**268405**	5
1	3	208	ECACA413B208	**268188**	110	ECACD413B110W	**268406**	5
1	3	230	ECACA413B230	**268189**	125	ECACD413B125W	**268407**	5
1	3	240	ECACA413B240	**268190**	230	ECACD413B230W	**268408**	5
1	3	400	ECACA413B400	**268191**	250	ECACD413B250W	**268409**	5
1	3	440	ECACA413B440	**268192**	400	ECACD413B440W	**268410**	5
1	3	480	ECACA413B480	**268193**				
1	3	500	ECACA413B500	**268194**	24	ECACD413B024L	**268411**	5
1	3	575	ECACA413B575	**268676**	48	ECACD413B048L	**268412**	5
1	3	600	ECACA413B600	**268195**	110	ECACD413B110L	**268413**	5
1	3				230	ECACD413B230L	**268414**	5
0	4	12	ECACA404B012	**268196**	12	ECACD404B012W	**268270**	5
0	4	24	ECACA404B024	**268197**	24	ECACD404B024W	**268271**	5
0	4	42	ECACA404B042	**268198**	36	ECACD404B036W	**268272**	5
0	4	48	ECACA404B048	**268199**	48	ECACD404B048W	**268273**	5
0	4	110	ECACA404B110	**268200**	60	ECACD404B060W	**268274**	5
0	4	120	ECACA404B120	**268201**	72	ECACD404B072W	**268275**	5
0	4	208	ECACA404B208	**268202**	110	ECACD404B110W	**268276**	5
0	4	230	ECACA404B230	**268203**	125	ECACD404B125W	**268277**	5
0	4	240	ECACA404B240	**268204**	230	ECACD404B230W	**268278**	5
0	4	400	ECACA404B400	**268205**	250	ECACD404B250W	**268279**	5
0	4	440	ECACA404B440	**268206**	400	ECACD404B440W	**268280**	5
0	4	480	ECACA404B480	**268207**				
0	4	500	ECACA404B500	**268208**	24	ECACD404B024L	**268281**	5
0	4	575	ECACA404B575	**268677**	48	ECACD404B048L	**268282**	5
0	4	600	ECACA404B600	**268209**	110	ECACD404B110L	**268283**	5
0	4				230	ECACD404B230L	**268284**	5

(1) End character: **W** = Wide voltage and built-in diode
L = Low consumption

Catalogue number structure

Example: **ECACA440B012**

EC: Means **E**fficor **C**ontactor range
AC: **A**uxiliary **C**ontact
A: **A** stands for AC
D stands for DC
4: Available contacts
40 4NO/0NC
31 3NO/1NC
22 2NO/2NC
13 1NO/3NC
04 0NO/4NC
B: **Type of terminal**
B stands for Box terminal
R stands for Ring terminal
012: Coil voltage (012 up to 600V)

New

Spare coils for contactors and auxiliary contactors - Box clamp terminals

	Voltage	Use for	Cat. no.	Ref. no.	Pack
AC coil Voltage in AC 50/60Hz	12Vac	EC09A...EC18A, ECACA...B	ECCS1A012S	**268687**	5
	24Vac	EC09A...EC18A, ECACA...B	ECCS1A024S	**268688**	5
	42Vac	EC09A...EC18A, ECACA...B	ECCS1A042S	**268689**	5
	48Vac	EC09A...EC18A, ECACA...B	ECCS1A048S	**268690**	5
	110Vac	EC09A...EC18A, ECACA...B	ECCS1A110S	**268691**	5
	120Vac	EC09A...EC18A, ECACA...B	ECCS1A120S	**268692**	5
	208Vac	EC09A...EC18A, ECACA...B	ECCS1A208S	**268693**	5
	230Vac	EC09A...EC18A, ECACA...B	ECCS1A230S	**268694**	5
	240Vac	EC09A...EC18A, ECACA...B	ECCS1A240S	**268695**	5
	400Vac	EC09A...EC18A, ECACA...B	ECCS1A400S	**268696**	5
	440Vac	EC09A...EC18A, ECACA...B	ECCS1A440S	**268697**	5
	480Vac	EC09A...EC18A, ECACA...B	ECCS1A480S	**268698**	5
	500Vac	EC09A...EC18A, ECACA...B	ECCS1A500S	**268699**	5
	575Vac	EC09A...EC18A, ECACA...B	ECCS1A575S	**268984**	5
	600Vac	EC09A...EC18A, ECACA...B	ECCS1A600S	**268700**	5
DC Wide Voltage range (W) Operating range: +25% Un -30% Un	12Vdc	EC09D...EC18D, ECACD...B	ECCS1D012S	**268701**	5
	24Vdc	EC09D...EC18D, ECACD...B	ECCS1D024S	**268702**	5
	36Vdc	EC09D...EC18D, ECACD...B	ECCS1D036S	**268703**	5
	48Vdc	EC09D...EC18D, ECACD...B	ECCS1D048S	**268704**	5
	60Vdc	EC09D...EC18D, ECACD...B	ECCS1D060S	**268705**	5
	72Vdc	EC09D...EC18D, ECACD...B	ECCS1D072S	**268706**	5
	110Vdc	EC09D...EC18D, ECACD...B	ECCS1D110S	**268707**	5
	125Vdc	EC09D...EC18D, ECACD...B	ECCS1D125S	**268708**	5
	230Vdc	EC09D...EC18D, ECACD...B	ECCS1D230S	**268709**	5
	250Vdc	EC09D...EC18D, ECACD...B	ECCS1D250S	**268710**	5
	440Vdc	EC09D...EC18D, ECACD...B	ECCS1D440S	**268711**	5
DC Low Consumption (L) VDC < 3.3W for EC09 up to EC18	24Vdc	EC09D...EC18D, ECACD...B	ECCS1D024SL	**268712**	5
	48Vdc	EC09D...EC18D, ECACD...B	ECCS1D048SL	**268713**	5
	110Vdc	EC09D...EC18D, ECACD...B	ECCS1D110SL	**268714**	5
	230Vdc	EC09D...EC18D, ECACD...B	ECCS1D230SL	**268715**	5
AC coil Voltage in AC 50/60Hz	12Vac	EC25A...EC40A...B	ECCS2A012S	**268716**	5
	24Vac	EC25A...EC40A...B	ECCS2A024S	**268717**	5
	42Vac	EC25A...EC40A...B	ECCS2A042S	**268718**	5
	48Vac	EC25A...EC40A...B	ECCS2A048S	**268719**	5
	110Vac	EC25A...EC40A...B	ECCS2A110S	**268720**	5
	120Vac	EC25A...EC40A...B	ECCS2A120S	**268721**	5
	208Vac	EC25A...EC40A...B	ECCS2A208S	**268722**	5
	230Vac	EC25A...EC40A...B	ECCS2A230S	**268723**	5
	240Vac	EC25A...EC40A...B	ECCS2A240S	**268724**	5
	400Vac	EC25A...EC40A...B	ECCS2A400S	**268725**	5
	440Vac	EC25A...EC40A...B	ECCS2A440S	**268726**	5
	480Vac	EC25A...EC40A...B	ECCS2A480S	**268727**	5
	500Vac	EC25A...EC40A...B	ECCS2A500S	**268728**	5
	575Vac	EC25A...EC40A...B	ECCS2A575S	**268985**	5
	600Vac	EC25A...EC40A...B	ECCS2A600S	**268729**	5
DC Wide Voltage range (W) Operating range: +25% Un -30% Un	12Vdc	EC25AD...EC40D...B	ECCS2D012S	**268730**	5
	24Vdc	EC25AD...EC40D...B	ECCS2D024S	**268731**	5
	36Vdc	EC25AD...EC40D...B	ECCS2D036S	**268732**	5
	48Vdc	EC25AD...EC40D...B	ECCS2D048S	**268733**	5
	60Vdc	EC25AD...EC40D...B	ECCS2D060S	**268734**	5
	72Vdc	EC25AD...EC40D...B	ECCS2D072S	**268735**	5
	110Vdc	EC25AD...EC40D...B	ECCS2D110S	**268736**	5
	125Vdc	EC25AD...EC40D...B	ECCS2D125S	**268737**	5
	230Vdc	EC25AD...EC40D...B	ECCS2D230S	**268738**	5
	250Vdc	EC25AD...EC40D...B	ECCS2D250S	**268739**	5
	440Vdc	EC25AD...EC40D...B	ECCS2D440S	**268740**	5
DC Low Consumption (L) VDC < 5.5W for EC25 up to EC40	24Vdc	EC25AD...EC40D...B	ECCS2D024SL	**268741**	5
	48Vdc	EC25AD...EC40D...B	ECCS2D048SL	**268742**	5
	110Vdc	EC25AD...EC40D...B	ECCS2D110SL	**268743**	5
	230Vdc	EC25AD...EC40D...B	ECCS2D230SL	**268744**	5

New

Accessories for contactors

Auxiliary contact blocks

	Contacts				Box clamp terminals		
	NO	NC	NO EM	NC EM	Cat. no.	Ref. no.	Pack
	•3 •4	•1 •2	•7 •8	•5 •6			
Frontal auxiliary blocks							
 	**2 contacts**						
	1	1	-	-	ECFA211S	**268872**	5
	2	0	-	-	ECFA220S	**268873**	5
	0	2	-	-	ECFA202S	**268874**	5
	4 contacts						
	4	0	-	-	ECFA440S	**268881**	5
	3	1	-	-	ECFA431S	**268882**	5
	2	2	-	-	ECFA422S	**268883**	5
	1	3	-	-	ECFA413S	**268884**	5
	0	4	-	-	ECFA404S	**268885**	5
	1	1	1	1	ECFA422SE	**268886**	5
Lateral auxiliary blocks							
 	**Contact block**						
	2	0	-	-	ECLA220S	**268899**	10
	1	1	-	-	ECLA211S	**268900**	10
	0	2	-	-	ECLA202S	**268901**	10
	Mechanical interlock						
	0	0	-	-	ECMI	**268908**	10
	0	2	-	-	ECMI02S	**268910**	10

Pneumatic timer[1]

	NO	NC	Time	Type	Box clamp terminals Cat. no.	Ref. no.	Pack
	•7 •8	•5 •6					
	1	1	0.1-30 s	delay ON	ECPT30SC	**268913**	5
	1	1	1 -60 s	delay ON	ECPT60SC	**268914**	5
	1	1	0.1-30 s	delay OFF	ECPT30SD	**268916**	5
	1	1	1 -60 s	delay OFF	ECPT60SD	**268917**	5

All accessories can be used with all type of contactors.
(1) Use only with contactor coil in AC voltage.

New

Accessories for contactors (continued)

Mechanical latch

NC	Use with	Coil voltage 50/60HZ	Coil voltage DC	Box clamp terminals Cat. no.	Box clamp terminals Ref. no.	Pack
•5 / •6						
1	EC09A up to EC18A, ECACA	24-32V	-	ECML1AS032	**268919**	5
1	EC09A up to EC18A, ECACA	42-60V	-	ECML1AS060	**268920**	5
1	EC09A up to EC18A, ECACA	110-127V	-	ECML1AS127	**268921**	5
1	EC09A up to EC18A, ECACA	220-240V	-	ECML1AS277	**268922**	5
1	EC09A up to EC18A, ECACA	380-480V	-	ECML1AS480	**268923**	5
1	EC09A up to EC18A, ECACA	500-690V	-	ECML1AS660	**268924**	5
1	EC25A up to EC40A	24-32V	-	ECML2AS032	**268925**	5
1	EC25A up to EC40A	42-60V	-	ECML2AS060	**268926**	5
1	EC25A up to EC40A	110-127V	-	ECML2AS127	**268927**	5
1	EC25A up to EC40A	220-240V	-	ECML2AS277	**268928**	5
1	EC25A up to EC40A	380-480V	-	ECML2AS480	**268929**	5
1	EC25A up to EC40A	500-690V	-	ECML2AS660	**268930**	5
1	EC09D up to EC18D, ECACD	-	24-36V	ECML1DS036	**269325**(1)	5
1	EC09D up to EC18D, ECACD	-	42-48V	ECML1DS048	**269326**(1)	5
1	EC09D up to EC18D, ECACD	-	60-72V	ECML1DS072	**269327**(1)	5
1	EC09D up to EC18D, ECACD	-	110-277V	ECML1DS177	**269328**(1)	5
1	EC09D up to EC18D, ECACD	-	220-250V	ECML1DS250	**269329**(1)	5
1	EC09D up to EC18D, ECACD	-	440V	ECML1DS440	**269330**(1)	5
1	EC25D up to EC40D	-	24-36V	ECML2DS036	**269331**(1)	5
1	EC25D up to EC40D	-	42-48V	ECML2DS048	**269332**(1)	5
1	EC25D up to EC40D	-	60-72V	ECML2DS072	**269333**(1)	5
1	EC25D up to EC40D	-	110-277V	ECML2DS277	**269334**(1)	5
1	EC25D up to EC40D	-	220-250V	ECML2DS250	**269335**(1)	5
1	EC25D up to EC40D	-	440V	ECML2DS440	**269336**(1)	5

(1) No use with DC version low consumption

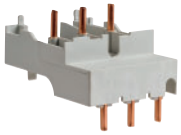
Surge suppressor (plug-in)

Description	Suppressor type	Voltage	Cat. no.	Ref. no.	Pack
Diode type, DC 12-440V	DI	DC	ECSUDI440	**268931**	10
RC type, AC 24-48V	RC	AC	ECSURC048	**268932**	10
RC type, AC 50-127V	RC	AC	ECSURC127	**268933**	10
RC type, AC 130-250V	RC	AC	ECSURC250	**268934**	10
RC type, AC 230-440V	RC	AC	ECSURC440	**268935**	10
RC type, AC 400-600V	RC	AC	ECSURC600	**268936**	10
Varistor type, AC/DC 24-48V	VA	AC/DC	ECSUVA048	**268937**	10
Varistor type, AC/DC 50-127V	VA	AC/DC	ECSUVA127	**268938**	10
Varistor type, AC/DC 130-250V	VA	AC/DC	ECSUVA250	**268939**	10
Varistor type, AC/DC 230-440V	VA	AC/DC	ECSUVA440	**268940**	10
Varistor type, AC/DC 400-600V	VA	AC/DC	ECSUVA600	**268941**	10

New

Accessories for starters

Fuseless starter kits

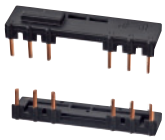


Use with	Description	Cat. no.	Ref. no.	Pack
GPS1 - EC09A up to EC25A	Link module	ECM1AL25	**268954**	5
GPS1 - EC32A	Link module	ECM1AL32	**268955**	5
GPS2 - EC32A and EC40A	Link module	ECM2AL40	**268956**	5

GPS1 - EC09 up to EC25	25A - 60mm busbar adapter 45x200mm	PBF23EBDA	**107152**	4
GPS2 - EC32 up to EC40	63A - 60mm busbar adapter 54x200	PBF23ECDA	**107153**	4
EC09-EC40	45mm busbar adapter empty for reversing/star-delta application	ECBSRSD1	**267403**	4
EC09-EC40	54mm busbar adapter empty for reversing/star-delta application	ECBSRSD2	**267404**	4
EC09-EC40	9mm busbar adapter empty for contactor lateral blocks	ECBSLS	**267405**	10
	60mm universal busbar support	ECBS60S	**267406**	10
	Lateral protection for universal busbar support	ECBSLP	**267407**	10

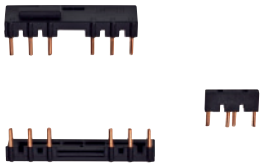
GPS1 - EC09 up to EC32	Base plate 45mm	ECBP45	**268962**	5
GPS2 - EC32 and EC40	Base plate 55mm	ECBP55	**268953**	5

Wiring kits for reversing starters



Use with	Description	Cat. no.	Ref. no.	Pack
EC09A up to EC25A	Suitable to be used for upper and lower connections with and without overload relay **with** mechanical interlock	ECKS1RV	**268948**	1
EC32A and EC40A	Suitable to be used for upper and lower connections with and without overload relay **with** mechanical interlock	ECKS2RV	**268950**	1

Wiring kits for star delta starters

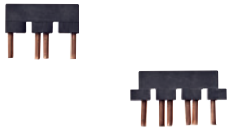


Use with	Description	Cat. no.	Ref. no.	Pack
EC09 up to EC25	Suitable to be used for upper and lower connections with and without overload relay	ECKS1YD	**268951**	1
EC32 and EC40	Suitable to be used for upper and lower connections with and without overload relay	ECKS2YD	**268952**	1

Parallel busbar

Use with	Description	Cat. no.	Ref. no.	Pack
EC09 up to EC25	Parallel busbar for 2 contactors	ECBB1B2	**268942**	5
EC32 and EC40	Parallel busbar for 2 contactors	ECBB2B2	**268945**	5

Parallel poles



Use with	Description	Cat. no.	Ref. no.	Pack
EC09 up to EC25	3 poles in parallel	EC3PP1B	**268943**	6
EC09 up to EC25	4 poles in parallel	EC4PP1B	**268944**	6
EC32 and EC40	3 poles in parallel	EC3PP2B	**268946**	6
EC32 and EC40	4 poles in parallel	EC4PP2B	**268947**	6

New

Thermal overload relays

Thermal overload relays

Trip class 10	Setting range		Fuses			Box clamp terminals		
	Min. A	Max. A	AM A	gL-gG A	Use with	Cat. no.	Ref. no.	Pack
	0.16	0.26	2	2		ECRT1B10B	**268996**	5
	0.25	0.41	2	2		ECRT1B10C	**268997**	5
	0.40	0.65	2	2		ECRT1B10D	**268998**	5
	0.65	1.10	2	4		ECRT1B10F	**268999**	5
	1.00	1.50	4	6		ECRT1B10G	**269000**	5
	1.30	1.90	4	6	EC09	ECRT1B10H	**269001**	5
	1.80	2.70	6	10	EC12	ECRT1B10J	**269002**	5
	2.50	4.00	8	16	EC18	ECRT1B10K	**269003**	5
	4.00	6.30	12	20		ECRT1B10L	**269004**	5
	5.50	8.50	16	20		ECRT1B10M	**269005**	5
	8.00	12.00	20	25		ECRT1B10N	**269006**	5
	10.00	16.00	25	35		ECRT1B10P	**269007**	5
	14.50	18.00	32	50		ECRT1B10S	**269008**	5
	17.50	22.00	40	63		ECRT1B10T	**269009**	5
	8.00	12.00	20	25		ECRT2B10N	**268103**	5
	10.00	16.00	25	35		ECRT2B10P	**268104**	5
	14.50	18.00	32	50	EC25	ECRT2B10S	**268105**	5
	17.50	22.00	40	63	EC32	ECRT2B10T	**268106**	5
	21.00	26.00	40	63	EC40	ECRT2B10U	**268107**	5
	25.00	32.00	50	80		ECRT2B10V	**268108**	5
	30.00	40.00	63	100		ECRT2B10W	**268109**	5

Accessories

Use with	Description	Cat. no.	Ref. no.	Pack
Base for separate mounting				
ECRT1	DIN EN500022-35	ECRT1BS	**268963**	1
ECRT2	DIN EN500022-35	ECRT2BS	**268964**	1
Push-button with flexible cable				
ECRT1	0.5 m	RTXS	**113855**	1
	1 m	RTXSL	**113856**	1
	backside reset	RTXBS	**108864**	1
Remote electrical reset				
ECRT1 and ECRT2	12 VAC/DC	RTXRRB	**113661**	1
	24 VAC/DC	RTXRRD	**113662**	1
	48 VAC/DC	RTXRRG	**113663**	1
	110-240VAC/DC	RTXRRJ	**113664**	1
	220/415VAC/DC	RTXRRN	**113665**	1
	380/480VAC/DC	RTXRRU	**113666**	1

New

Conformity to standards

IEC/EN 60947-1
IEC/EN 60947-4-1
IEC/EN 60947-5-1
IEC/EN 60947-5-4
EN50011
EN50012
EN50005
GB14048.4
UL508
UL486E
CSA2.22-14
NF F16 101/102

Ambient conditions

Storage temperature	-55°C to +80°C
Operation temperature	-40°C to +55°C
	-40°C to +70°C (1)
Altitude	<2000m

(1) From 100% to 110% of rated control voltage, without additional auxiliary blocks

Approvals/Marking

(1) (1) (1) (1)

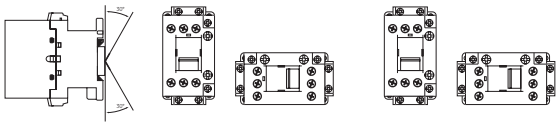
(1) In progress

Climatic resistance (IEC 68-2)

Continuous tests 40 / 125 / 56	
Cold (72h)	
Temperature	-40°C
Dry heat (96h)	
Temperature	+125°C
Relative humidity	< 50%
Humid heat (56h)	
Temperature	+40°C
Relative humidity	95%
Cyclic tests (6 cycles)	
Humid heat	
First half-cycle	
Low temperature	+25°C
Relative humidity	93%
Second half-cycle	
Low temperature	+55°C
Relative humidity	95°C

Mounting positions

Installation capabilities



With de-rating values

-10% connection voltage -10% disconnection voltage with same rated power, data compared to vertical mounting

+10% disconnection voltage +10% connection voltage with same rated power, data compared to vertical mounting

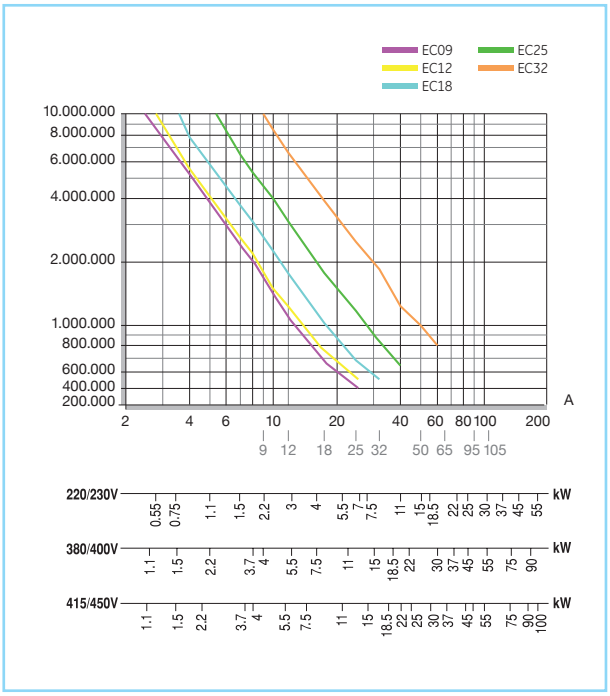
Terminal capacity and tightening torque

Conventional Thermal Current (Ith)	(A)	Head type	EC09 - EC18	EC25	EC32 - EC40
Box terminals			32	45	60
Solid, stranded and finely stranded w/o end sleeve	(mm^2)	Slot & PZ2	0.75...6	0.75...10	0.75...16
Finely stranded with end sleeve	(mm^2)	Slot & PZ2	0.75...6	0.75...10	0.75...16
Finely stranded w/o end sleeve	(mm^2)	Slot & PZ2	0.75...6	0.75...10	0.75...16
AWG wires			18...10	18...8	18...6
Tightening torque	(Nm) (Lb x in.)		2.2 / 20	2.2 / 20	2.2 / 20
Finely stranded w/o end sleeve	(mm^2)	Slot & PZ2	0.75...6	0.75...10	0.75...16
AWG wires			18...10	18...8	18...6
Tightening torque	(Nm) (Lb x in.)		2.2 / 20	2.2 / 20	2.2 / 20
Finely stranded with end sleeve	(mm^2)	Slot & PZ2	0.75...6	0.75...10	0.75...16
AWG wires			18...10	18...8	18...6
Tightening torque	(Nm) (Lb x in.)		2.2 / 20	2.2 / 20	2.2 / 20

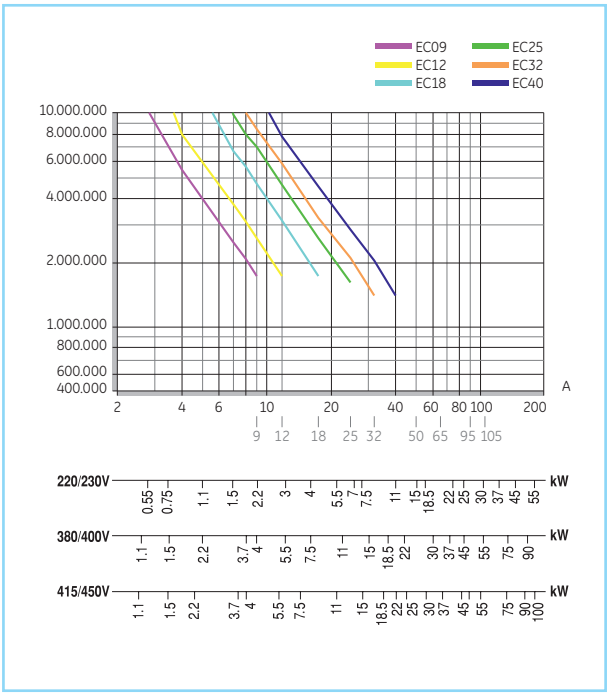
New

Electrical endurance

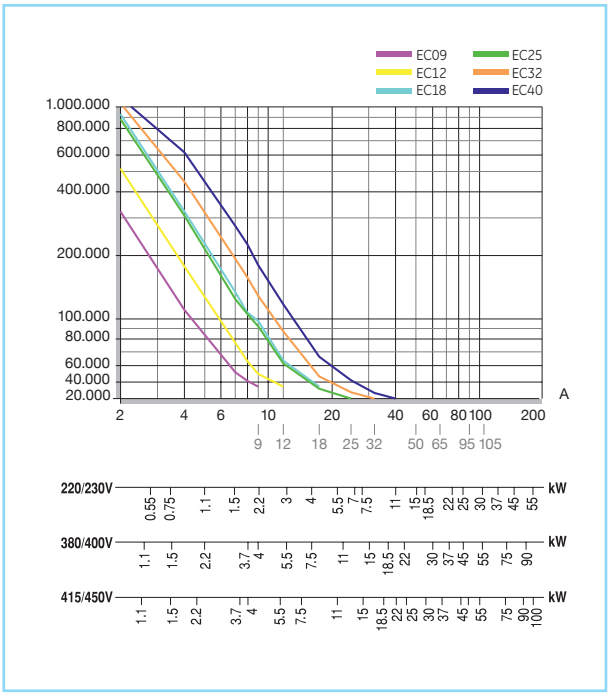
Category AC1 (3P & 4P contactors)



Category AC3 (3P contactors)



Category AC4 (3P contactors)



Power circuit

		EC 09	EC 12	EC18	EC 25	EC 32	EC 40
Three pole version							
Rated thermal current Ith at θ ≤ 55°C	(A)	25	25	32	45	60	60
Rated operational current Ie AC-3	(A)	9	12	18	25	32	40
Rated operational voltage Ue	(V)	690V acc. IEC 60947-4-1 / 600V acc. UL-CSA					
Four pole version							
Rated thermal current Ith at θ ≤ 55°C	(A)	-	25	32	45	60	-
Rated operational voltage Ue	(V)	690V acc. IEC 60947-4-1 / 600V acc. UL-CSA					
Three and four pole version							
Rated insulation voltage Ui	(V)	1000V acc. IEC 60947-4-1 / 600V acc. UL-CSA					
Maximum continuous current AC-1	(A)	25	25	32	45	60	60
Frequency limits	(Hz)	25...400	25...400	25...400	25...400	25...400	25...400
Making capacity (RMS) (IEC- 60947) U = 500V	(A)	220	220	220	315	520	520
Breaking capacity (RMS) (acc. IEC-60947)							
Ue = 500V	(A)	220	220	220	315	520	520
Ue = 690V	(A)	120	120	120	144	232	232
Short-time current from cold state							
1s	(A)	570	570	570	790	1265	1265
5s	(A)	254	254	254	355	565	565
10s	(A)	180	180	180	250	400	400
30s	(A)	104	104	104	145	231	231
1min	(A)	74	74	74	102	164	164
3min	(A)	42	42	42	60	95	95
Recovery time	(min)	10	10	10	10	10	10
Protection against short-circuit with fuses without thermal overload relay							
Coordination type 1							
gL-gG (U = 500V, 50kA or U = 415V, 80kA)	(A)	40	40	50	63	80	80
Coordination type 2							
gL-gG (U = 500V, 50kA or U = 415V, 80kA)	(A)	25	35	40	50	63	80
Average Impedance per pole	(mΩ)	2.25	2.25	2.25	1.6	1.2	1.2
Power dissipation per pole							
AC-1	(W)	1.41	1.41	2.30	3.24	4.32	4.32
AC-3	(W)	0.18	0.32	0.73	1.00	1.23	1.92
Insulation resistance							
Between adjacent poles	(MΩ)	>10	>10	>10	>10	>10	>10
Between poles and earth	(MΩ)	>10	>10	>10	>10	>10	>10
Between input and output	(MΩ)	>10	>10	>10	>10	>10	>10

Control circuit - Alternating current

		EC09 up to EC18	EC25 up to EC40
Rated insulation voltage Ui	(V)	1000	1000
Standard voltages Us 50Hz	(V)	12-600	12-600
Standard voltages Us 60Hz	(V)	12-600	12-600
Voltage operating limits 50/60Hz coils			
Operating 50Hz xUs		0.8 -1.1	0.8 -1.1
Operating 60Hz xUs		0.85-1.1	0.85-1.1
Pick-up 50Hz xUs		0.5...0.8	0.6...0.8
Pick-up 60Hz xUs		0.85-1.1	0.85-1.1
Drop out 50Hz xUs		0.35....0.55	0.30....0.55
Drop out 60Hz xUs		0.35....0.55	0.30....0.55
Maximum consumption bifrequency coils (cold state)			
Magnetic circuit closed (50Hz/60Hz)	(VA)	9.8 / 6.8	11.4 / 7.6
Magnetic circuit opened (50Hz/60Hz)	(VA)	70.1 / 68.2	144 / 138
Power factor			
Magnetic circuit closed cos φ		0.24	0.20
Magnetic circuit opened cos φ		0.85	0.70
Opening and closing times			
Values between +10% Us and –20% Us			
Making time on energisation (NO)	(ms)	10 - 25	10 - 25
Breaking time on de-energisation (NO)	(ms)	5 - 15	5 - 15
Values at Us			
Making time on energisation (NO)	(ms)	10 - 25	10 - 25
Making time on de-energisation (NO)	(ms)	5 - 15	5 - 15
Mechanical endurance			
Bifrequency coils (at 50Hz)	10^6 ops.	10	10
Maximum rate			
AC-1 at rated power	ops./h	1200	1200
AC-2 at rated power	ops./h	1200	1000
AC-3 at rated power	ops./h	1200	1000
AC-4 at rated power	ops./h	360	240
No load	ops./h	7200	7200

Control circuit - Direct current

		Coils with Wide voltage range		Coils with Low consumption	
		EC09 up to EC18	EC25 up to EC40	EC09 up to EC18	EC25 up to EC40
Rated insulation voltage Ui	(V)	1000	1000	1000	1000
Standard voltages Us DC	(V)	12 - 400	12 - 400	12 - 400	12 - 400
Operating Limits					
Operating xUs	(VDC)	0.70 - 1.25	0.70 - 1.25	0.80 - 1.1	0.80 - 1.1
Pick Up xUs	(VDC)	0.45 - 0.65	0.45 - 0.65	0.48 - 0.68	0.48 - 0.68
Drop Out xUs	(VDC)	0.12 - 0.30	0.12 - 0.30	0.12 - 0.30	0.12 - 0.30
Maximum consumption at Us					
Magnet circuit open and closed (cold state)	(W)	7.5	9.5	3.6	5.5
Opening and closing times					
Values between +10% Us and –20% Us					
Making time on energisation (NO)	(ms)	33 - 78	35 - 154	47 - 173	48 - 96
Breaking time on de-energisation (NO)	(ms)	14 - 18	15 - 26	12 - 15	8 - 26
Values at Us					
Making time on energisation (NO)	(ms)	33 - 78	35 - 66	44 - 83	33 - 75
Breaking time on de-energisation (NO)	(ms)	14 - 18	15 - 24	13 - 20	12 - 24
Mechanical endurance					
	10^6 ops.	10	10	10	10
Maximum rate					
AC-1 at rated power	ops./h	1200	1200	1200	1200
AC-2 at rated power	ops./h	1200	1000	1200	1000
AC-3 at rated power	ops./h	1200	1000	1200	1000
AC-4 at rated power	ops./h	360	240	360	240
No load	ops./h	7200	7200	7200	7200

(1) 4.4 for 230 Vdc version

New

Built-in auxiliary contacts

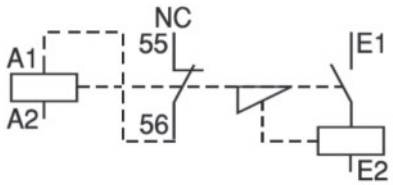
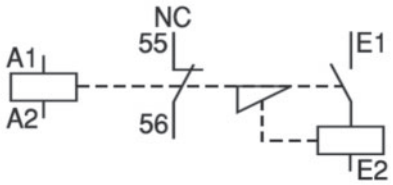
		EC09 up to EC25
Rated insulation voltage Ui according to IEC 60947	(V)	1000
Rated thermal current Ith a θ ≤ 55°C	(A)	10
Making capacity (r.m.s.) acc. to IEC 60947		
AC-15 Ue ≤ 400V, 50/60Hz	(A)	105
DC-13 Ue ≤ 220Vdc	(A)	105
Breaking capacity (r.m.s.) acc. to IEC 60947		
AC-15 Ue ≤ 400V, 50/60Hz	(A)	105
DC-13 Ue ≤ 220Vdc	(A)	2
AC-15 rated voltage and current Ue-Ie according to IEC	(V-A)	110/120-10 220/230-10 380/400-6 415/450-5 500-4 690/660-2
according to UL, CSA		A600
DC-13 rated voltage and current Ue-Ie according to IEC	(V-A)	24-6 48-4 110-2 220-0.7 440-0.35
according to UL, CSA		Q600
Electrical endurance	10^6 ops.	0.2
Minimum operational power (operational safety)		17 V - 5mA
Short-circuit protection Max. fuse class gl-gG without welding	(A)	10
Insulation resistance Between contacts Between contacts and earth	(MΩ) (MΩ)	>10
Guaranteed no overlap between NO and NC contacts		
Space		1.3mm
Impedance of the contacts	(MΩ)	2.7

Auxiliary contact blocks

		ECFA/ECLA
Rated insulation voltage Ui according to IEC 60947	(V)	1000
Rated thermal current Ith at θ ≤ 55°C	(A)	10
Making capacity (Ieff) according to IEC 60947		
AC-15 Ue ≤ 400V, 50/60Hz	(A)	60
DC-13 Ue ≤ 220Vdc	(A)	60
Breaking capacity (Ieff) according to IEC 60947		
AC-15 Ue ≤ 400V, 50/60Hz	(A)	60
DC-13 Ue ≤ 220V, DC	(A)	0.95
AC-15 rated voltage and current Ue-Ie according to IEC	(V-A)	110/120-6 220/230- 6 380/400-4 415/450-3.5 500-2.5 690/660-1.5
according to UL, CSA		A600
DC-13 rated voltage and current Ue-Ie according to IEC	(V-A)	24-4 48-2 110-0.7 220-0.3 440-0.15
according to UL, CSA		Q600
Electrical endurance	10^6 ops.	0.2
Mechanical endurance	10^6 ops.	10
Minimum operational current (operational safety)		17-5 V-mA
Short-circuit protection Max. fuse class gl-gG without welding	(A)	10
Insulation resistance Between contacts Between contacts and earth	(MΩ) (MΩ)	>10
Guaranteed no overlap between NO and NC contacts		
Space		1.6mm for ECFA / 2.2mm for ECLA
Impedance of the contacts	(MΩ)	2.7

New

Mechanical latch blocks

Rated insulation voltage Ui	(V)	1000
Standard voltages Us: 50 to 60Hz and DC	(V)	24-660 & 24-440
Operating limits		85% to 110%
Consumption for unlatching (auto cut-out)		
24 to 72V		30W / 25VA
110 to 440V		15W / 12VA
Electrical unlatching control		18
Minimum impulse	(ms)	15 – 25
Maintained		Auto cut by internal contact
Manual unlatching control		By manual push-button
Electrical making control		
Minimum pulse	(ms)	40 (auto cut)
Manual making control		By manual push-button
Auxiliary contact NC		
AC-15 utilisation according to IEC	(V-A)	110/120-6 220/230-6 380/400-4 415/450-3.5 500-2.5 690/660-1.5
according to UL/CSA		A600
DC-13 utilisation according to IEC	(V-A)	24-4 48-2 110-0.7 220-0.3 440-0.15
according to UL/CSA		Q600
Mechanical endurance	10^6 ops.	0.2
Wiring diagrams		
Alternating current		
Alternating current / Direct current		

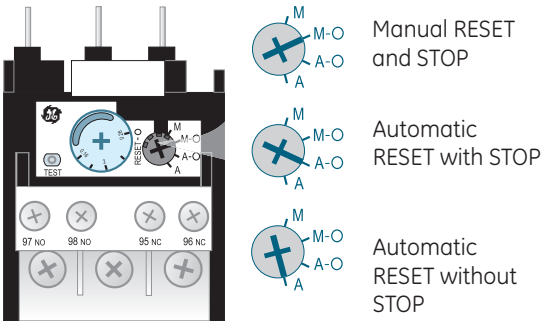
Terminal capacity

Terminal capacity		Screw plate ECMLSA,ECMLSD
Flexible wire	(mm^2)	2x0.5...2.5
AWG wire	(mm^2)	2x20...14
Standard gauge		A3
Tightening torque	(Nm/Lb·in)	1.1 / 10

New

Thermal mechanical overload relays for contactors from 0.16 to 40A

- Control circuit up to 690VAC
- Power circuit ECRT1, ECRT2: up to 690V
- Thermal protection against balanced overload.
- Three-pole differential (phase unbalance protection).
- Automatic ambient temperature compensation.
- Front mounted selector for choosing utilization current.
- Manual trip lever (tripping test).
- Tripping indicator (0-1).
- IP20 protection
- Reset button, 4 positions:
  - Manual RESET
  - Manual RESET and STOP
  - Automatic RESET with STOP
  - Automatic RESET without STOP



IEC/EN 60947-4-1
Ui=690V
Tripping current 120% of current setting

Standards

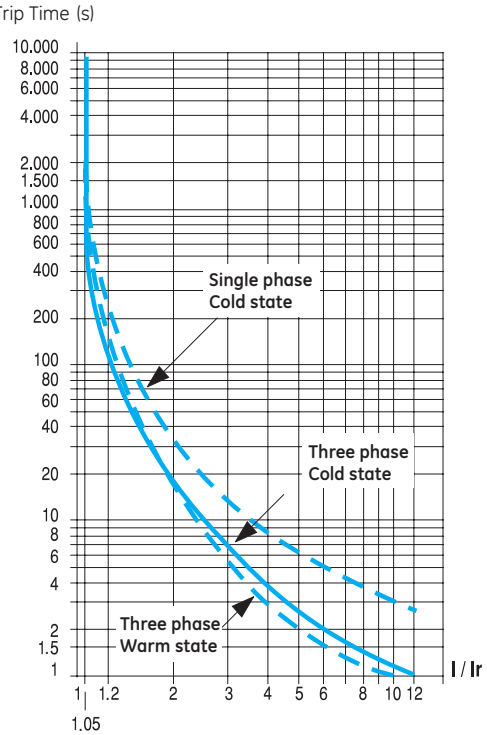
IEC 7 EN 60947-4-1
IEC EN 60947-5-1
GB14048.4
UL508
CSA22.2/14
VDE 0660

Approvals/Marking

(1) (1) (1) (1)

(1) In progress

Tripping curves



Multiples of setting current

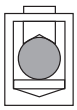
New

Thermal mechanical overload relays

Class		10A
Setting range	(A)	0.16...40
Suitable for		All Efficor contactors
Main circuit		
Rated insulation voltage	(V)	690
Frequency limits	(Hz)	0-400
Control circuit		
Rated insulation voltage (IEC60947-4) Ui	(V)	690
Rated thermal current Ith	(A)	10
Operation current		
AC-15 - rated voltage and current Ue-Ie	(V-A)	110/120-3 220/230-2 380/400-1 480/500-0.8 690/660-0.3
DC-13 - rated voltage and current Ue-Ie	(V-A)	24-2 48-1.4 110-0.6 220-0.3 440-0.1
Utilisation according UL and CSA		B600-Q600
Protective fuse type gL	(A)	10
Terminal capacity	(mm^2)	0.75..10
Tightening capacity	(Nm)	2.2 / 20

Terminal capacity

Clamp terminal - Flexible	(mm^2)	0.75..10
		18..8
Clamp terminal - Standard gauge		B6
		2.2 / 20



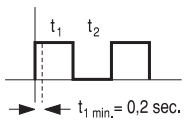
Ambient conditions

Storage temperature	-55°C to +80°C
Operation temperature (compensated)	-25°C to +60°C
Altitude <2000 m	without any changes in characteristics
Relative humidity	40°C, 95% no cond.
Protection treatment	Salt spary test

Remote electrical reset

Power consumption	
AC	100VA
DC	100W

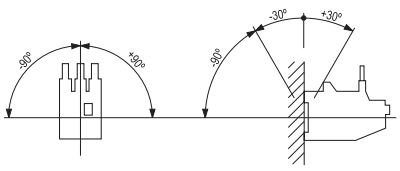
Coils not suitable for continuous operating duty



t_1 = 1 sec. ◆ t_2 = 30 sec.
t_1 = 5 sec. ◆ t_2 = 90 sec.
t_1 = 10 sec. ◆ t_2 = 180 sec.

(t_1 = ON time t_2 = OFF time)

Mounting positions



Inclination angle axis Y and Z: ±30°

New

Coordination table Type 2 with 50kA at 415V and 500V

Thermal Overload Relay	Current Setting range (Aac)	415VAC												500VAC							
						With MCCB as SCPD												With Fuse MMS as SCPD			
						SCPD		Contactor		SCPD (MCCB)		Contactor						SCPD		Contactor	
		Rated Power (kW)	Rated Current (A)	"r" Current (kA)	"q" Current (kA)	Type	Rat. (Aac)	Type	Rat. (Aac)	Type	Rat. (Aac)	Type	Rat. (Aac)	Rated Power (kW)	Rated Current (A)	"r" Current (kA)	"q" Current (kA)	Type	Rat. (Aac)	Type	Rat. (Aac)
ECRT1B10B	0.16 - 0.26	0.06	0.21	1	80	MMS	0.26	EC09A3	9	-	-	-	-	0.06	0.17	1	50	MMS	0.26	EC09A3	9
ECRT1B10C	0.25 - 0.41	0.09	0.31	1	80	Fuse	2	EC09A3	9	-	-	-	-	0.12	0.33	1	50	Fuse	2	EC09A3	9
ECRT1B10D	0.4 - 0.65	0.12	0.4	1	80	Fuse	4	EC09A3	9	-	-	-	-	0.18	0.48	1	50	Fuse	4	EC09A3	9
ECRT1B10F	0.65 - 1.1	0.25	0.8	1	80	Fuse	4	EC09A3	9	-	-	-	-	0.25	0.66	1	50	Fuse	4	EC09A3	9
ECRT1B10G	1.0 - 1.5	0.37	1.1	1	80	Fuse	6	EC09A3	9	-	-	-	-	0.55	1.2	1	50	Fuse	6	EC09A3	9
ECRT1B10H	1.3 - 1.9	0.55	1.5	1	80	Fuse	6	EC09A3	9	-	-	-	-	0.75	1.5	1	50	Fuse	6	EC09A3	9
ECRT1B10J	1.8 - 2.7	0.75	1.9	1	80	Fuse	6	EC09A3	9	-	-	-	-	1.1	2.1	1	50	Fuse	6	EC09A3	9
ECRT1B10K	2.5 - 4.0	1.5	3.4	1	80	Fuse	10	EC09A3	9	-	-	-	-	1.5	2.6	1	50	Fuse	10	EC09A3	9
ECRT1B10L	4.0 - 6.3	2.2	4.5	1	80	Fuse	16	EC09A3	9	-	-	-	-	3	5.3	1	50	Fuse	16	EC09A3	9
ECRT1B10M	5.5 - 8.5	3	6.5	1	80	Fuse	20	EC09A3	9	-	-	-	-	3.7	6	1	50	Fuse	20	EC09A3	9
ECRT1B10N/ ECRT2B10N	8.0 - 12	4	8	1	80	Fuse	25	EC09A3	9	MCCB	12.5	EC25A3	25	5.5	9	1	50	Fuse	25	EC09A3	9
ECRT1B10P/ ECRT2B10P	10.0 - 16.0	5.5	11	1	80	Fuse	35	EC012A3	12	MCCB	12.5	EC25A3	25	7.5	12	1	50	Fuse	35	EC12A3	12
ECRT1B10S/ ECRT2B10S	14.5 - 18.0	7.5	14.8	1	80	Fuse	40	EC018A3	18	MCCB	20	EC25A3	32	10	15.5	1	50	Fuse	40	EC18A3	18
ECRT1B10T/ ECRT2B10T	17.5 - 22	-	-	-	-	-	-	-	-		-	-	-	11	18.4	3	50	Fuse	40	EC18A3	18
ECRT2B10U	21.0 - 26	11	21	3	80	Fuse	50	EC025A3	25	MCCB	30	EC25A3	32	15	23	3	50	Fuse	50	EC25A3	25
ECRT2B10V	25.0 - 32.0	15	28	3	80	Fuse	63	EC032A3	32	MCCB	30	EC32A3	32	17.5	26.5	3	50	Fuse	63	EC32A3	32
ECRT2B10W	30.0 - 40	18.5	35	3	80	Fuse	80	EC040A3	40	MCCB	50	EC40A3	40	22	33	3	50	Fuse	80	EC40A3	40

Thermal overload relays, Trip Class: 10A
Rated operational voltage: 415Vac, 500Vac
Rated insulation voltage: 690Vac
Rated frequency: 50Hz.
Rated duty: Eight hour duty
Pollution degree: 3
Rated conditional short-circuit protection device current: 80kA at 415Vac; 50kA at 500Vac

Surion GPS high breaking capacity (Thermal Magnetic). Coordination Type 2 - 65kA at 380/400 & 415V

Motor[1]			Manual Motor Starter				Contactor	Box clamp		Links
Rated Power	Rated current (A)		Cat.No.	Rated current (In)	Thermal current	Magnetic current	Series	Smallest wire Cu (pvc)[2]	Minimum frontal electri-cal safety clearence	Cat.No.
kW	380/400V	415V		(A)	Setting range (A)	(A)		380/415V (mm^2)	(mm)	
0.06	0.23	0.21	GPS1BHAB	0.25	0.16-0.25	3.2	EC9A..	0.75	20	ECM1AL25
0.09	0.34	0.31	GPS1BHAC	0.4	0.25-0.4	5.2	EC9A..	0.75	20	ECM1AL25
0.12	0.44	0.4	GPS1BHAD	0.63	0.4-0.63	8.2	EC9A..	0.75	20	ECM1AL25
0.18	0.65	0.63	GPS1BHAE	1	0.63-1	13	EC9A..	0.75	20	ECM1AL25
0.25	0.9	0.8	GPS1BHAE	1	0.63-1	13	EC9A..	0.75	20	ECM1AL25
0.37	1.25	1.1	GPS1BHAF	1.6	1-1.6	20.5	EC9A..	0.75	20	ECM1AL25
0.55	1.6	1.5	GPS1BHAF	1.6	1-1.6	20.5	EC9A..	0.75	20	ECM1AL25
0.75	2	1.9	GPS1BHAG	2.5	1.6-2.5	32.5	EC9A..	0.75	20	ECM1AL25
1.1	2.6	2.5	GPS1BHAH	4	2.5-4	52	EC9A..	0.75	20	ECM1AL25
1.5	3.5	3.4	GPS1BHAH	4	2.5-4	52	EC9A..	0.75	20	ECM1AL25
2.2	5	4.5	GPS1BHAJ	6.3	4-6.3	82	EC9A..	0.75	20	ECM1AL25
3	7	6.5	GPS1BHAK	10	6.3-10	130	EC9A..	1.5	20	ECM1AL25
4	9	8	GPS1BHAK	10	6.3-10	130	EC9A..	1.5	20	ECM1AL25
5.5	12	11	GPS1BHAL	13	9-1.3	169	EC12A..	2.3	20	ECM1AL25
7.5	16	14	GPS1BHAM	16	11.0-16	208	EC18A..	4	20	ECM1AL25
11	22.5	21	GPS1BHAP	25	19-25	325	EC25A..	6	20	ECM1AL25
15	30	28	GPS1BHAR	32	24-32	416	EC32A..	6	20	ECM1AL32
18.5	37	35	GPS2BHAS	40	28-40	520	EC40A..	10	20	ECM1AL32

(1) Current are relevant to four pole motors not having special characteristics of torque. Inrush currents: ≤ 8 time rated current for ≤ 1s.
(2) The minimum cycle cross-sections are referred to an ambient temperature of 30°C max. in free air and are selected to withstand the maximum let-through energy and the motor rated current. Besides the user has to consider the drop voltage, the type of laying and ambient temperature.

New

Record Plus Coordination Type 2 at 80kA at 380/400 & 415V

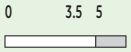
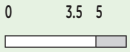
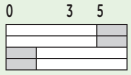
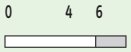
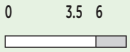
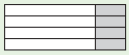
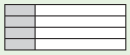
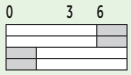
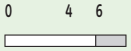
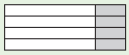
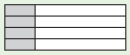
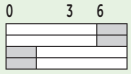
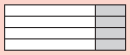
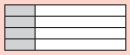
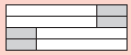
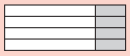
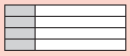
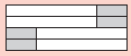
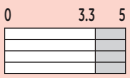
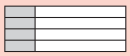
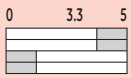
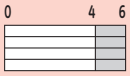
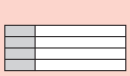
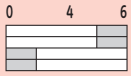
Motor[1]			MCCB				Contactor			Overload relay		Box clamp	Clearance
Rated Power	Rated current (A)		Cat.No.	Rated current (In)	Thermal Current	Magnetic Current		**Operating current**	**Admissible power**		Setting Range	Smallest wire Cu (pvc)[2]	Min. frontal electrical safety clearance
kW	380/400V	415V		(A)	Setting range (A)	(A)	Series	A	P(kW)	Series		380/415V (mm²)	mm
4	9	8	FD63	12.5	12.5	169	EC25A..	25	11	ECRT2	8-12	1.5	20
5.5	12	11	FD63	12.5	12.5	169	EC25A..	25	11	ECRT2	10-16	1.5	20
7.5	16	14.8	FD63	20	20	210	EC32A..	32	15	ECRT2	14.5-18	4	20
11	22.5	21	FD63	30	30	300	EC32A..	32	15	ECRT3	21-26	6	20
15	30	28	FD63	30	30	450	EC32A..	32	15	ECRT3	25-35	6	20
18.5	37	35	FD63	50	50	500	EC40A..	40	18.5	ECRT3	30-40	10	20

Record Plus Coordination Type 2 at 80kA at 500/525V

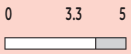
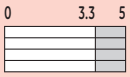
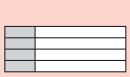
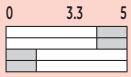
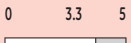
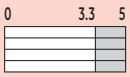
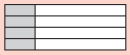
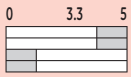
Motor[1]			MCCB				Contactor			Overload relay		Box clamp	Clearance
Rated Power	Rated current (A)		Cat.No.	Rated current (In)	Thermal Current	Magnetic Current		**Operating current**	**Admissible power**		Setting Range	Smallest wire Cu (pvc)[2]	Min. frontal electrical safety clearance
kW	380/400V	415V		(A)	Setting range (A)	(A)		A	P(kW)	Series		380/415V (mm²)	mm
7.5	12		FD63	12.5	12.5	-	EC32A..	32	15	ECRT2	10-19	4	20
11	18.4		FD63	20	20	-	EC32A..	32	18.5	ECRT3	17.5-25	6	20
15	23		FD63	30	30	-	EC40A..	40	18.5	ECRT3	21-29	6	20
18.5	29		FD63	30	30	-	EC40A..	40	18.5	ECRT3	25-35	10	20

(1) Current are relevant to four pole motors not having special characteristics of torque. Inrush currents: ≤ 8 time rated current for ≤ 1s.
(2) The minimum cycle cross-sections are referred to an ambient temperature of 30°C max. in free air and are selected to withstand the maximum let-through energy and the motor rated current. Besides the user has to consider the drop voltage, the type of laying and ambient temperature.

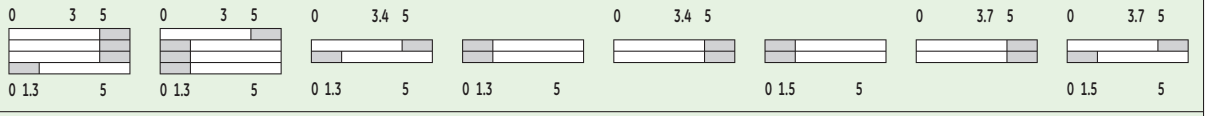
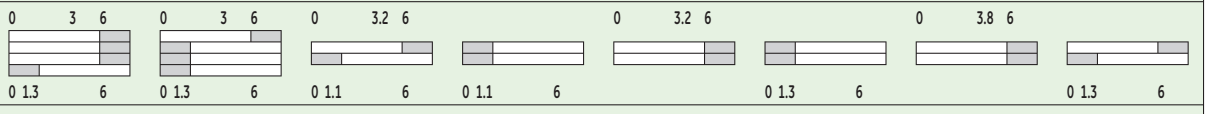
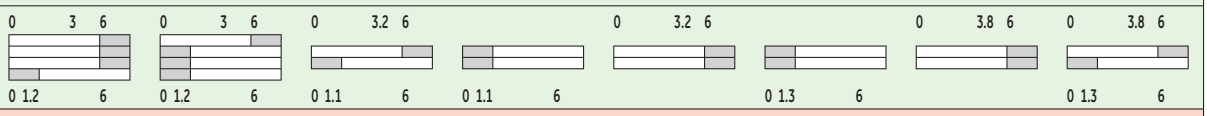
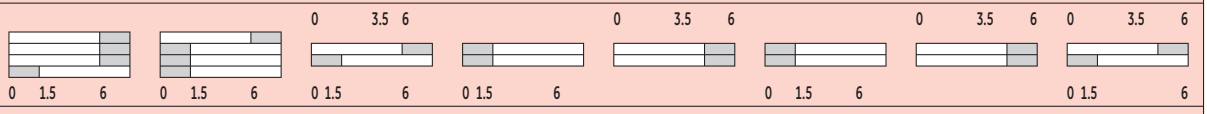
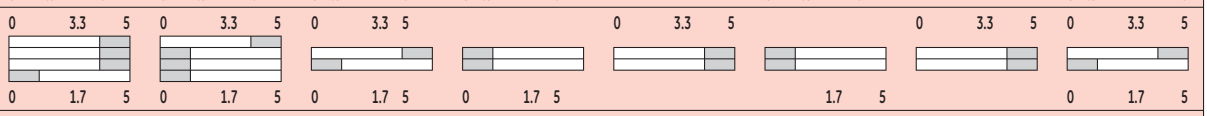
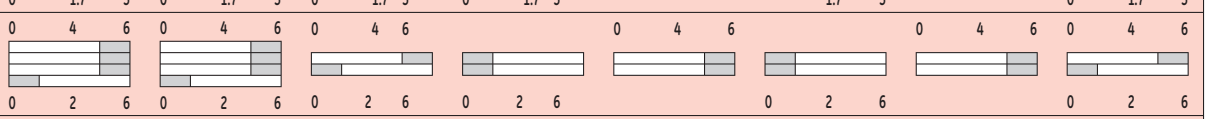
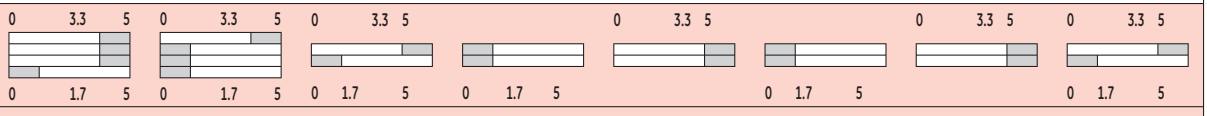
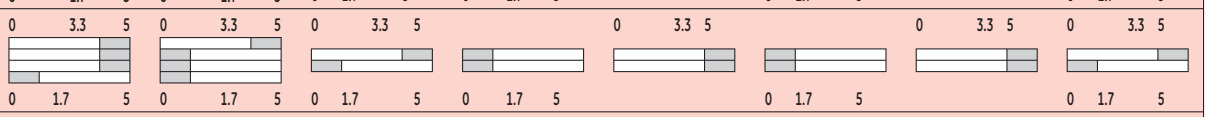
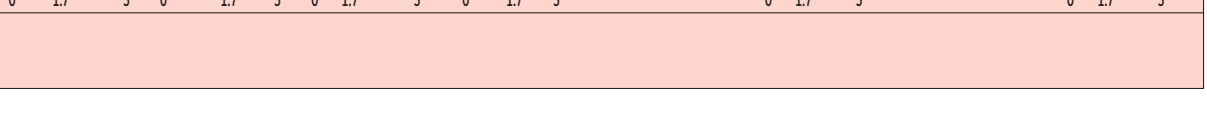
Contact sequence

Device	Rating	Basic contactor	Built-in auxiliary		Auxiliary contact blocks - Front mounted-4P		
			NO	NC	40	.04	22
3P contactors 3NO	EC09 EC12 EC18						
	EC25						
	EC32 EC40						
4P contactors 4NO	EC12 EC18						
							
4P contactors 2NO+2NC	EC09 EC12 EC18						
	EC25 EC32 EC40						

Contact sequence (auxiliary contactors)

4P contactors 4NO	ECAC09 ECAC12 ECAC18 ECAC25				
4P contactors 2NO+2NC	ECAC09 ECAC12 ECAC18 ECAC25				

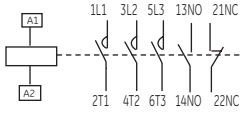
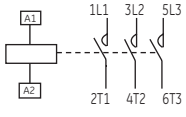
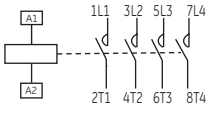
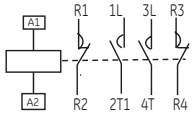
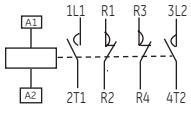
New

	Auxiliary contact blocks - Front mounted-2P				Auxiliary contact blocks - Front mounted-2P		
31	13	11	02	20	02	20	11
							
							
							
							
							
							
							
							
							
							

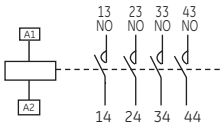
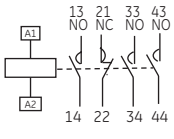
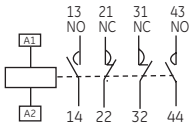
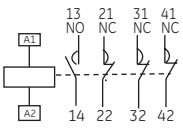
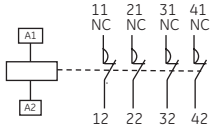
New

Terminal numbering

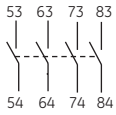
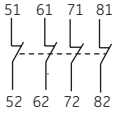
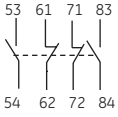
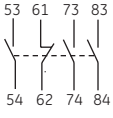
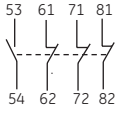
3P and 4P contactors

EC09A311..EC25A311 EC09D311..EC25D311	EC32A300..EC40A300 EC32D300..EC40D300	EC12A400..EC32A400 EC12D400..EC32D400	EC12AB00.....EC25AB00 EC12DB00.....EC25DB00	EC32AB00 EC32DB00
				

Auxiliary contactors

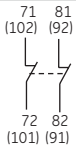
ECACA440 ECACD440	ECACA431 ECACD431	ECACA422 ECACD422	ECACA413 ECACD413	ECACA404 ECACD404
				

Auxiliary contact blocks - Front mounting

ECFA440	ECFA404	ECFA422	ECFA431	ECFA413
				

ECFA211	ECFA220	ECFA202
		

Auxiliary contact blocks - Lateral mounting

ECLA20	ECLA11	ECLA02
		

Mechanical and mechanical/electrical interlock

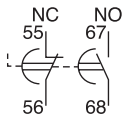
ECMI	ECMI02
	

New

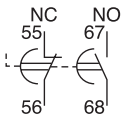
Terminal numbering (continued)

Pneumatic timer blocks

ECPTD

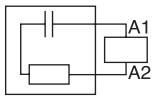


ECPTC

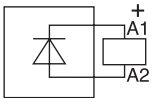


Voltage suppressor blocks

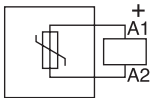
ECSURC



ECSUDI

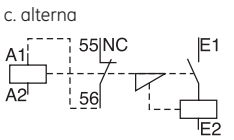


ECSUVI

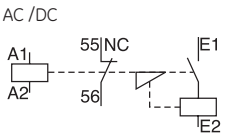


Mechanical latch block

ECMLA

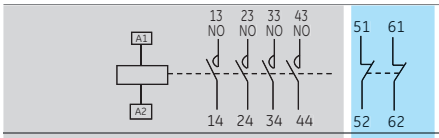
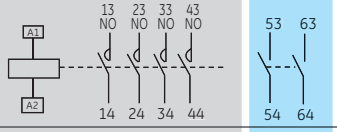
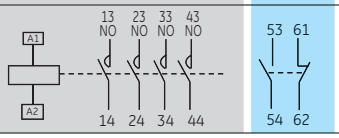
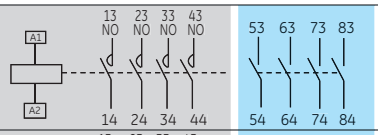
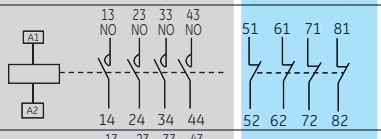
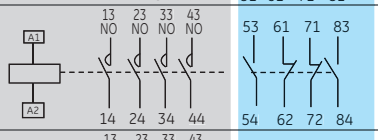
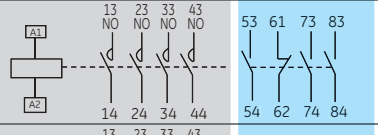
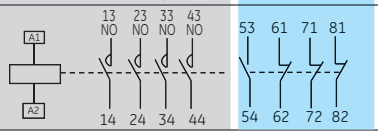
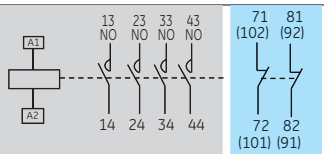
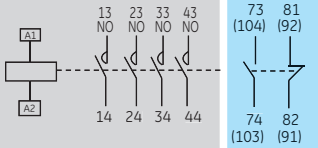
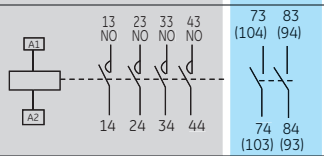


