# TeSys D, SK, K, SKGC, GC, GY, GF Contactors

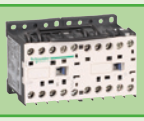


## TeSys D, D Green contactors



## TeSys SK, K Mini-contactors





S207 Contactors for railways applications.
Click on image to download.

S335 Contactors for electrodomestic application.
Click on image to download.

## Contactors for use in modular enclosures / Din rail



## TeSys D Green, enriching TeSys D family

**TeSys D** conventional contactors 9 to 150 A, for motor control and other applications.

**TeSys D Green** delivers a consistent low consumption range of contactors from 9 A to 80 A, covering control voltage from 24 to 250 V, with same coils for AC and DC.



## When implemented with other Schneider Electric products*, TeSys D Green contactors are part of a comprehensive solution that is ideal for all types of industrial machines and processes.

### TeSys LR9D

By combining a **TeSys D** Green contactor with our new **TeSys LR9D** electronic overload relay, you will have less heat generation, and further reduce energy consumption.

* such as PLC I/O type M580, M340, M221 or M241 or extended I/O type Advantys STB range, or in association with electronic overload relays LR9D or **TeSys T**.

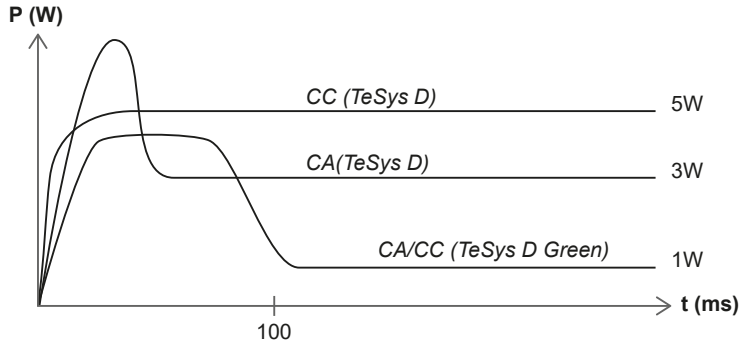

## Highly competitive coil consumption

Small changes can generate big savings. The new **TeSys D** Green contactor is equipped with an innovative electronic coil. These electronic-coil contactors require **up to 80 % less energy** than electro-mechanical contactors.This innovation results in concrete values: for example, large plants can noticeably reduce their energy bills and heat dissipation in cabinet.

Available in → 09-12-18 A 25-32-38 A 40-50-65-80 A

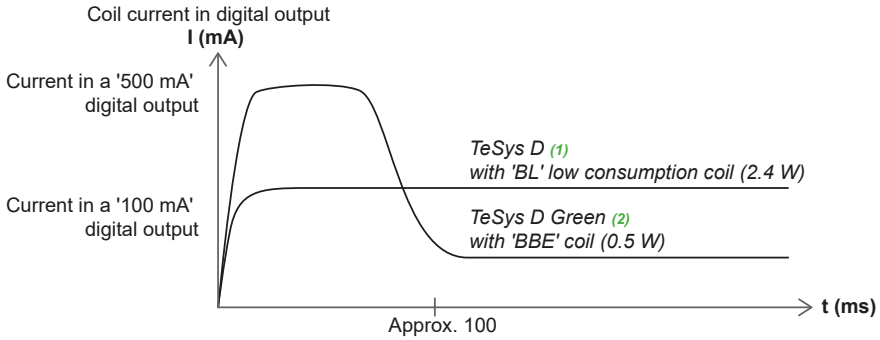
## Coil currents comparison

### TeSys D Green (AC/DC coil) vs Tesys D (AC, DC coils)




**TeSys D Green** brings a significant reduction of energy consumption.

### TeSys D Green ("BBE" coil) vs TeSys D (low consumption "BL" coil)




*(1) Up to 38 A.*
*(2) 40 to 80 A.*

**TeSys** D Green is well adapted to direct control by PLC static outputs, even in its high ratings.

# Product references

PB116859.eps

*LC1D09●●●*

PB116857.eps

*LC1D40A●●●*

TeSys D Green contactors have a dark grey casing and a 3-character code voltage.

## 3-pole contactors - Motor control up to 37 kW / 400 V - Category AC-3

| Standard power ratings of 3-phase motors 50-60 Hz in category AC-3 (θ ≤ 60 °C) | | | | | | Rated operational current in AC-3 440 V up to | Instantaneous auxiliary contacts | | Basic reference, to be completed by adding the control voltage code | Weight |
|---|---|---|---|---|---|---|---|---|---|---|
| 220 V 230 V | 380 V 400 V | 415 V | 440 V | 500 V | 660 V 690 V | | | | Fixing (1) | |
| kW | kW | kW | kW | kW | kW | A | | | | kg |
| **Connection by screw clamp terminals** | | | | | | | | | | |
| 2.2 | 4 | 4 | 4 | 5.5 | 5.5 | 9 | 1 | 1 | **LC1D09●●●** | 0.368 |
| 3 | 5.5 | 5.5 | 5.5 | 7.5 | 7.5 | 12 | 1 | 1 | **LC1D12●●●** | 0.373 |
| 4 | 7.5 | 9 | 9 | 10 | 10 | 18 | 1 | 1 | **LC1D18●●●** | 0.378 |
| 5.5 | 11 | 11 | 11 | 15 | 15 | 25 | 1 | 1 | **LC1D25●●●** | 0.433 |
| 7.5 | 15 | 15 | 15 | 18.5 | 18.5 | 32 | 1 | 1 | **LC1D32●●●** | 0.438 |
| 9 | 18.5 | 18.5 | 18.5 | 18.5 | 18.5 | 38 | 1 | 1 | **LC1D38●●●** | 0.442 |
| **Power connections by EverLink® BTR (2) screw connectors and control by screw clamp terminal** | | | | | | | | | | |
| 11 | 18.5 | 22 | 22 | 22 | 30 | 40 | 1 | 1 | **LC1D40A●●●** | 0.992 |
| 15 | 22 | 25 | 30 | 30 | 33 | 50 | 1 | 1 | **LC1D50A●●●** | 0.997 |
| 18.5 | 30 | 37 | 37 | 37 | 37 | 65 | 1 | 1 | **LC1D65A●●●** | 1.002 |
| 22 | 37 | 37 | 37 | 37 | 37 | 66 | 1 | 1 | **LC1D80A●●●** | 1.002 |
| **Connection for lugs or bars (4)** | | | | | | | | | | |

For LC1D40A to LC1D80A, insert a figure 6 before the voltage code.
Example: LC1D40A●●● becomes LC1D40A6●●●

## Auxiliary contact blocks and add-on modules

See pages B8/22 to B8/28.

## Control voltage codes

### AC/DC or 24 V DC supply

| Volts | 24 (DC only) | 24-60 | 48-130 | 100-250 |
|---|---|---|---|---|
| **LC1D09 ...D38, LC1D40A ... D80A** | | | | |
| U 0.85...1.1 Uc | | BNE | EHE | KUE |
| **LC1D09 ... D38** | | | | |
| U 0.8 ... 1.2 Uc | BNE | | | |
| **LC1D40A ... D80A** | | | | |
| U 0.8…1.2 Uc | BBE | | | |

*(1) **LC1D09** to **D80A**: clip-on mounting on 35 mm ⊔ rail **NSYSDR** or screw fixing.*
*(2) BTR screws: hexagon socket head. In accordance with local electrical wiring regulations, a size 4 insulated Allen key must be used (reference LADALLEN4, see B8/28).*
*(3) Please consult your Regional Sales Office.*

Contactors

PB116859.eps

*LC1D09●●●*

PB116857.eps

*LC1D40A●●●*

DB424871.eps

*LC1D60A●●●*

TeSys D Green contactors have a dark grey casing and a 3-character code voltage.

## 3-pole contactors - Load control from 25 to 80 A - Category AC-1

| Non inductive loads maximum current ($\theta \leq 60$ °C) utilisation category AC-1 | Number of poles | Instantaneous auxiliary contacts | | | Partial reference, to be completed by adding the control voltage code<br>Fixing (1) | Weight |
|---|---|---|---|---|---|---|
| A | | | | | | kg |
| **Connection by screw clamp terminals** | | | | | | |
| 25 | 3 | 1 | 1 | | **LC1D09●●●** | 0.368 |
| | | | | or | **LC1D12●●●** | 0.373 |
| 32 | 3 | 1 | 1 | | **LC1D18●●●** | 0.378 |
| 40 | 3 | 1 | 1 | | **LC1D25●●●** | 0.433 |
| 50 | 3 | 1 | 1 | | **LC1D32●●●** | 0.438 |
| | | | | or | **LC1D38●●●** | 0.442 |
| **Connection by EverLink®, BTR screw connectors (2)** | | | | | | |
| 60 | 3 | 1 | 1 | | **LC1D40A●●●** | 0.992 |
| 80 | 3 | 1 | 1 | | **LC1D50A●●●** | 0.997 |
| | | | | or | **LC1D65A●●●** (3) | 1.002 |
| | | | | or | **LC1D80A●●●** (3) | 1.002 |
| **Connection for lugs or bars** | | | | | | |
| For LC1D40A to LC1D80A, insert a figure 6 before the voltage code.<br>Example: LC1D40A●●● becomes LC1D40A6●●● | | | | | | |
| **4-pole contactors** | | | | | | |
| **Connection by EverLink®, BTR (2) screw connectors** | | | | | | |
| 60 | 4 | 1 | 1 | | **LC1DT60A●●●** | 1.230 |
| 80 | 4 | 1 | 1 | | **LC1DT80A●●●** | 1.290 |
| **Connection for lugs or bars** | | | | | | |
| For LC1DT60A to LC1DT80A, insert a figure 6 before the voltage code.<br>Example: LC1DT60A●●● becomes LC1DT60A6●●● | | | | | | |
| **4-pole changeover contactors** | | | | | | |
| **Connection by EverLink®, BTR (2) screw connectors** | | | | | | |
| 60 | 4 | 1 | 1 | | **LC2DT60A●●●** | 2.460 |
| 80 | 4 | 1 | 1 | | **LC2DT80A●●●** | 2.580 |

## Control voltage codes

**AC/DC 24 V DC supply**

| Volts | 24 (DC only) | 24-60 | 48-130 | 100-250 |
|---|---|---|---|---|
| **LC1D09…D80A and LC●DT60A...DT80A** | | | | |
| U 0.85 .... 1.1 Uc | | BNE | EHE | KUE |
| **LC1D09 .... D38** | | | | |
| U 0.8 .... 1.2 Uc | BNE | | | |
| **LC1D40 to LC1D80A, LC●DT60A to LC●DT80A** | | | | |
| U 0.8…1.2 Uc | BBE | | | |

*(1) **LC1D09** to **D80A**, **LC●DT60A** and **LC●DT80A**: clip-on mounting on 35 mm ⊔ rail **NSYSDR** or screw fixing.*
*(2) BTR screws: hexagon socket head. In accordance with local electrical wiring regulations, a size 4 insulated Allen key must be used (reference **LADALLEN4**, see page B8/28).*
*(3) Coordination tables according to the number of operation cycles, consult online datasheets for values.*

Contactors

# Product references

PB116859.eps

*LC1D09●●●*

PB116857.eps

*LC1D40A●●●*

TeSys D Green contactors have a dark grey casing and a 3-character code voltage.

## 3-pole contactors conforming to UL and CSA standards (North American market) - 25 to 80 A

| Standard power ratings of motors 50/60 Hz | | | | | | Associated cable type 75 °C-Cu | Continuous current | Type of contactor required Partial reference, to be completed by adding the control voltage code |
|---|---|---|---|---|---|---|---|---|
| Single-phase 1 Ø | | 3-phase 3 Ø | | | | | | Fixing, connection (1) |
| 115 V | 230 V 240 V | 200 V 208 V | 230 V 240 V | 460 V 480 V | 575 V 600 V | | | |
| HP | HP | HP | HP | HP | HP | | A | |
| **Connection by screw clamp terminals** | | | | | | | | |
| 1/3 | 1 | 2 | 2 | 5 | 7.5 | AWG 18 - 10 | 25 | **LC1D09●●●** |
| 0.5 | 2 | 3 | 3 | 7.5 | 10 | AWG 18 - 10 | 25 | **LC1D12●●●** |
| 1 | 3 | 5 | 5 | 10 | 15 | AWG 18 - 8 | 32 | **LC1D18●●●** |
| 2 | 3 | 7.5 | 7.5 | 15 | 20 | AWG 14 - 6 | 40 | **LC1D25●●●** |
| 2 | 5 | 10 | 10 | 20 | 25 | AWG 14 - 6 | 50 | **LC1D32●●●** |
| **Power connections by EverLink® BTR (2) screw connectors and control by spring terminals** | | | | | | | | |
| 3 | 5 | 10 | 10 | 30 | 30 | AWG 16 - 2 | 60 | **LC1D40A●●●** |
| 3 | 7.5 | 15 | 15 | 40 | 40 | AWG 16 - 2 | 70 | **LC1D50A●●●** |
| 5 | 10 | 20 | 20 | 40 | 50 | AWG 16 - 2 | 80 | **LC1D65A●●●** |
| 5 | 10 | 20 | 20 | 40 | 50 | AWG 16 - 2 | 80 | **LC1D80A●●●** |
| **Connection for lugs or bars** | | | | | | | | |

For LC1D40A to LC1D80A, insert a figure 6 before the voltage code.
Example: LC1D40A●●● becomes LC1D40A6●●●

## Applications with High-Fault Short-Circuit Current ratings

High-fault short-circuit current ratings are: 100 kA at 600 V with Class J fuses and 85 kA (D09-38), 100 kA (D40A-65A) at 480 V and 50 kA at 600 V with circuit breakers.

## Control voltage codes

### AC/DC 24 V DC supply

| Volts | 24 (DC only) | 24-60 | 48-130 | 100-250 |
|---|---|---|---|---|
| **LC1D09 ... D32, LC1D40A ... D80A** | | | | |
| U 0.85 .... 1.1 Uc | | BNE | EHE | KUE |
| **LC1D09 ... D38** | | | | |
| U 0.8 .... 1.2 Uc | BNE | | | |
| **LC1D40A ... D80A** | | | | |
| U 0.8…1.2 Uc | BBE | | | |

*(1) **LC1D09** to **D80**: clip-on mounting on 35 mm ⊔ rail **NSYSDR** or screw fixing.*
*(2) BTR screws: hexagon socket head. In accordance with local electrical wiring regulations, a size 4 insulated Allen key must be used (reference **LADALLEN4**, see page B8/28).*

Contactors

Characteristics: pages B8/59 to B8/65
Curves: page B8/68
Dimensions: pages B8/76 to B8/78
Schemes: pages B8/79 and B8/80
Click HERE for access to online contactor selector

TeSys D Green contactors - Coordination with PLC output modules (static/relay/triac)

## Selection of PLC coordinated contactors

Laboratory tests have been carried out in order to validate trouble free contactor closings and openings with different PLC output modules.
The coil must be defined according to the contactor rating range and output module.
See selection table below.

| The PLC your are using | | | | >>> | Compatible contactors (1) | Coil code |
|---|---|---|---|---|---|---|
| **PLC type** | **Output type** | **Output I (A)** | **Output module commercial reference** | | | |
| **M221 / M241 / M251** | Static output: 24 V DC | 0.5 | TM3DQ8●●● and Q16●●● (T, TG, U, UG) | >>> | LC1D09●● to LC1D38●●, | BL, BNE |
| | | | | | LC1D40A●●● to LC1D80A, LC1DT60A●●● to LC1DT80A●●● | BBE |
| | | 0.3 (sealed) 0.8 (inrush) | TM3XTYS4 | >>> | LC1D40A●●● to LC1D80A, LC1DT60A●●● to LC1DT80A●●● | BBE, BD, BNE |
| | | 0.1 | TM3DQ16●● and Q32●● (TK, UK) | >>> | LC1D09●● to LC1D38●● | BL |
| | Relay output: 24 V DC / 230 V AC | 2 | TM3DQ8 and DQ16 (R,RG), TM3DM8 and DM24 (R,RG) | >>> | LC1D09●● to LC1D38●●, LC1D40A●●● to LC1D80A, LC1DT60A●●● to LC1DT80A●●● | Code of any DC coil up to 24 V or any AC coil up to 230 V |
| **M340 / M580** | Static output: 24 V DC | 0.5 | BMXDDO1602 and DM16022 | >>> | LC1D09●● to LC1D38●● | BL, BNE |
| | | | | | LC1D40A●●● to LC1D80A, LC1DT60A●●● to LC1DT80A●●● | BBE |
| | | 0.1 | BMXDDO3202, BMXDDM3202K, BMXDDO6402K | >>> | LC1D09●● to LC1D38●● | BL |
| | Relay output: 24 V DC / 230 V AC | 2 | BMXDRA0805 and DM16025 | >>> | LC1D09●● to LC1D38●●, LC1D40A●●● to LC1D80A, LC1DT60A●●● to LC1DT80A●●● | Code of any DC coil up to 24 V or any AC coil up to 230 V |
| | Triac output: 230 V AC | 0.6 | BMXDAO1605 | >>> | LC1D09●● to LC1D38●●, LC1D40●●● to LC1D80A●●●, LC1DT60A●●● to LC1DT80A●●● | Code of any AC coil up to 230 V (P7 code = 230 V) |
| **ADVANTYS** | Static output: 24 V DC | 0.5 | STBDDO3200 | >>> | LC1D09●● to LC1D38●● | BL, BNE |
| | | | | | LC1D40A●●● to LC1D80A, LC1DT60A●●● to LC1DT80A●●● | BBE |
| | Triac output: 230 V AC | 2 | STBDAO8210 | >>> | LC1D09●● to LC1D38●●, LC1D40A●●● to LC1D80A, LC1DT60A●●● to LC1DT80A●●● | Code of any AC coil up to 230 V (P7 code = 230 V AC) |

### Coils consumption characteristics

| Coil type | Uc DC - min -max | Average consumption at UC DC / 20 °C | |
|---|---|---|---|
| | | Inrush | Sealed |
| BL | 24 V - 0.8 Uc to 1.1 Uc | 2.4 W - 2.4 VA | 2.4 W - 2.4 VA |
| BNE | | 14 W - 14 VA | 0.7 W - 0.7 VA |
| BBE | | 11 W - 11 VA | 0.5 W - 0.5 VA |

*(1) Replace dot by coil code. Ex **LC1D09●●** becomes **LC1D09BL**.*

PB121349.eps

*LC1D09●●*

PB121350.eps

*LC1D25●●*

PB120609.eps

*LC1D80A●●*

PB121351.eps

*LC1D95●●*

PB121352.eps

*LC1D115●●*

## 3-pole contactors - Motor control up to 75 kW at 400 V, in category AC-3

| Standard power ratings of 3-phase motors 50-60 Hz in category AC-3 (θ ≤ 60 °C) | | | | | | | Rated operational current in AC-3 440 V up to | Instantaneous auxiliary contacts | | Basic reference, to be completed by adding the control voltage code | Weight (2) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 220 V 230 V | 380 V 400 V | 415 V | 440 V | 500 V | 660 V 690 V | 1000 V | | | | Fixing (1) | |
| kW | kW | kW | kW | kW | kW | kW | A | | | | kg |
| **Connection by screw clamp terminals** | | | | | | | | | | | |
| 2.2 | 4 | 4 | 4 | 5.5 | 5.5 | – | 9 | 1 | 1 | **LC1D09●●** | 0.320 |
| 3 | 5.5 | 5.5 | 5.5 | 7.5 | 7.5 | – | 12 | 1 | 1 | **LC1D12●●** | 0.325 |
| 4 | 7.5 | 9 | 9 | 10 | 10 | – | 18 | 1 | 1 | **LC1D18●●** | 0.330 |
| 5.5 | 11 | 11 | 11 | 15 | 15 | – | 25 | 1 | 1 | **LC1D25●●** | 0.370 |
| 7.5 | 15 | 15 | 15 | 18.5 | 18.5 | – | 32 | 1 | 1 | **LC1D32●●** | 0.375 |
| 9 | 18.5 | 18.5 | 18.5 | 18.5 | 18.5 | – | 38 | 1 | 1 | **LC1D38●●** | 0.380 |
| **Power connections by EverLink® BTR screw connectors (3) and control by screw clamp terminal** | | | | | | | | | | | |
| 11 | 18.5 | 22 | 22 | 22 | 30 | – | 40 | 1 | 1 | **LC1D40A●●** | 0.850 |
| 15 | 22 | 25 | 30 | 30 | 33 | – | 50 | 1 | 1 | **LC1D50A●●** | 0.855 |
| 18.5 | 30 | 37 | 37 | 37 | 37 | – | 65 | 1 | 1 | **LC1D65A●●** | 0.860 |
| 22 | 37 | 37 | 37 | 37 | 37 | – | 66 | 1 | 1 | **LC1D80A●●** | 0.860 |
| **Connection by screw clamp terminals or connectors** | | | | | | | | | | | |
| 22 | 37 | 45 | 45 | 55 | 45 | 45 | 80 | 1 | 1 | **LC1D80●●** | 1.590 |
| 25 | 45 | 45 | 45 | 55 | 45 | 45 | 95 | 1 | 1 | **LC1D95●●** | 1.610 |
| 30 | 55 | 59 | 59 | 75 | 80 | 65 | 115 | 1 | 1 | **LC1D115●●** | 2.500 |
| 40 | 75 | 80 | 80 | 90 | 100 | 75 | 150 | 1 | 1 | **LC1D150●●** | 2.500 |

### Connection by lugs or bars

In the references selected above, insert a figure **6** before the voltage code.
Example: **LC1D09●●** becomes **LC1D096●●**.

## Separate components

**Auxiliary contact blocks and add-on modules**: see pages B8/22 to B8/28.

*(1) LC1D09 to D80A: clip-on mounting on 35 mm ⊔ rail* NSYSDR *or screw fixing.*
*LC1D80 to D95 ∿: clip-on mounting on 35 mm ⊔ rail* NSYSDR *or 75 mm ⊔ rail AM1DL or screw fixing.*
*LC1D80 to D95 ⎓: clip-on mounting on 75 mm ⊔ rail AM1DL or screw fixing.*
*LC1D115 and D150: clip-on mounting on 2 x 35 mm ⊔ rails* NSYSDR *or screw fixing.*

## Standard control circuit voltages (for other voltages, please consult your Regional Sales Office)

### a.c. supply

| Volts | 24 | 42 | 48 | 110 | 115 | 220 | 230 | 240 | 380 | 400 | 415 | 440 | 500 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **LC1D09…D150** (D115 and D150 coils with built-in suppression as standard, by bi-directional peak limiting diode). | | | | | | | | | | | | | |
| 50/60 Hz | B7 | D7 | E7 | F7 | FE7 | M7 | P7 | U7 | Q7 | V7 | N7 | R7 | S7 |
| **LC1D09…D65** (not available with "connection for lugs or bars") | | | | | | | | | | | | | |
| 50 Hz | B5 | D5 | E5 | | | | P5 | | | | | | |
| **LC1D80…D115** | | | | | | | | | | | | | |
| 50 Hz | B5 | D5 | E5 | F5 | FE5 | M5 | P5 | U5 | Q5 | V5 | N5 | R5 | S5 |
| 60 Hz | B6 | – | E6 | F6 | – | M6 | – | U6 | Q6 | – | – | R6 | – |

### d.c. supply

| Volts | 12 | 24 | 36 | 48 | 60 | 72 | 110 | 125 | 220 | 250 | 440 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **LC1D09…D38** (coils with integral suppression device fitted as standard, by bi-directional peak limiting diode) | | | | | | | | | | | |
| U 0.7…1.25 Uc | JD | BD | CD | ED | ND | SD | FD | GD | MD | UD | RD |
| **LC1D40A …D65A** (coils with integral suppression device fitted as standard, by bi-directional peak limiting diode) | | | | | | | | | | | |
| U 0.75…1.25 Uc | JD | (4) | (4) | (4) | (4) | (4) | (4) | (4) | (4) | (4) | RD |
| **LC1D80…D95** | | | | | | | | | | | |
| U 0.85…1.1 Uc | JD | BD | CD | ED | ND | SD | FD | GD | MD | UD | RD |
| U 0.75…1.2 Uc | JW | BW | CW | EW | – | SW | FW | – | MW | – | – |
| **LC1D115 and D150** (coil with built-in suppression device as standard) | | | | | | | | | | | |
| U 0.75…1.2 Uc | – | BD | – | ED | ND | SD | FD | GD | MD | UD | RD |

### Low consumption

| Volts ⎓ | 5 | 12 | 20 | 24 | 48 | 110 | 220 | 250 |
|---|---|---|---|---|---|---|---|---|
| **LC1D09…D38** (coils with integral suppression device fitted as standard, by bi-directional peak limiting diode) | | | | | | | | |
| U 0.8…1.25 Uc | AL | JL | ZL | BL | EL | FL | ML | UL |

### a.c. / d.c. supply - low consumption

**See TeSys D Green, page B8/4**

*For other voltages between 5 and 690 V, see pages B8/31 to B8/34.*
*(2) The weights indicated are for contactors with a.c. control circuit. For d.c. or low consumption control circuit, add 0.160 kg from **LC1D09** to **D38**, 0.075 kg from **LC1D40A** to **D80A** and 1 kg for **LC1D80** and **D95**.*
*(3) BTR screws: hexagon socket head. In accordance with local electrical wiring regulations, a size 4 insulated Allen key must be used (reference **LADALLEN4**, see page B8/28).*
*(4) For these coil voltages, choose from* TeSys D Green *contactors. Same product ref. radical, just add BBE coil voltage code for 24 V DC, BNE for 24-60V AC/DC, EHE for 48-130 V AC/DC, KUE for 100-250 V AC/DC. Exemple: **LC1D40ABBE**.*

Characteristics: pages B8/59 to B8/65
Dimensions: pages B8/72 to B8/75
Schemes: pages B8/79 to B8/80
Click **HERE** for access to online contactor selector

PB121353.eps

*LC1D123●●*

PB120690.eps

*LCD80A3●●*

## 3-pole contactors - Motor control up to 30 kW at 400 V, in category AC-3

| Standard power ratings of 3-phase motors 50-60 Hz in category AC-3 (θ ≤ 60 °C) | | | | | | | Rated operational current in AC-3 440 V up to | Instantaneous auxiliary contacts | | Basic reference, to be completed by adding the control voltage code |
|---|---|---|---|---|---|---|---|---|---|---|
| 220 V 230 V | 380 V 400 V | 415 V | 440 V | 500 V | 660 V 690 V | 1000 V | | | | Fixing [1] |
| kW | kW | kW | kW | kW | kW | kW | A | | | |
| **Power and control connections by spring terminals** | | | | | | | | | | |
| 2.2 | 4 | 4 | 4 | 5.5 | 5.5 | | 9 | 1 | 1 | **LC1D093●●** |
| 3 | 5.5 | 5.5 | 5.5 | 7.5 | 7.5 | | 12 | 1 | 1 | **LC1D123●●** |
| 4 | 7.5 | 9 | 9 | 10 | 10 | | 18 | 1 | 1 | **LC1D183●●** |
| 5.5 | 11 | 11 | 11 | 15 | 15 | | 25 | 1 | 1 | **LC1D253●●** |
| 7.5 | 15 | 15 | 15 | 18.5 | 18.5 | | 32 [2] | 1 | 1 | **LC1D323●●** |
| **Power connections by EverLink® BTR screw connectors [3] and control by spring terminals** | | | | | | | | | | |
| 11 | 18.5 | 22 | 22 | 22 | 30 | | 40 | 1 | 1 | **LC1D40A3●●** |
| 15 | 22 | 25 | 30 | 30 | 33 | | 50 | 1 | 1 | **LC1D50A3●●** |
| 18.5 | 30 | 37 | 37 | 37 | 37 | | 65 | 1 | 1 | **LC1D65A3●●** |
| 22 | 37 | 37 | 37 | 37 | 37 | | 66 | 1 | 1 | **LC1D80A3●●** |

### Connection by Faston connectors

These contactors are fitted with Faston connectors: 2 x 6.35 mm on the power poles and 1 x 6.35 mm on the coil and auxiliary terminals.
For contactors LC1D09 and LC1D12 only, replace the figure **3** with a **9** in the references selected above.
Example: **LC1D093●●** becomes **LC1D099●●**.

## Separate components

**Auxiliary contact blocks and add-on modules**: see pages B8/22 to B8/28.

*(1) LC1D09 to D32: clip-on mounting on 35 mm ⊔ rail* NSYSDR *or screw fixing.*

## Standard control circuit voltages (for other voltages, please consult your Regional Sales Office)

| a.c. supply | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volts** | **24** | **42** | **48** | **110** | **115** | **220** | **230** | **240** | **380** | **400** | **415** | **440** |
| **LC1D09…D80A** | | | | | | | | | | | | |
| 50/60 Hz | B7 | D7 | E7 | F7 | FE7 | M7 | P7 | U7 | Q7 | V7 | N7 | R7 |
| **d.c. supply** | | | | | | | | | | | | |
| **Volts** | **12** | **24** | **36** | **48** | **60** | **72** | **110** | **125** | **220** | **250** | **440** | |
| **LC1D09…D32** (coils with integral suppression device fitted as standard, by bi-directional peak limiting diode) | | | | | | | | | | | | |
| U 0.7…1.25 Uc | JD | BD | CD | ED | ND | SD | FD | GD | MD | UD | RD | |
| **LC1D40A…D65A** (coils with integral suppression device fitted as standard, by bi-directional peak limiting diode) | | | | | | | | | | | | |
| U 0.75…1.25 Uc | JD | BD | CD | ED | ND | SD | FD | GD | MD | UD | RD | |
| **Low consumption** | | | | | | | | | | | | |
| **Volts ⎓** | **5** | **12** | **20** | **24** | **48** | **110** | **220** | **250** | | | | |
| **LC1D09…D32** (coils with integral suppression device fitted as standard, by bi-directional peak limiting diode) | | | | | | | | | | | | |
| U 0.8…1.25 Uc | AL | JL | ZL | BL | EL | FL | ML | UL | | | | |

*For other voltages between 5 and 690 V, see pages B8/31 to B8/34.*

*(2) Must be wired with 2 x 4 mm² cables in parallel on the upstream side. On the downstream side, outgoing terminal block* ***LAD331*** *may be used (Quickfit technology, see page B1/18). When wired with a single cable, the product is limited to 25 A (11 kW/400 V motors).*

*(3) BTR screws: hexagon socket head. In accordance with local electrical wiring regulations, a size 4 insulated Allen key must be used (reference* ***LADALLEN4****, see page B8/28).*

Contactors

PB121354.eps

*LC1D09●●*

PB120691.eps

*LC1D80A●●*

## 3-pole contactors - Load control from 25 to 200 A in category AC-1

| Non inductive loads maximum current (θ ≤ 60 °C) utilisation category AC-1 | Number of poles | Instantaneous auxiliary contacts | | Basic reference, to be completed by adding the control voltage code<br>Fixing (1) | Weight (2) |
|---|---|---|---|---|---|
| A | | | | | kg |
| **Connection by screw clamp terminals** | | | | | |
| 25 | 3 | 1 | 1 | **LC1D09●●** | 0.320 |
| | | | | or **LC1D12●●** | 0.325 |
| 32 | 3 | 1 | 1 | **LC1D18●●** | 0.330 |
| 40 | 3 | 1 | 1 | **LC1D25●●** | 0.370 |
| 50 | 3 | 1 | 1 | **LC1D32●●** | 0.375 |
| | | | | or **LC1D38●●** | 0.380 |
| **Connection by EverLink®, BTR screw connectors (3)** | | | | | |
| 60 | 3 | 1 | 1 | **LC1D40A●●** | 0.850 |
| 80 | 3 | 1 | 1 | **LC1D50A●●** | 0.855 |
| | | | | or **LC1D65A●●** (4) | 0.860 |
| | | | | or **LC1D80A●●** (4) | 0.860 |
| **Connection by screw clamp terminals or connectors** | | | | | |
| 125 | 3 | 1 | 1 | **LC1D80●●** | 1.590 |
| | | | | or **LC1D95●●** (4) | 1.610 |
| 200 | 3 | 1 | 1 | **LC1D115●●** | 2.500 |
| | | | | or **LC1D150●●** (5) | 2.500 |

## 3-pole contactors for connection by lugs

In the references selected above, insert a figure **6** before the voltage code.
Example: **LC1D09●●** becomes **LC1D096●●**.

## Standard control circuit voltages
**(for other voltages, please consult your Regional Sales Office)**

| a.c. supply | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volts** | **24** | **42** | **48** | **110** | **115** | **220** | **230** | **240** | **380** | **400** | **415** | **440** | **500** |
| **LC1D09...D150** ( LC1D115 and D150 coils with built-in suppression device as standard) | | | | | | | | | | | | | |
| 50/60 Hz | B7 | D7 | E7 | F7 | FE7 | M7 | P7 | U7 | Q7 | V7 | N7 | R7 | S7 |
| **LC1D09…D65** (not available with "connection for lugs or bars") | | | | | | | | | | | | | |
| 50 Hz | B5 | D5 | E5 | | | | P5 | | | | | | |
| **LC1D80...D150** | | | | | | | | | | | | | |
| 50 Hz | B5 | D5 | E5 | F5 | FE5 | M5 | P5 | U5 | Q5 | V5 | N5 | R5 | S5 |
| 60 Hz | B6 | – | E6 | F6 | – | M6 | – | U6 | Q6 | – | – | R6 | – |

| d.c. supply | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volts** | **12** | **24** | **36** | **48** | **60** | **72** | **110** | **125** | **220** | **250** | **440** |
| **LC1D09…D38** (coils with integral suppression device fitted as standard, by bi-directional peak limiting diode) | | | | | | | | | | | |
| U 0.7…1.25 Uc | JD | BD | CD | ED | ND | SD | FD | GD | MD | UD | RD |
| **LC1D40A …D65A** (coils with integral suppression device fitted as standard, by bi-directional peak limiting diode) | | | | | | | | | | | |
| U 0.75…1.25 Uc | JD | (6) | (6) | (6) | (6) | (6) | (6) | (6) | (6) | (6) | RD |
| **LC1 or LP1D80** and **D95** | | | | | | | | | | | |
| U 0.85…1.1 Uc | JD | BD | CD | ED | ND | SD | FD | GD | MD | UD | RD |
| U 0.75…1.2 Uc | JW | BW | CW | EW | – | SW | FW | – | MW | – | – |
| **LC1D115** and **D150** (coils with built-in suppression device fitted as standard) | | | | | | | | | | | |
| U 0.75…1.2 Uc | – | BD | – | ED | ND | SD | FD | GD | MD | UD | RD |

| Low consumption | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Volts** ⎓ | **5** | **12** | **20** | **24** | **48** | **110** | **220** | **250** |
| **LC1D09…D38** (coils with integral suppression device fitted as standard, by bi-directional peak limiting diode) | | | | | | | | |
| U 0.8…1.25 Uc | AL | JL | ZL | BL | EL | FL | ML | UL |

*For other voltages between 5 and 690 V, see pages B8/31 to B8/34.*

*(1) **LC1D09** to **D80A**: clip-on mounting on 35 mm ⊔ rail **NSYSDR** or screw fixing.*
*__LC1D80__ and __D95__ ∿: clip-on mounting on 35 mm ⊔ rail **NSYSDR** or 75 mm ⊔ rail **AM1DL** or screw fixing.*
*__LC1__ or __LP1D80__ to __D95__ ⎓: clip-on mounting on 75 mm ⊔ rail **AM1DL** or screw fixing.*
*__LC1D115__ and __D150__: clip-on mounting on 2 x 35 mm ⊔ rails **NSYSDR** or screw fixing.*

*(2) The weights indicated are for contactors with a.c. control circuit. For d.c. or low consumption control circuit, add 0.160 kg from **LC1D09** to **D38**, 0.075 kg from **LC1D40A** to **D80A** and 1 kg for **LC1D80** and **D95**.*

*(3) BTR screws: hexagon socket head. In accordance with local electrical wiring regulations, a size 4 insulated Allen key must be used (reference **LADALLEN4**, see page B8/28).*

*(4) Coordination tables according to the number of operating cycles, see AC-1 curve, page A6/40.*

*(5) 32 A with 2 x 4 mm² cables connected in parallel.*

*(6) For these coil voltages, choose from* TeSys D *Green contactors. Same product ref. radical, just add BBE coil voltage code for 24 V DC, BNE for 24-60 V AC/DC, EHE for 48-130 V AC/DC, KUE for 100-250 V AC/DC. Exemple: **LC1D40ABBE**.*

Contactors

PB121355.eps

*LC1D123●●*

PB120692.eps

*LC1D80A3●●*

## 3-pole contactors - Load control from 16 to 80 A in category AC-1

| Non inductive loads maximum current (θ ≤ 60 °C) utilisation category AC-1 | Number of poles | Instantaneous auxiliary contacts | | Basic reference, to be completed by adding the control voltage code<br>Fixing (1) | Weight (2) |
|---|---|---|---|---|---|
| A | | | | | kg |
| **Connection by spring terminals** | | | | | |
| 16 | 3 | 1 | 1 | **LC1D093●●** (3) | 0.320 |
| | | | or | **LC1D123●●** (3) | 0.325 |
| 25 | 3 | 1 | 1 | **LC1D183●●** (4) | 0.335 |
| | | | or | **LC1D253●●** (5) | 0.325 |
| | | | or | **LC1D323●●** (5) | 0.325 |
| **Power connections by EverLink® BTR screw connectors (6) and control by spring terminals** | | | | | |
| 60 | 3 | 1 | 1 | **LC1D40A3●●** | 0.850 |
| 80 | 3 | 1 | 1 | **LC1D50A3●●** (7) | 0.855 |
| | | | or | **LC1D65A3●●** (7) | 0.860 |
| | | | or | **LC1D80A3●●** (7) | 0.860 |

## 3-pole contactors for connection by Faston connectors

These contactors are fitted with Faston connectors: 2 x 6.35 mm on the power poles and 1 x 6.35 mm on the coil terminals. For contactors LC1D09 and LC1D12 only, in the references selected from the previous page, insert a figure **9** before the voltage code. Example: **LC1D09●●** becomes **LC1D099●●**.

## Separate components

**Auxiliary contact blocks and add-on modules**: see pages B8/22 to B8/28.

## Standard control circuit voltages
**(for other voltages, please consult your Regional Sales Office)**

| **a.c. supply** | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volts** | **24** | **42** | **48** | **110** | **115** | **220** | **230** | **240** | **380** | **400** | **415** | **440** | **500** |
| **LC1D09...D80A** | | | | | | | | | | | | | |
| 50/60 Hz | B7 | D7 | E7 | F7 | FE7 | M7 | P7 | U7 | Q7 | V7 | N7 | R7 | S7 |

| **d.c. supply** | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volts** | **12** | **24** | **36** | **48** | **60** | **72** | **110** | **125** | **220** | **250** | **440** | |
| **LC1D09…D32** (coils with integral suppression device fitted as standard, by bi-directional peak limiting diode) | | | | | | | | | | | | |
| U 0.7…1.25 Uc | JD | BD | CD | ED | ND | SD | FD | GD | MD | UD | RD | |
| **LC1D40A…D65A** (coils with integral suppression device fitted as standard, by bi-directional peak limiting diode) | | | | | | | | | | | | |
| U 0.75…1.25 Uc | JD | BD | CD | ED | ND | SD | FD | GD | MD | UD | RD | |

| **Low consumption** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Volts** ⎓ | **5** | **12** | **20** | **24** | **48** | **110** | **220** | **250** |
| **LC1D09…D32** (coils with integral suppression device fitted as standard, by bi-directional peak limiting diode) | | | | | | | | |
| U 0.8…1.25 Uc | AL | JL | ZL | BL | EL | FL | ML | UL |

*For other voltages between 5 and 690 V, see pages B8/31 to B8/34.*
*(1) **LC1D09** to **D80A**: clip-on mounting on 35 mm ⊥ rail **NSYSDR** or screw fixing.*
*(2) The weights indicated are for contactors with a.c. control circuit. For d.c. or low consumption control circuit, add 0.160 kg from **LC1D09** to **D38** and 0.075 kg from **LC1D40A** to **D80A**.*
*(3) 20 A with 2 x 2.5 mm² cables connected in parallel.*
*(4) 32 A with 2 x 4 mm² cables connected in parallel.*
*(5) 40 A with 2 x 4 mm² cables connected in parallel.*
*(6) BTR screws: hexagon socket head. In accordance with local electrical wiring regulations, a size 4 insulated Allen key must be used (reference **LADALLEN4**, see page B8/28).*
*(7) Coordination tables according to the number of operating cycles, see AC-1 curve, page A6/40.*

Characteristics: pages B8/59 to B8/65
Dimensions: pages B8/72 to B8/75
Schemes: pages B8/79 to B8/80
Click HERE for access to online contactor selector

PB121356.eps

*LC1DT20●●*

PB121357.eps

*LC1DT80A●●*

PB108321.eps

*LC1D65008●●*

## 4-pole contactors - Load control, 20 to 200 A in category AC-1

| Non inductive loads maximum current ($\theta \leq 60$ °C) utilisation category AC-1 | Number of poles | | Instantaneous auxiliary contacts | | Basic reference, to be completed by adding the control voltage code / Fixing (1) | Weight (2) |
|---|---|---|---|---|---|---|
| A | | | | | | kg |
| **Connection by screw clamp terminals** | | | | | | |
| 20 | 4 | – | 1 | 1 | **LC1DT20●●** | 0.365 |
| | 2 | 2 | 1 | 1 | **LC1D098●●** | 0.365 |
| 25 | 4 | – | 1 | 1 | **LC1DT25●●** | 0.365 |
| | 2 | 2 | 1 | 1 | **LC1D128●●** | 0.365 |
| 32 | 4 | – | 1 | 1 | **LC1DT32●●** | 0.425 |
| | 2 | 2 | 1 | 1 | **LC1D188●●** | 0.425 |
| 40 | 4 | – | 1 | 1 | **LC1DT40●●** | 0.425 |
| | 2 | 2 | 1 | 1 | **LC1D258●●** | 0.425 |
| **Connection by EverLink®, BTR screw connectors** | | | | | | |
| 60 | 4 | – | 1 | 1 | **LC1DT60A●●** | 1.090 |
| 80 | 4 | – | 1 | 1 | **LC1DT80A●●** | 1.150 |
| **Connection by screw clamp terminals or connectors** | | | | | | |
| 60 | 2 | 2 | – | – | **LC1D40008●●** | 1.440 |
| | | | | | or **LP1D40008●●** | 2.210 |
| 80 | 2 | 2 | – | – | **LC1D65008●●** | 1.450 |
| | | | | | or **LP1D65008●●** | 2.220 |
| 125 | 4 | – | – | – | **LC1D80004●●** | 1.760 |
| | | | | | or **LP1D80004●●** | 2.685 |
| | 2 | 2 | – | – | **LC1D80008●●** | 1.840 |
| | | | | | or **LP1D80008●●** | 2.910 |
| 200 | 4 | – | – | – | **LC1D115004●●** | 2.860 |

## 4-pole contactors for connection by lugs or bars

In the references selected above, insert a figure 6 before the voltage code.
Example: **LC1DT20●●** becomes **LC1DT206●●**.