ECMLD

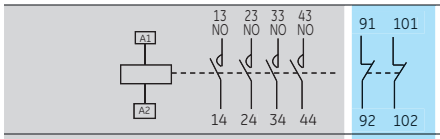
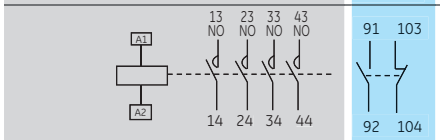
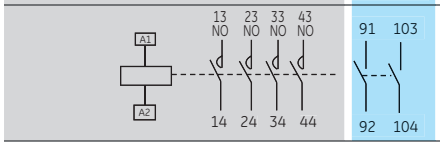
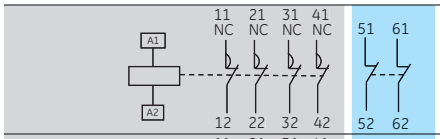
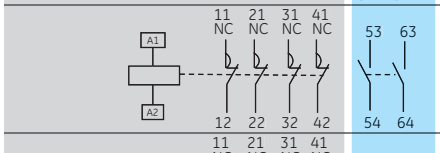
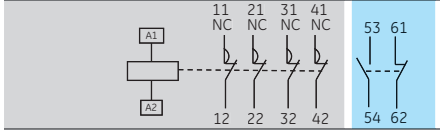
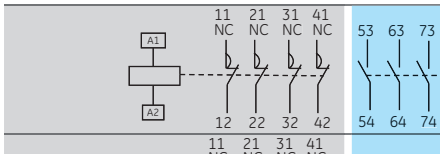
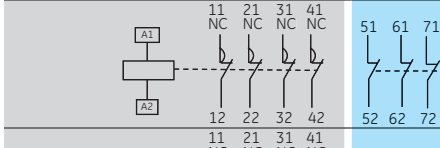
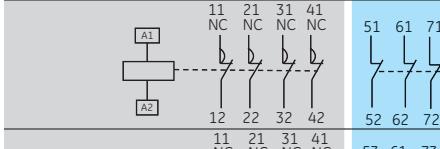
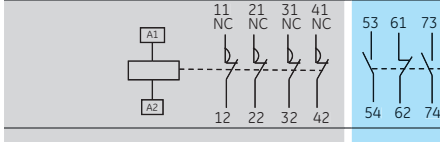
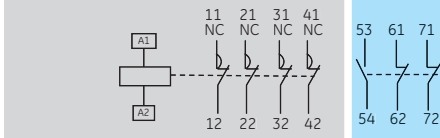


New

Terminal numbering according to EN 50011

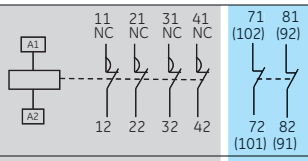
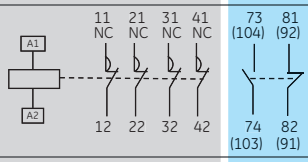
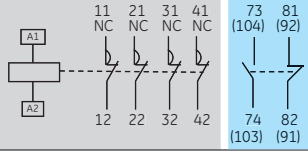
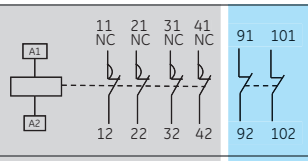
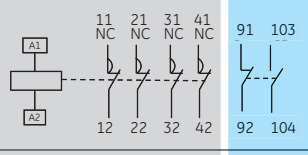
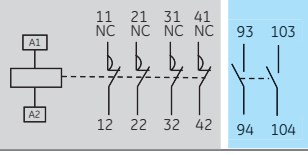
Auxiliary contacts	Description	NO	NC	*Possible basic auxiliary contactors + Auxiliary contacts blocks to be added*
4NO auxiliary contactor terminal combination with 2P FRONTAL block				
	42E	4	2	ECACA440 ECACD440 +ECFA202
	60E	6	0	ECACA440 ECACD440 +ECFA220
	51E	5	1	ECACA440 ECACD440 +ECFA211
4NO auxiliary contactor terminal combination with 4P FRONTAL block				
	80E	8	0	ECACA440 ECACD440 +ECFA440
	44E	4	4	ECACA440 ECACD440 +ECFA440
	62E	6	2	ECACA440 ECACD440 +ECFA422
	71E	7	1	ECACA440 ECACD440 +ECFA431
	53E	5	3	ECACA440 ECACD440 +ECLFA413
4NO auxiliary contactor terminal combination with LATERAL - block mounted on the RIGHT side of contactor				
	42	4	2	ECACA440 ECACD440 +ECLA202
	51	5	1	ECACA440 ECACD440 +ECLA211
	60	6	0	ECACA440 ECACD440 +ECLA220

Terminal numbering according to EN 50011 (continued 1)

Auxiliary contacts	Description	NO	NC	Possible basic auxiliary contactors + Auxiliary contacts blocks to be added
4NO auxiliary contactor terminal combination with LATERAL - block mounted on the LEFT side of contactor				
	42	4	2	**ECACA440** **ECACD440** **+ECLA202**
	51	5	1	**ECACA440** **ECACD440** **+ECLA211**
	6	6	0	**ECACA440** **ECACD440** **+ECLA220**
4NC auxiliary contactor terminal combination with 2P FRONTAL block				
	06E	6	0	**ECACA404** **ECACD404** **+ECFA202**
	24E	2	4	**ECACA404** **ECACD404** **+ECFA220**
	15E	5	1	**ECACD404** **ECACA404** **+ECFA211**
4NC auxiliary contactor terminal combination with 4P FRONTAL block				
	44E	4	4	**ECACA404** **ECACD404** **+ECFA440**
	08E	0	8	**ECACA404** **ECACD404** **+ECFA404**
	26E	2	6	**ECACA404** **ECACD404** **+ECFA422**
	35E	3	5	**ECACA404** **ECACD404** **+ECFA431**
	17E	1	7	**ECACA404** **ECACD404** **+ECLFA413**

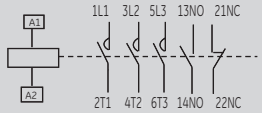
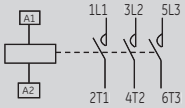
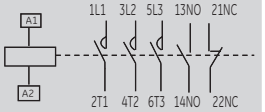
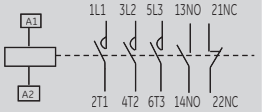
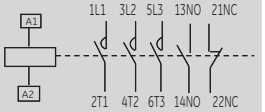
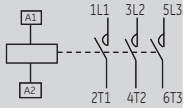
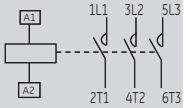
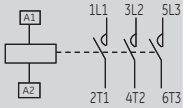
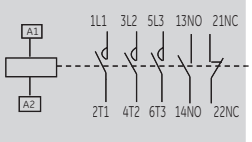
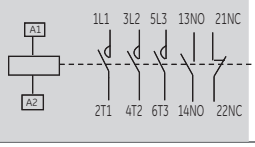
New

Terminal numbering according to EN 50011 (continued 2)

Auxiliary contacts	Description	NO	NC	Possible basic auxiliary contactors + Auxiliary contacts blocks to be added
4NC auxiliary contactor terminal combination with LATERAL - block mounted on the RIGHT side of contactor				
	42	0	6	**ECACA404** **ECACD404** **+ECLA202**
	15	1	5	**ECACA404** **ECACD404** **+ECLA211**
	24	2	4	**ECACA404** **ECACD404** **+ECLA220**
4NC auxiliary contactor terminal combination with LATERAL - block mounted on the LEFT side of contactor				
	42	4	2	**ECACA440** **ECACD440** **+ECLA202**
	51	5	1	**ECACA440** **ECACD440** **+ECLA211**
	6	6	0	**ECACA440** **ECACD440** **+ECLA220**

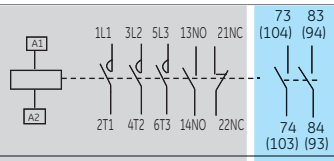
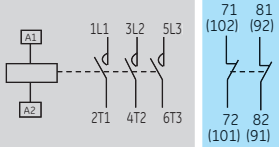
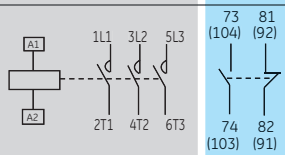
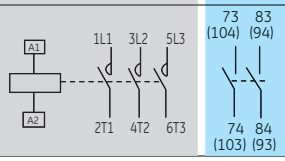
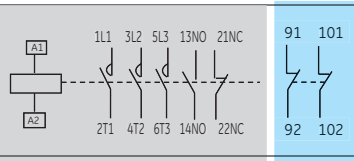
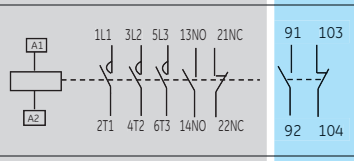
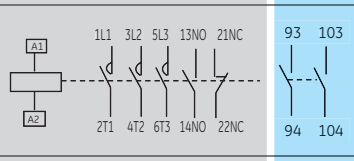
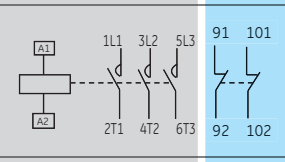
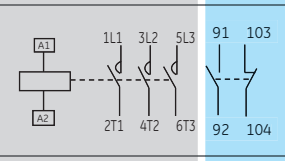
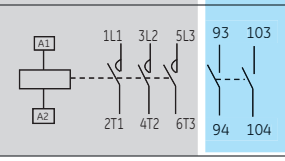
New

Terminal numbering according to EN 50012

Auxiliary contacts	Description	NO	NC	*Possible basic auxiliary contactors + Auxiliary contacts blocks to be added*
Terminal numbering according to EN 50012				
	11E	1	1	**EC09A311..EC25A311** **EC09D311..EC25D311**
	-	0	0	**EC32A300..EC40A300** **EC32D300..EC40D300**
***FRONT* mounted auxiliary contact blocks with 2 contacts each**				
	13	1	3	**EC09A311..EC25A311** **EC09D311..EC25D311** **+ECFA202**
	31	3	1	**EC09A311..EC25A311** **EC09D311..EC25D311** **+ECFA220**
	22	2	2	**EC09A311..EC25A311** **EC09D311..EC25D311** **+ECFA211**
	02	0	2	**EC32A300..EC40A300** **EC32D300..EC40D300** **+ECFA202**
	20	2	0	**EC32A300..EC40A300** **EC32D300..EC40D300** **+ECFA220**
	11	1	1	**EC32A300..EC40A300** **EC32D300..EC40D300** **+ECFA211**
***LATERAL* mounted auxiliary contact blocks with 2 contacts each - *RIGHT* side mounted**				
	13	1	3	**EC09A311..EC25A311** **EC09D311..EC25D311** **+ECLA220**
	22	2	2	**EC09A311..EC25A311** **EC09D311..EC25D311** **+ECLA211**

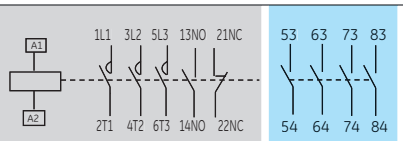
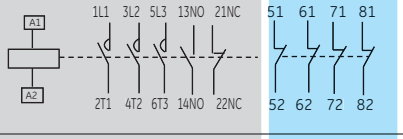
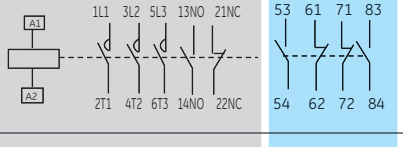
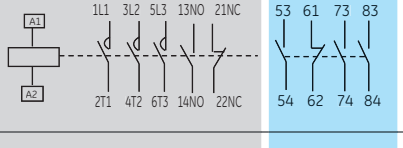
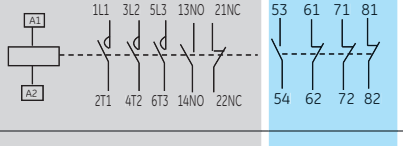
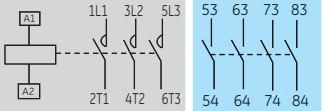
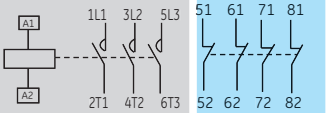
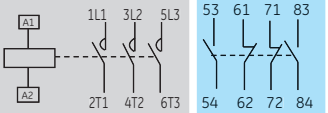
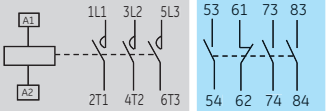
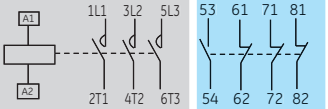
New

Terminal numbering according to EN 50012 (continued 1)

Auxiliary contacts	Description	NO	NC	Possible basic auxiliary contactors + Auxiliary contacts blocks to be added
***LATERAL** mounted auxiliary contact blocks with 2 contacts each - **RIGHT** side mounted (continued)*				
	31	3	1	**EC09A311..EC25A311** **EC09D311..EC25D311** **+ECLA220**
	02	0	2	**EC32A300..EC40A300** **EC32D300..EC40D300** **+ECLA202**
	11	1	1	**EC32A300..EC40A300** **EC32D300..EC40D300** **+ECLA211**
	20	2	0	**EC32A300..EC40A300** **EC32D300..EC40D300** **+ECLA220**
***LATERAL** mounted auxiliary contact blocks with 2 contacts each - **LEFT** side mounted*				
	13	1	3	**EC09A311..EC25A311** **EC09D311..EC25D311** **+ECLA202**
	22	2	2	**EC09D311..EC25D311** **EC09A311..EC25A311** **+ECLA211**
	31	3	1	**EC09A311..EC25A311** **EC09D311..EC25D311** **+ECLA220**
	02	0	2	**EC32A300..EC40A300** **EC32D300..EC40D300** **+ECLA202**
	11	1	1	**EC32A300..EC40A300** **EC32D300..EC40D300** **+ECLA211**
	20	2	0	**EC32A300..EC40A300** **EC32D300..EC40D300** **+ECLA220**

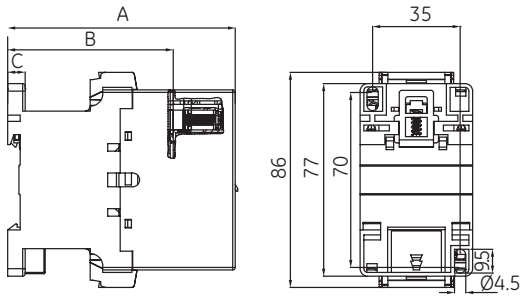
New

Terminal numbering according to EN 50012 (continued 2)

Auxiliary contacts	Description	NO	NC	*Possible basic auxiliary contactors + Auxiliary contacts blocks to be added*
***FRONT** mounted auxiliary contact blocks with 4 contacts each*				
	51	5	1	**EC09A311..EC25A311** **EC09D311..EC25D311** **+ECFA440**
	15	1	5	**EC09A311..EC25A311** **EC09D311..EC25D311** **+ECFA404**
	33	3	3	**EC09A311..EC25A311** **EC09D311..EC25D311** **+ECFA422**
	42	4	2	**EC09A311..EC25A311** **EC09D311..EC25D311** **+ECFA431**
	24	2	4	**EC09A311..EC25A311** **EC09D311..EC25D311** **+ECFA413**
	40	4	0	**EC09A311..EC25A311** **EC09D311..EC25D311** **+ECFA440**
	04	0	4	**EC09A311..EC25A311** **EC09D311..EC25D311** **+ECFA404**
	22	2	2	**EC32A300..EC40A300** **EC32D300..EC40D300** **+ECFA422**
	31	3	1	**EC32A300..EC40A300** **EC32D300..EC40D300** **+ECFA431**
	13	1	3	**EC32A300..EC40A300** **EC32D300..EC40D300** **+ECFA413**

Dimensions and weights

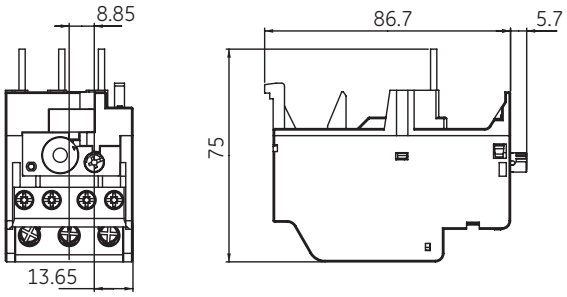
Contactors



Dimensions in mm	EC09A3 - EC18A3	EC25A3	EC32A3 - EC40A3	EC09D3 - EC18D3	EC25D3	EC32D3 - EC40D3
A	92	97	102	102	110	115
B	66.2	66.2	67.2	76.2	80.2	81.2
C	7	7	7	7	7	7
Weight in g	350	490	530	620	700	740

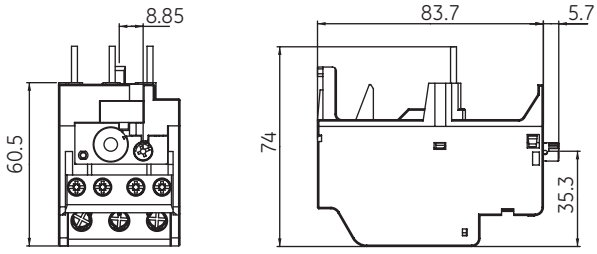
Thermal overload relay ECRT1

186 g



Thermal overload relay ECRT2

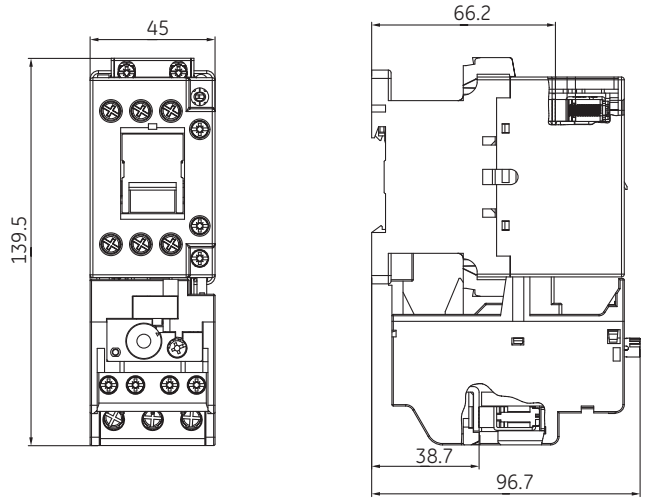
194 g



New

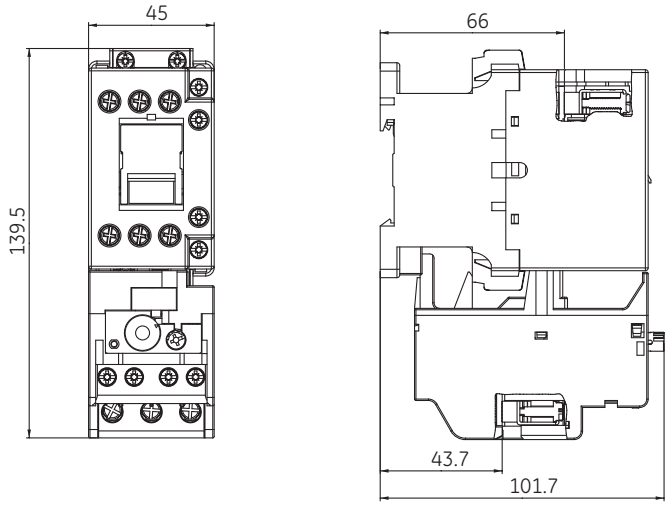
Combination of contactor EC09A-12A-18A and thermal overload relay ECRT1

536 g



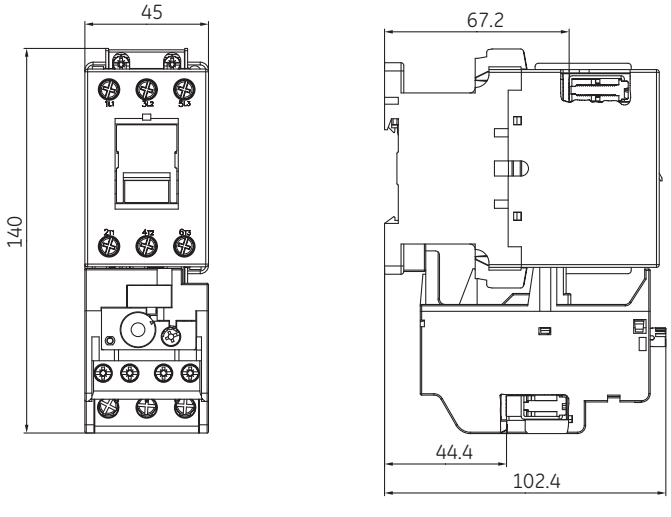
Combination of contactor EC25A and thermal overload relay ECRT2

680 g



Combination of contactor EC32A-40A and thermal overload relay ECRT2

790 g

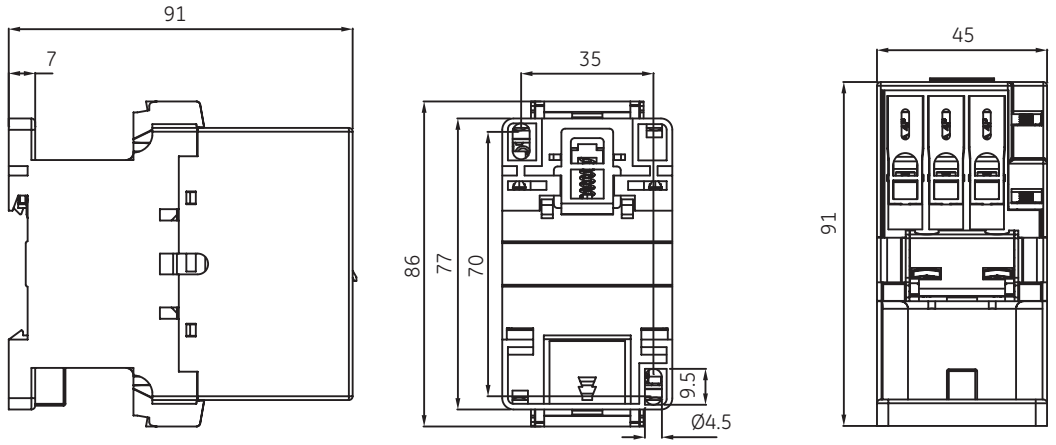


New

Dimensions and weights

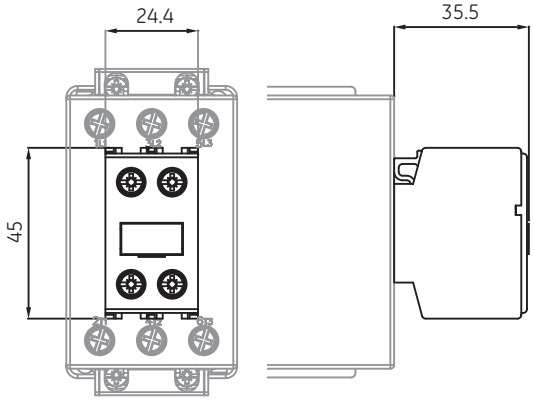
Auxiliary contactors ECACA

330 g



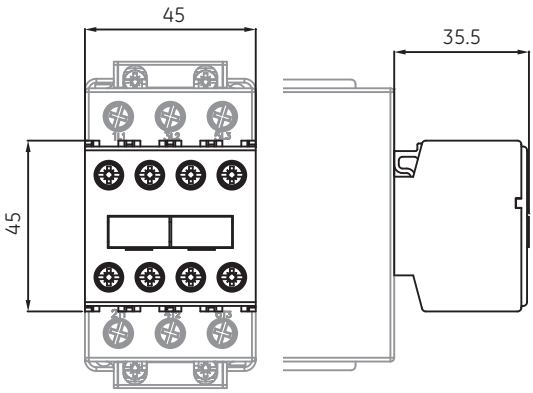
Frontal auxiliary contact block 2P ECFA2S

42 g



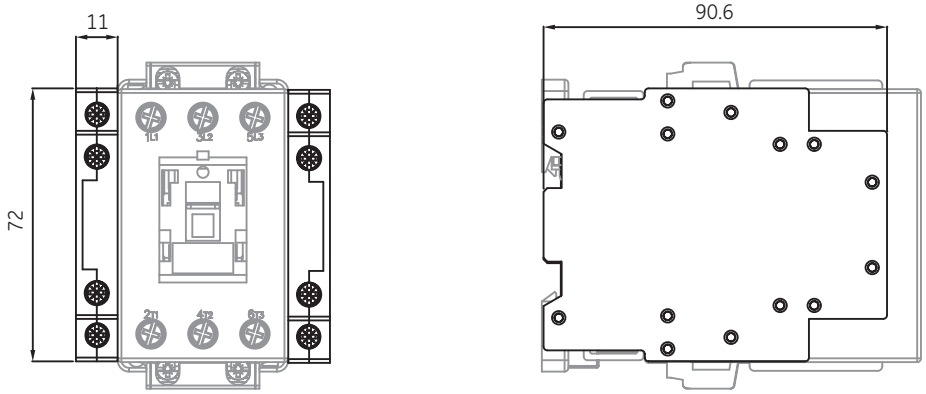
Frontal auxiliary contact block 4P ECFA4S

74 g



Lateral auxiliary contact block ECLA

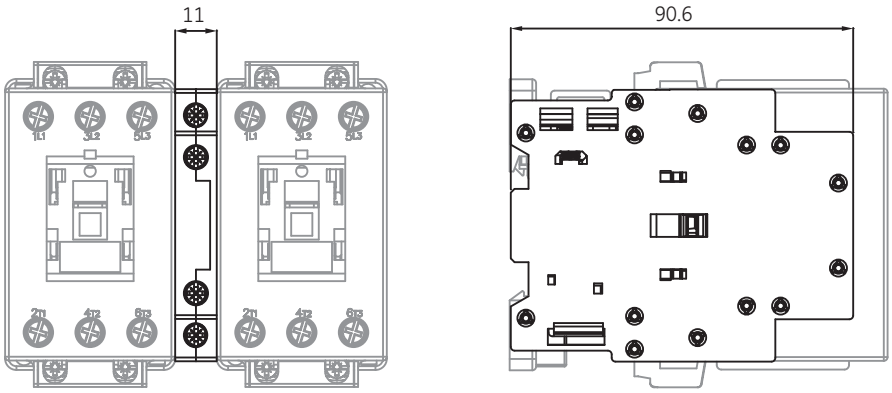
70 g



New

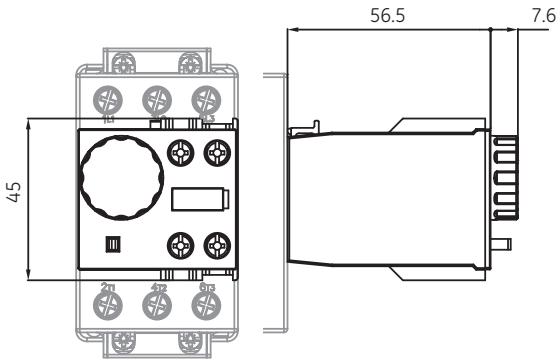
Lateral auxiliary mechanical interlock ECMI

52 g



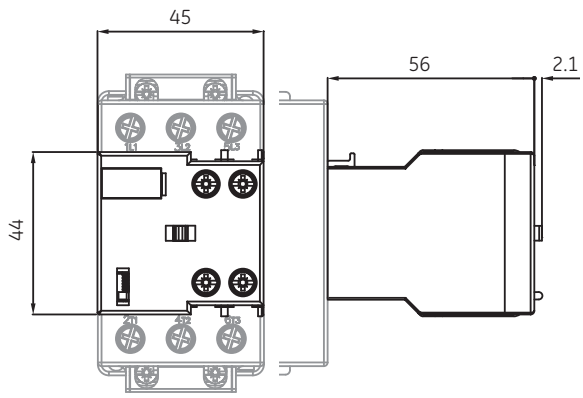
Pneumatic timer ECPT

78 g



Mechanical latch ECML

113 g

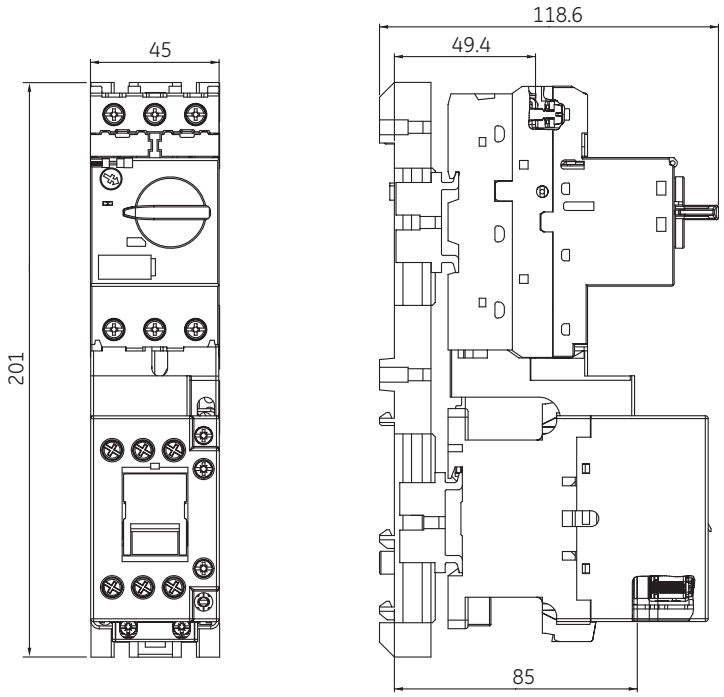


New

Dimensions and weights

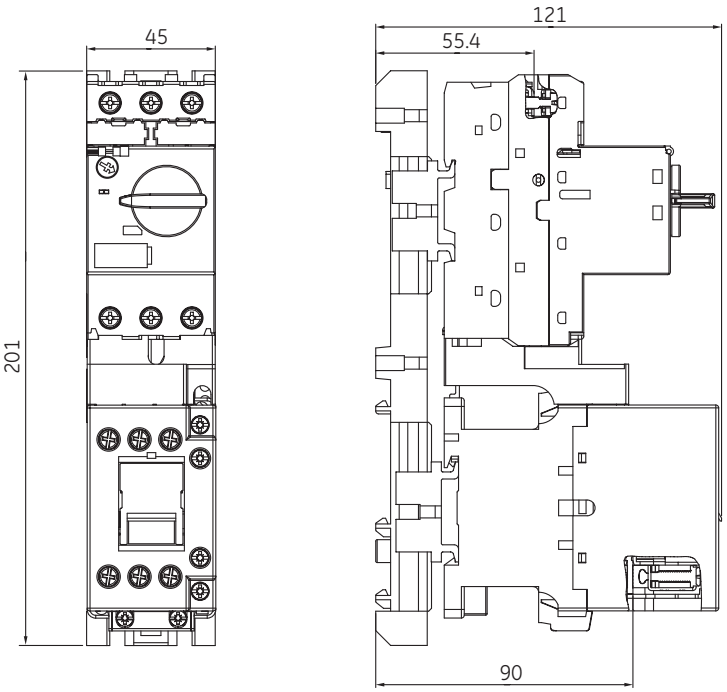
Starter combination of manual motor starter Surion GPS1 and contactor EC09A-12A-18A

787 g



Starter combination of manual motor starter Surion GPS1 and contactor EC25A

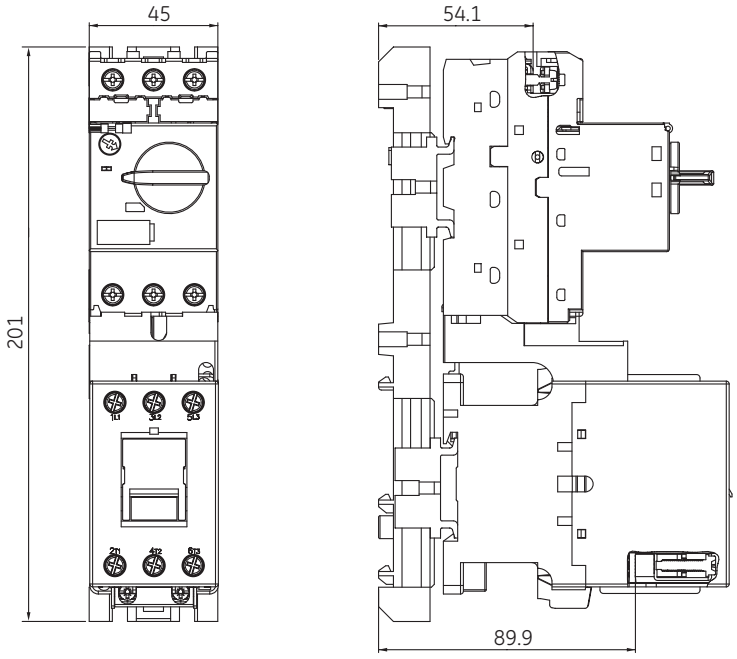
927 g



New

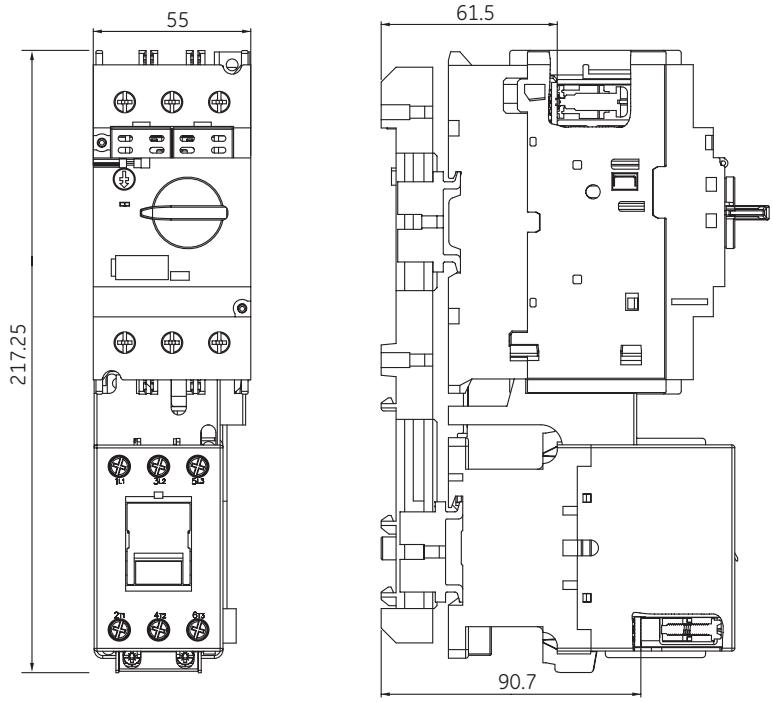
Starter combination of manual motor starter Surion GPS1 and contactor EC32A

967 g

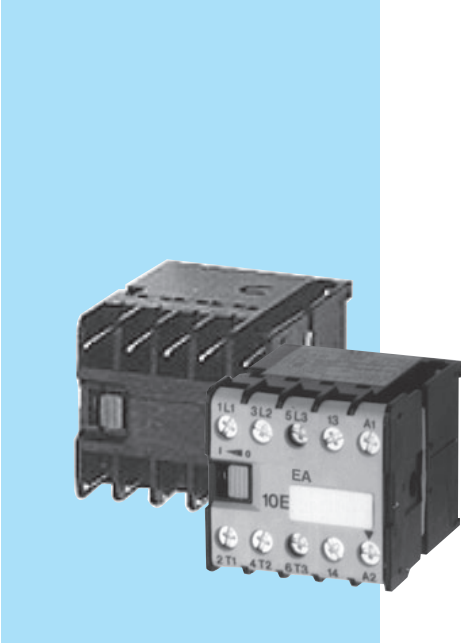


Starter combination of manual motor starter Surion GPS2 and contactor EC40A

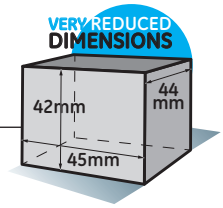
1368 g



New



Three pole minicontactors
7A (AC3)
16A (AC1)



- Control circuit:
  - Alternating current up to 230VAC at 50/60Hz
  - Direct current up to 110VDC
- Low consumption:
  - Only 1.2 WDC
  - 2.4W In AC
- Power circuit: Up to 400VAC
- Rating:
  - 7.3A AC3 at 400V
  - 16A AC1
  - Ith 16A
  - AC15: - 6A 230V
    - 4A 400V
- Motor rating AC-3 duty, 3 phases
  - 230V 1.5kW
  - 400/415V 3kW
- Very reduced dimensions: 42/45/44mm (HxWxD)
- Lateral carrier
- Terminal numbering in accordance with EN 50012
- Fixing by clipping onto 35mm DIN rail (EN 50022-35) or by screws
- Terminal versions:
  - Screws as standard
  - Solder pin for circuit board application
- Integrated one auxiliary contact block: 1NO or 1NC
- No accessories
  - No available additional auxiliary contacts
  - Stand-alone thermal protection

Standards

IEC/EN 60947-1
IEC/EN 60947-4-1
VDE 0660
BS5424

Approvals

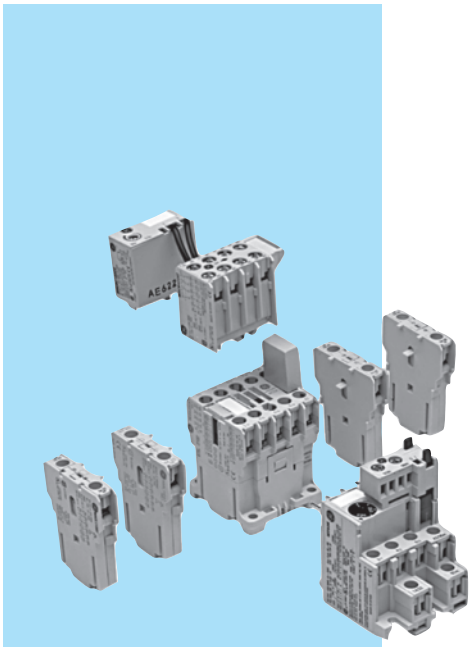
UL CSA

NEW in 2013

AC contactors

Power rating AC3 (kW)				Auxiliary contacts		Control				
230V	400V	Terminal	Poles	NO	NC	circuit	Voltage	Cat. no.	Ref. no.	Pack
1.5	3	Screw	3	1	0	AC	24	EA07A310S024	**247990**	10
1.5	3	Screw	3	0	1	AC	24	EA07A301S024	**247991**	10
1.5	3	Screw	3	1	0	AC	48	EA07A310S048	**247992**	10
1.5	3	Screw	3	0	1	AC	48	EA07A301S048	**247993**	10
1.5	3	Screw	3	1	0	AC	110	EA07A310S110	**247994**	10
1.5	3	Screw	3	0	1	AC	110	EA07A301S110	**247995**	10
1.5	3	Screw	3	1	0	AC	230	EA07A310S230	**247996**	10
1.5	3	Screw	3	0	1	AC	230	EA07A301S230	**247997**	10
1.5	3	Screw	3	1	0	DC	24	EA07D310S024	**247998**	10
1.5	3	Screw	3	0	1	DC	24	EA07D301S024	**247999**	10
1.5	3	Screw	3	1	0	DC	110	EA07D310S110	**248000**	10
1.5	3	Screw	3	0	1	DC	110	EA07D301S110	**248001**	10
1.1	1.5	Solder pin	3	1	0	AC	24	EA07A310I024	**248004**	10
1.1	1.5	Solder pin	3	0	1	AC	24	EA07A301I024	**248005**	10
1.1	1.5	Solder pin	3	1	0	DC	48	EA07D310I048	**248006**	10
1.1	1.5	Solder pin	3	0	1	DC	48	EA07D301I048	**248007**	10
1.1	1.5	Solder pin	3	1	0	DC	110	EA07D310I110	**248008**	10
1.1	1.5	Solder pin	3	0	1	DC	110	EA07D301I110	**248009**	10
1.1	1.5	Solder pin	3	1	0	AC	230	EA07A310I230	**248002**	10
1.1	1.5	Solder pin	3	0	1	AC	230	EA07A301I230	**248003**	10

NEW in 2013



Three and four pole contactors 9 and 12A (AC3) 20A (AC1)

- Control circuit: Alternating current up to 600V
  Direct current up to 440V
- Terminal numbering in accordance with EN 50012
- Fixing by clipping onto 35 mm DIN rail (EN 50022-35) or by screws
- Screws and fast-on terminals protected against accidental contact in accordance with VDE 0106 T.100 and VBG4
- Versions: Ring terminal and printed circuit terminals
- Facility to mount instant and timed auxiliary contact blocks and voltage suppressor block
- Degree of protection IP20 (EN 60529).
- Maximum number of auxiliary contacts to be added: 6

Standards

IEC/EN 60947-1	BS 4794
IEC/EN 60947-4-1	NFC 63-110
IEC/EN 60947-5-1	CSA C22.2/14
EN 50003	VDE 0660
EN 50005	SEV 10254
EN 50012	JIS C8325
UL 508	JEM 1038
NEMA ICS-1	CENELEC HD 419

Approvals

cULus IMQ RINA

Lloyd's Register Bureau Veritas CE

(Contact GE for details)

General data

		MC1...	MC2...
Maximum number of poles		4	4
Rated thermal current (Ith) θ ≤ 60° (1)	(A)	20	20
Rated operational current Ie (2)	(A)	9	12
(3x440V, 50/60Hz, AC3)			
Rated insulation current Ui	(V)	750	750
Rated operational current Ue	(V)	690	690

Standard voltages

To complete the catalogue number, replace the symbol ♦ by the code corresponding to the voltage and frequency of the control circuit (other voltages on request)

Alternating current (V). Bifrequency coil

♦	10	1	2	9	3	4	5	6	7	8	12	13
AC 50/60Hz	12	24	42	48	110 115	120	220	230	240	440	380	400

Operating voltages limits with bifrequency coils:
With 60Hz =0.85 to 1.1 x Us
With 50Hz=0.8 to 1.1 x Us in continuous service (ED=100%) with a maximum ambient temperature of 40°C

Alternating current (V).

♦	A	E	G	K	M	N	S	U	W	Y
AC 50Hz			48	115 127		220 240	260	380 400	415 440	500
AC 60Hz	6	32	60		208 220	240 277		440	480	600

Direct current (V)

♦	A	B	C	D	E	F	G	H	I	J	K	L	N	17	R	S	16
DC	6	12	32	24	36	42	48	60	72	110	120	125	220	230	240	250	440

Direct current (V) - *Wide voltage range*

♦	WD	WE	WG	WI	WJ	WN
DC	24	33	48	72	110	220

Order codes pg. A.45
Auxiliary contact blocks pg. A.48
Accessories pg. A.50
Technical data pg. A.83
Terminal numbering pg. A.89
Dimensions pg. A.110

Three pole contactors

Max.operat.current		Admissible power AC3					Aux. contacts		Control circuit: Alternating current		Control circuit: Direct current	
Non-inductive loads	Motors <440V, 3 ~ 50/60Hz	1-phase		3-phase								
		115V	220V	220V 230V	380V 400V	500V	•3 •4	•1 •2	Cat. no. (1)	Pack	Cat. no. (1)	Pack
AC1 (2) A	AC3 (3) A	kW HP	kW HP	kW HP	kW HP	kW HP			Ref. no. see bottom		Ref. no. see bottom	
Terminal: screw												
20	9	0.56	1.12	2.2	4	4	1	0	MC1A310AT ♦	20	MC1C310AT ♦	10
		0.75	*1.5*	*3*	*5.5*	*5.5*	0	1	MC1A301AT ♦	20	MC1C301AT ♦	10
20	12	0.75	2	3	5.5	5.5	1	0	MC2A310AT ♦	20	MC2C310AT ♦	10
		1	*2.6*	4	*7.3*	*7.3*	0	1	MC2A301AT ♦	20	MC2C301AT ♦	10
Terminal: ring terminal												
20	9	0.56	1.12	2.2	4	4	1	0	MC1A310AR ♦	20	MC1C310AR ♦	10
		0.75	*1.5*	*3*	*5.5*	*5.5*	0	1	MC1A301AR ♦	20	MC1C301AR ♦	10
20	12	0.75	2	3	5.5	5.5	1	0	MC2A310AR ♦	20	MC2C310AR ♦	10
		1	*2.6*	4	*7.3*	*7.3*	0	1	MC2A301AR ♦	20	MC2C301AR ♦	10
Terminal: faston 2x2.8 insulated (5)												
16 (4)	9	0.56	1.12	2.2	4	4	1	0	MC1A310AF ♦	20	MC1C310AF ♦	10
		0.75	*1.5*	*3*	*5.5*	*5.5*	0	1	MC1A301AF ♦	20	MC1C301AF ♦	10
Terminal: printed circuit												
20	9	0.56	1.12	2.2	4	4	1	0	MC1A310AI ♦	20	MC1C310AI ♦	10
		0.75	*1.5*	*3*	*5.5*	*5.5*	0	1	MC1A301AI ♦	20	MC1C301AI ♦	10
20	12	0.75	2	3	5.5	5.5	1	0	MC2A310AI ♦	20	MC2C310AI ♦	10
		1	*2.6*	4	*7.3*	*7.3*	0	1	MC2A301AI ♦	20	MC2C301AI ♦	10
Spare coil									MB0A ♦	10	MB0C ♦	10

(1) To complete the catalogue number, replace the symbol ♦ by the code corresponding to the voltage and frequency of the control circuit (other voltages on request) (see A.44)
(2) Electrical endurance AC-1: MC1... 0.3 x 10^6 operations
MC2... 0.35 x 10^6 operations
(3) Electrical endurance AC-3: MC1... (9A) = 0.85 x 10^6 operations
MC2... (12A)= 0.6 x 10^6 operations
(4) Terminal with wire 1.5 mm^2: Ie = 16A
with wire 1 mm^2: Ie = 10A
Insulated terminal type B 2.8 x 0.8 and wire 1 mm^2 Ie = 8A in accordance with DIN 46247.
(5) Fast-on 1 x 6.3 terminals on request (replace letter **F** by **H** in the catalogue number)

For reference numbers, see chapter X, pg. X.2

Three pole interface contactors

Max. oper. current		Admissible power AC3					Aux. contacts		Voltage 24V D.C, coil 1.2W (1)			Voltage 24V D.C, coil 2W (2)		
Non-inductive load AC1	Motors <440V, 3 ~ 50/60Hz AC3 (3)	1-phase 115V	1-phase 220V	3-phase 220V 230V	3-phase 380V 400V	3-phase 500V	•3 | •4	•1 | •2	Cat. no. (1)	Ref. no.	Pack	Cat. no. (1)	Ref. no.	Pack
A	A	kW	kW	kW	kW	kW								
Terminal: screw														
20	9	0.56	1.12	2.2	4	4	1	0	**MC1I310ATD**	100572	10	**MC1K310ATD**	100576	10
							0	1	**MC1I301ATD**	100573	10	**MC1K301ATD**	100577	10
20	12	0.75	2	3	5.5	5.5	1	0	**MC2I310ATD**	100559	10	**MC2K310ATD**	103590	10
							0	1	**MC2I301ATD**	100538	10	**MC2K301ATD**	103591	10
Spare coil									**MB0ID**	100470	10	**MB0KD**	100471	10

(1) No possibility of adding instantaneous auxiliary contact blocks.
(2) Facility to mount an instantaneous auxiliary contact block of two contacts or two instantaneous auxiliary contact blocks of one contact.
(3) Electrical endurance AC-3:
MC0... (6A) = 1.2 x 10^6 operations.
MC1... (9A) = 0.85 x 10^6 operations.
MC2... (12A) = 0.6 x 10^6 operations.

Multipack. Series M

To reduce the amount of waste packaging material and to save time during installation, we offer the opportunity to order contactors in a multipack without the individual packaging.

Product	Type	Standard pack	Multipack (1)
Contactors	MC1...MC2a	20	**40**

(1) The quantity ordered must be a multiple of the quantity in each multipack (with the same frame/size and coil voltage)

How to order

To order a multipack, add the suffix **MP** to the standard catalogue number

Example	Standard pack	Multipack
	MC0A310ATN	MC0A310ATN **MP** (40 pieces)

Four poles contactors

Max.oper.current		Admissible power AC3					Poles		Control circuit: Alternating current		Control circuit: Direct current	
Non-inductive load	Motors <440V, 3 ~ 50/60Hz	1-phase		3-phase								
		115V	220V	220V 230V	380V 400V	500V			Cat. no. (1)	Pack	Cat. no. (1)	Pack
AC1 (2)	AC3 (3)	kW	kW	kW	kW	kW						
A	A	*HP*	*HP*	*HP*	*HP*	*HP*			*Ref. no. see bottom*		*Ref. no. see bottom*	
Screw terminal												
20	9	**AC1**					4	0	**MC1A400AT ♦**	20	**MC1C400AT ♦**	10
		2.3	4.4	7.5	13	17	2	2	**MC1AB00AT ♦**	20	**MC1CB00AT ♦**	10
		-	-	-	-	-	0	4	**MC1AA00AT ♦**	20		
		AC3										
		0.56	1.12	2.2	4	4						
		0.75	*1.5*	*3*	*5.5*	*5.5*						
20	12	**AC1**					4	0	**MC2A400AT ♦**	20	**MC2C400AT ♦**	10
		2.3	4.4	7.5	13	17	2	2	**MC2AB00AT ♦**	20	**MC2CB00AT ♦**	10
		-	-	-	-	-						
		AC3										
		0.75	2	3	5.5	5.5						
		1	*2.6*	*4*	*7.3*	*7.3*						
Terminal: faston 2x2.8 insulated (5)												
16 (4)	9	**AC1**					4	0	**MC1A400AF ♦**	20	**MC1C400AF ♦**	10
		2.3	4.4	7.5	13	17	2	2	**MC1AB00AF ♦**	20	**MC1CB00AF ♦**	10
		-	-	-	-	-	0	4	**MC1AA00AF ♦**	20		
		AC3										
		0.56	1.12	2.2	4	4						
		0.75	*1.5*	*3*	*5.5*	*5.5*						
Terminal: printed circuit												
20	9	**AC1**					4	0	**MC1A400AI ♦**	20	**MC1C400AI ♦**	10
		2.3	4.4	7.5	13	17	2	2	**MC1AB00AI ♦**	20	**MC1CB00AI ♦**	10
		-	-	-	-	-	0	4	**MC1AA00AI ♦**	20		
		AC3										
		0.56	1.12	2.2	4	4						
		0.75	*1.5*	*3*	*5.5*	*5.5*						
Spare coil									**MB0A ♦**	10	**MB0C ♦**	10

(1) To complete the catalogue number, replace the symbol ♦ by the code corresponding to the voltage and frequency of the control circuit (see A.44)

(2) Electrical endurance AC-1: MC1... 0.3 x 10^6 operations
MC2... 0.35 x 10^6 operations

(3) Electrical endurance AC-3: MC1... (9A) = 0.85 x 10^6 operations
MC2... (12A)= 0.6 x 10^6 operations

(4) Terminal with wire 1.5 mm²: Ie = 16A
with wire 1 mm²: Ie = 10A
Insulated terminal type B 2.8 x 0.8 and wire of 1 mm² Ie = 8A in accordance with DIN 46247.

(5) Faston 1 x 6.3 terminals on request, (replace letter **F** by **H** in the catalogue number).

For reference numbers, see chapter X, pg. X.2

Instantaneous auxiliary contact blocks

Front mounting

Number contacts	Combinations with basic contactor 10E	Contacts in acc. with EN 50012	Contacts in acc.with EN 50005	Aux.contacts •3 \ •4	Aux.contacts •1 / •2	Cat. no.	Ref. no.	Pack
• Two or four additional contacts, to cover combinations of 3 or 5 contacts without increasing the surface are of the basic contactor								
Screw terminal								
2	21E	11		1	1	**MACN211AT**	100999	10
2	12E	02		0	2	**MACN202AT**	100998	10
2			20	2	0	**MARN220AT**	100994	10
2			11	1	1	**MARN211AT**	100993	10
2			02	0	2	**MARN202AT**	100992	10
4	41E	31		3	1	**MACN431AT**	100997	10
4	32E	22		2	2	**MACN422AT**	100996	10
4	23E	13		1	3	**MACN413AT**	100995	10
4			40	4	0	**MARN440AT**	100991	10
4			31	3	1	**MARN431AT**	100990	10
4			22	2	2	**MARN422AT**	100989	10
4			13	1	3	**MARN413AT**	100988	10
4			04	0	4	**MARN404AT**	100987	10
Ring terminal								
2	21E	11		1	1	**MACN211AR**	103557	10
2	12E	02		0	2	**MACN202AR**	103558	10
2			20	2	0	**MARN220AR**	103349	10
2			11	1	1	**MARN211AR**	103350	10
2			02	0	2	**MARN202AR**	103351	10
4	41E	31		3	1	**MACN431AR**	103559	10
4	32E	22		2	2	**MACN422AR**	103560	10
4	23E	13		1	3	**MACN413AR**	103561	10
4			40	4	0	**MARN440AR**	103352	10
4			31	3	1	**MARN431AR**	103353	10
4			22	2	2	**MARN422AR**	103354	10
4			13	1	3	**MARN413AR**	103355	10
4			04	0	4	**MARN404AR**	103300	10

Instantaneous auxiliary contact blocks (continued)

Lateral mounting

Number contacts	Combinations with basic contactor 10E	Contacts in acc. with EN 50012	Contacts in acc.with EN 50005	Aux.contacts •3 •4	Aux.contacts •1 •2	Cat. no.	Ref. no.	Pack
• One or two additional blocks, to cover combinations of 1 or 2 contacts without increasing the height of the basic unit contactor								
Screw terminal								
1	20	10		1	0	**MACL110AT**	100560	10
1	11E	01		0	1	**MACL101AT**	100561	10
Ring terminal								
1	20	10		1	0	**MACL110AR**	103555	10
1	11E	01		0	1	**MACL101AR**	103556	10
Terminal: faston 2x2.8 insulated (1)								
1	20	10		1	0	**MACL110AF**	100562	10
1	11E	01		0	1	**MACL101AF**	100563	10
Terminal: printed circuit								
1	20	10		1	0	**MACL110AI**	100564	10
1	11E	01		0	1	**MACL101AI**	100565	10
• One or two additional blocks, when up to 6 or 7 contacts are needed (combination possible with frontal blocks) • One or two additional blocks on both sides, to cover up to five contacts (combination possible only with lateral blocks)								
Screw terminal								
1			10	1	0	**MARL110ATS**	100519	10
1			01	0	1	**MARL101ATS**	100520	10
Ring terminal								
1			10	1	0	**MARL110ARS**	103299	10
1			01	0	1	**MARL101ARS**	103298	10
Terminal: faston 2x2.8 insulated (1)								
1			10	1	0	**MARL110AFS**	100521	10
1			01	0	1	**MARL101AFS**	100522	10
Terminal: printed circuit								
1			10	1	0	**MARL110AIS**	100523	10
1			01	0	1	**MARL101AIS**	100524	10

(1) Terminal with wire 1 mm^2: Ie = 10A
Insulated terminal type B 2.8 x 0.8 with wire 1 mm^2: Ie = 8A, in accordance with DIN 46247

Accessories

Electronic timer block

For use with:	Time	Function	Ue	Cat. no.	Ref. no.	Pack
Lateral or front fixing to the contactor						
MCR..MC_ ...	0.5 - 60 seg.	delay ON	24... 250V AC/DC	**MREBC10AC2**	100541	10
MCR..MC_ ...	0.2 - 24 seg.	delay ON	24...250V AC/DC	**MREBC20AC2**	100542	10

DIN rail adaptor for electronic timer block

For use with:	Cat. no.	Ref. no.	Pack
For fixing onto EN 50022-35			
MREBC...	**MVB0R**	100543	10

Voltage suppressor block

For use with:	Type	Control	Ue	Cat. no.	Ref. no.	Pack
Connection and (plug-in) fixing on to the connector						
MCRA,MC_ ...	R/C	AC	12...60V 50/60Hz	**MP0AAE1**	100544	10
MCRA,MC_ ...	R/C	AC	72...250V 50/60Hz	**MP0AAE2**	100545	10
MCRC,MC_ ...	Diode	DC	6...250V DC	**MP0CAE3**	100546	10
MCRC,MC_ ...	Varistor	AC/DC	24-48V	**MP0DAE4**	100536	10

Pole paralleling links

For use with:	Phases	Terminal capacity	Ue	Cat. no.	Ref. no.	Pack
To connect two, three or four phases in parallel						
MC_ ...	2, 3, 4 (parallel)	Ø4.5mm - 16mm²		**MVP0C**	100600	10

Mechanical interlock

For use with:	Cat. no.	Ref. no.	Pack
Mechanical interlock and pole jumpers			
MCR, MC_ ...	**MMH0**	100547	10

Identification

For use with:		Cat. no.	Ref. no.	Pack
MCR, MC_ ...	Labels (10 sheets of 260 labels)	**EAT 260**	100548	1
MCR, MC_ ...	Labelling plate base. Plug-in labelling plate bases (50 pieces in one pack)	**SPR**	100549	1

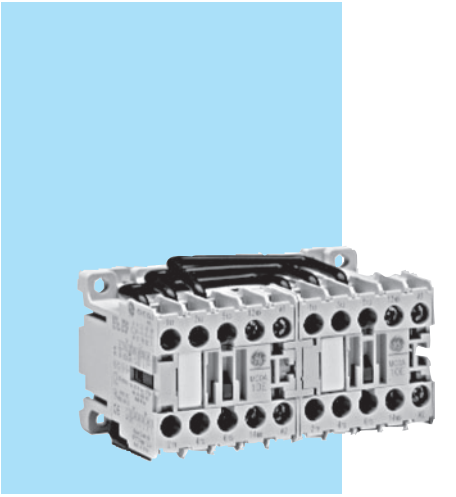
Direct-on-line starters

6 to 12A (AC-3)

- Power circuit: up to 690V AC
- Control circuit: up to 600V AC
- Polycarbonate enclosure (IP40 - IP65)
  - Shock resistance
  - Total insulation ⧈
  - 4 knock-out input holes PG13.5
  - Cable entry in the base
- Terminals protected against accidental contact
- 16 setting ranges from 0.11 up to 14A
- Start contact block

Series M - Direct-on-line starters

		Push-buttons	Protection degree	Cat. no.	Ref. no	Pack
Empty boxes		Start/Stop + Reset	IP40	**MG0004PAT0**	209780	1
			IP65	**MG0006PAT0**	209781	1
		Reset only	IP40	**MG0004RAT0**	137567	1
			IP65	**MG0006RAT0**	116402	1
		Start/Emergency stop	IP40	**MG0004QAT0**	137566	1
			IP65	**MG0006QAT0**	116074	1
Start contact block	Laterally mounted to the contactor, allowing the electrical operation the box push-button which incises on it.			**MAGL110AT**	100608	1

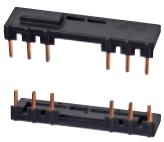


Reversing starters

6 to 12A (AC-3)

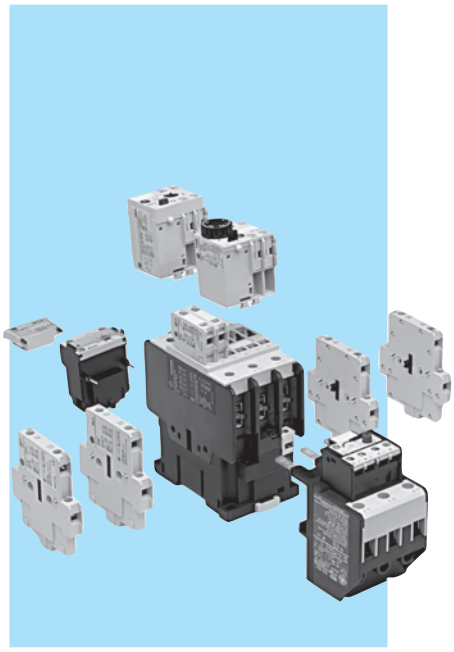
- Power circuit: up to 690V AC
- Control circuit: up to 600V AC
  up to 250V DC
- Assembled versions on request.
- Screw and push-on terminals protected against accidental contact.
- Protection degree IP20 in accordance with EN 60529.
- Facility to mount instant and timed auxiliary contact blocks and voltage suppressor blocks.

Series M - Reversing starters



	Description	For use with contactor	ac/dc	Cat. no.	Ref. no.	Pack.
Wiring kits for reversing starters	Suitable to be usd with link modules Upper and lower connections without overload relays	MC1.., MC2..	ac/dc	**WKMIU**	101421	1

Wiring diagrams ● page A.134
Dimensions ● page A.137



Three and four pole contactors
9 to 105A (AC3)
25 to 140A (AC1)

- Control circuit: Alternating current up to 690V
  Direct current up to 440V
- Terminal numbering in accordance with EN 50005 and EN 50012
- Fixing by clipping onto 35mm DIN rail EN 50022-35 or by screws
- Screws protected against accidental contact in accordance with VDE 0106 T.100, VBG4.
- Ring terminal version
- Three coil terminals
- Mounting possibilities of front/side instantaneous auxiliary contact blocks, timed auxiliary contact blocks, mechanical latch, transient suppressor block and interface modules.
- Degree of protection: IP20 to CL00 ... CL02
  IP10 to CL25 ... CL10
- Maximum number of auxiliary contacts: 4 for CL00 ... CL25
  6 for CL04 ... CL45
  8 for CL06 ... CL10

Standards

IEC/EN 60947-1
IEC/EN 60947-4-1
IEC/EN 60947-5-1
EN 50005
UL 508
NEMA ICS 1
BS 5424 & 775
CSA 22.2/14
NFC 63-110
ASE 1025
VDE 0660/102
CENELEC HD 419

Approvals

cULus
IMQ (up to Ith=32A)
RINA
Lloyd's Register
Bureau Veritas
CE
(Contact GE for details)

Standard voltages

To complete the catalogue number, replace the symbol ♦ by the code corresponding to the voltage and frequency of the control circuit.

Alternating current (V). Dual-frequency coil

♦	1	2	9	3	4	5	6	7	13	8	15
AC	24	42	48	110	120	220	230	240	400	440	480
50/60Hz				115							

Alternating current (V).

♦	E	K	L	N	T	U	W	Y	Z
AC	32	127		220		380	415	500	660
50Hz				230		400			690
AC			208	277	380	480	460	600	
60Hz									

Direct current (V)

For contactors type CL...D / Operating limits: 0.80 ... 1.10 x Us

♦	B	D	E	F	G	H	I	J	K	N	P	R	T	X
Voltage	12	24	36	42	48	60	72	110	120	220	230	240	250	440
									125					

Coil with electronic module for contactors CL...E (can also be used with alternating current)

♦	D	F	H	J	N	Y
Voltage	24	42	60	110	220	440
	28	48	72	125	250	

Direct current (V). Coil with wide voltage range (0.70 ... 1.30 x Us)

For contactors type CL...D

♦	WB	WD	WE	WF	WG	WH	WI	WJ	WK	WN	WP	WR	WT	WX
DC	12	24	33	42	48	60	72	110	125	220	230	240	250	440

Coil with electronic module for contactors CL...E

♦	WD	WE	WF	WH	WJ	WN
Voltage	24	33	48	72	110	220

Maximun number of add-on auxiliary contact blocks:

CL00D...CL02D : 2NO or 1NC
CL03D...CL45D : 1NO and 1NC
CL05D...CL10D : 4NO or 2NC
CL05E...CL10E : 4 cont. aux.

Different auxiliary contact configurations, contact us.