## Standard control circuit voltages (for other voltages, please consult your Regional Sales Office)

### a.c. supply

| Volts | 24 | 42 | 48 | 110 | 115 | 220 | 230 | 240 | 380 | 400 | 415 | 440 | 500 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **LC1D09...D150 and LC1DT20...DT80A** (LC1D115 and D150 coils with built-in suppression device as standard) | | | | | | | | | | | | | |
| 50/60 Hz | B7 | D7 | E7 | F7 | FE7 | M7 | P7 | U7 | Q7 | V7 | N7 | R7 | – |
| **LC1D80...D115** | | | | | | | | | | | | | |
| 50 Hz | B5 | D5 | E5 | F5 | FE5 | M5 | P5 | U5 | Q5 | V5 | N5 | R5 | S5 |
| 60 Hz | B6 | – | E6 | F6 | – | M6 | – | U6 | Q6 | – | – | R6 | – |

### d.c. supply

| Volts | 12 | 24 | 36 | 48 | 60 | 72 | 110 | 125 | 220 | 250 | 440 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **LC1D09…D25 and LC1DT20...DT40** (coils with integral suppression device fitted as standard, by bi-directional peak limiting diode) | | | | | | | | | | | |
| U 0.75…1.25 Uc | JD | BD | CD | ED | ND | SD | FD | GD | MD | UD | RD |
| **LC1DT60A …DT80A** (coils with integral suppression device fitted as standard, by bi-directional peak limiting diode) | | | | | | | | | | | |
| U 0.75…1.25 Uc | JD | (3) | (3) | (3) | (3) | (3) | (3) | (3) | (3) | (3) | RD |
| **LP1D40...D80** | | | | | | | | | | | |
| U 0.85…1.1 Uc | JD | BD | CD | ED | ND | SD | FD | GD | MD | UD | RD |
| U 0.75…1.2 Uc | JW | BW | CW | EW | – | SW | FW | – | MW | – | – |
| **LC1D115** (coil with built-in suppression device as standard) | | | | | | | | | | | |
| U 0.75…1.2 Uc | – | BD | – | ED | ND | SD | FD | GD | MD | UD | RD |

### Low consumption

| Volts ⎓ | 5 | 12 | 20 | 24 | 48 | 110 | 220 | 250 |
|---|---|---|---|---|---|---|---|---|
| **LC1D09...D25 and LC1DT20...DT40** (coils with integral suppression device fitted as standard, by bi-directional peak limiting diode) | | | | | | | | |
| U 0.8…1.25 Uc | AL | JL | ZL | BL | EL | FL | ML | UL |

*For other voltages between 5 and 690 V, see pages B8/31 to B8/34.*

*(1) **LC1D09** to **D38** and **LC1DT20** to **DT80A**: clip-on mounting on 35 mm ⊔ rail **NSYSDR** or screw fixing.*
*__LC1D80__ ∿: clip-on mounting on 35 mm ⊔ rail **NSYSDR** or 75 mm ⊔ rail **AM1DL** or screw fixing.*
*__LC1__ or __LP1D80__ ⎓: clip-on mounting on 75 mm ⊔ rail **AM1DL** or screw fixing.*
*__LC1D115__ and __D150__: clip-on mounting on 2 x 35 mm ⊔ rails **NSYSDR** or screw fixing.*
*(2) The weights indicated are for contactors with a.c. control circuit. For d.c. or low consumption control circuit, add 0.160 kg from **LC1D09** to **D38**, 0.075 kg from **LC1DT60A** and **D80A** and 1 kg for **LC1D80**.*
*(3) For these coil voltages, choose from TeSys D Green contactors. Same product ref. radical, just add BBE coil voltage code for 24 V DC, BNE for 24-60 V AC/DC, EHE for 48-130 V AC/DC, KUE for 100-250 V AC/DC. Exemple: **LC1DT60ABBE**.*

Characteristics: pages B8/59 to B8/65
Dimensions: pages B8/72 to B8/75
Schemes: pages B8/79 to B8/80
Click HERE for access to online contactor selector

# Product references

PB108325.eps

*LC1DT253●●*

PB108326.eps

*LC1DT80A3●●*

## 4-pole contactors - Load control, 20 to 80 A in category AC-1

| Non inductive loads maximum current ($\theta \leq 60$ °C) utilisation category AC-1 | Number of poles | | Instantaneous auxiliary contacts | | Basic reference, to be completed by adding the voltage code<br>Fixing [1] | Weight [2] |
|---|---|---|---|---|---|---|
| A | | | | | | kg |
| **Connection by spring terminals** | | | | | | |
| 20 | 4 | – | 1 | 1 | **LC1DT203●●** | 0.380 |
| | 2 | 2 | 1 | 1 | **LC1D0983●●** | 0.380 |
| 25 | 4 | – | 1 | 1 | **LC1DT253●●** | 0.380 |
| | 2 | 2 | 1 | 1 | **LC1D1283●●** | 0.380 |
| 32 | 4 | – | 1 | 1 | **LC1DT323●●** | 0.425 |
| | 2 | 2 | 1 | 1 | **LC1D1883●●** | 0.425 |
| 40 | 4 | – | 1 | 1 | **LC1DT403●●** | 0.425 |
| | 2 | 2 | 1 | 1 | **LC1D2583●●** | 0.425 |
| **Connection by EverLink®, BTR screw connectors and control circuit by spring terminals** | | | | | | |
| 60 | 4 | – | 1 | 1 | **LC1DT60A3●●** | 1.090 |
| 80 | 4 | – | 1 | 1 | **LC1DT80A3●●** | 1.150 |

## Separate components

**Auxiliary contact blocks and add-on modules**: see pages B8/22 to B8/28.

## Standard control circuit voltages
**(for other voltages, please consult your Regional Sales Office)**

### a.c. supply

| Volts | 24 | 42 | 48 | 110 | 115 | 220 | 230 | 240 | 380 | 400 | 415 | 440 | 500 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **LC1D09...D25 and LC1DT20...DT80A** (coils with integral suppression device fitted as standard, by bi-directional peak limiting diode) | | | | | | | | | | | | | |
| 50/60 Hz | B7 | D7 | E7 | F7 | FE7 | M7 | P7 | U7 | Q7 | V7 | N7 | R7 | – |

### d.c. supply

| Volts | 12 | 24 | 36 | 48 | 60 | 72 | 110 | 125 | 220 | 250 | 440 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **LC1D09…D25 and LC1DT20... DT40** (coils with integral suppression device fitted as standard, by bi-directional peak limiting diode) | | | | | | | | | | | |
| U 0.7…1.25 Uc | JD | BD | CD | ED | ND | SD | FD | GD | MD | UD | RD |
| **LC1DT60A...80A** (coils with integral suppression device fitted as standard, by bi-directional peak limiting diode) | | | | | | | | | | | |
| U 0.75…1.25 Uc | JD | BD | CD | ED | ND | SD | FD | GD | MD | UD | RD |

### Low consumption

| Volts ⎓ | 5 | 12 | 20 | 24 | 48 | 110 | 220 | 250 |
|---|---|---|---|---|---|---|---|---|
| **LC1D09...D25 and LC1DT20...DT40** (coils with integral suppression device fitted as standard, by bi-directional peak limiting diode) | | | | | | | | |
| U 0.8…1.25 Uc | AL | JL | ZL | BL | EL | FL | ML | UL |

*For other voltages between 5 and 690 V, see pages B8/31 to B8/34.*

*(1) **LC1D09** to **D38** and **LC1DT20** to **DT80A**: clip-on mounting on 35 mm ⊥ rail **NSYSDR** or screw fixing.*

*(2) The weights indicated are for contactors with a.c. control circuit. For d.c. or low consumption control circuit, add 0.160 kg from **LC1D09** to **D38**, 0.075 kg for **LC1DT60A** and **DT80A**.*

PB121349.eps

*LC1D09●●*

PB121350.eps

*LC1D25●●*

PB120609.eps

*LC1D80A●●*

PB121351.eps

*LC1D95●●*

## Contactors conforming to UL and CSA standards (North American market ) - 25 to 160 A

| Standard power ratings of motors 50/60 Hz | | | | | | Associated cable type 75 °C-Cu | UL continuous current | Type of contactor required Basic reference, to be completed |
|---|---|---|---|---|---|---|---|---|
| Single-phase 1 Ø | | 3-phase 3 Ø | | | | | | |
| 120 V | 240 V | 208 V | 240 V | 480 V | 600 V | | | Fixing, connection (1) |
| HP | HP | HP | HP | HP | HP | | A | |
| **Connection by screw clamp terminals** | | | | | | | | |
| 1/3 | 1 | 2 | 2 | 5 | 7.5 | AWG 18 - 10 | 25 | **LC1D09●●** |
| 0.5 | 2 | 3 | 3 | 7.5 | 10 | AWG 18 - 10 | 25 | **LC1D12●●** |
| 1 | 3 | 5 | 5 | 10 | 15 | AWG 18 - 8 | 32 | **LC1D18●●** |
| 2 | 3 | 7.5 | 7.5 | 15 | 20 | AWG 14 - 6 | 40 | **LC1D25●●** |
| 2 | 5 | 10 | 10 | 20 | 25 | AWG 14 - 6 | 50 | **LC1D32●●** (2) |
| 2 | 5 | 10 | 10 | 20 | 25 | AWG 14 - 6 | 50 | **LC1D38●●** (2) |
| **Power connections by EverLink® BTR screw connectors and control by spring terminals** | | | | | | | | |
| 3 | 5 | 10 | 10 | 30 | 30 | AWG 16 - 2 | 60 | **LC1D40A●●** |
| 3 | 7.5 | 15 | 15 | 40 | 40 | AWG 16 - 2 | 70 | **LC1D50A●●** |
| 5 | 10 | 20 | 20 | 40 | 50 | AWG 16 - 2 | 80 | **LC1D65A●●** |
| 5 | 10 | 20 | 20 | 40 | 50 | AWG 16 - 2 | 80 | **LC1D80A●●** |
| **Connection by screw clamp terminals or connectors** | | | | | | | | |
| 7.5 | 15 | 25 | 30 | 60 | 60 | AWG 10 - 2 | 110 | **LC1D80●●** |
| 7.5 | 15 | 25 | 30 | 60 | 60 | AWG 10 - 2 | 110 | **LC1D95●●** |
| – | – | 30 | 40 | 75 | 100 | AWG 8-1/0 | 160 | **LC1D115●●** |
| – | – | 40 | 50 | 100 | 125 | AWG 8-1/0 | 160 | **LC1D150●●** |

## Applications with High-Fault Short-Circuit ratings

High-fault short-circuit current ratings are: 100 kA (D09-80, D115-150) at 600 V with Class J fuses and 85 kA (D09-38), 100 kA (D40A-80, D115-150) at 480 V and 50 kA (D09-80, D115-150) at 600 V with circuit breakers.

### Application example

**For a 15 HP-230 V motor**
Select a contactor type **LC1D50A**.
Information: the contactor rating selected corresponds to “size 2”, the associated cable is type AWG3 75 °C-Cu.

## Standard control circuit voltages (for other voltages, please consult your Regional Sales Office)

### a.c. supply

| Volts | 24 | 42 | 48 | 110 | 115 | 120 | 208 | 220 | 230 | 240 | 380 | 400 | 415 | 440 | 480 | 500 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **LC1D09…D150** (D115 and D150 coils with built-in suppression device as standard) | | | | | | | | | | | | | | | | |
| 50/60 Hz | B7 | D7 | E7 | F7 | FE7 | G7 (3) | LE7 (3) | M7 | P7 | U7 | Q7 | V7 | N7 | R7 | T7 (3) | S7 |
| **LC1D09…D65** (not available with "connection for lugs or bars") | | | | | | | | | | | | | | | | |
| 50 Hz | B5 | D5 | E5 | | | | | | P5 | | | | | | | |
| **LC1D80…D115** | | | | | | | | | | | | | | | | |
| 50 Hz | B5 | D5 | E5 | F5 | FE5 | G5 | – | M5 | P5 | U5 | Q5 | V5 | N5 | R5 | – | S5 |
| 60 Hz | B6 | – | E6 | F6 | – | G6 | L6 | M6 | – | U6 | Q6 | – | – | R6 | T6 | – |

### d.c. supply

| Volts | 12 | 24 | 36 | 48 | 60 | 72 | 110 | 125 | 220 | 250 | 440 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **LC1D09…D32** (coils with integral suppression device fitted as standard, by bi-directional peak limiting diode) | | | | | | | | | | | |
| U 0.7…1.25 Uc | JD | BD | CD | ED | ND | SD | FD | GD | MD | UD | RD |
| **LC1D40A…D65A** (coils with integral suppression device fitted as standard, by bi-directional peak limiting diode) | | | | | | | | | | | |
| U 0.75…1.25 Uc | JD | (4) | (4) | (4) | (4) | (4) | (4) | (4) | (4) | (4) | RD |
| **LC1D80 and D95** | | | | | | | | | | | |
| U 0.85…1.1 Uc | JD | BD | CD | ED | ND | SD | FD | GD | MD | UD | RD |
| U 0.75…1.2 Uc | JW | BW | CW | EW | – | SW | FW | – | MW | – | – |
| **LC1D115 and D150** (coils with built-in suppression device as standard) | | | | | | | | | | | |
| U 0.75…1.2 Uc | – | BD | – | ED | ND | SD | FD | GD | MD | UD | RD |

### Low consumption

| Volts ⎓ | 5 | 12 | 20 | 24 | 48 | 72 | 110 | 220 | 250 |
|---|---|---|---|---|---|---|---|---|---|
| **LC1D09…D38** (coils with integral suppression device fitted as standard, by bi-directional peak limiting diode) | | | | | | | | | |
| U 0.8…1.25 Uc | AL | JL | ZL | BL | EL | SL | FL | ML | UL |

*(1) **LC1D09** to **D65A**: clip-on mounting on 35 mm ⊥ rail **NSYSDR** or screw fixing.*
*__LC1D80__ and __LC1D95__: clip-on mounting on 35 mm ⊥ rail __NSYSDR__ or 75 mm ⊥ rail __AM1DL__ or screw fixing.*
*__LC1D115__ and __D150__: clip-on mounting on 2 x 35 mm ⊥ rails __NSYSDR__ or screw fixing.*
*(2) Versions with spring terminals __LC1D323__ and __LC1D383__ are not certified UL/CSA.*
*(3) Contactors __LC1D40A__, __50A__, __65A__, __80A__: for this coil voltage use is only on 60 Hz.*
*(4) For these coil voltages, choose from TeSys D Green contactors. Same product ref. radical, just add BBE coil voltage code for 24 V DC, BNE for 24-60 V AC/DC, EHE for 48-130 V AC/DC, KUE for 100-250 V AC/DC. Exemple: __LC1D40ABBE__.*

Characteristics: pages B8/59 to B8/65
Dimensions: pages B8/72 to B8/75
Schemes: pages B8/79 to B8/80
Click HERE for access to online contactor selector

PB108301.eps

*LC2D12●●*

PB108340.eps

*LC2D65A●●*

PB121358.eps

*LC2D1156●●*

## 3-pole reversing contactors - Motors up to 75 kW / 400 V in category AC-3

**Horizontally mounted - Pre-wired power connections.**

| Standard power ratings of 3-phase motors 50-60 Hz in category AC-3 (θ ≤ 60 °C) | | | | | | | Rated operational current in AC-3 440 V up to | Instantaneous auxiliary contacts per contactor | | Contactors supplied with coil Basic reference, to be completed by adding the control voltage code | Weight (2) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 220 V 230 V | 380 V 400 V | 415 V | 440 V | 500 V | 660 V 690 V | 1000 V | | | | Fixing (1) | |
| kW | kW | kW | kW | kW | kW | kW | A | | | | kg |
| **With mechanical interlock, without electrical interlocking, for connection by screw clamp terminals or connectors** | | | | | | | | | | | |
| 2.2 | 4 | 4 | 4 | 5.5 | 5.5 | – | 9 | 1 | 1 | **LC2D09●●** (3) | 0.687 |
| 3 | 5.5 | 5.5 | 5.5 | 7.5 | 7.5 | – | 12 | 1 | 1 | **LC2D12●●** (3) | 0.697 |
| 4 | 7.5 | 9 | 9 | 10 | 10 | – | 18 | 1 | 1 | **LC2D18●●** (3) | 0.707 |
| 5.5 | 11 | 11 | 11 | 15 | 15 | – | 25 | 1 | 1 | **LC2D25●●** (3) | 0.787 |
| 7.5 | 15 | 15 | 15 | 18.5 | 18.5 | – | 32 | 1 | 1 | **LC2D32●●** (3) | 0.797 |
| 9 | 18.5 | 18.5 | 18.5 | 18.5 | 18.5 | – | 38 | 1 | 1 | **LC2D38●●** (3) | 0.807 |
| 11 | 18.5 | 22 | 22 | 22 | 30 | – | 40 | 1 | 1 | **LC2D40A●●** | 1.870 |
| 15 | 22 | 25 | 30 | 30 | 33 | – | 50 | 1 | 1 | **LC2D50A●●** | 1.880 |
| 18.5 | 30 | 37 | 37 | 37 | 37 | – | 65 | 1 | 1 | **LC2D65A●●** | 1.890 |
| 22 | 37 | 45 | 45 | 55 | 45 | – | 80 | 1 | 1 | **LC2D80●●** | 3.200 |
| 25 | 45 | 45 | 45 | 55 | 45 | – | 95 | 1 | 1 | **LC2D95●●** | 3.200 |
| **With mechanical interlock and electrical interlocking, for connection by screw clamp terminals or connectors** | | | | | | | | | | | |
| 30 | 55 | 59 | 59 | 75 | 80 | 65 | 115 | 1 | 1 | **LC2D115●●** | 6.350 |
| 40 | 75 | 80 | 80 | 90 | 100 | 75 | 150 | 1 | 1 | **LC2D150●●** | 6.400 |

### Connection by lugs or bars

For reversing contactors LC2D09 to LC2D38, LC2D115 and LC2D150, in the references selected above, insert a figure **6** before the voltage code. Example: **LC2D09●●** becomes **LC2D096●●**.
To build a 40 to 65 A reversing contactor, for connection by lugs, order 2 contactors **LC1D●●A6** and mechanical interlock **LAD4CM** (see page B8/29).

## Component parts

**Auxiliary contact blocks and add-on modules**: see pages B8/22 to B8/28.

*(1) LC2D09 to D65A: clip-on mounting on 35 mm ⊔ rail **NSYSDR** or screw fixing.*
*LC2D80 and D95: clip-on mounting on 35 mm ⊔ rail **NSYSDR** or 75 mm ⊔ rail **AM1DL** or screw fixing.*
*LC2D115 and D150: clip-on mounting on 35 mm ⊔ rail **NSYSDR** or screw fixing.*

## Standard control circuit voltages (for other voltages, please consult your Regional Sales Office)

### a.c. supply

| Volts | 24 | 42 | 48 | 110 | 115 | 220 | 230 | 240 | 380 | 400 | 415 | 440 | 500 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **LC2D09…D150** (D115 and D150 coils with built-in suppression device as standard) | | | | | | | | | | | | | |
| 50/60 Hz | B7 | D7 | E7 | F7 | FE7 | M7 | P7 | U7 | Q7 | V7 | N7 | R7 | S7 |
| **LC2D80…D115** | | | | | | | | | | | | | |
| 50 Hz | B5 | D5 | E5 | F5 | FE5 | M5 | P5 | U5 | Q5 | V5 | N5 | R5 | S5 |
| 60 Hz | B6 | – | E6 | F6 | – | M6 | – | U6 | Q6 | – | – | R6 | – |

### d.c.supply

| Volts | 12 | 24 | 36 | 48 | 60 | 72 | 110 | 125 | 220 | 250 | 440 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **LC2D09…D38** (coils with integral suppression device fitted as standard, by bi-directional peak limiting diode) | | | | | | | | | | | |
| U 0.7…1.25 Uc | JD | BD | CD | ED | ND | SD | FD | GD | MD | UD | RD |
| **LC2D40A…D65A** (coils with integral suppression device fitted as standard, by bi-directional peak limiting diode) | | | | | | | | | | | |
| U 0.75…1.25 Uc | JD | BD | CD | ED | ND | SD | FD | GD | MD | UD | RD |

### Low consumption

| Volts ⎓ | 5 | 12 | 20 | 24 | 48 | 110 | 220 | 250 |
|---|---|---|---|---|---|---|---|---|
| **LC2D09...D38** (coils with integral suppression device fitted as standard, by bi-directional peak limiting diode) | | | | | | | | |
| U 0.8…1.25 Uc | AL | JL | ZL | BL | EL | FL | ML | UL |

*For other voltages between 5 and 690 V, see pages B8/31 to B8/34.*
*(2) The weights indicated are for contactors with a.c. control circuit. For d.c. or low consumption control circuit, add 0.330 kg for **LC2D09** to **D38**, 0.150 kg for **LC1D40A** to **D65A**.*
*(3) For reversing contactors with electrical interlocking pre-wired at the factory, add suffix **V** to the references selected above. Example: **LC2D09P7** becomes **LC2D09P7V**.*

***Note:** when assembling a reversing contactor, it is good practice to incorporate a 50 ms time delay.*

PB108305.eps

*LC2D123●●*

## 3-pole reversing contactors - Motors up to 15 kW / 400 V in category AC-3

**Pre-wired power connections.**
Mechanical interlock without electrical interlocking.

| Standard power ratings of 3-phase motors 50-60 Hz in category AC-3 (θ ≤ 60 °C) | | | | | | Rated operational current in AC-3 440 V up to | Instantaneous auxiliary contacts per contactor | | Contactors supplied with coil Basic reference, to be completed by adding the voltage code | Weight (2) |
|---|---|---|---|---|---|---|---|---|---|---|
| 220 V 230 V | 380 V 400 V | 415 V | 440 V | 500 V | 660 V 690 V | | | | Fixing (1) | |
| kW | kW | kW | kW | kW | kW | A | | | | kg |
| **For connection by spring terminals** | | | | | | | | | | |
| 2.2 | 4 | 4 | 4 | 5.5 | 5.5 | 9 | 1 | 1 | **LC2D093●●** | 0.687 |
| 3 | 5.5 | 5.5 | 5.5 | 7.5 | 7.5 | 12 | 1 | 1 | **LC2D123●●** | 0.697 |
| 4 | 7.5 | 9 | 9 | 10 | 10 | 18 | 1 | 1 | **LC2D183●●** | 0.707 |
| 5.5 | 11 | 11 | 11 | 15 | 15 | 25 | 1 | 1 | **LC2D253●●** | 0.787 |
| 7.5 | 15 | 15 | 15 | 18.5 | 18.5 | 32 (3) | 1 | 1 | **LC2D323●●** | 0.797 |
| **Power connection by EverLink®, BTR screw connectors (4) and control by spring terminals** | | | | | | | | | | |
| 11 | 18.5 | 22 | 22 | 22 | 30 | 40 | 1 | 1 | **LC2D40A3●●** | 1.870 |
| 15 | 22 | 25 | 30 | 30 | 33 | 50 | 1 | 1 | **LC2D50A3●●** | 1.880 |
| 18.5 | 30 | 37 | 37 | 37 | 37 | 65 | 1 | 1 | **LC2D65A3●●** | 1.890 |
| **For connection by Faston connectors** | | | | | | | | | | |

**All power connections are to be made by the customer.**
These contactors are fitted with Faston connectors: 2 x 6.35 mm on the power poles and 1 x 6.35 mm on the coil terminals.
For reversing contactors LC2D09 and LC2D12 only, in the references selected above, replace the figure **3** before the voltage code with a figure **9**.
Example: **LC2D093●●** becomes **LC2D099●●**.

## Component parts

**Auxiliary contact blocks and add-on modules**: see pages B8/22 to B8/28.
*(1) LC2D09 to D32: clip-on mounting on 35 mm ⊥⌐ rail **NSYSDR** or screw fixing.*

## Standard control circuit voltages (for other voltages, please consult your Regional Sales Office)

| a.c. supply | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volts** | **24** | **42** | **48** | **110** | **115** | **220** | **230** | **240** | **380** | **400** | **415** | **440** | **500** |
| **LC2D09…D65A** | | | | | | | | | | | | | |
| 50/60 Hz | B7 | D7 | E7 | F7 | FE7 | M7 | P7 | U7 | Q7 | V7 | N7 | R7 | S7 |

| d.c. supply | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volts** | **12** | **24** | **36** | **48** | **60** | **72** | **110** | **125** | **220** | **250** | **440** |
| **LC2D09…D32** (coils with integral suppression device fitted as standard, by bi-directional peak limiting diode) | | | | | | | | | | | |
| U 0.7…1.25 Uc | JD | BD | CD | ED | ND | SD | FD | GD | MD | UD | RD |
| **LC2D40A …D65A** (coils with integral suppression device fitted as standard, by bi-directional peak limiting diode) | | | | | | | | | | | |
| U 0.75…1.25 Uc | JD | BD | CD | ED | ND | SD | FD | GD | MD | UD | RD |

| Low consumption | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Volts** ⎓ | **5** | **12** | **20** | **24** | **48** | **110** | **220** | **250** |
| **LC2D09...D32** (coils with integral suppression device fitted as standard, by bi-directional peak limiting diode) | | | | | | | | |
| U 0.8…1.25 Uc | AL | JL | ZL | BL | EL | FL | ML | UL |

*For other voltages between 5 and 690 V, see pages B8/31 to B8/34.*
*(2) The weights indicated are for reversing contactors with a.c. control circuit. For d.c. or low consumption control circuit, add 0.330 kg for **LC2D09** to **D38**, 0.150 kg for **LC1D40A** to **D65A**.*
*(3) Must be wired with 2 x 4 mm² cables in parallel on the upstream side. On the downstream side, outgoing terminal block **LAD331** may be used (Quickfit technology, see page B1/18).When wired with a single cable, the product is limited to 25 A (11 kW/400 V motors).*
*(4) BTR screws: hexagon socket head. In accordance with local electrical wiring regulations, a size 4 insulated Allen key must be used (reference **LADALLEN4**, see page B8/28).*

Contactors

Characteristics: pages B8/59 to B8/65
Dimensions: pages B8/81 and B8/82
Schemes: pages B8/83 and B8/84
Click HERE for access to online contactor selector

DB424874.eps

*LC2D09●●●*

DB424870.eps

*LC2D40A●●●*

TeSys D Green contactors have a dark grey casing and a 3-character code voltage.

## 3-pole reversing contactors - Motors up to 37 kW / 400 V in category AC-3

### Pre-wired power connections

| Standard power ratings of 3-phase motors 50-60 Hz in category AC-3 (θ ≤ 60 °C) | | | | | | Rated operational current in AC-3 440 V up to | Instantaneous auxiliary contacts per contactor | | Contactors supplied with coil Partial reference, to be completed by adding the control voltage code<br>Fixing [1] | Weight |
|---|---|---|---|---|---|---|---|---|---|---|
| 220 V 230 V | 380 V 400 V | 415 V | 440 V | 500 V | 660 V 690 V | | | | | |
| kW | kW | kW | kW | kW | kW | A | | | | kg |
| **With mechanical interlock, without electrical interlocking, for connection by screw clamp terminals or Everlink BTR screw connectors [2] [3]** | | | | | | | | | | |
| 2.2 | 4 | 4 | 4 | 5.5 | 5.5 | 9 | 1 | 1 | **LC2D09●●●** | 0.783 |
| 3 | 5.5 | 5.5 | 5.5 | 7.5 | 7.5 | 12 | 1 | 1 | **LC2D12●●●** | 0.793 |
| 4 | 7.5 | 9 | 9 | 10 | 10 | 18 | 1 | 1 | **LC2D18●●●** | 0.803 |
| 5.5 | 11 | 11 | 11 | 15 | 15 | 25 | 1 | 1 | **LC2D25●●●** | 0.913 |
| 7.5 | 15 | 15 | 15 | 18.5 | 18.5 | 32 | 1 | 1 | **LC2D32●●●** | 0.923 |
| 9 | 18.5 | 18.5 | 18.5 | 18.5 | 18.5 | 38 | 1 | 1 | **LC2D38●●●** | 0.933 |
| 11 | 18.5 | 22 | 22 | 22 | 30 | 40 | 1 | 1 | **LC2D40A●●●** [2] | 2.154 |
| 15 | 22 | 25 | 30 | 30 | 33 | 50 | 1 | 1 | **LC2D50A●●●** [2] | 2.164 |
| 18.5 | 30 | 37 | 37 | 37 | 37 | 65 | 1 | 1 | **LC2D65A●●●** [2] | 2.174 |
| 22 | 37 | 37 | 37 | 37 | 37 | 66 | 1 | 1 | **LC2D80A●●●** [2] | 2.174 |

## Auxiliary contact blocks and add-on modules

See pages B8/22 to B8/28.

## Coil voltage codes

### AC/DC 24 V DC supply

| Volts | 24 (DC only) | 24-60 | 48-130 | 100-250 |
|---|---|---|---|---|
| **LC2D09...D32, LC2D40A ... D80A** | | | | |
| U 0.85...1.1 Uc | | BNE | EHE | KUE |
| **LC2D09...D38** | | | | |
| U 0.8...1.2 Uc | BNE | | | |
| **LC2D40A ...D80A** | | | | |
| U 0.8...1.2 Uc | BBE | | | |

*(1) **LC2D09** to **D80A**: clip-on mounting on 35 mm ⊔ rail **NSYSDR** or screw fixing.*
*(2) BTR screws: hexagon socket head. In accordance with local electrical wiring regulations, a size 4 insulated Allen key must be used (reference **LADALLEN4**, see page B8/28).*
*(3) Electrical interlocking is recommended when 2 orders (direct and reverse) could appeared in the same time.*

PB108324.eps

*LC2DT20●●*

PB121359.eps

*LC2D115004●●*

## 4-pole changeover contactor pairs - 20 to 200 A in category A-1

**Pre-assembled. Pre-wired power connections**

LC2DT20 to LC2DT40: mechanical interlock without electrical interlocking.
LC2D80004: order separately 2 auxiliary contact blocks LADN●1 to obtain electrical interlocking between the 2 contactors (see page B8/22).
For electrical interlocking incorporated in the mechanical interlock, please consult your Regional Sales Office.
LC2D115004: mechanical interlock with integral, pre-wired electrical interlocking.

### For connection by screw clamp terminals or connectors

| Utilisation category AC-1 Non-inductive loads Maximum rated operational current ($\theta \leq 60$ °C) | Instantaneous auxiliary contacts per contactor | | Contactors supplied with coil<br>Basic reference, to be completed by adding the voltage code (1)<br>Fixing (2) | Weight |
|---|---|---|---|---|
| A | | | | kg |
| 20 | 1 | 1 | **LC2DT20●●** | 0.730 |
| 25 | 1 | 1 | **LC2DT25●●** | 0.730 |
| 32 | 1 | 1 | **LC2DT32●●** | 0.850 |
| 40 | 1 | 1 | **LC2DT40●●** | 0.850 |
| 125 | – | – | **LC2D80004●●** | 3.200 |
| 200 | – | – | **LC2D115004●●** | 7.400 |

### For connection by lugs or bars

| | | | | |
|---|---|---|---|---|
| 20 | 1 | 1 | **LC2DT206●●** | 0.730 |
| 25 | 1 | 1 | **LC2DT256●●** | 0.730 |
| 32 | 1 | 1 | **LC2DT326●●** | 0.850 |
| 40 | 1 | 1 | **LC2DT406●●** | 0.850 |

## For customer assembly

### For connection by screw clamp terminals or connectors

| | | | | |
|---|---|---|---|---|
| 60 | 1 | 1 | **LC1DT60A●●** (3) | – |
| 80 | 1 | 1 | **LC1DT80A●●** (3) | – |

### For connection by lugs or bars

| | | | | |
|---|---|---|---|---|
| 60 | 1 | 1 | **LC1DT60A6●●** (3) | – |
| 80 | 1 | 1 | **LC1DT80A6●●** (3) | – |

**Auxiliary contact blocks and add-on modules**: see pages B8/22 to B8/28.

*Note: when assembling changeover contactor pairs, it is good practice to incorporate a 50 ms time delay.*
*(1) See note (1) on next page.*
*(2) **LC2DT20** to **LC2DT80**: clip-on mounting on 35 mm ⊥ rail **NSYSDR** or screw fixing.*
*__LC2D80:__ clip-on mounting on 35 mm ⊥ rail **NSYSDR** or 75 mm ⊥ rail **AM1DL** or screw fixing.*
*__LC2D115__: clip-on mounting on 2 x 35 mm ⊥ rails **NSYSDR** or screw fixing.*
*(3) For these operational currents, order 2 identical contactors and a mechanical interlock **LAD4CM** (see page B8/29).*

Contactors

Characteristics: pages B8/59 to B8/65
Dimensions: pages B8/81 and B8/82
Schemes: pages B8/83 and B8/84
Click HERE for access to online contactor selector

*Example of necessary components for customer assembly:*
*2 x LC1DT80A3●● contactors + LAD4CM mechanical interlock*

## 4-pole changeover contactor pairs for 20 to 80 A control in category AC-1

### Pre-assembled, for customer assembly

**Pre-wired power connections, for connection by spring terminals.**

| Utilisation category AC-1 Non-inductive loads Maximum rated operational current (θ ≤ 60 °C) | Instantaneous auxiliary contacts per contactor | | Contactors supplied with coil<br>Basic reference, to be completed by adding the control voltage code<br>Fixing (1) |
|---|---|---|---|
| **A** | | | |
| 20 | 1 | 1 | **LC2DT203●●** |
| **Power connection by EverLink®, BTR screw connectors (2) and control by spring terminals** | | | |
| 60 | 1 | 1 | **LC1DT60A3●●** (3) |
| 80 | 1 | 1 | **LC1DT80A3●●** (3) |

### Separate components

**Auxiliary contact blocks and add-on modules**: see pages B8/19 to B8/19.

### Standard control circuit voltages
**(for other voltages, please consult your Regional Sales Office)**

**a.c. supply**

| Volts | 24 | 42 | 48 | 110 | 115 | 220 | 230 | 240 | 380 | 400 | 415 | 440 | 500 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **LC2DT20…DT40, LC2DT60A…DT80A** | | | | | | | | | | | | | |
| 50/60 Hz | B7 | D7 | E7 | F7 | FE7 | M7 | P7 | U7 | Q7 | V7 | N7 | R7 | – |
| **LC2D80004…D115004** | | | | | | | | | | | | | |
| 50 Hz | B5 | D5 | E5 | F5 | FE5 | M5 | P5 | U5 | Q5 | V5 | N5 | R5 | S5 |
| 60 Hz | B6 | – | E6 | F6 | – | M6 | – | U6 | Q6 | – | – | R6 | – |

**d.c. supply**

| Volts | 12 | 24 | 36 | 48 | 60 | 72 | 110 | 125 | 220 | 250 | 440 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **LC2DT20…DT40, LC1DT60…DT80** (coils with integral suppression device fitted as standard, by bi-directional peak limiting diode) | | | | | | | | | | | |
| U 0.7…1.25 Uc | JD | BD | CD | ED | ND | SD | FD | GD | MD | UD | RD |

**Low consumption**

| Volts ⎓ | 5 | 12 | 20 | 24 | 48 | 110 | 220 | 250 |
|---|---|---|---|---|---|---|---|---|
| **LC2DT20...DT40** (coils with integral suppression device fitted as standard, by bi-directional peak limiting diode) | | | | | | | | |
| U 0.8…1.25 Uc | AL | JL | ZL | BL | EL | FL | ML | UL |

*For other voltages between 5 and 690 V, see pages B8/19 to B8/19.*
*(1) Clip-on mounting on 35 mm ⊔ rail **NSYSDR** or screw fixing.*
*(2) BTR screws: hexagon socket head. In accordance with local electrical wiring regulations, a size 4 insulated Allen key must be used (reference **LADALLEN4**, see page B8/19).*
*(3) For these operational currents, order 2 identical contactors and a mechanical interlock **LAD4CM** (see page B8/19).*

Contactors

PB115163.eps

*LC1DFK●●*

PB115164.eps

*LC1DGK●●, LC1DLK●●, LC1DMK●●*

PB115167.eps

*LC1DPK●●, LC1DTK●●*

PB115169.eps

*LC1DWK12●●*

## Contactors for switching 3-phase capacitor banks (power factor correction)

Special contactors **LC1D●K** are designed for switching 3-phase, single or multiple-step capacitor banks (up to 6 steps). Over 6 steps, it is recommanded to use chokes in order to limit the inrush current and thus improve the lifetime of the installation. The contactors are conform to standards IEC 60070 and 60831, UL and CSA.

## Contactor applications

### Specification

Contactors fitted with a block of early make poles and damping resistors, limiting the value of the current on closing to 60 In max.
This current limitation increases the life of all the components of the installation, in particular that of the fuses and capacitors.

### Operating conditions

Short-circuit protection must be provided by gI type fuses rated at 1.7…2 In.
It will ensure the service continuity of the whole installation in case of a capacitor contactor end of life

### Maximum operational power

**The power values given in the selection table below are for the following operating conditions:**

| | | | |
|---|---|---|---|
| Prospective peak current at switch-on | LC1D●K | | 200 In |
| Maximum operating rate | LC1DFK, DGK, DLK, DMK | | 240 operating cycles/hour |
| | LC1DPK, DTK, DWK | | 100 operating cycles/hour |
| Electrical durability at nominal load | All contactor ratings | 400 V | 300 000 operating cycles |
| | | 690 V | 200 000 operating cycles |

| Operational power at 50/60 Hz (1) θ ≤ 60 °C (2) | | | | Instantaneous auxiliary contacts | | Tightening torque on cable end | Basic reference, to be completed by adding the voltage code (3) | Weight |
|---|---|---|---|---|---|---|---|---|
| 230 V | 400 V 415 V | 440 V | 690 V | | | | | |
| kVAR | kVAR | kVAR | kVAR | N/O | N/C | N.m | | kg |
| 7 | 12.5 | 12.5 | 21 | 1 | 2 | 1.7 | **LC1DFK●●** | 0.430 |
| 9.5 | 16.7 | 16.7 | 28.5 | 1 | 2 | 2.5 | **LC1DGK●●** | 0.450 |
| 11 | 20 | 21 | 33 | 1 | 2 | 2.5 | **LC1DLK●●** | 0.600 |
| 14 | 25 | 27 | 42 | 1 | 2 | 2.5 | **LC1DMK●●** | 0.630 |
| 17 | 30 | 32 | 50 | 1 | 2 | 5 | **LC1DPK●●** | 1.300 |
| 22 | 40 | 43 | 67 | 1 | 2 | 5 | **LC1DTK●●** | 1.300 |
| 35 | 63 | 67 | 104 | 1 | 2 | 9 | **LC1DWK12●●** | 1.650 |

**Switching of multiple-step capacitor banks** (with equal or different power ratings)

The correct contactor for each step is selected from the above table, according to the power rating of the step to be switched.
**Example:** 50 kVAR 3-step capacitor bank. Temperature: 50 °C and U = 400 V or 440 V.
One 25 kVAR step: contactor LC1DMK, one 15 kVAR step: contactor LC1DGK,
and one 10 kVAR step: contactor LC1DFK.