Order codes ● pg. A.53
Auxiliary contact blocks ● pg. A.57
Accessories ● pg. A.58
Technical data ● pg. A.91
Terminal numbering ● pg. A.99
Dimensions ● pg. A.112

Three pole contactors. Screw terminal

Max.oper.current Non-inductive load AC1 A	Motors <440V, 3 ~ 50/60Hz AC3 A	Admissible power AC3 220V 230V kW HP	380V 400V kW HP	415V 440V kW HP	500V kW HP	Electrical endurance Cat. AC3 Operations	Aux. contacts •3|•4	Aux. contacts •1|•2	Control circuit: Alternating current Cat. no. (1) Ref. no. see bottom	Pack (3)	Control circuit: Direct current Cat. no. (1) Ref. no. see bottom	Pack (3)	Control circuit: Coil with electronic module (AC/DC) Cat. no. (1) Ref. no. see bottom	Pack (3)
25	9	2.2 3	4 5.5	4 5.5	5.5 7.5	2x10⁶	1	0	CL00A310T♦	5	CL00D310T♦	10	-	
							0	0	CL00A301T♦	5	CL00D301T♦	10	-	
													-	
25	12	3 4	5.5 7.5	5.5 7.5	7.5 10	2x10⁶	1	0	CL01A310T♦	5	CL01D310T♦	10	-	
							0	1	CL01A301T♦	5	CL01D301T♦	10	-	
32	18	4 5.5	7.5 10	7.5 10	10 13.5	1.7x10⁶	1	0	CL02A310T♦	5	CL02D310T♦	10	-	
							0	1	CL02A301T♦	5	CL02D301T♦	10	-	
45	25	7.5 10	11 15	11 15	15 20	1.2x10⁶	0	0	CL25A300T♦	5	CL25D300T♦	10	-	
45	25	7.5 10	12 16	12 16	15 20	2x10⁶	1	0	CL03A310M♦	10	CL03D310M♦	10	-	
							0	1	CL03A301M♦	10	CL03D301M♦	10	-	
60	32	9 12	16 22	16 22	18.5 25	2x10⁶	1	0	CL04A310M♦	10	CL04D310M♦	10	-	
							0	1	CL04A301M♦	10	CL04D301M♦	10	-	
60	40	11 15	18.5 25	22 30	25 34	2x10⁶	0	0	CL45A300M♦	10	CL45D300M♦	10	-	
90	50	15 20	22 30	25 34	30 40	1.8x10⁶	0	0	CL06A300M♦	1	CL06D300M♦	1	CL06E300M♦	1
110	65	18.5 25	30 40	37 50	40 55	1.7x10⁶	0	0	CL07A300M♦	1	CL07D300M♦	1	CL07E300M♦	1
110	80	22 30	37 50	45 60	45 60	1.5x10⁶	0	0	CL08A300M♦	1	CL08D300M♦	1	CL08E300M♦	1
140	95	25 34	45 60	50 68	55 75	1.7x10⁶	0	0	CL09A300M♦	1	CL09D300M♦	1	CL09E300M♦	1
140	105	30 40	55 75	55 75	65 88	1.5x10⁶	0	0	CL10A300M♦	1	CL10D300M♦	1	CL10E300M♦	1

Spare coils

CL00 - CL25	LB1A ♦	5	LB1D ♦	5	-
CL03 - CL45	LB3A ♦	5	LB3D ♦	5	-
CL06 - CL10	LB4A ♦	5	LB4D ♦	1	-
coil + electronic module CL06E - CL10E					LB4E ♦ 1

(1) To complete the catalogue number, replace the symbol ♦ by the code corresponding to the voltage and frequency of the control circuit (see A.52).
(2) Equipped with two blocks BCLF
(3) Multipack, see below

Multipack. Series M and Series CL

To reduce the amount of waste packaging material and to save time during installation, we offer the opportunity to order contactors in a multipack without the individual packaging.

Product	Type	Standard pack	Multipack (1)
Contactors	CL00A...CL25A...	20	**40**
	CL03...CL45...	10	**20**

(1) The quantity ordered must be a multiple of the quantity in each multipack (with the same frame/size and coil voltage)

How to order

For reference numbers, see chapter X, pg. X.4

To order a multipack, add the suffix **MP** to the standard catalogue number

Example	Standard pack	Multipack
	CL03A400MJ	CL03A400MJ **MP** (20 pieces)

Three pole contactors. Ring terminal

Max.oper.current		Admissible power AC3				Electrical endurance	Aux. contacts		Control circuit: Alternating current		Control circuit: Direct current	
Non-inductive load	Motors <440V, 3 ~ 50/60Hz AC3	220V 230V	380V 400V	415V 440V	500V							
AC1	AC3	kW HP	kW HP	kW HP	kW HP	Cat. AC3 Operations	•3 | •4	•1 | •2	Cat. no. (1)	Pack (2)	Cat. no. (1)	Pack (2)
A	A								Ref. no. see bottom		Ref. no. see bottom	
25	9	2.2 *3*	4 *5.5*	4 *5.5*	5.5 *7.5*	2x10⁶	1 0	0 1	**CL00A310R♦** **CL00A301R♦**	5 5	**CL00D310R♦** **CL00D301R♦**	10 10
25	12	3 *4*	5.5 *7.5*	5.5 *7.5*	7.5 *10*	2x10⁶	1 0	0 1	**CL01A310R♦** **CL01A301R♦**	5 5	**CL01D310R♦** **CL01D301R♦**	10 10
32	18	4 *5.5*	7.5 *10*	7.5 *10*	10 *13.5*	1.7x10⁶	1 0	0 1	**CL02A310R♦** **CL02A301R♦**	5 5	**CL02D310R♦** **CL02D301R♦**	10 10
45	25	7.5 *10*	11 *15*	11 *15*	15 *20*	1.2x10⁶	0	0	**CL25A300R♦**	5	**CL25D300R♦**	10
45	25	7.5 *10*	12 *16*	12 *16*	15 *20*	2x10⁶	1 0	0 1	**CL03A310R♦** **CL03A301R♦**	10 10	**CL03D310R♦** **CL03D301R♦**	10 10
60	32	9 *12*	16 *22*	16 *22*	18.5 *25*	2x10⁶	1 0	0 1	**CL04A310R♦** **CL04A301R♦**	10 10	**CL04D310R♦** **CL04D301R♦**	10 10
60	40	11 *15*	18.5 *25*	22 *30*	25 *34*	2x10⁶	0	0	**CL45A300R♦**	10	**CL45D300R♦**	10
90	50	15 *20*	22 *30*	25 *34*	30 *40*	1.8x10⁶	0	0	**CL06A300R♦**	1	**CL06D300R♦**	1
110	65	18.5 *25*	30 *40*	37 *50*	40 *55*	1.7x10⁶	0	0	**CL07A300R♦**	1	**CL07D300R♦**	1
110	80	22 *30*	37 *50*	45 *60*	45 *60*	1.5x10⁶	0	0	**CL08A300R♦**	1	**CL08D300R♦**	1
140	95	25 *34*	45 *60*	50 *68*	55 *75*	1.7x10⁶	0	0	**CL09A300R♦**	1	**CL09D300R♦**	1
140	105	30 *40*	55 *75*	55 *75*	65 *88*	1.5x10⁶	0	0	**CL10A300R♦**	1	**CL10D300R♦**	1

Spare coils

CL00 - CL25	**LB1A ♦**	5	**LB1D ♦**	5
CL03 - CL45	**LB3A ♦**	5	**LB3D ♦**	5
CL06 - CL10	**LB4A ♦**	5	**LB4D ♦**	1

(1) To complete the catalogue number, replace the symbol ♦ by the code corresponding to the voltage and frequency of the control circuit (see A.52).
(2) Multipack, see A.53

For reference numbers, see chapter X, pg. X.4

Four pole contactors. Screw terminal

Max.oper.current Non-inductive loads AC1 A	AC3 A	Admissible power AC1 220V 230V kW	380V 400V kW	415V 440V kW	500V kW	Electrical endurance Cat. AC1 Operations	Power contacts		Control circuit: Alternating current Cat. no. (1) Ref. no. see bottom	Pack (2)	Control circuit: Direct current Cat. no. (1) Ref. no. see bottom	Pack (2)	Control circuit: Coil with electronic module (AC/DC) Cat. no. (1) Ref. no. see bottom	Pack (2)
25	12	9.5	16.5	18	21.5	$1.5x10^6$	4	0	CL01A400T♦	5	CL01D400T♦	10	-	
32	18	12	22	23	27.5	$1.5x10^6$	4	0	CL02A400T♦	5	CL02D400T♦	10	-	
45	25	17	29	32	39	$2x10^6$	4	0	CL03A400M♦	10	CL03D400M♦	10	-	
60	32	22.5	39.5	43	52	$1.5x10^6$	4	0	CL04A400M♦	10	CL04D400M♦	10	-	
													CL05E400M♦	1
90	50	34	59	64	78	$1.5x10^6$	4	0	CL05A400M♦	1	CL05D400M♦	1		
													CL07E400M♦	1
110	65	42	72.5	79	95	$1.8x10^6$	4	0	CL07A400M♦	1	CL07D400M♦	1		
													CL09E400M♦	1
140	95	53	92	100	121	$1.8x10^6$	4	0	CL09A400M♦	1	CL09D400M♦	1	-	

Max.oper.current Non-inductive loads AC1	Motors <440V, 3~ 50/60Hz AC3 A	Admissible power AC3 220V 230V kW HP	380V 400V kW HP	415V 440V kW HP	500V kW HP	Power contacts		Control circuit: Alternating current Cat. no. (1) Ref. no. see bottom	Pack (2)	Control circuit: Direct current Cat. no. (1) Ref. no. see bottom	Pack (2)	Control circuit: Coil with electronic module (AC/DC) Cat. no. (1) Ref. no. see bottom	Pack (2)
25	12	3 4	5.5 7.5	5.5 7.5	7.5 10	2	2	CL01AB00T♦	5	CL01DB00T♦	5	-	
32	18	4 5.5	7.5 10	7.5 10	10 13.5	2	2	CL02AB00T♦	5	CL02DB00T♦	5	-	
45	25	7.5 10	12 16	12 16	15 20	2	2	CL03AB00M♦	10	CL03DB00M♦	10	-	
60	32	9 12	16 22	16 22	18.5 25	2	2	CL04AB00M♦	10	CL04DB00M♦	10	-	
90	40	11 15	18.5 25	22 30	25 34	2	2	CL05AB00M♦	1	CL05DB00M♦	1	CL05EB00M♦	1
110	65	18.5 25	30 40	37 50	40 55	2	2	CL07AB00M♦	1	CL07DB00M♦	1	CL07EB00M♦	1
110	80	22 30	37 50	45 60	45 60	2	2	CL08AB00M♦	1	CL08DB00M♦	1	CL08EB00M♦	1

Spare coils

		CL00 - CL25	LB1A ♦	5	LB1D ♦	5	-
		CL03 - CL45	LB3A ♦	5	LB3D ♦	5	-
		CL05A - CL08A	LB4A ♦	5	LB4D ♦	1	-
	Coil + Electronic module	CL05E - CL08E	LB4E ♦	1	-		LB4E ♦	1

(1) To complete the catalogue number, replace the symbol ♦ by the code corresponding to the voltage and frequency of the control circuit (see A.52).
(2) Multipack, see A.53

For reference numbers, see chapter X, pg. X.4

Four poles. Ring terminal

Max.oper.current Non-inductive load AC1 A	Max.oper.current AC3 A	Admissible power AC1 220V 230V kW	380V 400V kW	415V 440V kW	500V kW	Electrical endurance Cat. AC1 Operations	Power contacts		Control circuit: Alternating current Cat. no. (1) Ref. no. see bottom	Pack (2)	Control circuit: Direct current Cat. no. (1) Ref. no. see bottom	Pack (2)
25	12	9.5	16.5	18	21.5	$1.5x10^6$	4	0	CL01A400R♦	5	CL01D400R♦	10
32	18	12	22	23	27.5	$1.5x10^6$	4	0	CL02A400R♦	5	CL02D400R♦	10
45	25	17	29	32	39	$2x10^6$	4	0	CL03A400R♦	10	CL03D400R♦	10
60	32	22.5	39.5	43	52	$1.5x10^6$	4	0	CL04A400R♦	10	CL04D400R♦	10
90	50	34	59	64	78	$1.5x10^6$	4	0	CL05A400R♦	1	CL05D400R♦	1
110	65	42	72.5	79	95	$1.8x10^6$	4	0	CL07A400R♦	1	CL07D400R♦	1
140	95	53	92	100	121	$1.8x10^6$	4	0	CL09A400R♦	1	CL09D400R♦	1

Max.oper.current Non-inductive load AC1 A	Max.oper.current Motors <440V, 3~ 50/60Hz AC3 A	Admissible power AC3 220V 230V kW HP	380V 400V kW HP	415V 440V kW HP	500V kW HP	Power contacts		Control circuit: Alternating current Cat. no. (1) Ref. no. see bottom	Pack (2)	Control circuit: Direct current Cat. no. (1) Ref. no. see bottom	Pack (2)
25	12	3 *4*	5.5 *7,5*	5.5 *7,5*	7.5 *10*	2	2	CL01AB00R♦	5	CL01DB00R♦	5
32	18	4 *5.5*	7.5 *10*	7.5 *10*	10 *13.5*	2	2	CL02AB00R♦	5	CL02DB00R♦	5
45	25	7.5 *10*	12 *16*	12 *16*	15 *20*	2	2	CL03AB00R♦	10	CL03DB00R♦	10
60	32	9 *12*	16 *22*	16 *22*	18.5 *25*	2	2	CL04AB00R♦	10	CL04DB00R♦	10

Spare coils

	Control circuit: Alternating current Cat. no. (1)	Pack (2)	Control circuit: Direct current Cat. no. (1)	Pack (2)
CL00 - CL25	LR1A ♦	5	LR1D ♦	5
CL03 - CL45	LR3A ♦	5	LR3D ♦	5
CL05A - CL08A	LR4A ♦	5	LR4D ♦	1

(1) To complete the catalogue number, replace the symbol ♦ by the code corresponding to the voltage and frequency of the control circuit (see A.52).
(2) Multipack, see A.53

For reference numbers, see chapter X, pg. X.4

Auxiliary contact blocks

Instantaneous

Frontal mounting

Number of contacts	Contacts (•3 •1 •7 •5 / •4 •2 •8 •6)				Type	Time	Cat. no.	Ref. no.	Pack
Terminal: screw									
1	1	0	0	0			**BCLF10**	104700	10
1	0	1	0	0			**BCLF01**	104701	10
1	0	0	1	0			**BCLF10G**	104702	10
1	0	0	0	1			**BCLF01G**	104703	10
Terminal: ring terminal									
1	1	0	0	0			**BCRF10**	108901	10
1	0	1	0	0			**BCRF01**	108902	10

Side mounting

Terminal: screw									
2	2	0	0	0			**BCLL20**	104706	10
2	1	1	0	0			**BCLL11**	104707	10
For combinations of more than 4 front-mounted and 2 side-mounted auxiliary contact blocks									
2	2	0	0	0			**BRLL20**	104704	10
2	1	1	0	0			**BRLL11**	104705	10
2	0	2	0	0			**BRLL02**	106622	10

Pneumatic timer

Front mounting

Terminal: screw									
2	0	0	1	1	Delay ON	0.1 - 30 sec.	**BTLF30C**	104709	10
2	0	0	1	1	Delay ON	1 - 60 sec.	**BTLF60C**	104710	10
2	0	0	1	1	Delay OFF	0.1 - 30 sec.	**BTLF30D**	104711	10
2	0	0	1	1	Delay OFF	1 - 60 sec.	**BTLF60D**	104712	10
Terminal: ring terminal									
2	0	0	1	1	Delay ON	0.1 - 30 sec.	**BTRF30C**	108903	10
2	0	0	1	1	Delay ON	1 - 60 sec.	**BTRF60C**	108904	10
2	0	0	1	1	Delay OFF	0.1 - 30 sec.	**BTRF30D**	108905	10
2	0	0	1	1	Delay OFF	1 - 60 sec.	**BTRF60D**	108906	10
Seaking cover protection for pneumatic timer							**BTLFX**	113001	5

Accessories

Interlock

Number of contacts	Contacts (•3 •1 •7 •5 / •4 •2 •8 •6)				For use with:	Cat. no. [1]	Ref. no.	Pack
Mechanical								
-	-	-	-	-	CL00 ... CL10	**BELA**	104723	5
Mech./ electrical								
2	0	2	-	-	CL00 ... CL10	**BELA02**	104724	5
Support interlock								
Only for direct current contactors					CL00D...CL10D	**SBELA**	101017	5

Mechanical latch blocks

Frontal mounted to the contactor								
					CL00 ... CL10	**RMLF ♦**	*see bottom*	10

♦	D	G	HC	J	N	U	Y
50Hz	24, 32	42, 48		110, 115, 120, 127	220, 230, 240	380, 400, 415, 440, 480	500, 660/690
60HZ	24, 32	48, 60		110, 115, 120, 127	208, 220, 240, 277	380, 400, 415, 440, 480	600
DC	24, 32, 36	42, 48	60, 72	110, 120, 125	220, 230, 240, 250	440	

1) To complete the catalogue number, replace the symbol ♦ by the code corresponding to the voltage and frequency of the control circuit (see A.52).

For reference numbers, see chapter X, pg. X.4

Accessories

Transient voltage suppressor block

For use with:	Type	Control circuit	Ue	Cat. no.	Ref. no.	Pack
Fixation to the coil terminals, that allows simultaneous use with the auxiliary contact blocks.						
CL00 ... CL45	R/C	AC	12V ... 48V	**BSLR2G**	104713	10
CL00 ... CL45	R/C	AC	50V ... 127V	**BSLR2K**	104714	10
CL00 ... CL45	R/C	AC	130V ... 250V	**BSLR2R**	104715	10
CL05A ... CL10A	R/C	AC	12V ... 48V	**BSLR3G**	104716	10
CL05A ... CL10A	R/C	AC	50V ... 127V	**BSLR3K**	104717	10
CL05A ... CL10A	R/C	AC	130V ... 250V	**BSLR3R**	104718	10
CL__ D	Diode	DC	12V ... 600V	**BSLDZ**	104719	10
CL00 ... CL10	Varistor	AC / DC	24V ... 48V	**BSLV3G**	104720	10
CL00 ... CL10	Varistor	AC / DC	50V ... 127V	**BSLV3K**	104721	10
CL00 ... CL10	Varistor	AC / DC	130V ... 250V	**BSLV3R**	104722	10
CL00 ... CL10	Varistor	AC / DC	277V ... 500V	**BSLV3U**	110836	10

Electronic timer module

For use with:	Control circ.	Type	Time	Cat. no.	Ref. no.	Pack
Fixation to the coil terminals, that allows simultaneous use with the auxiliary contact blocks.						
CL00 ... CL10	24-250V AC/DC	delay ON	0.1 - 2 sec.	**BETL02C**	113602	5
CL00 ... CL10	24-250V AC/DC	delay ON	1.5 - 45 sec.	**BETL45C**	113603	5
CL00 ... CL10	24-250V AC/DC	delay OFF	0.1 - 2 sec.	**BETL02D**	113604	5
CL00 ... CL10	24-250V AC/DC	delay OFF	1.5 - 45 sec.	**BETL45D**	113605	5

Accessories

Identification

For use with:		Cat. no.	Ref. no.	Pack
CL00 ... CL10	Sheets of labels (sheets of 260 labels each)	**EAT 260**	100548	1
CL00 ... CL10	Labelling plate base (50 pieces in one pack)	**SPR**	100549	1

Pole terminal protector IPXXB

CL03 ... CL04	**PTP04**	113850	8
CL45	**PTP45**	113851	6
CL05 ... CL08	**PTP08**	113852	8
CL09 ... CL10	**PTP10**	113853	8

Spares

Contact kits

For use with:	Number of sets	Type	Cat. no.	Ref. no.	Pack
CL03_3_/CL03_4_	3	NO	**V31203B**	104743	1
CL03_B_	4	2NAO-2NC	**VB1203B**	133170	1
CL04_3_/CL04_4_	3	NO	**V31204B**	104745	1
CL04_B_	4	2NO-2NC	**VB1204B**	133885	1
CL45_3_	3	NO	**V31245B**	104758	1
CL05_4_	4	NO	**V31205B**	104747	1
CL05_B_	4	2NO-2NC	**VB1205B**	104748	1
CL06___	3	NO	**V31206B**	104749	1
CL07_3_/CL07_4_	3	NO	**V31207B**	104750	1
CL07_B_	4	2NO-2NC	**VB1207B**	104751	1
CL08_3_/CL08_4_	3	NO	**V31208B**	104752	1
CL08_B_	4	2NO-2NC	**VB1208B**	104753	1
CL09___	3	NO	**V31209B**	104754	1
CL10___	3	NO	**V31210B**	104755	1

Direct-on-line starters

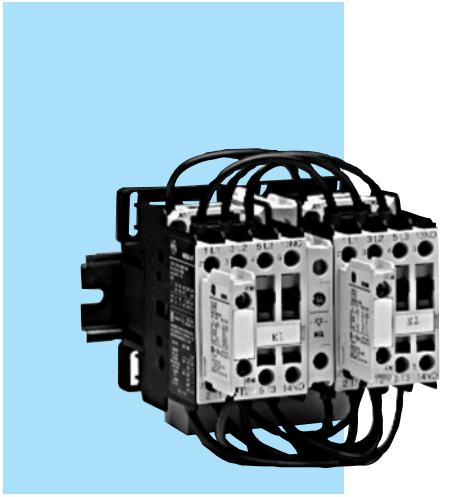
Series CL
9 to 105A (AC-3)

- Power circuit: up to 690V AC
- Control circuit: up to 690V AC
- Protection degree IP00

Series CL - Direct-on-line starters

	For use with	Push-buttons	Protection degree	Cat. no.	Ref. no	Pack
Empty boxes	CL00, CL01,CL02	Start/Stop + Reset	IP40	**LG0004P1B0**	209344	1
			IP65	**LG0006P1B0**	200004	1
		Without push-buttons	IP40	**LG0004S1B0**	209347	1
			IP65	**LG0006S1B0**	116011	1
		Only Reset	IP40	**LG0004R1B0**	116651	1
			IP65	**LG0006R1B0**	116652	1
	CL25	Start/Stop + Reset	IP40	**LG2504P1B0**	100885	1
			IP65	**LG2506P1B0**	101095	1
		Only Reset	IP40	**LG2504R1B0**	116226	1
			IP65	**LG2506R1B0**	133611	1
	CL04	Start/Stop + Reset	IP40	**LG0404P1B0**	116653	1
			IP65	**LG0406P1B0**	116656	1
		Only Reset	IP40	**LG0404R1B0**	133264	1
			IP65	**LG0406R1B0**	133265	1
	CL25, CL04	Without push-buttons	IP40	**LG0404S1B0**	116996	1
			IP65	**LG0406S1B0**	116997	1
Neutral terminal				**BNL**	104797	10
Conversion to permanent control	Pressure-fixed between push-buttons in direct-on-line enclosures for mechanical interlocking into permanent control.			**EPL**	104798	10
Start contact block	Pressure-fixed onto the front of direct-on-line starters allowing electrical operation using the start push-button on the enclosure			**BMLF**	104800	10

Wiring diagrams ● page A.132
Dimensions ● page A.137

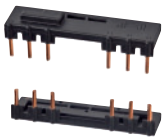


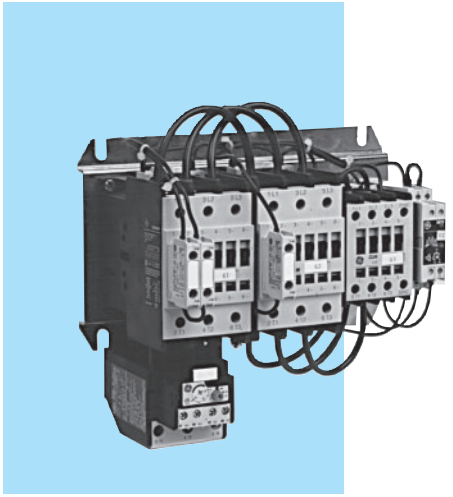
Reversing starters

9 to 40A (AC-3)

- Power circuit: up to 690V AC
- Control circuit: up to 690V AC
- IP00 version
- Polycarbonate enclosure (IP40 - IP65)
  - Shock resistance
  - Total insulation ⧈
  - 4 knock-out input holes
- Empty enclosures version
- Start contact block

Series CL - Reversing starters

	Description	For use with contactor	ac/dc	Cat. no.	Ref. no.	Pack.
 **Wiring kits for reversing starters**	Suitable to be usd with link modules Upper and lower connections without overload relays	CL00.., CL01.., CL02..	ac/dc	**WKLI02P**	101422	1
Plate	Metallic plate	CL06, CL07, CL08		**WKI0910**	241751	1
		CL08, CL09, CL10		**WKI0608**	241752	1



Star-delta starters

Series CL

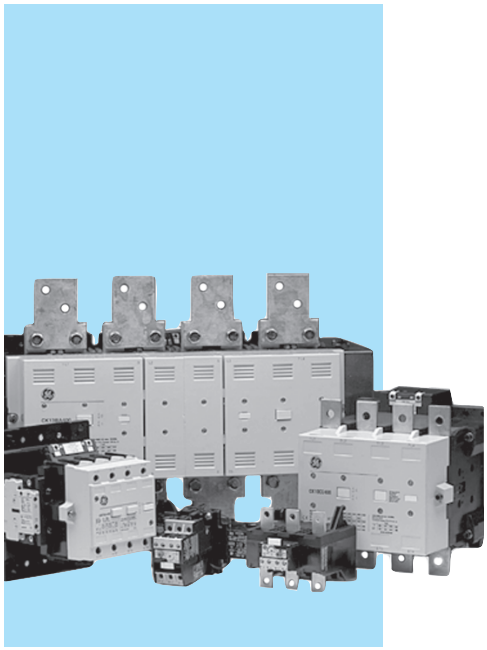
- Power circuit: up to 690V AC
- Control circuit: up to 690V AC
- Protection degree IP00
- Use delay setting by electronic relay NMET
- Terminals protected against accidental contact

Series CL - Star-delta starters

		Line-delta contactor		Cat. no.	Ref. no.	Pack
Busbar sets for power circuit		CL00		**WKLE00**	103238	1
		CL01, CL02		**WKLE02**	103241	1
Plate	Metallic plate	CL06, CL07, CL08		**WLSD**	103247	1
		CL09, CL10		**WLSD1**	241750	1

Order codes ● page A.60
Wiring diagrams ● page A.132
Dimensions ● page A.137

Notes



Three and four pole contactors
150 to 825A (AC3)
200 to 1250A (AC1)

- Control circuit: Alternating current up to 690V
  Direct current up to 500V
- Degree of protection IP00 (IPxxB with accessories)
- CK07...CK13: auxiliary and coil terminals originally protected against accidental contacts.
  Protection for power contacts on request (see accessories)
- Terminals protected against accidental contacts according to VDE 0106 T.100, VBG4.
- CK_ _E_with electronic module suitable for DC and AC. (50/60Hz)
- CK contactors always provided with one auxiliary contact block BCLL11 (1NO+1NC)

Standards

IEC/EN 60947-1	CSA 22.2/14
IEC/EN 60947-4-1	CENELEC HD 419
IEC/EN 60947-5-1	NFC 63-110
EN 50005	ASE 1025
UL 508	UNE 20109
NEMA ICS 1	VDE 0660/102
BS 5424 & 775	

Approvals/Marking

(1) cULus

CE

Lloyd's Register

Bureau Veritas

RINA

(Contact GE for details)

Standard voltages

To complete the catalogue number, replace the symbol ♦ by the code corresponding to the voltage and frequency of the control circuit.

Alternating current (V)

Three-pole contactors: CK75CA3..., CK08CA3..., CK85BA3...
Four-pole contactors: CK07BA4..., CK08BA4...

♦	C	D	F	G	H	I	J	K	M	N	R	S	T	U	V	W	X	Y	Z
50Hz		24	42	48			110	127		220	240			380		415	440	500	660
									230				400					690	
60Hz	24		48		110	120			220	277		240	380	480	440			600	

Alternating current (V). Dual-frequency coil

Three-pole contactors: CK75CA3..., CK08CA3..., CK85BA3...
Four-pole contactors: CK07BA4..., CK08BA4...

♦	1	2	3	6	13
50/60Hz	24	48	110	230	400

Alternating current (V)

Three-pole contactors: CK13BA3...
Four-pole contactors: CK13BA4...

♦	J	N	U	Y	Z
50/60Hz	110	220	380	480	600
		240	440	500	660

Control circuit with rectifier bridge

♦	J	N	U
50Hz	110	220	380
	230	400	
60Hz	120	240	480

Direct current (V). With electronic module (0.7 ... 1.3 x Us)

Three-pole contactors: CK75CE3...., CK08CE3.....

♦	WD	WE	WF	WH	WJ	WN
Voltage	24	33	48	72	110	220

Alternating c. / Direct c. (V). With electronic module (0.8 ... 1.10 x Us)

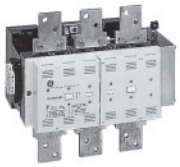
Three-pole & four-pole contactors: CK ..... **E**.....

♦	D	F	J	N	U	Y
Voltage	24	42	110	220	380	440
	28	48	127	250	415	500

(1) CK13 not UL

Order codes ● pg. A.63
Aux. contact blocks ● pg. A.64
Accessories & Spares ● pg. A.65
Technical data ● pg. A.102
Dimensions ● pg. A.118

Three pole contactors



Max.oper.current		Admissible power AC3					Electrical endurance	Control circuit: Alternating current		Control circuit: A.C. / D.C.	
Non-inductive loads	Motors <440V, 3 ~ 50/60Hz AC3	220V 230V	380V 400V	415V 440V	440V	500V					
AC1 A	A	kW *HP*	kW *HP*	kW *HP*	kW *HP*	kW *HP*	Cat. AC3 Operations	Cat. no. (1)	Pack	Cat. no. (1)	Pack
								Ref. no. see bottom		*Ref. no. see bottom*	
250	150	45 *60*	75 *100*	80 *108*	80 *108*	100 *135*	$1.7x10^6$	**CK75CA311 ♦**	1	**CK75CE311 ♦**	1
250	185	55 *75*	90 *125*	100 *135*	100 *135*	110 *150*	$1.2x10^6$	**CK08CA311 ♦**	1	**CK08CE311 ♦**	1
315	205	65 *88*	110 *150*	125 *170*	125 *170*	132 *180*	$1.7x10^6$	**CK85BA311 ♦**	1	**CK85BE311 ♦**	1
315	250	75 *100*	132 *180*	132 *180*	132 *180*	160 *220*	$1.5x10^6$	-		**CK09BE311 ♦**	1
450	309	90 *125*	160 *220*	160 *220*	185 *250*	200 *270*	$1,1x10^6$	-		**CK95BE311 ♦**	1
600	420	125 *170*	220 *300*	230 *312*	230 *312*	300 *405*	$1x10^6$	-		**CK10CE311 ♦**	1
700	550	160 *220*	280 *380*	315 *425*	315 *425*	400 *540*	$0.8x10^6$	-		**CK11CE311 ♦**	1
1000	700	220 *300*	375 *510*	400 *540*	425	480 *650*	$0.7x10^6$	-		**CK12BE311 ♦**	1
1250	825	250 *340*	450 *610*	450 *610*	450 *610*	500 *680*	$0.7x10^6$ (2)	**CK13BA311 ♦**	1	-	

Spare coil

	CK75CA3 ... CK08CA3	**C12168 ♦**	1	-	
	CK85BA3	**C04255 ♦**	1	-	
	CK13BA3	**C08998 ♦**	1	-	
Control circuit with incorporated rectifier bridge	CK13BA3	**C09120 ♦**	1	-	
Coil	CK75CE3 ... CK08CE3	-		**KB4E ♦**	1
	CK85BE3 ... CK95BE3	-		**KB5E ♦**	1
	CK12BE3	-		**KB6E ♦**	1
	CK10CE3 ... CK11CE3	-		**KB7E ♦**	1
Electronic module	CK75CE3 ... CK08CE3	-		**KM4E ♦**	1
	CK85BE3 ... CK95BE3	-		**KM5E ♦**	1
	CK12BE3	-		**KM6E ♦**	1
	CK10CE3 ... CK11CE3	-		**KM7E ♦**	1

(1) To complete the catalogue number, replace the symbol ♦ by the code corresponding to the voltage and frequency of the control circuit (see A.62).
(2) CK13 non alow the aux. block in right side.

For reference numbers, see chapter X, pg. X.5

Four pole contactors

Max.oper. current	Admissible power AC3 380V 400V		AC1 220V 230V	AC1 380V 400V	AC1 415V	AC1 440V	AC1 500V	Electrical endurance	Control circuit: Alternating current		Control circuit: A.C. / D.C.	
Non-inductive loads AC1 A	kW	A	kW	kW	kW	kW	kW	Cat. AC3 Operations	Cat. no. [1]	Pack	Cat. no. [1]	Pack
									Ref. no. see bottom		Ref. no. see bottom	
200	55	105	76	131	143	151	173	1x10⁶	**CK07BA41 ♦** CK07BA411	1	**CK07BE411 ♦**	1
325	100	185	123	214	233	247	281	0.6x10⁶	**CK08BA411 ♦**	1	**CK08BE411 ♦**	1
400	132	250	152	263	287	304	346	0.6x10⁶	-		**CK09BE411 ♦**	1
500	160	309	191	329	359	380	415	0.6x10⁶	-		**CK95BE411 ♦**	1
600	220	408	228	395	431	456	519	0.5x10⁶	-		**CK10CE411 ♦**	1
700	280	530	266	460	503	533	606	0.4x10⁶	-		**CK11CE411 ♦**	1
1000	375	680	381	658	719	762	866	0.4x10⁶	-		**CK12BE411 ♦**	1
1250	450	800	476	822	898	952	1082	0.6x10⁶ (2)	**CK13BA411 ♦**	1		

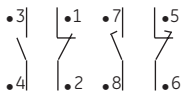
Spare coil

	CK07BA4	**C04255 ♦**	1	-	
	CK08BA4	**C04787 ♦**	1	-	
	CK13BA4	**C08998 ♦**	1	-	
Control circuit with incorporated rectifier bridge	CK13BA4	**C09120 ♦**	1	-	
Coil	CK07BE4	-		**KB5E ♦**	1
	CK08BE4 ... CK95BE4, CK12BE4	-		**KB6E ♦**	1
	CK10CE4 ... CK11CE4	-		**KB7E ♦**	1
Electronic module	CK07BE4	-		**KM5E ♦**	1
	CK08BE4 ... CK95BE4, CK12BE4	-		**KM6E ♦**	1
	CK10CE4 ... CK11CE4	-		**KM7E ♦**	1

(1) To complete the catalogue number, replace the symbol ♦ by the code corresponding to the voltage and frequency of the control circuit (see A.62).
(2) CK13 non alow the aux. block in right side.

Auxiliary instantaneous contact block

Side mounting

Number of contacts	Contacts				Cat. no.	Ref. no.	Pack
							
2	2	0	0	0	**BCLL20**	104706	10
2	1	1	0	0	**BCLL11**	104707	10
2	1	1	0	0	**BCLL11-K**[1]	248083	10
combinations of more than 2 blocks							
2	2	0	0	0	**BRLL20**	104704	10
2	1	1	0	0	**BRLL11**	104705	10
2	0	2	0	0	**BRLL02**	106622	10

(1) For high shock/vibrations environments

For reference numbers, see chapter X, pg. X.5

Accessories

Transient voltage suppressor

For use with:	Mounting	Voltage	Ue	Cat. no.	Ref. no.	Pack
Fixation to the coil terminals, that allows simultaneous use with the auxiliary contact blocks.						
CK75 ... CK08		AC	24V - 48V	**BSLR3G**	104716	10
CK75 ... CK08		AC	50V - 127V	**BSLR3K**	104717	10
CK75 ... CK08		AC	130V - 240V	**BSLR3R**	104718	10
CK75 ... CK08		AC	227V - 500V	**BSLV3U**	110836	10
CK85 ... CK13		AC	24V	**KRC24**	104760	10
CK85 ... CK13		AC	260V	**KRC48/260**	104761	10
CK85 ... CK13		AC	415V	**KRC380/415**	104762	10

Mechanical interlock

CK07B ... CK12	Horizontal			**BEKH**	104763	1
CK07B ... CK95	Vertical			**BEKVS 1**	104786	1
CK10C ... CK12B	Vertical			**BEKVA 1**	104785	1
CK13	Vertical			**BEKV**	104764	1

Pole terminal protection

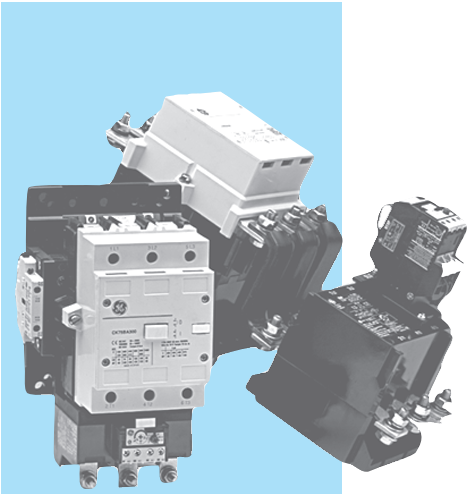
CK75C ... CK08C	1 pole. VDE0106			**CM1CA5F**	105200	1
CK85B ... CK12B	1 pole. VDE0106	Contactors 3P		**C09476**	104766	6
CK08B ... CK12B	1 pole. VDE0106	Contactors 4P		**C09479**	204800	8
CK75C ... CK08C	1 pole IPXXB			**PTPCK75**	103747	1[1]
CK85B ... CK95B	1 pole IPXXB			**PTPCK95**	103748	3[2]
CK10C ... CK12B	1 pole IPXXB			**PTPCK11**	103749	1[1]

(1) One phase
(2) Three pole

Spares

Contact kits

For use with:	Type			Cat. no.	Ref. no.	Pack
One set consists of two fixed contacts, one moving contact and accessory parts. When contact replacement is needed, it is recommended to replace all the contacts at the same time.						
CK07B	NA			**V1107BA**	113612	1
CK75C	NA			**V1175CA**	113613	1
CK08C	NA			**V1108CA**	113614	1
CK08B	NA	Contactors 4P		**V1108B4**	113505	1
CK85B	NA			**V1185BA**	113615	1
CK09B	NA			**V1109BA**	113616	1
CK09B	NA	Contactors 4P		**V1109B4**	113899	1
CK95B	NA			**V1195BA**	113617	1
CK10C	NA			**V1110CE**	113618	1
CK11C	NA			**V1111CE**	113619	1
CK12B	NA			**V1112BA**	113620	1
CK13B	NA			**V1113BA**	113621	1



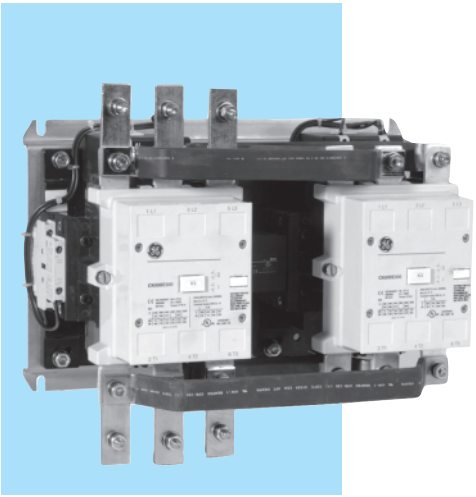
Direct-on-line starters

150 to 825A (AC-3)

- Power circuit: up to 1000V AC
- Control circuit: up to 690V AC
- Protection degree IP00
- Terminals protected against accidental contact: IP20
  - KG75 to KG12: Coil and auxiliary terminals with built-in protection
    Main terminals protector on request
  - KG13: Coil and auxiliary terminals with built-in protection

Series CK - Direct-on-line starters. IP00

			Cat. no.	Ref. no.	Pack
Connection sets	Busbar set for power circuit	CK85,CK09,CK95	**KVP85G**	104770	1
		CK10,CK11	**KVP10G**	104771	1
		CK12	**KVP12G**	104767	1
Plate	Metallic plate	CK85, CK09, CK95	**PVP85G**	241747	1
		CK10, CK11	**PVP10G**	241748	1
		CK12	**PCP12G**	241749	1



Reversing starters

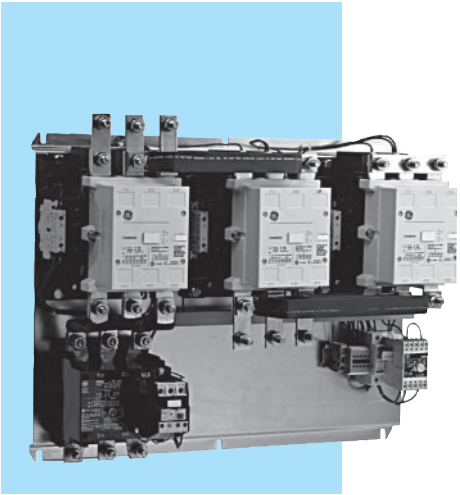
150 to 825A (AC-3)

- Power circuit: up to 1000V AC
- Control circuit: up to 690V AC
- Protection degree IP00

Series CK - Reversing starters. IP00

	Description	For use with contactor	Cat. no.	Ref. no.	Pack.
Connection sets	Busbar set for power circuit	CK75, CK08	**KVP75U**	113627	1
		CK85, CK09, CK95	**KVP85U**	113628	1
		CK10, CK11	**KVP10U**	133374	1
		CK12	**KVP12U**	113630	1
	Busbar set for power circuit For assembly with thermal overload relay.	CK75, CK08	**KVP75I**	133370	1
		CK85, CK09, CK95	**KVP85I**	113631	1
		CK10, CK11	**KVP10I**	133371	1
		CK12	**KVP12I**	113633	1
Plate	Metallic plate	CK75, CK08	**KVB75I**	104690	1
		CK85, CK95	**KVB95I**	104691	1
		CK10, CK11	**KVB10I**	104692	1
		CK12	**KVB12I**	104693	1

Order codes ● page A.66-67
Wiring diagrams ● page A.135
Dimensions ● page A.138



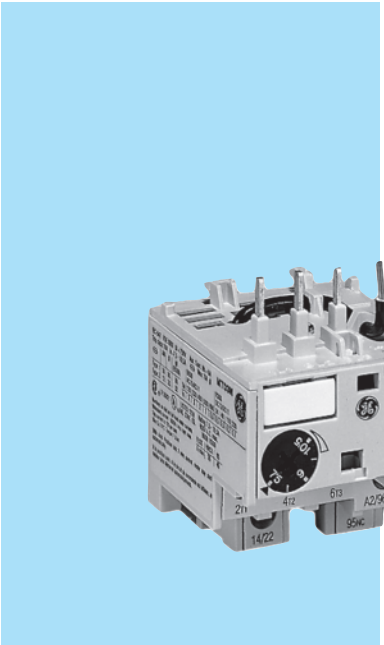
Star-delta starters

Series CK

- Power circuit: up to 1000V AC
- Control circuit: up to 690V AC
- Protection degree IP00
- Protection against accidental contacts: IP20
  - KE75: Built-in protection
  - KE08 - KE12: Coil and auxiliary terminals with built-in protection
    Main terminals protector on request
  - KE13: Coil and auxiliary terminals with built-in protection

Series CK - Star-delta starters. IP00

		Line-delta contactor	Star contactor	Cat. no.	Ref. no.	Pack
Busbar sets for power circuit		CK75, CK08	CK75, CK08	**KVP75E**	133378	1
		CK85, CK09, CK95	CK75, CK08	**KVP08E**	116212	1
		CK95	CK85, CK09, CK95	**KVP85E**	133379	1
		CK10, CK11	CK85, CK09, CK95	**KVP95E**	113637	1
		CK10, CK11	CK10, CK11	**KVP10E**	133380	1
		CK12	CK10, CK11	**KVP12E**	116235	1
Plate	Metallic plate	CK75, CK08		**KVB75E**	104694	1
		CK85, CK95		**KVB95E**	104695	1
		CK10, CK11		**KVB10E**	104597	1
		CK12		**KVB12E**	104587	1



Thermal overload relays for contactors from 0.11 to 14A

- Control circuit up to 690V
- Power circuit up to 690V
- Three-pole differential (phase unbalance protection)
- Automatic ambient temperature compensation between – 25°C and + 60°C
- Choice of manual or automatic reset
- Direct connection to contactor or independent mounting using accessories.
- Screw and Ring terminal versions
- Terminals protected against accidental contact in accordance with VDE 0106 T.100 and VBG4.
- Terminal numbering in accordance with EN 50005
- Degree of protection IP20 (EN 60529)
- Additional auxiliary contact block 1NO (with manual reset only)

Standards

IEC/EN 60947-4-1	CSA 22.2/14
IEC/EN 60947-5-1	NI C 63-650
UNE 115	VDE 0660
NFC 63-650	UL 508

Approvals/Marking

cULus NEMKO CE

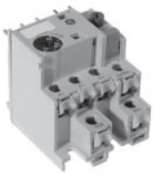
SEMKO SETI

General characteristics

- Thermal protection against balanced overload.
- Three-pole differential (phase unbalance protection).
- Automatic ambient temperature compensation.
- Front mounted selector for choosing utilisation current.
- Reset button, 2 positions : Manual(H) and Automatic(A) by turning the blue selector.
- Stop push button, independent of reset (red).
- Manual trip lever (tripping test).
- Tripping indicator (0-1).
- To facilitate wiring arrangements terminal 96 fits directly onto coil terminal (A2) and terminal 14/22 fits directly onto the feedback auxiliary contact.

Order codes ● pg. A.69
Technical data ● pg. A.120
Dimensions ● pg. A.121

Thermal overload relays for contactors



For use with:	Setting range (regulation)		Fuse				Terminal: screw		Terminal: ring terminal		Pack
			aM		gL						
	min. A	max. A	Type 2 A	Type 1 A	Type 2 A	Type 1 A	Cat. no.	Ref. no.	Cat. no.	Ref. no.	
MC0...	0.11	0.17	0.5	0.5	0.5	0.5	**MT03A**	101000	**MT03RA**	103540	10
MC1...	0.17	0.26	0.85	1	1	1	**MT03B**	101001	**MT03RB**	103541	10
MC2...	0.26	0.43	1	2	2	4	**MT03C**	101002	**MT03RC**	103542	10
	0.43	0.65	1	4	2	8	**MT03D**	101003	**MT03RD**	103543	10
	0.65	1	2	6	4	12	**MT03E**	101004	**MT03RE**	103544	10
	0.85	1,3	2	6	4	12	**MT03F**	101005	**MT03RF**	103545	10
	1.1	1.6	2	10	4	16	**MT03G**	101006	**MT03RG**	103546	10
	1.35	2	4	10	6	16	**MT03H**	101007	**MT03RH**	103547	10
	1.7	2.4	4	16	6	25	**MT03I**	101008	**MT03RI**	103548	10
	2.2	3.2	4	20	6	32	**MT03J**	101009	**MT03RJ**	103549	10
	2.5	4	4	20	6	32	**MT03R**	101015			10
	3	4.7	6	20	10	32	**MT03K**	101010	**MT03RK**	103550	10
	4	6.3	10	32	16	50	**MT03L**	101011	**MT03RL**	103551	10
	5.5	8	12	50	20	63	**MT03M**	101012	**MT03RM**	103552	10
	7.5	10.5	16	50	25	80	**MT03N**	101013	**MT03RN**	103553	10
	10	14	20	32	32	100	**MT03P**	101014	**MT03RP**	103554	10

Accessories

Input terminals

	Terminal	Cat. no.	Ref. no.	Pack
	Screw	**MVE0T**	101020	5
	Ring terminal	**MVE0R**	103562	5

Base

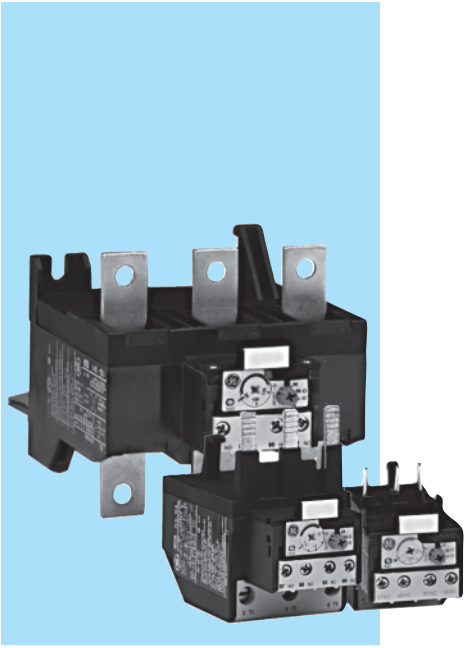
For separate mounting onto standard EN 50022-35 profile		**MVB0T**	101021	5

Auxiliary contact block

Frontal fixing to the relay With trip indicator (0-I) One block per relay and only for manual reset	Screw	**MATV10AT**	101022	10
	Ring terminal	**MATV10AR**	103563	10

Identification

Sheets of labels (sheets of 260 labels each)	**EAT 260**	100548	1
Labeling plate base (50 pieces in one pack)	**SPR**	100549	1



Thermal overload relays for contactors from 0.16 to 850A

- Control circuit up to 690V AC
- Power circuit:
  - RT1, RT12: up to 690V
  - RT2, RT22, RT3, RT32, RT4/4L, RT5/5L & RT6/6L: up to 1000V
- Thermal protection against normal overloads.
- Three pole differential (phase unbalance protection).
- Protection against long starting times.
- Automatic ambient temperature compensation between – 25°C + 60°C.
- Front mounted test button.
- Trip indication.
- Independent auxiliary contacts with double rupture (1NO + 1NC).
- Function selector:
  - Manual RESET
  - Manual RESET and STOP
  - Automatic RESET with STOP
  - Automatic RESET without STOP

Standards

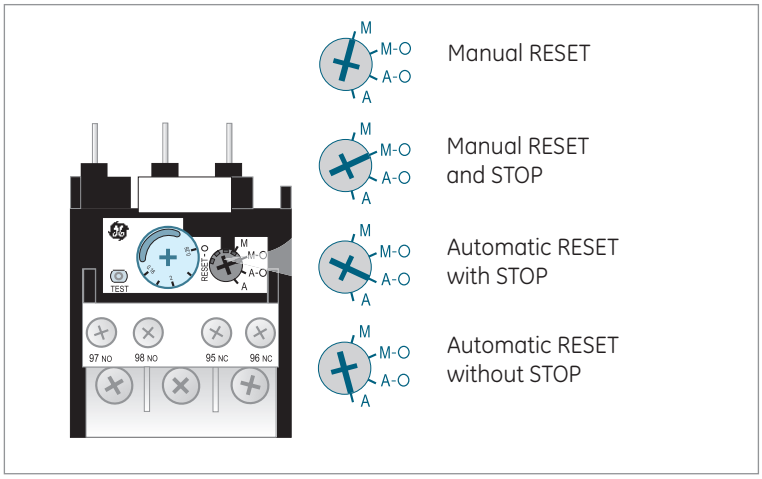
IEC/EN 60947-4-1	CSA 22.2/14
IEC/EN 60947-5-1	NI C 63-650
UNE 115	VDE 0660
NFC 63-650	UL 508
CEI 17-50	

Approvals/Marking

cULus CE

Lloyd's Register · Bureau Veritas · RINA

(Contact GE for details)



Order codes ● pg. A.71
Technical data ● pg. A.122
Dimensions ● pg. A.123

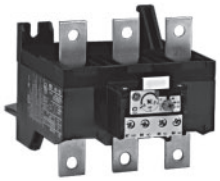
Thermal overload relays for contactors

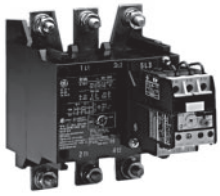
	For use with:	Setting range (regulation) min. A	Setting range (regulation) max. A	Fuses (1) aM A	Fuses (1) gL - gG A	Srew terminal Cat. no.	Srew terminal Ref. no.	Ring terminal Cat. no.	Ring terminal Ref. no.	Pack
Class 10A	CL00	0.16	0.26	2	2	**RT1B**	113700	**RT1RB**	114087	5
	CL01	0.25	0.41	2	2	**RT1C**	113701	**RT1RC**	114088	5
	CL02	0.4	0.65	2	2	**RT1D**	113702	**RT1RD**	114089	5
	CL25	0.65	1.1	2	4	**RT1F**	113703	**RT1RF**	114090	5
	CL03	1.0	1.5	4	6	**RT1G**	113704	**RT1RG**	114091	5
	CL04	1.3	1.9	4	6	**RT1H**	113705	**RT1RH**	114092	5
	CL45	1.8	2.7	6	10	**RT1J**	113706	**RT1RJ**	114093	5
		2.5	4.0	8	16	**RT1K**	113707	**RT1RK**	114094	5
		4.0	6.3	12	20	**RT1L**	113708	**RT1RL**	114095	5
		5.5	8.5	16	20	**RT1M**	113709	**RT1RM**	114096	5
		8.0	12.0	20	25	**RT1N**	113710	**RT1RN**	114097	5
		10.0	16.0	25	35	**RT1P**	113711	**RT1RP**	114098	5
		14.5	18.0	32	50	**RT1S**	113712	**RT1RS**	114099	5
		17.5	22.0	40	50	**RT1T**	113713	**RT1RT**	114100	5
		21.0	26.0	40	63	**RT1U**	113714	**RT1RU**	114101	5
		25.0	32.0	50	80	**RT1V**	113715	**RT1RV**	114102	5
		30.0	40.0	63	100	**RT1W**	113716	**RT1RW**	114103	5
Class 10	CL05	11.5	15.0	32	35	**RT2A**	113717	**RT2RA**	114104	1
	CL06	14.5	19.0	40	50	**RT2B**	113718	**RT2RB**	114132	1
	CL07	18.5	25.0	50	63	**RT2C**	113719	**RT2RC**	114106	1
	CL08	24.0	32.0	63	100	**RT2D**	113720	**RT2RD**	114133	1
	CL09	30.0	43.0	80	125	**RT2E**	113721	**RT2RE**	114134	1
	CL10	42.0	55.0	100	160	**RT2G**	113722	**RT2RG**	114109	1
		54.0	65.0	125	160	**RT2H**	113723	**RT2RH**	114146	1
		64.0	82.0	125	200	**RT2J**	113724	**RT2RJ**	114136	1
		78.0	97.0	125	200	**RT2L**	113725	**RT2RL**	114235	1
		90.0	110	160	250	**RT2M**	113726	**RT2RM**	114113	1
Class 20	CL00	0.4	0.65	2	2	**RT12D**	139138	**RT12RD**	114060	5
	CL01	0.65	1.1	2	4	**RT12F**	139139	**RT12RF**	114061	5
	CL02	1	1.5	4	6	**RT12G**	139140	**RT12RG**	114062	5
	CL25	1.3	1.9	4	6	**RT12H**	139141	**RT12RH**	114063	5
	CL03	1.8	2.7	8	10	**RT12J**	139142	**RT12RJ**	114159	5
	CL04	2.5	4.1	8	16	**RT12K**	113640	**RT12RK**	114114	5
	CL45	4	6.3	12	20	**RT12L**	113641	**RT12RL**	114115	5
		5.5	8.5	16	20	**RT12M**	113642	**RT12RM**	114116	5
		8	12	20	35	**RT12N**	113643	**RT12RN**	114117	5
		10	16	25	35	**RT12P**	113644	**RT12RP**	114118	5
		14.5	18	32	50	**RT12S**	113645	**RT12RS**	114119	5
		17.5	22	40	50	**RT12T**	113646	**RT12RT**	114120	5
		21	26	40	63	**RT12U**	113647	**RT12RU**	114121	5
		25	32	50	80	**RT12V**	113648	**RT12RV**	114122	5
		30	40	63	100	**RT12W**	113649	**RT12RW**	114123	5
	CL05	24	32	63	80	**RT22D**	113650	**RT22RD**	114124	1
	CL06	30	43	80	100	**RT22E**	113651	**RT22RE**	114141	1
	CL07	42	55	100	160	**RT22G**	113652	**RT22RG**	114126	1
	CL08	54	65	125	160	**RT22H**	113653	**RT22RH**	114127	1
	CL09	64	82	125	200	**RT22J**	113654	**RT22RJ**	114128	1
	CL10	78	97	125	200	**RT22L**	113655	**RT22RL**	114143	1
		90	110	160	250	**RT22M**	113656	**RT22RM**	114130	1

(1) Most suitable fuse in accordance with IEC 60947-4-1.

(continued on page A.72)

Thermal overload relays for contactors (continued)





	For use with:	Setting range (regulation) min. A	Setting range (regulation) max. A	Fuses [1] aM A	Fuses [1] gL - gG A	Cat.no. (Screw terminal)	Ref. no.	Pack
Class 10	CK75 CK08 Direct mounting	55	80	125	200	**RT3B**	113727	1
		63	90	125	200	**RT3C**	113728	1
		90	120	160	250	**RT3D**	113729	1
		110	140	200	315	**RT3E**	113730	1
		140	190	250	355	**RT3F**	113731	1
	CK85 CK09 CK95 [2]	120	190	250	315	**RT4N**	113732	1
		175	280	315	400	**RT4P**	113733	1
		200	310	400	500	**RT4R**	113734	1
	CK10 CK11 CK12 [3]	120	190	250	315	**RT5A**	113750	1
		175	280	315	400	**RT5B**	113751	1
		250	400	500	630	**RT5C**	113752	1
		315	500	630	800	**RT5D**	113753	1
		430	700	800	1000	**RT5E**	113754	1
	CK13 [4]	500	850	100	1250	**RT6A**	113760	1
Class 20	CK75 CK08 Direct ounting	63	90	125	200	**RT32C**	113657	1
		90	120	160	250	**RT32D**	113658	1
		110	140	200	315	**RT32E**	113659	1
		140	190	250	355	**RT32F**	113660	1
Class 30	CL... CK... Mounting with screws	2.5	4	10	16	**RT4LA**	113735	1
		4	6.5	12	20	**RT4LB**	113736	1
		5.5	8.5	16	25	**RT4LC**	113737	1
		7.5	11	20	32	**RT4LD**	113738	1
		10	16	25	40	**RT4LE**	113739	1
		12.5	20	32	50	**RT4LF**	113740	1
		17	27	50	80	**RT4LG**	113741	1
		26	40	80	125	**RT4LH**	113742	1
		32	52	100	160	**RT4LJ**	113743	1
		45	70	125	160	**RT4LK**	113744	1
		60	90	160	200	**RT4LL**	113745	1
		80	125	200	250	**RT4LM**	113746	1
	CK85	120	190	250	315	**RT4LN**	113747	1
	CK09	175	280	315	400	**RT4LP**	113748	1
	CK95 [2]	200	310	400	500	**RT4LR**	113749	1
	CK10 CK11 CK12 [3]	120	190	250	315	**RT5LA**	113755	1
		175	280	315	400	**RT5LB**	113756	1
		250	400	500	630	**RT5LC**	113757	1
		315	500	630	800	**RT5LD**	113758	1
		430	700	800	1000	**RT5LE**	113759	1
	CK13 [4]	500	850	1000	1250	**RT6LA**	113761	1

(1) Most suitable fuse in accordance with IEC 60947-4-1.
(2) Fitting direct to the contactor.
(3) Fitting direct to the contactor: by means of a coupling and connection set.
Separate mounting:with screws on DIN rail / with cable connection.
(4) RT6A = RT1 with right setting range plus RTXP, independent mounting base adaptor, to be utilisied with current transformer connected by passing cable chosen by customer. Current transformer data on request.

Accessories

Base for separate mounting

		Cat. no.	Ref. no.	Pack
DIN EN50022-35				
RT1		**RTXP**	105170	1
RT2		**RT2XP**	113764	1

Setting range cover protection

		Cat. no.	Ref. no.	Pack
RT...		**RTX3**	113762	1

Push-button with flexible cable

		Cat. no.	Ref. no.	Pack
for distance RESET				
RT1... - RT6.... (front)	0.5 meters	**RTXS**	113855	1
RT1... - RT6.... (front)	1 meters	**RTXSL**	113856	1
RT1..., RT2..., RT4..., RT5..., RT6... (back)		**RTXBS**	108864	1

Terminal protection

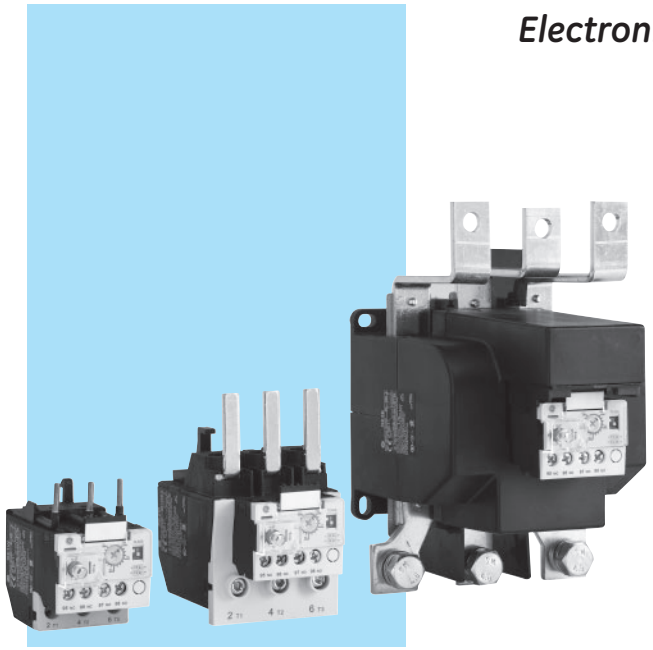
		Cat. no.	Ref. no.	Pack
for RT3 or CK75C/CK08C				
Thermal overload relay	1 pole IPxxB	**PTPCK75**	103747	1
Connection contactor-relay	3 poles	**RT3PXX3P**	110565	1

Remote electrical reset

		Cat. no.	Ref. no.	Pack
RT1... - RT6...		**RTXRR ◆**		1

Available coil voltages (V)

♦	B	D	G	J	N	U	X
AC/DC	12	24	48	110 240	220 415	380 480	440



Electronic overload relays

Approvals/Marking

cULus CE

Product features ➢ *Your benefits*

Lower power consumption	➢ Saving space into cabinet
Great accuracy	➢ Better motor protection
Full reliability	➢ Low risk to burn motor
Phase unbalance protection	➢ Better motor protection and current control
Direct fitting to contactors Series CL	➢ Compact starter
Interchangeable with thermal overload relay	➢ No need to redesign existing cabinet
Multiple trip class selection	➢ One device cover for start time motor
Manual / Auto reset	➢ One device for two solutions

Main characteristics

- Setting range from 0.1 up to 150A
- Self powered
- Thermal memory
- Phase loss protection
- Phase unbalance protection
- Direct fitting to contactors Series CL
- Interchangeable with thermal overload relay
- Multiple trip class selection
- Manual / Auto reset
- Increased flexibility, less order codes, less stock
- Tripp class: 5 - 10 - 20 - 30

Order codes ● pg. A.75
Technical data ● pg. A.128
Dimensions ● pg. A.130

Electronic overload relays for contactors

	Suitable for	Setting range (A) Min.	Setting range (A) Max.	Fuses (A) [1] gL - gG	Cat. no.	Ref. no.	Pack.
 Frame 1	CL00...CL45	0,1	0,5	2	**RE1D**	101866	5
		0,4	2	4	**RE1H**	101867	5
		1,0	5	10	**RE1K**	101868	5
		1,6	8	20	**RE1M**	101869	5
		6,4	32	63	**RE1S**	101870	5
		9,0	45	80	**RE1W**	101871	5
 Frame 2	CL05...CL10	15	75	125	**RE2H**	101872	1
		22	110	125	**RE2M**	101873	1
 Frame 3	CK75-CK08	30	150	250	**RE3E**	101874	1

Accessories

		Cat. no.	Ref. no.	Pack.
Transparent cover for pushbutton reset	For frames 1, 2 and 3	**RETC**	247795	10
 pendent mounting base adaptor	Frame 1	**RE1XP**	247302	1
pendent mounting base adaptor	Frame 2	**RE2XP**	247303	1

(1) Most suitable fuse in accordance with IEC 60947-4-1, see coordination table on pg. A.128.