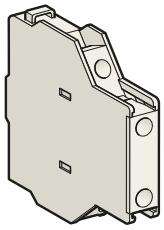
*(1) Operational power of the contactor according to the scheme on the page opposite.*
*(2) The average temperature over a 24-hour period, in accordance with standards IEC 60070 and 60831 is 45 °C.*
*(3) Standard control circuit voltages (the delivery time is variable, please consult your Regional Sales Office):*

| Volts | 24 | 48 | 110 | 120 | 220 | 230 | 240 | 380 | 400 | 415 | 440 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 50/60 Hz | B7 | E7 | F7 | G7 | M7 | P7 | U7 | Q7 | V7 | N7 | R7 |

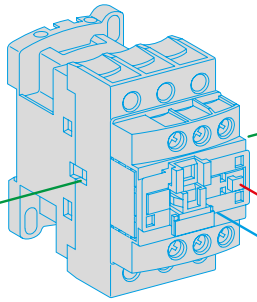
Dimensions, schemes:
page B8/85

Click **HERE** for access to online contactor selector

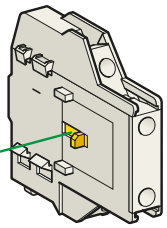
DB425485.eps



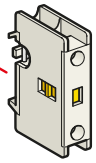
LAD8N (1)



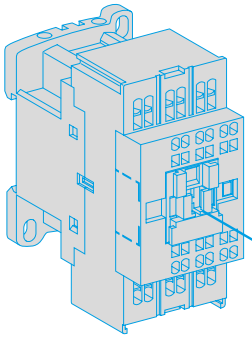
LC1 D●●



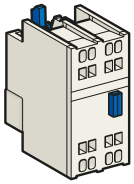
LAD 8N



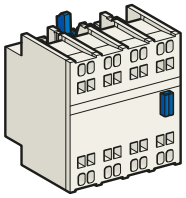
LAD N10, N01



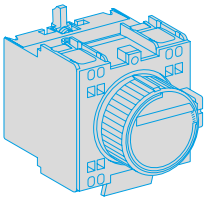
LC1 D●●3



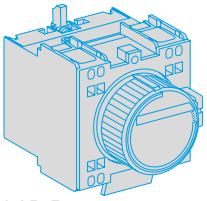
LAD N●●3



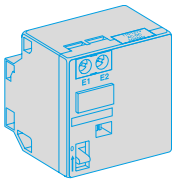
LAD N●●3
LAD C●●3



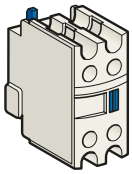
LAD T●3
LAD S23



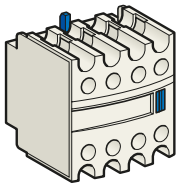
LAD R●3



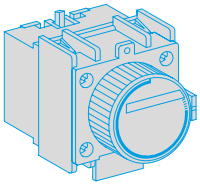
LA6 DK
or
LAD 6K



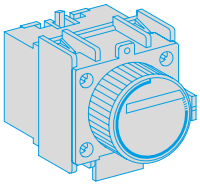
LAD N



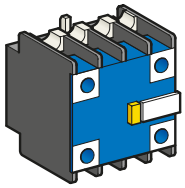
LAD N
LAD C



LAD T
LAD S2



LAD R



LA1 DX, DY, DZ

See page opposite for mounting possibilities according to the contactor type

*(1) No left side mounting on* TeSys D Green *contactors.*

PB121389.eps

*LADN11*

PB121388.eps

*LAD8N11*

PB121544.eps

*LA1DX●●, LA1DZ●●*

## Instantaneous auxiliary contact blocks for connection by screw clamp terminals

**For use in normal operating environments**

| Clip-on mounting | Number of contacts per block | Composition | | | | | Reference | |
|---|---|---|---|---|---|---|---|---|
| Front | 1 | – | – | – | 1 | – | **LADN10** | |
| | | – | – | – | – | 1 | **LADN01** | |
| | 2 | – | – | – | 1 | 1 | **LADN11** | |
| | | – | – | – | 2 | – | **LADN20** | |
| | | – | – | – | – | 2 | **LADN02** | |
| | 4 | – | – | – | 2 | 2 | **LADN22** | **LADN22S** (4) |
| | | – | – | – | 1 | 3 | **LADN13** | |
| | | – | – | – | 4 | – | **LADN40** | |
| | | – | – | – | – | 4 | **LADN04** | |
| | | – | – | – | 3 | 1 | **LADN31** | |
| | 4 incl. 1 N/O & 1 N/C make before break | – | – | – | 2 | 2 | **LADC22** | |
| Side (contact blocks compatible with AC coil contactors only) | 2 | – | – | – | 1 | 1 | **LAD8N11** | |
| | | – | – | – | 2 | – | **LAD8N20** | |
| | | – | – | – | – | 2 | **LAD8N02** | |
| **For terminal referencing conforming to EN 50012** | | | | | | | | |
| Front on 3P contactors and 4P contactors 20 to 80 A | 2 | – | – | – | 1 | 1 | **LADN11G** | |
| | 4 | – | – | – | 2 | 2 | **LADN22G** | |
| Front on 4P contactors 125 to 200 A | 2 | – | – | – | 1 | 1 | **LADN11P** | |
| | 4 | – | – | – | 2 | 2 | **LADN22P** | |
| **With dust and damp protected contacts, for use in particularly harsh industrial environments** | | | | | | | | |
| Front | 2 | – | 2 | – | – | – | **LA1DX20** | |
| | | 1 | 1 | – | – | – | **LA1DX11** | |
| | | 2 | – | – | – | – | **LA1DX02** | |
| | | – | 2 | 2 | – | – | **LA1DY20** (2) | |
| | 4 | – | 2 | – | 2 | – | **LA1DZ40** | |
| | | – | 2 | – | 1 | 1 | **LA1DZ31** | |

## Instantaneous auxiliary contact blocks for connection by lugs

This type of connection is not possible for blocks with 1 contact or blocks with dust and damp protected contacts. For all other instantaneous auxiliary contact blocks, add the figure **6** to the end of the references selected above. Example: **LADN11** becomes **LADN116**.

## Instantaneous auxiliary contact blocks for connection by spring terminals

This type of connection is not possible for LAD8, LADN with 1 contact or blocks with dust and damp protected contacts. For all other contact blocks, add the figure **3** to the end of the references selected above.
Example: **LADN11** becomes **LADN113**.

## Instantaneous auxiliary contact blocks for connection by Faston connectors

This type of connection is not possible for LAD8, LADN with 1 contact or blocks with dust and damp protected contacts. For all other contact blocks, add the figure **9** to the end of the references selected above.
Example: **LADN11** becomes **LADN119**.

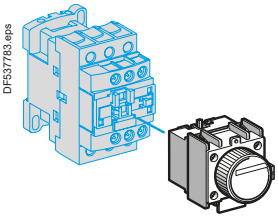
Maximum number of auxiliary contacts that can be fitted:

| Contactors | | | Instantaneous auxiliary contacts | | | | | Time delay |
|---|---|---|---|---|---|---|---|---|
| Type | Number of poles and size | | Side mounted | | Front mounted | | | Front mounted |
| | | | | | 1 contact | 2 contacts | 4 contacts | |
| AC | 3P | LC1D09…D38 | 1 on LH or 1 on RH side(1) | and | – | 1 | or 1 | or 1 |
| AC/DC | | LC1D40A…D80A | 1 on LH or 1 on RH side | and | – | 1 | or 1 | or 1 |
| | | LC1D80 and D95 (50/60 Hz) | 1 on each side | or | 2 | and 1 | or 1 | or 1 |
| | | LC1D80 and D95 (50 or 60 Hz) | 1 on each side | and | 2 | and 1 | or 1 | or 1 |
| | | LC1D115 and D150 | 1 on LH side | and | – | 1 | or 1 | or 1 |
| | 4P | LC1DT20…DT40 | 1 on LH side | and | – | 1 | or 1 | or 1 |
| | | LC1DT60A and DT80A | 1 on LH or 1 on RH side | and | – | 1 | or 1 | or 1 |
| | | LC1D40008, D65008 and D80 | 1 on each side | or | 1 | or 1 | or 1 | or 1 |
| | | LC1D115 | 1 on each side | and | 1 | or 1 | or 1 | or 1 |
| DC | 3P | LC1D09…D38 | – | | – | 1 | or 1 | or 1 |
| | | LC1D40A…D80A | – | | – | 1 | or 1 | or 1 |
| | | LC1D80 and D95 | – | | 1 | or 1 | or 1 | or 1 |
| | | LC1D115 and D150 | 1 on LH side | and | – | 1 | or 1 | or 1 |
| | 4P | LC1DT20…DT40 | – | | – | 1 | or 1 | or 1 |
| | | LC1DT60A and DT80A | – | | – | 1 | or 1 | or 1 |
| | | LC1D40008, D65008 and D80 | – | | 2 | and 1 | or 1 | or 1 |
| | | LC1D115 | 1 on each side | | – | and 1 | or 1 | or 1 |
| LC (3) (5) | 3P | LC1D09…D38 | – | | – | 1 | – | – |
| | 4P | LC1DT20…DT40 | – | | – | 1 | – | – |

*(1) 1 on LH side for AC coils - 1 on RH side for AC/DC coils.*
*(2) Device fitted with 4 earth screen continuity terminals.*
*(3) LC: low consumption.*
*(4) With red front face - for safety chain indication.*
*(5) LA1D●●● dust & damp proof auxiliary contact blocks not allowed.*

Characteristics: pages B8/66 and B8/67
Curves: page B8/68
Dimensions: pages B8/72 and B8/73

# Product references

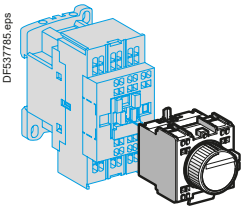




*LADT●*

## Time delay auxiliary contact blocks for connection by screw clamp terminals

Maximum number of auxiliary contact blocks that can be fitted per contactor, see page B8/22.
Sealing cover to be ordered separately, see page B8/28.
LADT0 and LADR0: with extended scale from 0.1 to 0.6 s.
LADS2: with switching time of 40 ms ± 15 ms between opening of the N/C contact and closing of the N/O contact.

| Clip-on mounting | Number of contacts | Time delay | | Reference |
|---|---|---|---|---|
| | | Type | Setting range | |
| Front | 1 N/O + 1 N/C | On-delay | 0…3 s | **LADT0** |
| | | | 1…30 s | **LADT2** |
| | | | 10…180 s | **LADT4** |
| | | | 1…30 s | **LADS2** |
| | | Off-delay | 0…3 s | **LADR0** |
| | | | 1…30 s | **LADR2** |
| | | | 10…180 s | **LADR4** |


*LADT●3*

## Time delay auxiliary contact blocks for connection by lugs

Add the figure **6** to the end of the references selected above. Example: **LADT0** becomes **LADT06**.

## Time delay auxiliary contact blocks for connection by spring terminals

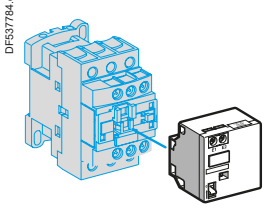
Add the figure **3** to the end of the references selected above. Example: **LADT0** becomes **LADT03.**

## Time delay auxiliary contact blocks for connection by Faston connectors

Add the figure **9** to the end of the references selected above. Example: **LADT0** becomes **LADT09**.

## Mechanical latch blocks (1)

| Clip-on mounting | Unlatching control | For use on contactor | Basic reference, to be completed by adding the control voltage code (2) |
|---|---|---|---|
| Front | Manual or electric | LC1D09…D38 (∿ or ⎓) (3)<br>LC1DT20…DT40 (∿ or ⎓) | **LAD6K10●** |
| | | LC1D40A…D80A<br>(3 P ∿ or ⎓)<br>LC1DT60A and DT80A<br>(4 P ∿ or ⎓) | **LA6DK10●** |
| | | LC1D80…D150 (3 P ∿)<br>LC1D80 and D115 (3 P ⎓)<br>LC1D80 (4 P ∿)<br>LC1D80 and D115 (4 P ∿)<br>LP1D80 and LC1D115 (4 P ⎓) | **LA6DK20●** |

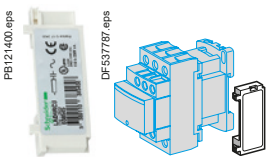

*LAD6K10●*

*(1) The mechanical latch block must not be powered up at the same time as the contactor. The duration of the control signal for the mechanical latch block and the contactor should be:*
*≥ 100 ms for a contactor operating on an a.c. supply,*
*≥ 250 ms for a contactor operating on a d.c. supply.*
*Maximum impulse duration for the **LAD6K10●** mechanical latch block: 10 seconds.*
*(2) Standard control circuit voltages (for other voltages, please consult your Regional Sales Office):*

| Volts 50/60 Hz, ⎓ | 24 | 32/36 | 42/48 | 60/72 | 100 | 110/127 | 220/240 | 256/277 | 380/415 |
|---|---|---|---|---|---|---|---|---|---|
| Code | B | C | E | EN | K | F | M | U | Q |

*(3) The DC, low consumption contactors ( coil code ●L) are not compatible with the mechanical latch blocks **LAD6K10●**.*

Contactors

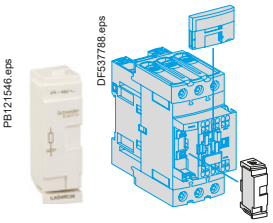



*LAD4RCU LAD4●●*

## RC circuits (Resistor-Capacitor)

Effective protection for circuits highly sensitive to "high frequency" interference. For use only in cases where the voltage is virtually sinusoidal. i.e. less than 5 % total harmonic distortion. Voltage limited to 3 Uc max. and oscillating frequency limited to 400 Hz max. Slight increase in drop-out time (1.2 to 2 times the normal time).

| Mounting | For use with contactor (1) | | | Reference |
|---|---|---|---|---|
| | Rating | Type | | |
| | | V ∿ | V ⎓ | |
| Clip-on side mounting (3) (5) | D09…D38 (3P)<br>DT20…DT40 | 24…48 | – | **LAD4RCE** |
| | | 50…127 | – | **LAD4RCG** |
| | | 110…250 | – | **LAD4RCU** |
| Clip-on front mounting (3) (5) | D40A…D65A (3P)<br>DT60A…DT80A (4P) | 24…48 | – | **LAD4RC3E** |
| | | 50…127 | – | **LAD4RC3G** |
| | | 110…240 | – | **LAD4RC3U** |
| | | 380…415 | – | **LAD4RC3N** |
| Screw fixing (4) | D80…D150 (3P)<br>D40…D115 (4P) | 24…48 | – | **LA4DA2E** |
| | | 50…127 | – | **LA4DA2G** |
| | | 110…240 | – | **LA4DA2U** |
| | | 380…415 | – | **LA4DA2N** |

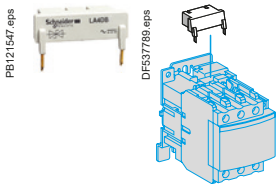



*LAD4RC3●, LAD4V3●, LAD4D3U, LAD4T3●*

## Varistors (peak limiting)

Protection provided by limiting the transient voltage to 2 Uc max. Maximum reduction of transient voltage peaks. Slight increase in drop-out time (1.1 to 1.5 times the normal time).

| | | | | |
|---|---|---|---|---|
| Clip-on side mounting (3) (5) | D09…D38 (3P)<br>DT20…DT40 | 24…48 | – | **LAD4VE** |
| | | 50…127 | – | **LAD4VG** |
| | | 110…250 | – | **LAD4VU** |
| Clip-on front mounting (3) (5) | D40A…D65A (3P)<br>DT60A…DT80A (4P) | 24…48 | 24…48 | **LAD4V3E** |
| | | 50…127 | 50…127 | **LAD4V3G** |
| | | 110…250 | 110…250 | **LAD4V3U** |
| Screw fixing (4) | D80…D115 (3P)<br>D80…D115 (4P) | 24…48 | – | **LA4DE2E** |
| | | 50…127 | – | **LA4DE2G** |
| | | 110…250 | – | **LA4DE2U** |
| | D80…D95 (3P)<br>D80 (4P) | – | 24…48 | **LA4DE3E** |
| | | – | 50…127 | **LA4DE3G** |
| | | – | 110…250 | **LA4DE3U** |




*LA4D●●*

## Flywheel diodes

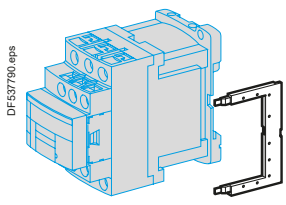
No overvoltage or oscillating frequency. Increase in drop-out time (6 to 10 times the normal time). Polarised component.

| | | | | |
|---|---|---|---|---|
| Clip-on side mounting (5) | D09…D38 (3P), DT20…DT40 | – | 5...600 | **LAD4DDL** |
| Clip-on front mounting (5) | D40A…D65A (3P), DT60A…DT80A (4P) | – | 24…250 | **LAD4D3U** |
| Screw fixing (4) | D80 and D95 (3P), D40…D80 (4P) | – | 24…250 | **LA4DC3U** |

## Bidirectional peak limiting diodes

Protection provided by limiting the transient voltage to 2 Uc max.
Maximum reduction of transient voltage peaks.

| | | | | |
|---|---|---|---|---|
| Clip-on side mounting (3) | D09…D38 (3P)<br>DT20…DT40 (4P) (2) | 24 | – | **LAD4TB** |
| | | – | 24 | **LAD4TBDL** |
| | | 72 | – | **LAD4TS** |
| | | – | 72 | **LAD4TSDL** |
| | | – | 125 | **LAD4TGDL** |
| | | – | 250 | **LAD4TUDL** |
| | | – | 600 | **LAD4TXDL** |
| Clip-on front mounting (3) | D40A…D65A (3P)<br>DT60A…DT80A (4P) (2) | 12…24 | 12…24 | **LAD4T3B** |
| | | 25…72 | 25…72 | **LAD4T3S** |
| | | 73…125 | 73…125 | **LAD4T3G** |
| | | 126…250 | 126…250 | **LAD4T3U** |
| | | 251…440 | 251…440 | **LAD4T3R** |
| Screw fixing (4) | D80…D95 (3P)<br>D40…D80 (4P) | 12…24 | – | **LA4DB2B** |
| | | 25…72 | – | **LA4DB2S** |
| | | – | 24 | **LA4DB3B** |
| | | – | 72 | **LA4DB3S** |




*LAD4DDL or LAD4T●DL*


*LAD4DDL*

*(1) For satisfactory protection, a suppressor module must be fitted across the coil of each contactor except for* TeSys D Green *(●●E coil), as surge protection is already embedded.*

*(2) From **D09** to **D65A** and from **LC1DT20** to **DT80A**, d.c, low consumption are fitted with a built-in bidirectional peak limiting diode suppressor as standard. This bidirectional peak limiting diode is removable and can therefore be replaced by the user. (See reference above). If a d.c. or low consumption contactor is used without suppression, the standard suppressor should be replaced with a blanking plug (reference **LAD9DL** for **LC1D09** to **D38** and **LC1DT20** to **DT40**; reference **LAD9DL3** for **LC1D40A** to **D65A** and **LC1DT60A** to **DT80A**).*

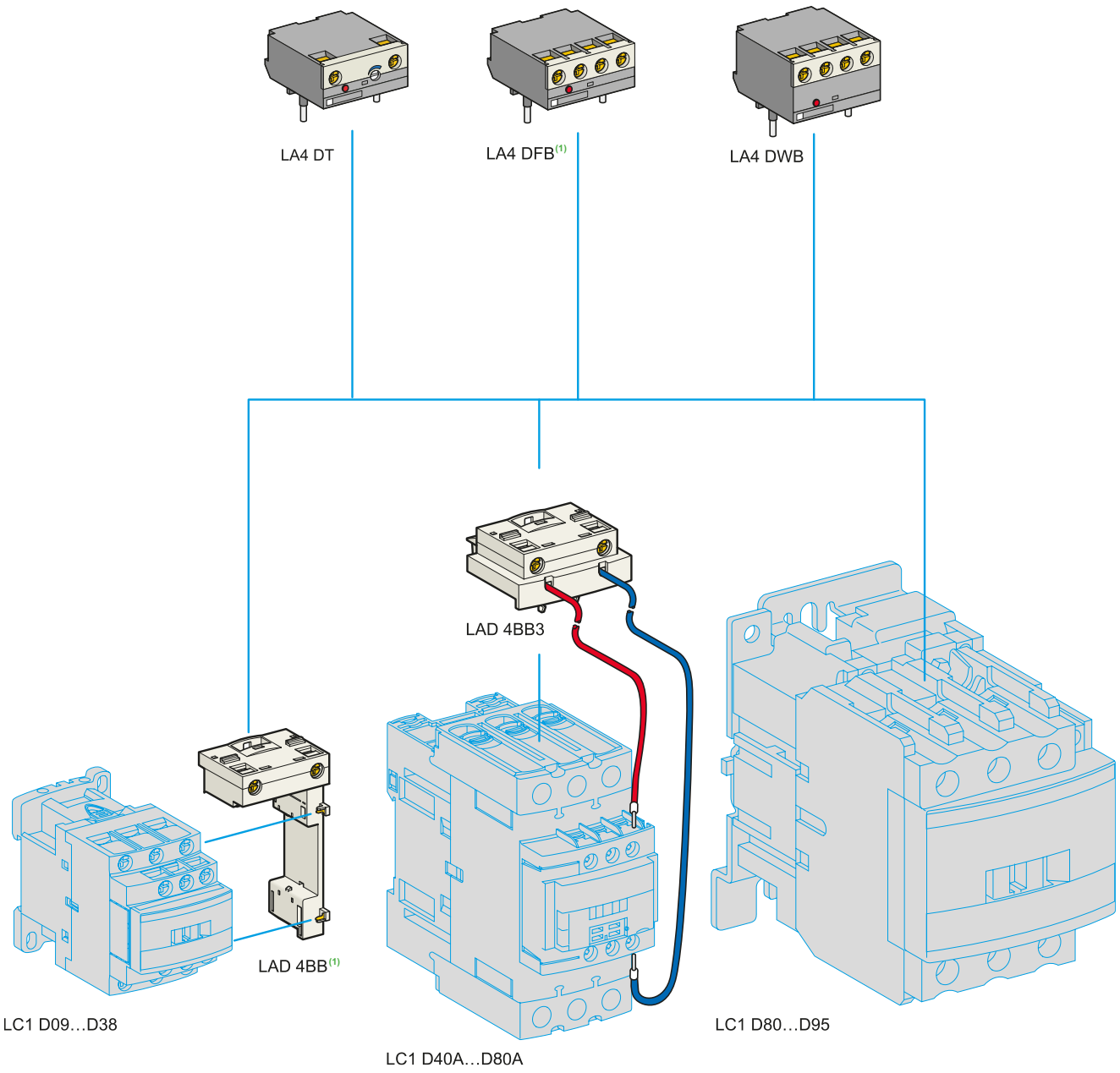
*(3) Clipping-on makes the electrical connection. The overall size of the contactor remains unchanged.*

*(4) Mounting at the top of the contactor on coil terminals A1 and A2.*

*(5) In order to install these accessories, the existing suppression device must first be removed.*


Characteristics:
page B8/69

DB425486.eps






See page opposite for mounting possibilities according to the contactor type.

*(1) For* TeSys D *with AC coil only.*

# Product references

PB121548.eps


*LA4DT●●*

PB121549.eps


*LA4DFB*

PB121550.eps


*LA4DBL*

PB121402.eps


*LAD4BBVU*

## Electronic serial timer modules (1)

■ 3-pole contactors LC1D09 to D38: mounted using adapter LAD4BB, to be ordered separately, see below.
■ 3-pole contactors LC1D40A to D65A: mounted using adapter LAD4BB3, to be ordered separately, see below.
■ 3-pole contactors LC1D80 to D150 and 4-pole contactors LC1D40 to D115: mounted directly across terminals A1 and A2 of the contactor.

### On-delay type

| Operational voltage ∿ | | Time delay | Reference |
|---|---|---|---|
| **24…250 V** | **100…250 V** | | |
| LC1D09…D80A (3P) | LC1D80…D150 (3P) | 0.1…2 s | **LA4DT0U** |
| | | 1.5…30 s | **LA4DT2U** |
| | | 25…500 s | **LA4DT4U** |

## Interface modules

■ 3-pole contactors LC1D09 to D38: mounted using adapter LAD4BB, to be ordered separately, see below.
■ 3-pole contactors LC1D40A to D80A: mounted using adapter LAD4BB3, to be ordered separately, see below.

### Relay interface

| Operational voltage ∿ | Supply voltage E1-E2 (⎓) | Reference |
|---|---|---|
| **24…250 V** | | |
| LC1D09…D150 (3P) | 24 V | **LA4DFB** |

### Static relay interface

| Operational voltage ∿ | | Supply voltage E1-E2 (⎓) | Reference |
|---|---|---|---|
| **24…250 V** | **100…250 V** | | |
| LC1D09…D80A (3P) | LC1D80…D115 (3P) | 24 V | **LA4DWB** |

## Adapter kit for low control signal

| For use on contactors | Composition | Reference |
|---|---|---|
| LC1D40A…D80A (3P) (2) | ■ 1 LAD4BB3 coil wiring adapter<br>■ 1 LA4DFB relay interface module | **LA4DBL** |

## Wiring adapters for coil retrofit of 3 pole contactors

### For adapting existing wiring to a new product

| For use on contactors | | | Reference |
|---|---|---|---|
| LC1D09…D38 | Without coil suppression | | **LAD4BB** (3) |
| | With coil suppression | ∿ 24…48 V | **LAD4BBVE** |
| | | ∿ 50…127 V | **LAD4BBVG** |
| | | ∿ 110…250 V | **LAD4BBVU** |
| LC1D40A…80A | Without coil suppression | | **LAD4BB3** |

*(1) For 24 V operation, the contactor must be fitted with a 21 V coil (code Z). See pages B8/31 to B8/34.*
*(2) The kit is compatible with a coil voltage of ∿ 24 V to ∿ 250 V (B7 to U7) and ⎓ 24 V to ⎓ 250 V (BD to UD).*
*(3) **LAD4BB** can not be used with 4 poles contactors.*

Contactors

Characteristics: page B8/70
Dimensions: page B8/72
Schemes: page B8/80

# Product references

PB121360.eps

*LA9D3260*

PB121361.eps

*LA9D11550●*

PB121362.eps

*LAD96570*

PB121363.eps

*LA9D11560●*

PB121364.eps

*LA9D11570●*

PB121365.eps

*LA9D80962*

PB121366.eps

*LA9D11567*

## Accessories for main pole and control connections

| Description | | For use with contactors LC1 ~ | For use with contactors LC1 ⎓ | Sold in lots of | Unit reference |
|---|---|---|---|---|---|
| Connectors for cable, size (1 connector) | 4-pole 10 mm² | DT20, DT25 | DT20, DT25 | 1 | **LAD92560** |
| | 3-pole 25 mm² | D09…D38 | D09…D38 | 1 | **LA9D3260** |
| EverLink® terminal block | 3-pole | D40A…D80A | D40A…D80A | 1 | **LAD96560** |
| Connectors for cables (2 connectors) | 3-pole 120 mm² | D115, D150 | D115, D150 | 1 | **LA9D115603** |
| | 4-pole 120 mm² | D115 | D115 | 1 | **LA9D115604** |
| Connectors for lug type terminals (2 connectors) | 3-pole | D1156, D1506 | D1156, D1506 | 1 | **LA9D115503** |
| | 4-pole | D1156 | D1156 | 1 | **LA9D115504** |
| Protective covers for connectors for lug type terminals | 3-pole | D40A6…D80A6 | D40A6…D80A6 | 1 | **LAD96570** |
| | | D1156, D1506 | D1156, D1506 | 1 | **LA9D115703** (1) |
| | 4-pole | D60A6…D80A6 | D60A6…D80A6 | 1 | **LAD96580** |
| | | D1156, D1506 | D1156, D1506 | 1 | **LA9D115704** |
| IP 20 covers for lug type terminals (for mounting with circuit breakers GV3 P●●6 and GV3 L●●6) | 3 poles | D40A6…D80A6 | D40A6…D80A6 | 1 | **LAD96575** |
| Links for parallel connection of | 2 poles | D09…D38 | D09…D38 | 10 | **LA9D2561** |
| | | DT20, DT25 (4P) | DT20, DT25 (4P) | 10 | **LA9D1261** |
| | | DT32, DT40 (4P) | DT32, DT40 (4P) | 10 | **LAD96061** |
| | | D40A…D80A | D40A…D80A | 1 | **LAD9P32** |
| | | D80, D95 | D80, D95 | 2 | **LA9D80961** |
| | 3 poles | D09…D38 | D09…D38 | 10 | **LAD9P3** (2) |
| | | D40A…D80A | D40A…D80A | 1 | **LAD9P33** |
| | | D80, D95 | D80, D95 | 1 | **LA9D80962** |
| | 4 poles | DT20, DT25 | DT20, DT25 | 2 | **LA9D1263** |
| | | D80 | D80 | 2 | **LA9D80963** |
| Staggered coil connection | | – | D80 | 10 | **LA9D09966** |
| Control circuit take-off from main pole | | D80, D95 | D80, D95 | 10 | **LA9D8067** |
| | | D115, D150 | D115, D150 | 10 | **LA9D11567** |
| Spreaders for increasing the pole pitch to 45 mm | | D115, D150 | D115, D150 | 3 | **GV7AC03** |

*(1) For 3-pole contactors: 1 set of 6 covers, for 4-pole contactors: 1 set of 8 covers.*
*(2) Separate connecting bar for connecting 2 poles in parallel.*

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## Sets of contacts and arc chambers

| Description | For contactor | | Reference |
|---|---|---|---|
| Sets of contacts | 3-pole | LC1D115 | **LA5D1158031** |
| | | LC1D150 | **LA5D150803** |
| | 4-pole | LC1D115004 | **LA5D115804** |
| Arc chambers | 3-pole | LC1D115 | **LA5D11550** |
| | | LC1D150 | **LA5D15050** |
| | 4-pole | LC1D115004 | **LA5D115450** |

## Power connection accessories

| | | |
|---|---|---|
| Terminal block | For supply to one or more GV2G busbar sets | **GV1G09** |
| Set of 63 A busbars for parallelling of contactors | 2 contactors LC1D09…D18 or D25…D38 | **GV2G245** |
| | 4 contactors LC1D09…D18 or D25…D38 | **GV2G445** |
| Set of 115 A busbars for parallelling of contactors | 2 contactors LC1D40A…D80A | **GV3G264** |
| | 3 contactors LC1D40A…D80A | **GV3G364** (1) |
| Set of S-shape busbars | For circuit breakers GV3P●● and GV3L●● (3) and contactors LC1D40A…D73A | **GV3S** |

PB121367.eps
*GV2G245*

PB121368.eps
*GV1G09*

PB121369.eps
*GV3S*

## Protection accessories

| Description | Use | Sold in lots of | Reference |
|---|---|---|---|
| Miniature control circuit fuse holder | 5 x 20 with 4 A-250 V fuse | 1 | **LA9D941** |
| Sealing cover | For LADT, LADR | 1 | **LA9D901** |
| Safety cover preventing access to the moving contact carrier | LC1D09…D80A and DT20…DT80A | 1 | **LAD9ET1** |
| | Red cover (for safety chain indication) | 1 | **LAD9ET1S** |
| | LC1D80 and D95 | 1 | **LAD9ET3** |
| | Red cover (for safety chain indication) | 1 | **LAD9ET3S** |
| | LC1D115 and D150 | 1 | **LAD9ET4** |
| | Red cover (for safety chain indication) | 1 | **LAD9ET4S** |

PB121370.eps
*LA9D941*

PB121371.eps
*LAD9ET1*

PB113824.eps
*LAD9ET1S*

## Marking accessories

| Description | Use | Sold in lots of | Unit reference |
|---|---|---|---|
| Sheet of 64 blank legends, self-adhesive, 8 x 33 mm (2) | Contactors (except 4P) LC1D80…D115, LADN (4 contacts), LA6DK | 10 | **LAD21** |
| Sheet of 112 blank legends, self-adhesive, 8 x 12 mm (2) | LADN (2 contacts), LADT, LADR, LRD | 10 | **LAD22** |
| Sheet of 64 blank legends for marking using plotter or 8 x 33 mm engraver | Contactors (except 4P) LC1D80…D115, LAD (4 contacts), LA6DK | 10 | **LAD23** |
| Sheet of 440 blank legends for marking using plotter or 8 x 12 mm engraver | All products | 35 | **LAD24** |
| Marker holder snap-in, 8 x 22 mm | 4-pole contactors, LC1D80...D115, LA6DK | 100 | **LA9D92** |
| Marker holder snap-in, 8 x 18 mm | LC1D09...D65A, LC1DT20...DT80A, LADN (4 contacts), LADT, LADR | 100 | **LAD90** |
| Bag of 300 blank legends self-adhesive, 7 x 21 mm | On holder LA9D92 | 1 | **LA9D93** |

PB121372.eps
*LAD21...24*

PB121373.eps
*LAD90*

## Mounting accessories

| | | | |
|---|---|---|---|
| Retrofit plate for screw fixing | For replacement of LC1D40 to D80 with LC1D40A to D80A | 1 | **LAD7X3** |
| Mounting plate | For replacement of LC1F115 or F150 with LC1D115 or D150 | 1 | **LA9D730** |
| Size 4 Allen key, insulated, 1000 V | For use on contactors LC1D40A to LC1D150 | 5 | **LADALLEN4** |

PB121374.eps
*LAD7X3*

*(1) With this set of busbars, any one contactor can be supplied directly by its EverLink® double cage power terminal block. The other two contactors are supplied by the busbar set. The 115 A limitation is therefore applied to these two contactors. Example: 1 **LC1D65A** supplied directly + 1 contactor **LC1D65A** and 1 contactor **LC1D50A** supplied via the busbar set = 115 A. This combination is compatible with busbar set **GV3G364**.*
*(2) These legends are for sticking onto the safety cover of the contactors or add-on block, if fitted.*
*(3) With 73 A current limit for **GV3L73**, **GV3P73**.*

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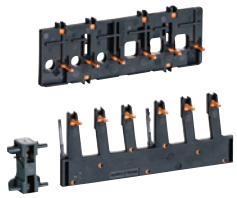
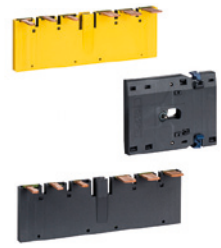


*LAD9R1*

PB121376.eps



*LAD9R3*

PB121377.eps

*LA9D8069*

## For 3-pole reversing contactors for motor control

Contactors with screw clamp terminals or connectors. Horizontally mounted, assembled by customer.

| Description | For contactors [1] (2 identical contactors) | Reference |
|---|---|---|
| **Kits for assembly of reversing contactors** | | |
| Kit comprising:<br>■ a mechanical interlock **LAD9V2** with electrical interlocking **LAD9V1**<br>■ a set of power connections **LAD9V5** (parallel) and **LAD9V6** (reversing). | LC1D09 to D38 | **LAD9R1V** |
| Kit comprising:<br>■ a mechanical interlock **LAD9V2** without electrical interlocking<br>■ a set of power connections **LAD9V5** (parallel) and **LAD9V6** (reversing). | LC1D09 to D38 | **LAD9R1** |
| Kit comprising:<br>■ a mechanical interlock **LAD4CM**<br>■ a set of power connections **LA9D65A69**. | LC1D40A to D80A | **LAD9R3** |
| **Mechanical interlocks** | | |
| Mechanical interlock with integral electrical interlocking | LC1D80 and D95 (~) | **LA9D4002** |
| | LC1D80 and D95 (⎓) | **LA9D8002** |
| | LC1D115 and D150 | **LA9D11502** |
| Mechanical interlock without integral electrical interlocking | LC1D09 to D38 | **LAD9V2** |
| | LC1D40A to D80A | **LAD4CM** |
| | LC1D80 and D95 (~) | **LA9D50978** |
| | LC1D80 and D95 (⎓) | **LA9D80978** |
| **Sets of power connections** | | |
| Comprising:<br>■ a set of parallel bars<br>■ a set of reverser bars. | LC1D09 to D38 with screw clamp terminals or connectors | **LAD9V5** + **LAD9V6** |
| | LC1D09…D32 with spring terminal connections | **LAD9V12** + **LAD9V13** [2] |
| | LC1D40A to D80A | **LA9D65A69** |
| | LC1D80 and D95 (~) | **LA9D8069** |
| | LC1D80 and D95 (⎓) | **LA9D8069** |
| | LC1D115 and D150 | **LA9D11569** |

## For low-speed/high-speed starter

| Description | For LC1D09... D38 contactors with connection type | Reference |
|---|---|---|
| Connection kit enabling reversing of low and high speed directions using a reversing contactor and a 2N/O + 2N/C main pole contactor | Screw clamps or connectors | **LAD9PVGV** |
| | Spring terminals | **LAD3PVGV** |

PB114205.eps

*LAD91217*

PB121378.eps

*LAD91218*

## For star-delta starter

| Description | For contactors | Reference | Without timer LADS2 |
|---|---|---|---|
| Mounting kit comprising:<br>■ 1 time delay contact block **LADS2** (**LC1D09…D80**),<br>■ power circuit connections (**LC1D09…D80**),<br>■ hardware required for fixing the contactors onto the mounting plate (**LC1D80**). | LC1D09 to D38 [3] | **LAD91217** | **LAD91218** |
| | LC1D09 to D38 [4] | **LAD93217** | **LAD93218** |
| | LC1D40A to D65A | **LAD9SD3** | – |
| | LC1D80 | **LA9D8017** | – |
| Equipment mounting plates | LC1D09 to D38 | **LA9D12974** | |
| | LC1D40A and D50A | – | |
| | LC1D80 | **LA9D80973** | |

*(1) To order the 2 contactors: see pages B8/9 and B8/15.*
*(2) To assemble a reversing contactor with spring terminal connections, the following components must be ordered:*
*- 1 mechanical interlock **LAD9V2**,*
*- 1 upstream power connection kit and 1 downstream power connection kit.*
*Upstream power connection kit **LAD9V10**: installed in the Quickfit system with power connection module **LAD34**.*
*(If module **LAD34** is not used, replace **LAD9V10** with **LAD9V12**).*
*Downstream power connection kit **LAD9V11**: installed in the Quickfit system with outgoing terminal block **LAD331**.*
*(If **LAD331** is not used, replace **LAD9V11** with **LAD9V13**).*
*(3) For assembly of 3 contactors of the same physical size (depth).*
*(4) For assembly of 3 contactors with star contactor physically smaller (depth).*

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Dimensions:
pages B8/81 and B8/82

Schemes:
pages B8/83 and B8/84

PB121379.eps

*LADT9R1V*

## For 4-pole changeover contactor pairs (3-phase distribution + neutral)

Contactors with screw clamp terminals or connectors. Horizontally mounted, assembled by customer.

| Description | For contactors [1] (2 identical contactors) | Reference |
|---|---|---|
| **Kits for assembly of changeover contactor pairs** | | |
| Kit comprising:<br>■ a mechanical interlock LAD9V2 with electrical interlocking LAD9V1,<br>■ a set of power connections (changeover) LAD9V7. | LC1DT20 to DT40 with screw clamps or connectors | **LADT9R1V** |
| Kit comprising:<br>■ a mechanical interlock LAD9V2 without electrical interlocking,<br>■ a set of power connections (changeover) LAD9V7. | LC1DT20 to DT40 with screw clamps or connectors | **LADT9R1** |
| **Mechanical interlocks** | | |
| With integral electrical interlocking | LC1D80004 | **LA9D4002** |
| | LP1D80004 | **LA9D8002** |
| | LC1D115004 | **LA9D11502** |
| Without integral electrical interlocking | LC1DT20 to DT40 with screw clamps or connectors | **LAD9V2** [2] |
| | LC1DT203 to DT403 with spring terminals | **LAD9V2** [2] |
| | LC1DT60A and DT80A | **LAD4CM** |
| | LC1D80004 | **LA9D50978** |
| | LP1D80004 | **LA9D80978** |
| **Sets of power connections** | | |
| Comprising a set of parallel bars | LC1D80004 | **LA9D8070** |
| | LP1D80004 | **LA9D8070** |
| | LC1D115004 | **LA9D11570** |
| | LC1DT203 to DT403 with spring terminals | **LAD9V9** |
| | LC1D80004 | **LA9D8070** [2] |
| | LP1D80004 | **LA9D8070** [2] |

PB121381.eps

*LA9D50978*

PB121380.eps

*LA9D8070*

## For 3-pole changeover contactor pairs

Contactors with screw clamp terminals or connectors. Horizontally mounted, assembled by customer.

| Description | For contactors [1] (2 identical contactors) | Reference |
|---|---|---|
| **Kits for assembly of changeover contactor pairs** | | |
| Kit comprising:<br>■ a mechanical interlock LAD4CM<br>■ a set of parallel bars LA9D65A6 | LC1D40A…D80A | **LAD9R3S** |
| **Mechanical interlocks** | | |
| Without integral electrical interlocking | LC1D40A…D80A | **LAD4CM** |
| With integral electrical interlocking | LC1D115 and D150 | **LA9D11502** |
| **Sets of power connections** | | |
| Comprising a set of parallel bars | LC1D40A…D80A | **LA9D65A6** |
| | LC1D115 and D150 | **LA9D11571** |

PB121382.eps

*LAD9R3S*

*(1) To order the 2 contactors: see pages B8/9 and B8/15.*
*(2) Order 2 contact blocks **LADN●1** to build the electrical interlock, see page B8/22.*

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Dimensions:
pages B8/81 and B8/82

Schemes:
pages B8/83 and B8/84

PB121383.eps

*LXD1●●*

## a.c coils for ∿ contactors LC1D09...D38 and LC1DT20…DT40

### Specifications

Average consumption at 20 °C:
- inrush (cos ϕ = 0.75) 70 VA,
- sealed (cos ϕ = 0.3) 50 Hz: 7 VA, 60 Hz: 7.5 VA.

Operating range (θ ≤ 60 °C): 50 Hz: 0.8…1.1 Uc, 60 Hz: 0.85…1.1 Uc.

| Control circuit voltage Uc | Average resistance at 20 °C ±10 % | Inductance of closed circuit | Reference (1) |
|---|---|---|---|
| V | Ω | H | |
| | | | 50/60 Hz |
| 12 | 1.33 | 0.05 | **LXD1J7** |
| 21 (2) | 4.17 | 0.17 | **LXD1Z7** |
| 24 | 5.37 | 0.22 | **LXD1B7** |
| 32 | 10.1 | 0.39 | **LXD1C7** |
| 36 | 12.8 | 0.49 | **LXD1CC7** |
| 42 | 17 | 0.67 | **LXD1D7** |
| 48 | 21.7 | 0.87 | **LXD1E7** |
| 60 | 34.6 | 1.4 | **LXD1EE7** |
| 100 | 100.4 | 3.8 | **LXD1K7** |
| 110 | 124.1 | 4.6 | **LXD1F7** |
| 115 | 129.8 | 5 | **LXD1FE7** |
| 120 | 150.6 | 5.4 | **LXD1G7** (3) |
| 127 | 158.5 | 6.1 | **LXD1FC7** |
| 200 | 410.7 | 15 | **LXD1L7** |
| 208 | 430.4 | 16 | **LXD1LE7** (3) |
| 220 | 515.4 | 18 | **LXD1M7** (4) |
| 230 | 538.6 | 20 | **LXD1P7** |
| 240 | 562.3 | 22 | **LXD1U7** |
| 277 | 800.7 | 29 | **LXD1W7** (3) |
| 380 | 1551 | 55 | **LXD1Q7** (5) |
| 400 | 1633 | 60 | **LXD1V7** |
| 415 | 1694 | 65 | **LXD1N7** |
| 440 | 1993 | 73 | **LXD1R7** |
| 480 | 2398 | 87 | **LXD1T7** (3) |
| 500 | 2499 | 95 | **LXD1S7** |
| 575 | 3294 | 125 | **LXD1SC7** |
| 600 | 3810 | 136 | **LXD1X7** |
| 660 | 4656 | 165 | **LXD1YC7** |
| 690 | 5020 | 180 | **LXD1Y7** |

*(1) The last 2 digits in the reference represent the voltage code.*
*(2) Voltage for special coils fitted in contactors with serial timer modules, with 24 V supply.*
*(3) Coil for use only on 60 Hz.*
*(4) Suitable for use on **230 V** / 50 Hz. In this case, apply a coefficient of 0.6 to the mechanical durability of the contactor (see page B8/60 and B8/62).*
*(5) Suitable for use on **400 V** / 50 Hz. In this case, apply a coefficient of 0.6 to the mechanical durability of the contactor (see page B8/60 and B8/62).*

PB121384.eps

*LXD3●●*

## a.c coils for ∿ contactors LC1D40A…D80A, LC1DT60A and LC1DT80A

### Specifications

Average consumption at 20 °C:
- inrush (cos ϕ = 0.75) 160 VA,
- sealed (cos ϕ = 0.3) 50 Hz: 15 VA, 60 Hz: 15 VA.