Intelligent motor management relay EntelliPro ES3 / ES5

- Motor protection and motor control
- Pre-programmed motor typicals
- Communication Interface to Profibus-DP and Modbus RTU system
- Status information from motor and switchgear
- Maintenance information,
- Management of settings and configuration
- Predefined control logic
- Internal event recording with time stamping
- Local control and display devices

Protection
- Overload (Class 5 to 40)
- Earth fault (Residual current))
- Phase loss
- Thermistor (PTC)
- Start current
- Blocked rotor
- Under load
- Maximum starts per time
- Self monitoring
- External device monitoring

Diagnostic
- Time to overload trip, release
- Number of operations
- Number of motor starts
- Motor ON-time, OFF-time
- Number of overload trips
- Number of thermistor trips
- Maximum currents
- Trip currents

Drive typicals
- Direct-on-line
- Reverse
- Star delta
- Star delta reverse
- Softstarter
- Softstarter reverse
- Dahlander
- Pole changing starter
- Solenoid valve
- Actuator

Approvals/Marking

SIL certified

ATEX certified

CE

Order information (see page A.77)

EntelliPro ES3 DP 2 2

ES3 = Standard device
ES5 = Medium device

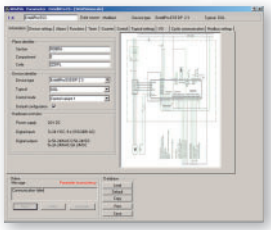
2 = Power supply and 7 digital inputs, voltage 24V DC
3 = Power supply and 7 digital inputs, voltage 110-240V AC

0 = no additional 9 digital inputs available
2 = additional 9 digital input, voltage 24V DC
3 = additional 9 digital input, voltage 110-240V AC

Order codes ● pg. A.77
Technical data ● pg. A.78
Dimensions ● pg. A.80

New

Intelligent motor management relay

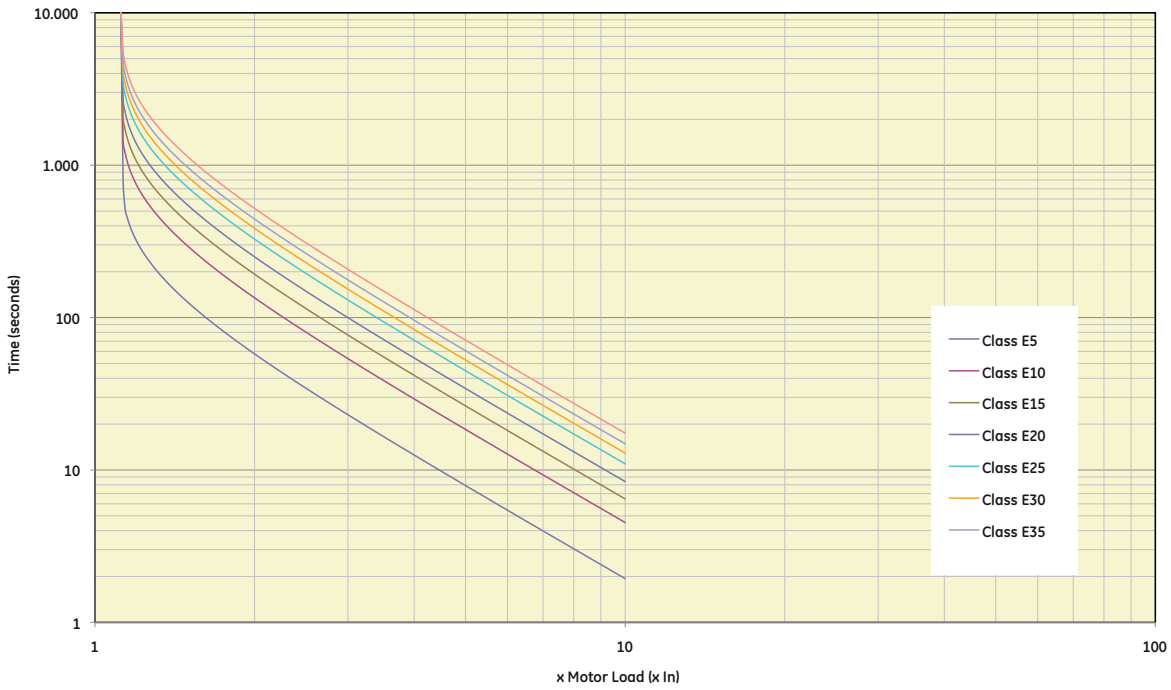


Type	Voltage	Ref. No.
Standard device (I/O 7 digital inputs / 3 digital outputs)		
EntelliPro ES3 DP 2 0	24V DC	**720003**
EntelliPro ES3 DP 3 0	240V AC	**720004**
Mid device (I/O 16 digital inputs / 8 digital outputs + 4–20 mA output)		
EntelliPro ES5 DP 2 2	24V DC / 24V DC	**720005**
EntelliPro ES5 DP 2 3	24V DC / 240V AC	**720006**
EntelliPro ES5 DP 3 3	240V AC / 240V AC	**720007**
Transformer		
EntelliPro CT8	1,4A – 8A	**720022**
EntelliPro CT32	5,4A - 32A	**720023**
EntelliPro CT64	10,7A – 64A	**720024**
EntelliPro CT630	105A - 630A	**720025**
HMI Control panel		
EntelliPro CP3	HMI 3,3" LCD	**720028**
EntelliPro CP5	HMI 7" color TFT-LCD	**720029**
Parameterizing user software		
WinESG V3	EntelliPro software tool for Windows	**720020**
Demonstration KIT		
Demo-case	Demonstration KIT for EntelliPro	**720030**

New

Intelligent motor management relay

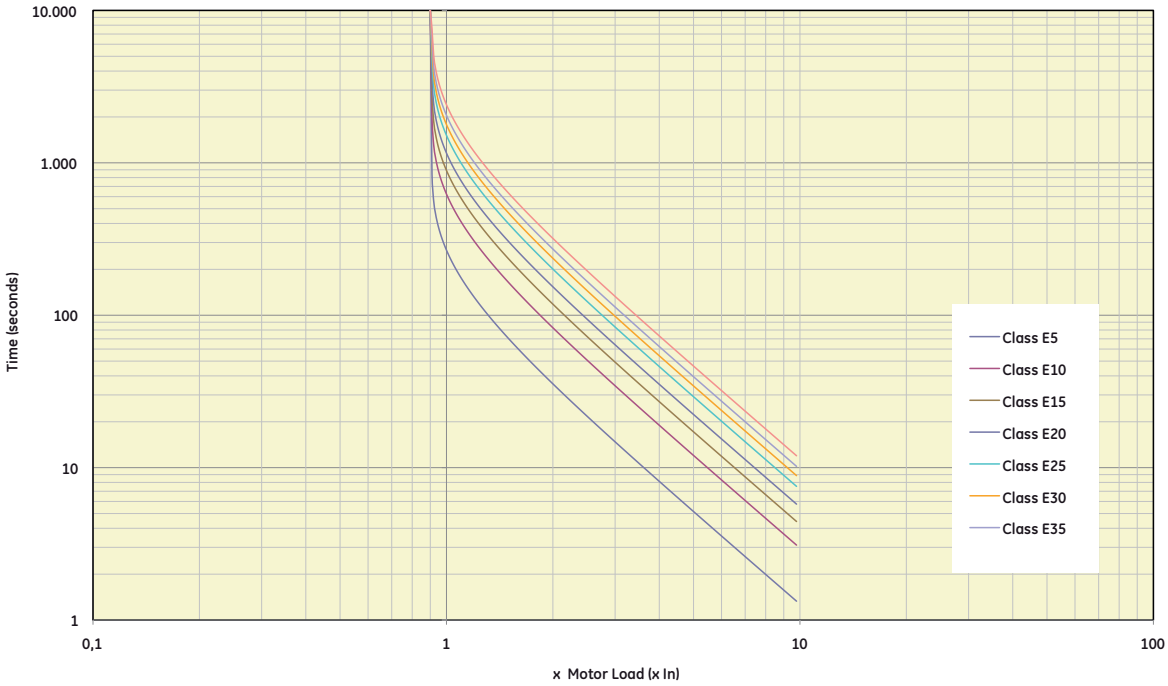
Overload tripping curves IEC 60947-4-1 (3-Pole / 3-Wire)



Current (x In)	Class E5 (sec)	Class E10 (sec)	Class E15 (sec)	Class E20 (sec)	Class E25 (sec)	Class E30 (sec)	Class E35 (sec)	Class E40 (sec)	Tolerance (%)
1.2	314.70	734.29	1048.99	1363.68	1783.28	2097.98	2412.67	2832.27	10
1.4	156.93	366.16	523.09	680.01	889.25	1046.17	1203.10	1412.83	10
1.6	103.43	241.33	344.75	448.18	586.08	689.50	792.93	930.83	10
1.8	75.21	175.49	250.70	325.91	426.19	501.40	576.61	676.90	10
2	57.80	134.86	192.66	250.46	327.53	385.33	443.12	520.19	10
2.5	34.41	80.29	114.70	149.11	194.99	229.40	263.81	309.69	10
3	23.26	54.10	77.85	101.91	133.65	155.70	178.76	209.50	10
3.5	16.79	39.02	56.31	73.91	97.03	112.62	129.22	151.34	10
4	12.74	29.56	42.80	56.34	74.06	85.60	98.14	114.86	10
4.5	10.02	23.22	33.74	44.56	58.66	67.48	77.30	90.40	10
5	8.11	18.75	27.36	36.26	47.81	54.71	62.62	73.16	10
5.5	6.71	15.48	22.68	30.19	39.86	45.37	51.87	60.55	10
6	5.65	13.01	19.10	24.31	31.97	37.52	43.16	50.43	10
6.5	4.83	11.10	16.43	20.76	27.33	32.06	36.89	43.06	10
7	4.18	9.59	13.40	17.96	23.67	27.76	31.94	37.25	10
7.2	3.90	9.08	12.78	17.00	22.42	26.28	30.25	35.26	10
8	3.20	7.39	10.40	13.88	18.33	21.47	24.71	28.76	20
9	2.60	5.89	8.40	11.09	14.68	17.18	18.90	22.98	20
10	2.30	5.20	7.40	9.10	12.19	14.13	16.27	18.85	20

New

Overload tripping curves IEC 60947-4-1 (2-Pole / 2-Wire)

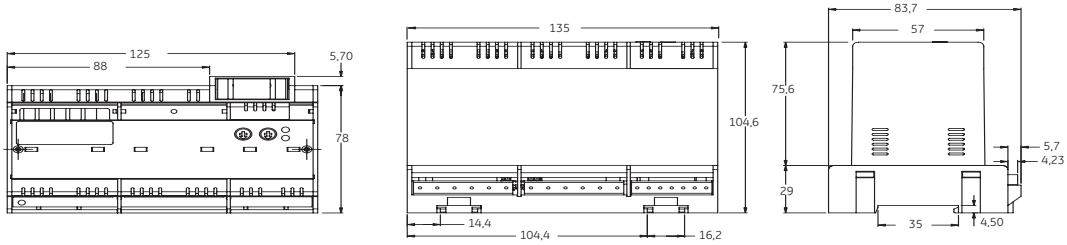


Current (x In)	Class E5 (sec)	Class E10 (sec)	Class E15 (sec)	Class E20 (sec)	Class E25 (sec)	Class E30 (sec)	Class E35 (sec)	Class E40 (sec)	Tolerance (%)
1	267.42	623.99	891.41	1158.83	1515.39	1782.81	2050.24	2406.80	10
1.2	130.59	304.72	435.31	565.91	740.03	870.63	1001.22	1175.35	10
1.4	83.87	195.69	279.56	263.43	475.25	559.12	642.98	754.81	10
1.6	59.72	139.35	199.07	258.79	338.42	398.14	457.88	537.48	10
1.8	45.12	105.27	150.39	195.51	255.67	300.78	345.90	406.06	10
2	35.46	82.75	118.21	153.67	200.96	236.42	271.88	319.17	10
2.5	21.73	50.71	72.45	94.18	123.16	144.90	166.63	195.61	10
3	14.76	34.44	49.20	63.97	83.65	98.41	113.17	132.85	10
3.5	10.70	24.98	35.68	46.39	60.66	71.36	82.07	96.34	10
4	8.13	18.97	27.09	35.22	46.06	54.19	62.32	73.15	10
4.5	6.39	14.90	21.29	27.67	36.19	42.57	48.96	57.48	10
5	5.15	12.02	17.17	22.33	29.20	34.35	39.50	46.37	10
5.5	4.25	9.91	14.15	18.40	24.06	28.30	32.55	38.21	10
6	3.56	8.31	11.86	15.42	20.17	23.73	27.29	32.04	10
6.5	3.03	7.06	10.09	13.12	17.16	20.18	23.21	27.25	10
7	2.80	6.30	8.79	11.70	15.47	17.88	20.94	24.36	10
7.2	2.60	6.05	8.42	11.09	14.66	16.92	19.83	23.07	10
8	2.20	4.90	6.80	9.14	12.09	13.78	16.22	19.04	20
9	1.75	3.80	5.66	7.21	9.61	10.98	13.00	15.05	20
10	1.66	3.50	5.30	6.39	7.87	8.98	12.19	14.01	20

New

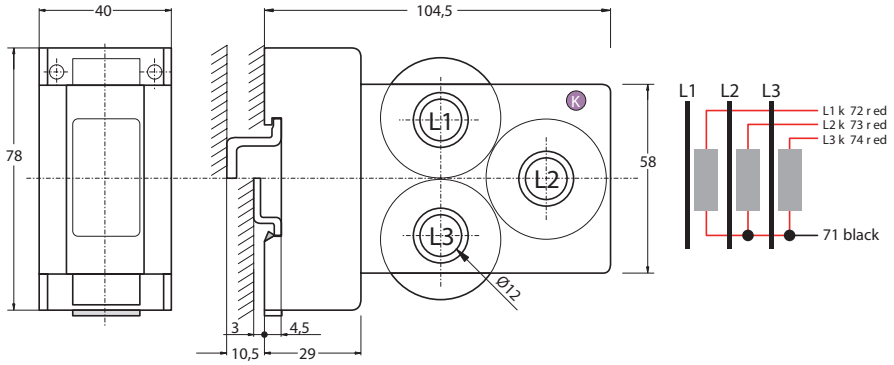
Dimensional drawings

EntelliPro ES3/ES5

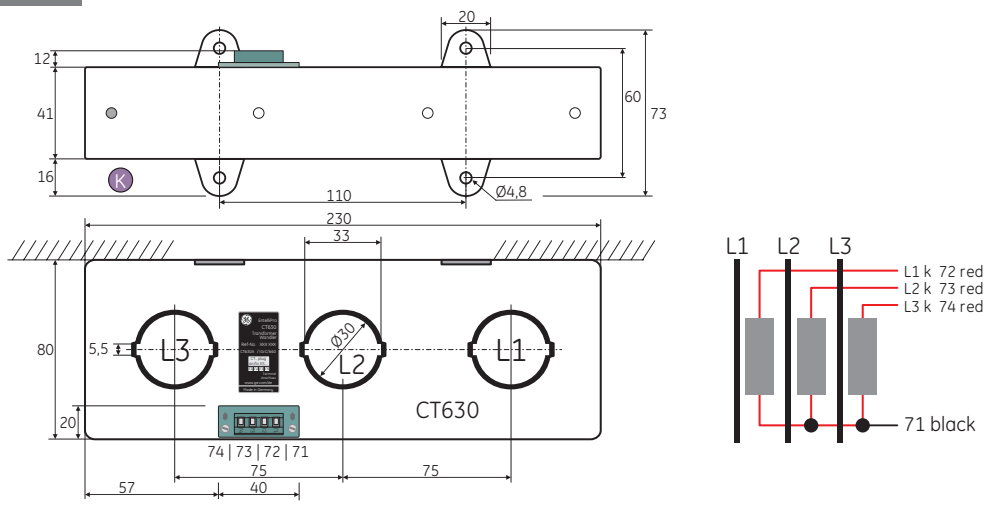


Transformers

CT 8 - CT 32 - CT 64



CT 630

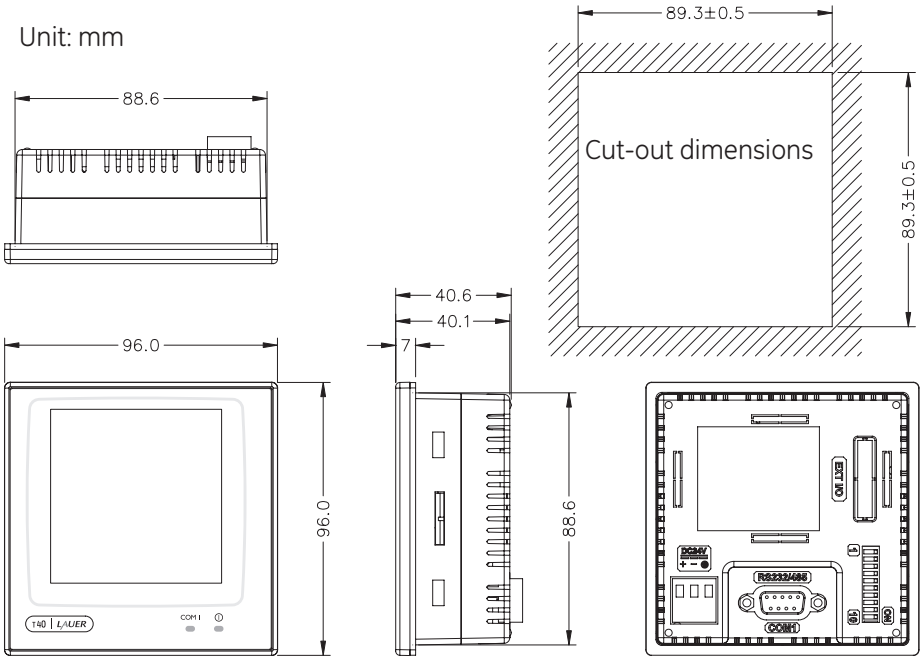


New

Control panel

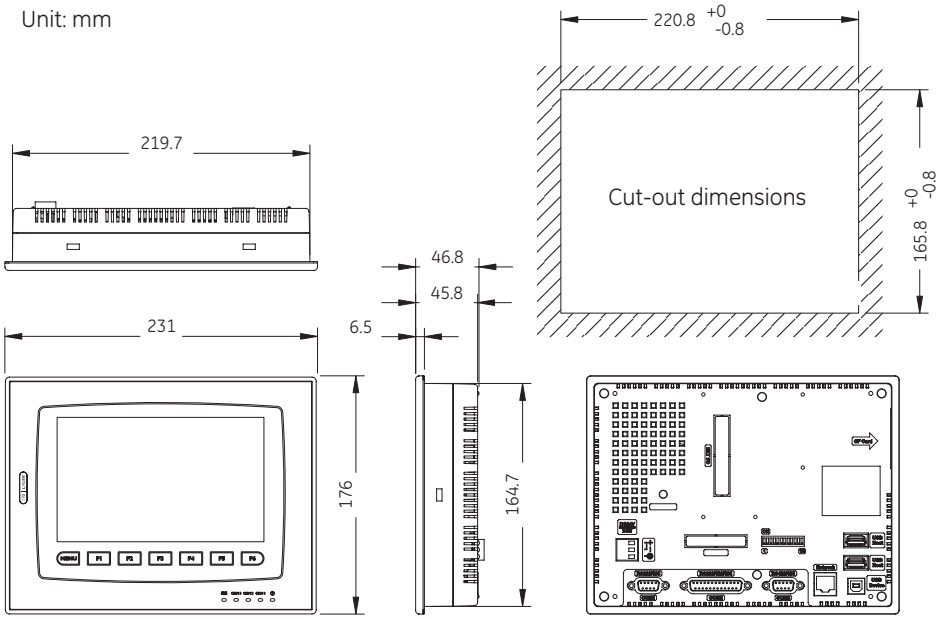
CP3

Unit: mm



CP5

Unit: mm



New

Notes

Technical data

General

		MC1...	MC2...
Rated thermal current Ith θ ≤ 60º(1)	(A)	20	20
Rated operational current Ie(2) (3 x 440V, 50/60Hz, AC-3)	(A)	9	12
Maximum number of poles		4	4
Rated insulation current Ui	(V)	750	750
Rated operational current Ue	(V)	690	690

(1) Insulated terminal type B 2.8 x 0.8 with wire 1 mm²: Ie = 8A, design DIN 46 247
(2) Max.operational current AC3, 3 -phase≤ 440V, according to IEC 947-4-1

Conformity to standards

IEC/EN 60947-1	CSA C22.2/14	SEV 10254
IEC/EN 60947-4-1	CENELEC HD 419	JIS C8325
IEC/EN 60947-5-1	VDE 0660	JEM 1038
EN 50003	NFC 63110	NEMA ICS-1
EN 50005	BS 4794	UL 508
EN 50012		

Approvals

cULus	NEMKO	SEMKO
SETI	DEMKO	RINA
IMQ		
Lloyd's Register	Bureau Veritas	CE

Ambient conditions

Storage temperature		-55ºC to +80ºC
Operation temperature		-40ºC to +55ºC
Altitude	up to 3000m	Nominal values
	from 3000 up to 4000m	90%Ie 80%Ue
	from 4000 up to 5000m	80%Ie 75%Ue

Climatic resistance

Continuous tests 40 / 125 / 56		
Cold (72h)		
	Temperature	-40ºC
Dry heat (96h)		
	Temperature	+125ºC
	Relative humidity	< 50%
Humid heat (56h)		
	Temperature	+40ºC
	Relative humidity	95%
Cyclic tests		
First half-cycle (12h)		
	Low temperature	+25ºC
	Relative humidity	93%
Second half-cycle (12h)		
	Low temperature	+55ºC
	Relative humidity	95%
Number of consecutive cycles		6

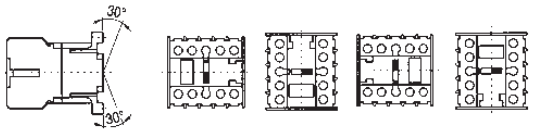
Shock resistance (IEC 68-2-27)

Continuously closed (at 0.8Us)	
Admissible acceleration	25 g
Impulse duration	11 ms
Continuously opened (no voltage)	
Admissible acceleration	20 g
Impulse duration	11 ms

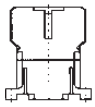
Vibration resistance (IEC 68-2-6)

Continuously closed (at 0.8Us)	
Admissible acceleration	15 g
Sweep between	10 - 200 Hz
Continuously opened (no voltage)	
Admissible acceleration	5g (AC) - 35g (DC)
Sweep between	10 - 200 Hz

Mounting positions



With the same pick-up and drop-out voltage
With the same rated power

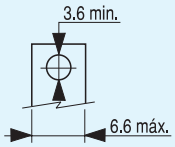


-7% of connection voltage
+4% of disconnection voltage
With the same rated power

7% of connection voltage
+4% of disconnection voltage
With the same rated power

Terminal capacity

Terminal with M3.5 screw		Tightening torque
(with pozidrive head and safety flange)		0.8 Nm - 7 Lb/in
Solid wire	mm²	0.75 to 2 x 2 w.
Flexible wire without terminal	mm²	0.75 to 2.5 x 2 w.
Flexible wire without terminal with cap	mm²	0.75 to 2.5 x 1 w.
	mm²	0.75 to 1 x 2 w.
Ring terminal		0.8 Nm - 7 Lb/in



Faston terminal 2.8 - 2 insulated terminals	mm²	1 x 2 w.
Terminal for printed circuit (Ø of PCB hole)		1.8 mm
Ring terminal cap		7.8 mm
Fork terminal cap		6.5 mm

Control circuit

		MC _ A...	MC _ C...	MC _ I...	MC _ K...	MC _ C...W
Rated insulation voltage (Ui)	(V)	750	750	750	750	750
Standard voltages (Us)						
50Hz(V)		24 ... 690	–	–	–	–
60Hz(V)		6 ... 600	–	–	–	–
DC	(V)	–	6 ... 440	24	24	12 ... 440
Operating voltages limits						
Operating [1]	xUs	0.8 ... 1.1	0.8 ... 1.1	0.8 ... 1.25	0.7 ... 1.25	0.7 ... 1.3
Drop-out	xUs	0.35 ... 0.55	0.15 ... 0.4	0.15 ... 0.3	0.15 ... 0.35	0.15 ... 0.3
Operating voltages limits with coil 50/60 Hz						
Operating	xUs	0.8 ... 1.1	–	–	–	–
Drop-out	xUs	0.35 ... 0.55	–	–	–	–
Consumption						
50 or 60Hz - monofrequency coil						
Pick-up	(VA)	26	–	–	–	–
Seal	(VA)	4	–	–	–	–
50/60Hz - bifrequency coil						
Pick-up	(VA)	32	–	–	–	–
Seal	(VA)	6	–	–	–	–
DC	(W)	–	3	1.2	2	4
Power factor						
Magnetic circuit open	(cos φ)	0.8	–	–	–	–
Magnetic circuit closed	(cos φ)	0.35	–	–	–	–
Power dissipation	(W)	1.4	3	1.2	2	4
Opening and closing times						
Values between ± %Us	%	+10 ... -20	+10 ... -20	+25 ... -30	+25 ... -30	+30 ... -30
Time on energisation NO	(ms)	6 ... 13	22 ... 36	30 ... 70	20 ... 50	17 ... 28
Time on de-energisation NC	(ms)	8 ... 16	9 ... 12	9 ... 16	9 ... 16	9 ... 12
Time on energisation NC	(ms)	5 ... 11	18 ... 27	20 ... 45	18 ... 35	12 ... 25
Time on de-energisation NO	(ms)	6 ... 13	5 ... 7	5 ... 9	5 ... 9	5 ... 7
Values at Us						
Time on excitation NO	(ms)	7 ... 12	24 ... 27	25 ... 45	25 ... 40	11 ... 23
Time on desexcitation NC	(ms)	8 ... 16	9 ... 11	9 ... 16	9 ... 16	9 ... 11
Time on excitation NC	(ms)	6 ... 10	20 ... 26	25 ... 35	20 ... 30	15 ... 21
Time on desexcitation NO	(ms)	6 ... 13	5 ... 8	5 ... 9	5 ... 8	5 ... 8
Maximum time without voltage	(ms)	3	3	3	3	3
Mechanical endurance						
Monofrequency coil	10^6 ops.	>15	–	–	–	–
Bifrequency coil	10^6 ops.	>10	–	–	–	–
DC	10^6 ops.	–	10	10	10	10
Maximum rate						
No load Monofrequency coil	ops./h	9000	–	–	–	–
Bifrequency coil	ops./h	3600	–	–	–	–
DC	ops./h	–	9000	9000	9000	9000
AC1 and AC3 (at rated power)	ops./h	1200	1200	1200	1200	1200
AC4 (at rated power)	ops./h	300	300	300	300	300

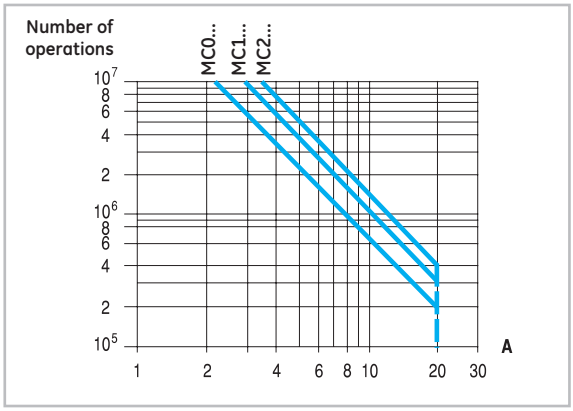
Main circuit (poles)

			MC1...	MC2...
Rated insulation voltage (Ui)		(V)	750	750
(acc. IEC 947-4)				
Rated thermal current (Ith)		(A)	20	20
θ ≤ 60° (1)				
Frequency limits		(Hz)	0...400	0...400
Making capacity (r.m.s.) Ue ≤ 690V 50/60Hz		(A)	160	160
Breaking capacity (r.m.s.) Ue ≤ 440V		(A)	106	106
Ue = 500V		(A)	90	90
Ue = 690V		(A)	80	90
Short-time current				
0.3 sec.		(A)	470	470
1 sec.		(A)	250	250
5 sec.		(A)	125	125
10 sec.		(A)	95	95
30 sec.		(A)	70	70
1 min.		(A)	50	50
3 min.		(A)	40	40
Recovery time		min.	10	10
Protec. against short-circuits (IEC 947-4). w/o TOR				
Coordination type "1"	gL/gG	(A)	32	32
Coordination type "2"	gL/gG	(A)	20	20
w/o welding contacts	gL/gG	(A)	16	16
Circuit breaker rating (curve G CEE 19.1)			20	20
Impedance per pole		(mΩ)	1.5	1.5
Power dissipation per pole				
AC1		(W)	0.6	0.6
AC3		(W)	0.128	0.228
Insulation resistance				
Between adjacent poles		(mΩ)	> 10	> 10
Between pole and earth		(mΩ)	> 10	> 10
Between input and output		(mΩ)	> 10	> 10
Guaranteed no overlap				
between NO and NC contacts				
Space		(mm)	1	1
Time		(ms)	> 2	> 2

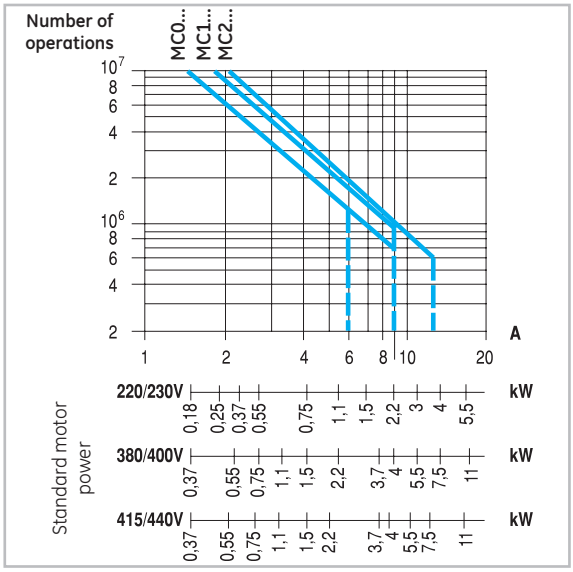
(1) Insulated terminal type B 2.8 x 0.8 with wire 1 mm² Ie = 8A acc. to DIN 46247

Electrical endurance

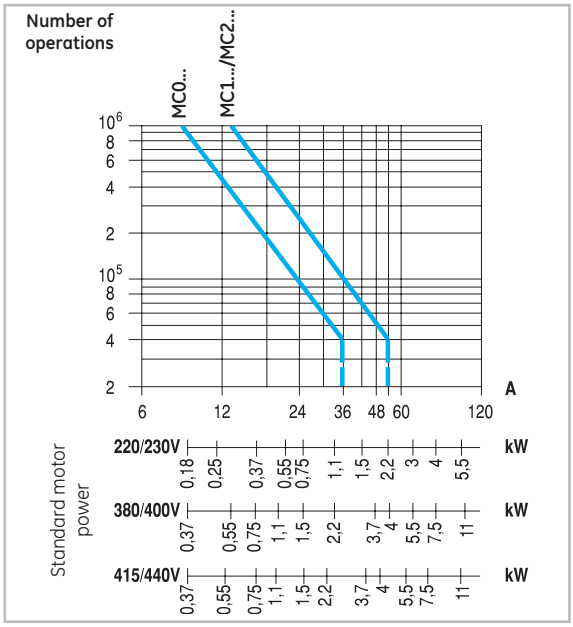
Category AC1



Category AC3



Category AC4



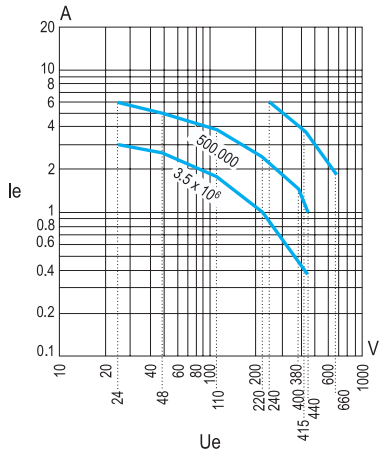
Internal auxiliary contacts

			MC1 / MC2
Rated insulation voltage (Ui) IEC 60947-5		(V)	750
Rated thermal current (Ith) θ ≤ 60°C (1)		(A)	16
Making capacity according with IEC 60947-5-1			
	Ue ≤ 690 50-60 Hz	(A)	160
	Ue ≤ 440V DC	(A)	160
Breaking capacity (r.m.s.) IEC 60947-5-1			
	AC-15		
	Ue ≤ 440V / 50-60 Hz	(A)	106
	DC-13		
	Ue ≤ 110V DC	(A)	3
	Ue = 220V DC	(A)	1.2
	Ue = 48V DC	(A)	10
Minimum operational power (operational safety.)			5mA, 17V
Short-circuit protection (max.class gl fuse) w/o welding		(A)	10
Insulation resistance			
	Between adjacent contacts	(mΩ)	> 10
	Between contacts and earth	(mΩ)	> 10
	Between input and output	(mΩ)	> 10
Guaranteed no overlap between NO and NC contacts			
	Space	(mm)	0,5
	Minimal time	(ms)	> 2
Impedance		(mΩ)	2.3
Terminal capacity			Same as main circuit

(1) Insulated terminal type B 2.8 x 0.8 with wire 1 mm² Ie = 8A acc. with DIN 46247

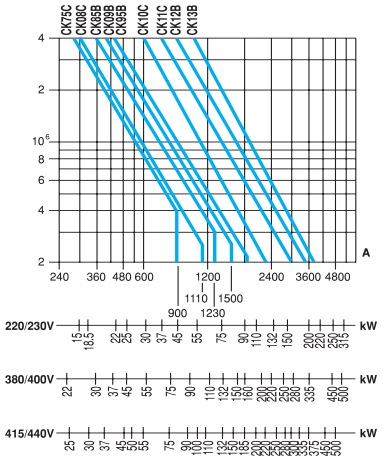
Tripping characteristics (AC)

AC Operation AC-15
Electrical endurance



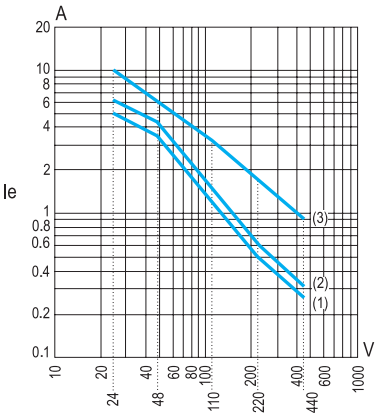
Tripping characteristics (DC)

DC Inductive circuit. DC-13 L/R ≤ 100 ms
Electrical endurance 10⁶ ops.



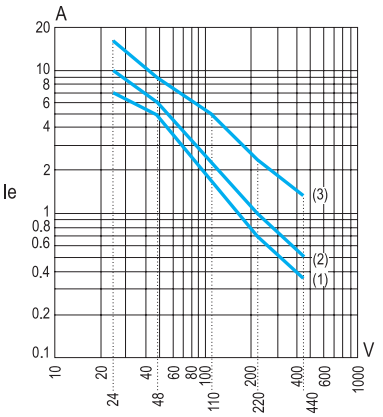
(1) 1 pole in series
(2) 2 poles in series
(3) 3 poles in series

DC Inductive circuit. DC-13 L/R ≤ 15 ms
Electrical endurance 10⁶ ops.



(1) 1 pole in series
(2) 2 poles in series
(3) 3 poles in series

DC Inductive circuit. DC-13 L/R ≤ 1 ms
Electrical endurance 10⁶ ops.



(1) 1 pole in series
(2) 2 poles in series
(3) 3 poles in series

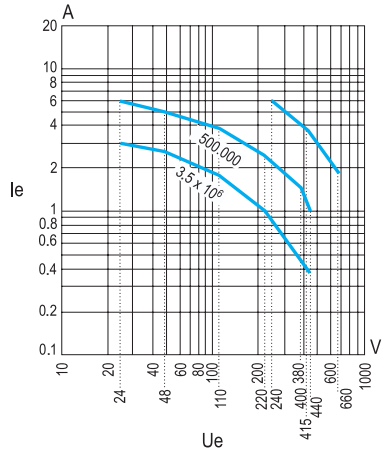
Instantaneous auxiliary contact blocks

			MACN..., MACL...
Rated insulation voltage (Ui) acc. IEC 60947-1		(V)	750
Rated thermal current (Ith) θ ≤ 60°C (1)		(A)	10
Making capacity (r.m.s.) according with IEC/EN 60947-5-1			
AC-15	Ue ≤ 220V 50/60 Hz	(A)	73
	Ue = 380V 50/60 Hz	(A)	38
	Ue = 690V 50/60 Hz	(A)	22
DC-13	Ue ≤ 100V DC	(A)	2.6
L/R=100ms	Ue = 220V DC	(A)	1
	Ue = 440V DC	(A)	0.6
Breaking capacity (r.m.s.) acc. IEC/EN 60947-5-1			
AC-15	Ue ≤ 220V 50/60 Hz	(A)	73
	Ue = 380V 50/60 Hz	(A)	38
	Ue = 690V 50/60 Hz	(A)	22
DC-13	Ue ≤ 100V DC	(A)	2
LR=100ms	Ue = 220V DC	(A)	0,8
	Ue = 440V DC	(A)	0.4
Rated voltage and rated current Ue-Ie			
AC-15	according to IEC 60947		120V - 6A 230V - 6A 400V - 4A 500V - 1A 600V - 1A
	according to UL, CSA		A600
DC-13	according to IEC 60947		24V - 4A 48V - 2A 110V - 0.7A 220V - 0.3A 440V - 0.1A
	according to UL, CSA		Q600
Minimum operational power (operational safety)			5 mA, 17V
Short-circuit protection (max. class gl fuse) w/o welding		(A)	10
Insulation resistance			
	Between adjacent contacts	(mΩ)	> 10
	Between contacts an earth	(mΩ)	> 10
	Between input and output	(mΩ)	> 10
Guaranteed no overlap between NO and NC contacts			
	Space	(mm)	0,5
	Minimal time	(ms)	> 2
Impedance		(mΩ)	2.4
Terminal capacity			Same as main circuit

(1) Insulated terminal type B 2.8 x 0.8 with wire 1 mm² Ie = 8A acc. with DIN 46247

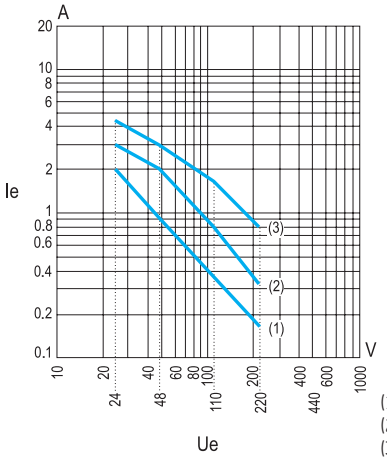
Tripping characteristics (AC)

AC Operation AC-15
Electrical endurance



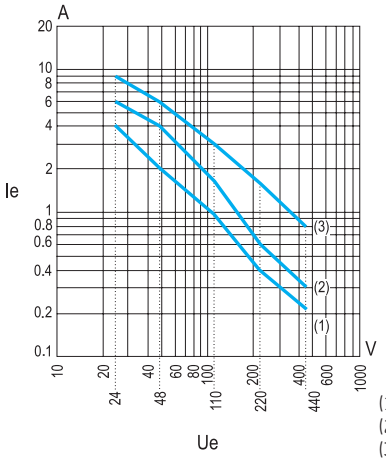
Tripping characteristics (DC)

DC Inductive circuit. DC-13 L/R ≤ 100 ms
Electrical endurance 10^6 ops.



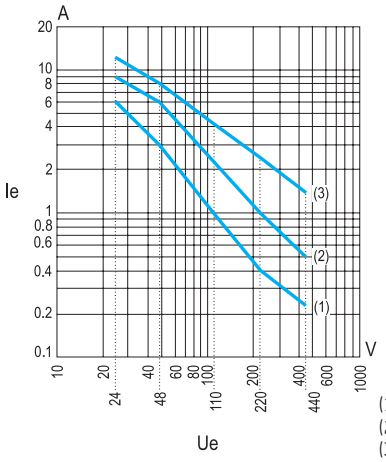
(1) 1 pole in series
(2) 2 poles in series
(3) 3 poles in series

DC Inductive circuit. DC-13 L/R ≤ 15 ms
Electrical endurance 10^6 ops.



(1) 1 pole in series
(2) 2 poles in series
(3) 3 poles in series

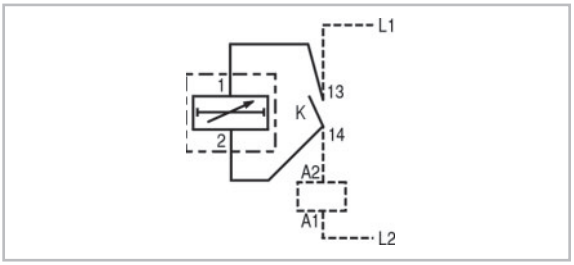
DC Inductive circuit. DC-13 L/R ≤ 1 ms
Electrical endurance 10^6 ops.



(1) 1 pole in series
(2) 2 poles in series
(3) 3 poles in series

Electronic timer block

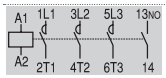
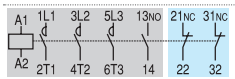
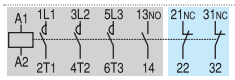
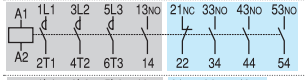
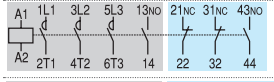
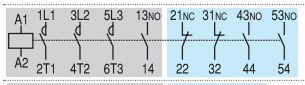
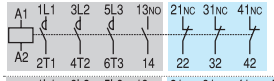
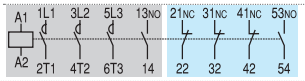
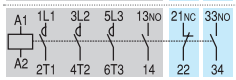
			MREBC...
Rated insulation voltage (Ui)		(V)	750
Rated thermal current (Ith) $\theta \leq 60°C$ [1]		(V)	0.55
Supply voltage (AC and DC)		(V)	24 to 250
Operating limits			0.80 to 1.1 Us (0.85 to 1.1 Us to 12V)
Voltage drop		(V)	< 3
Maximum load current at :			
	20°C	(A)	0.9
	40°C	(A)	0.72
	60°C	(A)	0.55
Minimum load for safe operation		(A)	> 10
Maximum current		(A)	10A per 40 ms
Leakage current at 220V		(mA)	< 5
Operational current			
	AC-15	(A)	0.7
	DC-13	(A)	0.9
Timing range (delay ON)		(s)	0.5 to 60 (± 6 s)
Rearrangement time		(ms)	< 100
Repeatibility (accuracy) (%)			± 1
Ambient temperature			
	storage	(°C)	–55 to + 80
	operation	(°C)	–5 to + 60
Degree of protection			IP20
Mounting positions			Any
Terminals : 2 free cables			1 mm² (AWG 17) 250 mm



Contact sequence

	Main contact (NO)	Main contact (NC)	Auxiliary contact (NO)	Auxiliary contact (NC)
Three-pole minicontactor				
MC...310...	0 2 3.5		0 2.3 3.5	
MC...301...	0 2 3.5			0 1.2 3.5
Four-pole minicontactor				
MC...400...	0 2 3.5			
MC...B00...	0 2 3.5	0 1.2 3.5		
MC...A00...		0 1.2 3.5		
Auxiliary contact block				
MAC...			0 2.1 3.5	0 1 3.5
MAR...			0 2.1 3.5	0 1 3.5

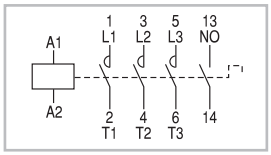
Terminal numbering in accordance with EN 50012

Final structure of the contactor	Auxiliary contactors Combination / Description	NO	NC	Possible basic contactors + Auxiliary contact blocks to be added
Without auxiliary contact blocks				
 	01E	0	1	MC_A301A...
	10E	1	0	MC_A310A...
Auxiliary contact blocks front mounted with two or four contacts				
 	11E	1	1	MC_A310A... + MACN211A
	21E	2	1	MC_A310A... + MACN211A
	12E	1	2	MC_A310A... + MACN202A
 	31E	3	1	MC_A310A... + MACN431A
	41E	4	1	MC_A310A... + MACN431A
	22E	2	2	MC_A310A... + MACN422A
	32E	3	2	MC_A310A... + MACN422A
	13E	1	3	MC_A310A... + MACN413A
	23E	2	3	MC_A310A... + MACN413A
Auxiliary contact blocks lateral mounted with one contact				
 	11E	1	1	MC_A310A... + MACL101A
 	21E	2	1	MC_A310A... + MACL101A + MACL110A
	12E	1	2	MC_A310A... + MACL101A + MACL101A

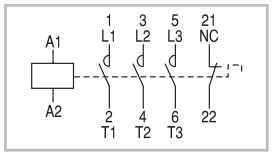
Terminal numbering

Basic three-pole contactors. *(EN 50012)*

MC _ _ 310A _

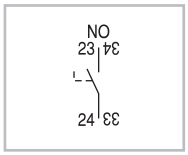


MC _ _ 301A _

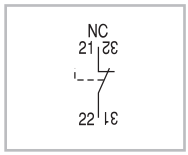


Instantaneous auxiliary contact blocks. *(EN 50012)*

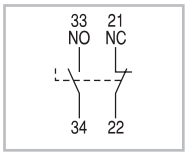
MACL110A _



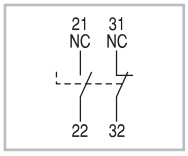
MACL101A _



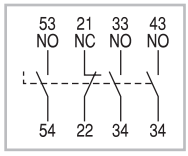
MACN211A_



MACN202A_



MACN431A_



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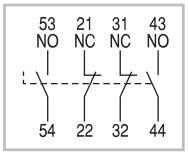

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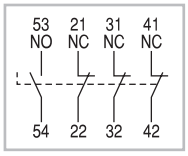
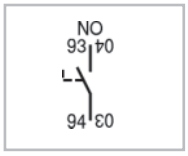
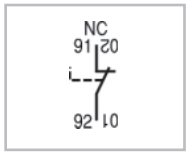


Instantaneous auxiliary contact blocks. *(EN 50005)*

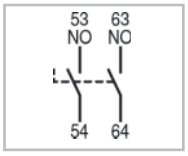
MARL110A_S



MARL101A_S



MARN220A_



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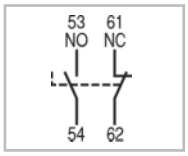
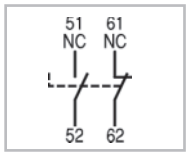
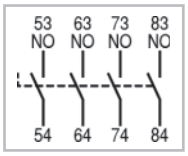


MARN202A_



MARN440A_



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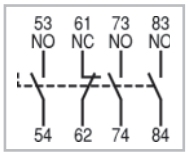

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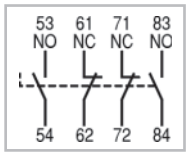

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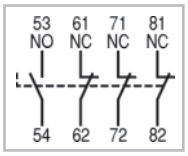
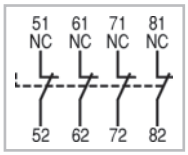
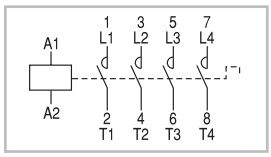


MARN404A_

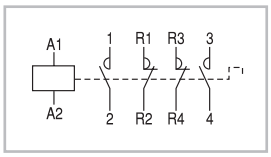


Base four-pole contactors. *(EN 50005)*

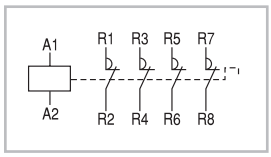
MC _ _ 400A _



MC _ _ B00A _

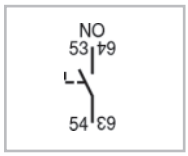


MC _ _ A00A _



Instantaneous auxiliary contact blocks. *(EN 50005)*

MARL110A_



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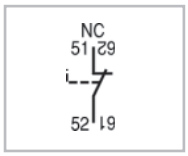
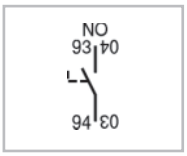


MARL110A_S



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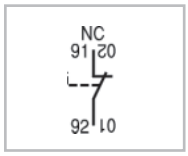

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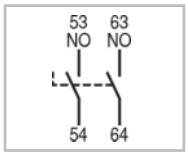

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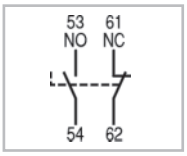

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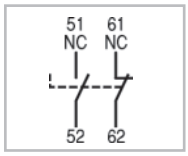

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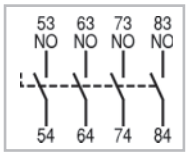

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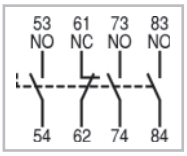

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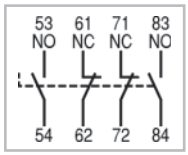

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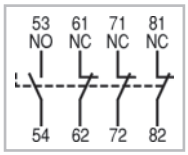

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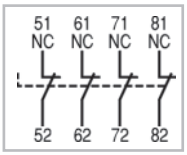
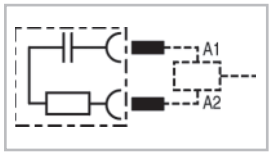
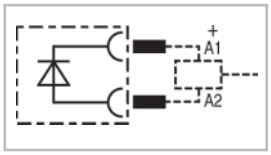


Voltage suppressor block

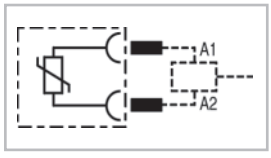
MP0AAE _



MP0CAE3



MP0CAE4



Conformity to standards

IEC/EN 60947-1	EN 50005	UNE 20109
IEC/EN 60947-4-1	CENELEC HD419	BS 5424 & 775
IEC/EN 60947-5-1	NF C63-110	NEMA ICS 1
UL 508	ASE 1025	VDE 0660/102
CSA 22.2/14		

Approvals

cULus	RINA	CE
SETI	IMQ (up to Ith:32A)	
Lloyd's Register	Bureau Veritas	

Ambient conditions

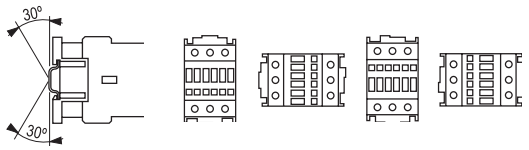
Storage temperature		-55°C to +80°C
Operation temperature		-40°C to +55°C
Altitude	up to 3000m	Nominal values
	from 3000 up to 4000m	90%Ie 80%Ue
	from 4000 up to 5000m	80%Ie 75%Ue

Climatic resistance (IEC 68-2)

Continuous tests 40 / 125 / 56	
Cold (72h)	
Temperature	-40°C
Dry heat (96h)	
Temperature	+125°C
Relative humidity	< 50%
Humid heat (56h)	
Temperature	+40°C
Relative humidity	95%

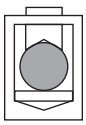
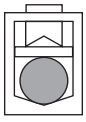
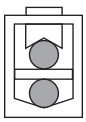
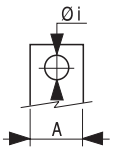
Cyclic test (6 cycles)	
Humid heat	
First half-cycle (12h))	
Low temperature	+25°C
Relative humidity	93%
Second half-cycle (12h)	
Low temperature	+55°C
Relative humidity	95%

Mounting positions



With the same pick-up and drop-out voltage
With the same rated power

Terminal capacity and tightening torque

			CL00 ... CL02	CL25	CL03 ...CL04	CL45	CL05 ... CL08	CL09 ... CL10
	Solid, stranded and finely stranded		2 x 0.5 ... 2.5	2 x 0.5 .. 2.5	–	–	–	–
	without end sleeve	(mm²)	2 x 2.5 ... 6	2 x 2.5 ... 10	–	–	–	–
	Finely stranded with or		2 x 1 ... 2,5	2 x 1 ... 2,5	–	–	–	–
	without end sleeve	(mm²)	2 x 2.5 ... 6	2 x 2.5 ... 10	–	–	–	–
	AWG wires		2 x 20 ... 12	2 x 20 ... 8	–	–	–	–
	Tightening torque	(Nm)	1.6	2.2	–	–	–	–
		(Lb x in.)	15	20	–	–	–	–
	Solid, stranded and finely stranded							
	without end sleeve	(mm²)	–	–	0.75 ... 16	0.75 ... 16	1 ... 35	1.5 ... 50
	Finely stranded with end sleeve	(mm²)	–	–	0.75 ... 16	0.75 ... 16	1 ... 35	1.5 ... 50
	Finely stranded w/o end sleeve	(mm²)	–	–	1 ... 16	1 ... 16	1 ... 35	1.5 ... 50
	AWG wires		–	–	18 ... 6	18 ... 6	16 ... 2	16 ... 2
	Tightening torque	(Nm)	–	–	1,4	1,8	4	5,6
		(Lb x in.)	–	–	12	16	35	50
	Solid	(mm²)	–	–	0.75 ... 16	0.75 ... 16	1 ... 16	4 ... 35
	Stranded	(mm²)	–	–	0.75 ... 16	0.75 ... 16	1 ... 25	4 ... 35
	Finely stranded w/o end sleeve	(mm²)	–	–	0.75 ... 16	0.75 ... 16	1 ... 25	4 ... 35
	Finely stranded with end sleeve	(mm²)	–	–	1 ... 16	1 ... 16	1 ... 25	4 ... 35
	AWG wires		–	–	18 ... 6	18 ... 6	16 ... 4	10 ... 1
	Tightening torque	(Nm)	–	–	1.4	1.8	4	5.6
		(Lb x in.)	–	–	12	16	35	50
	Solid, stranded and finely stranded		–	–	Max. 16	Max. 16	Max. 50 ... 4	Max. 50 ... 35
	without end sleeve	(mm²)	–	–			Max. 25 ... 16	
	Finely stranded w/o end sleeve	(mm²)	–	–			Max. 25 ... 16	
	Finely stranded with end sleeve	(mm²)	–	–			Max. 25 ... 25	
	AWG wires		–	–	Max. 6	Max. 6	Max. 2 ... 12	Max. 1
			–	–			Max 4 ... 4	
	Tightening torque	(Nm)	–	–	1.4	1.8	4	5.6
		(Lb x in.)	–	–	12	16	35	50
	Ring terminals	(Ø i)	3,6	4,2	4.2	4.2	6.2	6.2
	(acc. with IEC/EN 60947-1)	(A)	8	10	10	10	12.5	12.5
	Tightening torque	(Nm)	1,6	1,4	1.4	1.4	3	3
		(Lb x in.)	15	12	12	12	26	26

Power circuit

		CL00	CL01	CL02	CL25	CL03	CL04	CL45	CL05	CL06	CL07	CL08	CL09	CL10
Three pole version														
Rated thermal current Ith at θ ≤ 55°C	(A)	25	25	32	45	45	60	60	-	90	110	110	140	140
Rated operational current Ie AC-3	(A)	9	12	18	25	25	32	40	-	50	65	80	95	105
Rated operational voltage Ue	(V)	690	690	690	690	690	690	690	-	690	690	690	690	690
Four pole version (4NO and 2NO+2NC)														
Rated thermal current Ith at θ ≤ 55°C	(A)	-	25	32	-	45	60	-	90	-	110	110	140	-
Rated operational voltage Ue	(V)	-	690	690	-	690	690	-	690	-	690	690	690	-
Three and four pole version														
Rated insulation voltage Ui	(V)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Maximum continuous current AC-1	(A)	25	25	32	45	45	60	60	90	90	110	110	140	140
Frequency limits	(Hz)	25..400	25..400	25..400	25..400	25..400	25..400	25..400	25..400	25..400	25..400	25..400	25..400	25..400
Making capacity (RMS) (IEC 947)	(A)	450	450	450	450	550	550	550	1000	1000	1000	1000	1280	1280
Breaking capacity (RMS) (IEC 947)														
Ue ≤ 400V	(A)	250	250	250	350	450	450	450	920	920	920	920	1050	1050
Ue = 500V	(A)	250	250	250	320	450	450	450	920	920	920	920	1050	1050
Ue = 690V	(A)	130	130	130	170	205	205	205	780	780	780	780	950	950
Short-time current														
1 sec.	(A)	455	455	570	630	1010	1010	1265	1580	1580	2530	2530	3300	3300
5 sec.	(A)	205	205	254	280	450	450	450	565	710	1130	1130	1485	1485
10 sec.	(A)	144	144	180	200	320	320	400	500	500	800	800	1050	1050
30 sec.	(A)	85	85	104	115	185	185	230	290	290	460	460	600	600
1 min.	(A)	60	60	74	80	130	130	165	205	205	325	325	430	430
3 min.	(A)	35	35	46	50	90	90	100	120	120	185	185	250	250
Recovery time	(min.)	10	10	10	10	10	10	10	10	10	10	10	10	10
Protec. against short-circuit with fuses without TOR														
Coordination type "1"														
gL/gG	(A)	50	50	63	63	100	100	125	200	200	200	200	250	250
Coordination type "2"														
gL-gG	(A)	25	35	35	50	63	63	80	100	100	125	125	160	200
Without welding														
gL-gG	(A)	10	10	25	35	35	35	50	80	80	100	100	140	160
Impedance per pole	(mΩ)	2.35	2.35	2.41	1.65	1.28	1.28	0.95	0.85	0.85	0.86	0.86	0.76	0.76
Power dissipation per pole														
AC-1	(W)	1.47	1.47	2.46	3.34	2.59	4.6	3.42	6.89	6.86	10.40	10.40	14.89	14.89
AC-3	(W)	0.19	0.34	0.78	1.03	0.80	1.31	1.52	1.36	2.12	3.63	5.5	6.86	8.37
Insulation resistance														
Between adjacent poles	(mΩ)	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10
Between poles and earth	(mΩ)	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10
Between input and output	(mΩ)	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10

Control circuit

Alternating current

		CL00 ... CL25	CL03 ... CL45	CL05 ... CL08	CL09 ... CL10
Rated insulation voltage Ui	(V)	1000	1000	1000	1000
Standard voltages Us 50 Hz	(V)	24...690	24...690	24...690	24...690
Standard voltages Us 60 Hz	(V)	24...600	24...600	24...600	24...600
Voltage operating limits monofrequency coils					
Operating	xUs	0.8...1.1	0.8...1.1	0.8...1.1	0.8...1.1
Pick-up	xUs	0.6...0.8	0.65...0.8	0.65...0.8	0.65...0.8
Seal	xUs	0.35...0.55	0.4...0.6	0.4...0.6	0.4...0.6
Voltage operating limits 50/60 Hz coils					
Operating 50 Hz	xUs	0,8...1,1	0.8...1.1	0.8...1.1	0.8...1.1
Operating 60 Hz	xUs	0,85...1,1	0.85...1.1	0.85...1.1	0.85...1.1
Pick-up 50 Hz	xUs	0,5...0,8	0.6...0.8	0.6...0.8	0.6...0.8
Pick-up 60 Hz	xUs	0,65...0,85	0.7...0.85	0.7...0.85	0.7...0.85
Seal 50 Hz	xUs	0,3...0,55	0.35...0.60	0.35...0.60	0.35...0.60
Seal 60 Hz	xUs	0,35...0,65	0.4...0.6	0.4...0.6	0.4...0.6
Consumption monofrequency coils					
Magnetic circuit closed	(VA)	6	9	15.5	15.5
Magnetic circuit opened (VA)		48	88	190	190
Consumption bifrequency coils					
Magnetic circuit closed (50 Hz/60 Hz)	(VA)	6.8 / 5.6	11.4 / 9.5	20 / 16.6	20 / 16,6
Magnetic circuit opened (50 Hz/60 Hz)	(VA)	53 / 44	120 / 100	245 / 204	245 / 204
Thermal power dissipation (50 Hz/60 Hz)	(W)	2.2 / 1.8	3.2 / 2.6	5.2 / 4.3	5.2 / 4.3
Power factor					
Magnetic circuit closed	cos φ	0.33	0.28	0.26	0.26
Magnetic circuit opened	cos φ	0.84	0.73	0.54	0.54
Opening and closing times					
Values between + 10 % Us and – 20 % Us					
Time on energisation (NO)	(ms)	6...20	7...25	9...35	9...35
Time on de-energisation (NO)	(ms)	6...13	5...25	9...15	9...15
Values at Us					
Time on energisation (NO)	(ms)	8...20	10...19	15...30	15...30
Time on de-energisation (NO)	(ms)	6...13	5...25	9...15	9...15
Mechanical endurance					
Monofrequency coils	10^6 ops.	15	15	15	15
Bifrequency coils (at 50 Hz)	10^6 ops.	10	10	8	8
Maximum rate					
Monofrequency coils. No load	ops./h	9000	9000	9000	5000
AC-1 at rated power	ops./h	1200	1200	1200	1200
AC-2 at rated power	ops./h	1000	1000	1000	750
AC-3 at rated power	ops./h	1200	1200	1200	600
AC-4 at rated power	ops./h	360	360	200	200
Bifrequency coils. No load	ops./h	3600	3600	3600	3600

Direct current

				Coils with electronic module			Coils with wide voltage range		
		CL00D ... CL25D	CL03D ... CL45D	CL05E ... CL08E	CL09E ... CL10E		CL00D..W ... CL25D..W	CL03D..W ... CL45D..W	CL05D..W ... CL10D..W
Rated insulation voltage Ui	(V)	1000	1000	1000	1000		1000	1000	1000
Standard voltages Us	(V)	12...440	12...440	24...440	24...440		12...440	12...440	12...440
Operating limits									
Operating	xUs	0.8...1.1	0.8...1.1	0.8...1.1	0.8...1.1		0.7...1.3	0.7...1.3	0.7...1.3
Pick-up	xUs	0.45...0.65	0.45...0.65	0.70...0.80	0.70...0.80		0.45...0.55	0.45...0.55	0.45...0.55
Drop-out	xUs	0.15...0.3	0.15...0.3	0.4...0.6	0.4...0.6		0.15...0.3	0.15...0.3	0.15...0.3
Consumption									
Magnetic circuit closed	(W)	5.5	8	10	10		6.5	10.4	20
Magnetic circuit opened (W)		5.5	8	170	170		6.5	10.4	20
Opening and closing times									
Values between + 10 % Us and – 20 % Us									
Time on energisation (NO)	(ms)	35...65	35...70	60...80	60...80		26...55	30...65	64...133
Time on de-energisation (NO)	(ms)	6...15	40...65	40...50	40...50		6...15	5...10	20...23
Values at Us									
Time on energisation (NO)	(ms)	35...45	40...55	50...60	50...60		35...45	40...55	75...95
Time on de-energisation (NO)	(ms)	7...12	30...65	55...60	55...60		7...12	6...8	20...22
Mechanical endurance	10^6 ops.	15	15	12	12		15	15	12
Maximum rate									
No load	ops./h	3600	3600	2500	2500		3600	3600	3600
AC1 and AC3 at rated power	ops./h	1200	1200	1200	600		1200	1200	1200
AC4 at rated power	ops./h	360	360	200	200		360	360	200

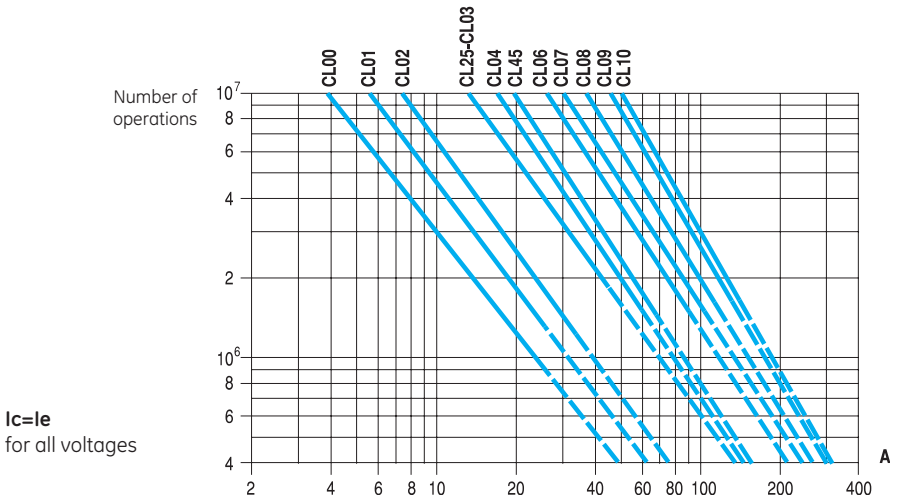
Electrical endurance

Mixed category AC4 / AC3

Electrical endurance for mixed category (AC-3/AC-4) is calculated with the following formula:

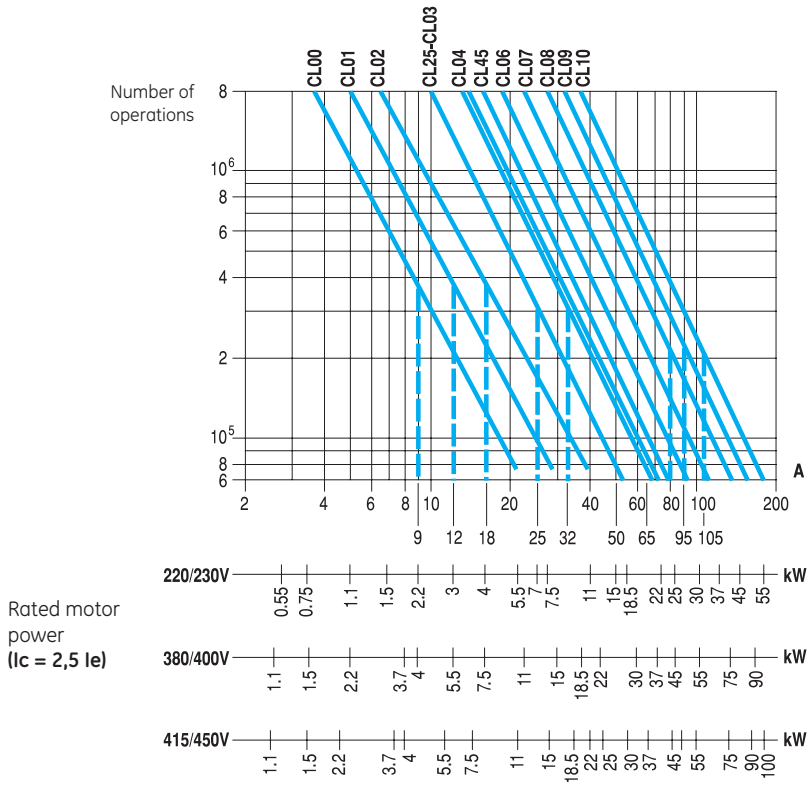
$$\text{Electrical endurance (AC-3/AC-4)} = \frac{\text{Electrical endurance (AC-3)}}{1 + \frac{\text{\% oper AC-4}}{100} \times \left(\frac{\text{Elec.endur. (AC-3)}}{\text{Elec.endur.(AC-4)}} - 1 \right)}$$

Category AC1



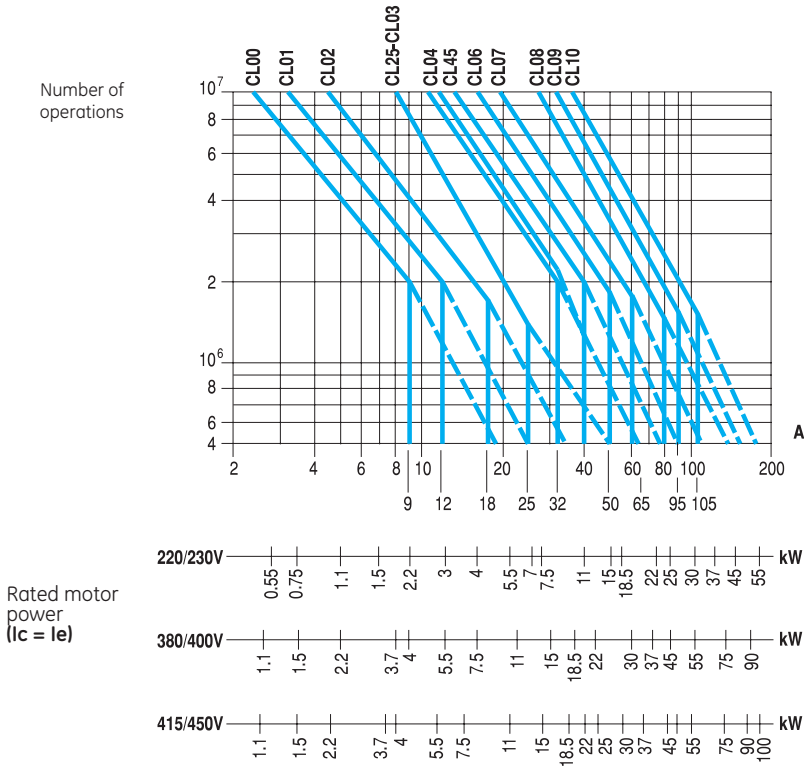
Ic=Ie
for all voltages

Category AC2

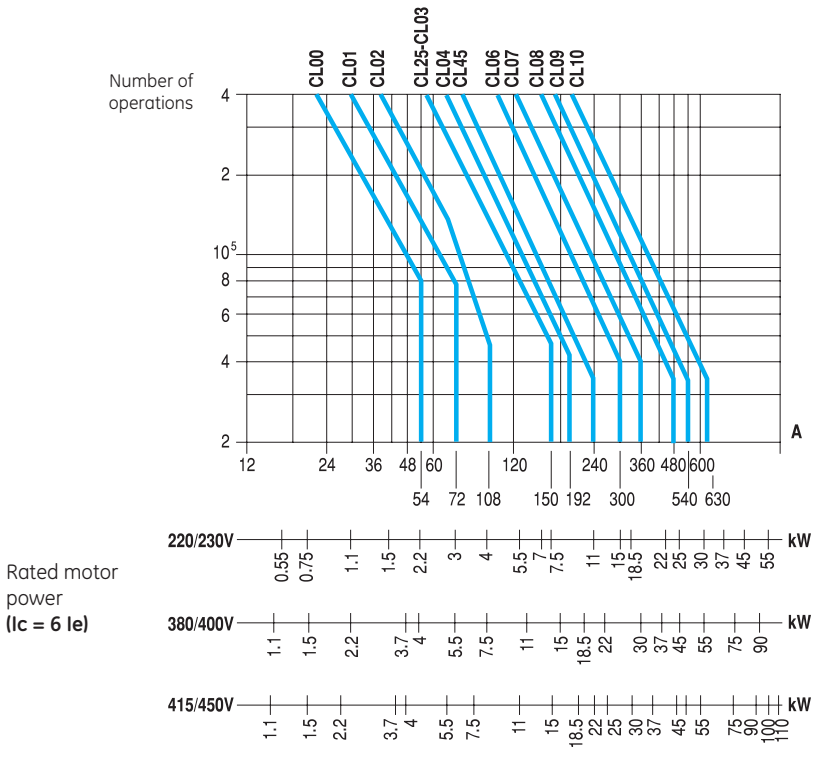


Rated motor power
(Ic = 2,5 Ie)

Category AC3



Category AC4



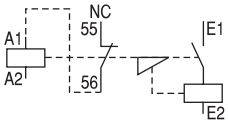
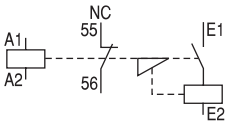
Internal auxiliary contacts

				CL00 ... CL02		CL03 ... CL04	
Rated insulation voltage Ui according to IEC 60947			(V)	1000		1000	
Rated thermal current Ith a θ ≤ 55°C			(A)	20		20	
Making capacity (r.m.s.) acc. to IEC 60947							
AC-15	Ue ≤ 400V, 50/60 Hz		(A)	250		250	
DC-13	Ue ≤ 220V DC		(A)	250		250	
Breaking capacity (r.m.s.) acc.to IEC 60947							
AC-15	Ue ≤ 400V, 50/60 Hz		(A)	250		250	
DC-13	Ue ≤ 220V DC		(A)	2		2	
AC-15	Rated voltage and current Ue-Ie	according to IEC		110/120V-10A 400/380V-6A 500V-4A	220/230V-10A 415/450V-5A 690/660V-2A	110/120V-10A 400/380V-6A 500V-4A	230/220V-10A 415/450V-5A 690/660V-2A
		according to UL, CSA		A600		A600	
DC-13	Rated voltage and current Ue-Ie	according to IEC		24V-6A 110V-2A 440V-0.35A	48V-4A 220V-0.7A	24V-6A 110V-2A 440V-0.35A	48V-4A 220V-0.7A
		according to CSA		P600		P600	
Electrical endurance			ops.	10^6		10^6	
Minimum operational power (operational safety)				17V - 5mA		17V - 5mA	
Short-circuit protect.	Max.fuse class gl-gG without welding		(A)	10		10	
Insulation resistance	Between contacts		(mΩ)	> 10		> 10	
	Between contacts and earth		(mΩ)	> 10		> 10	
	Between input and output		(mΩ)	> 10		> 10	
Guaranteed no overlap between NO and NC contacts							
	Space		(mm)	1.3		2.6	
	Time		(ms)	1.5		1.5	
Impedance of the contacts			(mΩ)	1.28		1.28	

Auxiliary contact blocks

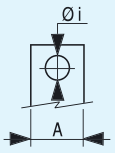
				Instantaneous BCLF..., BCRF..., BCLL..., BRLL...		Timed blocks BTLF..., BTRF...	
Rated insulation voltage Ui according to IEC 60947			(V)	1000		1000	
Rated thermal current Ith at θ ≤ 55°C			(A)	10		10	
Making capacity (Ieff) according to IEC 60947							
AC-15	Ue ≤ 400V, 50/60 Hz		(A)	90		90	
DC-13	Ue ≤ 220V DC		(A)	90		90	
Breaking capacity (Ieff) according to IEC 60947							
AC-15	Ue ≤ 400V, 50/60 Hz		(A)	60		60	
DC-13	Ue ≤ 220V, DC		(A)	0.95		0.95	
AC-15	Rated voltage and current Ue-Ie	according to IEC		120/110V-6A 400/380V-4A 500V-2.5A	230/220V-6A 440/415V-3.5A 690/660V-1.5A	120/110V-6A 400/380V-4A 500V-2.5A	230/220V-6A 440/415V-3.5A 690/660V-1.5A
		according to UL, CSA		A600		A600	
DC-13	Rated voltage and current Ue-Ie	according to IEC		24V-4A 110V-0.7A 440V-0.15A	48V-2A 220V-0.3A	24V-4A 110V-0.7A 440V-0.15A	48V-2A 220V-0.3A
		according to UL, CSA		Q600		Q600	
Electrical endurance			10^6 ops.	1		1	
Mechanical endurance			10^6 ops.	10		5	
Minimum operational current (operational safety)				17V - 5mA		17V - 5mA	
Short-circuit protect.	Max.fuse class gl-gG without welding		(A)	10		10	
Insulation resistance	Between contacts		(mΩ)	> 10		> 10	
	Between contacts and earth		(mΩ)	> 10		> 10	
	Between input and output		(mΩ)	> 10		> 10	
Guaranted no overlap between NO and NC contacts							
	Space		(mm)	1.3		1.3	
	Time		(ms)	1.5		5	
Impedance of the contacts			(mΩ)	1.28		1.28	
Timing (ambient temperature between – 25°C and + 55°C)							
	Accuracy			–		± 5%	
	Loss of accuracy 0.5 x 10^6 ops.			–		+ 20%	
	Loss of accuracy per rise °C (0 - 55°C)			–		+ 0.75% per °C	

Mechanical latch blocks

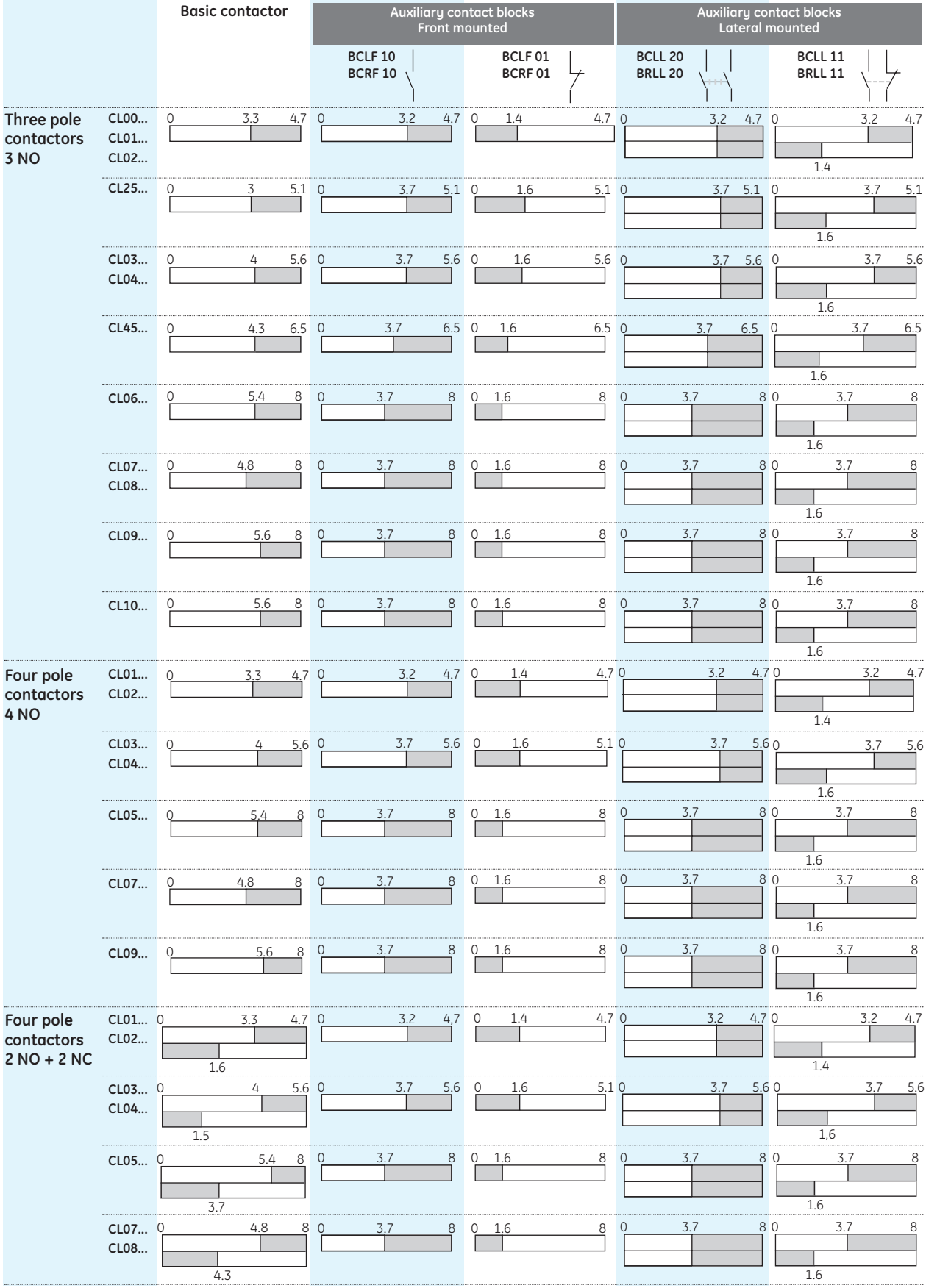
		RMLF...	
Rated insulation voltage Ui		1000 V	
Standard voltages Us : 50 to 60 Hz and DC		24...690 V	
Operating limits		0.75...1.1 xUs	
Consumption for unlatching (auto cut-out)			
24 to 72 V		210 W / VA	
110 to 440 V		130 W / VA	
Electrical unlatching control [1]			
Minimum impulse		10 ms	
Maintained		auto cut-out by integral contact	
Manual unlatching control		by local push-button	
Electrical making control			
Minimum pulse		40 ms auto cut-out by integral contact	
Manual making control		by local push-button	
Auxiliary contact NC			
Utilisation AC-15	according to IEC	120V - 6A 230V/220V - 4A 400V/380V - 2.5A	500V - 1.5A 690V/660V - 1A
	according to UL/CSA	A600	
Utilisation DC-13	according to IEC	24V - 3A 48V - 1.5A 110V - 0.6A	220V - 0.3A 400V - 0.15A
	according to UL/CSA	Q600	
Mechanical endurance			
CL00...CL45		3 million (1200 ops./h)	
CL05...CL10		0.1 million (300 ops./h)	
Wiring diagram Alternating current			
Alternating current / Direct current			

(1) The contactor coil and the unlatch control must not be energised simultaneously

Terminal capacity

			Terminal: screw BCLF, BCLL, BTLF y RMLF	Terminal: ring terminal BCRF, BTRF
Solid			2 x 0.5 to 2.5 or 1 x 4	
Stranded and finely stranded without end sleeve			2 x 0.5 to 2.5 or 1 x 4	
Finely stranded with end sleeve			2 x 0.5 to 2.5 or 1 x 4	
AWG wires, solid and stranded			12 - 22 AWG 75ºC	
Tightening torque			1.1 Nm / 10 Lb x in.	
	Ring terminal	Ø i		3.6 min.
		A		6.5 max.
	Tightening torque			0.8 Nm / 7 Lb x in.

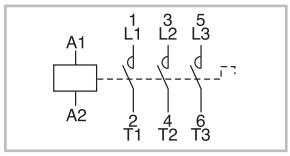
Contact sequence



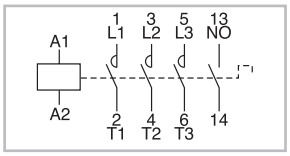
Terminal numbering

Three-pole and four-pole AC contactors

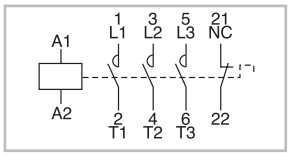
CL00A310__ ... CL10A300__
CL25D300__ ... CL45D300__
CL06E300__ ... CL10E300__



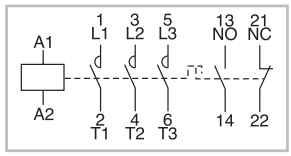
CL00_310__ ... CL02_310__
CL03_310__ ... CL04_310__



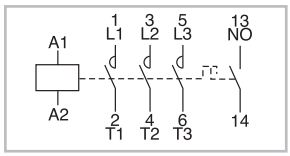
CL00_301__ ... CL02_301__
CL03_301__ ... CL04_301__



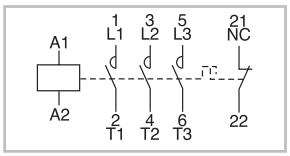
CL45A311__ ... CL10A311__



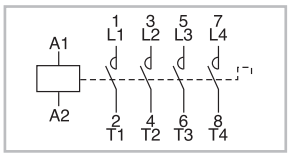
CL25_310__



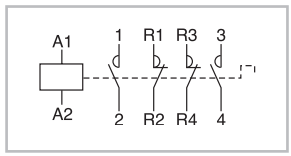
CL25_301__



CL00A400__ ... CL08A400__
CL01D400__ ... CL04D400__
CL05E400__ ... CL09E400__



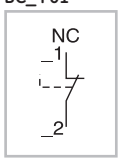
CL01AB00__ ... CL08AB00__
CL01DB00__ ... CL04DB00__
CL05EB00__ ... CL08EB00__



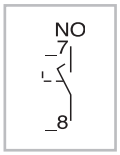
Auxiliary contact blocks. Front mounting

BC_ F10

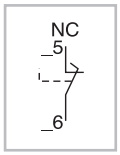
BC_ F01



BCLF10G

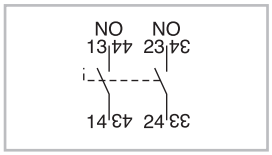


BCLF01G

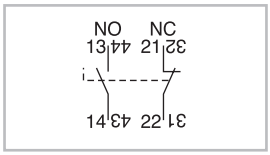


Auxiliary contact blocks. Lateral mounting

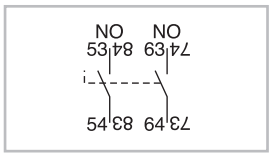
BCLL20



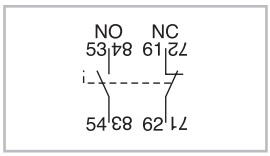
BCLL11



BRLL20

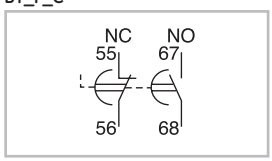


BRLL11

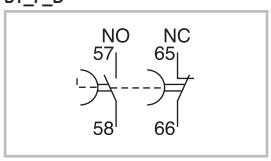


Pneumatic timer blocks

BT_F_C

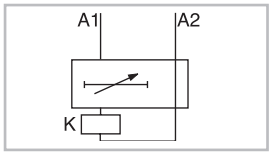


BT_F_D

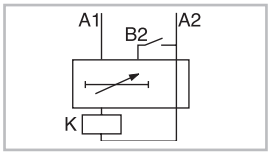


Electronic timer blocks

BETL__C

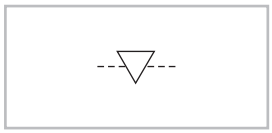


BETL__D

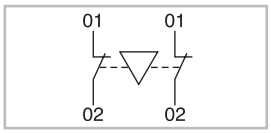


Mechanical and mechanical/electrical interlock

BELA

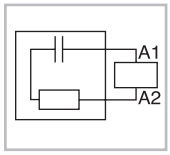


BELA02

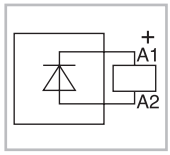


Voltage suppressor blocks

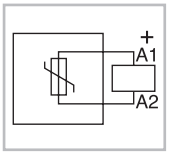
BSLR2, BSLR3



BSLDZ

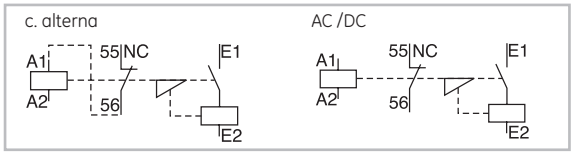


BSLV3

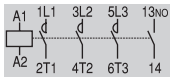
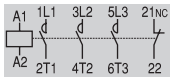
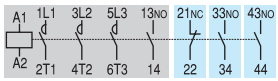
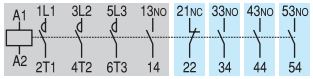
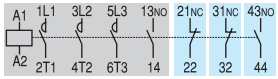
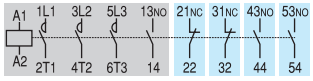
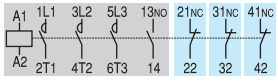
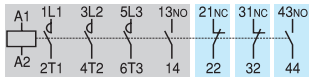
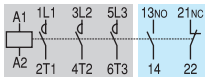
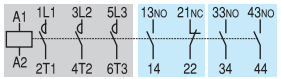
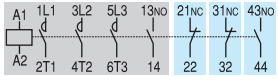


Mechanical latch block

RMLF

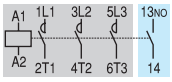
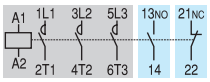
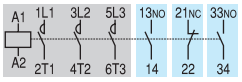
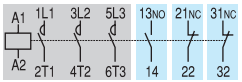
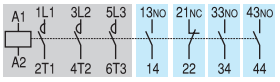
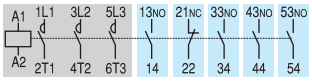
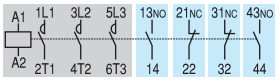
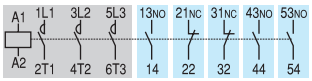
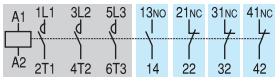
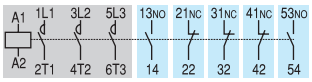
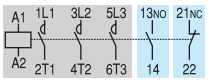
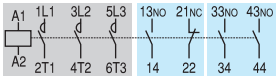
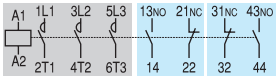


Terminal numbering according to EN 50012

	Auxiliary contacts Combination / Description	NO	NC	Possible basic contactors + Auxiliary contacts blocks to be added
Without auxiliary contact blocks				
	10E	1	0	 CL00_310_... - CL04_310_...
	01E	0	1	 CL00_301_... - CL04_301_...
Front mounting auxiliary contact blocks with one contact each				
	11E	1	1	 CL00_310_... - CL04_310_... + BC_F01
	21E	2	1	 CL00_310_... - CL04_310_... + BC_F01 + BC_F10
	12E	1	2	 CL00_310_... - CL04_310_... + BC_F01 + BC_F01
	31E	3	1	 CL00_310_... - CL04_310_... + BC_F01 + BC_F10 + BC_F10
	41E	4	1	 CL00_310_... - CL04_310_... + BC_F01 + BC_F10 + BC_F10 + BC_F10
	22E	2	2	 CL00_310_... - CL04_310_... + BC_F01 + BC_F01 + BC_F10
	32E	3	2	 CL00_310_... - CL04_310_... + BC_F01 + BC_F01 + BC_F10 + BC_F10
	13E	1	3	 CL00_310_... - CL04_310_... + BC_F01 + BC_F01 + BC_F01
	23E	2	3	 CL00_310_... - CL04_310_... + BC_F01 + BC_F01 + BC_F01 + BC_F10
Lateral mounting auxiliary contact blocks with two contacts each				
	11E	1	1	 CL25_300_... - CL45_300_... + BCLL11
	31E	3	1	 CL25_300_... - CL45_300_... + BCLL11 + BCLL20
	22E	2	2	 CL00_310_... - CL45_310_... + BCLL11 + BCLL11

The maximum number of auxiliary contacts is 4 for CL00 to CL25, 6 for CL03 -CL04 and 8 for CL45, CL06 to CL10.When using the pneumatic BTLF-block, these-numbers are reduced to two, resp .four.(2 for CL00 to CL25, 4 for CL03 and CL04, etc.)

Terminal numbering according to EN 50012 (continued)

	Auxiliary contacts Combination / Description	NO	NC	Possible basic contactors + Auxiliary contacts blocks to be added	
Without auxiliary contact blocks					
				 CL25_300_... - CL45_300_...	 CL06_300_... - CL10_300_...
Front mounting auxiliary contact blocks with one contact each					
	10E	1	0	 CL25_300_... - CL45_300_... + BC_F10	 CL06_300_... - CL10_300_... + BC_F10
	01E	0	1	 CL25_300_... - CL45_300_... + BC_F01	 CL06_300_... - CL10_300_... + BC_F01
	11E	1	1	 CL25_300_... - CL45_300_... + BC_F10 + BC_F01	 CL06_300_... - CL10_300_... + BC_F10 + BC_F01
	21E	2	1	 CL25_300_... - CL45_300_... + BC_F10 + BC_F01 + BC_F10	 CL06_300_... - CL10_300_... + BC_F10 + BC_F01 + BC_F10
	12E	1	2	 CL25_300_... - CL45_300_... + BC_F10 + BC_F01 + BC_F01	 CL06_300_... - CL10_300_... + BC_F10 + BC_F01 + BC_F01
	31E	3	1	 CL25_300_... - CL45_300_... + BC_F10 + BC_F01 + BC_F10 + BC_F10	 CL06_300_... - CL10_300_... + BC_F10 + BC_F01 + BC_F10 + BC_F10
	41E	4	1		 CL06_300_... - CL10_300_... + BC_F10 + BC_F01 + BC_F10 + BC_F10 + BC_F10
	22E	2	2	 CL25_300_... - CL45_300_... + BC_F10 + BC_F01 + BC_F01 + BC_F10	 CL06_300_... - CL10_300_... + BC_F10 + BC_F01 + BC_F01 + BC_F10
	32E	3	2		 CL06_300_... - CL10_300_... + BC_F10 + BC_F01 + BC_F01 + BC_F10 + BC_F10
	13E	1	3	 CL25_300_... - CL45_300_... + BC_F10 + BC_F01 + BC_F01 + BC_F01	 CL06_300_... - CL10_300_... + BC_F10 + BC_F01 + BC_F01 + BC_F01
	23E	2	3		 CL06_300_... - CL10_300_... + BC_F10 + BC_F01 + BC_F01 + BC_F01 + BC_F10
Lateral mounting auxiliary contact blocks with two contacts each					
	11E	1	1	 CL25_300_... - CL45_300_... + BCLL11	 CL06_300_... - CL10_300_... + BCLL11
	31E	3	1	 CL25_300_... - CL45_300_... + BCLL11 + BCLL20	 CL06_300_... - CL10_300_... + BCLL11 + BCLL20
	22E	2	2	 CL25_300_... - CL45_300_... + BCLL11 + BCLL11	 CL06_300_... - CL10_300_... + BCLL11 + BCLL11

Conformity to standards

IEC/EN 60947-1	NF C 63-110	BS 5424 & 775
IEC/EN 60947-4-1	ASE 1025	NEMA ICS 1
CENELEC HD 419	CSA 22.2/14	VDE 0660/102
UL 508	UNE 20109	
EN 50005		

Approvals

cULus	RINA	CE
NOM	FI	
Lloyd's Register	Bureau Veritas	

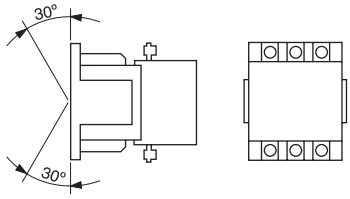
Ambient conditions

Storage temperature		-55°C to +80°C
Operation temperature	-40°C to +60°C	
Altitude	up to 3000m	Nominal values
	from 3000 up to 4000m	90%Ie 80%Ue
	from 4000 up to 5000m	80%Ie 75%Ue

Climatic resistance (IEC 68-2)

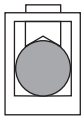
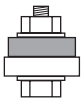
Continuous tests 40 / 125 / 56		
Cold (72h)		
	Temperature	-40°C
Dry heat (96h)		
	Temperature	+125°C
	Relative humidity	< 50%
Humid heat (56 days)		
	Temperature	+40°C
	Relative humidity	95%
Cyclical test		
First half-cycle (12h)		
	Low temperature	+25°C
	Relative humidity	93%
Second half-cycle (12h)		
	Low temperature	+55°C
	Relative humidity	95%
Number of consecutive cycles		6

Mounting positions



With the same pick-up and drop-out voltage
With the same rated power

Terminal capacity and tightening torque

			CK07B	CK75C CK08C	CK08B CK95B	CK10C	CK11C	CK12B	CK13B
	Solid	(mm²)	1.5...95						
	Finely stranded w/end sleeve	(mm²)	2...35						
	Finely stranded w/o end sleeve	(mm²)	2...50						
	Stranded	(mm²)	1.5...95						
	AWG wires	(mm²)	16...00						
	Tightening torque	(Nm)	8						
		(Lb x in)	70						
	Finely stranded w/end sleeve	(mm²)		1 x 120 2 x 95	1 x 240 2 x 150	2 x 185	2 x 240	–	–
	AWG wires with end sleeve	(mm²)		1 x 300 2 x 107	1 x 500 2 x 300	2 x 350	2 x 500	–	–
	Busbars			2 (25 x 5)	2 (25 x 5)	2 (35 x 10)	2 (35 x 10)	2 (35 x 10)	2 (60 x 10)
	Tightening torque	(Nm)		8	23	31.5	31.5	31.5	31.5
		(Lb x in)		70	200	275	275	275	275

Power circuit

Three pole contactors

		CK75C	CK08C	CK85B	CK09B	CK95B	CK10C	CK11C	CK12B	CK13B
Rated thermal current Ith at θ ≤ 40°C	(A)	250	250	315	315	450	600	700	1000	1250
Rated operational current Ie AC-3	(A)	150	185	205	250	309	420	550	700	825
Rated operational voltage Ue	(V)	1000	1000	1000	1000	1000	1000	1000	1000	1000
Rated insulation voltage Ui	(V)	1000	1000	1000	1000	1000	1000	1000	1000	1000
Maximum continuous current AC-1	(A)	250	250	315	315	450	600	700	1000	1250
Frequency limits	(Hz)	25...400	25...400	25...400	25...400	25...400	25...400	25...400	25...400	25...400
Making capacity (RMS) (IEC 947)	(A)	1850	2200	2500	2500	3700	6500	6500	8400	8250
Breaking capacity (RMS) (IEC 947)										
Ue ≤ 400V	(A)	1600	1850	2000	3500	3500	5600	5600	7300	6600
Ue = 500V	(A)	1600	1850	2000	3500	3500	5600	5600	7000	6600
Ue = 690V	(A)	1000	1200	1660	2200	2200	5000	5000	6700	6000
Ue = 1000V	(A)	350	350	850	1100	1100	3000	3000	3500	3500
Short-time current 1 sec.	(A)	2500	2500	4000	5500	5500	7500	7500	9700	11600
5 sec.	(A)	2500	2500	3200	3500	3500	5200	5200	7700	8800
10 sec.	(A)	2300	2300	2400	2500	2500	4000	4000	6100	7350
30 sec.	(A)	1250	1250	1400	1600	1600	2800	2800	4400	5300
1 min.	(A)	900	900	1000	1200	1200	1800	1800	3500	4500
3 min.	(A)	600	600	750	900	900	1200	1200	2300	2800
Short-time current	(min.)	10	10	10	10	10	10	10	10	10
Protec. against short-circuit with fuses without TOR										
Coord. type "1" gL/gG	(A)	355	355	500	500	630	1250	1250	1250	2x800
Coord. type "2" gL/gG	(A)	250	250	315	400	500	630	800	1000	1250
Without welding gL/gG	(A)	200	200	250	315	425	500	630	800	1000
Impedance per pole	(mΩ)	0.30	0.30	0.28	0.28	0.28	0.15	0.13	0.14	0.11
Power dissipation AC-1	(W)	19	19	27.7	27.7	56.7	54.3	63.7	140	171.8
per pole AC-3	(W)	6.8	10.3	11.7	17.5	26.7	26.5	45.3	68.6	74.8
Insulation resistance										
Between adjacent poles	(mΩ)	> 10	> 10	> 10	> 10	> 10	> 10	> 10	> 10	> 10
Between poles and earth	(mΩ)	> 10	> 10	> 10	> 10	> 10	> 10	> 10	> 10	> 10
Between input and output	(mΩ)	> 10	> 10	> 10	> 10	> 10	> 10	> 10	> 10	> 10

Four pole contactors

		CK07B	CK08B		CK09B	CK95B	CK10C	CK11C	CK12B	CK13B
Rated thermal current Ith at θ ≤ 40°C	(A)	200	325		400	500	600	700	1000	1250
Rated operational voltage Ue	(V)	690	1000		1000	1000	1000	1000	1000	1000
Rated insulation voltage Ui	(V)	1000	1000		1000	1000	1000	1000	1000	1000
Maximum continuous current AC-1	(A)	200	325		400	500	600	700	1000	1250
Frequency limits	(Hz)	25...400	25...4000		25...400	25...400	25...400	25...400	25...400	25...400
Making capacity (RMS) (IEC 947)	(A)	1150	1850		2500	3700	6500	6500	6700	8250
Breaking capacity (RMS) (IEC 947)										
Ue ≤ 400V	(A)	950	1600		3500	3500	5600	5600	6700	6600
Ue = 500V	(A)	950	1600		3500	3500	5600	5600	6700	6600
Ue = 690V	(A)	800	1000		2200	2200	3500	3500	6000	6000
Ue = 1000V	(A)	–	350		1100	1100	2000	2000	3500	3500
Short-time current 1 sec.	(A)	2100	2500		5500	5500	7500	7500	9700	11600
5 sec.	(A)	1500	2500		3500	3500	5200	5200	7700	8800
10 sec.	(A)	1150	2300		2500	2500	4000	4000	6100	7350
30 sec.	(A)	750	1250		1600	1600	2800	2800	4400	5300
1 min.	(A)	550	900		1200	1200	1800	1800	3500	4500
3 min.	(A)	350	600		900	900	1200	1200	2300	2800
Recovery time	min.	10	10		10	10	10	10	10	10
Short-circuit protection with fuse without TOR										
Coord. type "1" gL/gG	(A)	315	500		500	630	1250	1250	1250	2x800
Coord. type "2" gL/gG	(A)	250	400		400	500	630	800	1000	1250
Without welding gL/gG	(A)	200	315		315	425	500	630	800	1000
Impedance per pole	(mΩ)	0.45	0.32		0.28	0.28	0.15	0.13	0.14	0.11
Power dissipation per pole										
AC-1	(W)	18	33.8		44.8	56.7	61.2	68.6	140	171.8
Insulation resistance										
Between adjacent poles	(mΩ)	> 10	> 10		> 10	> 10	> 10	> 10	> 10	> 10
Between poles and earth	(mΩ)	> 10	> 10		> 10	> 10	> 10	> 10	> 10	> 10
Between input and output	(mΩ)	> 10	> 10		> 10	> 10	> 10	> 10	> 10	> 10

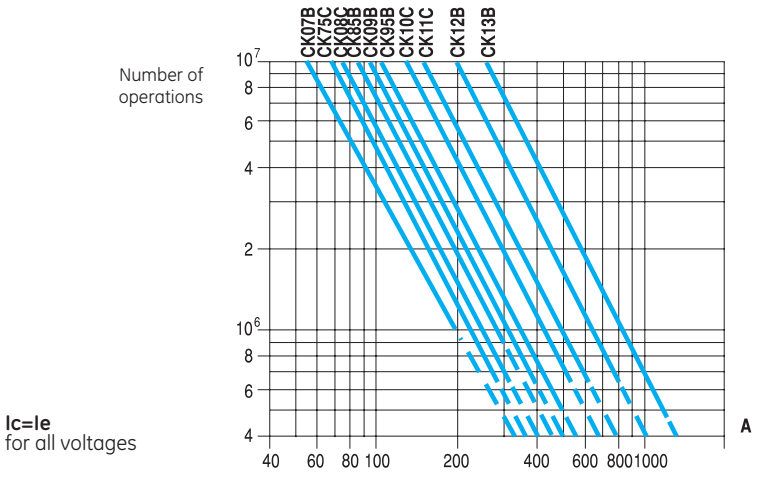
Electrical endurance

Mixed category AC4 / AC3

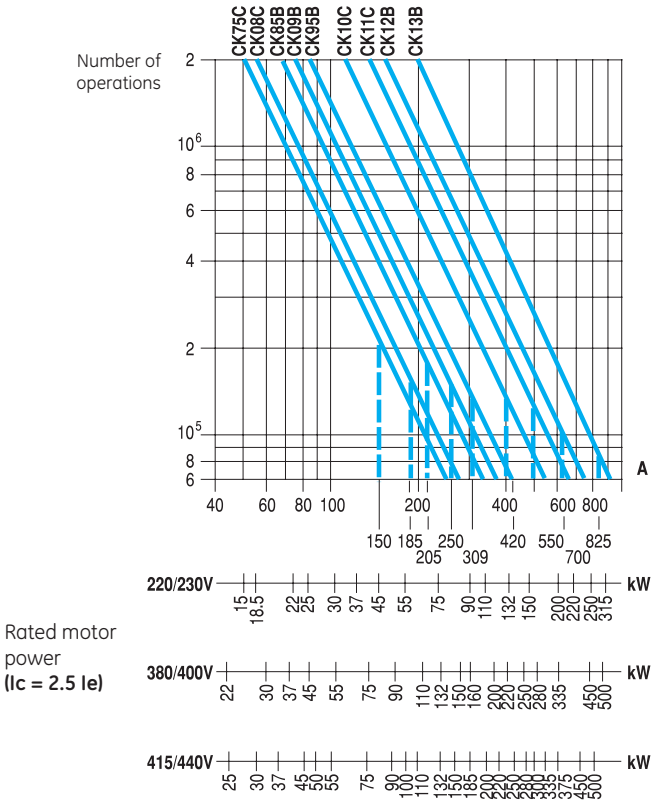
Electrical endurance for mixed category (AC-3/AC-4) is calculated with the following formula:

$$\text{Electrical endurance (AC-3/AC-4)} = \frac{\text{Electrical endurance (AC-3)}}{1 + \frac{\text{\% oper AC-4}}{100} \times \left(\frac{\text{Elec.endur. (AC-3)}}{\text{Elec.endur.(AC-4)}} - 1 \right)}$$

Category AC1

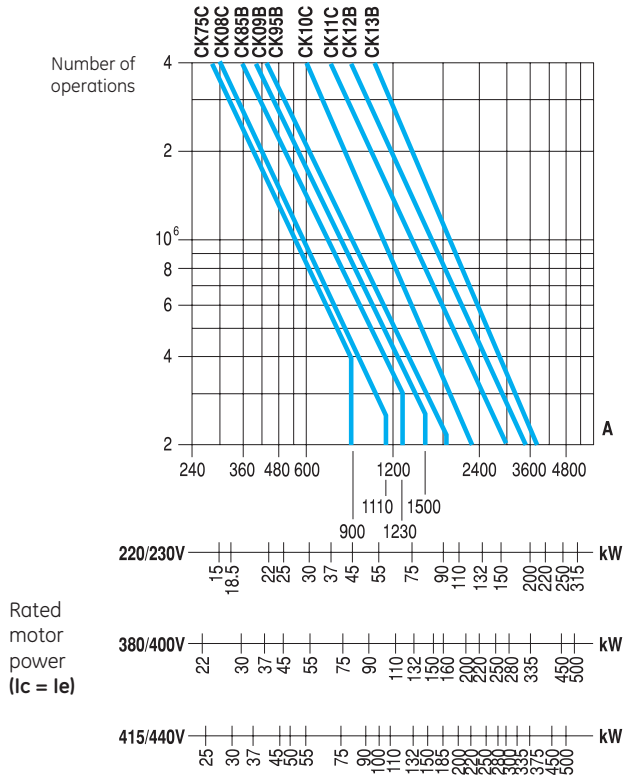


Category AC2

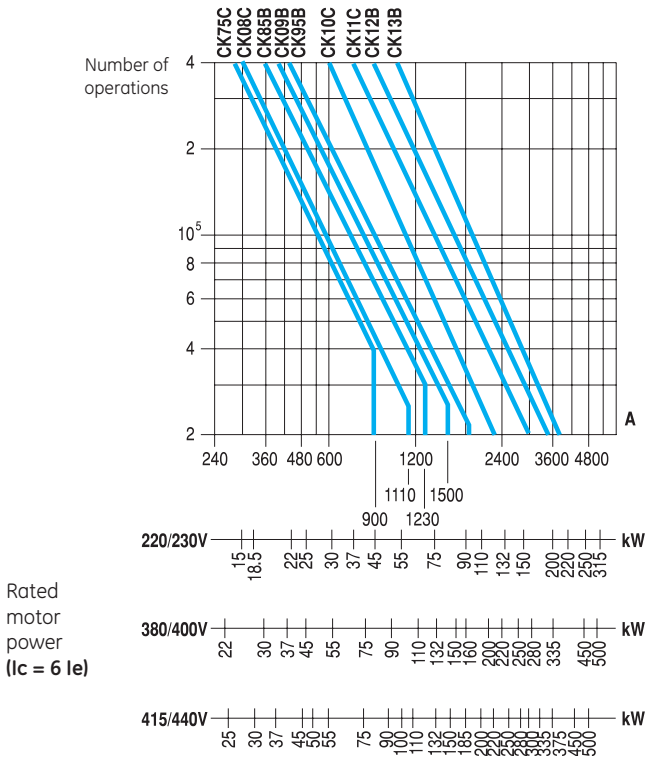


Electrical endurance (continued)

Category AC3



Category AC4



Three pole contactors. Control circuit

Alternating current

			CK75CA	CK08CA	CK85BA CK85BE	CK09BE	CK95BE	CK10CE	CK11CE	CK12BE	CK12BE	CK13BA
Rated insulation voltage Ui		(V)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Standard voltages Us (50/60 Hz)		(V)	24...690	24...690	24...690	24...690	24...690	24...690	24...690	24...72	100...690	24...440
Operating limits												
Switch-on		xUs	0.8...1.1	0.8...1,1	0.85...1.1	0.85...1,1	0.85...1.1	0.85...1.1	0.85...1.1	0.85...1.1	0.85...1.1	0.8...1.1
Switch-off		xUs	0.2...0.75	0.2...0.75	0.2...0.75	0.2...0.75	0.2...0.75	0.2...0.75	0.2...0.75	0.2...0.75	0.2...0.75	0.25...0.55
Consumption. Monofrequency coils												
Magnetic circuit	CK....A	(VA)	42	42	46	-	-	-	-	-	-	6
closed	CK....E	(VA)	-	-	20	20	20	23	23	25	25	-
Magnetic circuit	CK....A	(VA)	500	500	830	-	-	-	-	-	-	2760
open	CK....E	(VA)	-	-	425	425	425	680	680	750	750	-
Power	CK....A	(W)	21	21	17	-	-	-	-	-	-	5
dissipation	CK....E	(W)	-	-	3.5	3.5	3.5	4	4	4.5	4.5	-
Consumption. Bifrequency coils												
Magnetic circuit	50Hz	(VA)	46	46	60	-	-	-	-	-	-	-
closed (CK....A)	60Hz	(VA	38.3	38.3	50	-	-	-	-	-	-	-
Magnetic circuit	50Hz	(VA)	568	568	1082	-	-	-	-	-	-	-
open (CK....A)	60Hz	(VA)	473	473	901	-	-	-	-	-	-	-
Power 50Hz		(W)	23	23	22.2	-	-	-	-	-	-	-
dissipation (CK....A)	60Hz	(W	19.1	19.1	18.5	-	-	-	-	-	-	-
Power factor												
Magnetic circuit	CK....A	(cos φ)	0.4	0.4	0.37	-	-	-	-	-	-	approx. 1
closed	CK....E	(cos φ)	-	-	-	-	-	-	-	-	-	-
Magnetic circuit	CK....A	(cos φ)	0.6	0.6	0.6	-	-	-	-	-	-	approx. 1
open	CK....E	(cos φ)	-	-	-	-	-	-	-	-	-	-
Opening and closing times at Us												
Making time		(ms)	20...25	20...25	36...40	60...70	60...80	80...90	80...90	150...170	70...80	50...55
at excitation (NO)												
Breaking time		(ms)	10...13	10...13	60...80	60...80	60...80	60...80	60...90	60...90	60...90	115...130
at de-energisation (NO)												
Mechanical endurance [1]		10^6 ops	10	10	6.5	6.5	6.5	7.5	7.5	3.5	3.5	3
Maximum rate												
No load		ops./h	2400	2400	2400	1200	1200	900	900	900	900	600
AC-1/AC-3 at rated power		ops./h	600	600	600	600	600	300	300	300	300	120
AC-2 at rated power		ops./h	150	150	150	150	150	120	120	120	120	120
AC-4 at rated power		ops./h	150	150	150	150	150	120	120	120	120	120

(1) Mechanical endurance for e-module is 1 Million operations

Direct current

		CK75CE	CK08CE	CK85BE	CK09BE	CK95BE	CK10CE	CK11CE	CK12BE	CK12BE	
Rated insulation voltage Ui	(V)	1000	1000	1000	1000	1000	1000	1000	1000	1000	
Standard voltages Us (50/60 Hz)	(V)	24...500	24...500	24...500	24...500	24...500	24...500	24...500	24...72	110...500	
Operating limits											
Switch-on	xUs	0.8...1.1	0.8...1.1	0.8...1.1	0.8...1.1	0.8...1.1	0.8...1.1	0.8...1,1	0.8...1.1	0.8...1.1	
Switch-off	xUs	0.2...0.75	0.2...0.75	0.2...0.75	0.2...0.75	0.2...0.75	0.2...0.75	0.2...0.75	0.2...0.75	0.2...0.75	
Consumption											
Magnetic circuit closed	(W)	10	10	10	10	10	10	10	10	10	
Magnetic circuit open	(W)	225	225	350	350	350	500	500	650	650	
Opening and closing times at Us											
Making time	(ms)	60...70	60...70	60...70	60...70	60...70	80...90	80...90	150...170	70...80	
at excitation (NO contacts)											
Breaking time	(ms)	40...50	40...50	60...80	60...80	60...80	60...80	60...80	60...90	60...90	
at de-energisation (NO contacts)											
Mechanical endurance	10^6 ops.	10	10	6.5	6.5	6.5	7.5	7.5	3.5	3.5	
Maximum rate											
No load	ops./h	1200	1200	1200	1200	1200	900	900	900	900	
AC-3 at rated power	ops./h	600	600	600	600	600	300	300	300	300	
AC-4 at rated power	ops./h	150	150	150	150	150	120	120	120	120	

(1) Mechanical endurance for e-module is 1 Million operations

Four pole contactors. Control circuit

Alternating current

			CK07BA CK07BE	CK08BA CK08BE	CK09BE	CK95BE	CK10CE	CK11CE	CK12BE	CK12BE	CK13BA
Rated insulation voltage Ui		(V)	1000	1000	1000	1000	1000	1000	1000	1000	1000
Standard voltages Us (50/60 Hz)		(V)	24...690	24...690	24...690	24...690	24...690	24...690	24...72	100...690	110...440
Operating limits											
Switch-on		xUs	0.85...1.1	0.85...1.1	0.85...1.1	0.85...1.1	0.85...1.1	0.85...1.1	0.85...1.1	0.85...1.1	0.85...1.1
Switch-off		xUs	0.2...0.75	0.2...0.75	0.2...0.75	0.2...0.75	0.2...0.75	0.2...0.6	0.2...0.75	0.2...0.75	0.2...0.75
Consumption. Monofrequency coils											
Magnetic circuit	CK....A	(VA)	46	130	-	-	-	-	-	-	6
closed	CK....E	(VA)	20	25	25	25	23	23	25	25	-
Magnetic circuit	CK....A	(VA)	830	2860	-	-	-	-	-	-	2760
open	CK....E	(VA)	425	750	750	750	680	680	750	750	-
Power	CK....A	(W)	17	53	-	-	-	-	-	-	5
dissipation	CK....E	(W)	3.5	4.5	4.5	4.5	4	4	4.5	4.5	-
Consumption. Bifrequency coils											
Magnetic circuit	50Hz	(VA)	60	159.3	-	-	-	-	-	-	-
closed (CK....A)	60Hz	(VA)	50	132.7	-	-	-	-	-	-	-
Magnetic circuit	50Hz	(VA)	1082	3509	-	-	-	-	-	-	-
open (CK....A)	60Hz	(VA)	901	2924	-	-	-	-	-	-	-
Power	50Hz	(W)	22.2	65.3	-	-	-	-	-	-	-
dissipation (CK....A)	60Hz	(W)	18.5	54.4	-	-	-	-	-	-	-
Power factor											
Magnetic circuit	CK....A	(cos φ)	0.37	0.37	-	-	-	-	-	-	approx. 1
closed	CK....E	(cos φ)	-	-	-	-	-	-	-	-	-
Magnetic circuit	CK....A	(cos φ)	0.6	0.6	-	-	-	-	-	-	approx. 1
open	CK....E	(cos φ)	-	-	-	-	-	-	-	-	-
Opening and closing times at Us											
Making time		(ms)	36...40	60...70	70...80	70...80	110...115	80...90	150...170	110...115	50...55
at excitation (NO)											
Breaking time		(ms)	10...15	13...17	70...80	70...80	70...80	70...80	70...80	70...80	70...80
at de-energisation (NO)											
Mechanical endurance		10^6 ops.	10	6.5	6.5	6.5	6.5	6.5	3.5	3.5	3
Maximum rate											
No load		ops./h	2400	900	900	900	900	900	900	900	600
AC-1/AC-3 at rated power		ops./h	600	600	600	600	300	300	300	300	120

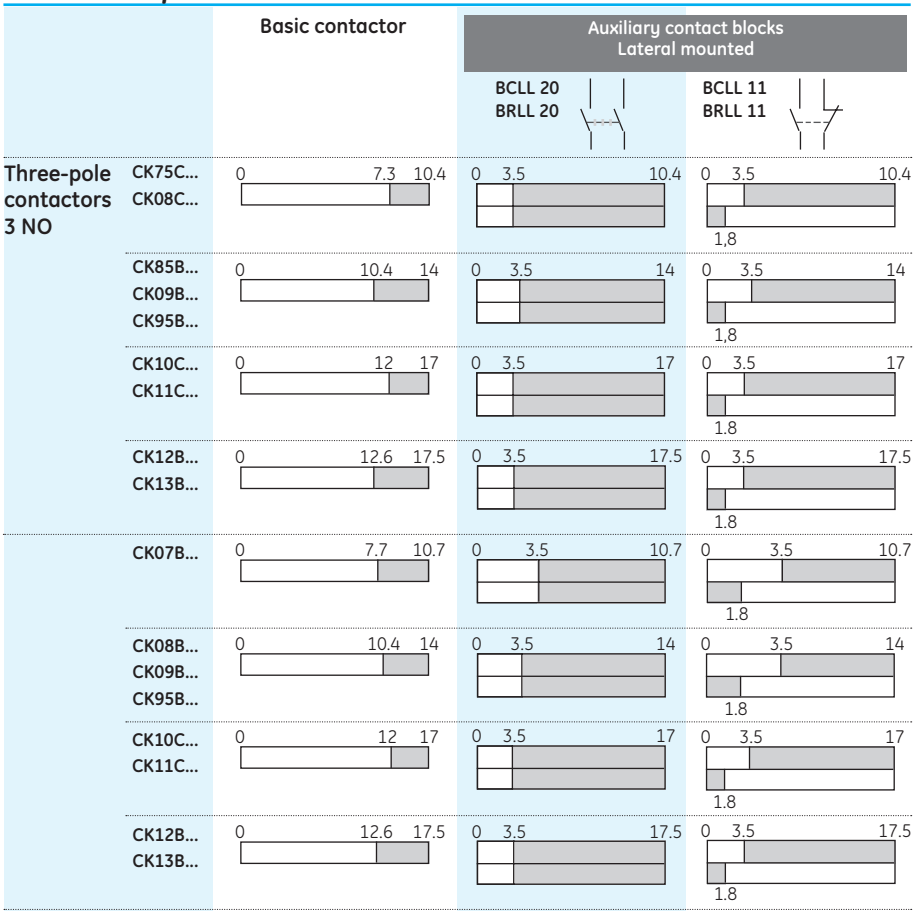
(1) Mechanical endurance for e-module is 1 Million operations

Direct current - Electronic module

		CK07BE	CK08BE		CK08BE	CK95BE	CK10CE	CK11CE	CK12BE	CK12BE
Rated insulation voltage Ui	(V)	1000	1000		1000	1000	1000	1000	1000	1000
Standard voltages Us	(V)	24...500	24...500		24...500	24...500	24...500	24...500	24...72	110...500
Operating limits										
Switch-on	xUs	0.75...1.1	0.8...1.1		0.8...1.1	0.8...1.1	0.8...1.1	0.8...1.1	0.8...1.1	0.8...1.1
Switch-off	xUs	0.2...0.75	0.2...0.75		0.2...0.75	0.2...0.75	0.2...0.75	0.2...0.75	0.2...0.75	0.2...0.75
Consumption										
Magnetic circuit closed	(W)	10	10		10	10	10	10	10	10
Magnetic circuit open	(W)	350	650		650	650	650	650	650	650
Opening and closing times at Us										
Making time	(ms)	60...70	70...80		70...80	70...80	80...90	80...90	150...170	110...115
at excitation (NO contacts)										
Breaking time	(ms)	40...50	70...80		70...80	70...80	60...80	60...80	60...90	60...90
at de-energisation (NO contacts)										
Mechanical endurance	10^6 ops.	10	6.5		6.5	6.5	6.5	6.5	3.5	3.5
Maximum rate										
No load	ops./h	1200	900		900	900	900	900	900	900
AC-3 at rated power	ops./h	600	600		600	600	600	300	300	300

(1) Mechanical endurance for e-module is 1 Million operations

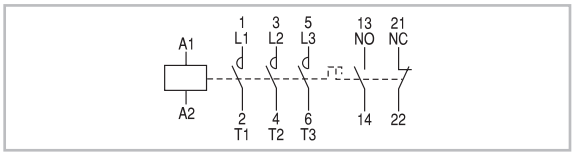
Contact sequence



Numbering of the terminals

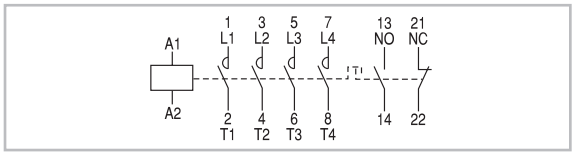
Three pole contactors

CK75C__3_ ... CK13B __3_



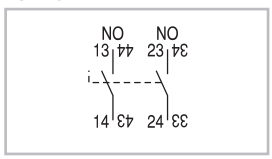
Four pole contactors

CK07B__4_ ... CK13B __4_

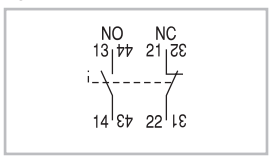


Auxiliary contact blocks. *Lateral mounting*

BCLL20



BCLL11



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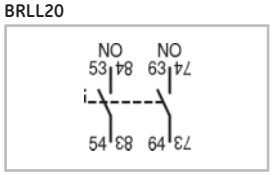

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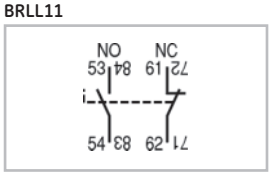
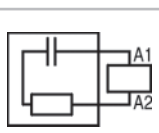


Voltage suppressor block

K/RC...



Mechanical interlock

BEKV, BEKVA1, BEKVS1, BEKVH

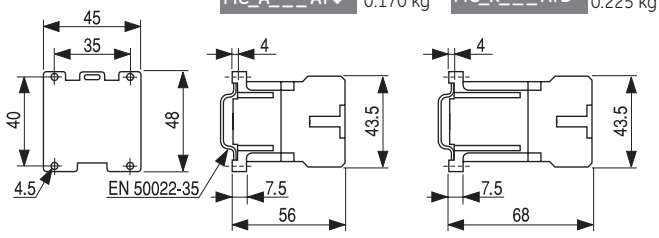
Notes

Dimensional drawings

Three and four pole contactors

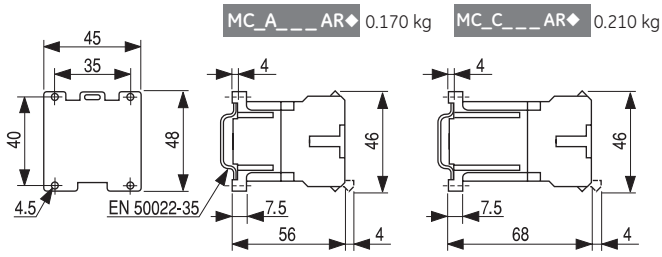
Screw terminal

MC_A_ _ _ AT◆	0.170 kg
MC_C_ _ _ AT◆	0.210 kg
MC_I _ _ _ ATD	0.225 kg
MC_K_ _ _ ATD	0.225 kg



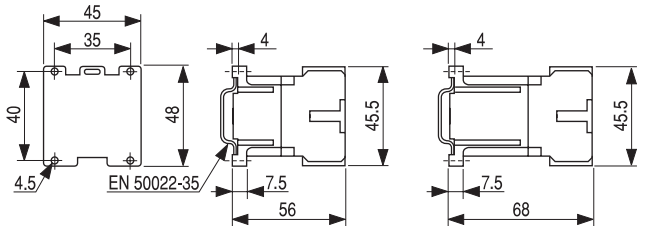
Ring terminal

MC_A_ _ _ AR◆	0.170 kg
MC_C_ _ _ AR◆	0.210 kg



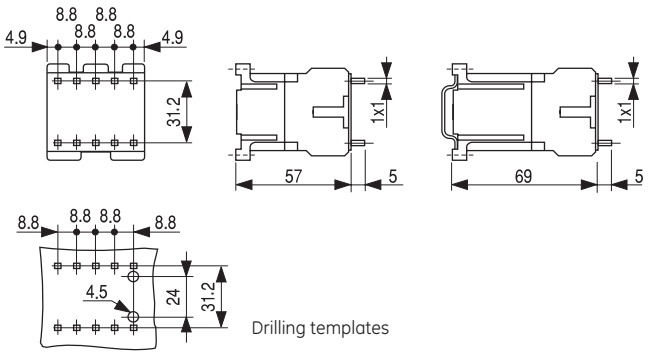
Terminal: faston 2x2,8 insulated

MC_A_ _ _ AF◆	0.165 kg
MC_C_ _ _ AF◆	0.210 kg



Terminal: printed circuit

MC_A_ _ _ AI◆	0.165 kg
MC_C_ _ _ AI◆	0.210 kg

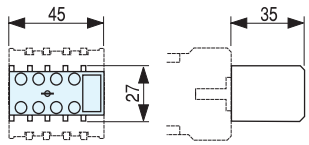


Drilling templates

Auxiliary contact block. *Lateral mounting*

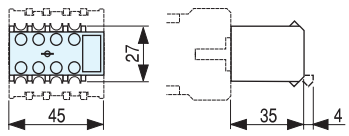
Screw terminal

MACN2 _ _AT - MARN2 _ _AT	0.025 kg
MACN4 _ _AT - MARN4 _ _AT	0.040 kg



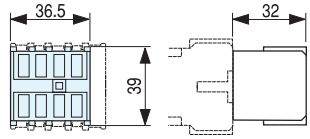
Ring terminal

MACN2 _ _AR - MARN2 _ _AR	0.025 kg
MACN4 _ _AR - MARN4 _ _AR	0.040 kg



Terminal: faston 2x2.8 insulated

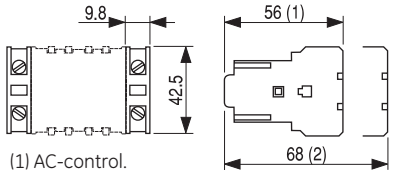
MACF4 _ _AF	0.035 kg
MARF4 _ _AF	0.035 kg



Auxiliary contact blocks. Lateral mounting

Screw terminal

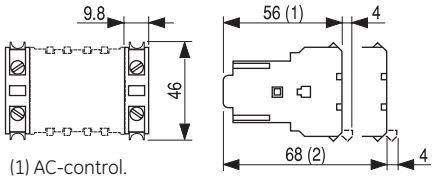
MACL_ _ _AT	0.013 kg
MARL_ _ _ATS	0.013 kg



(1) AC-control.
(2) DC-control.

Ring terminal

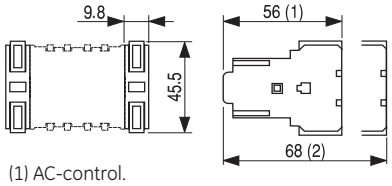
MACL_ _ _AR	0.013 kg
MARL_ _ _ARS	0.013 kg



(1) AC-control.
(2) DC-control.

Terminal: faston 2x2.8 insulated

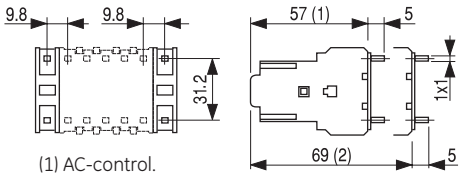
MACL _ _AF	0.009 kg
MARL _ _AFS	0.009 kg



(1) AC-control.
(2) DC-control.

Terminal: printed circuit

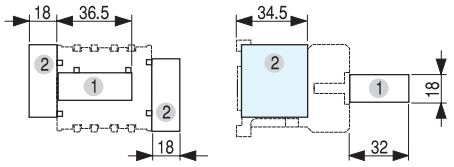
MACL _ _AI	0.009 kg
MARL _ _AIS	0.009 kg



(1) AC-control.
(2) DC-control.