Operating range (θ ≤ 60 °C): 50 Hz: 0.8…1.1 Uc, 60 Hz: 0.85…1.1 Uc.

| Control circuit voltage Uc | Average resistance at 20 °C ±10% | Inductance of closed circuit | Reference (1) |
|---|---|---|---|
| V | Ω | H | |
| | | | 50/60 Hz |
| 12 | 0.49 | 0.03 | **LXD3J5** (2) |
| 24 | 1.98 | 0.12 | **LXD3B7** |
| 32 | 3.76 | 0.22 | **LXD3C7** |
| 42 | 6.18 | 0.37 | **LXD3D7** |
| 48 | 7.97 | 0.48 | **LXD3E7** |
| 100 | 37.63 | 2.07 | **LXD3K7** |
| 110 | 42.28 | 2.50 | **LXD3F7** |
| 115 | 48.76 | 2.74 | **LXD3FE7** |
| 120 | 37.63 | 2.07 | **LXD3G7** (5) |
| 127 | 60.29 | 3.34 | **LXD3FC7** |
| 200 | 149 | 8.27 | **LXD3L7** |
| 208 | 105 | 6.22 | **LXD3LE7** (5) |
| 220 | 182 | 10 | **LXD3M7** (3) |
| 230 | 192 | 10.9 | **LXD3P7** |
| 240 | 202 | 11.9 | **LXD3U7** |
| 277 | 193 | 11 | **LXD3W7** (5) |
| 380 | 512 | 29.9 | **LXD3Q7** (4) |
| 400 | 607 | 33.1 | **LXD3V7** |
| 415 | 635 | 35.6 | **LXD3N7** |
| 440 | 682 | 40.1 | **LXD3R7** |
| 480 | 607 | 33.1 | **LXD3T7** (5) |
| 500 | 878 | 51.7 | **LXD3S7** |
| 575 | 1238 | 68.4 | **LXD3SC7** |
| 600 | 1304 | 74.5 | **LXD3X7** |
| 660 | 1593 | 90.1 | **LXD3YC7** |
| 690 | 1683 | 98.5 | **LXD3Y7** |

*(1) The last 2 digits in the reference represent the voltage code.*
*(2) This coil can only be used on 50 Hz.*
*(3) Suitable for use on **230 V** / 50 Hz. In this case, apply a coefficient of 0.6 to the mechanical durability of the contactor (see page B8/60 and B8/62).*
*(4) Suitable for use on **400 V** / 50 Hz. In this case, apply a coefficient of 0.6 to the mechanical durability of the contactor (see page B8/60 and B8/62).*
*(5) This coil can only be used on 60 Hz.*

PB121385.eps

*LX1D6●●*

## a.c coils for 3 or 4-pole contactors LC1D40, D50, D65, D80, D95

### Specifications

Average consumption at 20 °C:
- inrush (cos ϕ = 0.75) 50 Hz: 200 VA, 60 Hz: 220 VA
- sealed (cos ϕ = 0.3) 50 Hz: 20 VA, 60 Hz: 22 VA.

Operating range (θ ⩽ 55 °C): 0.85…1.1 Uc.

| Control circuit voltage Uc | Average resistance at 20°C ±10 % | Inductance of closed circuit | Reference (1) | Average resistance at 20 °C ±10 % | Inductance of closed circuit | Reference (1) |
|---|---|---|---|---|---|---|
| V | Ω | H | | Ω | H | |
| | | | 50 Hz | | | 60 Hz |
| 24 | 1.4 | 0.09 | **LX1D6B5** | 1.05 | 0.06 | **LX1D6B6** |
| 32 | 2.6 | 0.16 | **LX1D6C5** | – | – | – |
| 42 | 4.4 | 0.27 | **LX1D6D5** | – | – | – |
| 48 | 5.5 | 0.35 | **LX1D6E5** | 4.2 | 0.23 | **LX1D6E6** |
| 110 | 31 | 1.9 | **LX1D6F5** | 22 | 1.2 | **LX1D6F6** |
| 115 | 31 | 1.9 | **LX1D6FE5** | – | – | – |
| 120 | – | – | **–** | 28 | 1.5 | **LX1D6G6** |
| 127 | 41 | 2.4 | **LX1D6G5** | – | – | – |
| 208 | – | – | **–** | 86 | 4.3 | **LX1D6L6** |
| 220 | – | – | **–** | 98 | 4.8 | **LX1D6M6** |
| 220/230 | 127 | 7.5 | **LX1D6M5** | – | – | – |
| 230 | 133 | 8.1 | **LX1D6P5** | – | – | – |
| 240 | 152 | 8.7 | **LX1D6U5** | 120 | 5.7 | **LX1D6U6** |
| 256 | 166 | 10 | **LX1D6W5** | – | – | – |
| 277 | – | – | **–** | 157 | 8 | **LX1D6W6** |
| 380 | – | – | **–** | 300 | 14 | **LX1D6Q6** |
| 380/400 | 381 | 22 | **LX1D6Q5** | – | – | – |
| 400 | 411 | 25 | **LX1D6V5** | – | – | – |
| 415 | 463 | 26 | **LX1D6N5** | – | – | – |
| 440 | 513 | 30 | **LX1D6R5** | 392 | 19 | **LX1D6R6** |
| 480 | – | – | **–** | 480 | 23 | **LX1D6T6** |
| 500 | 668 | 38 | **LX1D6S5** | – | – | – |
| 575 | – | – | **–** | 675 | 33 | **LX1D6S6** |
| 600 | – | – | **–** | 775 | 36 | **LX1D6X6** |
| 660 | 1220 | 67 | **LX1D6Y5** | – | – | – |

### Specifications

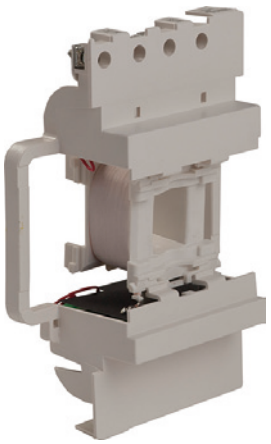
Average consumption at 20 °C:
- inrush (cos ϕ = 0.75) 50/60 Hz: 245 VA at 50 Hz
- sealed (cos ϕ= 0.3) 50/60 Hz: 26 VA at 50 Hz.

Operating range (θ ⩽ 55 °C): 0.85…1.1 Uc.

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | 50/60 Hz |
| 24 | – | – | – | 1.22 | 0.08 | **LX1D6B7** |
| 42 | – | – | – | 3.5 | 0.25 | **LX1D6D7** |
| 48 | – | – | – | 5 | 0.32 | **LX1D6E7** |
| 110 | – | – | – | 26 | 1.7 | **LX1D6F7** |
| 115 | – | – | – | – | – | **LX1D6FE7** |
| 120 | – | – | – | 32 | 2 | **LX1D6G7** |
| 220/230 (2) | – | – | – | 102 | 6.7 | **LX1D6M7** |
| 230 | – | – | – | 115 | 7.7 | **LX1D6P7** |
| 230/240 (3) | – | – | – | 131 | 8.3 | **LX1D6U7** |
| 380/400 (4) | – | – | – | 310 | 20 | **LX1D6Q7** |
| 400 | – | – | – | 349 | 23 | **LX1D6V7** |
| 415 | – | – | – | 390 | 24 | **LX1D6N7** |
| 440 | – | – | – | 410 | 27 | **LX1D6R7** |

*(1) The last 2 digits in the reference represent the voltage code.*
*(2) For use on **230 V** / 50 Hz, apply a coefficient of 0.6 to the mechanical durability of the contactor, see page B8/60 and B8/62. This coil can be used on 240 V at 60 Hz.*
*(3) This coil can be used on 220/240 V at 50 Hz and on 240 V only at 60 Hz.*
*(4) For use on **400 V** / 50 Hz, apply a coefficient of 0.6 to the mechanical durability of the contactor, see page B8/60 and B8/62.*

PB121386.eps



*LX1D8●●*

## a.c coils for 3 or 4-pole contactors LC1D115

### Specifications

Average consumption at 20 °C:
■ inrush (cos ϕ = 0.8) 50 or 60 Hz: 300 VA
■ sealed (cos ϕ = 0.3) 50 or 60 Hz: 22 VA.
Operating range (θ ≤ 55 °C): 0.85…1.1 Uc.

| Control circuit voltage Uc | Average resistance at 20 °C ±10 % | Inductance of closed circuit | Reference (1) | Average resistance at 20 °C ±10 % | Inductance of closed circuit | Reference (1) |
|---|---|---|---|---|---|---|
| V | Ω | H | | Ω | H | |
| | | | 50 Hz | | | 60 Hz |
| 24 | 1.24 | 0.09 | **LX1D8B5** | 0.87 | 0.07 | **LX1D8B6** |
| 32 | 2.14 | 0.17 | **LX1D8C5** | – | – | – |
| 42 | 3.91 | 0.28 | **LX1D8D5** | – | – | – |
| 48 | 4.51 | 0.36 | **LX1D8E5** | 3.91 | 0.28 | **LX1D8E6** |
| 110 | 26.53 | 2.00 | **LX1D8F5** | 19.97 | 1.45 | **LX1D8F6** |
| 115 | 26.53 | 2.00 | **LX1D8FE5** | – | – | – |
| 120 | – | – | – | 24.02 | 1.70 | **LX1D8G6** |
| 127 | 32.75 | 2.44 | **LX1D8FC5** | – | – | – |
| 208 | – | – | – | 67.92 | 5.06 | **LX1D8L6** |
| 220 | 104.77 | 7.65 | **LX1D8M5** | 79.61 | 5.69 | **LX1D8M6** |
| 230 | 104.77 | 8.29 | **LX1D8P5** | – | – | – |
| 240 | 125.25 | 8.89 | **LX1D8U5** | 97.04 | 6.75 | **LX1D8U6** |
| 277 | – | – | – | 125.75 | 8.89 | **LX1D8W6** |
| 380 | 338.51 | 22.26 | **LX1D8Q5** | 243.07 | 17.04 | **LX1D8Q6** |
| 400 | 368.43 | 25.55 | **LX1D8V5** | – | – | – |
| 415 | 368.43 | 27.65 | **LX1D8N5** | – | – | – |
| 440 | 441.56 | 30.34 | **LX1D8R5** | 338.51 | 22.26 | **LX1D8R6** |
| 480 | – | – | – | 368.43 | 25.55 | **LX1D8T6** |
| 500 | 566.62 | 38.12 | **LX1D8S5** | – | – | – |

## a.c coils for 3 or 4-pole contactors LC1D115, LC1D150

### Specifications

Average consumption at 20 °C:
■ inrush: cos ϕ = 0.9 - 280 to 350 VA
■ sealed: cos ϕ = 0.9 - 2 to 18 VA.
Operating range (θ ≤ 55 °C): 0.8…1.15 Uc.
Coils with integral suppression device fitted as standard, class B.

| Control circuit voltage Uc | Average resistance at 20 °C ±10 % | Inductance of closed circuit | Reference (1) | Average resistance at 20 °C ±10 % | Inductance of closed circuit | Reference (1) |
|---|---|---|---|---|---|---|
| V | Ω | H | | Ω | H | |
| | | | | | | 50/60 Hz |
| 24 | – | – | – | 147 | 3.03 | **LX1D8B7** |
| 32 | – | – | – | 301 | 8.28 | **LX1D8C7** |
| 42 | – | – | – | 498 | 13.32 | **LX1D8D7** |
| 48 | – | – | – | 1061 | 24.19 | **LX1D8E7** |
| 110 | – | – | – | 4377 | 109.69 | **LX1D8F7** |
| 115 | – | – | – | 4377 | 109.69 | **LX1D8FE7** |
| 120 | – | – | – | 4377 | 109.69 | **LX1D8G7** |
| 127 | – | – | – | 6586 | 152.65 | **LX1D8FC7** |
| 208 | – | – | – | 10 895 | 260.15 | **LX1D8LE7** |
| 220 | – | – | – | 9895 | 210.72 | **LX1D8M7** |
| 230 | – | – | – | 9895 | 210.72 | **LX1D8P7** |
| 240 | – | – | – | 9895 | 210.72 | **LX1D8U7** |
| 277 | – | – | – | 21 988 | 533.17 | **LX1D8UE7** |
| 380 | – | – | – | 21 011 | 482.42 | **LX1D8Q7** |
| 400 | – | – | – | 21 011 | 482.42 | **LX1D8V7** |
| 415 | – | – | – | 21 011 | 482.42 | **LX1D8N7** |
| 440 | – | – | – | 21 501 | 507.47 | **LX1D8R7** |
| 480 | – | – | – | 32 249 | 938.41 | **LX1D8T7** |
| 500 | – | – | – | 32 249 | 938.41 | **LX1D8S7** |

*(1) The last 2 digits in the reference represent the voltage code.*

PB121387.eps

*LX4D7●D*

## d.c. coils for 3-pole contactors LC1D80 or 4-pole contactors LP1D80

### Specifications

Average consumption: 22 W.
Operating range: 0.85…1.1 Uc.

| Control circuit voltage Uc | Average resistance at 20 °C ± 10% | Inductance of closed circuit | Reference (1) | Weight |
|---|---|---|---|---|
| V | Ω | H | | kg |
| 12 | 6.6 | 0.46 | **LX4D7JD** | 0.680 |
| 24 | 27 | 1.89 | **LX4D7BD** | 0.680 |
| 36 | 57 | 4 | **LX4D7CD** | 0.680 |
| 48 | 107 | 7.5 | **LX4D7ED** | 0.680 |
| 60 | 170 | 11.9 | **LX4D7ND** | 0.680 |
| 72 | 230 | 16.1 | **LX4D7SD** | 0.680 |
| 110 | 564 | 39.5 | **LX4D7FD** | 0.680 |
| 125 | 718 | 50.3 | **LX4D7GD** | 0.680 |
| 220 | 2215 | 155 | **LX4D7MD** | 0.680 |
| 250 | 2850 | 200 | **LX4D7UD** | 0.680 |
| 440 | 9195 | 640 | **LX4D7RD** | 0.680 |

*(1) The last 2 digits in the reference represent the voltage code.*

## d.c. coils for contactors LC1D115, D150

### Specifications

Consumption: inrush 270 to 365 W, sealed 2.4 to 5.1 W.
Operating range: 0.75…1.2 Uc.
Coils with integral suppression device fitted as standard, class B.

*LX4D8●D*

| Control circuit voltage Uc | Average resistance at 20 °C ± 10 % | Inductance of closed circuit | Reference (1) | Weight |
|---|---|---|---|---|
| V | Ω | H | | kg |
| 24 | 147 | 3.03 | **LX4D8BD** | 0.300 |
| 48 | 1061 | 24.19 | **LX4D8ED** | 0.300 |
| 60 | 1673 | 38.44 | **LX4D8ND** | 0.300 |
| 72 | 2500 | 56.27 | **LX4D8SD** | 0.300 |
| 110 | 4377 | 109.69 | **LX4D8FD** | 0.300 |
| 125 | 6586 | 152.65 | **LX4D8GD** | 0.300 |
| 220 | 9895 | 210.72 | **LX4D8MD** | 0.300 |
| 250 | 18 022 | 345.40 | **LX4D8UD** | 0.300 |
| 440 | 21 501 | 684.66 | **LX4D8RD** | 0.300 |

## d.c. coils for 3-pole contactors LC1D80 or 4-pole contactors LP1D80

### Specifications

Wide range coils for specific applications
Average consumption: 23 W.
Operating range: 0.75 to 1.2 Uc.
Coils with "TH" treatment as standard.



PB121390.eps

*LX4D7●●*

| Control circuit voltage Uc | Average resistance at 20 °C ± 10 % | Inductance of closed circuit | Reference (1) | Weight |
|---|---|---|---|---|
| V | Ω | H | | kg |
| 12 | 6.2 | 0.49 | **LX4D7JW** | 0.680 |
| 24 | 23.5 | 1.75 | **LX4D7BW** | 0.680 |
| 36 | 51.9 | 4.18 | **LX4D7CW** | 0.680 |
| 48 | 94.2 | 7 | **LX4D7EW** | 0.680 |
| 72 | 204 | 15.7 | **LX4D7SW** | 0.680 |
| 110 | 483 | 36 | **LX4D7FW** | 0.680 |
| 220 | 1922 | 144 | **LX4D7MW** | 0.680 |

*(1) The last 2 digits in the reference represent the voltage code.*

# Product references

PB111641.eps

*LC1SK06*

- Width of contactor 27 mm.
- Mounting on 35 mm ⎓ rail.
- Screw clamp terminals.

## Mini-contactors for motor in category AC-3

| Standard power ratings of 3-phase motors 50/60 Hz in category AC-3 [1] | | | Rated operational voltage in AC-3 up to 400 V | Number of poles | Instantaneous auxiliary contacts | | Basic reference. Complete with code indicating control circuit voltage [2] |
|---|---|---|---|---|---|---|---|
| 220 V 230 V | 380 V 415 V | 660 V 690 V | | | | | |
| kW | kW | kW | A | | | | |
| 1.1 | 2.2 | 2.2 | 6 | 2 | – | – | **LC1SK0600●●** |

## Mini-contactors for motor in category AC-1

| Non inductive loads maximum current (θ ≤ 55 °C) utilisation category AC-1 | Control circuit supply | Number of poles | Instantaneous auxiliary contacts | | Basic reference. Complete with code indicating control circuit voltage [2] |
|---|---|---|---|---|---|
| A | | | | | |
| 12 | a.c. | 2 | – | – | **LC1SK0600●●** |
| | d.c. | 2 | – | – | **LP1SK0600●●** |

PB111639.eps

*LA1SK10*

## Add-on block with 1 power pole (for 3-phase circuits)

| For use on contactor | Number of poles | Instantaneous auxiliary contacts | | Reference |
|---|---|---|---|---|
| LC1SK06 clip-on front mounting | 1 | 1 | – | **LA1SK10** |
| | 1 | – | 1 | **LA1SK01** |

***Note:*** *Auxiliary contact blocks and coil suppressor module, see next page.*

*(1) For use in AC-3 category and 3-phase circuits, an **LA1SK●●** auxiliary contact block should be ordered separately for mounting on the contactor.*

*(2) Standard control circuit voltages (variable delivery times, please consult your Regional Sales Office):*

| **Mini-contactors LC1SK** | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Volts ∿ 50/60 Hz** | **24** | **48** | **110** | **120** | **220** | **230** | **240** | **380** | **400** |
| Code | B7 | E7 | F7 | G7 | M7 | P7 | U7 | Q7 | V7 |
| **Mini-contactors LP1SK** | | | | | | | | | |
| **Volts ⎓** | **12** | **24** | **36** | **48** | **72** | | | | |
| Code | JD | BD | CD | ED | SD | | | | |

Contactors

# Product references

PB111639.eps


*LA1SK●●*

PB111640.eps


*LA4SK●1●*

## Instantaneous auxiliary contact blocks

### Clip-on front mounting

| For use on contactor | Maximum number of blocks per contactor | Composition | | Reference |
|---|---|---|---|---|
| LC1SK06 | 1 | 2 | – | **LA1SK20** |
| | | – | 2 | **LA1SK02** |
| | | 1 | 1 | **LA1SK11** |

## Coil suppressor modules

### Clip-on fixing and electrical connection on right-hand side, without use of tools

| For use on contactors | Type | For voltages | Sold in lots of | Unit reference |
|---|---|---|---|---|
| LC1SK06 and LP1SK06 | Varistor (1) | ∿ and ⎓ 24 V…48 V | 10 | **LA4SKE1E** |
| | | ∿ and ⎓ 110 V…250 V | 10 | **LA4SKE1U** |
| | Diode (2) | ⎓ 24 V…250 V | 10 | **LA4SKC1U** |

*(1) Protection provided by limiting the transient voltage to 2 Uc max. Maximum reduction of transient voltage peaks. Slight increase in drop-out time (1.1 to 1.5 times the normal time).*
*(2) No overvoltage or oscillating frequency. Slight increase in drop-out time (1.1 to 1.5 times the normal time).*



Characteristics: pages B8/86 to B8/89
Dimensions, schemes: page B8/90

*LC1K0910●●*

*LC1K09103●●*

*LC1K09107●●*

*LC1K09105●●*

*LC7K0910●●*

Mounting on 35 mm ⎓ rail or Ø4 screw fixing.
Screws in the open "ready-to-tighten" position.
Add-on auxiliary contact blocks and accessories, see pages B8/48 to B8/50.

## 3-pole contactors - Motor control 6 to 16 A in categories AC-3 AC-4 - a.c. coil

| Standard power ratings of 3-phase motors 50-60 Hz in category AC-3 | | | Rated operational current in category AC-3 440 V up to | Instantaneous auxiliary contacts | | Basic reference, to be completed by adding the voltage code (1) |
|---|---|---|---|---|---|---|
| 220 V 230 V | 380 V 415 V | 440/500 V 660/690 V | | | | |
| kW | kW | kW | A | | | |
| **Screw clamp connections** | | | | | | |
| 1.5 | 2.2 | 3 | **6** | 1 | - | **LC1K0610●●** |
| | | | | - | 1 | **LC1K0601●●** |
| 2.2 | 4 | 4 | **9** | 1 | - | **LC1K0910●●** |
| | | | | - | 1 | **LC1K0901●●** |
| 3 | 5.5 | 4 (> 440) | **12** | 1 | - | **LC1K1210●●** |
| | | 5.5 (440) | | - | 1 | **LC1K1201●●** |
| 4 | 7.5 | 4 (> 440) | **16** | 1 | - | **LC1K1610●●** |
| | | 5.5 (440) | | - | 1 | **LC1K1601●●** |

### Spring terminal connections (2)

For 6 to 12 A ratings only, in the references selected above, insert a figure **3** before the voltage code.
Example: **LC1K0610●●** becomes **LC1K06103●●.**

### Faston connectors, 1 x 6.35 or 2 x 2.8

For 6 to 16 A ratings, in the references selected above, insert a figure **7** before the voltage code.
Example: **LC1K0610●●** becomes **LC1K06107●●**.

### Solder pins for printed circuit boards

For 6 to 16 A ratings, in the references selected above, insert a figure **5** before the voltage code.
Example: **LC1K0610●●** becomes **LC1K06105●●**.

## 3-pole silent contactors

Recommended for use in areas sensitive to noise, high interference mains supplies, etc.
Coil with rectifier incorporated, suppressor fitted as standard.

| | | | | | | |
|---|---|---|---|---|---|---|
| **Screw clamp connections** | | | | | | |
| 1.5 | 2.2 | 3 | **6** | 1 | - | **LC7K0610●●** |
| | | | | - | 1 | **LC7K0601●●** |
| 2.2 | 4 | 4 | **9** | 1 | - | **LC7K0910●●** |
| | | | | - | 1 | **LC7K0901●●** |
| 3 | 5.5 | 4 (> 440) | **12** | 1 | - | **LC7K1210●●** |
| | | 5.5 (440) | | - | 1 | **LC7K1201●●** |

### Faston connectors, 1 x 6.35 or 2 x 2.8

In the references selected above, insert a figure **7** before the voltage code.
Example: **LC7K0610●●** becomes **LC7K06107●●**.

### Solder pins for printed circuit boards

In the references selected above, insert a figure **5** before the voltage code.
Example: **LC7K0610●●** becomes **LC7K06105●●**.

## Standard control circuit voltages (for other voltages, please consult your Regional Sales office)

### Coil voltage codes - a.c. (3)

**Contactors LC1K** (0.8…1.15 Uc) *(0.85…1.1 Uc)*

| **Volts** | **12** | **20** | **24** (1) | **36** | **42** | **48** | **110** | **115** | **120** | **127** | **200/208** | | ***220/230*** | ***230*** | ***230/240*** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 Hz (4) | | | B5 | | D5 | E5 | | | | | | | | *P5* | |
| 50/60 Hz | J7 | Z7 | B7 | C7 | D7 | E7 | F7 | FE7 | G7 | FC7 | L7 | | *M7* | *P7* | *U7* |
| **Volts** | **256** | **277** | ***380/400*** | | **400** | ***400/415*** | | **440** | **480** | **500** | **575** | **600** | **660/690** | | |
| 50/60 Hz | W7 | UE7 | *Q7* | – | V7 | *N7* | | R7 | T7 | S7 | SC7 | X7 | *Y7* | – | – |

Up to and including 240 V, coil with integral suppression device available: add **2** to the code required. Example: **J72**.

**Contactors LC7K** (0.85…1.1 Uc)

| **Volts** | **24** | **42** | **48** | **110** | **115** | **220** | **230/240** |
|---|---|---|---|---|---|---|---|
| 50/60 Hz | B7 | D7 | E7 | F7 | FE7 | M7 | U7 |

*(1) For mains supplies with a high level of interference (voltage surge > 800 V), use a suppressor module **LA4KE1FC** (50…129 V) or **LA4KE1UG** (130…250 V), see page B8/49.*
*(2) For **LC●K●●●●3 / LP●K●●●●3** with spring terminal, Ith max = 10 A.*
*(3) (0.8…1.15 Uc) for single voltage coil; (0.85…1.1 Uc) for dual voltage coil, exemple 200/208 V AC.*
*(4) Only available for 'screw clamp terminals' versions.*

Characteristics: pages B8/91 to B8/93
Dimensions: page B8/95
Schemes: page B8/96
Click HERE for access to online contactor selector


PB121392.eps

*LP1K0910●●*


PB121393.eps

*LP1K09103●●*


PB112197.eps

*LP1K09107●●*


PB112190.eps

*LP1K09105●●*


PB111997.eps

*LP4K0910●●*

Contactor selection according to utilisation category, see pages A6/34 to A6/39 and A6/42 to A6/45.
Mounting on 35 mm ⎓ rail or Ø4 screw fixing.
Screws in the open "ready-to-tighten" position.
Add-on auxiliary contact blocks and accessories, see pages B8/48 to B8/50.

## 3-pole contactors - Motor control 6 to 12 A in categories AC-3 AC-4 - d.c. coil

| Standard power ratings of 3-phase motors 50-60 Hz in category AC-3 | | | Rated operational current in category AC-3 440 V up to | Instantaneous auxiliary contacts | | Basic reference, to be completed by adding the voltage code (1) |
|---|---|---|---|---|---|---|
| 220 V 230 V | 380 V 415 V | 440/500 V 660/690 V | | | | |
| kW | kW | kW | A | | | |
| **Screw clamp connections** | | | | | | |
| 1.5 | 2.2 | 3 | **6** | 1 | – | **LP1K0610●●** |
| | | | | – | 1 | **LP1K0601●●** |
| 2.2 | 4 | 4 | **9** | 1 | – | **LP1K0910●●** |
| | | | | – | 1 | **LP1K0901●●** |
| 3 | 5.5 | 4 (> 440) | **12** | 1 | – | **LP1K1210●●** |
| | | 5.5 (440) | | – | 1 | **LP1K1201●●** |

### Spring terminal connections (2)

In the references selected above, insert a figure **3** before the voltage code.
Example: **LP1K0610●●** becomes **LP1K06103●●**.

### Faston connectors, 1 x 6.35 or 2 x 2.8

In the references selected above, insert a figure **7** before the voltage code.
Example: **LP1K0610●●** becomes **LP1K06107●●**.

### Solder pins for printed circuit boards

In the references selected above, insert a figure **5** before the voltage code.
Example: **LP1K0610●●** becomes **LP1K06105●●**.

## 3-pole low consumption contactors

Compatible with programmable controller outputs.
Wide range coil (0.7…1.30 Uc), suppressor fitted as standard, consumption 1.8 W.

| | | | | | | |
|---|---|---|---|---|---|---|
| **Screw clamp connections** | | | | | | |
| 1.5 | 2.2 | 3 | **6** | 1 | – | **LP4K0610●●** |
| | | | | – | 1 | **LP4K0601●●** |
| 2.2 | 4 | 4 | **9** | 1 | – | **LP4K0910●●** |
| | | | | – | 1 | **LP4K0901●●** |
| 3 | 5.5 | 4 (> 440) | **12** | 1 | – | **LP4K1210●●** |
| | | 5.5 (440) | | – | 1 | **LP4K1201●●** |

### Spring terminal connections

In the references selected above, insert a figure **3** before the voltage code.
Example: **LP4K0610●●** becomes **LP4K06103●●**.

### Faston connectors, 1 x 6.35 or 2 x 2.8

In the references selected above, insert a figure **7** before the voltage code.
Example: **LP4K0610●●** becomes **LP4K06107●●**.

### Solder pins for printed circuit boards

In the references selected above, insert a figure **5** before the voltage code.
Example: **LP4K0610●●** becomes **LP4K06105●●**.

## Standard control circuit voltages (for other voltages, please consult your Regional Sales office)

**d.c. supply** (contactors LP1K: 0.8...1.15 Uc)

| **Volts** | **12** | **20** | **24** (1) | **36** | **48** | **60** | **72** | **100** | **110** | **125** | **155** | **174** | **200** | **220** | **230** | **240** | **250** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Code | JD | ZD | BD | CD | ED | ND | SD | KD | FD | GD | PD | QD | LD | MD | MPD | MUD | UD |

Coil with integral suppression device available: add **3** to the code required. Example: **JD3**

**Low consumption** (contactors LP4K: 0.7...1.3 Uc)

| **Volts** | **12** | **20** | **24** | **48** | **72** | **110** | **120** |
|---|---|---|---|---|---|---|---|
| Code | JW3 | ZW3 | BW3 | EW3 | SW3 | FW3 | GW3 |

Coil with integral suppression device fitted as standard, by bi-directional peak limiting diode.

*(1) For **LP1K** only, when connecting an electronic sensor or timer in series with the contactor coil, select a 20 V coil (∼ control circuit voltage code Z7, ⎓ control circuit voltage code ZD) so as to compensate for the incurred voltage drop.*
*(2) For **LC●K●●●●3** / **LP●K●●●●3** with spring terminal), Ith max = 10 A.*

Characteristics: pages B8/91 to B8/93
Dimensions: page B8/95
Schemes: page B8/96
Click HERE for access to online contactor selector


PB121394.eps

*LC1K09004●●*


PB111988.eps

*LC1K09103●●*


PB112195.eps

*LC1K09107●●*


PB111994.eps

*LC1K09004●●*

Contactor selection according to utilisation category, see pages A6/40 and A6/41.
Mounting on 35 mm ⎓ rail or Ø4 screw fixing.
Screws in the open "ready-to-tighten" position.
Add-on auxiliary contact blocks and accessories, see pages B8/48 to B8/50.

## 3 or 4-pole contactors - Load control up to 20 A in category AC-1 - a.c. coil (1)

| Non-inductive loads Category AC-1 Maximum current at θ ≤ 50 °C | Number of poles | | Instantaneous auxiliary contacts | | Basic reference, to be completed by adding the voltage code (2) |
|---|---|---|---|---|---|
| A | | | | | |
| **Screw clamp connections** | | | | | |
| 20 | 3 | – | 1 | – | **LC1K0910●●** |
| | | | | | or **LC1K1210●●** |
| | 3 | – | – | 1 | **LC1K0901●●** |
| | | | | | or **LC1K1201●●** |
| | 4 | – | – | – | **LC1K09004●●** |
| | | | | | or **LC1K12004●●** |
| | 2 | 2 | – | – | **LC1K09008●●** |

### Spring terminal connections (3)

In the references selected above, insert a figure **3** before the voltage code.
Example: **LC1K0910●●** becomes **LC1K09103●●**.

### Faston connectors, 1 x 6.35 or 2 x 2.8

In the references selected above, insert a figure **7** before the voltage code.
Example: **LC1K0910●●** becomes **LC1K09107●●**.

### Solder pins for printed circuit boards

In the references selected above, insert a figure **5** before the voltage code.
Example: **LC1K0910●●** becomes **LC1K09105●●**.

## 3 or 4-pole silent contactors (1)

Recommended for use in areas sensitive to noise, high interference mains supplies, etc.
Coil with rectifier incorporated, suppressor fitted as standard.

| | | | | | |
|---|---|---|---|---|---|
| **Screw clamp connections** | | | | | |
| 20 | 3 | – | 1 | – | **LC7K0910●●** |
| | | | | | or **LC7K1210●●** |
| | 3 | – | – | 1 | **LC7K0901●●** |
| | | | | | or **LC7K1201●●** |
| | 4 | – | – | – | **LC7K09004●●** |
| | | | | | or **LC7K12004●●** |
| | 2 | 2 | – | – | **LC7K09008●●** |

### Faston connectors, 1 x 6.35 or 2 x 2.8

In the references selected above, insert a figure **7** before the voltage code.
Example: **LC7K0910●●** becomes **LC7K09107●●**.

### Solder pins for printed circuit boards

In the references selected above, insert a figure **5** before the voltage code.
Example: **LC7K0910●●** becomes **LC7K09105●●**.

*(1) Coordination tables between 9 and 12 A ratings according to number of operating cycles, see AC-1 curve on page A6/40.*

## Standard control circuit voltages (for other voltages, please consult your Regional Sales office)

### Coil voltage codes - a.c. (4)

**Contactors LC1K** (0.8…1.15 Uc) *(0.85…1.1 Uc)*

| **Volts** | **12** | **20** | **24** (2) | **36** | **42** | **48** | **110** | **115** | **120** | **127** | **200/208** | | ***220/230*** | **230** | ***230/240*** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 Hz (5) | | | B5 | | D5 | E5 | | | | | | | | P5 | |
| 50/60 Hz | J7 | Z7 | B7 | C7 | D7 | E7 | F7 | FE7 | G7 | FC7 | L7 | | *M7* | P7 | *U7* |
| **Volts** | **256** | **277** | ***380/400*** | | **400** | ***400/415*** | | **440** | **480** | **500** | **575** | **600** | ***660/690*** | | |
| 50/60 Hz | W7 | UE7 | *Q7* | | V7 | *N7* | | R7 | T7 | S7 | SC7 | X7 | *Y7* | | |

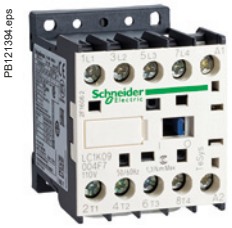
Up to and including 240 V, coil with integral suppression device available: add **2** to the code required. Example: **J72.**

**Contactors LC7K** (0.8…1.1 Uc)

| **Volts** | **24** | **42** | **48** | **110** | **115** | **220** | **230/240** |
|---|---|---|---|---|---|---|---|
| 50/60 Hz | B7 | D7 | E7 | F7 | FE7 | M7 | U7 |

*(2) For mains supplies with a high level of interference (voltage surge > 800 V), use a suppressor module **LA4KE1FC** (50…129 V) or **LA4KE1UG** (130…250 V), see page B8/49.*
*(3) For **LC●K●●●●3 / LP●K●●●●3** with spring terminal, Ith max = 10 A.*
*(4) (0.8…1.15 Uc) for single voltage coil; (0.85…1.1 Uc) for dual voltage coil, exemple 200/208 V AC.*
*(5) Only available for 'screw clamp terminals' versions.*

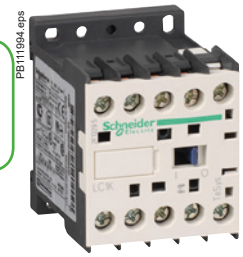
Characteristics: pages B8/91 to B8/93
Dimensions: page B8/95
Schemes: page B8/96
Click HERE for access to online contactor selector




*LC1K09004●●*


*LC1K09103●●*


*LC1K09105●●*




*LC1K09004●●*

Contactor selection according to utilisation category, see pages A6/40 and A6/41.
Mounting on 35 mm ⎓ rail or Ø4 screw fixing.
Screws in the open "ready-to-tighten" position.
Add-on auxiliary contact blocks and accessories, see pages B8/48 to B8/50.

## 3 and 4-pole contactors - Load control - 20 A in category AC-1 - d.c. coil (1)

| Non-inductive loads Category AC-1 Maximum current at θ ≤ 50 °C | Number of poles | | Instantaneous auxiliary contacts | | Basic reference, to be completed by adding the voltage code (2) |
|---|---|---|---|---|---|
| A | | | | | |
| **Screw clamp connections** | | | | | |
| 20 | 3 | – | 1 | – | **LP1K0910●●** |
| | | | | | or **LP1K1210●●** |
| | 3 | – | – | 1 | **LP1K0901●●** |
| | | | | | or **LP1K1201●●** |
| | 4 | – | – | – | **LP1K09004●●** |
| | | | | | or **LP1K12004●●** |
| | 2 | 2 | – | – | **LP1K09008●●** |
| **Spring terminal connections (3)** | | | | | |
| In the references selected above, insert a figure **3** before the voltage code. Example: **LP1K0910●●** becomes **LP1K09103●●**. | | | | | |
| **Faston connectors, 1 x 6.35 or 2 x 2.8** | | | | | |
| In the references selected above, insert a figure **7** before the voltage code. Example: **LP1K0910●●** becomes **LP1K09107●●**. | | | | | |
| **Solder pins for printed circuit boards** | | | | | |
| In the references selected above, insert a figure **5** before the voltage code. Example: **LP1K0910●●** becomes **LP1K09105●●**. | | | | | |

## 3 or 4-pole 20 A / AC-1 - d.c. low consumption coil (1)

Compatible with programmable controller outputs.
Wide range coil (0.7…1.30 Uc), suppressor fitted as standard, consumption 1.8 W.

| | | | | | |
|---|---|---|---|---|---|
| **Screw clamp connections** | | | | | |
| 20 | 3 | – | 1 | – | **LP4K0910●●●** |
| | | | | | or **LP4K1210●●●** |
| | 3 | – | – | 1 | **LP4K0901●●●** |
| | | | | | or **LP4K1201●●●** |
| | 4 | – | – | – | **LP4K09004●●●** |
| | | | | | or **LP4K12004●●●** |
| | 2 | 2 | – | – | **LP4K09008●●●** |
| **Spring terminal connections** | | | | | |
| In the references selected above, insert a figure **3** before the voltage code. Example: **LP4K0910●●** becomes **LP4K09103●●**. | | | | | |
| **Faston connectors, 1 x 6.35 or 2 x 2.8** | | | | | |
| In the references selected above, insert a figure **7** before the voltage code. Example: **LP4K0910●●** becomes **LP4K09107●●**. | | | | | |
| **Solder pins for printed circuit boards** | | | | | |
| In the references selected above, insert a figure **5** before the voltage code. Example: **LP4K0910●●** becomes **LP4K09105●●**. | | | | | |

*(1) Coordination tables between 9 and 12 A ratings according to number of operating cycles, see AC-1 curve on page A6/40.*

## Standard control circuit voltages (for other voltages, please consult your Regional Sales office)

**Coil voltage codes - d.c.** (contactors LP1K: 0.8...1.15 Uc)

| Volts ⎓ | 12 | 20 | 24 (2) | 36 | 48 | 60 | 72 | 100 | 110 | 125 | 155 | 174 | 200 | 220 | 230 | 240 | 250 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Code | JD | ZD | BD | CD | ED | ND | SD | KD | FD | GD | PD | QD | LD | MD | MPD | MUD | UD |

Coil with integral suppression device available: add **3** to the code required. Example: **JD3.**

**Coil voltage codes - low consumption d.c.** (contactors LP4K: 0.7...1.3 Uc)

| Volts ⎓ | 12 | 20 | 24 | 48 | 72 | 110 | 120 |
|---|---|---|---|---|---|---|---|
| Code | JW3 | ZW3 | BW3 | EW3 | SW3 | FW3 | GW3 |

Coil with integral suppression device fitted as standard, by bi-directional peak limiting diode.

*(2) For **LP1K** only, when connecting an electronic sensor or timer in series with the contactor coil, select a 20 V coil (∿ control circuit voltage code Z7, ⎓ control circuit voltage code ZD) so as to compensate for the incurred voltage drop.*

*(3) For **LC●K●●●●3 / LP●K●●●●3** with spring terminal, Ith max = 10 A.*

Characteristics: pages B8/91 to B8/93
Dimensions: page B8/95
Schemes: page B8/96
Click HERE for access to online contactor selector

Reversing contactor selection according to utilisation category, see pages A6/34 to A6/39 and A6/42 to A6/45.
Integral mechanical interlock.
It is essential to link the contacts of the electrical interlock.
Pre-wired power circuit connections as standard on screw clamp versions.
Mounting on 35 mm ⊔ rail or Ø4 screw fixing. Screws in the open "ready-to-tighten" position.
Add-on auxiliary contact blocks and accessories, see pages B8/48 to B8/50.

PB112199.eps

*LC2K0910●●*

PB112206.eps

*LC2K09105●●*

## 3-pole reversing contactors - Motor control 6 to 16 A in categories AC-3 AC-4 - a.c. coil

| Standard power ratings of 3-phase motors 50/60 Hz in category AC-3 | | | Rated operational current in category AC-3 440 V up to | Instantaneous auxiliary contacts per contactor | | Basic reference, to be completed by adding the voltage code (1) |
|---|---|---|---|---|---|---|
| 220 V 230 V | 380 V 415 V | 440/500 V 660/690 V | | | | |
| kW | kW | kW | A | | | |
| **Screw clamp connections** | | | | | | |
| 1.5 | 2.2 | 3 | **6** | 1 | – | **LC2K0610●●** |
| | | | | – | 1 | **LC2K0601●●** |
| 2.2 | 4 | 4 | **9** | 1 | – | **LC2K0910●●** |
| | | | | – | 1 | **LC2K0901●●** |
| 3 | 5.5 | 4 (> 440) | **12** | 1 | – | **LC2K1210●●** |
| | | 5.5 (440) | | – | 1 | **LC2K1201●●** |
| 4 | 7.5 | 4 (> 440) | **16** | 1 | – | **LC2K1610●●** |
| | | 5.5 (440) | | – | 1 | **LC2K1601●●** |

### Spring terminal connections (2)

For 6 to 12 A ratings only, in the references selected above, insert a figure **3** before the voltage code.
Example: **LC2K0610●●** becomes **LC2K06103●●**.

### Faston connectors, 1 x 6.35 or 2 x 2.8

For 6 to 16 A ratings, in the references selected above, insert a figure **7** before the voltage code.
Example: **LC2K0610●●** becomes **LC2K06107●●**.

### Solder pins for printed circuit boards

For 6 to 16 A ratings, in the references selected above, insert a figure **5** before the voltage code.
Example: **LC2K0610●●** becomes **LC2K06105●●**.