Electronic timer block

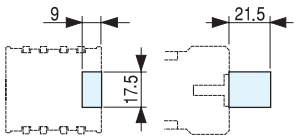
MREBC _0AC2	0.040 kg



(1) Frontal mounting
(2) Lateral mounting

Voltage suppressor block

MP0A_AE_	0.010 kg
MP0C_AE3	0.010 kg

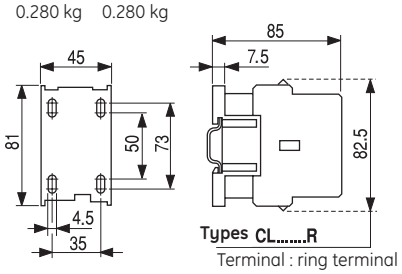


Dimensional drawings. Three pole contactors

Alternating current

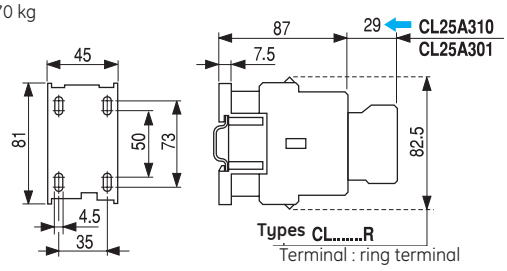
CL00A3...., CL01A3...., CL02A3....

0.280 kg 0.280 kg 0.280 kg



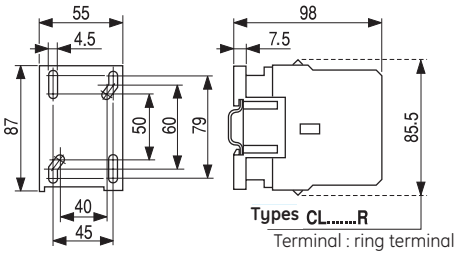
CL25A3....

0.270 kg



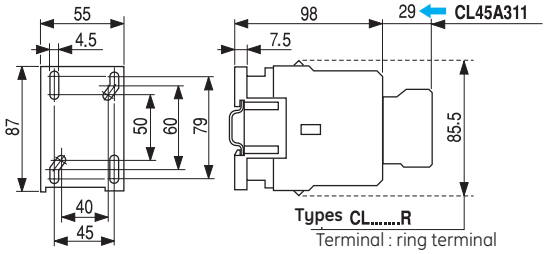
CL03A3...., CL04A3....

0.490 kg 0.500 kg



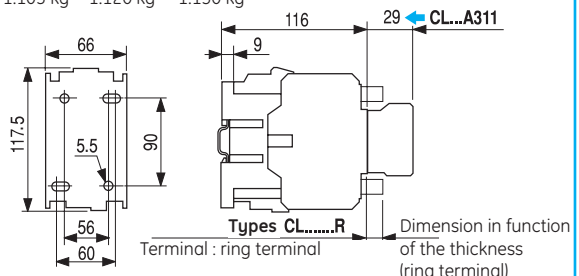
CL45A3....

0.520 kg



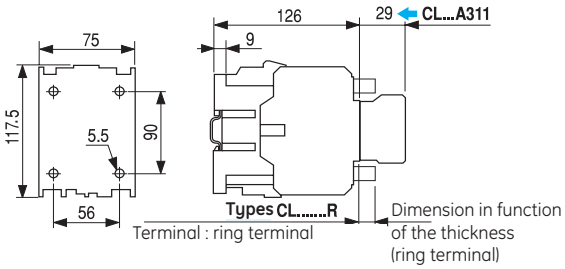
CL06A3...., CL07A3...., CL08A3....

1.105 kg 1.120 kg 1.130 kg



CL09A3...., CL10A3....

1.450 kg 1.470 kg

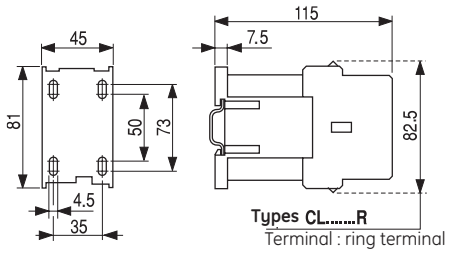


Three pole contactors

Direct current

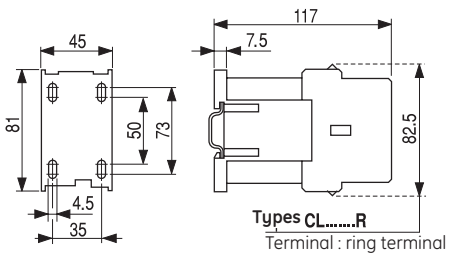
CL00D3...., CL01D3...., CL02D3....

0.490 kg 0.490 kg 0.490 kg



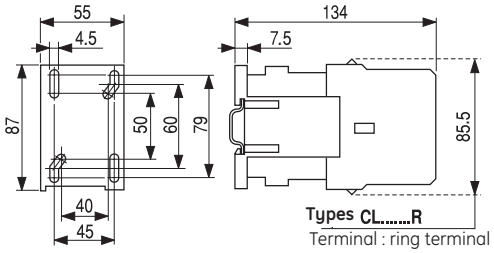
CL25D3....

0.480 kg



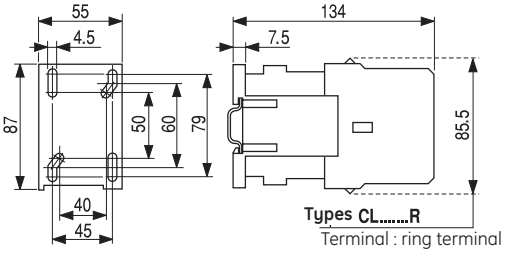
CL03D3...., CL04D3....

0.480 kg 0.835 kg



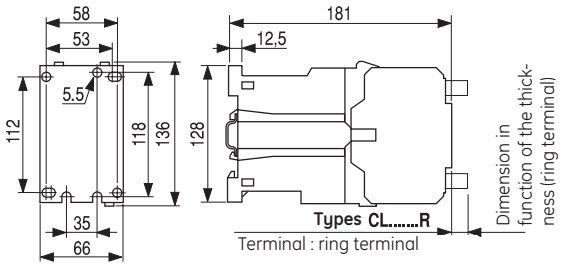
CL45D3....

0.825 kg



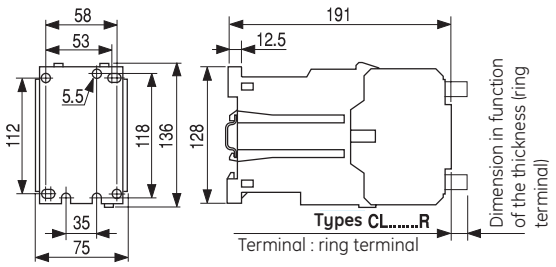
CL06D3...., CL07D3...., CL08D3....

1.110 kg 1.110 kg 1.110 kg



CL09D3...., CL10D3....

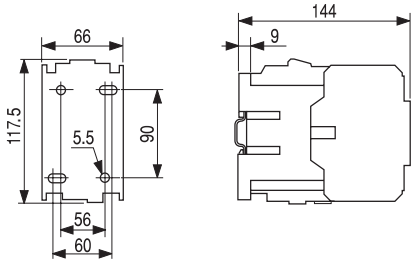
1.440 kg 1.440 kg



Coil with electronic module

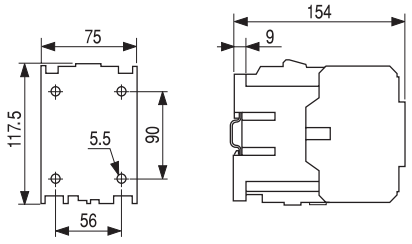
CL06E3...., CL07E3...., CL08E3....

1.095 kg 1.110 kg 1.120 kg



CL09E3...., CL10E3....

1.440 kg 1.460 kg

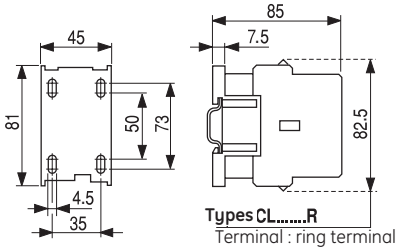


Dimensional drawings. Four pole contactors

Alternating current

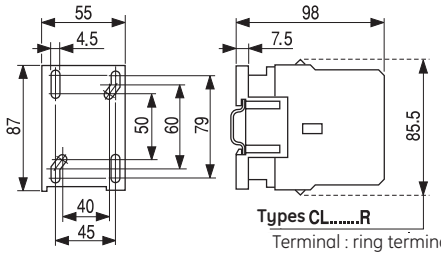
CL01A4...., CL02A4...., CL01AB...., CL02AB....

0.280 kg 0.280 kg 0.280 kg 0.280 kg



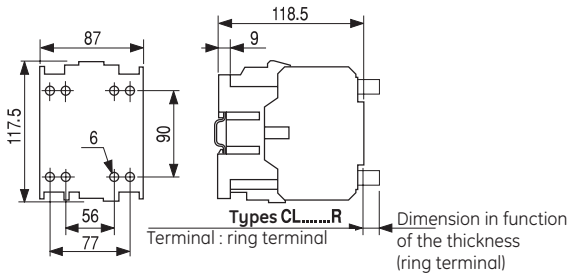
CL03A4...., CL04A4...., CL03AB...., CL04AB....

0.490 kg 0.500 kg 0.490 kg 0.500 kg



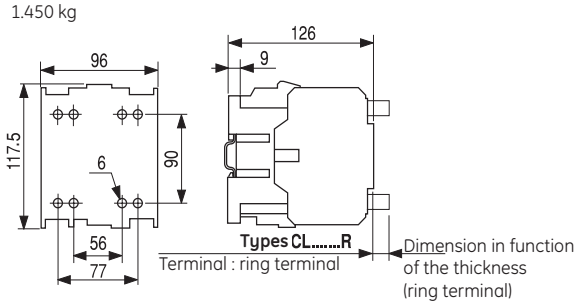
CL05A4...., CL07A4...., CL05AB...., CL07AB...., CL08AB...

1.240 kg 1.270 kg 1.240 kg 1.270 kg 1.270 kg



CL09A4....

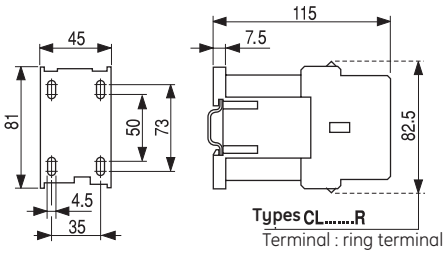
1.450 kg



Direct current

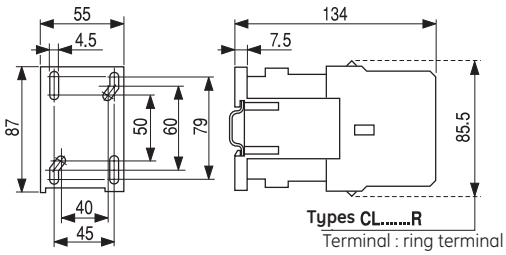
CL01D4...., CL02D4...., CL01DB...., CL02DB....

0.490 kg 0.490 kg 0.490 kg 0.490 kg



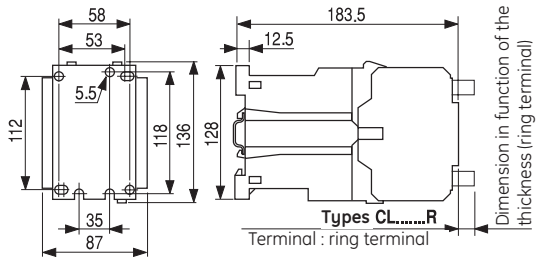
CL03D4...., CL04D4...., CL03DB...., CL04DB....

0.825 kg 0.835 kg 0.825 kg 0.835 kg

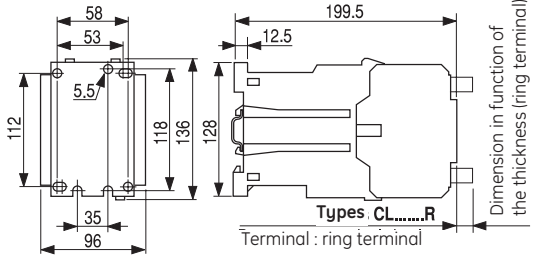


CL05D4...., CL07D4...., CL05DB...., CL07DB...., CL08DB...

1.290 kg 1.290 kg 1.290 kg 1.290 kg



CL09D4....

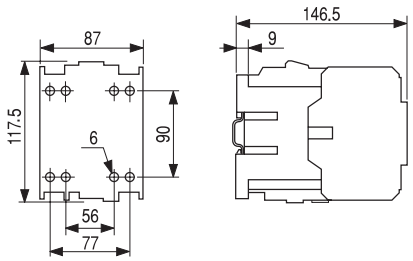


Four pole contactors

Coil with electronic module

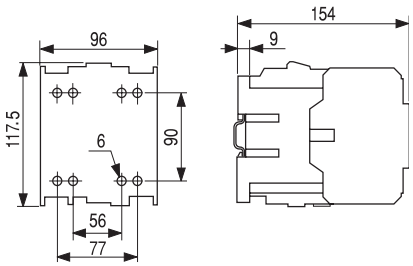
CL05E4...., CL07E4...., CL05EB...., CL07EB...., CL08EB...

1.290 kg 1.290 kg 1.290 kg 1.320 kg 1.320 kg



CL09E4....

1.500 kg

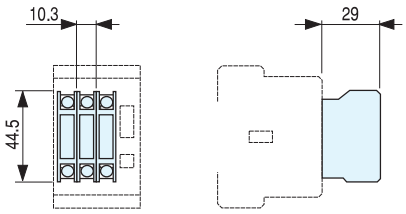


Dimensional drawings

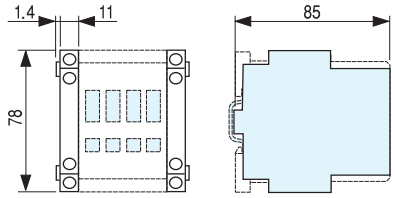
Auxiliary contact blocks

Screw terminal

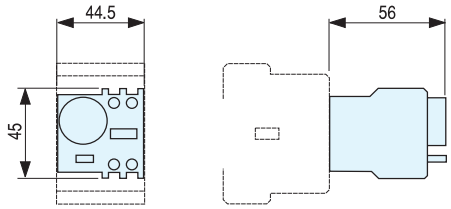
BCLF... 0.015 kg



BCLL..., BRLL.... 0.048 kg

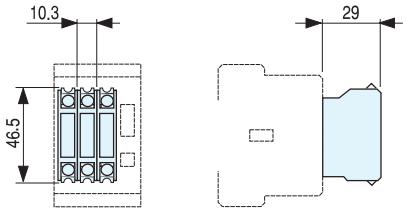


BTLF... 0.085 kg

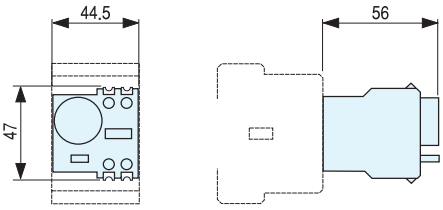


Ring terminal

BCRF... 0.015 kg



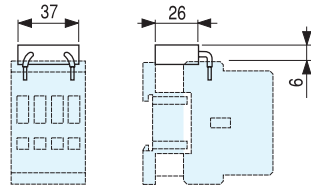
BTRF... 0.085 kg



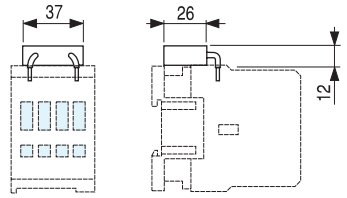
Accessories

Voltage suppressor block

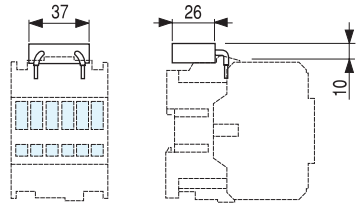
BSLR, BSLDZ, BSLV 0.020 kg



CL00 ... CL25



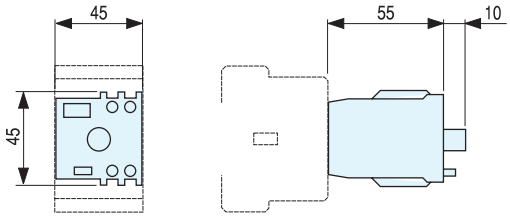
CL03 ... CL45



CL05 ... CL10

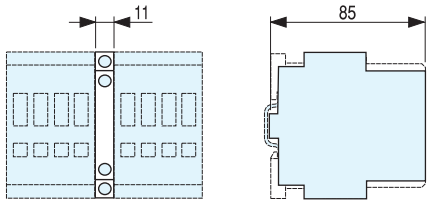
Mechanical latch block

RMLF 0.082 kg



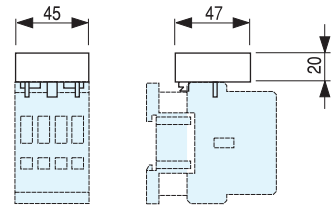
Mechanical / mechanical-electrical interlock

BEL, BELA, BEL02, BELA02 0.025 kg

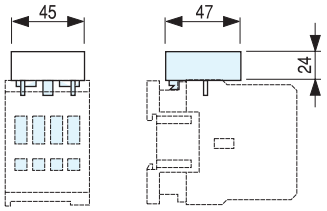


Electronic timer block

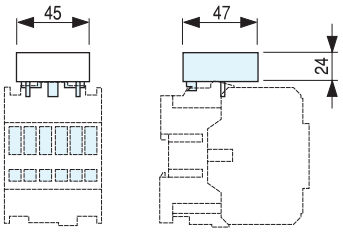
BETL02, BETL45 0.040 kg



CL00 ... CL25



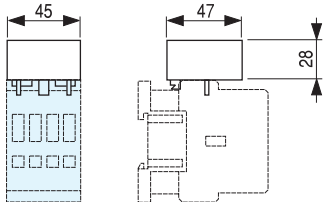
CL03 ... CL45



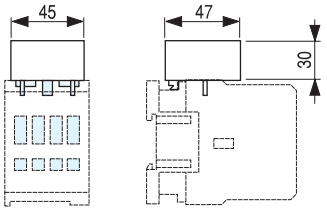
CL05 ... CL10

Interface modules

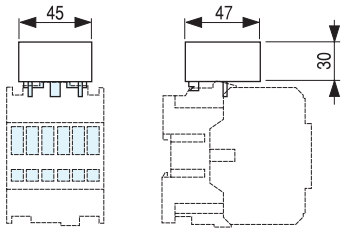
IMR..., IMRF..., IMSSD, IMAMS 0.020 kg



CL00 ... CL25



CL03 ... CL45

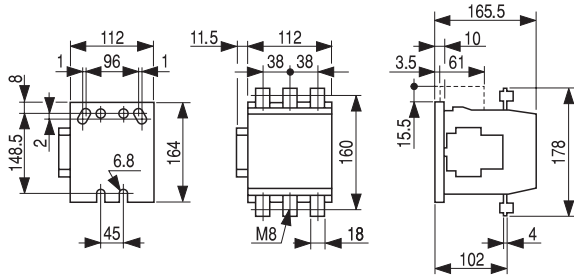


CL05 ... CL10

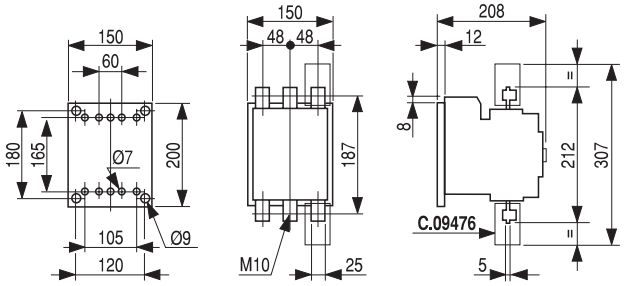
Dimensional drawings

Three pole contactors

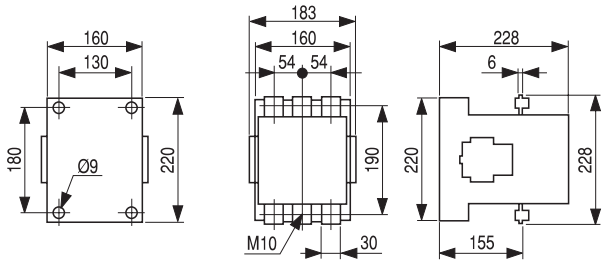
CK75C 3.500 kg
CK08C 3.500 kg



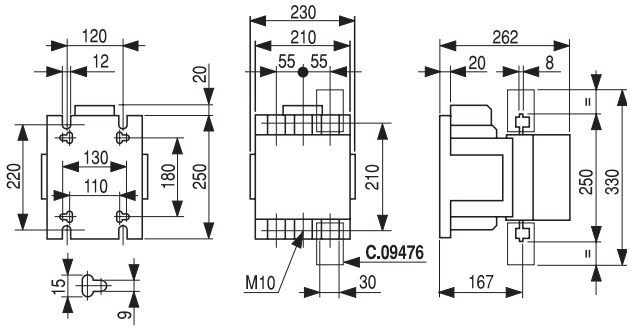
CK85B 6.100 kg
CK09B 6.200 kg
CK95B 6.300 kg



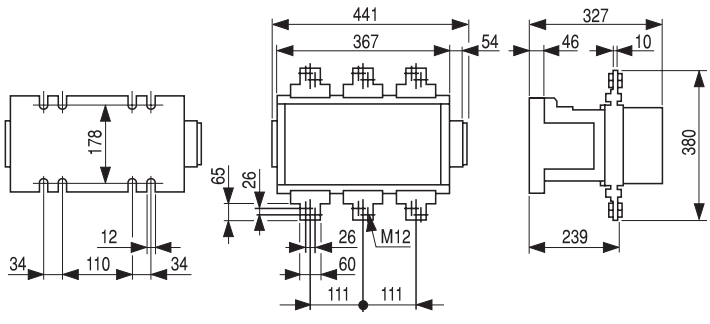
CK10C 11.00 kg
CK11C 11.00 kg



CK12B 18.00 kg

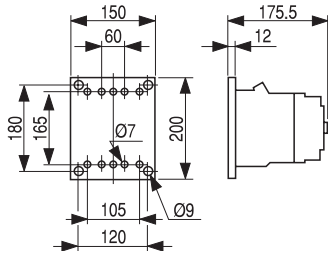


CK13B 35.00 kg

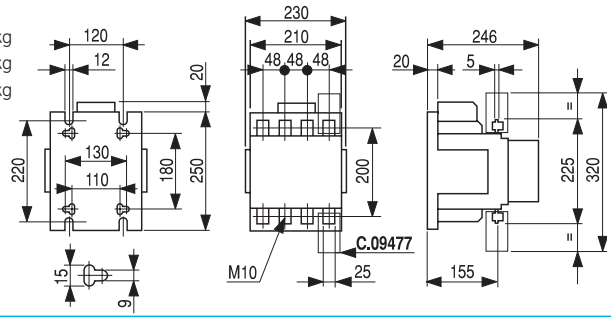


Four pole contactors

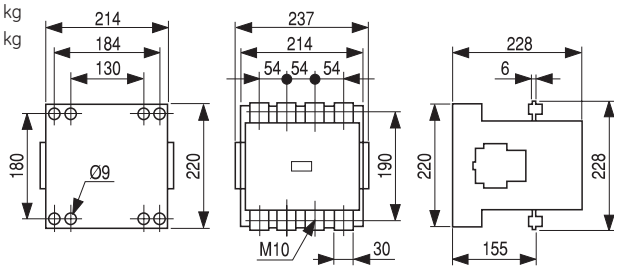
CK07B 4.700 kg



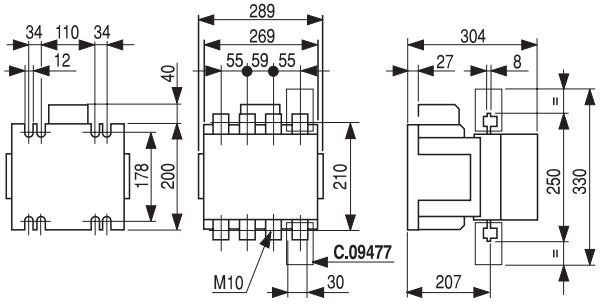
CK08B 14.90 kg
CK09B 15.10 kg
CK95B 15.30 kg



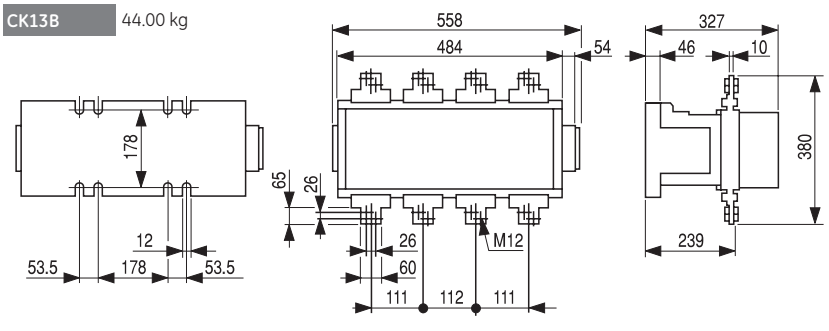
CK10C 22.30 kg
CK11C 22.80 kg



CK12B 23.30 kg



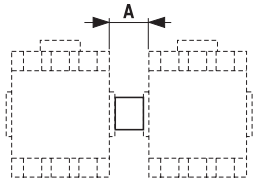
CK13B 44.00 kg



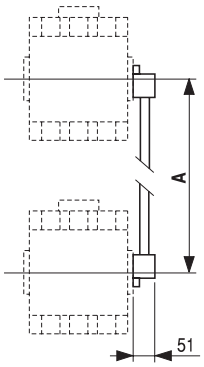
Mechanical interlock

BEKH 0.350 kg

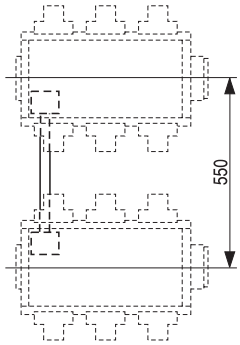
	A
CK75C3... - CK08C3...	55
CK85B3... - CK95B3...	55
CK10C3... - CK11C3...	33
CK12B3...	75



	A	
BEKVA1	550	0.900 kg
BEKVS1	350	0.800 kg



BEKV 1.200 kg



Technical data

General

- Thermal protection against balanced overload.
- Three-pole differential (phase unbalance protection).
- Automatic ambient temperature compensation.
- Front mounted selector for choosing utilisation current.
- Reset button, 2 positions :
  Manual(H) and Automatic(A) by turning the blue selector.
- Stop push button, independent of reset (red).
- Manual trip lever (tripping test).
- Tripping indicator (0-1).
- To facilitate wiring arragements terminal 96 fits directly onto coil terminal (A2) and terminal 14/22 fits directly onto the feedback auxiliary contact.

Conformity to standards

IEC 60947-4	CEI 17-50	VDE660
UNE 115	NI C63-650	UL508
NFC63-650		

Approvals

UL	CSA	SEMKO
SETI	NEMKO	CE

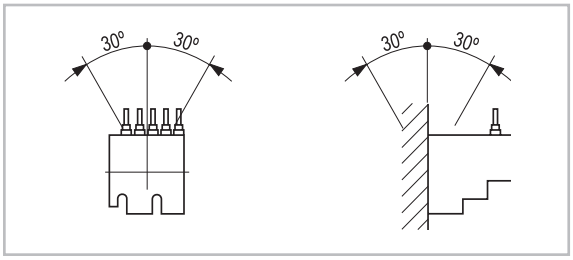
Ambient conditions

Storage temperature		-55°C to +80°C
Operation temperature		-25°C to +60°C
Altitude	up to 3000m	Nominal values
	from 3000 to 4000m	90%Ie 80%Ue
	from 4000 to 5000m	80%Ie 75%Ue
Degree of protection		IP20
Protection treatment		Tropical finish

Climatic resistance

Continuous tests 40 / 125 / 56		
Cold (72h)		
	Temperature	-40°C
Dry heat (96h)		
	Temperature	+125°C
	Relative humidity	< 50%
Humid heat (56 days)		
	Temperature	+40°C
	Relative humidity	95%
Cyclical tests		
First half-cycle (12h)		
	Low temperature	+25°C
	Relative humidity	93%
Second half-cycle (12h)		
	Low temperature	+55°C
	Relative humidity	95%
Number of consecutive cycles		6

Mounting positions

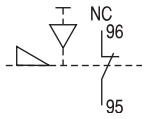


Main circuit *(poles)*

			MT0...
Rated insulation voltage (Ui) according to IEC 947		(V)	750
Frequency		(Hz)	0...400
Power dissipation per pole		(W)	min. 1 / max. 2.5
Terminal capacity			
Screw M 3.5 (pozidrive head) safety flange			
Maximum capacity :			
Solid		(Ø mm)	2 x 2 wires
Stranded without end sleeve		(mm^2)	2 wires Ø 2.5
Stranded with end sleeve			
pen (2 end sleeves)		(mm^2)	2 wires Ø 0.75
pen (1 end sleeve)		(mm^2)	2 wires Ø 1 1 wires Ø 2.5
Tightening torque		(Nm)	0.8

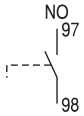
Control circuit *(incorporated auxiliary contact)*

			MT0...
Rated insulation voltage (Ui) according to IEC 947		(V)	750
Rated thermal current (Ith) θ ≤ 60°C		(A)	10
Tripping currents			
AC-15	Ue-Ie	(V-A)	223-3, 380-2, 500-1
DC-13	Ue-Ie	(V-A)	60-0.5, 110-0.2, 220-0.1
Short-circuit protection (max.glass gL fuse - w/h welding)		(A)	6
Number and type of contacts			

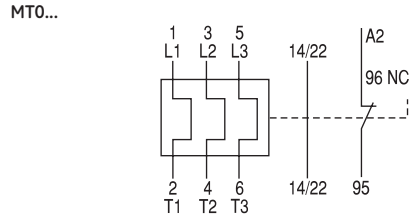


Control circuit *(auxiliary contact block)*

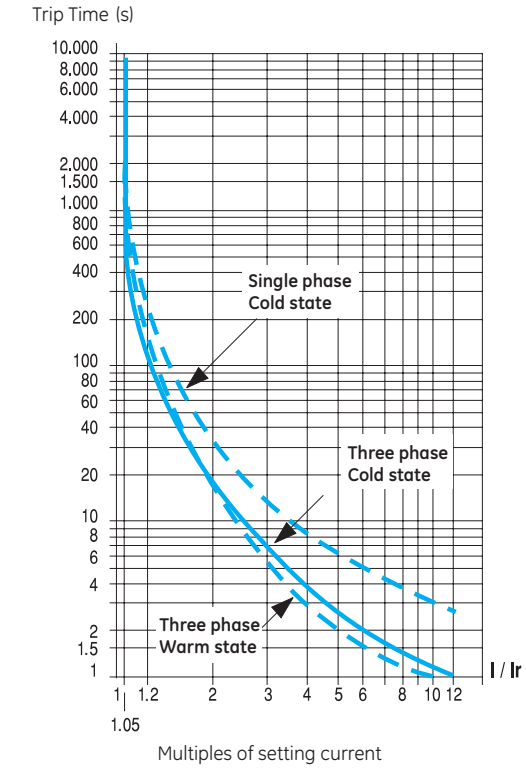
			MATV10AT
Rated insulation voltage (Ui) according to IEC 947		(V)	750
Rated thermal current (Ith) θ ≤ 60°C		(A)	10
Tripping currents			
AC-15	Ue-Ie	(V-A)	223-1, 380-0.5
DC-13	Ue-Ie	(V-A)	60-0.1, 110-0.5
Short-circuit protection (max.glass gL fuse - w/h welding)		(A)	6
Number and type of contacts			



Numbering of the terminals

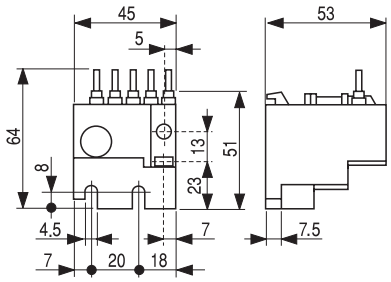


Tripping curves

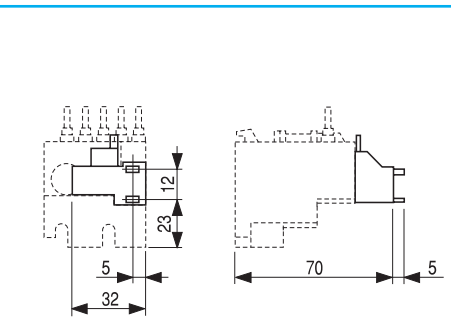


Dimensional drawings

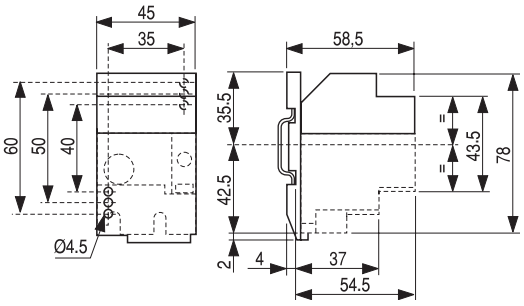
Thermal overload relay



Thermal overload relay + aux. contact block (front mounting)



Independent mounting of the thermal overload relay



Technical data

		RT1...	RT2...	RT3...	RT4.../ 4L...	RT5.../ 5L...	RT6.../ 6L...
General							
Class		10A / 20	10 / 20	10 / 20	10 / 30	10 / 30	10 / 30
Setting range	(A)	0.16 ... 40	11.5 ... 110	55 ... 190	2.5 ... 310	120 ... 700	500 ... 850
Suitable for		CL00...CL45	CL05...CL10	CK75...CK08	CL,CK	CK10...CK12	CK13
Main circuit							
Rated insulation voltage	(V)	690	1000	1000	1000	1000	1000
(IEC947-4) Ui							
Frequency limits	(Hz)	0...400	0...400	0...400	50...60	50...60	50...60
Terminal capacity							
Clamp terminal - solid	(mm^2)	16	50	120	-	-	-
Clamp terminal - flexible	(mm^2)	10	50	120	-	-	-
Flat terminal	(mm)	-	-	25 x 5	-	-	80 x 10
Passing by hole (wire) through C.T. core	(mm^2)	-	-	-	-	400	-
Passing by hole (bar) through C.T. core	(mm)	-	-	-	30 x 10	30 x 10	-
Tightening torque	(Nm)	2.5	4.5	6.5	23	31.5	-

Control circuit		
Rated insulation voltage	(V)	690
(IEC60947-4) Ui		
Rated thermal current Ith	(A)	10
Operation current		
AC-15 - Ue-Ie	(V - A)	110/120 - 3 ; 220/240 - 2 ; 380/415 - 1 ; 480/500 - 0,8 ; 660/690 - 0,3
DC-13 - Ue-Ie	(V - A)	24 - 2 ; 48 - 1.4 ; 110 - 0.6 ; 250 - 0.3 ; 440 - 0.1
Utilisation according UL and CSA		B600 - Q600
Protective fuse type gL	(A)	10
Terminal capacity	(mm^2)	2.5
Tightening capacity	(Nm)	0.8

Conformity to standards

IEC/EN 60947-4-1	NFC 63-650	NI C 63-650
IEC/EN 60947-5-1	CEI 17-50	VDE 0660
UNE 115	CSA 22.2/14	UL 508

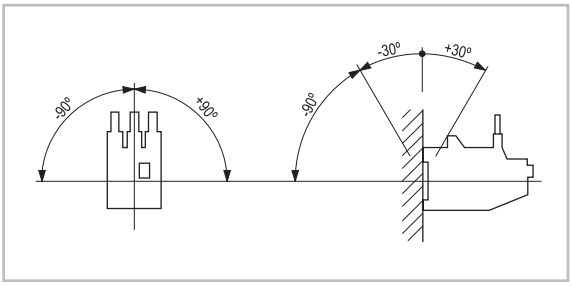
Approvals

cULus	RINA	CE
LLoyd's Register	Bureau Veritas	

Ambient conditions

Storage temperature		-40°C to +70°C
Operation temperature (compensated)		-25°C to +60°C
Altitude	up to 3000m	w/o any changes in characteristics
Relative humidity		98%
Protection treatment		Tropical finish

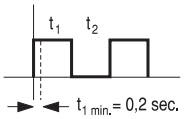
Mounting positions



Remote electrical reset

Power consumption		
AC	(VA)	100
DC	(W)	100

Coils not suitable for continuous operating duty

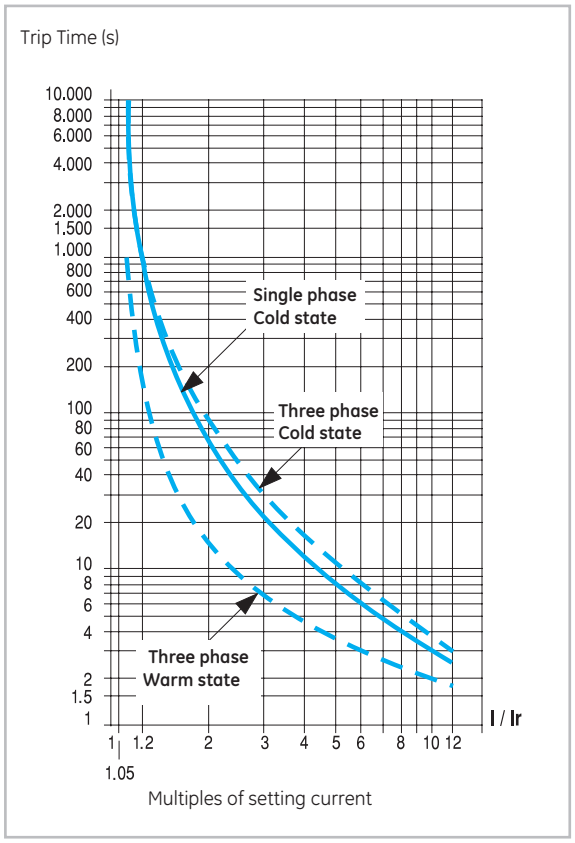


t_1 = 1 sec. ◆ t_2 = 30 sec.
t_1 = 5 sec. ◆ t_2 = 90 sec.
t_1 = 10 sec. ◆ t_2 = 180 sec.

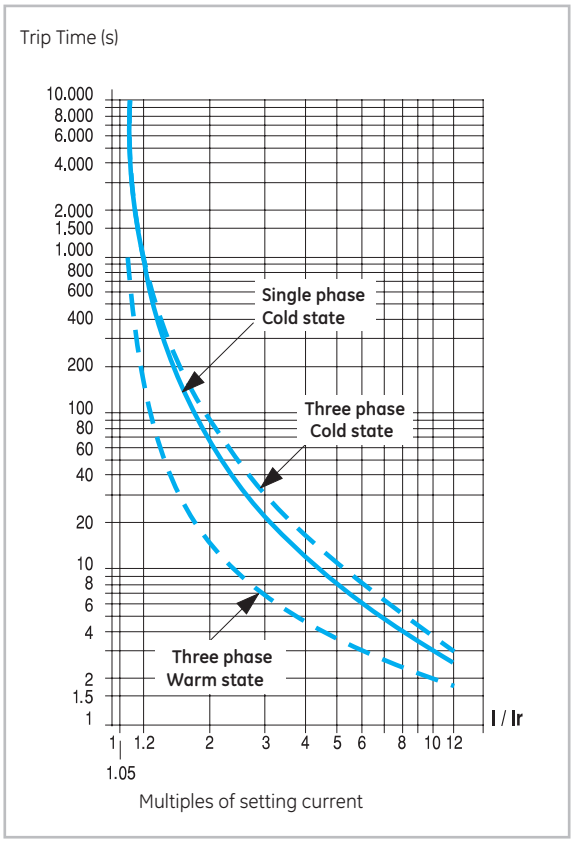
(t_1 = ON time t_2 = OFF time)

Tripping curves

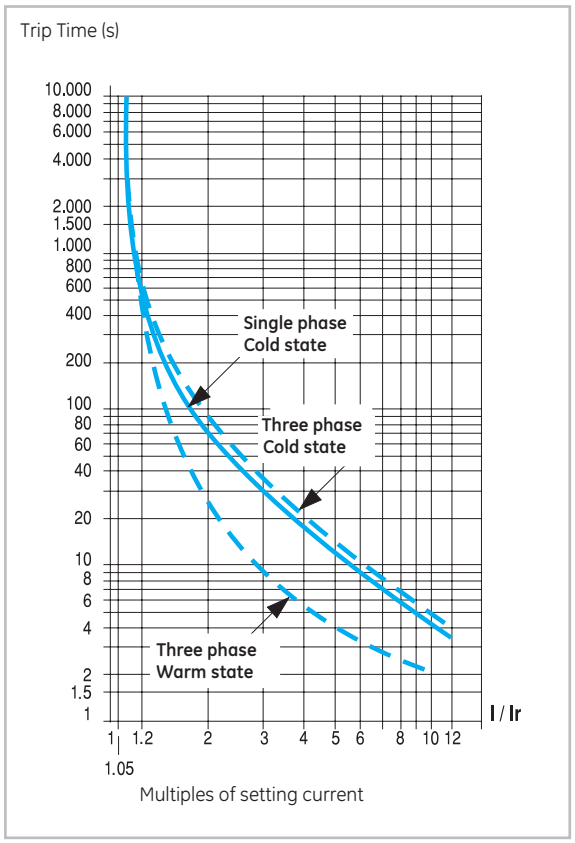
RT1 Class 10A



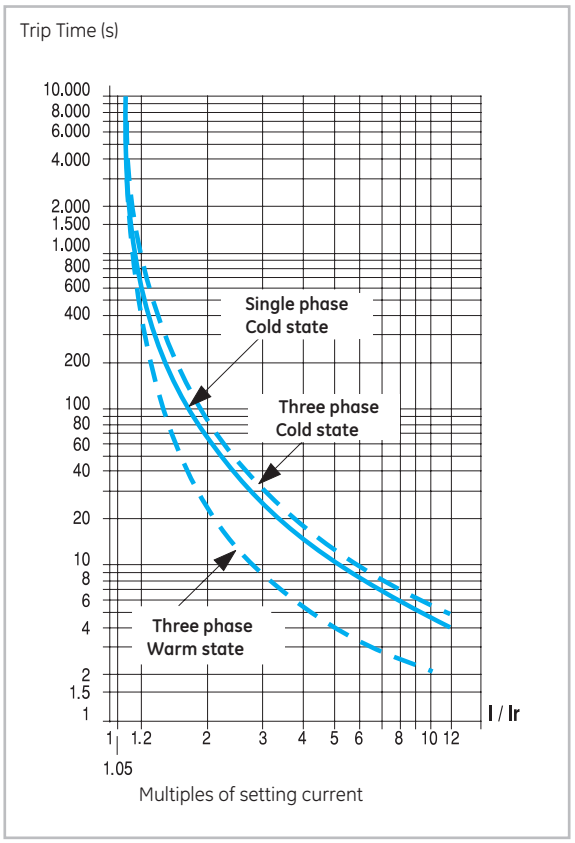
RT2 Class 10



RT12 Class 20

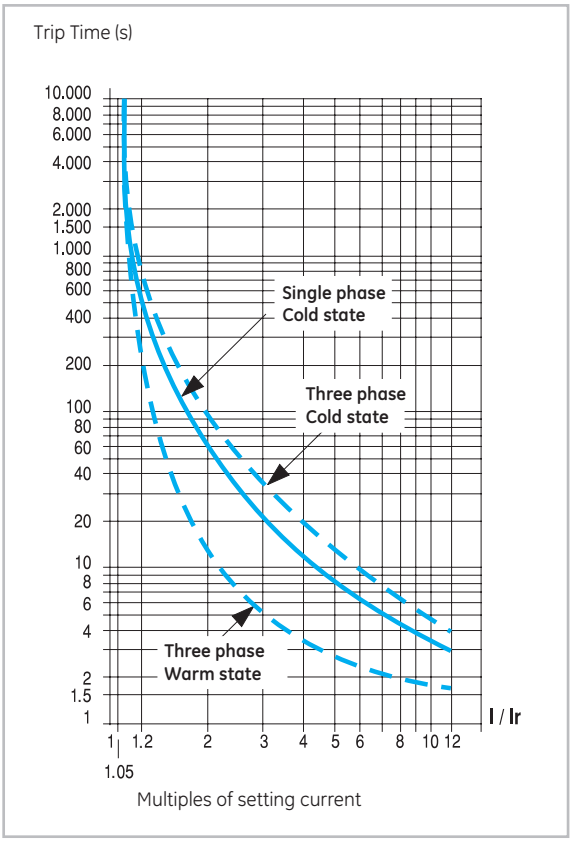


RT22 Class 20

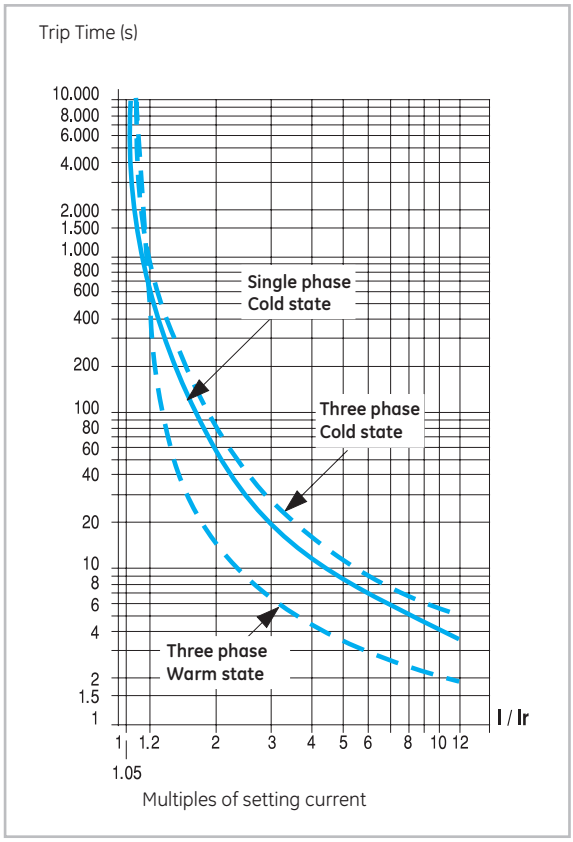


Tripping curves

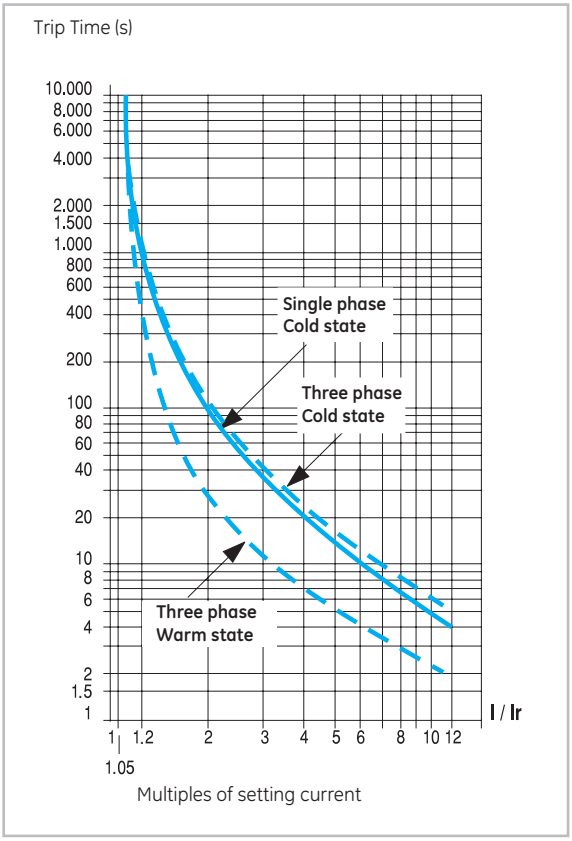
RT3 Class 10



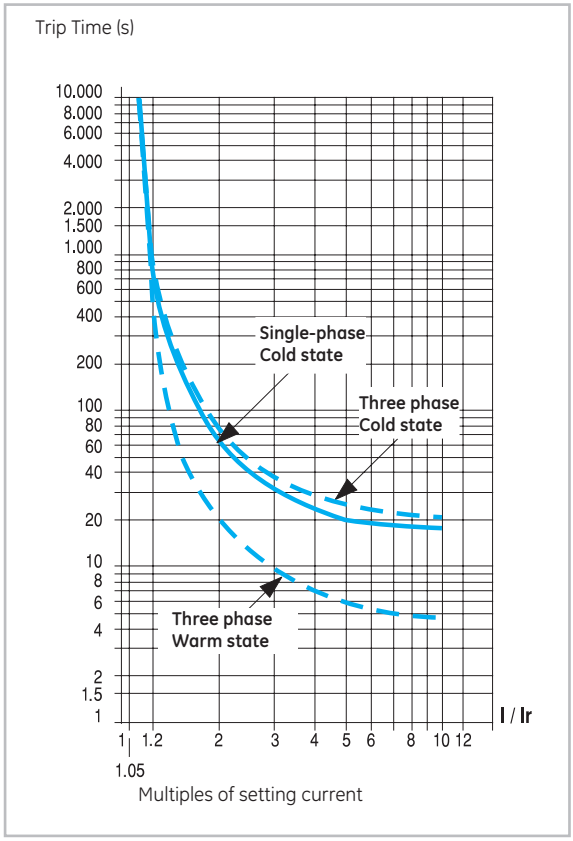
RT4 Class 10



RT32 Class 20

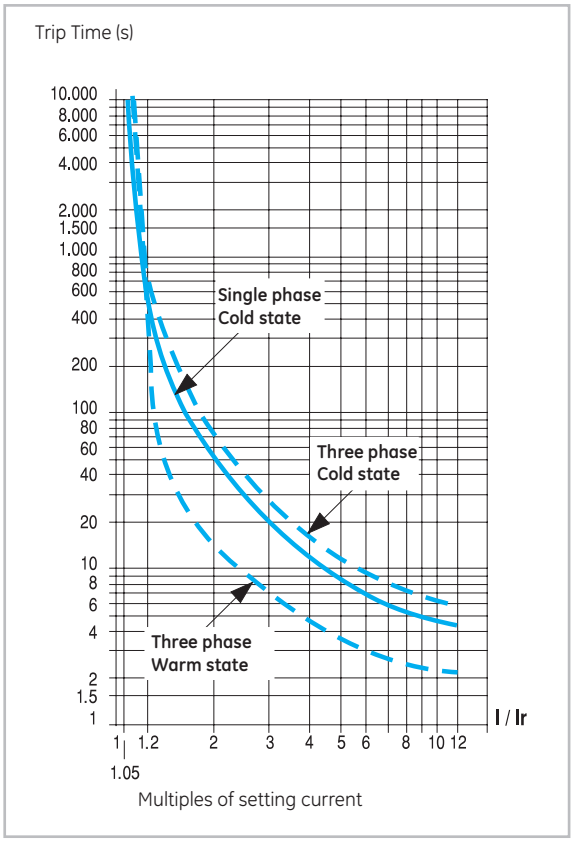


RT4L Class 30

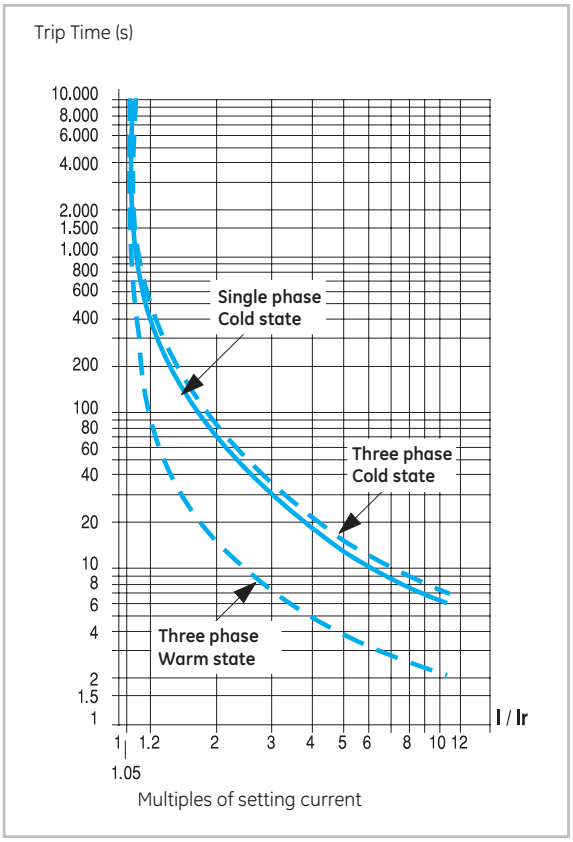


Tripping curves

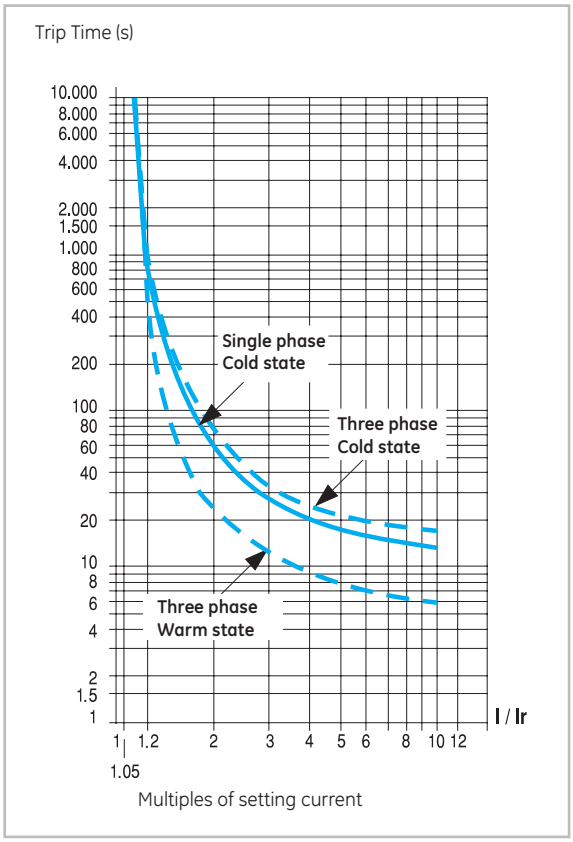
RT5 Class 10



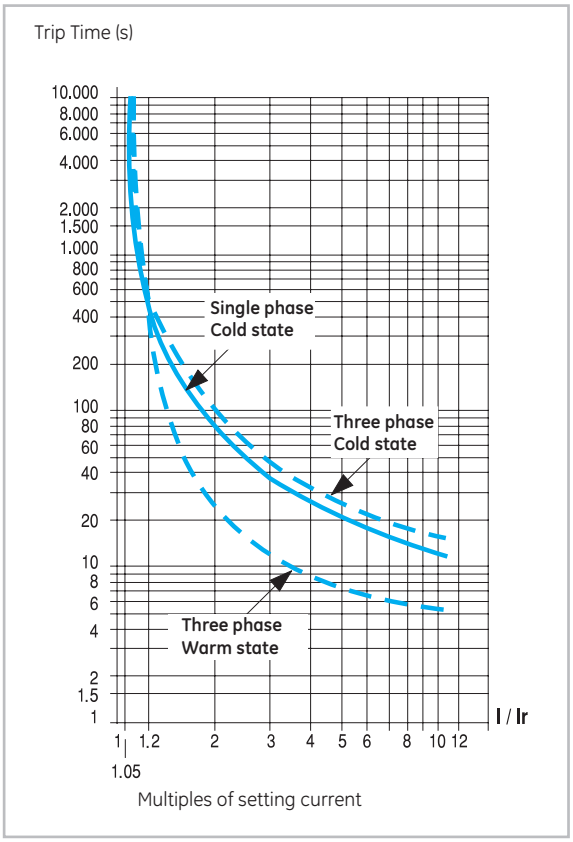
RT6 Class 10



RT5L Class 30



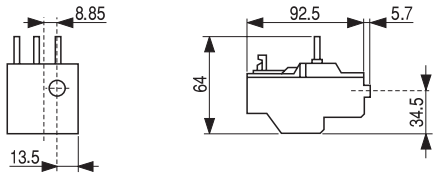
RT6L Class 30



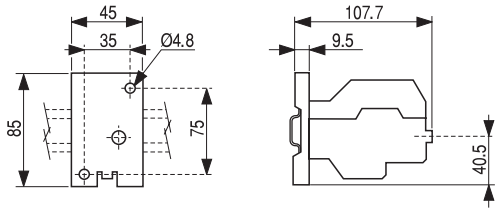
Dimensional drawings

Thermal overload relay for contactors

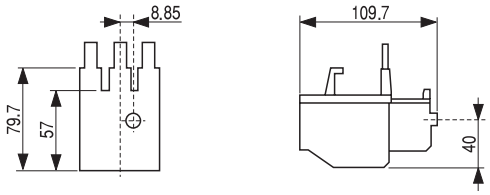
RT1 - RT12
0.190 kg



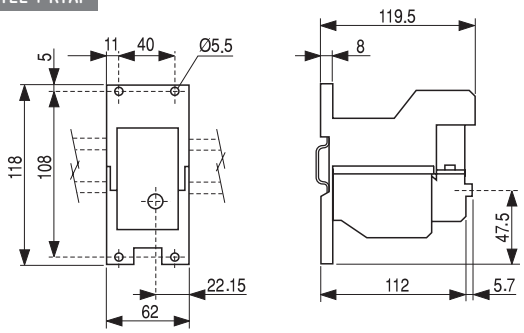
RT1 + RT XP
RT12 + RTXP



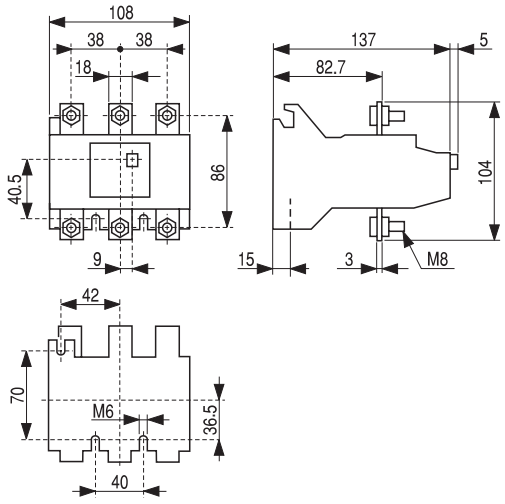
RT2 - RT22
0.400 kg



RT2 + RT XP
RT22 + RTXP

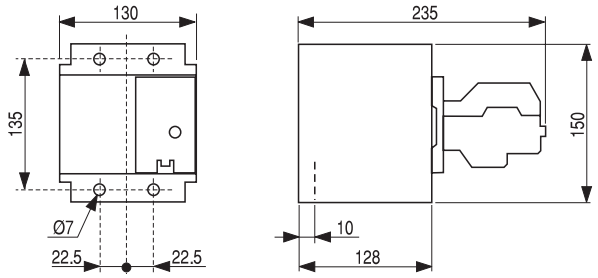


RT3 - RT32
0.900 kg

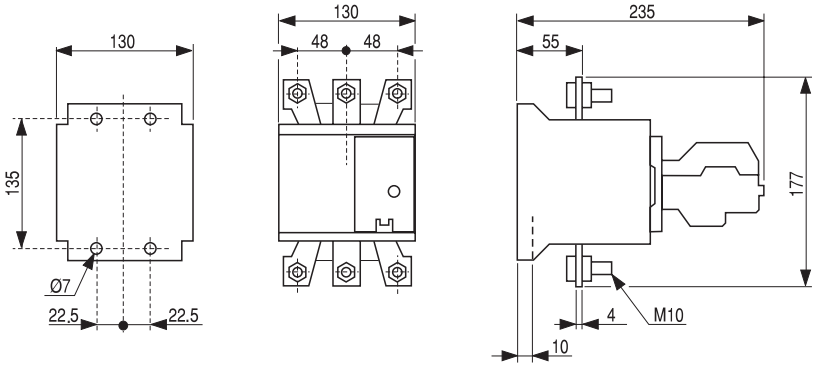


Thermal overload relay for contactors

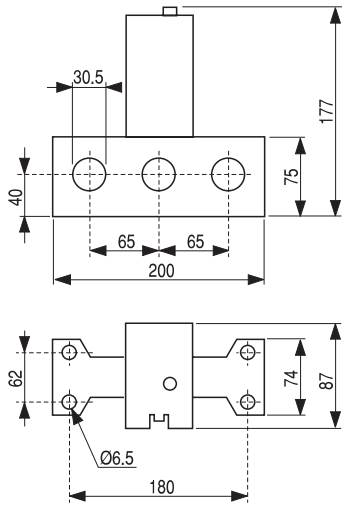
RT4LA...RT4LM
2.400 kg



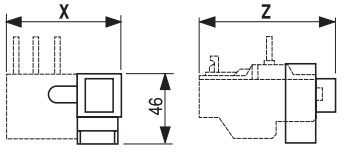
RT4/4LN...RT4/4LR
2.400 kg



RT5 / 5L
0.875 kg



Remote electrical reset



RTXRR + ...	X	Z
RT1	75	110
RT2	84	121
RT3	108	153
RT4	150	240
RT5	200	196

Coordination tables

Coordination Type 2 - 65kA at 380/400V and 415V - 50/60Hz

MOTOR[1]			BREAKER				CONTACTOR	OVERLOAD RELAY		WIRE	
Rated power	Rated current		Cat. no.	Rated current In	Magnetic setting 1m Pick-up ±20% Im	Magnetic current	Series	Series	Setting range	Smallest wire Cu (PVC)[2]	Min frontal safety
	380/400V	415V									
(kW)	(A)		#	(A)	(A)	(A)			(A)	(mm²)	(mm)
0.06	0.23	0.21	GPS1MHAB	0.25	-	3.3	CLOO	RE1D	0.1-0.5	1	20
0.09	0.34	0.31	GPS1MHAC	0.4	-	5.2	CLOO	RE1D	0.1-0.5	1	20
0.12	0.44	0.4	GPS1MHAD	0.63	-	8.2	CLOO	RE1D	0.1-0.5	1	20
0.18	0.65	0.63	GPS1MHAE	1	-	13	CLOO	RE1H	0.4-2.0	1	20
0.25	0.9	0.8	GPS1MHAE	1	-	13	CLOO	RE1H	0.4-2.0	1	20
0.37	1.25	1.1	GPS1MHAF	1.6	-	20.8	CLOO	RE1H	0.4-2.0	1	20
0.55	1.6	1.5	GPS1MHAF	1.6	-	20.8	CLOO	RE1H	0.4-2.0	1	20
0.75	2	1.9	GPS1MHAG	2.5	-	32.S	CLOO	RE1K	1.5-5.0	1	20
1.1	2.6	2.5	GPS1MHAH	4	-	52	CL25	RE1K	1.5-5.0	1	20
1.5	3.5	3.4	GPS1MHAH	4	-	52	CL25	RE1K	1.5-5.0	1	20
2.2	5	4.5	GPS1MHAJ	6.3	-	81.9	CL25	RE1K	1.5-5.0	1	20
3	7	6.5	GPS1MHAK	10	-	130	CL25	RE1M	1.6-8.0	1.5	20
4	9	8	GPS1MHAK	10	-	130	CL25	RE1S	6.4-32.0	1.5	20
5.5	12	11	GPS1MHAL	13	-	169	CL25	RE1S	6.4-32.0	2.5	20
7.5	-	14	GPS1MHAM	16	-	208	CL25	RE1S	6.4-32.0	2.5	20
8.8	16	-	GPS1MHAM	16	-	208	CL25	RE1S	6.4-32.0	2.5	20
11	22.5	21	GPS1MHAP	25	-	325	CL25	RE1S	6.4-32.0	4	20
15	30	28	GPS1MHAR	32	-	416	CL04	RE1S	6.4-32.0	6	20
11	22.5	21	GPS2MHAR	25	-	325	CL04	RE1S	6.4-32.0	4	20
15	30	28	GPS2MHAP	32	-	416	CL04	RE1S	6.4-32.0	6	20
18.5	37	35	GPS2MHAS	40	-	520	CL45	RE1W	9.0-45.0	10	20
22	-	40	GPS2MHAT	50	-	650	CL06	RE2H	15.0-75.0	10	25
	44	--	GPS2MHAT	50	-	650	CL06	RE2H	15.0-75.0	10	25
30	60	55	GPS2MHAU	63	-	819	CL07	RE2H	15.0-75.0	16	25
35	65	60	FDH36MC080GD	80	900-1300	1100	CL08	RE2H	15.0-75.0	25	25
45	85	80	FDH36MC1 OOGD	100	1000-1500	1400	CL09	RE2M	22.0-110.0	25	30
55	-	100	FDH36MC1 OOGD	100	1000-1500	1400	CL10	RE2M	22.0-110.0	25	30
55	105	-	FEH36MC125JF	125	1250-1875	1250	CL10	RE2M	22.0-110.0	25	30
75	138	135	FEH36MC200KF	200	2250-3350	2800	CK75	RE3E	30.0-150.0	50	40

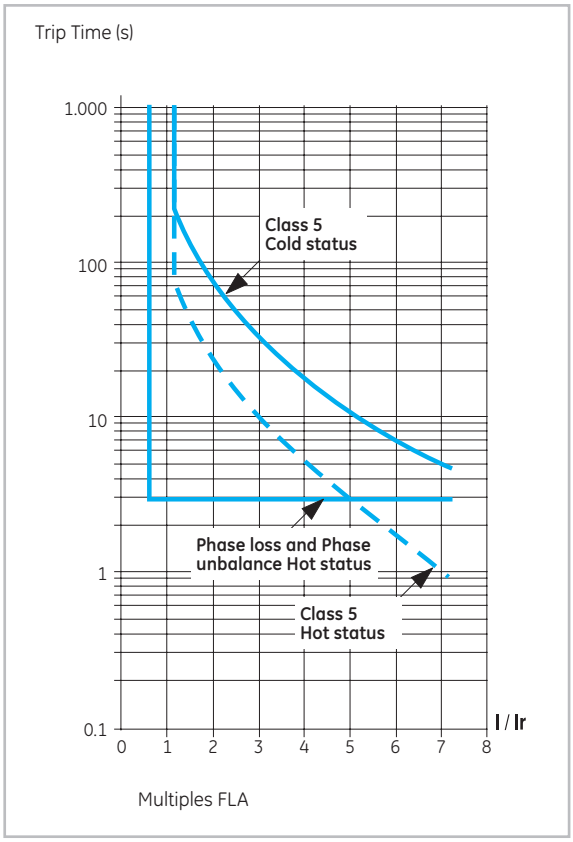
Coordination Type 2 - 100kA at 500 - 525V - 50/60Hz

MOTOR[1]			gL/gG Fuses		EOL			CONTACTOR		WIRE	
Rated power	Rated current			Size	Series	Type	Setting range	Series	PAC3	Seco min	Safety clearance
	500V	525V									
kW	(A)		In (A)				(A)		(kW)		(mm)
0.06	0.17	0.16	2	000	RE1	D	0.1-0.5	CLOO	5.5	1	20
0.03	0.24	0.22	2	000	RE1	D	0.1-0.5	CLOO	5.5	1	20
0.12	0.33	0.3	2	000	RE1	D	0.1-0.5	CLOO	5.5	1	20
0.18	0.48	0.46	2	000	RE1	D	0.1-0.5	CLOO	5.5	1	20
0.25	0.66	0.64	2	000	RE1	H	0.4-2.0	CLOO	5.5	1	20
0.37	0.3	0.85	4	000	RE1	H	0.4-2.0	CLOO	5.5	1	20
0.55	1.2	1.15	4	000	RE1	H	0.4-2.0	CLOO	5.5	1	20
0.75	1.5	1.45	4	000	RE1	H	0.4-2.0	CLOO	5.5	1	20
1.1	2.1	1.3	6	000	RE1	K	1.5-5.0	CLOO	5.5	1	20
1.5	2.8	2.6	10	000	RE1	K	1.5-5.0	CLOO	5.5	1	20
1.1	2.1	1.3	6	000	RE1	K	1.5-5.0	CL01	7.5	1	20
1.5	2.8	2.6	10	000	RE1	K	1.5-5.0	CL01	7.5	1	20
2.2	3.3	3.6	10	000	RE1	K	1.5-5.0	CL01	7.5	1	20
1.5	2.8	2.6	10	000	RE1	K	1.5-5.0	CL25	15	1	20
2.2	3.3	3.6	10	000	RE1	K	1.5-5.0	CL25	15	1	20
3	5.3	5	16	000	RE1	M	1.6-8.0	CL25	15	1	20
4	6.8	6.5	20	000	RE1	M	1.6-8.0	CL25	15	1	20
5.5	3.1	8.6	25	000	RE1	S	6.4-32.0	CL25	15	1.5	20
7.5	12	11.4	32	000	RE1	S	6.4-32.0	CL25	15	2.5	20
10	15.5	14.8	40	000	RE1	S	6.4-32.0	CL25	15	2.5	20
11	17.6	17	40	000	RE1	S	6.4-32.0	CL25	15	2.5	20
15	23	22	50	000	RE1	S	6.4-32.0	CL04	18.5	4	20
18.5	28.5	27	63	000	RE1	S	6.4-32.0	CL04	18.5	6	20
4	6.8	6.5	20	000	RE1	M	1.6-8.0	CL45	25	1.5	20
5.5	3.1	8.6	25	000	RE1	S	6.4-32.0	CL45	25	2.5	20
7.5	12	11.4	32	000	RE1	S	6.4-32.0	CL45	25	2.5	20
11	17.6	17	40	000	RE1	S	6.4-32.0	CL45	25	2.5	20
15	23	22	50	000	RE1	S	6.4-32.0	CL45	25	4	20
18.5	28.5	27	63	000	RE1	W	3.0-45.0	CL45	25	5	20
22	33	31.5	80	000	RE1	H	15.0-75.0	CL45	25	5	20
18.5	28.5	27	63	000	RE2	H	15.0-75.0	CL06	30	5	25
22	33	31.5	80	000	RE2	H	15.0-75.0	CL06	30	5	25
30	45	43	80	000	RE2	H	15.0-75.0	CL06	30	10	25
37	53	52	100	000	RE2	H	15.0-75.0	CL07	40	10	25
40	53	56	100	000	RE2	H	15.0-75.0	CL08	45	16	25
45	65	62	125	00	RE2	H	15.0-75.0	CL09	55	16	30
55	80	76	125	00	RE2	M	22.0-110.0	CL10	65	25	30
75	105	100	160	01/1	RE3	E	30.0-150.0	CK75	100	35/25	40
30	130	124	250	01/1	RE3	E	30.0-150.0	CK08	110	50	40

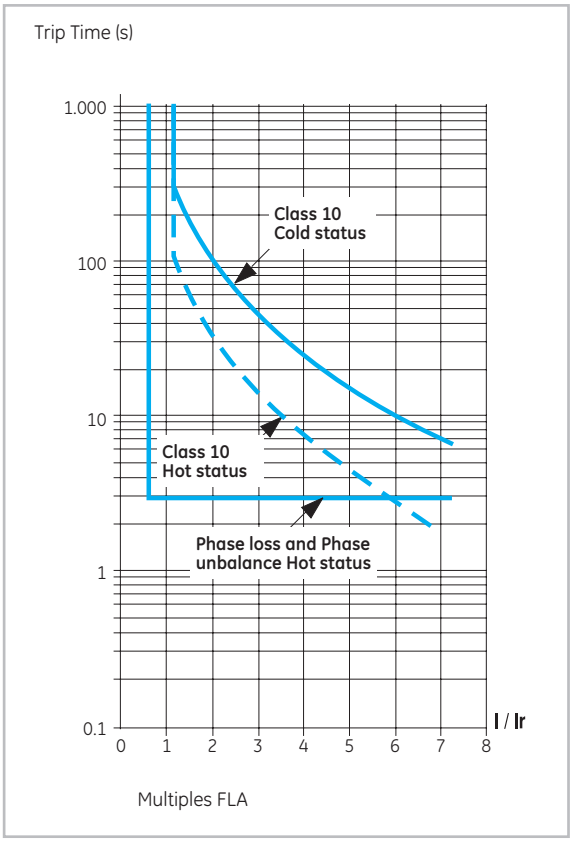
(1) Current are relevant to four pole motors not having special characteristics of torque.
(2) The minimum cycle cross-sections are referred to an ambient temperature of 30°C max. in free air and are selected to withstand the maximum let-through energy and the motor rated current. Besides the user has to consider the drop voltage, the type of laying and ambient temperature if it is different.

Tripping curves

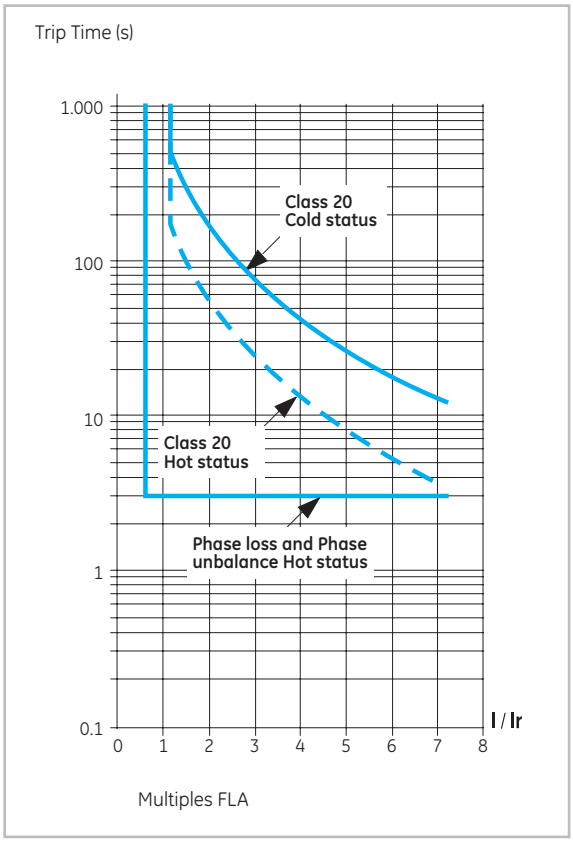
Class 5



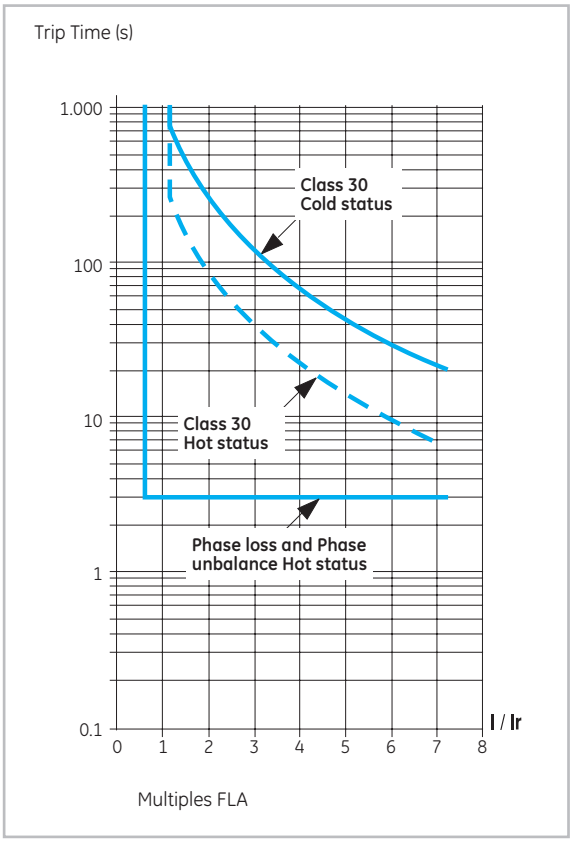
Class 10



Class 20

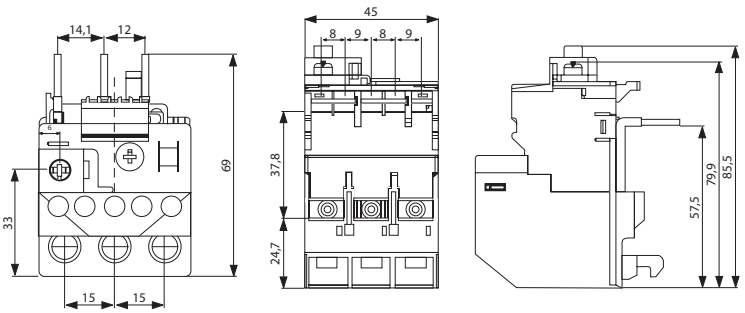


Class 30

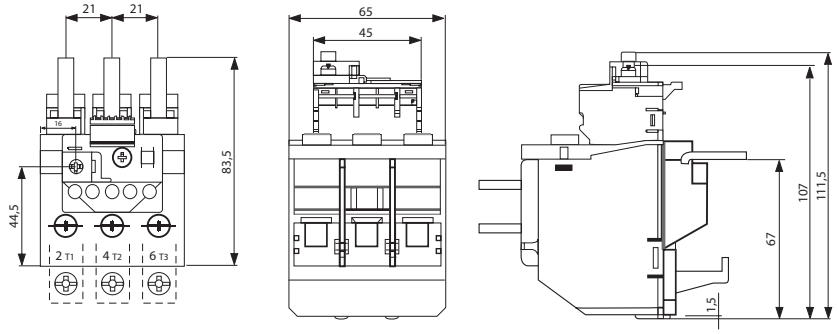


Dimensional drawings

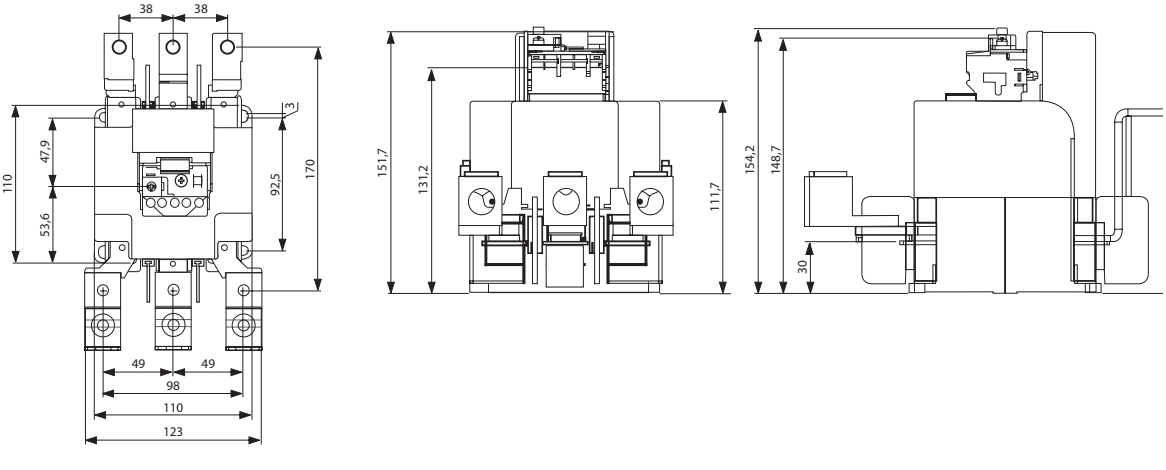
Frame 1



Frame 2



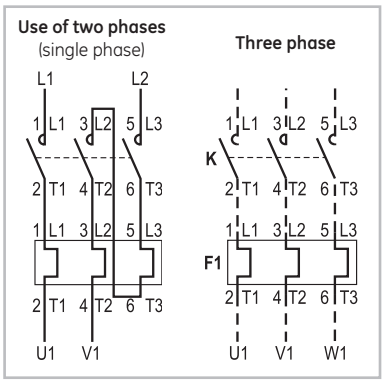
Frame 3



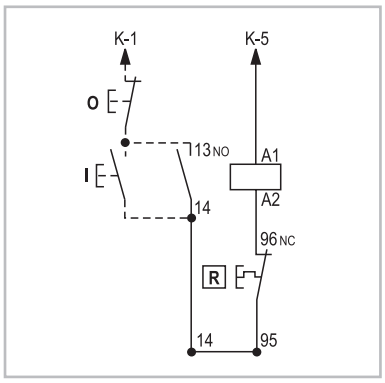
Wiring diagrams

Series M. Direct-on-line starter with reset

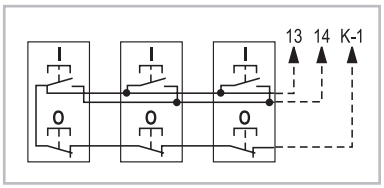
Power circuit



Control circuit

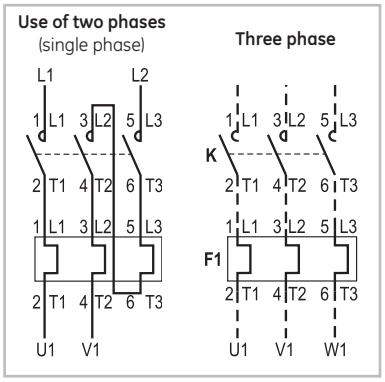


Control by two or more push-buttons

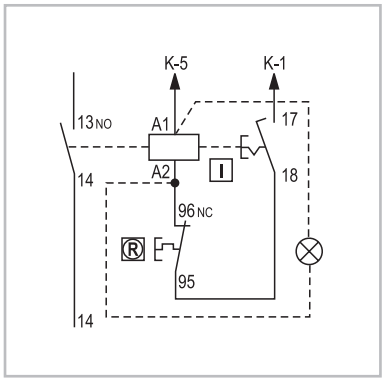


Series M. Direct-on-line starter with start/emergency stop push-button

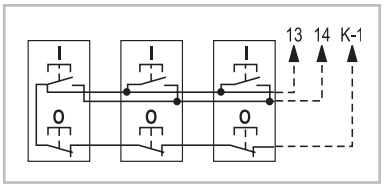
Power circuit



Control circuit



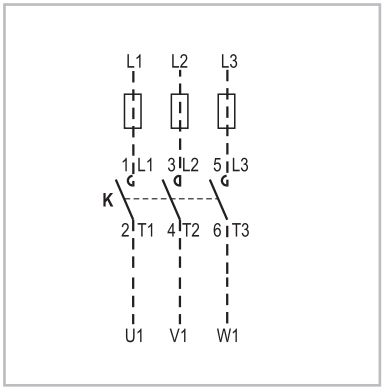
Control by two or more push-buttons



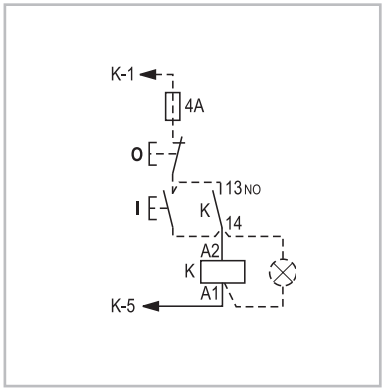
Wiring diagrams

Series CL. Direct-on-line starter

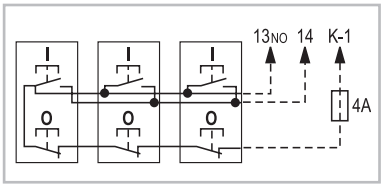
Power circuit



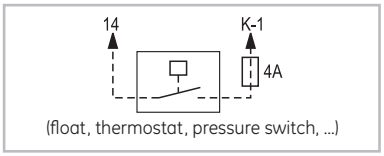
Control circuit



Control by two or more push-buttons

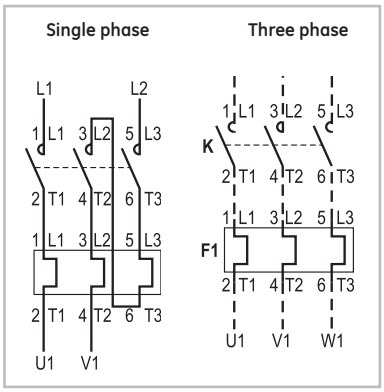


Control by permanent contact

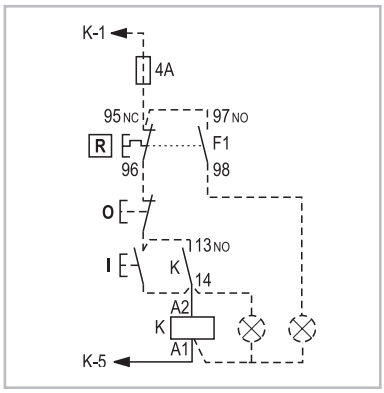


Series CL. Direct-on-line starter with reset push-button

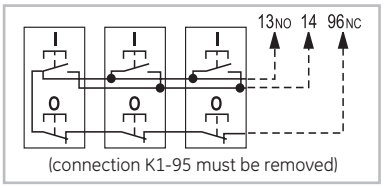
Power circuit



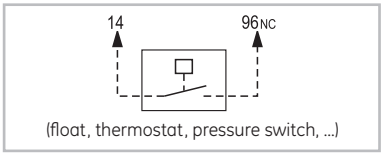
Control circuit



Control by two or more push-buttons

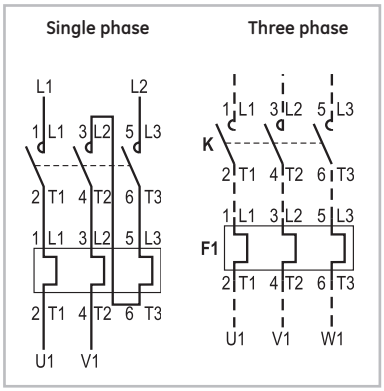


Control by permanent contact

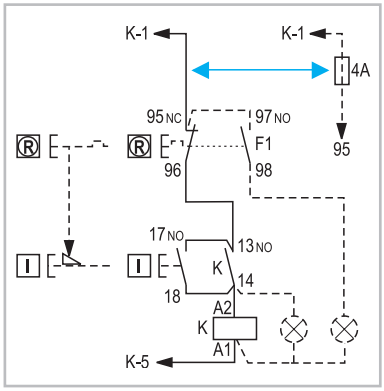


Series CL. Direct-on-line starter with start/stop/reset push-button

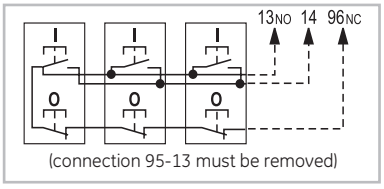
Power circuit



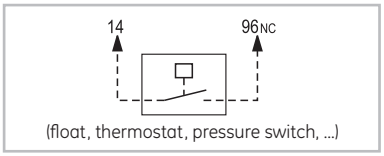
Control circuit



Control by two or more push-buttons

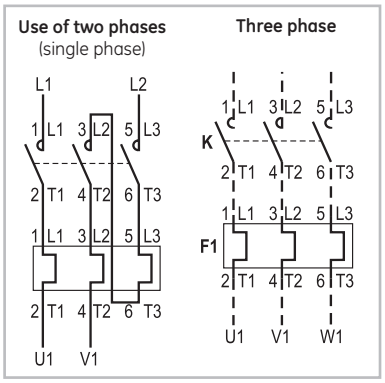


Control by permanent contact

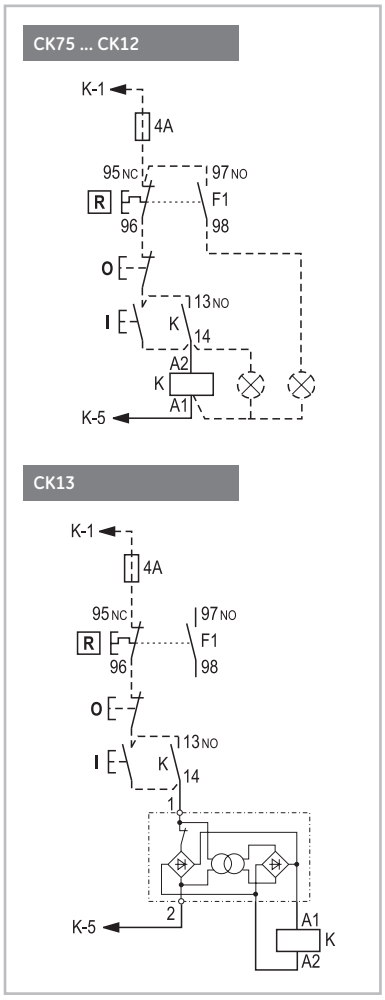


Series CK. Direct-on-line starter

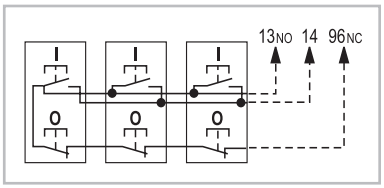
Power circuit



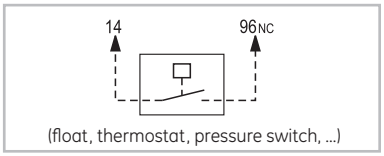
Control circuit



Control by two or more push-buttons



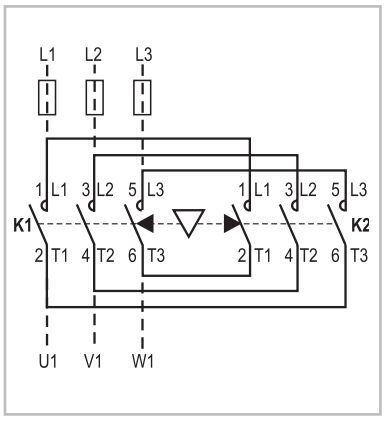
Control by permanent contact



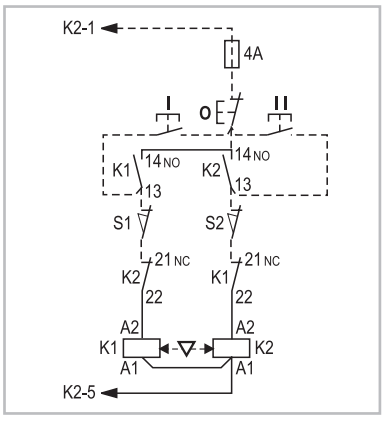
Wiring diagrams

Series M. Reversing starter without thermal overload relay

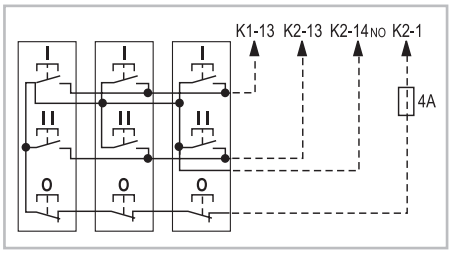
Power circuit



Control circuit

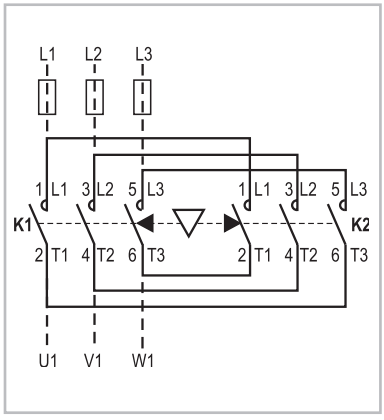


Control by two or more push-buttons

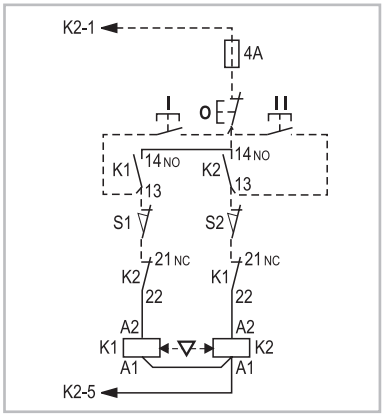


Series CL. Reversing starter without thermal overload relay

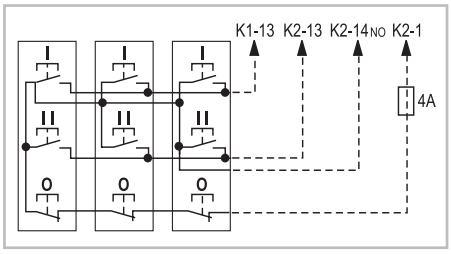
Power circuit



Control circuit

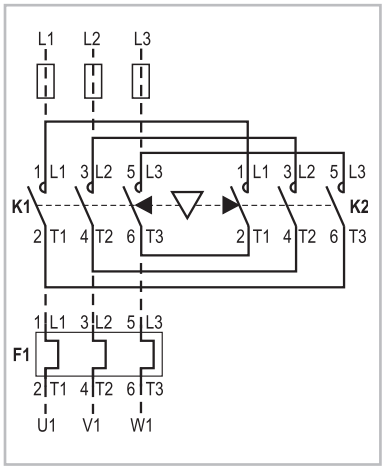


Control by two or more push-buttons

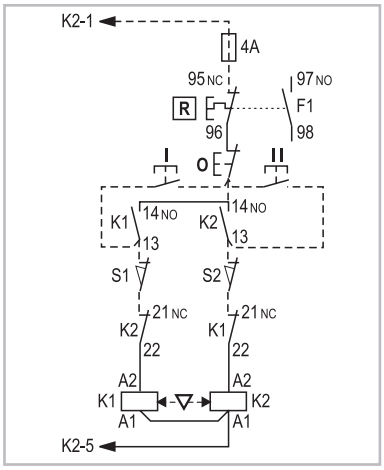


Series CL. Reversing starter with thermal overload relay

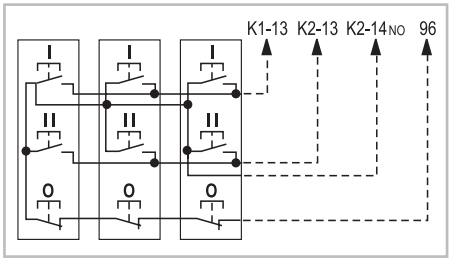
Power circuit



Control circuit

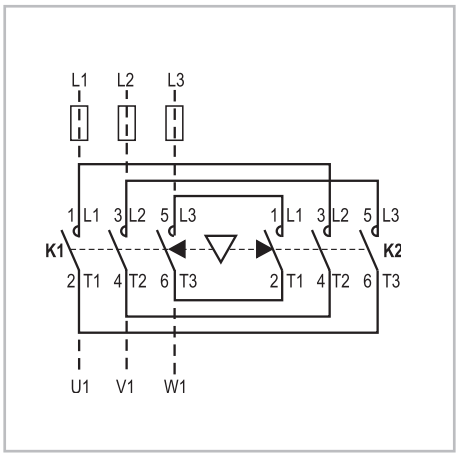


Control by two or more push-buttons

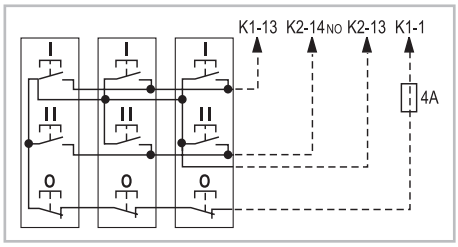


Series CK. Reversing starter without thermal overload relay

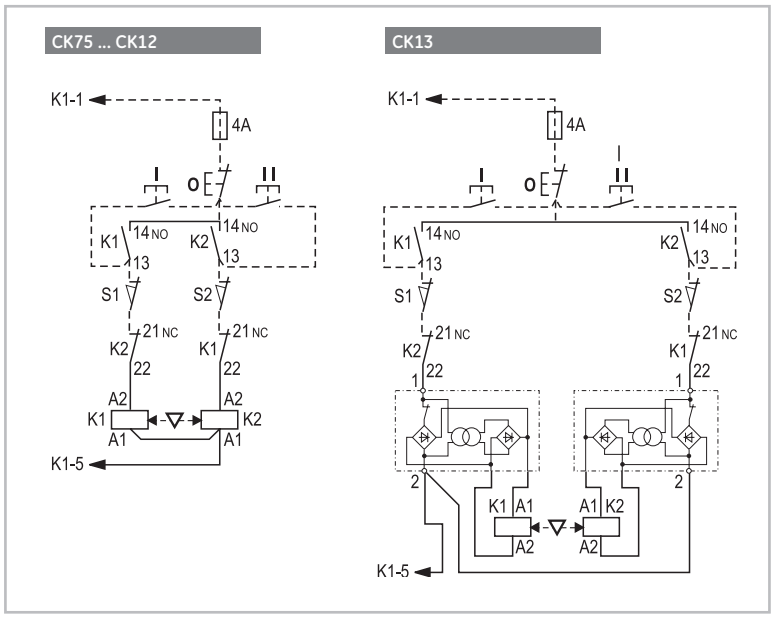
Power circuit



Control by two or more push-buttons

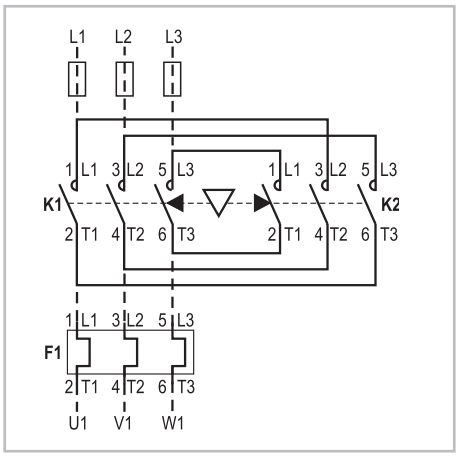


Control circuit

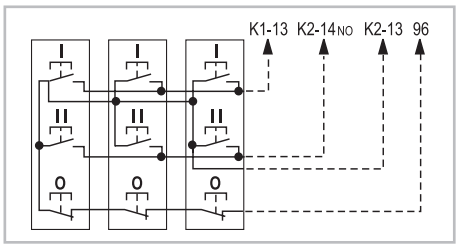


Series CK. Direct-on-line starters with thermal overload relay

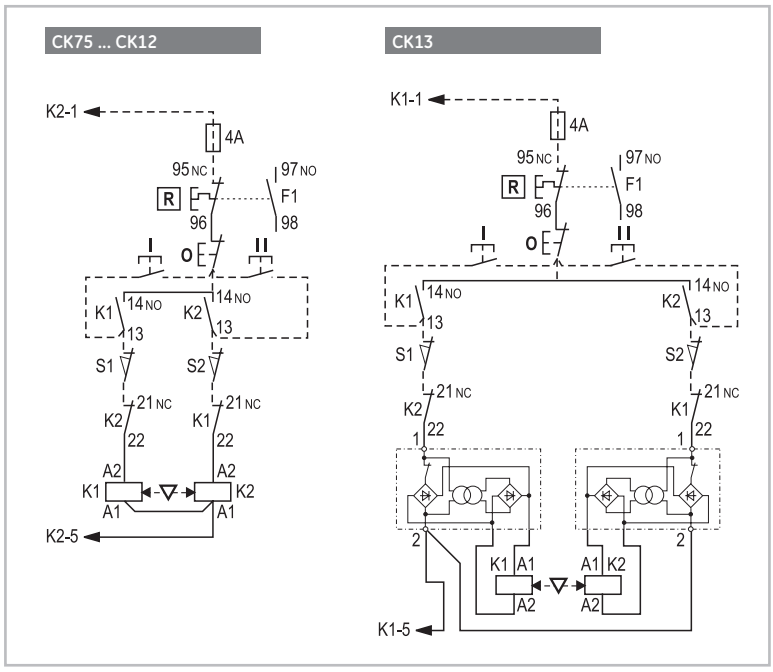
Power circuit



Control by two or more push-buttons



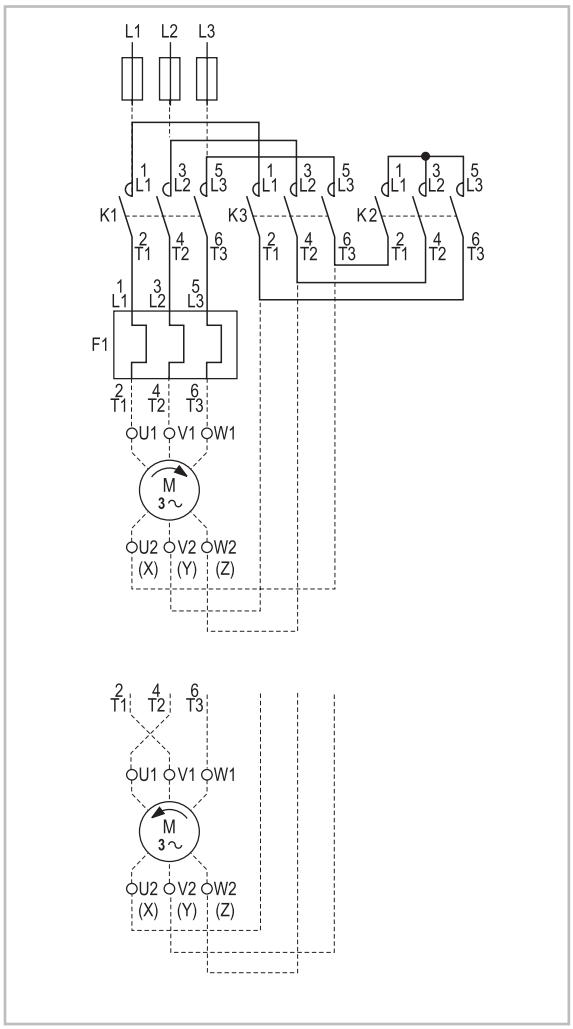
Control circuit



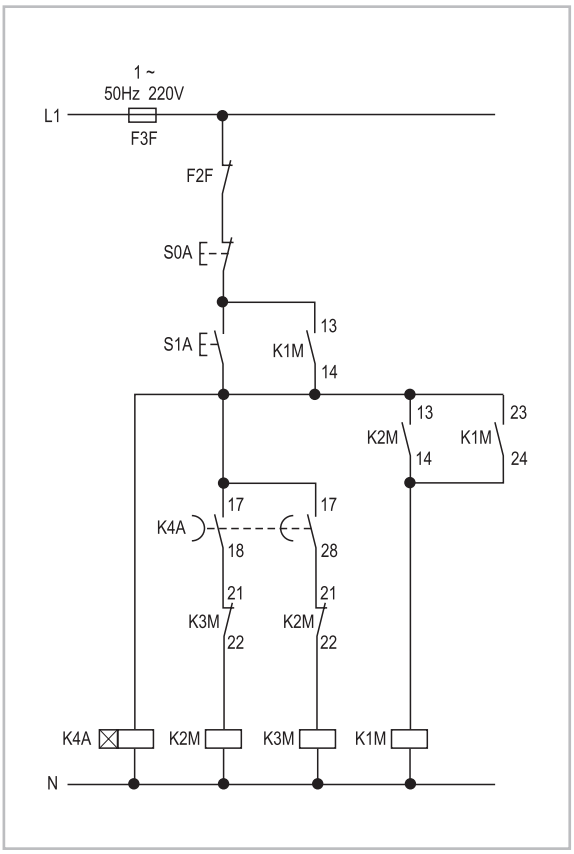
Wiring diagrams

Series CL and CK. Star-delta starters

Power circuit



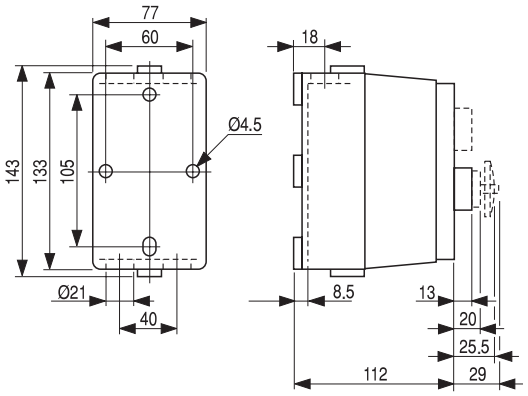
Control circuit



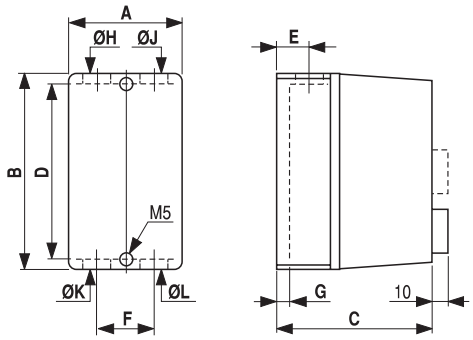
Dimensional drawings

Direct-on-line starters. IP40 / IP65

Series M



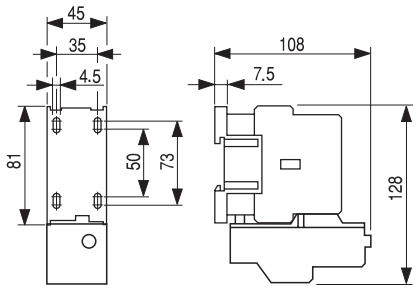
Series CL



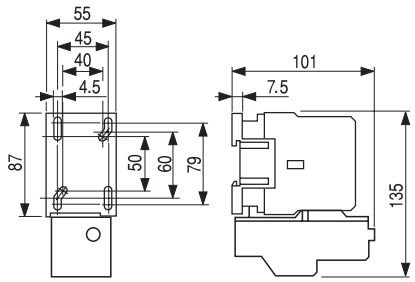
	LG00... - LG02...	LG25... - LG04...
A	87	101
B	180	195
C	124.5	136
D	162	177
E	20	23
F	49	57
G	8	8
Ø H	21	23
Ø J	21	21
Ø K	21	23
Ø L	21	23

Series CL - Direct-on-line starters

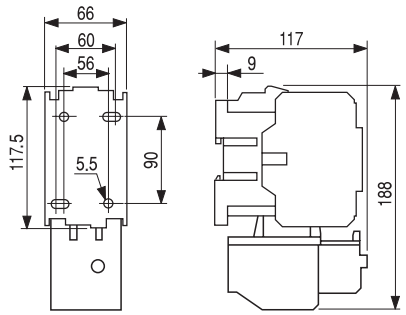
CL00 ... CL25



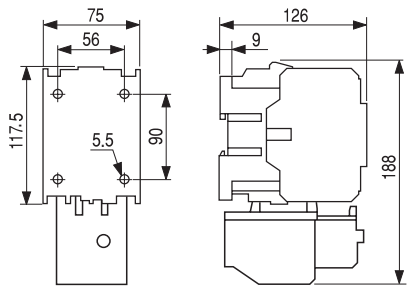
CL04



CL45 ... CL08



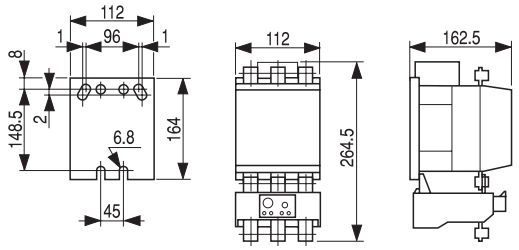
CL09 ... CL10



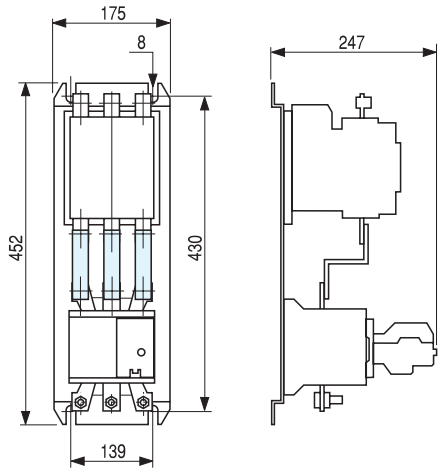
Dimensional drawings

Series CK - Direct-on-line starters

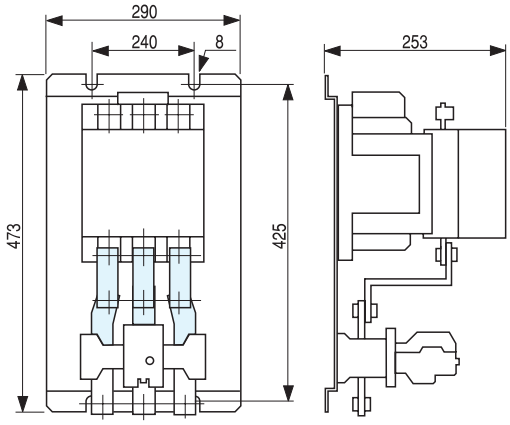
CK75 ... CK08



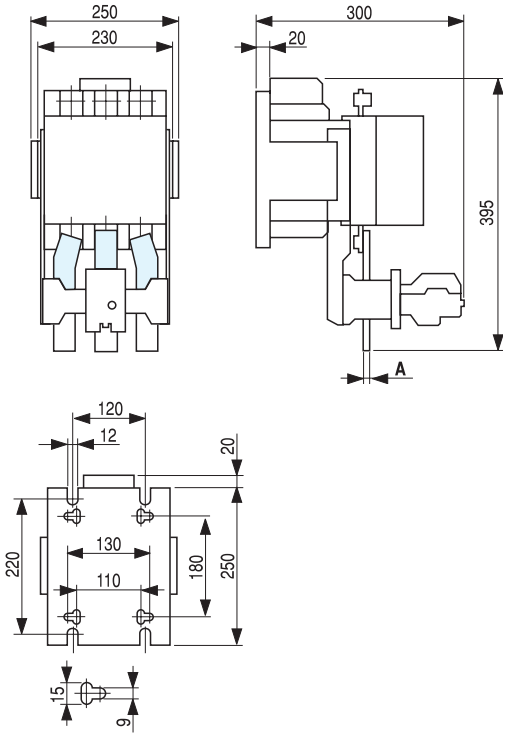
CK85 ... CK95



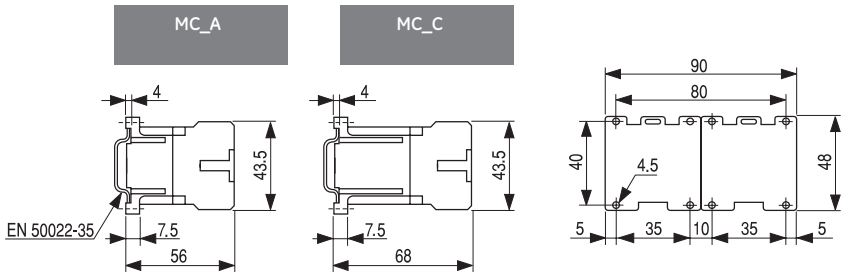
CK10 ... CK11

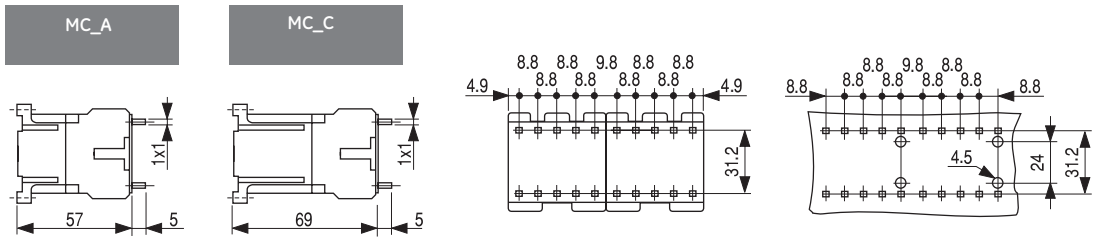


CK12



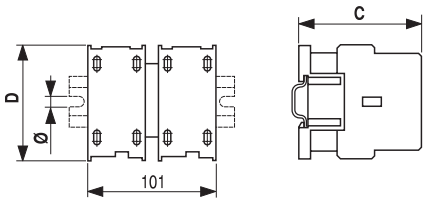
Series M. Direct-on-line reversing starters



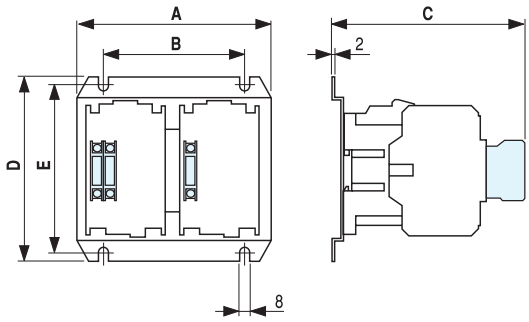


Series CL. Direct-on-line reversing starters without thermal overload relay

	A	B	C	D	Ø
CL00... - CL25...	130	116	87.5	81	5.5
CL03... - CL45...	150	136	100.5	87	5.5

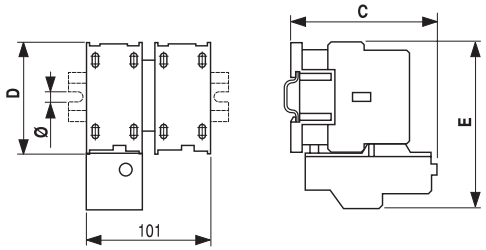


	A	B	C	D	E
CL06... - CL08...	171	135	160	155	133
CL09... - CL10...	186	150	167	155	133

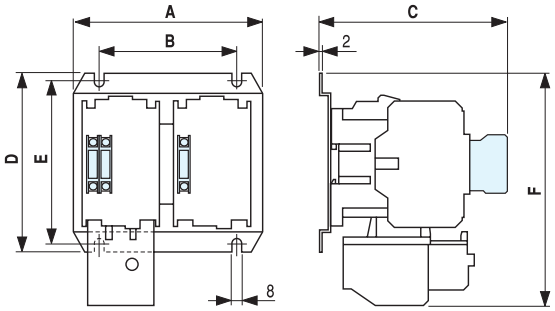


Series CL. Direct-on-line reversing starters with thermal overload relay

	A	B	C	D	E	Ø
CL00... - CL25...	130	116	110.5	81	135	5.5
CL03... - CL45...	150	136	103.5	87	145	5.5



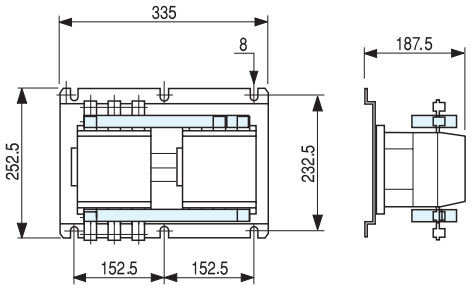
	A	B	C	D	E	F
CL06... - CL08...	171	135	160	155	133	205
CL09... - CL10...	186	150	167	155	133	258



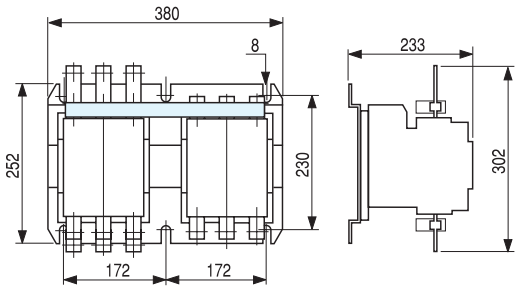
Dimensional drawings

Series CK. Direct-on-line reversing starters without thermal overload relay

CK75 .... CK08

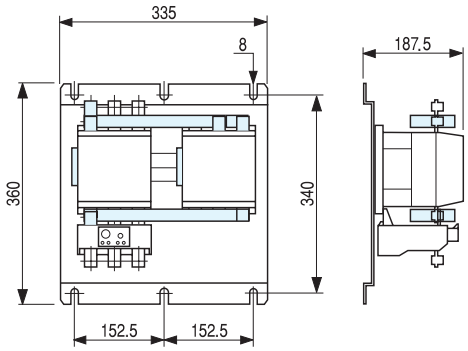


CK85 .... CK95

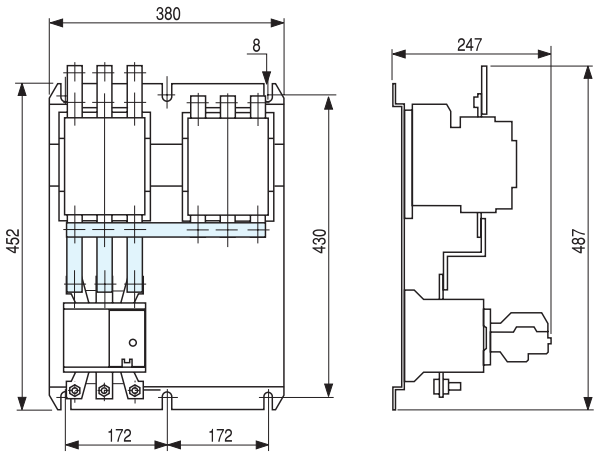


Series CK. Direct-on-line reversing starters with thermal overload relay

CK75 .... CK08

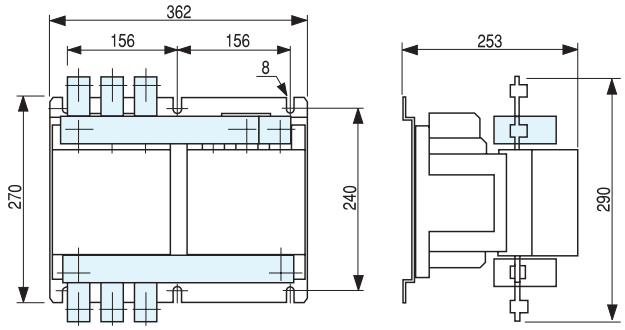


CK85 .... CK95

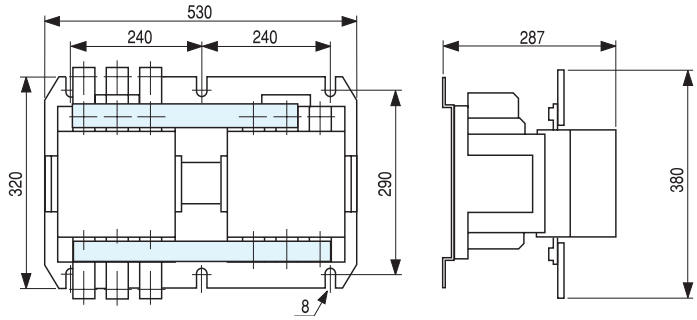


Series CK - Direct-on-line reversing starters without thermal overload relay

CK10 .... CK11

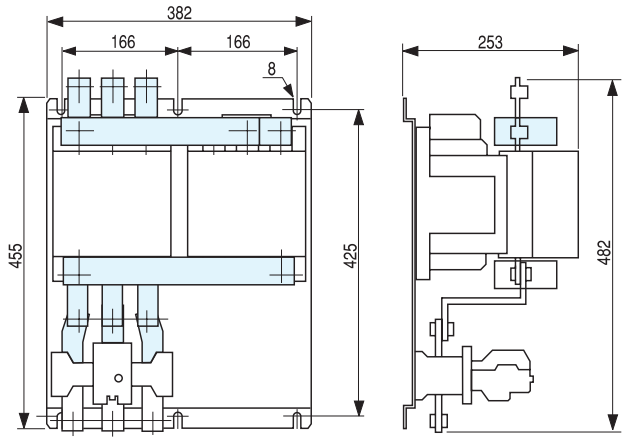


CK12

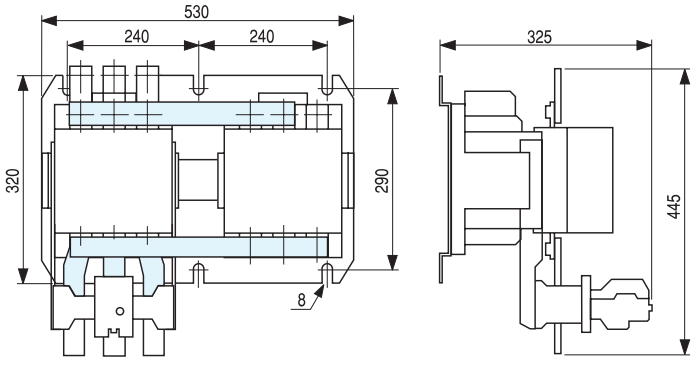


Series CK - Direct-on-line reversing starters with thermal overload relay

CK10 .... CK11

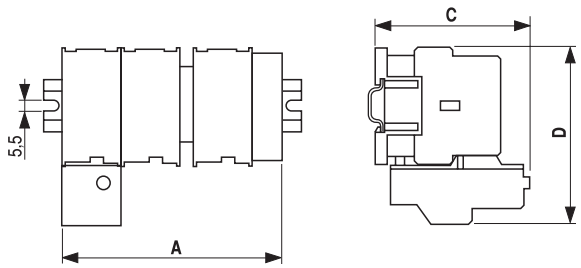


CK12

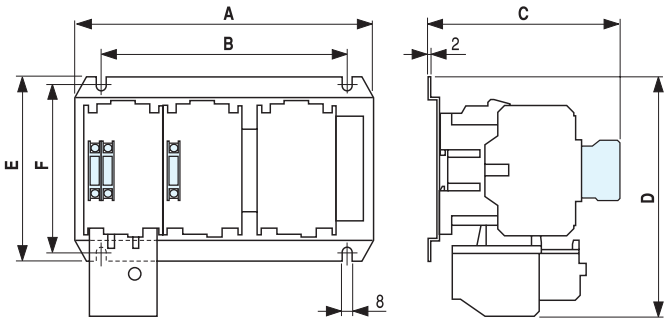


Dimensional drawings

Series CL - Star-delta starters



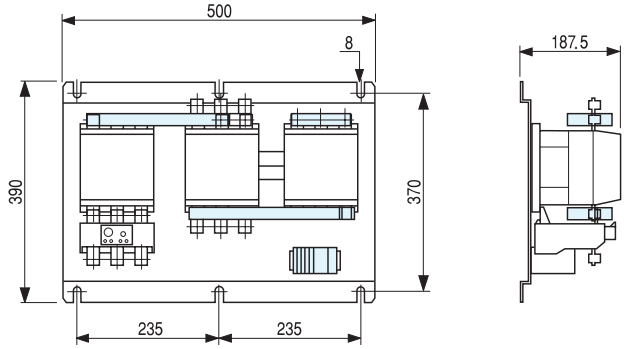
	A	B	C	D
CL00... - CL25...	190	180	110.5	135
CL03... - CL04...	220	210	103.5	145



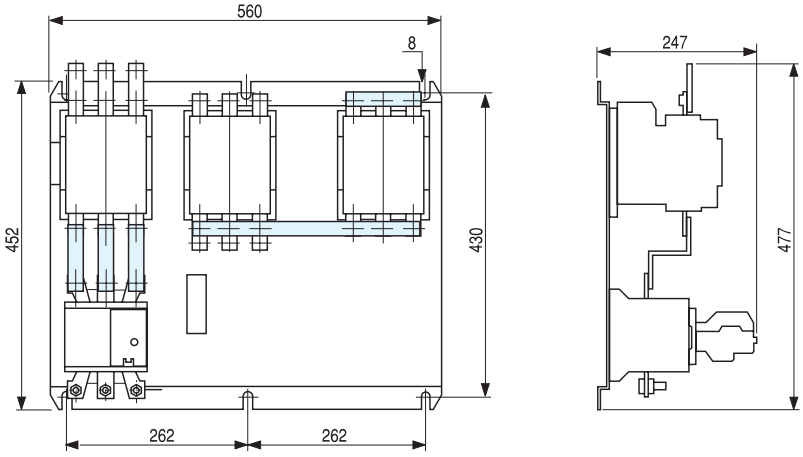
	A	B	C	D	E	F
CL06... - CL08...	253	217	129	205	155	133
CL09...	263	247	138	247	155	133
CL10...	283	247	151	247	155	133

Series CK - Star-delta starters

CK75 ... CK08

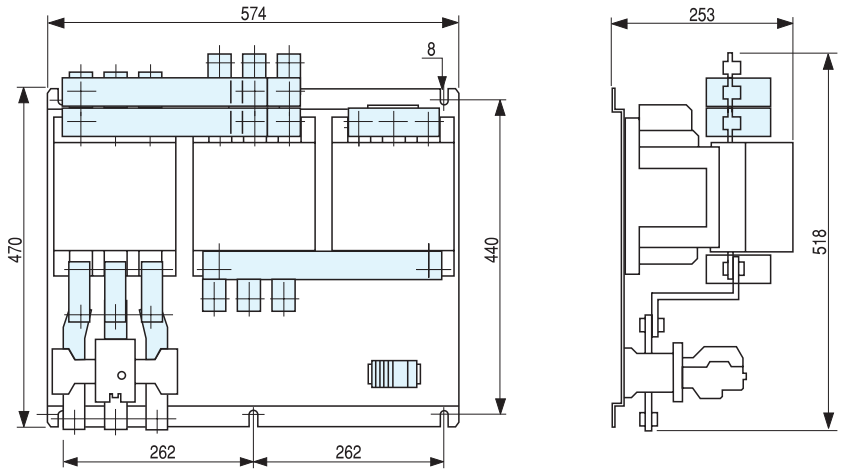


CK85 ... CK95

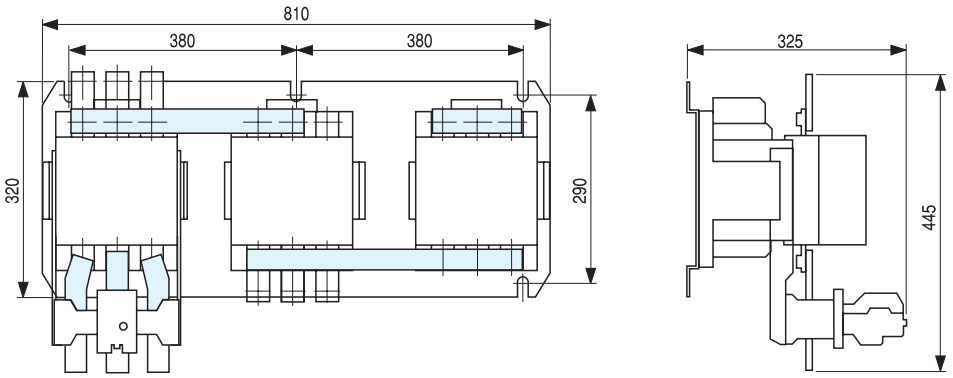


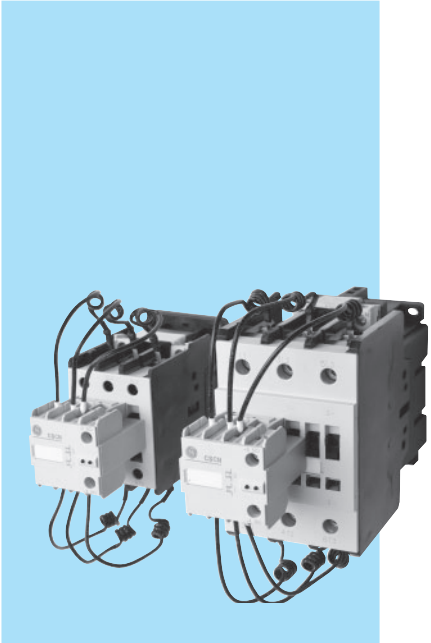
Series CK - Star-delta starters

CK10 ... CK11



CK12





Contactors for capacitors switching

With built-in resistance to switch three phase capacitor banks

"CSCN" contactors incorporate a front block with three early-make auxiliary contacts together with 6 quick discharge resistors (two per phase) through which the capacitors are switched to the network, reducing the current peak. Once the resistors have damped the current peak, the main contacts short-circuit the resistors, carrying the uninterrupted current.
A few miliseconds later the early-make auxiliary contact closes to guarantee that all current flows through the main contacts.

Standards

IEC/EN 60947-1
IEC/EN 60947-4-1
IEC/EN 60947-5-1
EN 50005
UL 508
CSA C22.2/14
CENELEC HD 419
VDE 0660/102
NFC 63-110
ASE 1025
UNE 20109

Approvals/Marking

cULus CE

Standard voltages

To complete the catalogue number, replace the symbol ♦ by the code corresponding to the voltage and frequency of the control circuit, other voltages on request.