## 3-pole silent reversing contactors - 6 to 16 A categories AC-3 AC-4 - a.c. coil

Recommended for use in areas sensitive to noise, high interference mains supplies, etc.
Coil with rectifier incorporated, suppressor fitted as standard.

| | | | | | | |
|---|---|---|---|---|---|---|
| **Screw clamp connections** | | | | | | |
| 1.5 | 2.2 | 3 | **6** | 1 | – | **LC8K0610●●** |
| | | | | – | 1 | **LC8K0601●●** |
| 2.2 | 4 | 4 | **9** | 1 | – | **LC8K0910●●** |
| | | | | – | 1 | **LC8K0901●●** |
| 3 | 5.5 | 4 (> 440) | **12** | 1 | – | **LC8K1210●●** |
| | | 5.5 (440) | | – | 1 | **LC8K1201●●** |

### Faston connectors, 1 x 6.35 or 2 x 2.8

In the references selected above, insert a figure **7** before the voltage code.
Example: **LC8K0610●●** becomes **LC8K06107●●**.

### Solder pins for printed circuit boards

In the references selected above, insert a figure **5** before the voltage code.
Example: **LC8K0610●●** becomes **LC8K06105●●**.

## Standard control circuit voltages (for other voltages, please consult your Regional Sales office)

### Coil voltage codes - a.c. (3)

**Reversing contactors LC2K** (0.8…1.15 Uc) *(0.85…1.1 Uc)*

| **Volts** | **12** | **20** | **24** (1) | **36** | **42** | **48** | **110** | **115** | **120** | **127** | **200/208** | | ***220/230*** | **230** | ***230/240*** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50/60 Hz | J7 | Z7 | B7 | C7 | D7 | E7 | F7 | FE7 | G7 | FC7 | L7 | | *M7* | P7 | U7 |
| **Volts** | **256** | **277** | ***380/400*** | | **400** | ***400/415*** | | **440** | **480** | **500** | **575** | **600** | ***660/690*** | | |
| 50/60 Hz | W7 | UE7 | *Q7* | | V7 | *N7* | | R7 | T7 | S7 | SC7 | X7 | *Y7* | | |

Up to and including 240 V, coil with integral suppression device available: add **2** to the code required. Example: **J72.**

**Reversing contactors LC8K** (0.8…1.1 Uc)

| **Volts** | **24** | **42** | **48** | **110** | **115** | **220** | **230/240** |
|---|---|---|---|---|---|---|---|
| 50/60 Hz | B7 | D7 | E7 | F7 | FE7 | M7 | U7 |

*(1) For mains supplies with a high level of interference (voltage surge > 800 V), use a suppressor module **LA4KE1FC** (50…129 V) or **LA4KE1UG** (130…250 V), see page B8/49.*
*(2) For **LC●K●●●●3 / LP●K●●●●3** with spring terminal, Ith max = 10 A.*
*(3) (0.8…1.15 Uc) for single voltage coil; (0.85…1.1 Uc) for dual voltage coil, exemple 200/208 V AC.*

Characteristics: pages B8/91 to B8/93
Dimensions: page B8/97
Schemes: page B8/98
Click HERE for access to online contactor selector

Reversing contactor selection according to utilisation category, see pages A6/34 to A6/39 and A6/42 to A6/45.
Integral mechanical interlock.
It is essential to link the contacts of the electrical interlock.
Pre-wired power circuit connections as standard on screw clamp versions.
Mounting on 35 mm ⎓ rail or Ø4 screw fixing.
Screws in the open “ready-to-tighten” position.
Add-on auxiliary contact blocks and accessories, see pages B8/48 to B8/50.

## 3-pole reversing contactors - Motor control 6 to 12 A in categories AC-3 AC-4 - d.c. coil

| Standard power ratings of 3-phase motors 50-60 Hz in category AC-3 | | | Rated operational current in category AC-3 440 V up to | Instan-taneous auxiliary contacts per contactor | | Basic reference, to be completed by adding the voltage code [1] |
|---|---|---|---|---|---|---|
| 220 V 230 V | 380 V 415 V | 440/500 V 660/690 V | | | | |
| kW | kW | kW | A | | | |
| **Screw clamp connections** | | | | | | |
| 1.5 | 2.2 | 3 | 6 | 1 | – | **LP2K0610●●** |
| | | | | – | 1 | **LP2K0601●●** |
| 2.2 | 4 | 4 | 9 | 1 | – | **LP2K0910●●** |
| | | | | – | 1 | **LP2K0901●●** |
| 3 | 5.5 | 4 (> 440) | 12 | 1 | – | **LP2K1210●●** |
| | | 5.5 (440) | | – | 1 | **LP2K1201●●** |
| **Spring terminal connections [2]** | | | | | | |
| In the references selected above, insert a figure **3** before the voltage code.<br>Example: **LP2K0610●●** becomes **LP2K06103●●**. | | | | | | |
| **Faston connectors, 1 x 6.35 or 2 x 2.8** | | | | | | |
| In the references selected above, insert a figure **7** before the voltage code.<br>Example: **LC2K0610●●** becomes **LC2K06107●●**. | | | | | | |
| **Solder pins for printed circuit boards** | | | | | | |
| For 6 to 16 A ratings, in the references selected above, insert a figure **5** before the voltage code.<br>Example: **LC2K0610●●** becomes **LC2K06105●●**. | | | | | | |

## 3-pole low consumption reversing contactors

Compatible with programmable controller outputs.
Wide range coil (0.7…1.30 Uc), suppressor fitted as standard, consumption 1.8 W.

| | | | | | | |
|---|---|---|---|---|---|---|
| **Screw clamp connections** | | | | | | |
| 1.5 | 2.2 | 3 | 6 | 1 | – | **LP5K0610●●** |
| | | | | – | 1 | **LP5K0601●●** |
| 2.2 | 4 | 4 | 9 | 1 | – | **LP5K0910●●** |
| | | | | – | 1 | **LP5K0901●●** |
| 3 | 5.5 | 4 (> 440) | 12 | 1 | – | **LP5K1210●●** |
| | | 5.5 (440) | | – | 1 | **LP5K1201●●** |
| **Spring terminal connections** | | | | | | |
| In the references selected above, insert a figure **3** before the voltage code.<br>Example: **LP5K0610●●** becomes **LP5K06103●●**. | | | | | | |
| **Faston connectors, 1 x 6.35 or 2 x 2.8** | | | | | | |
| In the references selected above, insert a figure **7** before the voltage code.<br>Example: **LP5K0610●●** becomes **LP5K06107●●**. | | | | | | |
| **Solder pins for printed circuit boards** | | | | | | |
| In the references selected above, insert a figure **5** before the voltage code.<br>Example: **LP5K0610●●** becomes **LP5K06105●●**. | | | | | | |

## Standard control circuit voltages (for other voltages, please consult your Regional Sales office)

### Coil voltage codes - d.c.

**Reversing contactors LP2K** (0.8…1.15 Uc)

| Volts | 12 | 20 | 24 [1] | 36 | 48 | 60 | 72 | 100 | 110 | 125 | 155 | 174 | 200 | 220 | 230 | 240 | 250 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Code | JD | ZD | BD | CD | ED | ND | SD | KD | FD | GD | PD | QD | LD | MD | MPD | MUD | UD |

Coil with integral suppression device available: add **3** to the code required. Example: **JD3**.

### Coil voltage codes - low consumption d.c.

**Reversing contactors LP5K** (0.7…1.3 Uc)

| Volts | 12 | 20 | 24 | 48 | 72 | 110 | 120 |
|---|---|---|---|---|---|---|---|
| Code | JW3 | ZW3 | BW3 | EW3 | SW3 | FW3 | GW3 |

Coil with integral suppression device fitted as standard, by bi-directional peak limiting diode.

*(1) For **LP2K** only, when connecting an electronic sensor or timer in series with the contactor coil, select a 20 V coil (∼ control circuit voltage code Z7, ⎓ control circuit voltage code ZD) so as to compensate for the incurred voltage drop.*

*(2) For **LC●K●●●●3 / LP●K●●●●3** with spring terminal, Ith max = 10 A.*

Characteristics: pages B8/91 to B8/94
Dimensions: page B8/97
Schemes: page B8/98
Click HERE for access to online contactor selector

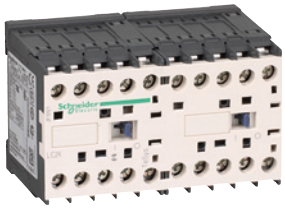

PB112199.eps

*LC2K0910●●*

**Warning: reversing contactors LC2K0910●● and LC2K0901●● are pre-wired for reverse motor operation as standard.**
Reversing contactor selection according to utilisation category, see pages A6/40 and A6/41.
Integral mechanical interlock.
**It is essential to link the contacts of the electrical interlock.**
Mounting on 35 mm ⎓ rail or Ø4 screw fixing.
Screws in the open “ready-to-tighten” position.
Add-on auxiliary contact blocks and accessories, see pages B8/48 to B8/50.

## 3 or 4-pole reversing contactors - Load control - 20 A in category AC-1 - a.c. coil (1)

| Non-inductive loads Category AC-1 Maximum current at θ ≤ 50 °C | Number of poles | | Instantaneous auxiliary contacts per contactor | | | Basic reference, to be completed by adding the voltage code (2) |
|---|---|---|---|---|---|---|
| |  | |  | | | |
| **A** | | | | | | |
| **Screw clamp connections** | | | | | | |
| 20 | 3 | – | 1 | – | | **LC2K0910●●** |
| | | | | | or | **LC2K1210●●** |
| | 3 | – | – | 1 | | **LC2K0901●●** |
| | | | | | or | **LC2K1201●●** |
| | 4 | – | – | – | | **LC2K09004●●** |
| | | | | | or | **LC2K12004●●** |


PB112206.eps

*LC2K09105●●*

**Spring terminal connections (3)**
In the references selected above, insert a figure **3** before the voltage code.
Example: **LC2K0910●●** becomes **LC2K09103●●**.

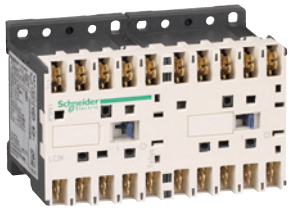
**Faston connectors, 1 x 6.35 or 2 x 2.8**
In the references selected above, insert a figure **7** before the voltage code.
Example: **LC2K0910●●** becomes **LC2K09107●●**.

**Solder pins for printed circuit boards**
In the references selected above, insert a figure **5** before the voltage code.
Example: **LC2K0910●●** becomes **LC2K09105●●**.

## 3 or 4-pole silent reversing contactors - 20 A / AC-1 - a.c. coil (1)

Recommended for use in areas sensitive to noise, high interference mains supplies, etc.
Coil with rectifier incorporated, suppressor fitted as standard.

| | | | | | | |
|---|---|---|---|---|---|---|
| **Screw clamp connections** | | | | | | |
| 20 | 3 | – | 1 | – | | **LC8K0910●●** |
| | | | | | or | **LC8K1210●●** |
| | 3 | – | – | 1 | | **LC8K0901●●** |
| | | | | | or | **LC8K1201●●** |
| | 4 | – | – | – | | **LC8K09004●●** |
| | | | | | or | **LC8K12004●●** |


PB112210.eps

*LC2K09107●●*

**Faston connectors, 1 x 6.35 or 2 x 2.8**
In the references selected above, insert a figure **7** before the voltage code.
Example: **LC8K0910●●** becomes **LC8K09107●●**.

**Solder pins for printed circuit boards**
In the references selected above, insert a figure **5** before the voltage code.
Example: **LC8K0910●●** becomes **LC8K09105●●**.

*(1) Coordination tables between 9 and 12 A ratings according to number of operating cycles, see AC-1 curve on page A6/40.*

## Standard control circuit voltages (for other voltages, please consult your Regional Sales office)

### Coil voltage codes - a.c. (4)

**Reversing contactors LC2K** (0.8…1.15 Uc) *(0.85…1.1 Uc)*

| **Volts** | **12** | **20** | **24** (2) | **36** | **42** | **48** | **110** | **115** | **120** | **127** | **200/208** | | ***220/230*** | ***230*** | ***230/240*** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50/60 Hz | J7 | Z7 | B7 | C7 | D7 | E7 | F7 | FE7 | G7 | FC7 | L7 | | *M7* | *P7* | *U7* |
| **Volts** | **256** | **277** | ***380/400*** | | **400** | ***400/415*** | | **440** | **480** | **500** | **575** | **600** | ***660/690*** | | |
| 50/60 Hz | W7 | UE7 | *Q7* | | V7 | *N7* | | R7 | T7 | S7 | SC7 | X7 | *Y7* | | |

Up to and including 240 V, coil with integral suppression device available: add **2** to the code required. Example: **J72**.

**Reversing contactors LC8K** (0.8…1.1 Uc)

| **Volts** | **24** | **42** | **48** | **110** | **115** | **220** | **230/240** |
|---|---|---|---|---|---|---|---|
| 50/60 Hz | B7 | D7 | E7 | F7 | FE7 | M7 | U7 |

*(2) For mains supplies with a high level of interference (voltage surge > 800 V), use a suppressor module **LA4KE1FC** (50…129 V) or **LA4KE1UG** (130…250 V), see page B8/49.*
*(3) For **LC●K●●●●3 / LP●K●●●●3** with spring terminal, Ith max = 10 A.*
*(4) (0.8…1.15 Uc) for single voltage coil; (0.85…1.1 Uc) for dual voltage coil, exemple 200/208 V AC.*

Characteristics: pages B8/91 to B8/94
Dimensions: page B8/97
Schemes: page B8/98
Click **HERE** for access to online contactor selector

**Warning: reversing contactors LP2K0910●● and LP2K0901●● are pre-wired for reverse motor operation as standard.**
Reversing contactor selection according to utilisation category, see pages A6/40 and A6/41.
Integral mechanical interlock.
**It is essential to link the contacts of the electrical interlock.**
Mounting on 35 mm ⎓ rail or Ø4 screw fixing.
Screws in the open "ready-to-tighten" position.
Add-on auxiliary contact blocks and accessories, see pages B8/48 to B8/50.

## 3 or 4-pole reversing contactors - Load control - 20 A in category AC-1 - d.c. coil (1)

| Non-inductive loads Category AC-1 Maximum current at θ ≤ 50 °C | Number of poles | | Instantaneous auxiliary contacts per contactor | | | Basic reference, to be completed by adding the voltage code (2) |
|---|---|---|---|---|---|---|
| A | | | | | | |
| **Screw clamp connections** | | | | | | |
| 20 | 3 | – | 1 | – | | **LP2K0910●●** |
| | | | | | or | **LP2K1210●●** |
| | 3 | – | – | 1 | | **LP2K0901●●** |
| | | | | | or | **LP2K1201●●** |
| | 4 | – | – | – | | **LP2K09004●●** |
| | | | | | or | **LP2K12004●●** |

**Spring terminal connections (3)**
In the references selected above, insert a figure **3** before the voltage code.
Example: **LP2K0910●●** becomes **LP2K09103●●**.

**Faston connectors, 1 x 6.35 or 2 x 2.8**
In the references selected above, insert a figure **7** before the voltage code.
Example: **LP2K0910●●** becomes **LP2K09107●●**.

**Solder pins for printed circuit boards**
In the references selected above, insert a figure **5** before the voltage code.
Example: **LP2K0910●●** becomes **LP2K09105●●**.

## 3 or 4-pole reversing contactors - 20 A / AC-1 - d.c. low consumption coil (1)

Compatible with programmable controller outputs.
Wide range coil (0.7…1.30 Uc), suppressor fitted as standard, consumption 1.8 W.

| | | | | | | |
|---|---|---|---|---|---|---|
| **Screw clamp connections** | | | | | | |
| 20 | 3 | – | 1 | – | | **LP5K0910●●●** |
| | | | | | or | **LP5K1210●●●** |
| | 3 | – | – | 1 | | **LP5K0901●●●** |
| | | | | | or | **LP5K1201●●●** |
| | 4 | – | – | – | | **LP5K09004●●●** |
| | | | | | or | **LP5K12004●●●** |

**Spring terminal connections**
In the references selected above, insert a figure **3** before the voltage code.
Example: **LP5K0910●●** becomes **LP5K09103●●**.

**Faston connectors, 1 x 6.35 or 2 x 2.8**
In the references selected above, insert a figure **7** before the voltage code.
Example: **LP5K0910●●** becomes **LP5K09107●●**.

**Solder pins for printed circuit boards**
In the references selected above, insert a figure **5** before the voltage code.
Example: **LP5K0910●●** becomes **LP5K09105●●**.

*(1) Coordination tables between 9 and 12 A ratings according to number of operating cycles, see AC-1 curve on page A6/40.*

## Standard control circuit voltages (for other voltages, please consult your Regional Sales office)

**Coil voltage codes - d.c.** (reversing contactors LP2K: 0.8…1.15 Uc)

| Volts ⎓ | 12 | 20 | 24 (2) | 36 | 48 | 60 | 72 | 100 | 110 | 125 | 155 | 174 | 200 | 220 | 230 | 240 | 250 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Code | JD | ZD | BD | CD | ED | ND | SD | KD | FD | GD | PD | QD | LD | MD | MPD | MUD | UD |

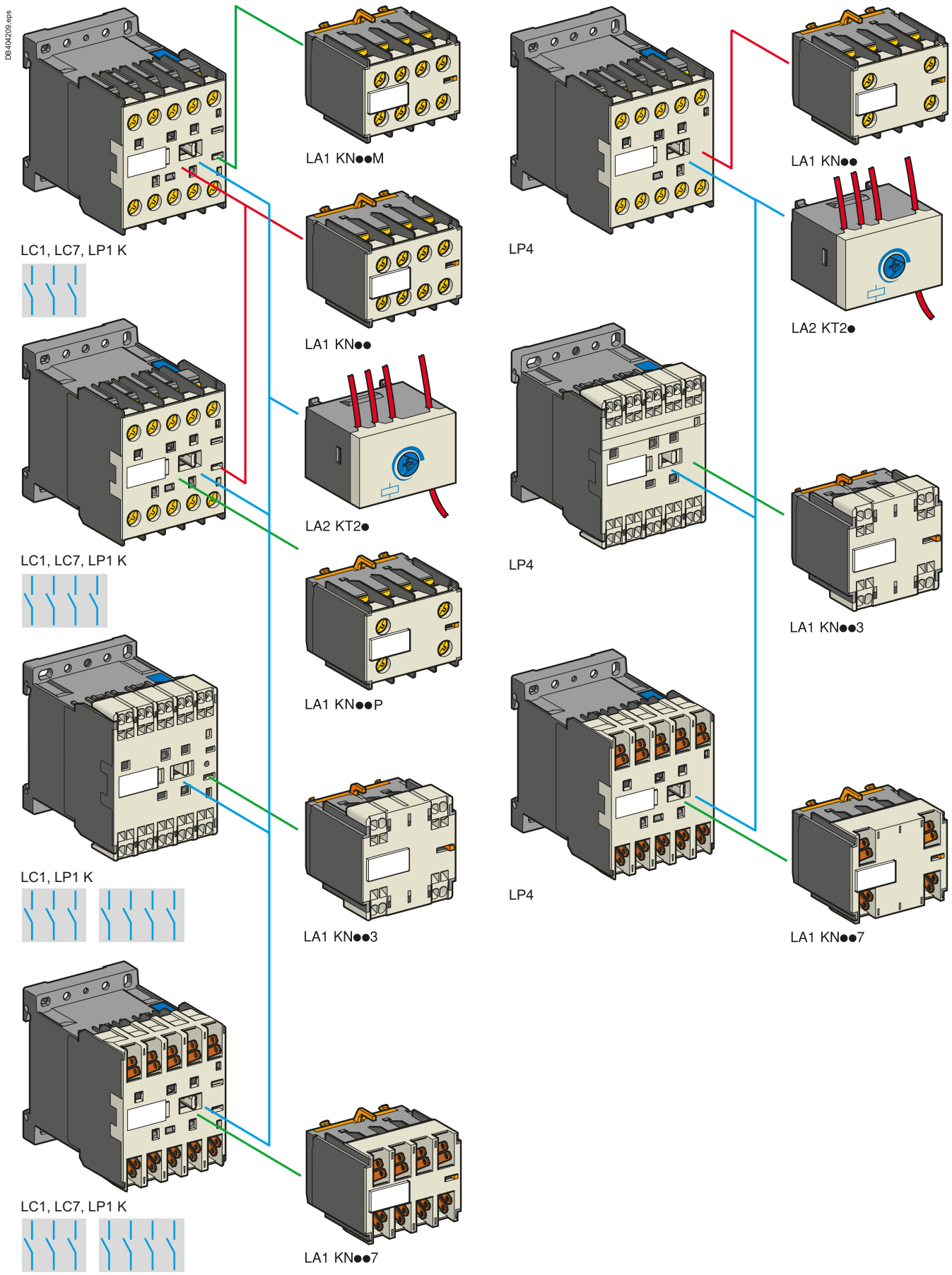
Coil with integral suppression device available: add **3** to the code required. Example: **JD3**.

**Coil voltage codes - low consumption d.c.** (reversing contactors LP5K: 0.7…1.3 Uc)

| Volts ⎓ | 12 | 20 | 24 | 48 | 72 | 110 | 120 |
|---|---|---|---|---|---|---|---|
| Code | JW3 | ZW3 | BW3 | EW3 | SW3 | FW3 | GW3 |

Coil with integral suppression device fitted as standard, by bi-directional peak limiting diode.
*(2) For **LP2K** only, when connecting an electronic sensor or timer in series with the contactor coil, select a 20 V coil (∼ control circuit voltage code Z7, ⎓ control circuit voltage code ZD) so as to compensate for the incurred voltage drop.*
*(3) For **LC●K●●●●3** / **LP●K●●●●3** with spring terminal, Ith max = 10 A.*

Characteristics: pages B8/91 to B8/94
Dimensions: page B8/97
Schemes: page B8/98
Click **HERE** for access to online contactor selector


DB404209.eps
LC1, LC7, LP1 K
LA1 KN●●M
LA1 KN●●
LA2 KT2●
LC1, LC7, LP1 K
LA2 KT2●
LA1 KN●●P
LA1 KN●●3
LC1, LP1 K
LA1 KN●●3
LP4
LA1 KN●●7
LC1, LC7, LP1 K
LA1 KN●●7
LP4
LA1 KN●●
LP4
LA1 KN●●3

# Product references

PB121395.eps


*LA1KN22*

PB111987.eps


*LA1KN223*

PB111988.eps


*LA1KN227*

## Instantaneous auxiliary contact blocks

**Recommended for standard applications. Clip-on front mounting, 1 block per contactor**

| Connection | For use on contactors | Composition | | Reference |
|---|---|---|---|---|
| | | ⌐ | ⌐ | |
| Screw clamp terminals | All products with screw clamp terminals | 2 | – | **LA1KN20** |
| | | – | 2 | **LA1KN02** |
| | | 1 | 1 | **LA1KN11** |
| | All products with screw clamp terminals except low consumption | 4 | – | **LA1KN40** |
| | | 3 | 1 | **LA1KN31** |
| | | 2 | 2 | **LA1KN22** |
| | | 1 | 3 | **LA1KN13** |
| | | – | 4 | **LA1KN04** |
| Spring terminals | All products with spring terminals | 2 | – | **LA1KN203** |
| | | – | 2 | **LA1KN023** |
| | | 1 | 1 | **LA1KN113** |
| | All products with spring terminals except low consumption | 4 | – | **LA1KN403** |
| | | 3 | 1 | **LA1KN313** |
| | | 2 | 2 | **LA1KN223** |
| | | 1 | 3 | **LA1KN133** |
| | | – | 4 | **LA1KN043** |
| Faston connectors, 1 x 6.35 or 2 x 2.8 | All products with Faston connectors | 2 | – | **LA1KN207** |
| | | – | 2 | **LA1KN027** |
| | | 1 | 1 | **LA1KN117** |
| | All products with Faston connectors except low consumption | 4 | – | **LA1KN407** |
| | | 3 | 1 | **LA1KN317** |
| | | 2 | 2 | **LA1KN227** |
| | | 1 | 3 | **LA1KN137** |
| | | – | 4 | **LA1KN047** |

**With terminal referencing to standard EN 50012. Clip-on front mounting, 1 block per contactor**

| | | | | |
|---|---|---|---|---|
| Screw clamp terminals with referencing conforming to standard EN 50012 | All 3-pole + N/O products with screw clamp terminals except LP4 and LP5K12 | – | 2 | **LA1KN02M** |
| | | 1 | 1 | **LA1KN11M** |
| | All 3-pole + N/O products with screw clamp terminals except LP4 or LP5K06, K09 and K12 | 3 | 1 | **LA1KN31M** |
| | | 2 | 2 | **LA1KN22M** |
| | | 1 | 3 | **LA1KN13M** |
| | All 4-pole products with screw clamp terminals except LP4 or LP5K12 | 1 | 1 | **LA1KN11P** |
| | All 4-pole products with screw clamp terminals except LP4 or LP5K09 and K12 | 2 | 2 | **LA1KN22P** |

## Electronic time delay auxiliary contact blocks

Relay output with common point changeover contact, ∼ or ⎓ 240 V, 2 A maximum.
Control voltage 0.85…1.1 Uc.
Maximum switching capacity 250 VA or 150 W.
Operating temperature -10…+60 °C.
Reset time: 1.5 s during the time delay period, 0.5 s after the time delay period.

**Clip-on front mounting, 1 block per contactor**

| Voltage | Type | Timing range | Composition | Reference |
|---|---|---|---|---|
| | | | ⌐ | |
| V | | s | | |
| ∼ or ⎓ 24…48 | On-delay | 1…30 | 1 | **LA2KT2E** |
| ∼ 110…240 | On-delay | 1…30 | 1 | **LA2KT2U** |

Characteristics: page B8/94
Dimensions: pages B8/95 and B8/97
Schemes: pages B8/96 and B8/98

## Product references

PB111989_R.eps

*LA4K●●●*

### References

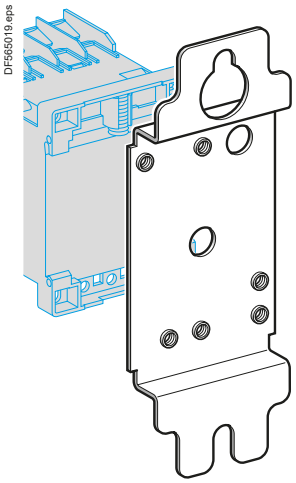
| Mounting and connection | Type | For voltages | Sold in lots of | Unit reference |
|---|---|---|---|---|
| Clip-on fixing on the front of contactors LC1 and LP1, with locating device. No tools required. | Varistor (1) | ∼ and ⎓ 12…24 V | 5 | **LA4KE1B** |
| | | ∼ and ⎓ 32…48 V | 5 | **LA4KE1E** |
| | | ∼ and ⎓ 50…129 V | 5 | **LA4KE1FC** |
| | | ∼ and ⎓ 130…250 V | 5 | **LA4KE1UG** |
| | Diode + Zener diode (2) | ⎓ 12…24 V | 5 | **LA4KC1B** |
| | | ⎓ 32…48 V | 5 | **LA4KC1E** |
| | RC (3) | ∼ 110…250 V | 5 | **LA4KA1U** |

*(1) Protection provided by limiting the transient voltage to 2 Uc max.*
*Maximum reduction of transient voltage peaks.*
*Slight increase in drop-out time (1.1 to 1.5 times the normal time).*
*(2) No overvoltage or oscillating frequency.*
*Polarised component.*
*Slight increase in drop-out time (1.1 to 1.5 times the normal time).*
*(3) Protection by limiting the transient voltage to 3 Uc max. and limitation of the oscillating frequency.*
*Slight increase in drop-out time (1.2 to 2 times the normal time).*



Characteristics: page B8/94
Dimensions: pages B8/95 and B8/97
Schemes: pages B8/96 and B8/98

## Product references




*DX1AP25*


*LA9D973*

### Mounting and marking accessories

| Description | Application | | Sold in lots of | Unit reference |
|---|---|---|---|---|
| Mounting plates (1) | For fixing on 1 ⊔ rail | Clip-on | 1 | **LA9D973** |
| | For fixing on 2 ⊔ rails | 110/120 mm fixing centres | 10 | **DX1AP25** |
| Marker holder | Clip-on | Onto front of contactor | 100 | **LA9D90** |
| Clip-in markers | 4 maximum per contactor | Strips of 10 identical numbers 0…9 | 25 | **AB1R●** (2) |
| | | Strips of 10 identical letters A…Z | 25 | **AB1G●** (2) |


*LA9E01*

### Connection accessories

| Description | Application | | Sold in lots of | Unit preference |
|---|---|---|---|---|
| Paralleling links | For 2 poles | With screw clamps | 4 | **LA9E01** |
| | For 4 poles | With screw clamps | 2 | **LA9E02** |
| Set of 6 power connections | For 3-pole reversing contactors for motor control | For contactors with screw clamp terminals | 100 | **LA9K0969** |

*(1) Order 1 mounting plate for fixing a contactor and 2 mounting plates for fixing a reversing contactor.*
*(2) Complete the reference by replacing the dot with the required character.*




**Control Panel Technical Guide:**
Mounting and wiring accessories for TeSys D, K, F - Star Delta, reverser, low-high speed control motor starters and changeover applications - Product references and details on all kits and wiring accessories.

> Ref. Document: CPTG011_EN

> Click on QR code to download

Dimensions:
pages B8/95 and B8/97

# Product references

Mini-contactors 25 and 47 mm pitch for use in modular panels.
- Mounting on 35 mm ⊔ rail or fixing by four Ø4 screws, except for LC1SKGC200.
- Connection by connectors.
- Mini-contactor fitted with transparent, sealable protective cover to prevent front face access.

PB111643.eps

*LC1SKGC200*

## Mini-contactors, width 27 mm

| Standard power ratings of 3-phase motors 50/60 Hz in category AC-3 | | | Rated operational current in AC-3 up to 400 V | Non inductive loads category AC-1 maximum current θ ≤ 50 °C | No. of poles | | | Basic reference, to be completed by adding the voltage code (1) |
|---|---|---|---|---|---|---|---|---|
| 220 V 230 V | 380 V 415 V | 660 V 690 V | | | | | | |
| kW | kW | kW | A | A | | | | |
| – | – | – | 5 | 20 | 2 | – | – | **LC1SKGC200●●** |

PB111645_R.eps

*LC1SKGC400*

## Mini-contactors, width 45 mm

| Standard power ratings of 3-phase motors 50/60 Hz in category AC-3 | | | Rated operational current in AC-3 up to 400 V | Non inductive loads category AC-1 maximum current θ ≤ 50 °C | No. of poles | | | Basic reference, to be completed by adding the voltage code (1) |
|---|---|---|---|---|---|---|---|---|
| 220 V 230 V | 380 V 415 V | 660 V 690 V | | | | | | |
| kW | kW | kW | A | A | | | | |
| 1.1 | 4 | 4 | 9 | 20 | 3 | 1 | – | **LC1SKGC310●●** |
| | | | | | 3 | – | 1 | **LC1SKGC301●●** |
| | | | | | 4 | – | – | **LC1SKGC400●●** |

*(1) Standard control circuit voltages (for other voltages, please consult your Regional Sales Office):*

| Volts ∼ 50/60 Hz | 24 | 48 | 110 | 120 | 220 | 230 | 240 | 380 | 400 |
|---|---|---|---|---|---|---|---|---|---|
| Code | B7 | E7 | F7 | G7 | M7 | P7 | U7 | Q7 | V7 |

Contactors

## Product references

PB111640_R.eps


*LA4SK●1●*

### Suppressor modules

**Connection without need for tools by clipping onto right-hand side of contactor**

| For use on contactors | Type | For voltages | Sold in lots of | Unit reference |
|---|---|---|---|---|
| LC1SKGC | Varistor (1) | ∿ and ⎓ 24…48 V | 10 | **LA4SKE1E** |
| | | ∿ and ⎓ 110…250 V | 10 | **LA4SKE1U** |
| | Diode (2) | ⎓ 24…250 V | 10 | **LA4SKC1U** |

*(1) Protection provided by limiting the transient voltage to 2 Uc max.*
*Maximum reduction of transient voltage peaks.*
*Slight increase in drop-out time (1.1 to 1.5 times the normal time).*
*(2) No overvoltage or oscillating frequency.*
*Slight increase in drop-out time (1.1 to 1.5 times the normal time).*



Characteristics:
pages B8/99 to B8/101

Dimensions, schemes:
page B8/103


PB113075_12.eps

*GC2520*


PB113078_18.eps

*GC4040*


PB113079_24.eps

*GC10020*

## TeSys GC Contactors - modular - 17.5 mm pitch for modular panels

| No. of poles | | Number of 17.5 mm modules | Commercial reference 50 Hz coil - different voltages | | | | | Sold in lots of |
|---|---|---|---|---|---|---|---|---|
| | | | 12 V | 24 V | 48 V | 110 V | 220/240 V | |
| **Maximum current rating category AC-7a - 16 A** | | | | | | | | |
| 1 | – | 1 | **GC1610J5** | **GC1610B5** | **GC1610E5** | **GC1610F5** | **GC1610M5** ★ | 12 |
| 1 | 1 | 1 | **GC1611J5** | **GC1611B5** | **–** | **GC1611F5** | **GC1611M5** ★ | 12 |
| 2 | – | 1 | **GC1620J5** | **GC1620B5** | **GC1620E5** | **GC1620F5** ★ | **GC1620M5** ★ | 12 |
| 2 | 2 | 2 | **–** | **GC1622B5** | **GC1622E5** | **GC1622F5** ★ | **GC1622M5** | 6 |
| 3 | – | 2 | **–** | **–** | **–** | **–** | **GC1630B5** **GC1630M5** ★ | 6 |
| 4 | – | 2 | **–** | **GC1640B5** | **–** | **GC1640F5** | **GC1640M5** ★ | 6 |
| **Maximum current rating category AC-7a - 25 A** | | | | | | | | |
| – | 2 | 1 | **–** | **GC2502B5** | **GC2502E5** | ★ | **GC2502M5** ★ | 12 |
| – | 4 | 2 | **–** | **GC2504B5** | **GC2504E5** | ★ | **GC2504M5** ★ | 6 |
| 1 | – | 1 | **–** | **GC2510B5** | **–** | **–** | **GC2510M5** ★ | 12 |
| 1 | 1 | 1 | **–** | **GC2511B5** | **–** | **GC2511F5** | **GC2511M5** ★ | 12 |
| 2 | – | 1 | **GC2520J5** | **GC2520B5** | **GC2520E5** | **GC2520F5** ★ | **GC2520M5** ★ | 12 |
| 2 | 2 | 2 | **–** | **GC2522B5** | **GC2522E5** | **GC2522F5** | **GC2522M5** ★ | 6 |
| 3 | – | 2 | **–** | **GC2530B5** | **–** | **GC2530F5** | **GC2530M5** ★ | 6 |
| 3 | 1 | 2 | **–** | **–** | **–** | **–** | **GC2531M5** | 6 |
| 4 | – | 2 | **GC2540J5** | **GC2540B5** | **GC2540E5** | **GC2540F5** ★ | **GC2540M5** ★ | 6 |
| **Maximum current rating category AC-7a - 40 A** | | | | | | | | |
| – | 2 | 2 | **–** | **GC4002B5** | **–** | **–** | **GC4002M5** ★ | 6 |
| – | 4 | 3 | **–** | **GC4004B5** | **–** | **GC4004F5** ★ | **GC4004M5** | 4 |
| 1 | 1 | 2 | **–** | **GC4011B5** | **–** | **–** | **GC4011M5** ★ | 6 |
| 2 | – | 2 | **–** | **GC4020B5** | **–** | **GC4020F5** ★ | **GC4020M5** ★ | 6 |
| 2 | 2 | 3 | **–** | **–** | **–** | **–** | **GC4022M5** | 4 |
| 3 | – | 3 | **–** | **GC4030B5** | **–** | **GC4030F5** | **GC4030M5** ★ | 4 |
| 4 | – | 3 | **–** | **GC4040B5** | **GC4040E5** | **GC4040F5** ★ | **GC4040M5** ★ | 4 |
| **Maximum current rating category AC-7a - 63 A** | | | | | | | | |
| – | 2 | 2 | **–** | **–** | **–** | **–** | **GC6302M5** | 6 |
| – | 4 | 3 | **–** | **GC6304B5** | **–** | **–** | **GC6304M5** | 4 |
| 1 | 1 | 2 | **–** | **–** | **–** | **–** | **GC6311M5** | 6 |
| 2 | – | 2 | **–** | **–** | **–** | **–** | **GC6320M5** | 6 |
| 2 | 2 | 3 | **–** | **–** | **–** | **GC6322F5** | **GC6322M5** | 4 |
| 3 | – | 3 | **–** | **GC6330B5** | **–** | **GC6330F5** | **GC6330M5** ★ | 4 |
| 4 | – | 3 | | **GC6340B5** | **GC6340E5** | **GC6340F5** ★ | **GC6340M5** ★ | 4 |
| **Maximum current rating category AC-7a - 100 A** | | | | | | | | |
| 2 | – | 3 | **–** | **–** | **–** | **–** | **GC10020M5** | 4 |
| 4 | – | 6 | **–** | **GC10040B5** | **–** | **–** | **GC10040M5** ★ | 2 |

★ *for 60 Hz coil replace last figure 5 by 6.*

Characteristics:
pages B8/104 to B8/110

Dimensions, schemes:
pages B8/111 to B8/113

## Product references

PB113083_13.eps

*GY2520M5*

PB113087_26.eps

*GY6340M5*

### TeSys GY "dual tariff" contactors - modular - 17.5 mm pitch for modular panels

| No. of poles | | Number of 17.5 mm modules | Commercial reference 50 Hz coil - different voltages | | | | | Sold in lots of |
|---|---|---|---|---|---|---|---|---|
| | | | 12 V | 24 V | 48 V | 110 V | 220/240 V | |
| **Maximum current rating category AC-7a - 16 A** | | | | | | | | |
| 2 | – | 1 | – | **GY1620B5** | | – | **GY1620M5** | 12 |
| 4 | – | 2 | – | – | – | – | **GY1640M5** | 6 |
| **Maximum current rating category AC-7a - 25 A** | | | | | | | | |
| 2 | – | 1 | – | **GY2520B5** | – | – | **GY2520M5** ★ | 12 |
| 3 | – | 2 | – | – | – | – | **GY2530M5** | 6 |
| 4 | – | 2 | – | **GY2540B5** | – | – | **GY2540M5** | 6 |
| **Maximum current rating category AC-7a - 40 A** | | | | | | | | |
| 2 | – | 2 | – | – | – | – | **GY4020M5** | 6 |
| 3 | – | 3 | – | – | – | – | **GY4030M5** | 4 |
| 4 | – | 3 | – | **GY4040B5** | – | – | **GY4040M5** | 4 |
| **Maximum current rating category AC-7a - 63 A** | | | | | | | | |
| 2 | – | 2 | – | – | – | – | **GY6320M5** | 6 |
| 4 | – | 3 | – | **GY6340B5** | – | – | **GY6340M5** | 4 |

★ *for 60 Hz coil replace last figure 5 by 6.*




Characteristics: pages B8/114 to B8/116

Dimensions, schemes: pages B8/117 and B8/118

Schemes: page B8/118

# Product references

PB121399.eps

*GF1610M7*

## TeSys GF impulse relays - modular - 17.5 mm pitch for modular panels

| Maximum current rating category AC-1 | Composition | | Coil voltages ~ 50/60 Hz | Coil voltages ⎓ | Sold in lots of | Unit reference |
|---|---|---|---|---|---|---|
| A | | | V | V | | |
| 16 | 1 | – | 12 | 6 | 12 | **GF1610J7** |
| | | | 24 | 12 | 12 | **GF1610B7** |
| | | | 48 | 24 | 12 | **GF1610E7** |
| | | | 110 | 48 | 12 | **GF1610F7** |
| | | | 220 | – | 12 | **GF1610M7** |
| | | | 230/240 | 110 | 12 | **GF1610U7** |
| | 2 | – | 12 | 6 | 12 | **GF1620J7** |
| | | | 24 | 12 | 12 | **GF1620B7** |
| | | | 48 | 24 | 12 | **GF1620E7** |
| | | | 110 | 48 | 12 | **GF1620F7** |
| | | | 220 | – | 12 | **GF1620M7** |
| | | | 230/240 | 110 | 12 | **GF1620U7** |
| | 1 | 1 | 12 | 6 | 12 | **GF1611J7** |
| | | | 24 | 12 | 12 | **GF1611B7** |
| | | | 48 | 24 | 12 | **GF1611E7** |
| | | | 110 | 48 | 12 | **GF1611F7** |
| | | | 220 | – | 12 | **GF1611M7** |
| | | | 230/240 | 110 | 12 | **GF1611U7** |



Characteristics:
pages B8/119 to B8/122

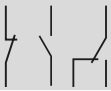
Dimensions, schemes:
page B8/123

# Product references

PB113093_13.eps

*GAP23*

## Instantaneous auxiliary contact blocks

| Number of contacts | Number of poles | | | Reference |
|---|---|---|---|---|
| |  | | | |
| 2 | 1 | 1 | – | **GAC0521** |
| | – | 2 | – | **GAC0531** |
| | – | – | 1 | **GAC0511** |

PB104483-40.eps

*GAC5*

PB104486_34.eps

*A9A15922*

PB104487_49.eps

*A9A15923*

## Accessories

| Description | For use on contactor | Number of modules | Operational voltage in V | Sold in lots of | Unit reference |
|---|---|---|---|---|---|
| Coil suppression blocks comprising 2 RC circuits | – | 1 | 12…48 | 1 | **GAP21** |
| | | | 110…240 | 1 | **GAP23** |
| Ventilation 1/2 module clips onto ⊔ rail | – | 1/2 | – | 10 | **GAC5** |
| Set of screw shields (10 top parts + 10 bottom parts) | 40 or 63 A 2 contacts | 2 | – | 1 | **A9A15922** |
| | 40 or 63 A 3 or 4 contacts | 3 | – | 1 | **A9A15923** |



Dimensions, schemes: page B8/112
Schemes: page B8/113

TeSys D Green, D, SK, K, SKGC, GC, GY, GF

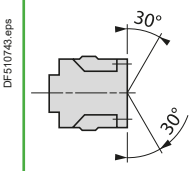
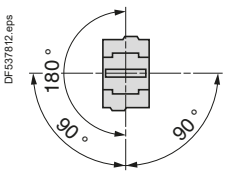
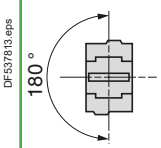
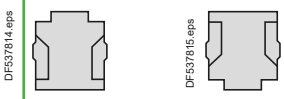
# Technical Data for Designers