Alternating current (V). Dual-frequency

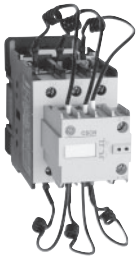
♦	1	2	3	4	5	6	7	8	9
50/60Hz	24	42	110 115	120	220	230	240	440	48

Alternating current (V)

♦	E	K	L	N	T	U	W	Y	Z
50Hz	32	127		220 230		380 400	415	500	660 690
60Hz			208	277	380	480	460	600	

Order codes ● pg. A.145
Technical data ● pg. A.146
Dimensional drawings ● pg. A.148

Contactors for capacitors switching



Ith	Ambient temperature										Fuse	Contacts		Cat. no. (1)	Ref. no. see bottom	Pack
	θ ≤ 55°C					θ ≤ 70°C										
	230V 240V	400V	415V	500V	660V 690V	230V 240V	400V	415V	500V	660V 690V		•3 | •4	•1 | •2			
A	kvar	kvar	kvar	kvar	kvar	kvar	kvar	kvar	kvar	kvar	gl - gG					
25	7.5	12.5	13	16	15	3.7	7.5	8	9.5	10	25	2	0	CSCN12A320 ♦		1
												1	1	CSCN12A311 ♦		1
												0	2	CSCN12A302 ♦		1
32	10	16.7	17	21	20	5	10	11	12.5	12.5	35	2	0	CSCN16A320 ♦		1
												1	1	CSCN16A311 ♦		1
												0	2	CSCN16A302 ♦		1
45	12.5	20	21	25	25	7.5	12.5	13	16	15	40	1	0	CSCN20A310 ♦		1
												0	1	CSCN20A301 ♦		1
												2	1	CSCN20A321 ♦		1
												1	2	CSCN20A312 ♦		1
45	15	25	26	31	30	10	15	16	18	20	50	1	0	CSCN25A310 ♦		1
												0	1	CSCN25A301 ♦		1
												2	1	CSCN25A321 ♦		1
												1	2	CSCN25A312 ♦		1
60	20	30	31	38	35	16	22	23	27	25	63	1	0	CSCN30A310 ♦		1
												0	1	CSCN30A301 ♦		1
												2	1	CSCN30A321 ♦		1
												1	2	CSCN30A312 ♦		1
90	25	45	47	56	55	20	35	36	44	40	80	1	0	CSCN45A310 ♦		1
												0	1	CSCN45A301 ♦		1
												2	0	CSCN45A320 ♦		1
												1	1	CSCN45A311 ♦		1
												1	2	CSCN45A312 ♦		1
110	35	55	57	69	65	30	45	47	56	50	125	1	0	CSCN55A310 ♦		1
												0	1	CSCN55A301 ♦		1
												2	0	CSCN55A320 ♦		1
												1	1	CSCN55A311 ♦		1
												1	2	CSCN55A312 ♦		1
140	45	70	73	88	85	35	60	62	75	70	160	1	0	CSCN70A310 ♦		1
												0	1	CSCN70A301 ♦		1
												2	0	CSCN70A320 ♦		1
												1	1	CSCN70A311 ♦		1
												1	2	CSCN70A312 ♦		1

Spare coils

For series CSCN12 ... CSCN25	LB1A ♦		5
For series CSCN30	LB3A ♦		5
For series CSCN45 ... CSCN70	LB4A ♦		5

(1) To complete the reference, replace ♦ by the code corresponding to the voltage and frequency of the control circuit. (see pg. A.144)

Technical data

Technical characteristics

Main circuit (poles)

			CSCN12	CSCN16	CSCN20	CSCN25	CSCN30	CSCN45	CSCN55	CSCN70
Rated operational voltage		(V)	690	690	690	690	690	690	690	690
Rated insulation voltage according to IEC947		(V)	1000	1000	1000	1000	1000	1000	1000	1000
Rated thermal current		(A)	25	32	45	45	60	90	110	140
Max. power utilization	230/240V	(kvar)	7,5	10	12,5	15	20	25	35	45
at 55°C	380/400V	(kvar)	12.5	16,7	20	25	30	45	55	70
	660/690V	(kvar)	15	20	25	30	35	55	65	85
Electrical endurance		(ops.)	280.000	280.000	280.000	250.000	200.000	150.000	120.000	90.000
Max. ops./hour		(ops./hour)	350	350	350	240	240	150	150	150

Control circuit

				CSCN12	CSCN16	CSCN20	CSCN25	CSCN30	CSCN45	CSCN55	CSCN70
Standard voltages		50Hz	(V)	24-690	24-690	24-690	24-690	24-690	24-690	24-690	24-690
		60Hz	(V)	24-600	24-600	24-600	24-600	24-600	24-600	24-600	24-600
Consumption											
Single frequency	Mar. circuit open		(VA)	45	45	48	48	88	191	191	198
	Mar. circuit closed		(VA)	6	6	7	7	9	15,5	15,5	17
Dual frequency	Mar. circuit open		(VA)	54	54	58	58	125	245	245	250
50Hz	Mar. circuit closed		(VA)	7	7	8	8	11.5	20	20	23
Dual frequency	Mar. circuit open		(VA)	35	35	39	39	110	215	215	220
60Hz	Mar. circuit closed		(VA)	5	5	6	6	11	15	15	19

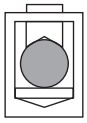
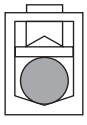
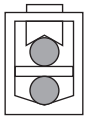
Instantaneous auxiliary contact blocks

Rated insulation voltage Ui	(V)	1000
Rated thermal current Ith	(A)	10

Ambient conditions

Storage temperature	(°C)	-50 ... +80
Operating temperature	(°C)	-25 to +55 (without derating)
Altitude up to 3000m		Nominal values
Mounting positions		Vertical mounting +/- 30°

Terminal capacity and tightening torque

			CSCN12	CSCN16	CSCN20	CSCN25	CSCN30	CSCN45	CSCN55	CSCN70
	Solid, stranded and finely stranded		1 x 0.5 ... 2,5		1 x 0.5 .. 2,5		–	–		–
	without end sleeve	(mm²)	1 x 2.5 ... 6		1 x 2.5 ... 10		–	–		–
	Finely stranded with or		1 x 1 ... 2,5		1 x 1 ... 2,5		–	–		–
	without end sleeve	(mm²)	1 x 2.5 ... 6		1 x 2.5 ... 10		–	–		–
	AWG wires		1 x 20 ... 12		1 x 20 ... 8		–	–		–
	Tightening torque	(Nm)	1.6		2.2		–	–		–
		(Lb x in.)	15		20		–	–		–
	Solid, stranded and finely stranded									
	without end sleeve	(mm²)	–		–		0.75 ... 16	1 ... 35		1.5 ... 50
	Finely stranded with end sleeve	(mm²)	–		–		0.75 ... 16	1 ... 35		1.5 ... 50
	Finely stranded without end sleeve	(mm²)	–		–		1 ... 16	1 ... 35		1.5 ... 50
	AWG wires		–		–		18 ... 6	16 ... 2		16 ... 2
	Tightening torque	(Nm)	–		–		1.8	4		5.6
		(Lb x in.)	–		–		16	35		50
	Solid	(mm²)	–		–		0.75 ... 16	1 ... 16		4 ... 35
	Stranded	(mm²)	–		–		0.75 ... 16	1 ... 25		4 ... 35
	Finely stranded without end sleeve	(mm²)	–		–		0.75 ... 16	1 ... 25		4 ... 35
	Finely stranded with end sleeve	(mm²)	–		–		1 ... 16	1 ... 25		4 ... 35
	AWG wires		–		–		18 ... 6	16 ... 4		10 ... 1
	Tightening torque	(Nm	–		–		1.8	4		5.6
		(Lb x in.)	–		–		16	35		50
	Solid, stranded and finely stranded		–		–		Max. 16	Max. 50 ... 4		Max.
	without end sleeve	(mm²)	–		–			Max. 25 ... 16		50 ... 35
	Finely stranded without end sleeve	(mm²)	–		–		Max. 16	Max. 35 ... 2,5		Max. 35
								Max. 25 ... 16		
	Finely stranded with end sleeve	(mm²)	–		–		Max. 16	Max. 35 ... 16		Max. 35
								Max. 25 ... 25		
	AWG wires		–		–		Max. 6	Max. 2 ... 12		Max. 1
			–		–			Max 4 ... 4		
	Tightening torque	(Nm)	–		–		1.8	4		5.6
		(Lb x in.)	–		–		16	35		50

Standard contactors

Series "CL" and "CK" contactors, to switch three phase capacitor banks

Electrical endurance: >100,000 operations

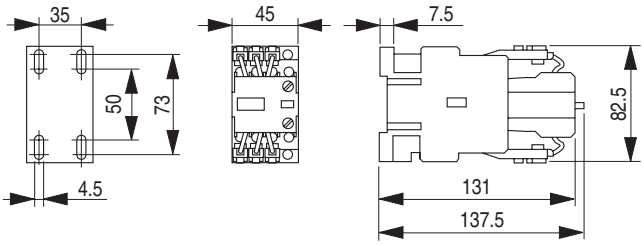
Contactor		θ ≤ 55°C					θ ≤ 70°C					Fuse gl - gG	I max. (peak)
Type (1)	Ith	220V 230V 240V	400V	415V	500V	690V 660V	220V 230V 240V	400V	415V	500V	690V 660V		
	A	kvar	kvar	kvar	kvar	kvar	kvar	kvar	kvar	kvar	kvar	A	A
CL00A	25	3	5	5.5	6.5	5.7	2.4	4	4.5	5.2	4.5	10	1000
CL01A	25	4.5	9.5	10.5	12.5	11	3.6	6	6.5	10	7	16	1000
CL02A	32	6.5	11	12	14.5	12.5	5.2	8.5	9	11.5	10	25	1000
CL25A	45	7.5	12.5	14	16	15	6.5	10	11	13	12	25	1000
CL03A	45	9	15	16.5	20	17.5	7.2	12	13	16	14	35	2500
CL04A	60	12.5	21	23	27.5	24	10	17	18	22	19.5	40	2500
CL45A	60	16.5	25	27	32	30	13	20	22	25	22	50	2500
CL06A	90	22	40	43	52	50	17	30	33	41	35	80	3500
CL07A	110	25	45	48	58	65	19	35	37	46	40	125	3500
CL08A	110	30	50	54	65	70	22	40	43	52	50	125	3500
CL09A	140	40	65	70	85	95	35	58	62	75	85	160	3500
CL10A	140	50	80	85	105	120	43	70	75	90	105	160	3500
CK75C	250	60	110	118	145	150	48	88	94	116	120	250	5000
CK08C	250	70	125	135	162	170	56	100	107	130	136	250	5000
CK85B	315	80	150	160	195	200	64	120	130	156	160	315	5000
CK09B	315	95	165	177	215	230	85	148	160	192	205	315	5000
CK95B	450	105	190	205	250	288	95	175	188	230	265	450	5500
CK10C	600	135	260	280	340	370	120	235	252	375	330	630	10000
CK11C	700	190	325	350	425	450	152	260	280	340	360	800	10000
CK12B	1000	250	400	430	520	600	200	320	344	416	480	1000	12000
CK13B	1250	315	525	565	685	650	252	420	452	548	520	1250	15000

(1) To complete contactor reference, see A.52 for CL and A.62 for CK

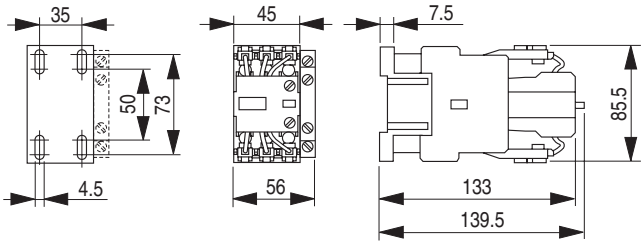
Dimensional drawings

Contactors for capacitors switching

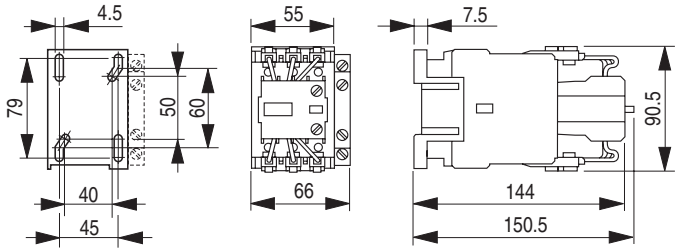
CSCN12..., CSCN16...



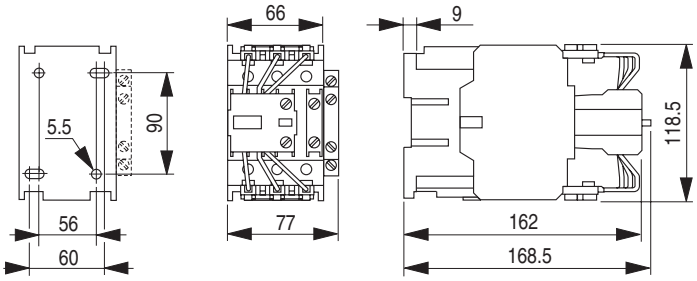
CSCN20..., CSCN25...



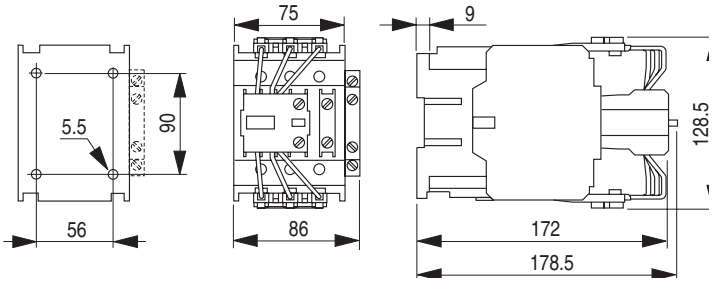
CSCN30...



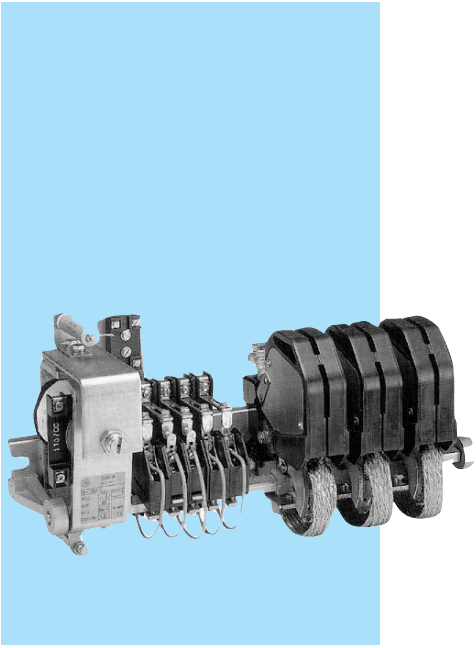
CSCN45..., CSCN55...



CSCN70...



Notes



Clapper contactors 40A to 800A (AC-3) / 45A to 1200A (AC-1)

AC and DC control using a bridge rectifier, designed to meet the most recent stringent requirements in terms of reliability, service life and performance.

Main characteristics

- Sliding contact holder, set on self-centering and self-lubricating bronze bushings
- Minitubes made of high-strength, high electrical resistance material
- Individual auxiliary contacts

Construction

Variable composition contactors (the number of main poles and auxiliary contacts may vary), preferably secured on mounts

Control circuit

Solid iron magnetic circuit with coil powered by direct or rectified current, particularly for heavy-duty applications (e.g., cranes, roll mills, reversing winches, etc.). The coils are sized for intermittent operation. For continuous operation, insert an economy resistor in series with the coil using the respective auxiliary contact.

Main contacts

The sintered main contacts are classified as Type 4/2 for intermittent operation and Type 5/2 for continuous operation.
The 4/2 sintered contact may be used only for heavy-duty operation when the number of switching operations per hour is above 60 and the operating intermittence is equal or less than 60% (cranes, roll mills, etc.).
If used for continuous operation, the contact will overheat.
The 5/2 sintered contact may be used only for normal duty when the number of switching operations per hour is equal to or less than 60% and the operating intermittence is above 60%.

Auxiliary contacts

Individual NO or NC single-breake contacts
Possibility to advance or delay contact making or breaking

Special versions

The following items may be supplied upon request:
- Contactors with coils having an operating limit that exceeds the limits required by the standards
- Contactors with an operating voltage up to 3000V (rotary disconnect switches, induction furnaces, etc.)
- Vertical mechanical interlocks ideal for interlocking 3 contactors.

Control voltage and normal combinations

Normal rated voltages, shaft spacing and combinations (main and auxiliary poles) have been defined for each switchgear unit, thereby allowing the contactor to be rapidly selected.
AC rated voltages: 24V - 48V - 110V - 220/230V
DC rated voltages: 24V - 48V - 110V - 220/230V

Spacing between standarised shafts and combinations:
See pages A.160 to A.162
Standard center-to-center spacing (mm): 150, 200, 250, 300, 350, 400, 450, 500, 600, 700, 800, 900, 1000

Standard voltages

Alternating current (V) Dual-frequency coils

	AP	CP	EP	GP
50/60Hz	24	48	110	220

Direct current (V)

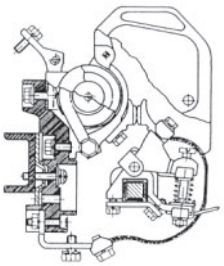
	A	B	C	D	E	F	G	H	M	R
Voltage	20	24	40	48	97	110	197	220	230	125

Spare parts and additional components

Spare parts and additional components for the contactors are listed on page A.155.

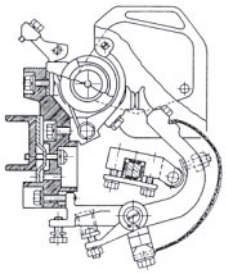
Order codes ● pg. A.151
Coils ● pg. A.154
Spare parts ● pg. A.155
Technical data ● pg. A.158
Dimensional drawings ● pg. A.160

Main poles



The poles can be constructed as follows, depending on the operating conditions:

Z design (NO)
- For load breaking, with high breaking capacity
- For AC or DC use
- Equipped with magnetic arc-quenching coil. In the case of AC, the poles are normally supplied with an appropriate arc-quenching coil for the maximum rated current of the pole.
- Arc-quenching coils for medium rated currents with respect to the expected peak current are available for DC use upon request, for more effective pole performance (see table on page A.154).



RN design (NC)
- Based on the use of break poles, which are open when the coil is energized and closed when the coil is de-energised.
- For AC or DC use in special circuits where high interrupting capacities are not required.
- This design is intended to be used with contactors R1, R2, R3, R4, R5, R7.

Poles	R1	R2	R3	R4	R5	R6	R7	R8	R9
Z	■	■	■	■	■	■	■	■	■
RN	■	■	■	■	■		■		

Order codes - Clapper contactors

Peak operating current		AC-3 admissible rated powers				Electric endur.	AC or DC	Pack.
Resistive loads	Motors <440V, 3 ~ 50/60Hz	220V 230V	380V 400V	415V 440V	500V	Cat. AC3	See the following pages A.152 and A.153 on how to complete the catalogue number	
AC1 A	AC3 A	kW HP	kW HP	kW HP	kW HP	Switching operations		
45	40	11,5	20	20	20	1×10^6	**R1 . . .**	1
90	90	26	45	45	45	1×10^6	**R2 . . .**	1
125	120	36.5	62	62	73.5	1×10^6	**R3 . . .**	1
250	200	72.5	100	100	120	1×10^6	**R4 . . .**	1
320	320	93	160	160	165	1.2×10^6	**R5 . . .**	1
450	450	130	225	225	300	1.5×10^6	**R6 . . .**	1
630	630	184	315	315	400	1×10^6	**R7 . . .**	1
800	800	232	400	400	500	0.9×10^6	**R8 . . .**	1
1500	-	-	-	-	-	-	**R9 . . .**	1

Catalogue number structure

1	2	3	4	5	6	7	8	9
Product line	Size	Coil voltage		Resistor	No. NO aux. contacts	No. NC aux. contacts	No. "Z" poles	"Z" poles

1 2 Size

	Ith	1	2
Max.	45	R	1
500V AC	90	R	2
250V DC	125	R	3
	250	R	4
	320	R	5
	450	R	6
	630	R	7
	800	R	8
	1200	R	9

3 4 Coil voltage

AC	DC	3	4
Types R1 ... R7			
24V		A	P
48V		C	P
110V		E	P
220V		G	P
	20V	A	-
	24V	B	-
	40V	C	-
	48V	D	-
	97V	E	-
	110V	F	-
	197V	G	-
	220V	H	-
	230V	M	-
	125V	R	-
Types R8 and R9			
110V		E	P
220V	97V	G	P
	110V	E	-
	197V	F	-
	220V	G	-
	230V	H	-
	125V	M	-

5 Economy resistor

	5
If required (5/2 contacts)	R
If not required	-

6 7 Auxiliary contacts

NO	NC	6	7
1		1	
2		2	
3		3	
4		4	
5		5	
6		6	
	1		1
	2		2
	3		3
	4		4

8 "Z" poles (N)

"Z" poles	8
0	-
1	1
2	2
3	3
4	4

9 "Z" poles

Type of pole	9
Z	Z
No "Z" poles	-

10 Arc-quenching coil "Z" poles

Type	Standard A	Standard B	Upon request C
R1	45A	14A	25A
R2	90A	45A	-
R3	125A	75A	-
R4	200A	50A	130A
R5	320A	150A	-
R6	450A	270A	-
R7	630A	320A	-
R8	800A	320A	400A
R9	1200A	-	-

11 "RN" poles" (NC)

"RN" poles	"RN" poles	11
0	0	-
1	1	1
2	2	2
3	3	3
4	4	4

Note: The "RN" poles are not available for the R6, R8 and R9 types.

12 "RN" poles

Type of pole	12
RN	V
No "RN" poles	-

Note: The "RN" poles are not available for the R6, R8 and R9 types.

13 Arc-quenching coil «RN» poles

Type	Standard A	Standard B	Upon request C
R1	45A	14A	25A
R2	90A	45A	-
R3	125A	75A	-
R4	200A	50A	130A
R5	320A	150A	-
R6	-	-	-
R7	630A	320A	-
R8	-	-	-
R9	-	-	-

Note: The "RN" poles are not available for the R6, R8 and R9 types.

14 Type of contacts

Type		14
4/2	Intermittent op.	4
5/2	Continuous op.	5

10	11	12	13	14	15	16	17	18
Arc-quenching coil "Z" poles	No. "RN" poles	"RN" poles	Arc-quenching coil "RN" poles	Type of contacts	Stationary support	Space	Shaft	Isolation

15 *Stationary support*

Length (mm)	Contactor type R1 R2 R3	R4 R5	R6 R7 R8	R9
150	A	-	-	-
200	B	-	-	-
250	C	C	-	-
300	D	D	-	-
350	E	E	E	-
400	F	F	F	F
450	G	G	G	G
500	H	H	H	H
600	I	I	I	I
700	L	L	L	L
800	M	M	M	M
900	N	N	N	N
1000	O	O	O	O

17 *Schaft (≤stat. sup.)*

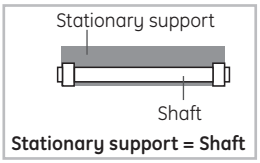
Length (mm)	Contactor type R1 R2 R3	R4 R5	R6 R7 R8	R9
150	A	-	-	-
200	B	-	-	-
250	C	C	-	-
300	D	D	-	-
350	E	E	E	-
400	F	F	F	F
450	G	G	G	G
500	H	H	H	H
600	I	I	I	I
700	L	L	L	L
800	M	M	M	M
900	N	N	N	N
1000	O	O	O	O

18 *Isolation* **18**

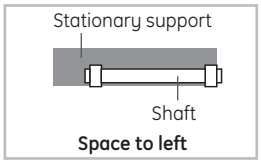
	For more isolation	M
	Not required	-

16 *Space* **16**

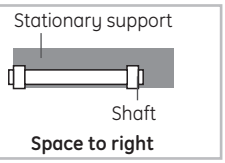
No space	Station. sup.=Shaft	-
Space	Left	S
	Right	-



Stationary support = Shaft



Space to left



Space to right

Standard DC or rectified coils

The DC coils are suitable for intermittent operation; for continuous operation, an economy resistor must be used.
The coils for rectified rated voltages 20-40-97-197V obtained from AC power supplies. (before the rectifier). 24-48-110-220V are available upon request. For the contactor of "RN" break poles, contact GE.

Contactor	Voltage VDC	Coil		Economy resistor for continuous operation ± 5%				Single-phase bridge rectifier for AC power		
		Cat. no.	Ref. no.	W	Ω	Cat. no.	Ref. no.	V 50/60Hz	Cat. no.	Ref. no.
R1 R2	20	39012Y20D	244107	4	8.2	RSS13/64TA8,2	204177	24	MSK-B250/220-1,5	209997
	24	39012Y24D	202327		18	RSS13/64TA18	211727	-		
	40	39012Y40D	244106		33	RSS13/64TA33	211728	48	MSK-B250/220-1,5	209997
	48	39012Y48D	244734		68	RSS13/64TA6,8	214869	-		
	97	39012Y97D	202328		220	RSS13/64TA220	212702	110	MSK-B250/220-1,5	209997
	110	39012Y110D	202323		330	RSS13/64TA330	211745	-		
	197	39012Y197D	202325		680	RSS13/64TA680	214580	220	MSK-B250/220-1,5	209997
	220	39012Y220D	202326		1200	RSS13/64TA1200	213034	-		
	230	39012Y230D	211706		1200	RSS13/64TA1200	213034			
	125	39012Y125D	202324		330	RSS13/64TA300	211714			
R3	20	3903Y20D	215278	4	8.2	RSS13/64TA8,2	204177	24	MSK-B250/220-1,5	209997
	24	3903Y24D	244735		18	RSS13/64TA18	211727	-		
	40	3903Y40D	244088		39	RSS13/64TA39	211730	48	MSK-B250/220-1,5	209997
	48	3903Y48D	212705		47	RSS13/64TA47	211731	-		
	97	3903Y97D	213691		270	RSS13/64TA270	214399	110	MSK-B250/220-1,5	209997
	110	3903Y110D	202437		330	RSS13/64TA330	211745	-		
	197	3903Y197D	214442		820	RSS13/64TA820	214400	220	MSK-B250/220-1,5	209997
	220	3903Y220D	202438		1200	RSS13/64TA1200	213034	-		
	230	3903Y230D	211107		1200	RSS13/64TA1200	213034			
	125	3903Y125D	216100		330	RSS13/64TA300	211714			
R4	20	3904Y20D	244084	6	8.2	RSS13/64TA8,2	204177	24	MSK-B250/220-1,5	209997
	24	3904Y24D	202483		18	RSS13/64TA18	211727	-		
	40	3904Y40D	244083		33	RSS13/64TA33	211728	48	MSK-B250/220-1,5	209997
	48	3904Y48D	213814		33	RSS13/64TA33	211728	-		
	97	3904Y97D	213601		180	RSS13/64TA180	211744	110	MSK-B250/220-1,5	209997
	110	3904Y110D	202479		180	RSS13/64TA180	211744	-		
	197	3904Y197D	202481		680	RSS13/64TA680	214580	220	MSK-B250/220-1,5	209997
	220	3904Y220D	202482		680	RSS13/64TA680	214580	-		
	230	3904Y230D	211708		680	RSS13/64TA680	214580			
	125	3904Y125D	202480		180	RSS13/64TA180	211744			
R5	20	3905Y20D	244073	10	6.8	RSS13/64TA6,8	214869	24	SKB-B80/70-4	211716
	24	3905Y24D	244072		10	RSS13/64TA10	211742	-		
	40	3905Y40D	244071		27	RSS13/64TA27	244192	48	MSK-B250/220-1,5	209997
	48	3905Y48D	244736		27	RSS13/64TA27	244192	-		
	97	3905Y97D	202513		120	RSS13/64TA120	243281	110	MSK-B250/220-1,5	209997
	110	3905Y110D	202512		180	RSS13/64TA180	211744	-		
	197	3905Y197D	244074		470	RSS13/64TA470	244191	220	MSK-B250/220-1,5	209997
	220	3905Y220D	212706		680	RSS13/64TA680	214580	-		
	230	3905Y230D	211709		680	RSS13/64TA680	214580			
	125	3905Y125D	242260		180	RSS13/64TA180	211744			
R6	20	3906Y20D	244065	10	6.8	RSS13/64TA6,8	214869	24	SKB-B80/70-4	211716
	24	3906Y24D	244064		8.2	RSS13/64TA8,2	204177	-		
	40	3906Y40D	244063		27	RSS13/64TA27	244192	48	MSK-B250/220-1,5	209997
	48	3906Y48D	212707		27	RSS13/64TA27	244192	-		
	97	3906Y97D	202533		100	RSS13/64TA100	211744	110	MSK-B250/220-1,5	209997
	110	3906Y110D	202532		180	RSS13/64TA180	211744	-		
	197	3906Y197D	244066		470	RSS13/64TA470	244191	220	MSK-B250/220-1,5	209997
	220	3906Y220D	213612		680	RSS13/64TA680	214580	-		
	230	3906Y230D	211770		680	RSS13/64TA680	214580			
	125	3906Y125D	211711		180	RSS13/64TA180	211744			
R7	20	3907Y20D	244058	16	5.6	RSS13/64TA5,6	211735	24	SKB-B80/70-4	211716
	24	3907Y24D	244057		5.6	RSS13/64TA5,6	211735	-		
	40	3907Y40D	244056		15	RSS13/64TA15	211737	48	SKB-B80/70-4	211716
	48	3907Y48D	244737		18	RSS13/64TA18	211727	-		
	97	3907Y97D	244738		82	RSS13/64TA82	204177	110	MSK-B250/220-1,5	209997
	110	3907Y110D	202547		100	RSS13/64TA100	211743	-		
	197	3907Y197D	244059		330	RSS13/64TA330	211745	220	MSK-B250/220-1,5	209997
	220	3907Y220D	202548		390	RSS13/64TA390	211746	-		
	230	3907Y230D	211712		1200	RSS13/64TA1200	213034			
	125	3907Y125D	211713		330	RSS13/64TA330	211745			
R8	97	3908Y97D	212959	16	82	RSS20/165TA82	214081	110	SKB-B250/220-4	212165
	110	3908Y110D	202565		120	RSS20/165TA120	213664	-		
	197	3908Y197D	214066		390	RSS20/165TA390	211748	220	MSK-B250/220-1,5	209997
	220	3908Y220D	202566		470	RSS20/165TA470	211739	-		
R9	97	3909Y97D	214146	140	100	RSS20/165TA100	213663	110	SKB-B30/08	211720
	110	3909Y110D	202572		150	RSS20/165TA150	215004	-		
	197	3909Y197D	204181		390	RSS20/165TA390	211748	220	SKB-B500/445-4	214501
	220	3909Y220D	244739		560	RSS20/165TA560	244987	-		

(1) To insert the resistors, use NC auxiliary contacts in series.
(2) Two 20x165 resistors connected in parallel, each with a resistive value listed in the table.

Spare parts

Contactor	Description	Cat. no.	Ref. no.	Pack (units)
R1	"Z" stationary part with 14A arc-quenching coil and spark suppressor	**390/3921PFZCS14**	202273	1
	"Z" stationary part with 25A arc-quenching coil and spark suppressor	**390/3921PFZCS25**	244172	1
	"Z" stationary part with 45A arc-quenching coil and spark suppressor	**390/3921PFZCS45**	202274	1
	"RN" stationary part with spark suppressor	**390/3921PFRN**	244173	1
	"Z" moving part (with pressure spring and strap)	**390/3921PMZI**	202276	1
	"RN" moving part (with pressure spring and strap)	**390/3921PMRN**	202275	1
	Stationary and moving main contact, type 4/2 (intermittent operation)	**390/3921/2FOM4/2**	214120	1
	Stationary and moving main contact, type 5/2 (continuous operation)	**390/3922FOM5/2**	214121	1
	Spark suppressor for "Z" and "RN" poles	**390/3921PZ**	202277	1
R2	"Z" stationary part with 45A arc-quenching coil and spark suppressor	**390/3922PFZCS45**	244744	1
	"Z" stationary part with 90A arc-quenching coil and spark suppressor	**390/3922PFZCS90**	202278	1
	"RN" stationary part with spark suppressor	**390/3922PFRN**	212709	1
	"Z" moving part (with pressure spring and strap)	**390/3922PMZI**	202279	1
	"RN" moving part (with pressure spring and strap)	**390/3922PMRN**	213014	1
	Stationary and moving main contact, type 4/2 (intermittent operation)	**390/3921/2FOM4/2**	214120	1
	Stationary and moving main contact, type 5/2 (continuous operation)	**390/3922FOM5/2**	214121	1
	Spark suppressor for "Z" and "RN" poles	**390/3922PZ**	202280	1
R3	"Z" stationary part with 75A arc-quenching coil and spark suppressor	**390/3923PFZCS75**	244745	1
	"Z" stationary part with 125A arc-quenching coil and spark suppressor	**390/3923PFZCS125**	202281	1
	"RN" stationary part with spark suppressor	**390/3923PFRN**	213986	1
	"Z" moving part (with pressure spring and strap)	**390/3923PMZI**	202283	1
	"RN" moving part (with pressure spring and strap)	**390/3923PMRN**	202282	1
	Stationary and moving main contact, type 4/2 (intermittent operation)	**390/3923/2FOM4/2**	214122	1
	Stationary and moving main contact, type 5/2 (continuous operation)	**390/3923FOM5/2**	214123	1
	Spark suppressor for "Z" and "RN" poles	**390/3923PZ**	202284	1
R4	"Z" stationary part with 125A arc-quenching coil and spark suppressor	**390/3924PFZCS125**	202288	1
	"Z" stationary part with 200A arc-quenching coil and spark suppressor	**390/3924PFZCS200**	202289	1
	"RN" stationary part with spark suppressor	**390/3924PFRN**	202287	1
	"Z" moving part (with pressure spring and strap)	**390/3924PMZI**	202291	1
	"RN" moving part (with pressure spring and strap)	**390/3924PMRN**	202290	1
	Stationary main contact, type 4/2 (intermittent operation)	**390/3924F4**	214124	1
	Moving main contact, type 4/2 (intermittent operation)	**390/3924M4/2**	214126	1
	Stationary main contact, 5/2 type (continuous operation)	**390/3924F5/2**	204178	1
	Moving main contact, type 5/2 (continuous operation)	**390/3924M5/2**	214127	1
	Spark suppressor for "Z" and "RN" poles	**390/3924PZ**	202292	1
R5	"Z" stationary part with 125A arc-quenching coil and spark suppressor	**390/3925PFZCS150**	213573	1
	"Z" stationary part with 320A arc-quenching coil and spark suppressor	**390/3925PFZCS320**	202295	1
	"RN" stationary part with spark suppressor	**390/3925PFRN**	244746	1
	"Z" moving part (with pressure spring and strap)	**390/3925PMZI**	202298	1
	"RN" moving part (with pressure spring and strap)	**390/3925PMRN**	202297	1
	Stationary main contact, type 4/2 (intermittent operation)	**390/3925F4/2**	214128	1
	Moving main contact, type 4/2 (intermittent operation)	**390/3925M4/2**	214130	1
	Stationary main contact, 5/2 type (continuous operation)	**390/3925F5/2**	214129	1
	Moving main contact, type 5/2 (continuous operation)	**390/3925M5/2**	214131	1
	Spark suppressor for "Z" and "RN" poles	**390/3925PZ**	202299	1
R5	"Z" stationary part with 270A arc-quenching coil and spark suppressor	**390/3926PFZCS270**	202303	1
	"Z" stationary part with 450A arc-quenching coil and spark suppressor	**390/3926PFZCS450**	213574	1
	"Z" moving part (with pressure spring and strap)	**390/3926PMZI**	202304	1
	Stationary main contact, type 4/2 (intermittent operation)	**390/3926F4/2**	214133	1
	Moving main contact, type 4/2 (intermittent operation)	**390/3926M4/2**	214135	1
	Stationary main contact, 5/2 type (continuous operation)	**390/3926F5/2**	214134	1
	Moving main contact, type 5/2 (continuous operation)	**390/3926M5/2**	214136	1
	Spark suppressor for "Z" and "RN" poles	**390/3926PZ**	202654	1

Spare parts (continued)

Contactor	Description	Cat. no.	Ref. no.	Pack (units)
R7	"Z" stationary part with 320A arc-quenching coil and spark suppressor	**390/3927PFZCS320**	202307	1
	"Z" stationary part with 630A arc-quenching coil and spark suppressor	**390/3927PFZCS630**	202308	1
	"RN" stationary part with spark suppressor	**390/3927PFRN**	202306	1
	"Z" moving part (with pressure spring and strap)	**390/392PMZI**	202310	1
	"RN" moving part (with pressure spring and strap)	**390/3927PMRN**	202309	1
	Stationary main contact, type 4/2 (intermittent operation)	**390/3927F4/2**	214137	1
	Moving main contact, type 4/2 (intermittent operation)	**390/3927M4/2**	214139	1
	Stationary main contact, 5/2 type (continuous operation)	**390/3927F5/2**	214138	1
	Moving main contact, type 5/2 (continuous operation)	**390/3927M5/2**	214140	1
	Spark suppressor for "Z" and "RN" poles	**390/3927PZ**	202311	1
R8	"Z" stationary part with 400A arc-quenching coil and spark suppressor	**3908PFZCS400**	202555	1
	"Z" stationary part with 800A arc-quenching coil and spark suppressor	**3908PFZCS800**	202562	1
	"Z" moving part (with pressure spring and strap)	**3908PMZ**	202563	1
	Stationary main contact, type 4/2 (intermittent operation)	**3908F4/2**	214144	1
	Moving main contact, type 4/2 (intermittent operation)	**3908/9M4/2**	214141	1
	Stationary main contact, 5/2 type (continuous operation)	**3908F5/2**	214145	1
	Moving main contact, type 5/2 (continuous operation)	**3908/9M5/2**	214142	1
	Spark suppressor for "Z" and "RN" poles	**3908PZ**	202564	1
R9	"Z" stationary part with 1200A arc-quenching coil and spark suppr.	**3909PFZCS120**	244983	1
	"Z" moving part (with pressure spring and strap)	**3909PMZ**	212962	1
	Stationary main contact, type 4/2 (intermittent operation)	**3909F4/2**	204179	1
	Moving main contact, type 4/2 (intermittent operation)	**3908/9M4/2**	214141	1
	Stationary main contact, 5/2 type (continuous operation)	**3909F5/2**	204180	1
	Moving main contact, type 5/2 (continuous operation)	**3908/9M5/2**	214142	1

Operating categories

				R1...	R2...	R3...	R4...	R5...	R6...	R7...	R8...	R9...
AC-1	Peak operating current	40ºC	(A)	45	90	125	250	320	450	630	800	1200
	at ambient temp. of:	55ºC	(A)	45	90	125	250	320	450	600	750	1200
	(for all rated voltages)	70ºC	(A)	30	70	100	200	280	360	500	700	950
	Max. operating power	230/220V	(kW)	17	30	45	90	114	170	195	240	450
	Resistor III	400/380V	(kW)	29	55	75	155	196	310	330	410	750
		440/415V	(kW)	32	57	85	180	227	340	330	500	900
		500V	(kW)	39	69	102	200	250	390	420	550	1030
	Conductor		(mm^2)	10	35	50	120	185	2 x (30x5)	2 x (40x5)	2 x (60x5)	4 x (50x5)
	Operation in % of peak	120 ops./h	(%)	100	100	100	100	100	100	100	100	50
	operating current	300 ops./h	(%)	50	50	50	50	30	30	20	10	10
AC-3	Peak operating current	Ue = 400V	(A)	40	90	110	200	320	450	630	800	-
	Max. operating power	230/220V	(kW)	11.5	26	36.5	72.5	93	130	184	232	-
		400/380V	(kW)	20	45	62	100	160	225	315	400	-
		440/415V	(kW)	20	45	68	100	160	225	315	400	-
		500V	(kW)	20	45	72,5	120	165	280	400	500	-
	Use in % of peak	120 ops./h	(%)	100	100	100	100	100	100	100	100	-
	operating current	300 ops./h	(%)	50	50	50	50	50	50	30	30	-
AC-4	Peak operating current	Ue = 500V	(A)	18.5	44	55	110	125	150	165	250	-
	Operating power	230/220V	(kW)	4	11	15	33	37	45	50	80	-
	(200,000 switching		(HP)	5.3	14.6	19.9	43.9	49.2	59.8	66.5	106	-
		400/380V	(kW)	9	22	28	55	63	80	90	132	-
			(HP)	11.9	29.2	37.2	73.1	83.8	106	119.7	175.5	-
		500V	(kW)	11	25	33	75	90	100	110	225	-
			(HP)	14.6	33.2	43.9	99.7	119.7	133	146	299	-
	Peak operating current	≤ 400V	(A)	40	90	110	185	280	420	590	700	-
	Max. operating power	400/380V	(kW)	18.5	38	55	90	150	220	300	375	-

	Ue	Series poles	R1...	R2...	R3...	R4...	R5...	R6...	R7...	R8...	R9...
DC1 L/R ≤ 1ms	125V	1	40	85	115	180	300	400	600	700	900
		2	60	90	125	200	320	450	630	750	1000
		3	60	90	125	200	320	450	630	800	1250
		4	60	90	125	200	320	450	630	800	1250
	220V	1	20	75	110	160	275	350	500	600	800
		2	30	90	115	200	300	370	560	650	900
		3	40	90	125	250	320	400	630	750	1000
		4	40	90	125	250	320	450	630	800	1250
	440V	1	-	-	-	-	-	-	-	-	-
		2	-	75	100	200	275	350	500	600	800
		3	20	90	125	250	320	400	600	700	900
		4	20	90	125	250	320	450	630	800	1000
DC3 L/R ≤ 2.5ms	125V	1	30	75	100	170	280	380	550	650	-
		2	40	80	110	200	320	450	630	800	-
		3	45	90	110	200	320	450	630	800	-
		4	45	100	120	220	340	480	-	-	-
	220V	1	-	-	-	-	-	-	-	-	-
		2	15	65	90	155	245	340	460	550	-
		3	20	90	110	200	320	450	630	800	-
		4	25	90	110	200	320	450	630	800	-
	440V	1	-	-	-	-	-	-	-	-	-
		2	-	-	-	-	-	-	-	-	-
		3	10	55	75	120	200	300	400	500	-
		4	13	70	100	160	260	400	550	660	-
DC5 L/R ≤ 15ms	125V	1	27	50	70	90	240	320	400	500	-
		2	35	70	90	150	280	380	450	550	-
		3	40	90	100	200	320	420	500	600	-
		4	40	90	110	200	320	450	500	650	-
	220V	1	-	-	-	-	-	-	-	-	-
		2	13	55	80	140	220	300	410	490	-
		3	18	80	100	180	290	400	560	700	-
		4	22	80	100	180	290	400	560	700	-
	440V	1	-	-	-	-	-	-	-	-	-
		2	-	-	-	-	-	-	-	-	-
		3	9	50	67	100	180	270	360	450	-
		4	11	60	90	130	224	360	480	600	-

Technical data

Standards

IEC/EN 60947-1
IEC/EN 60947-4-1
IEC/EN 60947-5-1

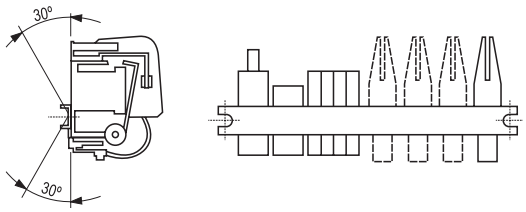
Ambient conditions

Storage temperature		-55°C to +80°C
Operating temperature	-40°C to +60°C	
Altitude	up to 2500m	Rated values
	3000 to 4000m	90%Ie 80%Ue
	4000 to 5000m	80%Ie 75%Ue

Climatic withstand capacity (IEC 68-2)

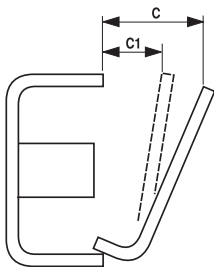
Continuous testing 40/125/56			
	Cold (72h)	Temperature	-40°C
	Dry heat (96h)	Temperature	+125°C
		Relative humidity	< 50%
	Moist heat (56 days)	Temperature	+40°C
		Relative humidity	95%
Cyclic testing			
	First half-cycle (12h)	Low temperature	+25°C
		Relative humidity	93%
	Second half-cycle (12h)	Low temperature	+55°C
		Relative humidity	95%
	No. consecutive cycles		6

Mounting positions



No variation in on and off voltage.
No variation in rated power

Maintenance



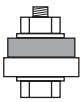
C = Opening of the moving core
C1 = Opening of moving core when the contacts start to touch. The data listed in the table refers to contactors in a normal three-pole design and may vary in the case of special designs.

DC power supply		Pressure of closed contact in kg (+10% / -30%)
C (mm) ±1	**C1** (mm) ±1	
18	5	0.750
18	5	0.750
20	6	0.750
22	6	1.300
24	7	2.000
28	8	3.500
28	8	5.500
34	10	8.000
34	10	15.000

Replacement of main contact

The replacement (due to wear) of the main contacts requires an adjustment to ensure proper distance between the moving and the stationary contacts. The respective adjustment screws should be turned until the main contacts start to touch simultaneously when the gap indicated by A1 or C1 exists between the stationary and the moving magnetic circuit. Make sure that all contactor poles have the same stroke by manually closing the magnetic circuit; if the poles are properly adjusted, they should come into contact at the same time.
If contact wear is abnormal, please contact the manufacturer since the apparatus has been improperly chosen for the application conditions.
To replace the contacts, loosen the screw securing the contacts to the respective contact holder, making sure that the screws are well-tightened when installing the new contacts.
GE Power Controls warrants proper operation of the contactors only if the contacts are replaced with OEM contacts.

Capacity of terminals and torque

			R1... R2...	R3...	R4...	R5...	R6...	R7...	R8...	R9...
	Single-core conductor	(mm²)	2.5...25	2.5...50						
	Multi-strand conductor with terminal sheath	(mm²)	2.5...25	2.5...50						
	Multi-strand conductor without terminal sheath	(mm²)	2.5...25	2.5...50						
	Multi-strand	(mm²)	4...25	4...50						
	Single- and multi-strand AWG	(mm²)	16...4	16...2						
	Torque	(Nm)	4	5,6						
		(Lb x in)	35	50						
	Multi-strand with terminal	(mm²)			1 x 120 2 x 95	1 x 185 2 x 150	-	-	-	
	Clappers				-	-	2 x (30x5)	2 x (40x5)	2 x (60x5)	
	Torque	(Nm)			7	23	31	31	31	
		(Lb x in)			60	200	275	275	275	

Power circuit

			R1...	R2...	R3...	R4...	R5...	R6...	R7...	R8...	R9...
Thermal rated current Ith at θ ≤ 55°C		(A)	45	90	125	250	320	450	630	800	1500
Rated operating current Ie AC-3		(A)	40	90	110	200	320	450	630	800	-
Rated operating voltage Ue (1)		(V)	500	500	500	500	500	500	500	500	500

3-pole contactors

Rated isolation voltage Ui		(V)	1000	1000	1000	1000	1000	1000	1000	1000	1000
Maximum continuous current AC-1		(A)	45	90	125	250	320	450	630	800	1200
Frequency limits (Hz)		(Hz)									
Making capacity (RMS) (IEC947)	(A)		540	1200	1250	2400	3800	5400	7500	9600	4000
Breaking capacity (RMS) (IEC 947)	Ue ≤ 400V	(A)	450	960	1250	1900	3050	4350	6000	7700	4000
	Ue = 500V	(A)	-	650	1050	1900	3050	4350	6000	7700	4000
Short-time current	1 s.	(A)	1200	1500	2000	2500	3000	4250	5000	6000	10000
	5 s.	(A)	800	900	1500	2200	2800	4000	4800	5700	9000
	10 s.	(A)	500	650	1200	1600	2500	3900	4600	5500	8800
	30 s.	(A)	250	300	750	1100	2000	3700	4400	5200	8500
	1 min.	(A)	180	200	450	800	1500	2500	3000	4000	5000
	3 min.	(A)	100	150	250	500	600	900	1500	2300	3000
Recovery time		(min.)	10	10	10	10	10	10	10	10	10
Fused short-circuit protection	aM	(A)	50	125	160	250	400	630	800	1000	-
	gL-gG	(A)	80	160	200	315	425	630	800	1000	-
Impedance per pole		(mΩ)	1	1	0.5	0.4	0.2	0.3	0.2	0.25	0.10
Power dissipated per pole	AC-1	(W)	2.1	8.1	7.8	25	20	60	79	160	144
	AC-3	(W)	1.6	8.1	6	16	20	60	79	160	-
Isolation resistance											
Pole-to-pole		(mΩ)	>10	>10	>10	>10	>10	>10	>10	>10	>10
Pole-to-ground		(mΩ)	>10	>10	>10	>10	>10	>10	>10	>10	>10
Input-to-output		(mΩ)	>10	>10	>10	>10	>10	>10	>10	>10	>10

(1) For rated voltages above 500V, contact the manufacturer.

Control circuit

Alternating current

		R1...	R2...	R3...	R4...	R5...	R6...	R7...	R8...	R9...
Rated isolation voltage Ui	(V)	1000	1000	1000	1000	1000	1000	1000	1000	1000
Standardized voltages Us at 50/60 Hz	(V)	24...220	24...220	24...220	24...220	24...220	24...220	24...220	24...220	24...220
Single-frequency coil voltage limits										
Operation	xUs	0.85...1.1	0.85...1.1	0.85...1.1	0.85...1.1	0.85...1.1	0.85...1.1	0.85...1.1	0.85...1.1	0.85...1.1
Off	xUs	0.22...0.55	0.22...0.55	0.22...0.55	0.22...0.55	0.22...0.55	0.22...0.55	0.22...0.55	0.22...0.55	0.22...0.55
Consumption of dual-frequency coils (1)										
Closed magnetic circuit (50 Hz/60 Hz)	(VA)	19	19	20	25	35	38	53	100	190
Open magnetic circuit (50 Hz/60Hz)	(VA)	27	27	38	41	57	60	90	440	1400
Dissipated thermal power (50 Hz/60 Hz)	(W)	19	19	20	25	35	38	53	100	190
On and off times. Values at Us										
Making time at de-energisation (NA)	(ms)	60/70	60/70	60/70	110/120	150/160	180/200	200/210	150/160	-
Making time at de-energisation (NA)	(ms)	80/95	80/95	80/95	160/170	200/210	350/450	240/250	150/160	-
Mechanical endurance										
Dual-frequency coils (at 50 Hz)	10^6 ops.	10	10	10	10	10	10	10	8	8
Maximum rate										
Dual-frequency coils. No-load	ops./h	1200	1200	600	400	400	400	400	300	300
AC-1 with rated power	ops./h	600	600	300	120	120	120	120	90	60
AC-2 with rated power	ops./h	250	250	200	120	120	120	120	90	-
AC-3 with rated power	ops./h	600	600	300	120	120	120	120	90	-
AC-4 with rated power	ops./h	150	150	100	60	60	60	60	30	-

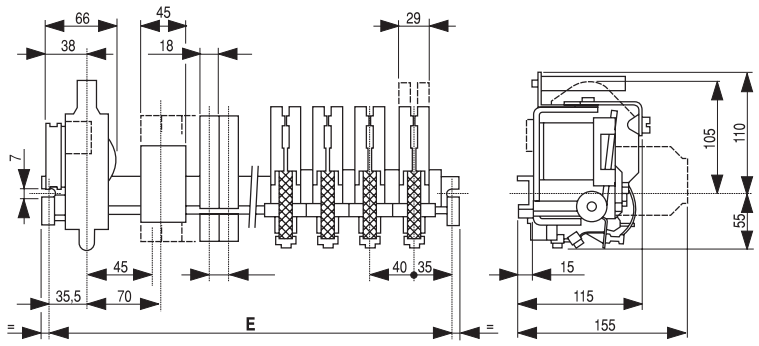
Direct current

Rated isolation voltage Ui	(V)	1000	1000	1000	1000	1000	1000	1000	1000	1000
Standardized voltages Us	(V)	24...230	24...230	24...230	24...230	24...230	24...230	24...230	24...230	24...230
Voltage limits										
Operating	xUs	0.8...1.1	0.8...1.1	0.8...1.1	0.8...1.1	0.8...1.1	0.8...1.1	0.8...1.1	0.8...1.1	0.8...1.1
Off	xUs	0.15...0.5	0.15...0.5	0.15...0.5	0.15...0.5	0.15...0.5	0.15...0.5	0.15...0.5	0.15...0.5	0.15...0.5
Power consumption										
Closed magnetic circuit	(W)	14	14	16	22	28	30	42	80	140
Open magnetic circuit	(W)	21	21	25	31	45	46	65	400	1000
On and off time										
Values at Us										
Making time at energization (NA)	(ms)	60/70	60/70	60/70	110/120	150/160	180/200	200/210	150/160	-
Breaking time at de-energization (NA)	(ms)	19/20	19/20	19/20	28/30	40/45	59/60	30/35	25/30	-
Mechanical endurance	10^6 ops.	10	10	10	10	10	10	10	8	8
Maximum rate										
No-load	ops./h	1200	1200	600	400	400	400	400	300	300
AC1 and AC3 with rated power	ops./h	600	600	300	120	120	120	120	90	-
AC4 with rated power	ops./h	150	150	100	60	60	60	60	30	-

(1) With 5/2 contact

Dimensional drawings

R1..., R2...

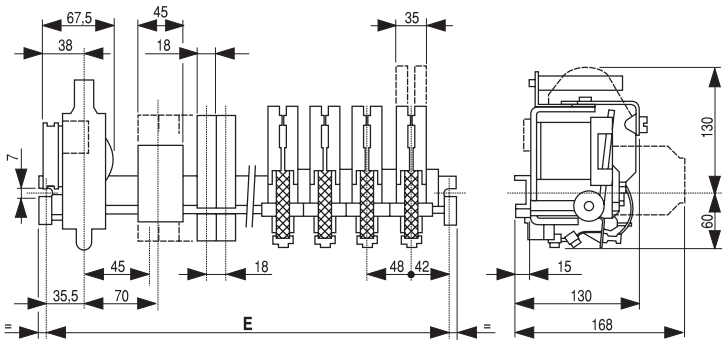


Contact combination

"Z" main pole (1)	Max. no. of aux. contacts	Max. NO	Max. NC	Center-to-center spacing
1	1	1	1	150
	3	3	3	200
	6	6	4	250
	9	6	4	300
	10	6	4	350
	10	6	4	400
2	1	1	1	200
	4	4	4	250
	7	6	4	300
	9	6	4	350
	9	6	4	400
3	2	2	2	250
	5	5	4	300
	7	6	4	350
	7	6	4	400
4	2	2	2	300
	5	5	4	350
	5	5	4	400

(1) A "RN" pole can be used to replace one of the "Z" poles. To use a higher number of "RN" poles, contact the manufacturer.

R3...

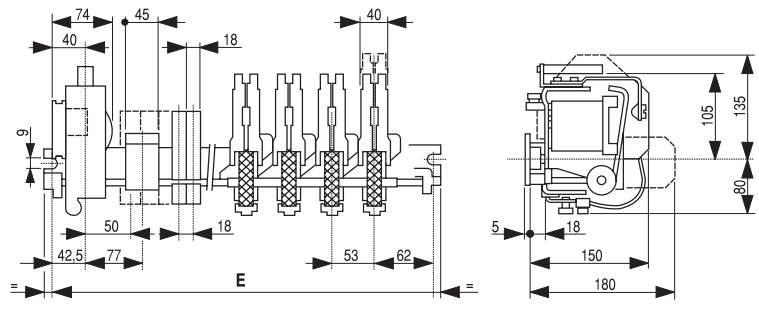


Contact combination

"Z" main pole (1)	Max. no. of aux. contacts	Max. NO	Max. NC	Center-to-center spacing
1	-	-	-	150
	3	3	3	200
	6	6	4	250
	9	6	4	300
	10	6	4	350
	10	6	4	400
2	-	-	-	200
	3	3	3	250
	6	6	4	300
	8	6	4	350
	9	6	4	400
3	-	-	-	250
	3	3	3	300
	6	6	4	350
	7	6	4	400
4	-	-	-	300
	3	3	3	350
	4	4	4	400

(1) A "RN" pole can be used to replace one of the "Z" poles. To use a higher number of "RN" poles, contact the manufacturer.

R4...

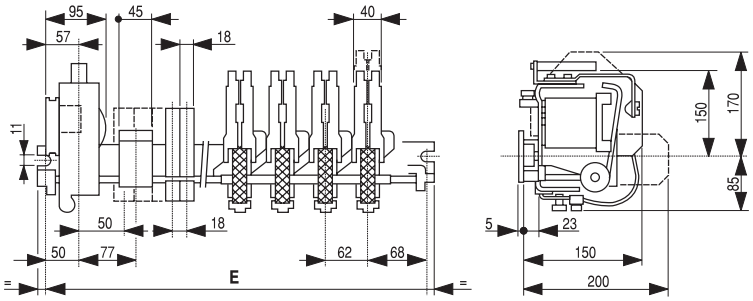


Contact combination

"Z" main pole (1)	Max. no. of aux. contacts	Max. NO	Max. NC	Center-to-center spacing
1	3	3	3	250
	6	6	4	300
	9	6	4	350
	10	6	4	400
	10	6	4	450
2	-	-	-	250
	3	3	3	300
	6	6	4	350
	9	6	4	400
	10	6	4	450
3	-	-	-	300
	3	3	3	350
	6	6	4	400
	9	6	4	450
4	3	3	3	400
	4	4	3	450

(1) A "RN" pole can be used to replace one of the "Z" poles. To use a higher number of "RN" poles, contact the manufacturer.

R5...

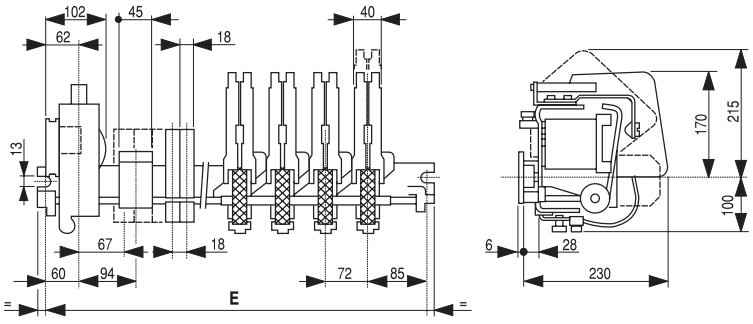


Contact combination

"Z" main pole (1)	Max. no. of aux. contacts	Max. NO	Max. NC	Center-to-center spacing
1	2	2	2	250
	5	5	4	300
	8	6	4	350
	10	6	4	400
	10	6	4	450
	10	6	4	500
2	2	2	2	300
	4	4	4	350
	7	6	4	400
	10	6	4	450
	10	6	4	500
3	1	-	-	350
	4	4	4	400
	6	6	4	450
	7	6	4	500
4	-	-	-	400
	3	3	3	450
	3	3	3	500

(1) A "RN" pole can be used to replace one of the "Z" poles. To use a higher number of "RN" poles, contact the manufacturer.

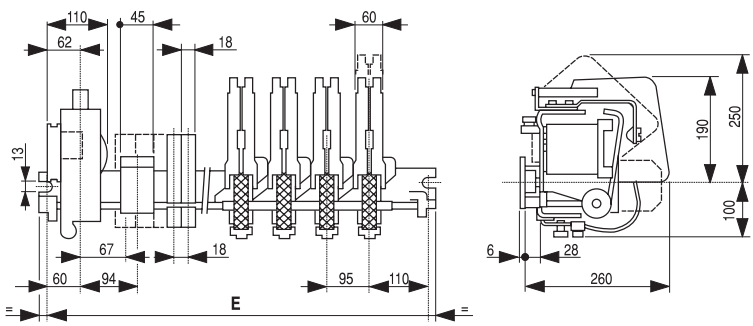
R6...



Contact combination

"Z" main pole	Max. no. of aux. contacts	Max. NO	Max. NC	Center-to-center spacing
1	5	2	4	350
	8	6	4	400
	10	6	4	450
	10	6	4	500
	10	6	4	600
	10	6	4	700
2	1	1	1	350
	4	4	4	400
	7	6	4	450
	9	6	4	500
	10	6	4	600
3	10	6	4	700
	2	2	2	450
	5	5	4	500
	7	6	4	600
	7	6	4	700
4	1	1	1	500
	2	2	2	600
	2	2	2	700

R7...



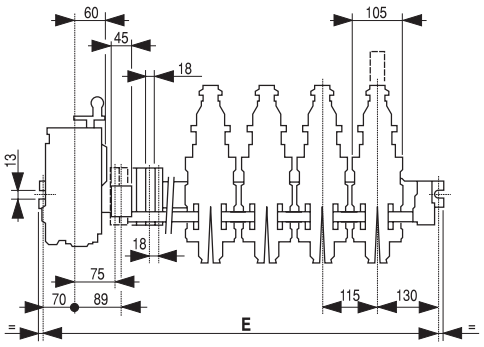
Contact combination

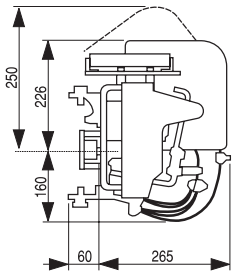
"Z" main pole (1)	Max. no. of aux. contacts	Max. NO	Max. NC	Center-to-center spacing
1	4	4	4	350
	6	6	4	400
	9	6	4	450
	10	6	4	500
	10	6	4	600
	10	6	4	700
2	1	1	1	400
	4	4	4	450
	7	6	4	500
	10	6	4	600
	10	6	4	700
3	1	1	1	500
	7	6	4	600
	8	6	4	700
4	2	2	2	600
	5	5	3	700

(1) A "RN" pole can be used to replace one of the "Z" poles. To use a higher number of "RN" poles, contact the manufacturer.

Dimensional drawings

R8...

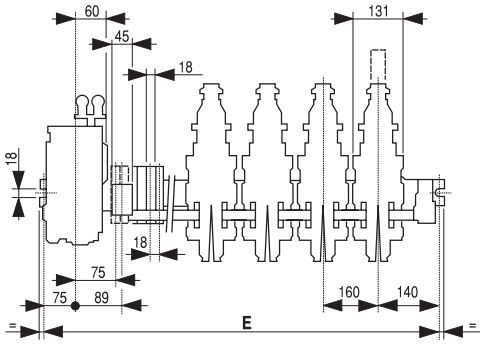


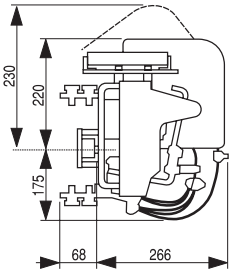


Contact combination

"Z" main pole	Max. no. of aux. contacts	Max. NO	Max. NC	Center-to-center spacing
1	1	1	1	350
	4	4	4	400
	6	6	4	450
	9	6	4	500
	10	6	4	600
	10	6	4	700
	10	6	4	800
2	-	-	-	450
	3	3	3	500
	8	6	4	600
	10	6	4	700
	10	6	4	800
3	2	2	2	600
	8	6	4	700
	8	6	4	800
4	1	1	1	700
	4	3	3	800

R9...





Contact combination

"Z" main pole	Max. no. of aux. contacts	Max. NO	Max. NC	Center-to-center spacing
1	2	2	2	400
	4	4	4	450
	7	6	4	500
	10	6	4	600
	10	6	4	700
	10	6	4	800
	10	6	4	900
	10	6	4	1000
2	4	4	4	600
	9	6	4	700
	10	6	4	800
	10	6	4	900
	10	6	4	1000
3	-	-	-	700
	6	6	4	800
	8	6	4	900
	8	6	4	1000
4	3	3	3	900
	4	3	3	1000