Contents

# Characteristics

## Environment

| Contactor type LC1 | | | D09…D18 DT20 and DT25 | D25…D38 DT32 and DT40 | D40A…D80A DT60A and DT80A | D80…D95 (1) | D115 and D150 |
|---|---|---|---|---|---|---|---|
| Rated insulation voltage (Ui) | Conforming to IEC 60947-4-1, overvoltage category III, degree of pollution: 3 | V | 690 | | | 1000 | |
| | Conforming to UL, CSA | V | 600 | | | | |
| Rated impulse withstand voltage (Uimp) | Conforming to IEC 60947 | kV | 6 | | | 8 | |
| Conforming to standards | | | IEC/EN 60947-4-1, IEC/EN 60947-5-1, UL 60947-4-1, CSA C22.2 n° 60947-4-1, UL 60947-5-1, CSA C22.2 n° 60947-5-1, GB/T 14048.4 | | | | |
| Product certifications (1) | | | UL, CSA, CCC, EAC, CB certification, EU-MR-RO by DNV-GL | | | UL, CSA, CCC, EAC, CB certification, DNV-GL, RINA, BV, LRoS | |
| Degree of protection (2) (front face) | Conforming to IEC 60529 | | | | | | |
| | Power circuit connections | | Protection against direct finger contact IP20 | | | | |
| | Coil connection | | Protection against direct finger contact IP20 | | | | |
| Climatic withstand | | | According to IACS E10 and IEC 60947-1 Annex Q category D | | | According to IACS E10 | |
| Ambient air temperature around the device | Storage | °C | -60…+80 | | | | |
| | Operation (3) | °C | -40...+60 | | | | |
| | Allowed with derating (3) (4) | °C | +60…+70 at Uc to 1.●● x Uc | | | | |
| Maximum operating altitude | Without derating | m | 3000 | | | | |
| Operating positions (5) | Without derating in the following positions | | AC and DC coils AC/DC and "BBE" coils   | | AC coils AC/DC and "BBE" coils   | | DC coils   |
| | Positions that are not allowed | | For ⎓ contactors LC1D09 to LC1D150.   | | | | |
| Flame resistance | Conforming to IEC 60695-2-11 | °C | 850 | | | | |
| Shock resistance (6) 1/2 sine wave = 11 ms | Contactor open | | 10 gn | 8 gn | 10 gn | 8 gn | 6 gn |
| | Contactor closed | | 15 gn | 15 gn | 15 gn | 10 gn | 15 gn |
| Vibration resistance (6) 5…300 Hz | Contactor open | | 2 gn | | | | |
| | Contactor closed | | 4 gn | 4 gn | 4 gn | 3 gn | 4 gn |

*(1) Contactor **LC1D95** with d.c. coil is not UL/CSA certified.*
*(2) Protection provided for the cabling c.s.a.'s indicated on the next page and for connection by cable. For lug type: add a protective cover.*
*(3) As per IEC60947-4-1, operating time and drop out voltage given and tested for -5...+40 °C.*
*(4) Refer to operational current in AC1 (page A6/40).*
*(5) When mounting on a vertical rail, use a stop.*
*(6) Without modifying the power contact states, in the most unfavourable direction (coil energised at Ue). In case of vibration, it is recommended to mount the devices separately by screws on metal plate.*

References: pages B8/4 to B8/14
Dimensions: pages B8/72 to B8/78
Schemes: pages B8/79 and B8/80

# Characteristics

## Pole characteristics TeSys D, TeSys D Green

| Contactor type | | | LC1 | | D09 (3P) | DT20 D098 | D12 (3P) | DT25 D128 | D18 (3P) | DT32 D188 | D25 (3P) | DT40 D258 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rated operational current (Ie) (Ue ≤ 440 V) | In AC-3, θ ≤ 60 °C | | | A | 9 | | 12 | | 18 | | 25 | |
| | In AC-1, θ ≤ 60 °C | | | A | 25 (1) | 20 | 25 (1) | 25 | 32 (1) | 32 | 40 (1) | 40 |
| Rated operational voltage (Ue) | Up to | | | V | 690 | | 690 | | 690 | | 690 | |
| Frequency limits | Of the operational current | | | Hz | 25…400 | | 25…400 | | 25…400 | | 25…400 | |
| Conventional thermal current (Ith) | θ ≤ 60 °C | | | A | 25 (1) | 20 | 25 (1) | 25 | 32 (1) | 32 | 40 (1) | 40 |
| Rated making capacity (440 V) | Conforming to IEC 60947 | | | A | 250 | | 250 | | 300 | | 450 | |
| Rated breaking capacity (440 V) | Conforming to IEC 60947 | | | A | 250 | | 250 | | 300 | | 450 | |
| Permissible short time rating No current flowing for preceding 15 minutes with θ ≤ 40 °C | For 1 s | | | A | 210 | | 210 | | 240 | | 380 | |
| | For 10 s | | | A | 105 | | 105 | | 145 | | 240 | |
| | For 1 min | | | A | 61 | | 61 | | 84 | | 120 | |
| | For 10 min | | | A | 30 | | 30 | | 40 | | 50 | |
| Fuse protection against short-circuits (U ≤ 690 V) | Without thermal overload relay, gG fuse | type 1 | | A | 25 | | 40 | | 50 | | 63 | |
| | | type 2 | | A | 20 | | 25 | | 35 | | 40 | |
| | With thermal overload relay | | | A | See pages B11/4 and B11/5, for aM or gG fuse ratings corresponding to the associated thermal overload relay | | | | | | | |
| Average impedance per pole | At Ith and 50 Hz | | | mΩ | 2.5 | | 2.5 | | 2.5 | | 2 | |
| Power dissipation per pole for the above operational currents | AC-3 | | | W | 0.20 | | 0.36 | | 0.8 | | 1.25 | |
| | AC-1 | | | W | 1.56 | | 1.56 | | 2.5 | | 3.2 | |

## Control circuit characteristics, a.c. supply TeSys D

| | | | | | |
|---|---|---|---|---|---|
| Rated control circuit voltage (Uc) | | | 50/60 Hz | V | 12…690 |
| Control voltage limits | | | | | |
| | 50 or 60 Hz coils | Operation | | | – |
| | | Drop-out | | | – |
| | 50/60 Hz coils | Operation | | | 0.8…1.1 Uc on 50 Hz and 0.85…1.1 Uc on 60 Hz at 60 °C |
| | | Drop-out | | | 0.3…0.6 Uc at 60 °C |
| Average consumption at 20 °C and at Uc | ∼ 50 Hz | Inrush | 50 Hz coil | VA | – |
| | | | Cos φ | | 0.75 |
| | | | 50/60 Hz coil | VA | 70 |
| | | Sealed | 50 Hz coil | VA | – |
| | | | Cos φ | | 0.3 |
| | | | 50/60 Hz coil | VA | 7 |
| | ∼ 60 Hz | Inrush | 60 Hz coil | VA | – |
| | | | Cos φ | | 0.75 |
| | | | 50/60 Hz coil | VA | 70 |
| | | Sealed | 60 Hz coil | VA | – |
| | | | Cos φ | | 0.3 |
| | | | 50/60 Hz coil | VA | 7.5 |
| Heat dissipation | 50/60 Hz | | | W | 2…3 |
| Operating time (2) | | Closing "C" | | ms | 12…22 |
| | | Opening "O" | | ms | 4…19 |
| Mechanical durability in millions of operating cycles | | 50 or 60 Hz coil | | | – |
| | | 50/60 Hz coil on 50 Hz | | | 15 |
| Maximum operating rate at ambient temperature ≤ 60 °C | | In operating cycles per hour | | | 3600 |

*(1) Versions with spring terminal connections:*
*16 A for **LC1D093** and **LC1D123** (20 A possible with 2 x 2.5 mm² in parallel),*
*25 A for **LC1D183** to **LC1D323** (32 A possible for **LC1D183** connected with 2 x 4 mm² cables in parallel; 40 A possible for **LC1D253** and **LC1D323** connected with 2 x 4 mm² in parallel).*

*(2) The closing time "C" is measured from the moment the coil supply is switched on to closure of the main poles. The opening time "O" is measured from the moment the coil supply is switched off to the moment the main poles separate.*

References: pages B8/4 to B8/14
Dimensions: pages B8/72 to B8/78
Schemes: pages B8/79 and B8/80

| D32 | D38 | D40A | DT60A | D50A | D65A | D80A | DT80A | D80 | D95 | D115 | D150 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 32 | 38 | 40 | – | 50 | 65 | 66 | – | 80 | 95 | 115 | 150 |
| 50 (1) | 50 | 60 | 60 | 80 | 80 | 80 | 80 | 125 | 125 | 200 | 200 |
| 690 | 690 | 690 | 690 | 690 | 690 | 690 | 690 | 1000 | 1000 | 1000 | 1000 |
| 25…400 | 25…400 | 25…400 | 25…400 | 25…400 | 25…400 | 25…400 | 25…400 | 25…400 | 25…400 | 25…400 | 25…400 |
| 50 | 50 | 60 | 60 | 80 | 80 | 80 | 80 | 125 | 125 | 200 | 200 |
| 550 | 550 | 800 | 800 | 900 | 1000 | 1000 | 1000 | 1100 | 1100 | 1260 | 1660 |
| 550 | 550 | 800 | 800 | 900 | 1000 | 1000 | 1000 | 1100 | 1100 | 1100 | 1400 |
| 430 | 430 | 720 | 720 | 810 | 900 | 900 | 900 | 990 | 1100 | 1100 | 1400 |
| 260 | 310 | 320 | 320 | 400 | 640 | 640 | 640 | 640 | 800 | 950 | 1200 |
| 138 | 150 | 165 | 165 | 208 | 260 | 260 | 260 | 320 | 400 | 550 | 580 |
| 60 | 60 | 72 | 72 | 84 | 110 | 110 | 110 | 135 | 135 | 250 | 250 |
| 63 | 63 | 80 | 80 | 100 | 125 | 125 | 125 | 200 | 200 | 250 | 315 |
| 63 | 63 | 80 | 80 | 100 | 125 | 125 | 125 | 160 | 160 | 200 | 250 |
| See pages B11/4 and B11/5 for aM or gG fuse ratings corresponding to the associated thermal overload relay | | | | | | | | | | | |
| 2 | 2 | 1.5 | 1.6 | 1.5 | 1.5 | 1.5 | 1.6 | 0.8 | 0.8 | 0.6 | 0.6 |
| 2 | 3 | 2.4 | – | 3.7 | 6.3 | 6.3 | – | 5.1 | 7.2 | 7.9 | 13.5 |
| 5 | 5 | 5.4 | 5.8 | 9.6 | 9.6 | 9.6 | 10.2 | 12.5 | 12.5 | 24 | 24 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 12…690 | 12…690 | | | | | | | | | 24…500 | |
| – | – | | | | | | | 0.85…1.1 Uc at 55 °C | | | |
| – | – | | | | | | | 0.3…0.6 Uc at 55 °C | | 0.3…0.5 Uc at 55 °C | |
| 0.8…1.1 Uc on 50 Hz and 0.85…1.1 Uc on 60 Hz at 60 °C | 0.8…1.1 Uc on 50 Hz and 0.85…1.1 Uc on 60 Hz at 60 °C | | | | | | | 0.8…1.1 Uc on 50 Hz and 0.85…1.1 Uc on 60 Hz at 55 °C | | 0.8…1.15 Uc on 50/60 Hz at 55 °C | |
| 0.3…0.6 Uc at 60 °C | 0.3…0.6 Uc at 60 °C | | | | | | | 0.3…0.6 Uc at 55 °C | | 0.3…0.5 Uc at 55 °C | |
| – | – | | | | | | | 200 | | 300 | – |
| 0.75 | 0.75 | | | | | | | 0.75 | | 0.8 | 0.9 |
| 70 | 160 | | | | | | | 245 | | 280…350 | 280…350 |
| – | – | | | | | | | 20 | | 22 | – |
| 0.3 | 0.3 | | | | | | | 0.3 | | 0.3 | 0.9 |
| 7 | 15 | | | | | | | 26 | | 2…18 | 2…18 |
| – | – | | | | | | | 220 | | 300 | – |
| 0.75 | 0.75 | | | | | | | 0.75 | | 0.8 | 0.9 |
| 70 | 140 | | | | | | | 245 | | 280…350 | 280…350 |
| – | – | | | | | | | 22 | | 22 | – |
| 0.3 | 0.3 | | | | | | | 0.3 | | 0.3 | 0.9 |
| 7.5 | 13 | | | | | | | 26 | | 2…18 | 2…18 |
| 2…3 | 4…5 | | | | | | | 6…10 | | 3…8 | 3…4.5 |
| 12…22 | 12…26 | 12…26 | 12…26 | 12…26 | 12…26 | 12…26 | 20…35 | 20…35 | 20…50 | 20…35 | |
| 4…19 | 4…19 | 4…19 | 4…19 | 4…19 | 4…19 | 4…19 | 6…20 | 6…20 | 6…20 | 40…75 | |
| – | – | – | – | – | – | – | 10 | 10 | 8 | – | |
| 15 | 6 | 6 | 6 | 6 | 6 | 6 | 4 | 4 | 8 | 8 | |
| 3600 | 3600 | 3600 | 3600 | 3600 | 3600 | 3600 | 3600 | 3600 | 2400 | 1200 | |

## d.c. control circuit characteristics TeSys D

| Contactor type | | | | LC1D09…D38 LC1DT20…DT40 | LC1D40A…D80A LC1DT60A and DT80A | LC1 or LP1D80 LC1D95 | LC1D115 and LC1D150 |
|---|---|---|---|---|---|---|---|
| Rated control circuit voltage (Uc) | ⎓ | | V | 12…440 | 12…440 | | 24…440 |
| Rated insulation voltage | Conforming to IEC 60947-1 | | V | 690 | | | |
| | Conforming to UL, CSA | | V | 600 | | | |
| Control voltage limits | Operation | Standard coil | | 0.7…1.25 Uc at 60 °C | 0.75…1.25 Uc at 60 °C | 0.85…1.1 Uc at 55 °C | 0.75…1.2 Uc at 55 °C |
| | | Wide range coil | | – | – | 0.75…1.2 Uc at 55 °C | – |
| | Drop-out | | | 0.1…0.25 Uc at 60 °C | 0.1…0.3 Uc at 60 °C | 0.1…0.3 Uc at 55 °C | 0.15…0.4 Uc at 55 °C |
| Average consumption at 20 °C and at Uc | ⎓ | Inrush | W | 5.4 | 19 | 22 | 270…365 |
| | | Sealed | W | 5.4 | 7.4 | 22 | 2.4…5.1 |
| Operating time (1) average at Uc | Closing | "C" | ms | 63 ±15 % | 50 ±15% | 95…130 | 20…35 |
| | Opening | "O" | ms | 20 ±20 % | 20 ±20% | 20…35 | 40…75 |
| | | | | *Note: The arcing time depends on the circuit switched by the poles. For all normal 3-phase applications, the arcing time is less than 10 ms. The load is isolated from the supply after a time equal to the sum of the opening time and the arcing time.* | | | |
| Time constant (L/R) | | | ms | 28 | 34 | 75 | 25 |
| Mechanical durability at Uc | In millions of operating cycles | | | 30 | 10 | 10 | 8 |
| Maximum operating rate at ambient temperature ⩽ 60 °C | In operating cycles per hour | | | 3600 | 3600 | 3600 | 1200 |

## Low consumption control circuit characteristics TeSys D

| | | | | | |
|---|---|---|---|---|---|
| Rated insulation voltage | Conforming to IEC 60947-1 | | V | 690 | – |
| | Conforming to UL, CSA | | V | 600 | – |
| Maximum voltage | Of the control circuit on ⎓ | | V | 250 | – |
| Average consumption d.c. at 20 °C and at Uc | Wide range coil (0.8…1.25 Uc) | Inrush | W | 2.4 | – |
| | | Sealed | W | 2.4 | – |
| Operating time (1) at Uc and at 20 °C | Closing | "C" | ms | 77 ±15 % | – |
| | Opening | "O" | ms | 25 ±20 % | – |
| Voltage limits (θ ⩽ 60 °C) of the control circuit | Operation | | | 0.8 to 1.25 Uc | – |
| | Drop-out | | | 0.1…0.3 Uc | – |
| Time constant (L/R) | | | ms | 40 | – |
| Mechanical durability | In millions of operating cycles | | | 30 | – |
| Maximum operating rate at ambient temperature ⩽ 60 °C | In operating cycles per hour | | | 3600 | – |

*(1) The operating times depend on the type of contactor electromagnet and its control mode.*
*The closing time "C" is measured from the moment the coil supply is switched on to initial contact of the main poles.*
*The opening time "O" is measured from the moment the coil supply is switched off to the moment the main poles separate.*

Ref.
Contactors

## Wide band TeSys D Green AC/DC coil circuit characteristics

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Rated control circuit voltage (Uc) | | **V** | AC/DC 24...250 | | | | | | |
| | Operation | **V** | 0.85 Uc mini...1.1 Uc maxi at 60 °C in AC or DC<br>(BNE coil: 0.8 Uc mini at 24 VDC, 0.85 Uc mini in AC). | | | | | | |
| | Drop-out | **V** | 0.1 Uc maxi (e.g. 100 to 250 V = 25 V at 60 °C) | | | | | | |
| **Contactor type** | | | **LC1D09...D38** | | | **LC1D40A...D80A, LC1DT60A, LC1DT80A** | | | |
| **Coil code** | | | **BNE** | **EHE** | **KUE** | **BBE** | **BNE** | **EHE** | **KUE** |
| Rated control circuit voltage (Uc) | | | 24-60 | 48-130 | 100-250 | 24 DC | 24-60 | 48-130 | 100-250 |
| AC supply at 20°C | Consumption inrush | **VA** | 15 | 25 | 25 | - | 15 | 23 | 18 |
| | Consumption sealed | **VA** | 0.9 | 1.3 | 1.6 | - | 1 | 1.4 | 1.8 |
| | Consumption sealed | **mA** | 28 | 15 | 9 | - | 35 | 17 | 9.5 |
| | Heat dissipation | **W** | 0.6 | 0.8 | 1.1 | - | 0.8 | 0.9 | 1.3 |
| DC supply at 20°C | Consumption inrush | **W** | 14 | 24 | 18 | 11 | 16 | 19 | 14 |
| | Consumption sealed | **mA** | 23 | 13 | 7 | 20 | 30 | 15 | 7.7 |
| | Heat dissipation | **W** | 0.6 | 0.8 | 1.1 | 0.5 | 0.7 | 0.9 | 1.2 |
| Max operating time (2) | Closing "C" | **ms** | 50 ±5 ms | | | 60 ±5 ms | | | |
| | Opening "O" | **ms** | 20...90 ms | | | 20...80 ms | | | |
| EMC immunity | | | Meets IEC 60947-4-1 standard, table 14 | | | | | | |
| EMC emission | IEC 60947-4-1 §9.4.3 | | Environment A (1) | | | | | | |
| Maximum operating rate at ambient temperature ⩽ 60°C | | **cycle/h** | 3600 | | | | | | |
| Mechanical durability at Uc In millions of operating cycles | | | 15 | | | 6 | | | |

*(1) Use of this product in EMC environment B may require mitigation measures to avoid unwanted disturbance.*
*(2) The closing time "C" is measured from the moment the coil supply is switched on to closure of the main poles. The opening time "O" is measured from the moment the coil supply is switched off to the moment the main poles separates.*

Ref.
Contactors

# Characteristics

## Power circuit connections

### Screw clamp terminal connections TeSys D, TeSys D Green

| Contactor type | | LC1 | D09 and D12 DT20 and DT25 | D18 (3P) | D25 (3P) | D32 | D38 | D18 and D25 (4P) DT32 and DT40 | D40A to D80A DT60A and DT80A (1) | D80 and D95 | D115 and D150 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Tightening | | | Screw clamp terminals | | | | | Connector 2 inputs | Screw clamp terminals | Connector 1 input | Connector 2 inputs |
| Flexible cable without cable end | 1 conductor | mm² | 1…4 | 1.5…6 | 2.5…10 | | | 2.5…10 | 1…35 | 4…50 | 10…120 |
| | 2 conductors | mm² | 1…4 | 1.5…6 | 2.5…10 | | | 2.5…10 | 1…25 and 1…35 | 4…25 | 10…120 + 10…50 |
| Flexible cable with cable end | 1 conductor | mm² | 1…4 | 1…6 | 1…10 | | | 2.5…10 | 1…35 | 4…50 | 10…120 |
| | 2 conductors | mm² | 1…2.5 | 1…4 | 1.5…6 | | | 2.5…10 | 1…25 and 1…35 | 4…16 | 10…120 + 10…50 |
| Solid cable without cable end | 1 conductor | mm² | 1…4 | 1.5…6 | 1.5…10 | | | 2.5…16 | 1…35 | 4…50 | 10…120 |
| | 2 conductors | mm² | 1…4 | 1.5…6 | 2.5…10 | | | 2.5…16 | 1…25 and 1…35 | 6…25 | 10…120 + 10…50 |
| Screwdriver | Philips | | N° 2 | N° 2 | N° 2 | | | N° 2 | – | – | – |
| | Flat screwdriver Ø | | Ø6 | Ø6 | Ø6 | | | Ø6 | – | Ø6…Ø8 | – |
| Hexagonal key | | | – | – | – | | | – | 4 | 4 | 4 |
| Tightening torque | | N.m | 1.7 | 1.7 | 2.5 | | | 1.8 | 5: ⩽ 25 mm² 8: 35 mm² | 12 | 12 |

### Spring terminal connections (2) TeSys D

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Flexible cable without cable end | 1 conductor | mm² | 2.5 (4: DT25) | 4 | 4 | 4 | – | 10 | – | – | |
| | 2 conductors | mm² | 2.5 (except DT25) | 4 | 4 | 4 | – | – | – | – | |

### Connection by bars or lugs TeSys D

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Bar c.s.a. | | | – | – | – | – | | – | – | 3 x 16 | 5 x 25 |
| Lug external Ø | | mm | 8 | 8 | 10 | 10 | | 8 | 16.5 | 17 | 25 |
| Ø of screw | | mm | M3.5 | M3.5 | M4 | M4 | | M3.5 | M6 | M6 | M8 |
| Screwdriver | Pozidriv | | N° 2 | N° 2 | N° 2 | N° 2 | | N° 2 | – | – | – |
| | Flat screwdriver Ø | | Ø6 | Ø6 | Ø6 | Ø6 | | Ø6 | – | Ø8 | – |
| Key for hexagonal headed screw | | | – | – | – | – | | – | 10 | 10 | 13 |
| Tightening torque | | N.m | 1.7 | 1.7 | 2.5 | 2.5 | | 1.8 | 6 | 9 | 12 |

## Control circuit connections

### Connection by cable (tightening via screw clamps) TeSys D, TeSys D Green

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Flexible cable without cable end | 1 conductor | mm² | 1…4 | 1…4 | 1…4 | 1…4 | | 1…4 | 1…4 | 1…4 | 1…2.5 |
| | 2 conductors | mm² | 1…4 | 1…4 | 1…4 | 1…4 | | 1…4 | 1…4 | 1…4 | 1…2.5 |
| Flexible cable with cable end | 1 conductor | mm² | 1…4 | 1…4 | 1…4 | 1…4 | | 1…4 | 1…4 | 1…2.5 | 1…2.5 |
| | 2 conductors | mm² | 1…2.5 | 1…2.5 | 1…2.5 | 1…2.5 | | 1…2.5 | 1…2.5 | 1…2.5 | 1…2.5 |
| Solid cable without cable end | 1 conductor | mm² | 1…4 | 1…4 | 1…4 | 1…4 | | 1…4 | 1…4 | 1…4 | 1…2.5 |
| | 2 conductors | mm² | 1…4 | 1…4 | 1…4 | 1…4 | | 1…4 | 1…4 | 1…4 | 1…2.5 |
| Screwdriver | Philips | | N° 2 | N° 2 | N° 2 | N° 2 | | N° 2 | N° 2 | N° 2 | N° 2 |
| | Flat screwdriver Ø | | Ø6 | Ø6 | Ø6 | Ø6 | | Ø6 | Ø6 | Ø6 | Ø6 |
| Tightening torque | | N.m | 1.7 | 1.7 | 1.7 | 1.7 | | 1.7 | 1.7 | 1.7 | 1.2 |

### Spring terminal connections (2) TeSys D

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Flexible cable without cable end | 1 conductor | mm² | 2.5 | 2.5 | 2.5 | 2.5 | – | 2.5 | 0.75…2.5 | – | – |
| | 2 conductors | mm² | 2.5 | 2.5 | 2.5 | 2.5 | – | 2.5 | 0.75…2.5 | – | – |

### Connection by bars or lugs TeSys D

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lug external Ø | | mm | 8 | 8 | 8 | 8 | | 8 | 8 | 8 | 8 |
| Ø of screw | | mm | M3.5 | M3.5 | M3.5 | M3.5 | | M3.5 | M3.5 | M3.5 | M3.5 |
| Screwdriver | Pozidriv (except for D80-95 / D115-150: Philips) | | N° 2 | N° 2 | N° 2 | N° 2 | | N° 2 | N° 2 | N° 2 | N° 2 |
| | Flat screwdriver Ø | | Ø6 | Ø6 | Ø6 | Ø6 | | Ø6 | Ø6 | Ø6 | Ø6 |
| Tightening torque | | N.m | 1.7 | 1.7 | 1.7 | 1.7 | | 1.7 | 1.7 | 1.7 | 1.2 |

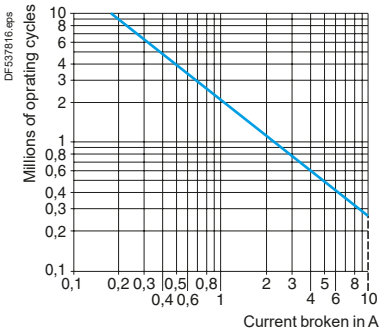
*(1) BTR screws: hexagon socket head. In accordance with local electrical wiring regulations, a size 4 insulated Allen key must be used (reference **LADALLEN4**, see page B8/28).*

*(2) If cable ends are used, choose the next size down (example: for 2.5 mm², use 1.5 mm²) and square crimp the cable ends using a special tool.*

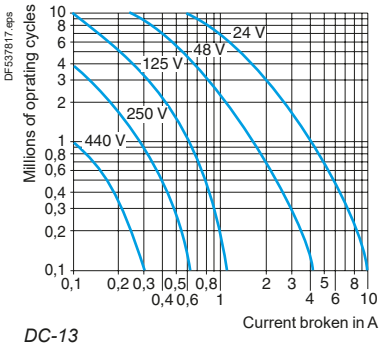
References: pages B8/4 to B8/14
Dimensions: pages B8/72 to B8/78
Schemes: pages B8/79 and B8/80

## Characteristics of auxiliary contacts incorporated in the contactor

| | | | | |
|---|---|---|---|---|
| Mechanically linked contacts | Conforming to IEC 60947-5-1 | | | Each contactor has 2 N/O and N/C contacts mechanically linked on the same movable contact holder |
| Mirror contact | Conforming to IEC 60947-4-1 | | | The N/C contact on each contactor represents the state of the power contacts and can be connected to a PREVENTA safety module |
| Rated operational voltage (Ue) | Up to | | **V** | 690 |
| Rated insulation voltage (Ui) | Conforming to IEC 60947-1 | | **V** | 690 |
| | Conforming to UL, CSA | | **V** | 600 |
| Conventional thermal current (Ith) | For ambient temperature ≤ 60 °C | | **A** | 10 |
| Frequency of the operational current | | | **Hz** | 25…400 |
| Minimum switching capacity λ = $10^{-8}$ | U min | | **V** | 17 |
| | I min | | **mA** | 5 |
| Short-circuit protection | Conforming to IEC 60947-5-1 | | | gG fuse: 10 A |
| Rated making capacity | Conforming to IEC 60947-5-1, I rms | | **A** | ∼: 140, ⎓: 250 |
| Short-time rating | Permissible for | 1 s | **A** | 100 |
| | | 500 ms | **A** | 120 |
| | | 100 ms | **A** | 140 |
| Insulation resistance | | | **MΩ** | > 10 |
| Non-overlap time | Guaranteed between N/C and N/O contacts | | **ms** | 1.5 (on energisation and on de-energisation) |
| Tightening torque | Pozidriv / Philips head n° 2 and Ø6 | | **N.m** | 1.7 |




*AC-15*




*DC-13*

## Operational power of contacts conforming to IEC 60947-5-1

### a.c. supply, categories AC-14 and AC-15

Electrical durability (valid for up to 3600 operating cycles/hour) on an inductive load such as the coil of an electromagnet: making current (cos φ 0.7) = 10 times the power broken (cos φ 0.4).

| Operating cycles | V | 24 | 48 | 115 | 230 | 400 | 440 | 600 |
|---|---|---|---|---|---|---|---|---|
| 1 million | **VA** | 60 | 120 | 280 | 560 | 960 | 1050 | 1440 |
| 3 million | **VA** | 16 | 32 | 80 | 160 | 280 | 300 | 420 |
| 10 million | **VA** | 4 | 8 | 20 | 40 | 70 | 80 | 100 |

### d.c. supply, category DC-13

Electrical durability (valid for up to 1200 operating cycles/hour) on an inductive load such as the coil of an electromagnet, without economy resistor, the time constant increasing with the load.

| Operating cycles | V | 24 | 48 | 125 | 250 | 440 |
|---|---|---|---|---|---|---|
| 1 million | **W** | 96 | 76 | 76 | 76 | 44 |
| 3 million | **W** | 48 | 38 | 38 | 32 | – |
| 10 million | **W** | 14 | 12 | 12 | – | – |

References:
pages B8/4 to B8/14
Dimensions:
pages B8/72 to B8/78
Schemes:
pages B8/79 and B8/80

# Characteristics

## Environment

| Contact block type (not dust/damp protected) | | | | LADN or LAD C | LADT and LADS | LADR | LAD8 |
|---|---|---|---|---|---|---|---|
| Conforming to standards | | | | IEC/EN 60947-5-1, UL 60947-5-1, CSA C22.2 n° 60947-5-1, GB/T 14048.5 | | | |
| Product certifications | | | | UL, CSA, CCC, EAC, CB certification | | | |
| Degree of protection | Conforming to IEC 60529 | | | Protection against direct finger contact IP 2X | | | |
| Ambient air temperature around the device | Storage | | °C | -60…+80 | | | |
| | Operation | | °C | -5…+60 | | | |
| Maximum operating altitude | Without derating | | m | 3000 | | | |
| Connection by cable | Phillips n° 2 and Ø6 mm Flexible or solid cable with or without cable end | | mm² | Min: 1 x 1; max: 2 x 2.5 | | | |
| Tightening torque | | | N.m | 1.7 | | | |
| Spring terminal connections | Flexible or solid cable without cable end | | mm² | Max: 2 x 2.5 | | | |

## Instantaneous and time delay contact characteristics

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Number of contacts | | | | 1, 2 or 4 | 2 | 2 | 2 |
| Rated operational voltage (Ue) | Up to | | V | 690 | | | |
| Rated insulation voltage (Ui) | Conforming to IEC 60947-5-1 | | V | 690 | | | |
| | Conforming to UL, CSA | | V | 600 | | | |
| Conventional thermal current (Ith) | For ambient temperature ≤ 60 °C | | A | 10 | | | |
| Frequency of the operational current | | | Hz | 25…400 | | | |
| Minimum switching capacity | | U min | V | 17 | | | |
| | | I min | mA | 5 | | | |
| Short-circuit protection | Conforming to IEC 60947-5-1 gG fuse | | A | 10 | | | |
| Rated making capacity | Conforming to IEC 60947-5-1 | I rms | A | ∼: 140; ⎓: 250 | | | |
| Short-time rating | Permissible for | 1 s | A | 100 | | | |
| | | 500 ms | A | 120 | | | |
| | | 100 ms | A | 140 | | | |
| Insulation resistance | | | MΩ | > 10 | | | |
| Non-overlap time | Guaranteed between N/C and N/O contacts | | ms | 1.5 (on energisation and on de-energisation) | | | |
| Overlap time | Guaranteed between N/C and N/O contacts on LADC22 | | ms | 1.5 | – | – | – |
| Time delay (LADT, R and S contact blocks) Accuracy only valid for setting range indicated on the front face | Ambient air temperature for operation | | °C | – | -40…+70 | -40…+70 | – |
| | Repeat accuracy | | | – | ±2 % | ±2 % | – |
| | Drift up to 0.5 million operating cycles | | | – | +15 % | +15 % | – |
| | Drift depending on ambient air temperature | | | – | 0.25 % per °C | 0.25 % per °C | – |
| Mechanical durability | In millions of operating cycles | | | 30 | 5 | 5 | 30 |
| Operational power of contacts | | | | See page B8/68 | | | |

Ref.
Contactors

References: page B8/22
Dimensions: pages B8/72 and B8/73
Schemes: pages B8/79 and B8/80

# Characteristics

## Environment

| Contact block type (dust/damp protected) | | | LA1DX | LA1DZ (4 contacts: 2 protected + 2 non protected) | | LA1DY |
|---|---|---|---|---|---|---|
| | | | Protected | Protected | Non protected | Protected |
| Conforming to standards | | | IEC/EN 60947-5-1, UL 60947-5-1, CSA C22.2 n° 60947-5-1, GB/T 14048.5 | | | |
| Product certifications | | | UL, CSA, CCC, EAC, CB certification | | | |
| Degree of protection | Conforming to IEC 60529 | | Protection against direct finger contact IP 2X | | | |
| Ambient air temperature | Storage and operation | **°C** | -25…+70 | | | |
| Cabling | Phillips n° 2 and Ø6 mm<br>Flexible or solid conductor with or without cable end | **mm²** | Min: 1 x 1; max: 2 x 2.5 | | | |
| Tightening torque | | **N.m** | 1.7 | | | |
| Number of contacts | | | 2 | 2 | 2 | 2 |

## Contact characteristics

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Rated operational voltage (Ue) | Up to | | **Vac** | 125 | 125 | 690 | 125 |
| | | | **Vdc** | 30 | 30 | | 30 |
| Rated insulation voltage (Ui) | Conforming to IEC 60947-5-1 | | **V** | 250 | 250 | 690 | 250 |
| | Conforming to UL, CSA | | **V** | – | – | 600 | – |
| Conventional thermal current (Ith) | For ambient temperature ≤ 40 °C | | **A** | – | – | 10 | – |
| Maximum operational current (Ie) | | | **mA** | 100 | 100 | – | 100 |
| Frequency of the operational current | | | **Hz** | – | – | 25…400 | – |
| Minimum switching capacity | | U min | **V** | 5 | 5 | 17 | 5 |
| | | I min | **mA** | 1 | 1 | 5 | 1 |
| Short-circuit protection | Conforming to IEC 609475-1 gG fuse | | **A** | – | – | 10 | – |
| Rated making capacity | Conforming to IEC 609475-1 | I rms | **A** | – | – | ∿:140; ⎓: 250 | – |
| Short-time rating | Permissible for | 1 s | **A** | – | – | 100 | – |
| | | 500 ms | **A** | – | – | 120 | – |
| | | 100 ms | **A** | – | – | 140 | – |
| Insulation resistance | | | **MΩ** | > 10 | > 10 | > 10 | > 10 |
| Mechanical durability | In millions of operating cycles | | | 5 | 5 | 30 | 5 |
| Materials and technology used for dust and damp protected contacts | | | | Gold alloy - Single break | Gold alloy - Single break | – | Gold alloy - Single break with crossed bars |

Ref.
Contactors

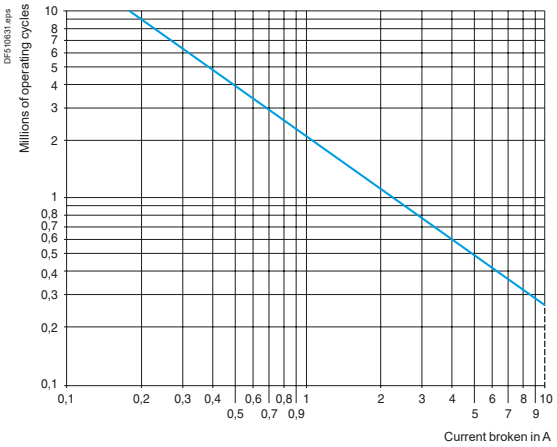
References: page B8/22
Dimensions: pages B8/72 and B8/73
Schemes: pages B8/79 and B8/80

## Rated operational power of not dust/damp protected contacts (conforming to IEC 60947-5-1)

### a.c. supply, categories AC-14 and AC-15

Electrical durability (valid for up to 3600 operating cycles/hour) on an inductive load such as the coil of an electromagnet: making current (cos φ 0.7) = 10 times the power broken (cos φ 0.4).

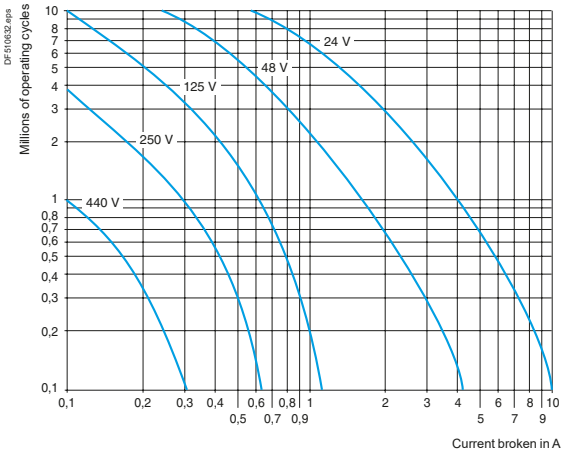
| Operating cycles | V | 24 | 48 | 115 | 230 | 400 | 440 | 600 |
|---|---|---|---|---|---|---|---|---|
| 1 million | **VA** | 60 | 120 | 280 | 560 | 960 | 1050 | 1440 |
| 3 million | **VA** | 16 | 32 | 80 | 160 | 280 | 300 | 420 |
| 10 million | **VA** | 4 | 8 | 20 | 40 | 70 | 80 | 100 |




### d.c. supply, category DC-13

Electrical durability (valid for up to 1200 operating cycles/hour) on an inductive load such as the coil of an electromagnet, without economy resistor, the time constant increasing with the load.

| Operating cycles | V | 24 | 48 | 125 | 250 | 440 |
|---|---|---|---|---|---|---|
| 1 million | **W** | 96 | 76 | 76 | 76 | 44 |
| 3 million | **W** | 48 | 38 | 38 | 32 | – |
| 10 million | **W** | 14 | 12 | 12 | – | – |




Ref.
Contactors

# Characteristics

## Environment

| | | | |
|---|---|---|---|
| Conforming to standards | | | IEC/EN 60947-5-1, UL 60947-5-1, CSA C22.2 n° 60947-5-1, GB/T 14048.5 |
| Product certifications | | | UL, CSA |
| Degree of protection | Conforming to IEC 60529 | | Protection against direct finger contact IP 2X |
| Ambient air temperature around the device | Storage | °C | -40…+80 |
| | Operation | °C | -25…+55 |
| | Permissible for operation at Uc | °C | -25…+70 |

## Suppressor modules TeSys D

| Module type | | | LA4DA, LAD4RC, LAD4RC3 | LA4DB, LAD4T, LAD4T3 | LA4DC, LAD4D3 | LA4DE, LAD4V, LAD4V3 |
|---|---|---|---|---|---|---|
| Type of protection | | | RC circuit | Bidirectional peak limiting diode | Diode | Varistor |
| Rated control circuit voltage (Uc) | | V | ∿ 24…415 | ∿ or ⎓ 24…440 | ⎓ 12…250 | ∿ or ⎓ 24…250 |
| Maximum peak voltage | | | 3 Uc | 2 Uc | Uc | 2 Uc |
| Natural RC frequency | 24/48 V | Hz | 400 | – | – | – |
| | 50/127 V | Hz | 200 | – | – | – |
| | 110/240 V | Hz | 100 | – | – | – |
| | 380/415 V | Hz | 150 | – | – | – |

## Mechanical latch blocks (1) TeSys D, TeSys D Green

| Mechanical latch block type | | | | LAD6K10 | LA6DK20 |
|---|---|---|---|---|---|
| For use on contactor | | | | **LC1D09…D80A DT20…DT80A** | **LC1D80…D150 LP1D80 and LC1D115** |
| Product certifications | | | | UL, CSA | UL, CSA |
| Rated insulation voltage | Conforming to IEC 60947-5-1 | | V | 690 | 690 |
| Rated control circuit voltage | ∿ 50/60 Hz and ⎓ | | V | 24…415 | 24…415 |
| Power required | For unlatching | ∿ | VA | 25 | 25 |
| | | ⎓ | W | 30 | 30 |
| Maximum operating rate | In operating cycles/hour | | | 1200 | 1200 |
| On-load factor | | | | 10 % | 10 % |
| Mechanical durability at Uc | In millions of operating cycles | | | 0.5 | 0.5 |

*(1) Unlatching can be manually operated or electrically controlled (pulsed).*
*The **LA6DK** or **LAD6K** latch coil and the **LC1D** operating coil must not be energised simultaneously.*
*The duration of the **LA6DK** or **LAD6K** and **LC1D** control signals must be ≥ 100 ms.*

Ref.
Contactors

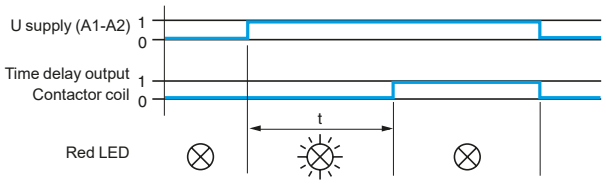
References:
pages B8/23 and B8/24
Dimensions:
pages B8/72 and B8/73
Schemes:
page B8/80

# Characteristics

| Environment TeSys D, TeSys D Green | | | |
|---|---|---|---|
| **Module type** | | | **LA4DT** (On-delay) |
| Conforming to standards | | | IEC 60255-5 |
| Product certifications | | | UL, CSA |
| Degree of protection | Conforming to IEC 60529 | | Protection against direct finger contact IP 2X |
| Ambient air temperature around the device | Storage | **°C** | -40…+80 |
| | Operation | **°C** | -25…+55 |
| | For operation at Uc | **°C** | -25…+70 |
| Rated insulation voltage (Ui) | Conforming to IEC 60947-1 | **V** | 250 |
| Cabling | Phillips n° 2 and Ø6 mm Flexible or solid conductor with or without cable end | **mm²** | Min: 1 x 1; max: 2 x 2.5 |
| Tightening torque | | **N.m** | 1.7 |
| **Control circuit characteristics** | | | |
| Built-in protection | Of the input | | By varistor |
| | Contactor coil suppression | | By varistor |
| Rated control circuit voltage (Uc) | | **V** | ∼ or ⎓: 24…250 |
| Permissible variation | | | 0.8…1.1 Uc |
| Type of control | | | By mechanical contact only |
| **Timing characteristics** | | | |
| Timing ranges | | **s** | 0.1…2; 1.5…30; 25…500 |
| Repeat accuracy | 0…40 °C | | ±3 % (10 ms minimum) |
| Reset time | During time delay period | **ms** | 150 |
| | After time delay period | **ms** | 50 |
| Immunity to microbreaks | During time delay period | **ms** | 10 |
| | After time delay period | **ms** | 2 |
| Minimum control pulse duration | | **ms** | – |
| Time delay signalling | By LED | | Illuminates during time delay period |
| **Switching characteristics (solid state type)** | | | |
| Maximum power dissipated | | **W** | 2 |
| Leakage current | | **mA** | < 5 |
| Residual voltage | | **V** | 3.3 |
| Overvoltage protection | | | 3 kV; 0.5 joule |
| Electrical durability | In millions of operating cycles | | 30 |

## Function diagram

**Electronic on-delay timer LA4DT**




References:
page B8/26
Dimensions:
pages B8/72 and B8/73
Schemes:
pages B8/79 and B8/80

# Characteristics

## Environment TeSys D, TeSys D Green

| | | | | |
|---|---|---|---|---|
| Conforming to standards | | | | IEC 60255-5 |
| Product certifications | | | | UL, CSA |
| Degree of protection | Conforming to IEC 60529 | | | Protection against direct finger contact IP 2X |
| Ambient air temperature around the device | Storage | | °C | -40…+80 |
| | Operation | | °C | -25…+55 |
| | Permissible for operation at Uc | | °C | -25…+70 |

## Other characteristics

| Module type | | | | LA4DFB for TeSys D<br>With relay | LA4DWB for TeSys D, TeSys D Green<br>Solid state |
|---|---|---|---|---|---|
| Conventional thermal current (Ith) | For ambient temperature ≤ 50 °C | | A | 8 | |
| Rated insulation voltage | Conforming to IEC 60947-5-1 | | V | 250 | |
| Rated operational voltage | Conforming to IEC 60947-5-1 | | V | 250 | |
| Indication of input state | | | | By integral LED which illuminates when the contactor coil is energised | |
| Input signals | Control voltage (E1-E2) | | V | ⎓ 24 | ⎓ 24 |
| | Permissible variation | | V | 17…30 | 5…30 |
| | Current consumption at 20 °C | | mA | 25 | 8.5 for 5 V<br>15 for 24 V |
| | State “0” guaranteed for | U | V | < 2.4 | < 2.4 |
| | | I | mA | < 2 | < 2 |
| | State “1” guaranteed for | U | V | 17 | 5 |
| Built-in protection | Against reversed polarity | | | By diode | By diode |
| | Of the input | | | By diode | By diode |
| Electrical durability at 220 A/240 V | In millions of operating cycles | | | 10 | 20 |
| Maximum immunity to microbreaks | | | ms | 4 | 1 |
| Power dissipated | At 20 °C | | W | 0.6 | 0.4 |
| Direct mounting on contactor | With coil | ∿ 24…250 V | | **LC1D80…D150** | – |
| | | ∿ 100…250 V | | – | **LC1D80…D115** |
| | | ∿ 380…415 V | | – | – |
| Mounting with cabling adapter LAD4BB | With coil | ∿ 24…250 V | | **LC1D09…D38, LC1DT20…DT40** | **LC1D09…D38, LC1DT20…DT40** |
| | | ∿ 380…415 V | | – | – |
| Mounting with cabling adapter LAD4BB3 | With coil | ∿ 24…250 V | | **LC1D40A…D80A** | **LC1D40A…D80A** |
| | | ∿ 380…415 V | | **LC1D40A…D80A** | **LC1D40A…D80A** |

Total operating time at Uc (of the contactor)

The operating times depend on the type of contactor electromagnet and its control mode. The closing time "C" is measured from the moment the coil supply is switched on to initial contact of the main poles. The opening time "O" is measured from the moment the coil supply is switched off to the moment the main poles separate.

| | | | | **LC1D09…D38, LC1DT20…DT40** | **LC1D40A…D80A** | **LC1D80 and D95** | **LC1D115** | **LC1D150** |
|---|---|---|---|---|---|---|---|---|
| With **LA4DFB** | "C" | | ms | 20…30 | 28…34 | 28…43 | 28...58 | 28...43 |
| | "O" | | ms | 16…24 | 20…24 | 18…32 | 18...32 | 52...87 |

| | | | |
|---|---|---|---|
| Cabling | Phillips n° 2 and Ø6 mm<br>Flexible or solid cable<br>with or without cable end | $mm^2$ | Min: 1 x 1; max: 2 x 2.5 |
| Tightening torque | | N.m | 1.7 |

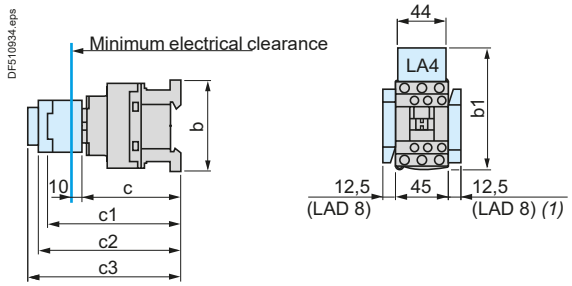
References:
page B8/26

Dimensions:
pages B8/72 and B8/73

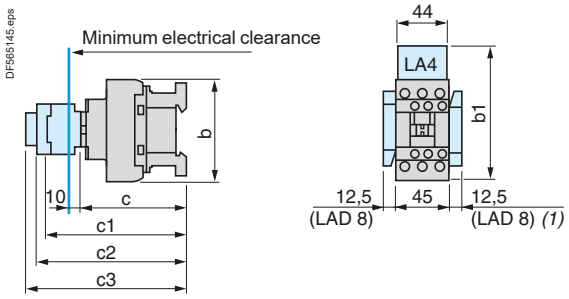
Schemes:
pages B8/79 and B8/80

# Dimensions

## **LC1D09…D18** (3-pole)



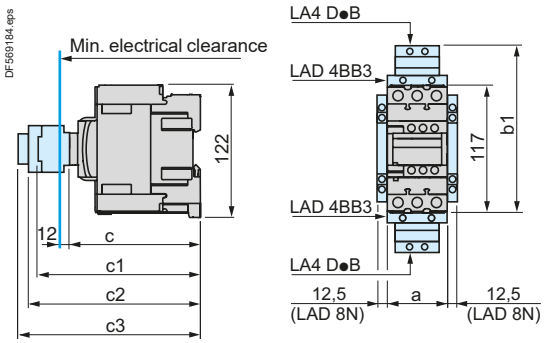

## **LC1D25…D38** (3-pole), **LC1DT20…DT40** (4-pole)



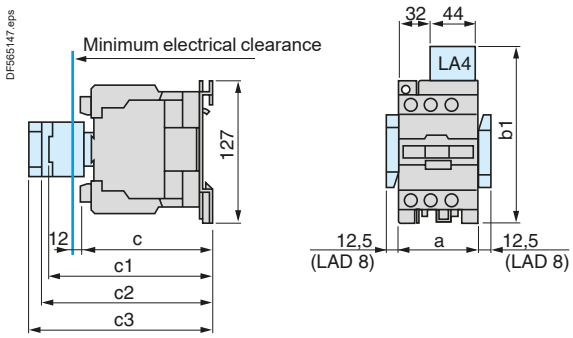

| LC1 | | D09…D18 | D093… D123 | D099… D129 | D25… D38 | D183… D323 | D098, D128, DT20 and DT25 | DT203 and DT253 | DT32 and DT40 | D188, D258, DT323 and DT403 |
|---|---|---|---|---|---|---|---|---|---|---|
| b | without add-on blocks | 77 | 99 | 80 | 85 | 99 | 85 | 99 | 91 | 105 |
| b1 | with LAD4BB | 94 | 107 | 95,5 | 98 | 107 | 98 | – | – | – |
| | with LA4D●2 | 110 (1) | 123 (1) | 111.5 (1) | 114 (1) | 123 (1) | 114 | – | – | – |
| | with LA4DF, DT | 119 (1) | 132 (1) | 120.5 (1) | 123 (1) | 132 (1) | 129 | – | – | – |
| | with LA4DW, DL | 126 (1) | 139 (1) | 127.5 (1) | 130 (1) | 139 (1) | 190 | – | – | – |
| c | without cover or add-on blocks | 84 | 84 | 84 | 90 | 90 | 90 | 90 | 97 | 97 |
| | with cover, without add-on blocks | 86 | 86 | 86 | 92 | 92 | 92 | 92 | 99 | 99 |
| c1 | with LADN or C (2 or 4 contacts) | 117 | 117 | 117 | 123 | 123 | 123 | 123 | 131 | 131 |
| c2 | with LA6DK10, LAD6K10 | 129 | 129 | 129 | 135 | 135 | 135 | 135 | 143 | 143 |
| c3 | with LADT, R, S | 137 | 137 | 137 | 143 | 143 | 143 | 143 | 151 | 151 |
| | with LADT, R, S and sealing cover | 141 | 141 | 141 | 147 | 147 | 147 | 147 | 155 | 155 |

*(1) Including **LAD4BB**.*

## **LC1D40A…D80A** (3-pole), **LC1DT60A…DT80A** (4-pole)



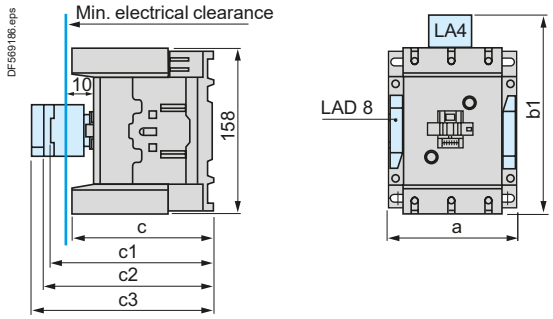

## **LC1D80** and **D95** (3-pole), **LC1D80004** and **D80008** (4-pole), **D40008** and **D65008** (4-pole)




| LC1 | | D40A…D80A | DT60A…DT80A | D40008 | D80 | D95, D65008 | D80004 | D80008 |
|---|---|---|---|---|---|---|---|---|
| a | | 55 | 70 | 85 | 85 | 85 | 96 | 96 |
| b1 | with LA4D●2 | – | – | 135 | 135 | 135 | 135 | 135 |
| | with LA4DB3 or LAD4BB3 | 136 | – | – | 135 | – | – | – |
| | with LA4DF, DT | 157 | – | 142 | 142 | 142 | 142 | 142 |
| | with LA4DM, DW, DL | 166 | – | 150 | 150 | 150 | 150 | 150 |
| c | without cover or add-on blocks | 118 | 118 | 125 | 125 | 125 | 125 | 140 |
| | with cover, without add-on blocks | 120 | 120 | – | 130 | 130 | – | – |
| c1 | with LADN (1 contact) | – | – | 139 | 150 | 150 | 150 | 150 |
| | with LADN or C (2 or 4 contacts) | 150 | 150 | 147 | 158 | 158 | 158 | 158 |
| c2 | with LAD6K10 or LA6DK | 163 | 163 | 159 | 170 | 170 | 170 | 170 |
| c3 | with LADT, R, S | 171 | 171 | 167 | 178 | 178 | 178 | 178 |
| | with LADT, R, S and sealing cover | 175 | 175 | 171 | 182 | 182 | 182 | 182 |

## **LC1D115** and **D150** (3-pole), **LC1D115004** (4-pole)

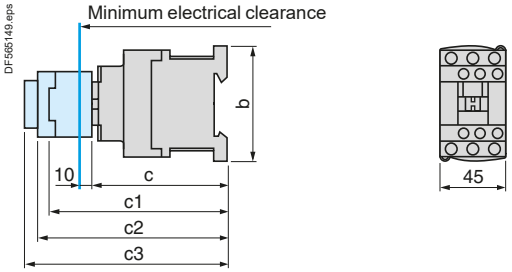
| LC1 | | D115, D150 | D115004 | D1150046 |
|---|---|---|---|---|
| a | | 120 | 150 | 155 |
| b1 | with LA4DA2 | 174 | 174 | 174 |
| | with LA4DF, DT | 185 | 185 | 185 |
| | with LA4DM, DL | 188 | 188 | 188 |
| | with LA4DW | 188 | 188 | 188 |
| c | without cover or add-on blocks | 132 | 132 | 115 |
| | with cover, without add-on blocks | 136 | – | – |
| c1 | with LADN or C (2 or 4 contacts) | 150 | 150 | 150 |
| c2 | with LA6DK20 | 155 | 155 | 155 |
| c3 | with LADT, R, S | 168 | 168 | 168 |
| | with LADT, R, S and sealing cover | 172 | 172 | 172 |



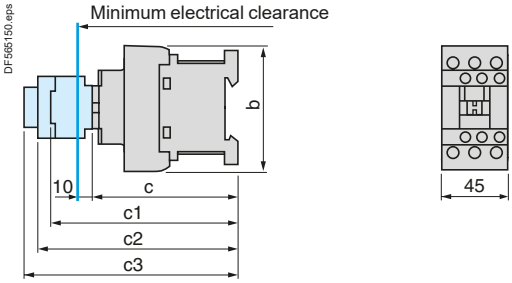

References:
pages B8/8 to B8/14
Characteristics:
pages B8/59 to B8/65
Schemes:
pages B8/79 and B8/80

# Dimensions

## **LC1D09…D18** (3-pole)

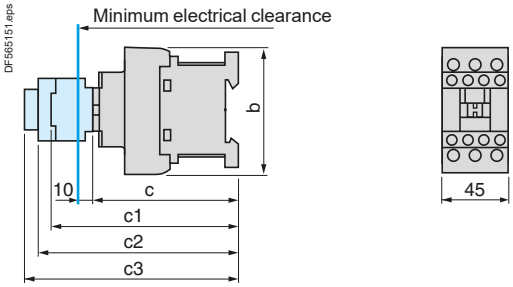



## **LC1D25…D38** (3-pole)



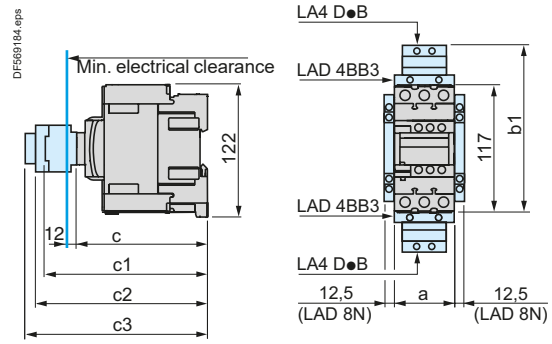

| **LC1** | | **D09…D18** | **D093…D123** | **D099…D129** | **D25…D38** | **D183…D323** |
|---|---|---|---|---|---|---|
| b | | 77 | 99 | 80 | 85 | 99 |
| c | without cover or add-on blocks | 93 | 93 | 93 | 99 | 99 |
| | with cover, without add-on blocks | 95 | 95 | 95 | 101 | 101 |
| c1 | with LADN or C (2 or 4 contacts) | 126 | 126 | 126 | 132 | 132 |
| c2 | with LA6DK10 | 138 | 138 | 138 | 144 | 144 |
| c3 | with LADT, R, S | 146 | 146 | 146 | 152 | 152 |
| | with LADT, R, S and sealing cover | 150 | 150 | 150 | 156 | 156 |

## **LC1DT20…DT40** (4-pole)

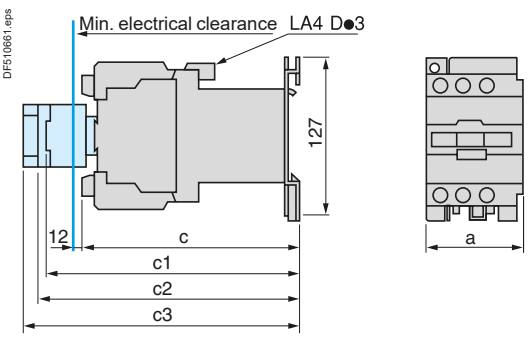



| **LC1** | | **DT20** and **DT25**<br>**D098** and **D128** | **DT203** and **DT253**<br>**D0983** and **D1283** | **DT32** and **DT40**<br>**D188…D258** | **DT323** and **DT403**<br>**D1883** and **D2583** |
|---|---|---|---|---|---|
| b | | 85 | 99 | 91 | 105 |
| c | with cover | 102 | 102 | 107 | 107 |
| c1 | with LADN or C (2 or 4 contacts) | 123 | 123 | 131 | 131 |
| c2 | with LA6DK10 | 135 | 135 | 143 | 143 |
| c3 | with LADT, R, S | 143 | 143 | 151 | 151 |
| | with LADT, R, S and sealing cover | 147 | 147 | 155 | 155 |

## **LC1D40A…D80A** (3-pole), **LC1DT60A…DT80A** (4-pole)




## **LC1D80** and **D95** (3-pole), **LP1D80004, LP1D80008** (4-pole), **LP1D40008** and **D65008** (4-pole)




| | | **LC1D40A … D80A** | **LC1 DT60A…DT80A** | **LP1D40008** and **D65008** | **LC1 D80** and **D95** | **LP1D80004** | **LP1D80008** |
|---|---|---|---|---|---|---|---|
| a | | 55 | 72 | 85 | 85 | 96 | 96 |
| b1 | with LAD4BB3 | 136 | 136 | – | – | – | – |
| | with LA4DF, DT | 157 | 157 | – | – | – | – |
| c | without cover or add-on blocks | 118 | 118 | 182 | 181 | 181 | 196 |
| | with cover, without add-on blocks | 120 | 120 | – | 186 | – | – |
| c1 | with LADN (1 contact) | – | – | 196 | 204 | 204 | 204 |
| | with LADN or C (2 or 4 contacts) | 150 | 150 | 202 | 210 | 210 | 210 |
| c2 | with LA6DK10 | 163 | 163 | 213 | 221 | 221 | 221 |
| c3 | with LADT, R, S | 171 | 171 | 221 | 229 | 229 | 229 |
| | with LADT, R, S and sealing cover | 175 | 175 | 225 | 233 | 233 | 233 |

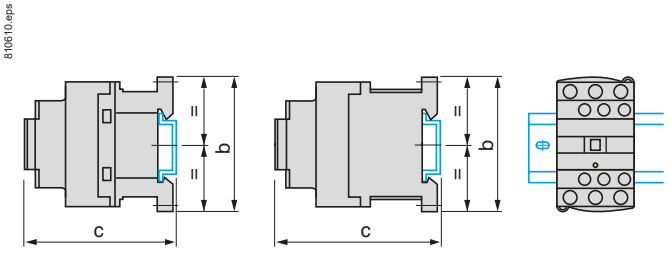
**LC1D115●●●** and **LC1D150●●●** with ⎓ coil: see page B8/72.

References:
pages B8/8 to B8/14
Characteristics:
pages B8/59 to B8/65
Schemes:
pages B8/79 and B8/80

# Mounting

## LC1D09…D38, DT20…DT40

**On mounting rail NSYSDR200BD, NSYSDR200BD or NSYSDR200** (width 35 mm)




**Control circuit: a.c.**

| LC1 | D09… D18 | D25… D38 | DT20 and DT25 | DT32 and DT40 |
|---|---|---|---|---|
| b | 77 | 85 | 85 | 100 |
| c (NSYSDR200BD or NSYSDR200BD) (1) | 88 | 94 | 94 | 109 |
| c (NSYSDR200) (1) | 96 | 102 | 102 | 117 |

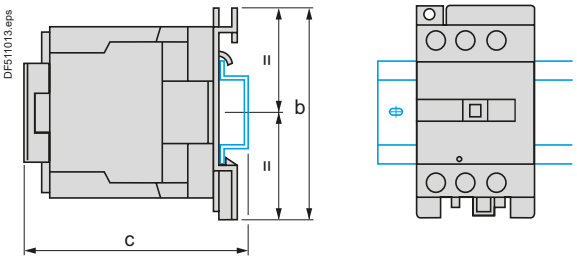
**Control circuit: d.c.**

| LC1 | D09… D18 | D25… D38 | DT20 and DT25 | DT32 and DT40 |
|---|---|---|---|---|
| b | 77 | 85 | 94 | 109 |
| c (NSYSDR200BD or NSYSDR200BD) (1) | 97 | 103 | 103 | 118 |
| c (NSYSDR200) (1) | 105 | 110 | 111 | 126 |

*(1) With safety cover.*

## LC1D40A…D80A, LC1DT60A and DT80A, LC1D80 and D95, LC1D40008 and D65008

**On mounting rail AM1DL201** (width 75 mm) (2)
**On mounting rail NSSDPR●● or NSYSDR200** (width 35 mm)




**Control circuit: a.c.**

| LC1 | D40A…D80A DT60A…DT80A | D80 and D95 | D40008 and D65008 |
|---|---|---|---|
| b | 122 | 127 | 127 |
| c | – | 147 | 143 |
| c (AM1DL201) (1) | – | 137 | 133 |
| c (NSSDPR●● or NSYSDR200 (1) | 128 | 137 | 133 |

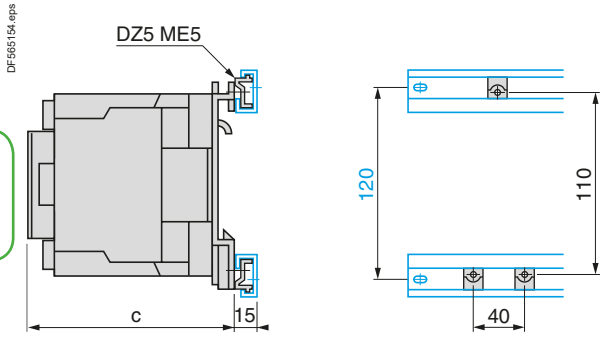
**Control circuit: d.c.**

| LC1 | D40A…D80A DT60A…DT80A | D80 and D95 | D40008 and D65008 |
|---|---|---|---|
| c | – | 205 | 200 |
| c (AM1DL201) (1) | – | 195 | 190 |
| c (NSSDPR●● or NSYSDR200) (1) | 128 | – | 190 |

*(1) With safety cover.*
*(2) Except for **LC1D40A**…**D80A**, **LC1DT60A** and **DT80A**.*

## LC1D80 and D95, LP1D80

**On 2 mounting rails DZ5MB on 120 mm centres**




**Control circuit: a.c.**

| LC1 | D80 and D95 |
|---|---|
| c with cover | 130 |

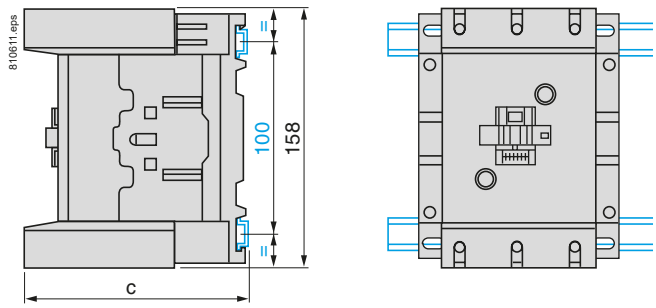
**Control circuit: d.c.**

| LC1 | D80 and D95 |
|---|---|
| c with cover | 186 |

| LP1 | D80 |
|---|---|
| c | 181 |

## LC1D115, D150

**On 2 mounting rails DZ5MB on 120 mm centres**



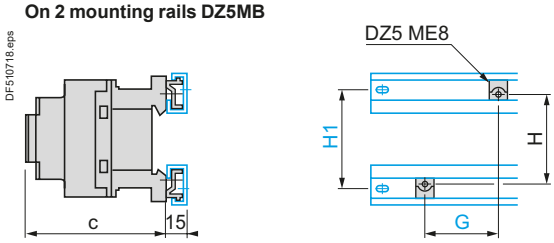

**Control circuit: a.c. or d.c.**

| LC1 | D115 and D150 | D1156 and D1506 |
|---|---|---|
| c (NSYSDR200BD or NSYSDR200BD) | 134.5 | 117.5 |
| c (NSYSDR200 or ED●●●) | 142.5 | 125.5 |

References: pages B8/8 to B8/14
Characteristics: pages B8/59 to B8/65
Schemes: pages B8/79 and B8/80

## LC1D09…D38 and LC1DT20…DT40

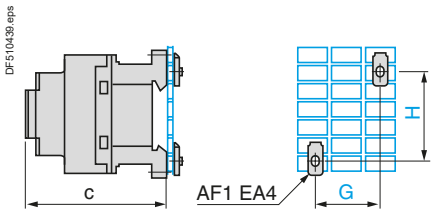
**On 2 mounting rails DZ5MB**




| Control circuit: | a.c. | | d.c. | |
|---|---|---|---|---|
| LC1 | D09…D18 | D25…D38 | D09…D18 | D25…D38 |
| c with cover | 86 | 92 | 95 | 101 |
| G | 35 | 35 | 35 | 35 |
| H | 60 | 60 | 70 | 70 |
| H1 | 70 | 70 | 70 | 70 |
| **4-pole contactors** | | | | |
| LC1 | DT20 and DT25 | DT32 and DT40 | DT20 and DT25 | DT32 and DT40 |
| c | 92 | 100 | 101 | 109 |
| G | 35 | 35 | 35 | 35 |
| H | 60 | 60 | 70 | 70 |
| H1 | 70 | 70 | 70 | 70 |

## LC1D09…D38 and LC1DT20…DT40

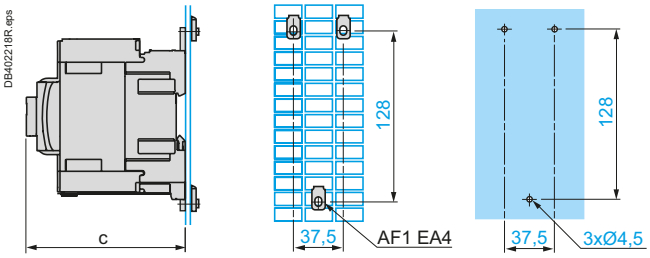
**On pre-slotted mounting plate AM1 PA, PB, PC**




| Control circuit: | a.c | | d.c | |
|---|---|---|---|---|
| LC1 | D09…D18 | D25…D38 | D09…D18 | D25…D38 |
| c with cover | 86 | 92 | 95 | 101 |
| G | 35 | 35 | 35 | 35 |
| H | 60/70 | 60/70 | 70 | 70 |
| LC1 | DT20 and DT25 | DT32 and DT40 | DT20 and DT25 | DT32 and DT40 |
| c with cover | 80 | 93 | 118 | 132 |
| G | 35 | 35 | 35 | 35 |
| H | 60 | 60 | 70 | 70 |

## LC1D40A…D80A, LC1DT60A…DT80A

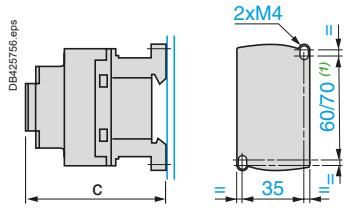
**On pre-slotted mounting plate AM1 PA, PB, PC and panel mounted**




| Control circuit: | a.c | d.c. |
|---|---|---|
| LC1 | D40A…D80A, DT60A…DT80A | D40A…65A, DT60A…DT80A |
| c with cover | 120 | 120 |

## LC1D09…D38, LC1DT20…DT40

**Panel mounted**

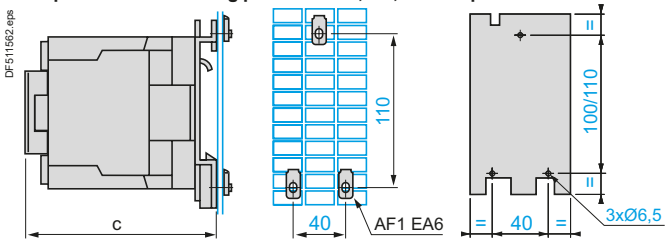



*(1) for DC coil: 70 mm only.*

| Control circuit: | a.c | | d.c | |
|---|---|---|---|---|
| LC1 | D09…D18 | D25…D38 | D09…D18 | D25…D38 |
| c with cover | 86 | 92 | 95 | 101 |
| **4-pole contactors** | | | | |
| LC1 | DT20 and DT25 | DT32 and DT40 | DT20 and DT25 | DT32 and DT40 |
| c with cover | 90 | 98 | 90 | 98 |

## LC1D80 and D95, LC1D40008 and D65008, LP1D80

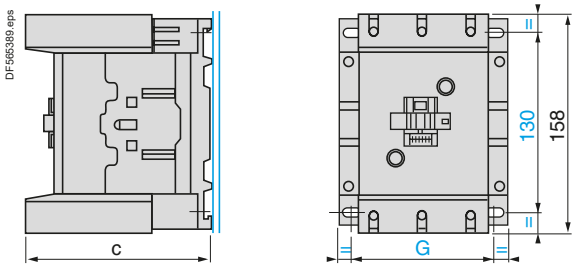
**On pre-slotted mounting plate AM1 PA, PB, PC and panel mounted**




| Control circuit: | a.c | d.c. |
|---|---|---|
| LC1 | D80 and D95, D40008 and D65008 | D80 and D95 D40008 and D65008 |
| c with cover | 130 | 186 |
| LP1 | – – | D80 |
| c without cover | – – | 181 |

## LC1D115, D150

**Panel mounted**




| LC1 | D115 | D1156 | D150 | D1506 |
|---|---|---|---|---|
| c | 132 | 115 | 132 | 115 |
| G (3-pole) | 96/110 | 96/110 | 96/110 | 96/110 |
| G (4-pole) | 130/144 | 130/144 | – | – |

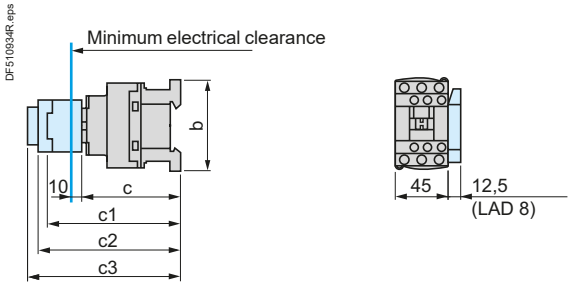
References:
pages B8/8 to B8/14

Characteristics:
pages B8/59 to B8/65

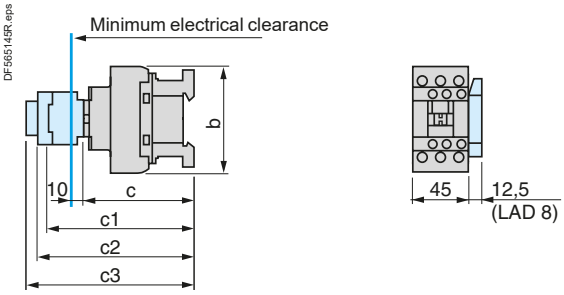
Schemes:
pages B8/79 and B8/80

# Dimensions

## LC1D09…D18 (3-pole), with AC/DC compatible coil

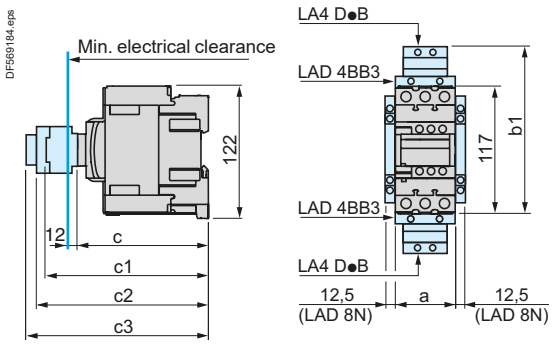



## LC1D25…D38 (3-pole), with AC/DC compatible coil




| LC1 | | D09…D18 | D25…D38 |
|---|---|---|---|
| b | without add-on blocks | 77 | 85 |
| c | without cover or add-on blocks | 84 | 90 |
| | with cover, without add-on blocks | 86 | 92 |
| c1 | with LADN or C (2 or 4 contacts) | 117 | 123 |
| c2 | with LA6DK10 | 129 | 135 |
| c3 | with LADT, R, S | 137 | 143 |
| | with LADT, R, S and sealing cover | 141 | 147 |

## LC1D40A…D80A (3-pole), LC1DT60A…DT80A (4-pole), with AC/DC compatible coil



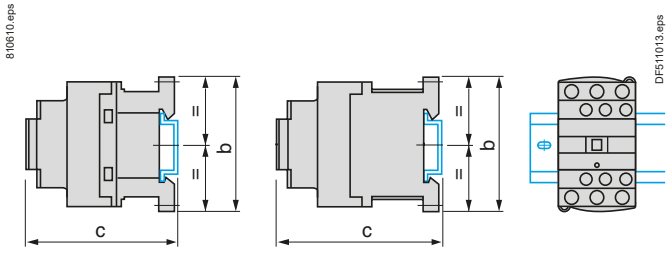

| LC1 | | D40A…D80A | DT60A…DT80A |
|---|---|---|---|
| a | | 55 | 70 |
| b1 | LAD4BB3 | 136 | – |
| | with LAD4DWB | 166 | – |
| c | without cover or add-on blocks | 118 | 118 |
| | with cover, without add-on blocks | 120 | 120 |
| c1 | with LADN (1 contact) | – | – |
| | with LADN or C (2 or 4 contacts) | 150 | 150 |
| c2 | with LAD6K10 | 163 | 163 |
| c3 | with LADT, R, S | 171 | 171 |
| | with LADT, R, S and sealing cover | 175 | 175 |

Ref.
Contactors

# Mounting

## **LC1D09…D38** (3-pole), with AC/DC compatible coil

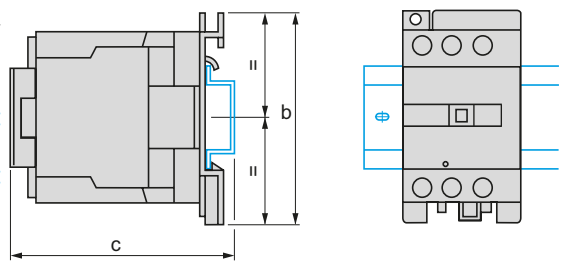
**On mounting rail NSYSDR200BD, NSYSDR200BD or NSYSDR200** (width 35 mm)




| LC1 | D09…D18 | D25…D38 |
|---|---|---|
| b | 77 | 85 |
| c (NSYSDR200BD or NSYSDR200BD) | 88 | 94 |
| c (NSYSDR200) | 96 | 102 |

## **LC1D40A…D80A** (3-pole), **LC1DT60A** and **DT80A** (4-pole), with AC/DC compatible coil

**On mounting rail AM1DL201** (width 75 mm) (2)
**On mounting rail NSSDPR●● or NSYSDR200** (width 35 mm)

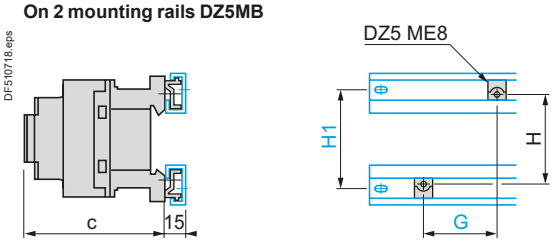



| LC1 | D40A…D80A DT60A…DT80A |
|---|---|
| b | 122 |
| c | – |
| c (AM1DL201) | – |
| c (NSSDPR●● or NSYSDR200) | 128 |

Ref.
Contactors

## LC1D09…D38 (3-pole), with AC/DC compatible coil

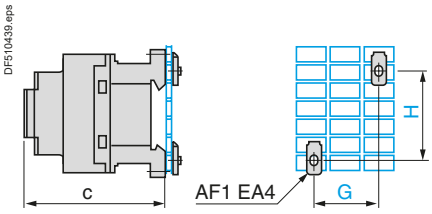
**On 2 mounting rails DZ5MB**




| LC1 | D09…D18 | D25…D38 |
|---|---|---|
| c with cover | 86 | 92 |
| **G** | **35** | **35** |
| H | 60 | 60 |
| **H1** | **70** | **70** |

## LC1D09…D38 (3-pole), with AC/DC compatible coil

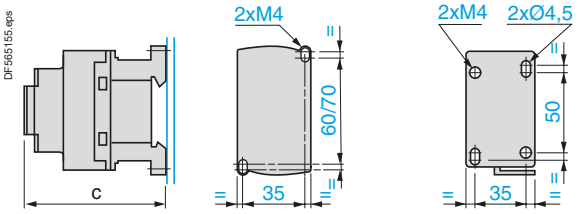
**On pre-slotted mounting plate AM1PA, PB, PC**




| LC1 | D09…D18 | D25…D38 |
|---|---|---|
| c with cover | 86 | 92 |
| **G** | **35** | **35** |
| H | 60/70 | 60/70 |

## LC1D09…D38 (3-pole), with AC/DC compatible coil

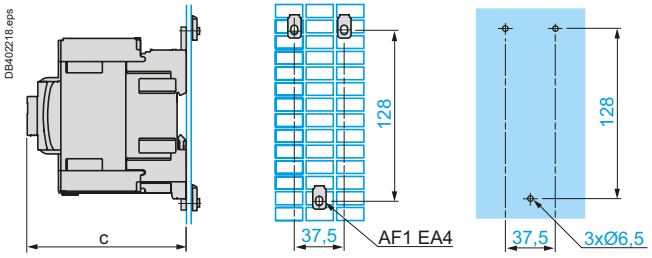
**Panel mounted**




| LC1 | D09…D18 | D25…D38 |
|---|---|---|
| c with cover | 86 | 92 |

## LC1D40A…D80A (3-pole), LC1DT60A…DT80A (4-pole), with AC/DC compatible coil

**On pre-slotted mounting plate AM1PA, PB, PC and panel mounted**




| LC1 | D40A…D80A , DT60A…DT80A |
|---|---|
| c with cover | 120 |

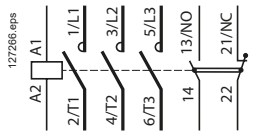
Ref.
Contactors

## Schemes

### Contactors

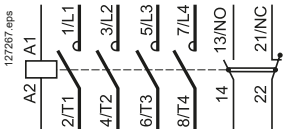
**TeSys D, TeSys D Green 3-pole contactors** (References: pages B8/8 to B8/11)

**LC1D09 to D150**

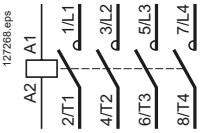



**TeSys D 4-pole contactors** (References: pages B8/12 and B8/13)

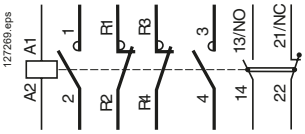
**LC1DT20 to DT80A**



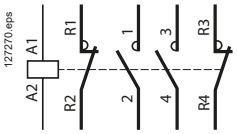

**LC1D115004**




**LC1D098 to D258**



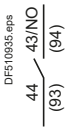

**LC1 and LP1D40008 to D80008**



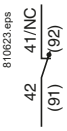

### Front mounting add-on contact blocks

**Instantaneous auxiliary contacts for TeSys D, TeSys D Green** (References: page B8/22)

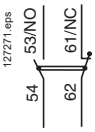
**1 N/O LADN10** (1)



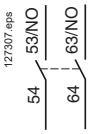

**1 N/C LADN01** (1)



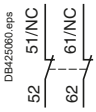

**1 N/O + 1 N/C LADN11**



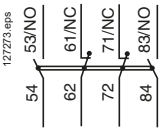

**2 N/O LADN20**



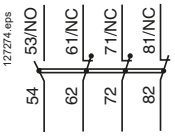

**2 N/C LADN02**



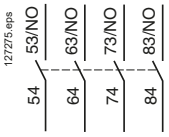

**2 N/O + 2 N/C LADN22**



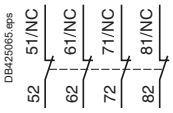

**1 N/O + 3 N/C LADN13**



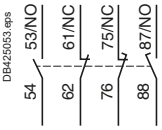

**4 N/O LADN40**



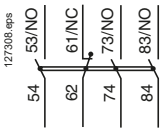

**4 N/C LADN04**




**2 N/O + 2 N/C including 1 N/O + 1 N/C make before break LADC22**

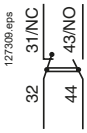



**3 N/O + 1 N/C LADN31**

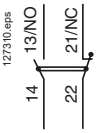



**Instantaneous auxiliary contacts conforming to standard EN 50012 for TeSys D, TeSys D Green** (References: page B8/22)

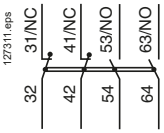
**1 N/O + 1 N/C LADN11G**



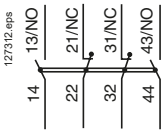

**1 N/O + 1 N/C LADN11P**



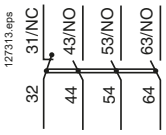

**2 N/O + 2 N/C LADN22G**



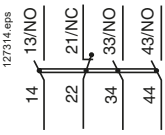

**2 N/O + 2 N/C LADN22P**



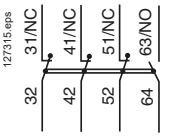

**3 N/O + 1 N/C LADN31G**



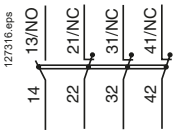

**3 N/O + 1 N/C LADN31P**




**1 N/O + 3 N/C LADN13G**




**1 N/O + 3 N/C LADN13P**




*(1) Items in brackets refer to blocks mounted on right-hand side of contactor.*


References:
pages B8/8 to B8/26

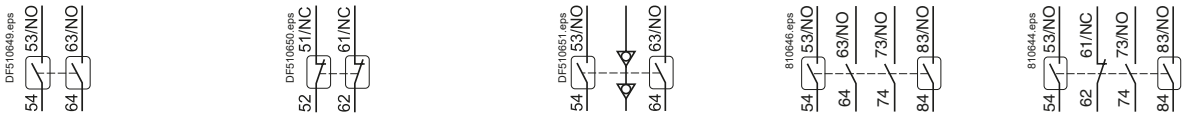
Characteristics:
pages B8/59 to B8/71

Dimensions:
pages B8/72 to B8/78

## Front mounting add-on contact blocks for TeSys D, TeSys D Green

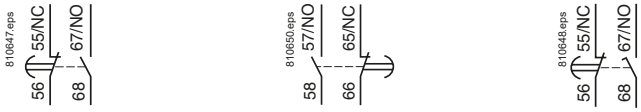
**Dust and damp protected instantaneous auxiliary contacts** (References: page B8/22)

| 2 N/O (24-50 V) | 2 N/C (24-50 V) | 2 N/O (5-24V) with 2 cable screen terminals | 2 N/O protected (24-50 V) 2 N/O standard | 2 N/O protected (24-50 V) + 1 N/O + 1 N/C standard |
|---|---|---|---|---|
| LA1DX20 | LA1DX02 | LA1DY20 | LA1DZ40 | LA1DZ31 |



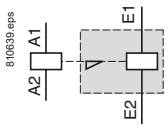

**Time delay auxiliary contacts** (References: page B8/23)

| On-delay 1 N/O + 1 N/C | Off-delay 1 N/O + 1 N/C | On-delay 1 N/C + 1 N/O break before make |
|---|---|---|
| LADT | LADR | LADS |




## Mechanical latch blocks for TeSys D, TeSys D Green (References: page B8/23)

**LAD6K10 and LA6DK20**

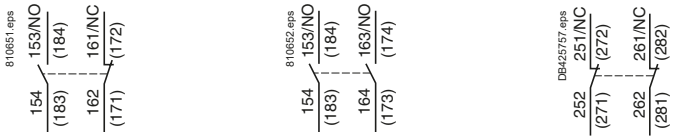



Ref.

## Side mounting add-on contact blocks for TeSys D, TeSys D Green

**Instantaneous auxiliary contacts** (References: page B8/22)

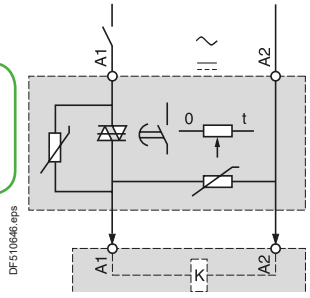
| 1 N/O + 1 N/C LAD8N11 (1) | 2 N/O LAD8N20 (1) | 2 N/C LAD8N02 (1) |
|---|---|---|




*(1) Items in brackets refer to blocks mounted on right-hand side of contactor.*

## Electronic serial timer modules for TeSys D, TeSys D Green

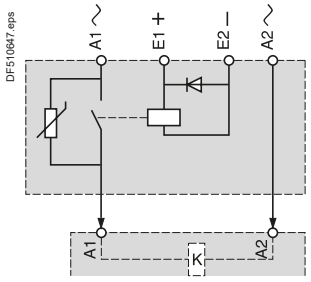
**On-delay LA4DT●U**




## Interface modules

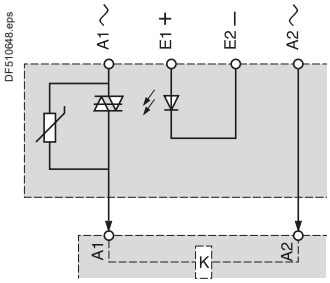
**Relay output for TeSys D**

**LA4DFB**




**Solid state for TeSys D, TeSys D Green**

**LA4DWB**



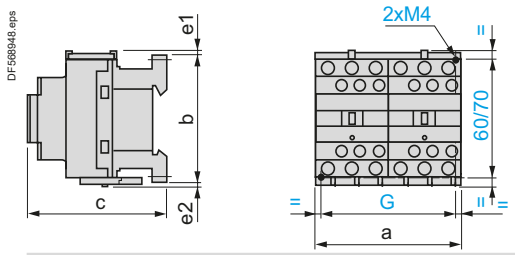

References: page B8/85.


References: pages B8/22 to B8/26
Characteristics: pages B8/66 to B8/70
Dimensions: pages B8/72 and B8/73, B8/76

## Dimensions

### LC2D09 to D38 TeSys D, TeSys D Green

2 x **LC1D09 to D38**



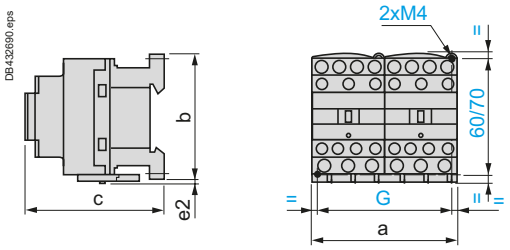

| LC2 or 2 x LC1 | a | b | c (1) | e1 | e2 | G |
|---|---|---|---|---|---|---|
| **D09 to D18 AC, AC/DC** | 90 | 77 | 86 | 4 | 1.5 | 80 |
| **D093 to D123 AC** | 90 | 99 | 86 | – | – | 80 |
| **D09 to D18 DC** | 90 | 77 | 95 | 4 | 1.5 | 80 |
| **D093 to D123 DC** | 90 | 99 | 95 | – | – | 80 |
| **D25 to D38 AC, AC/DC** | 90 | 85 | 92 | 9 | 5 | 80 |
| **D183 to D383 AC** | 90 | 99 | 92 | – | – | 80 |
| **D25 to D32 DC** | 90 | 85 | 101 | 9 | 5 | 80 |
| **D183 to D383 DC** | 90 | 99 | 101 | – | – | 80 |

e1 and e2: including cabling.

*(1) With safety cover, without add-on block.*

### LC2DT20 to DT40 TeSys D

2 x **LC1DT20 to DT40**

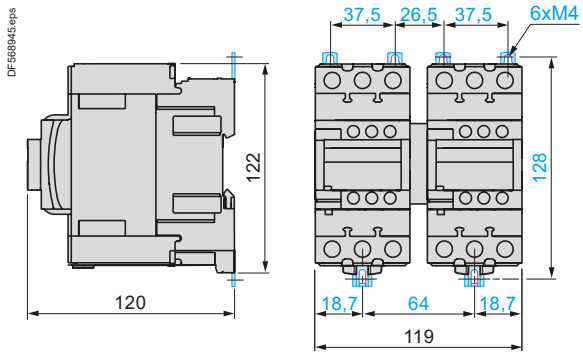



| LC2 or 2 x LC1 | a | b | c | G | e2 |
|---|---|---|---|---|---|
| **DT20 and DT25 AC** | 90 | 85 | 92 | 80 | 20 |
| **DT32 and DT40 AC** | 90 | 91 | 99 | 80 | 22 |
| **DT20 and DT25 DC** | 90 | 85 | 102 | 80 | 20 |
| **DT32 and DT40 DC** | 90 | 91 | 109 | 80 | 22 |

c, e: including cabling.

### LC2D40A to D80A for TeSys D, TeSys D Green

2 x **LC1D40A to D80A**



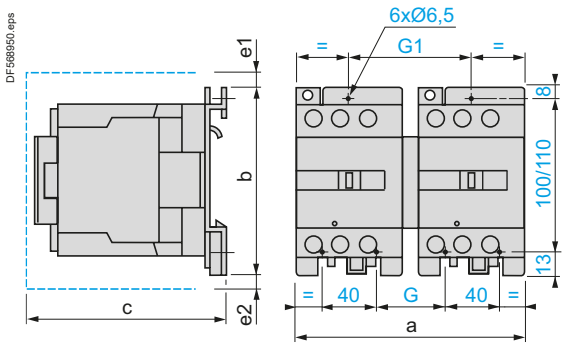


Ref.
Contactors

# Dimensions

## LC2D80 and D95

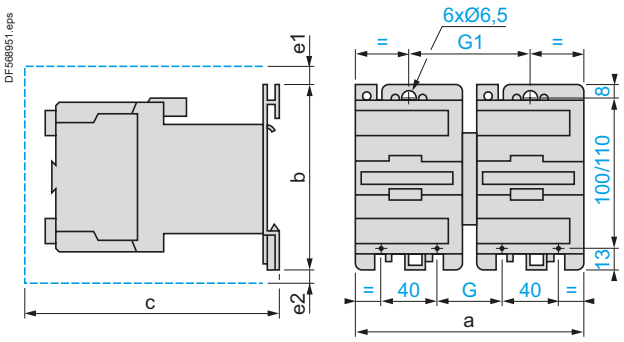
2 x **LC1D80 and D95** ∿




| **LC2** or 2 x **LC1** | **a** | **b** | **c** | **e1** | **e2** | **G** | **G1** |
|---|---|---|---|---|---|---|---|
| **D80 and D95** ∿ | 182 | 127 | 158 | 13 | – | **57** | **96** |
| **D80004** ∿ | 207 | 127 | 158 | – | 20 | **71** | **111** |

c, e1 and e2: including cabling.

2 x **LC1D80 and D95** ⎓

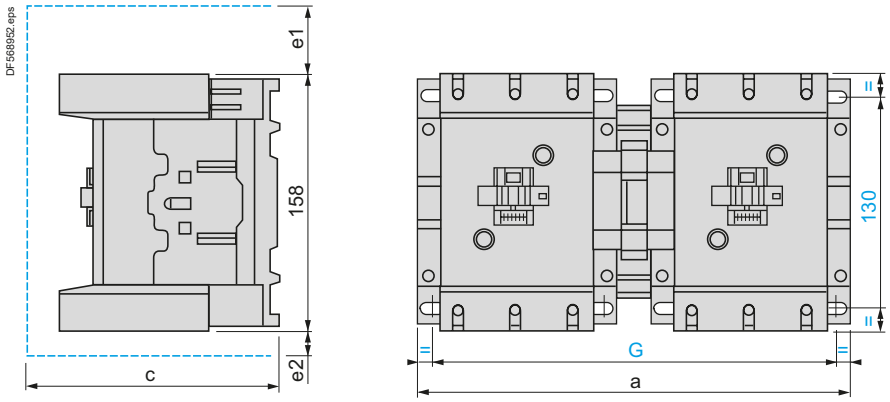



| 2 x **LC1** | **a** | **b** | **c** | **e1** | **e2** | **G** | **G1** |
|---|---|---|---|---|---|---|---|
| **D80 and D95** | 207 | 127 | 215 | 13 | 20 | **96** | **111** |

c, e1 and e2: including cabling.

## LC2D115 and D150

2 x **LC1D115 and D150**




| **LC2** or 2 x **LC1** | **a** | **c** | **e1** | **e2** | **G** |
|---|---|---|---|---|---|
| **D115 and D150** | 266 | 148 | 56 | 18 | **242/256** |
| **D115004** | 334 | 148 | – | 60 | **310/324** |

c, e1 and e2: including cabling.

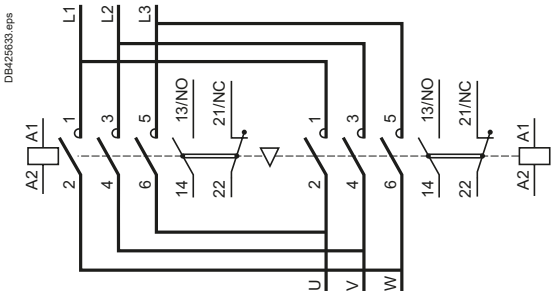
Ref.
Contactors

## Schemes

### Reversing contactors for motor control

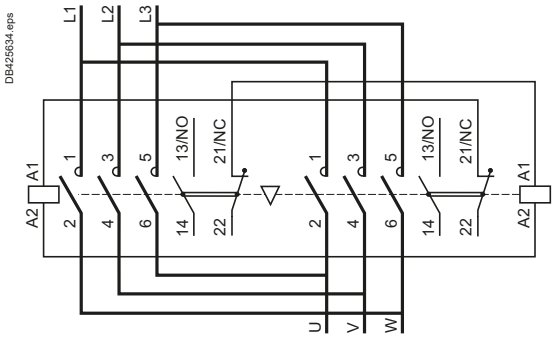
**LC2D09...D80A TeSys D , TeSys D Green LC2D80...D150 TeSys D**

Horizontally mounted




**LAD9R1V TeSys D, TeSys D Green**

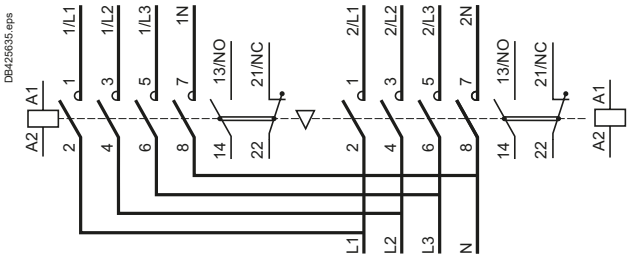
With integral electrical interlocking




### Changeover contactor pairs TeSys D

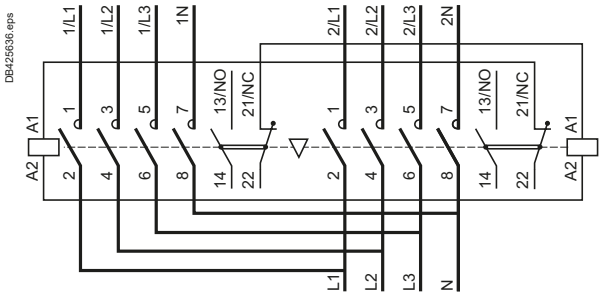
**LC2DT20…DT40**

Horizontally mounted




**LADT9R1V**

With integral electrical interlocking

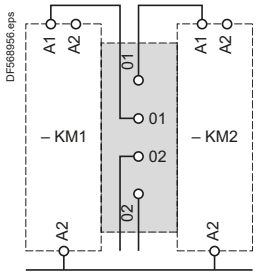



Ref.
Contactors

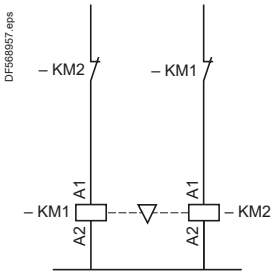
## Schemes

**Electrical interlocking of TeSys D, TeSys D Green reversing contactors fitted with:**

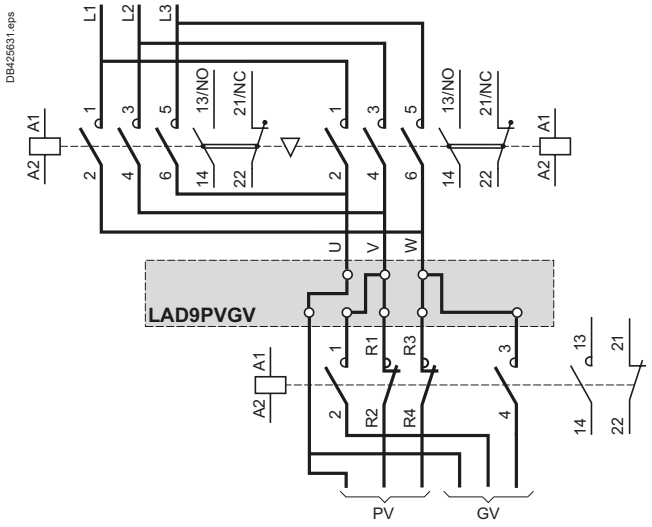
**Mechanical interlock with integral electrical contacts**
**LA9D4002, LA9D8002 and LA9D11502**



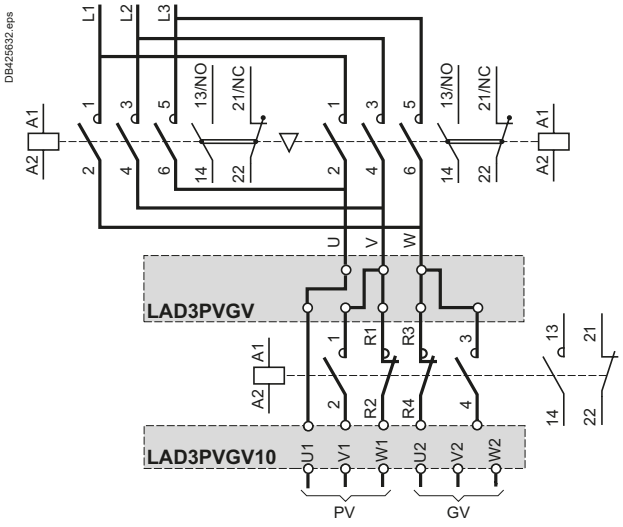

**Mechanical interlock without integral electrical contacts**
**LAD9V2, LAD4CM, LA9D50978 and LA9D80978**




**Low speed - High speed cabling kit, screw clamp terminals for LC1D09... D38 contactors (TeSys D, TeSys D Green)**




**Low speed - High speed cabling kit, spring terminals for LC1D09... D38 contactors (TeSys D)**



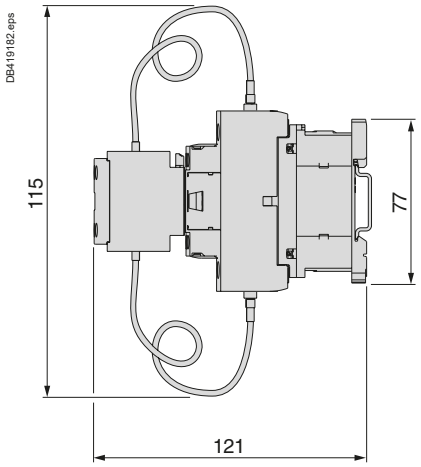


Ref.
Contactors

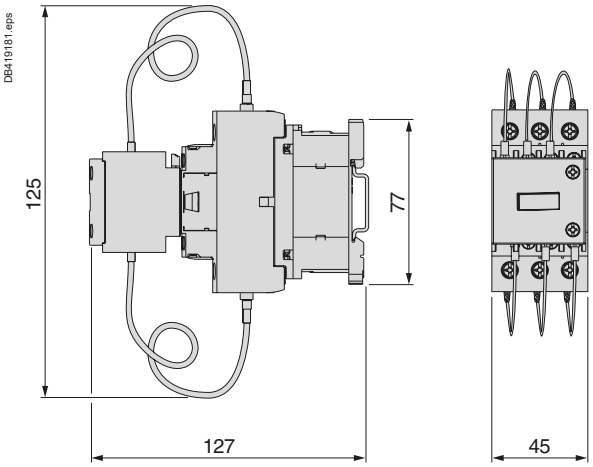
# Dimensions and scheme

## Dimensions

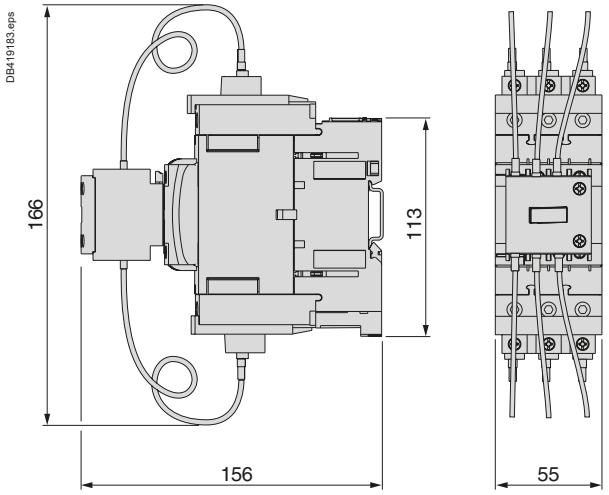
### LC1DFK



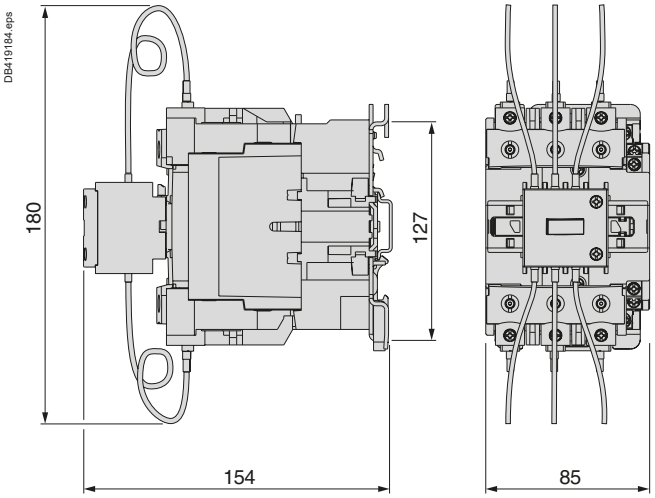

### LC1DGK, DLK, DMK




### LC1DPK, DTK

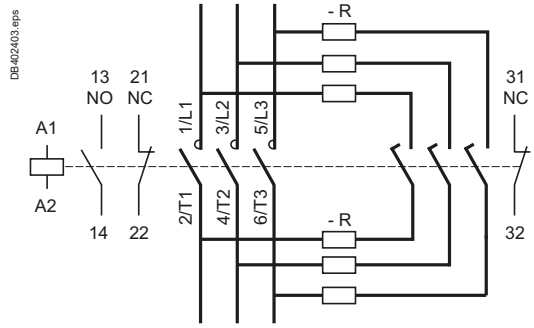



### LC1DWK




## Scheme

### LC1D●K

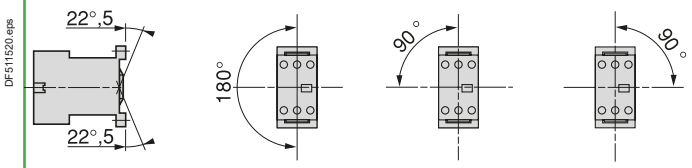



R = Pre-wired resistor connections.

References:
page B8/20

# Characteristics

## Environment

| | | | |
|---|---|---|---|
| Rated insulation voltage (Ui) | Conforming to 60947 | **V** | 690 |
| Conforming to standards | | | IEC/EN 60947-4-1, UL 60947-4-1, CSA C22.2 n° 60947-4-1 |
| Approvals | | | cULus, CCC, EAC, CB certification |
| Degree of protection | Conforming to IEC 60529 | | Protection against direct finger contact IP2x |
| Ambient air temperature around the device | Storage | **°C** | -50…+70 |
| | Operation | **°C** | -20…+50 |
| Maximum operating altitude | Without derating | **m** | 2000 |
| Operating position | | | **Vertical axis** **Horizontal axis**   Without derating Without derating |

| | | | | |
|---|---|---|---|---|
| Cabling, screw clamp terminals | | | Min | Max |
| | Solid conductor | **mm²** | 1 x 1.5 or 2 x 1.5 | 1 x 6 or 2 x 4 |
| | Flexible cable without cable end | **mm²** | 1 x 0.5 or 2 x 0.35 | 1 x 6 or 2 x 2.5 |
| | Flexible cable with cable end | **mm²** | 1 x 0.35 or 2 x 0.35 | 1 x 6 or 2 x 1.5 |
| Tightening torque | Pozidriv n° 1 head | **N.m** | 0.8 | |
| Terminal referencing | | | Conforming to standards En 50005 | |

Ref.
Contactors

# Characteristics

## Pole characteristics

| | | | |
|---|---|---|---|
| Conventional thermal current (Ith) | For ambient temperature ≤ 55 °C | **A** | 12 |
| Rated operational frequency | | **Hz** | 50/60 |
| Frequency limits of the operational current | | **Hz** | Up to 400 |
| Rated operational voltage (Ue) | | **V** | 690 |
| Rated making capacity | I rms conforming to IEC 60947-1 | **A** | 66 |
| Rated breaking capacity (for Ue ≤ 400 V) | Conforming to IEC 60947-1 | **A** | 52 |
| Short time rating | In free air for a time "t" from cold state (θ ≤ 55 °C) | **A** | 50 |
| Short-circuit protection | gl fuse U ≤ 440 V | **A** | 16 |
| Average impedance per pole | At Ith and 50 Hz | **mΩ** | 4 |
| Maximum rated operational current | | | |
| For a temperature ≤ 55 °C | AC-3 (1) (Ue ≤ 400 V) | **A** | 6 |
| | AC-1 | **A** | 12 |
| Utilisation in category AC-1 resistive circuits, heating, lighting (Ue ≤ 440 V) | Increase in operational current by paralleling of poles | **A** | 20 |

## Auxiliary contact characteristics of add-on blocks

| | | | |
|---|---|---|---|
| Rated operational voltage (Ue) | Up to | **V** | 690 |
| Rated insulation voltage (Ui) | Conforming to IEC 60947, IEC 60947-1 | **V** | 690 |
| Conventional thermal current (Ith) | For ambiant temperature ≤ 55 °C | **A** | 10 |
| Frequency of operational current | | **Hz** | Up to 400 |
| Short-circuit protection | Conforming to IEC 60947 and IEC 60947-1, gl fuse | **A** | 10 |

## Operational power of contacts conforming to IEC 60947

### a.c. supply, category AC-15

Electrical durability (valid up to 3600 operating cycles per hour) on an inductive load such as the coil of an electromagnet: making current (cos φ 0.7) = 10 times the breaking current (cos φ 0.4).

| | V | 24 | 48 | 110/127 | 220/230 | 380/400 | 440 |
|---|---|---|---|---|---|---|---|
| 1 million operating cycles | **VA** | 48 | 96 | 240 | 440 | 800 | 880 |
| 3 million operating cycles | **VA** | 17 | 34 | 86 | 158 | 288 | 317 |
| 10 million operating cycles | **VA** | 7 | 14 | 36 | 66 | 120 | 132 |
| Occasional making capacity | **VA** | 1000 | 2050 | 5000 | 10000 | 14000 | 13000 |

### d.c. supply, category DC-13

Electrical durability (valid up to 1200 operating cycles per hour) on an inductive load such as the coil of an electromagnet, without economy resistor, the time constant increasing with the load.

| | V | 24 | 48 | 110 | 220 | 440 | 440 |
|---|---|---|---|---|---|---|---|
| 1 million operating cycles | **W** | 120 | 80 | 60 | 52 | 51 | 880 |
| 3 million operating cycles | **W** | 55 | 38 | 30 | 28 | 26 | 317 |
| 10 million operating cycles | **W** | 15 | 11 | 9 | 8 | 7 | 132 |
| Occasional making capacity | **W** | 720 | 600 | 400 | 300 | 230 | 13000 |

*(1) For LC1 contactors.*

References: pages B8/37 and B8/38
Curves: page B8/89
Dimensions: page B8/90
Schemes: page B8/90

# Characteristics

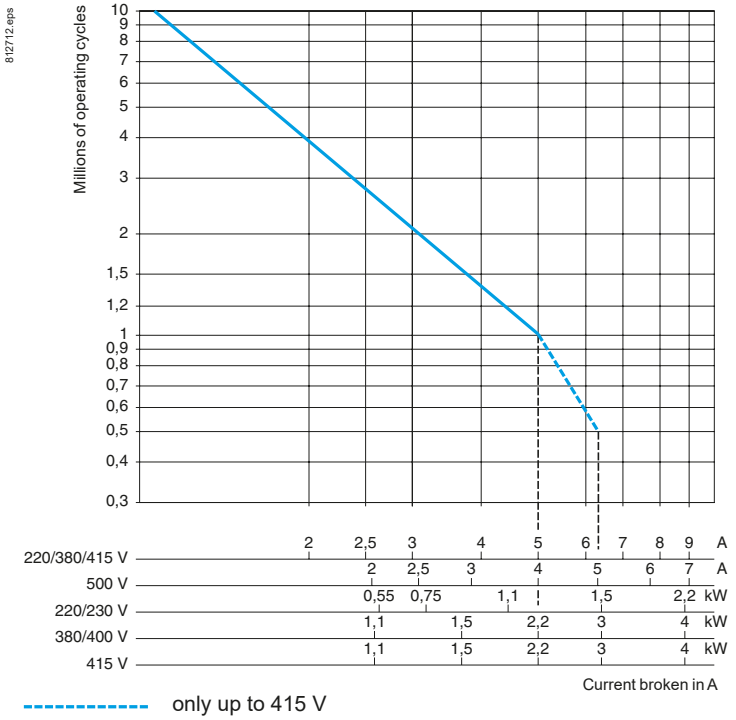
## Control circuit characteristics

| Type | | | LC1SK06 | LP1SK06 |
|---|---|---|---|---|
| Rated control circuit voltage (Uc) | | **V** | ∼ 24…400 | ⎓ 12…72 |
| Control voltage limits (q ≤ 50 °C) | For operation | | 0.85…1.1 Uc | 0.85…1.1 Uc |
| | For drop-out | | ≥ 0.20 Uc | ≥ 0.10 Uc |
| Average coil consumption at 20 °C and at Uc | Inrush | | 16 VA | 2.2 W |
| | Sealed | | 4.2 VA | 2.2 W |
| Heat dissipation | | **W** | 1.4 | 2.2 |
| Operating time at 20 °C and at Uc | | | | |
| Between coil energisation and | opening of the N/C contacts | **ms** | 8…16 | 10…18 |
| | closing of the N/O contacts | **ms** | 7…14 | 8…12 |
| Between coil de-energisation and | opening of the N/O contacts | **ms** | 6…8 | 4…6 |
| | closing of the N/C contacts | **ms** | 8…10 | 6…8 |
| Maximum operating rate | In operating cycles per hour | | 1200 | 1200 |
| Mechanical durability at Uc In millions of operating cycles | 50/60 Hz coil | | 10 | – |
| | ⎓ coil | | – | 10 |

Ref.
Contactors

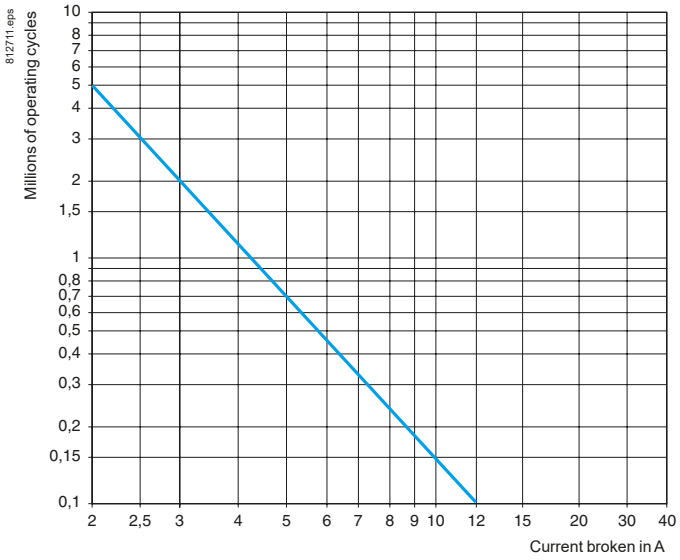
## Use in category AC-3 (Ue ⩽ 440 V)

Control of 3-phase asynchronous squirrel cage motors with breaking whilst running.
The current broken (Ic) in category AC-3 is equal to the rated operational current (Ie) of the motor.




## Use in category AC-1 (Ue ⩽ 440 V)

Control of resistive circuits (cos φ ⩾ 0.95).
The current broken (Ic) in category AC-1 is equal to the current (Ie) normally drawn by the load.

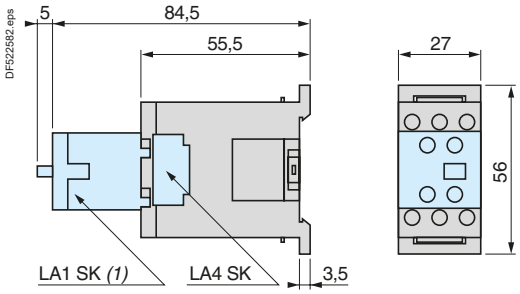



Ref.
Contactors

## Dimensions

### Mini-contactors

**LC1 and LP1SK06**



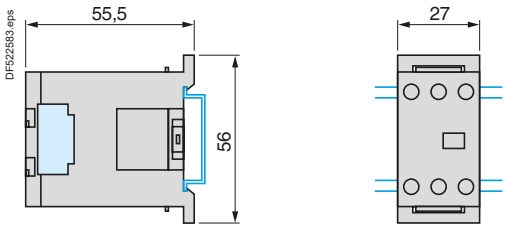

*(1) Only on **LC1SK06**.*

## Mounting

### Mini-contactors

**LC1 and LP1SK06**

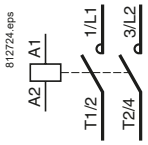
**On mounting rail NSYSDR200BD or NSYSDR200 (ـــ 35 mm)**



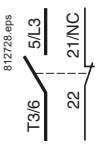

## Schemes

### 2-pole mini-contactors

**LC1 and LP1SK06**



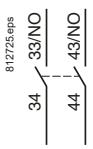
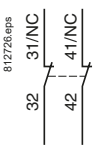
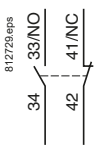

### Add-on power pole block

| 1 pole + 1 “N/O” aux. | 1 pole + 1 “N/C” aux. |
|---|---|
| **LA1SK10** | **LA1SK01** |
|  |  |





### Instantaneous auxiliary contacts

| 2 “N/O” | 2 “N/C” | 1 “N/O” + 1 “N/C” |
|---|---|---|
| **LA1SK20** | **LA1SK02** | **LA1SK11** |
|  |  |  |



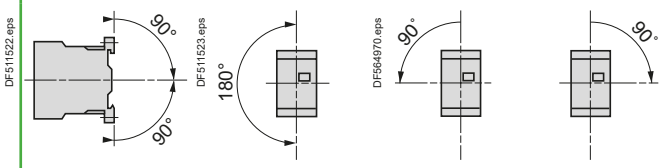




Ref.
Contactors

# Characteristics

## Environment characteristics

| | | | |
|---|---|---|---|
| Conforming to standards | | | IEC/EN 60947-4-1, IEC/EN 60947-5-1, UL 60947-4-1, CSA C22.2 n° 60947-4-1, UL 60947-5-1, CSA C22.2 n° 60947-5-1, GB/T 14048.4 |
| Product certifications | LC● and LP●K06 to K12 | | UL, CSA, CCC, EAC, CB certification |
| | LC● and LP●K16 | | CB certification, CCC, EA |
| Operating positions | | | Vertical axis / Horizontal axis<br>  <br>*Without derating* — *Without derating* — *Possible positions for* **LC●K** *only. Contactor pull-in voltage: 0.85 Uc* |

| | | | | | |
|---|---|---|---|---|---|
| Connection | | | **Min.** | **Max.** | **Max. to IEC 60947** |
| Screw clamp terminals | Solid conductor | **mm²** | 1 x 1.5 | 2 x 4 | 1 x 4 + 1 x 2.5 |
| | Flexible conductor without cable end | **mm²** | 1 x 0.75 | 2 x 4 | 2 x 2.5 |
| | Flexible conductor with cable end | **mm²** | 1 x 0.34 | 1 x 1.5 + 1 x 2.5 | 1 x 1.5 + 1 x 2.5 |
| Spring terminals | Solid conductor | **mm²** | 1 x 0.75 | 1 x 1.5 | 2 x 1.5 |
| | Flexible conductor without cable end | **mm²** | 1 x 0.75 | 1 x 1.5 | 2 x 1.5 |
| Faston connectors | Clip | **mm** | 2 x 2.8 or 1 x 6.35 | | |
| Solder pins for printed circuit board | | | With locating device between power and control circuits pins length 5 mm<br>Recommended minimum width and thickness layer for power printed circuit board track : 4mm x 35 microns | | |
| Tightening torque | of screw-clamp terminals only Philips head n° 2 and Ø6 | **N.m** | 0.8 | | |
| Terminal referencing | Conforming to standards EN 50005 and EN 50012 | | Up to 5 contacts, depending on model | | |
| Rated insulation voltage (Ui) | Conforming to IEC 60947-4-1 | **V** | 690 | | |
| | Conforming to CSA 22-2 n° 60947-4-1, UL 60947-4-1 | **V** | 600 | | |
| Rated impulse withstand voltage (Uimp) | | **kV** | 8 | | |
| Degree of protection | Conforming to IEC 60529 | | Protection against direct finger contact IP2x | | |
| Ambient air temperature around the device | Storage | **°C** | -50…+80 | | |
| | Operation | **°C** | -25…+50 in AC3, -25…+60 in AC1 | | |
| Maximum operating altitude | Without derating | **m** | 2000 | | |
| Vibration resistance 5 ... 300 Hz | Contactor open | | 2 gn | | |
| | Contactor closed | | 4 gn | | |
| Flame resistance | according to IEC 60695-2-10 | **°C** | 850 | | |
| Shock resistance (1/2 sine wave, 11 ms) | Contactor open | | On X axis: 6 gn<br>On Y and Z axes: 10 gn | | |
| | Contactor closed | | On X axis: 10 gn<br>On Y and Z axes: 15 gn | | |

References:
pages B8/39 to B8/46

Dimensions:
pages B8/95 and B8/97

Schemes:
pages B8/96 and B8/98

# Characteristics

## Pole characteristics

| Type | | | | K06 | K09 | K12 | K16 |
|---|---|---|---|---|---|---|---|
| Conventional thermal current (Ith) | For ambient temperature ≤ 60 °C | | A | 20 (1) | | | |
| Rated operational frequency | | | Hz | 50/60 | | | |
| Frequency limits of the operational current | | | Hz | Up to 400 | | | |
| Rated operational voltage (Ue) | | | V | 690 | | | |
| Rated making capacity | I rms conforming to IEC 60947 | | A | 110 | 110 | 144 | 160 |
| Rated breaking capacity | I rms conforming to IEC 60947 | 220/230 V | A | 110 | 110 | – | – |
| | | 380/400 V | A | 110 | 110 | – | – |
| | | 415 V | A | 110 | 110 | – | – |
| | | 440 V | A | 110 | 110 | 110 | 110 |
| | | 500 V | A | 80 | 80 | 80 | 80 |
| | | 660/690 V | A | 70 | 70 | 70 | 70 |
| Permissible short time rating | In free air for a time "t" from cold state (θ ≤ 50 °C) | 1 s | A | 90 | 90 | 115 | 115 |
| | | 5 s | A | 85 | 85 | 105 | 105 |
| | | 10 s | A | 80 | 80 | 100 | 100 |
| | | 30 s | A | 60 | 60 | 75 | 75 |
| | | 1 min | A | 45 | 45 | 55 | 55 |
| | | 3 min | A | 40 | 40 | 50 | 50 |
| | | ≥ 15 min | A | 20 | 20 | 25 | 25 |
| Short-circuit protection | gG fuse U ≤ 440 V (aM fuse, see page 22009/2) | | A | 25 | | | |
| Average impedance per pole | At Ith and 50 Hz | | mΩ | 3 | | | |
| Use in category AC-1 resistive circuits, heating, lighting (Ue ≤ 440 V) | Maximum rated operational current for a temperature ≤ 50 °C | | A | 20 | | | |
| | Maximum rated operational current for a temperature ≤ 70 °C | | A | 16 for Ue only | | | |
| | Rated operational current limits in relation to the on-load factor and operating frequency | | | On-load factor | | 90 % | 60 % 30 % |
| | | | A | 300 operating cycles/hour | | 13 | 15 18 |
| | | | A | 120 operating cycles/hour | | 15 | 18 19 |
| | | | A | 30 operating cycles/hour | | 19 | 20 20 |
| | Increase in rated operational current by paralleling of poles | | | Apply the following coefficients to the above currents; these coefficients take into account an often unbalanced distribution of current between the poles | | | |
| | | | | 2 poles in parallel: K = 1.60 | | | |
| | | | | 3 poles in parallel: K = 2.25 | | | |
| | | | | 4 poles in parallel: K = 2.80 | | | |
| Use in category AC-3 squirrel cage motors | Operational power according to the voltage. Voltage 50 or 60 Hz | 115 V single-ph. | kW | 0.37 | 0.55 | – | – |
| | | 220 V single-ph. | kW | 0.75 | 1.1 | – | – |
| | | 220/230 V 3-ph. | kW | 1.5 | 2.2 | 3 | 4 |
| | | 380/415 V 3-ph. | kW | 2.2 | 4 | 5.5 | 7.5 |
| | | 440/480 V 3-ph. | kW | 3 | 4 | 5.5/4 (480) | 5.5/4 (480) |
| | | 500/600 V 3-ph. | kW | 3 | 4 | 4 | 4 |
| | | 660/690 V 3-ph. | kW | 3 | 4 | 4 | 4 |
| | Maximum operating rate (in operating cycles/hour in relation to % of rated power) | | | Op. cycles/h | | 600 | 900 1200 |
| | | | | Power | | 100 % | 75 % 50 % |

*(1) For **LC●K●●●●3 / LP●K●●●●3** with spring terminal, Ith max = 10 A.*

References: pages B8/39 to B8/46
Dimensions: pages B8/95 and B8/97
Schemes: pages B8/96 and B8/98

## Control circuit characteristics

| Type | | | LC1 | LC2 | LC7 | LC8 | LP1 | LP2 | LP4 | LP5 |
|---|---|---|---|---|---|---|---|---|---|---|
| Rated control circuit voltage (Uc) | | **V** | ∼ 12…690 (1) | | ∼ 24…240 (1) | | ⎓ 12…250 (1) | | ⎓ 12…120 | |
| Control voltage limits (≤ 50 °C) single voltage coil | Operation | | 0.8…1.15 Uc (2) | | 0.85…1.1 Uc | | 0.8…1.15 Uc | | 0.7…1.30 Uc | |
| | Drop-out | | ≥ 0.20 Uc | | ≥ 0.10 Uc | | ≥ 0.10 Uc | | ≥ 0.10 Uc | |
| Average consumption at 20 °C and at Uc | Inrush | | 30 VA | | 3 VA | | 3 W | | 1.8 W | |
| | Sealed | | 4.5 VA | | 3 VA | | 3 W | | 1.8 W | |
| Heat dissipation | | **W** | 1.3 | | 3 | | 3 | | 1.8 | |
| Operating time at 20 °C and at Uc | | | | | | | | | | |
| Between coil energisation and: | - opening of the N/C contacts | **ms** | 5…15 | | 25…35 | | 25…35 | | 25…35 | |
| | - closing of the N/O contacts | **ms** | 10…20 | | 30…40 | | 30…40 | | 30…40 | |
| Between coil de-energisation and: | - opening of the N/O contacts | **ms** | 10…20 | | 30 | | 10 | | 10…20 | |
| | - closing of the N/C contacts | **ms** | 15…25 | | 40 | | 15 | | 15…25 | |
| Maximum immunity to microbreaks | | **ms** | 2 | | 2 | | 2 | | 2 | |
| Maximum operating rate | In operating cycles per hour | | 3600 | | 3600 | | 3600 | | 3600 | |
| Mechanical durability at Uc In millions of operating cycles | 50/60 Hz coil | | 10 | 5 | 10 | 5 | – | – | – | – |
| | ⎓ coil | | – | – | – | – | 10 | 5 | – | – |
| | Wide range coil, Low consumption | | – | – | – | – | – | – | 30 | 5 |

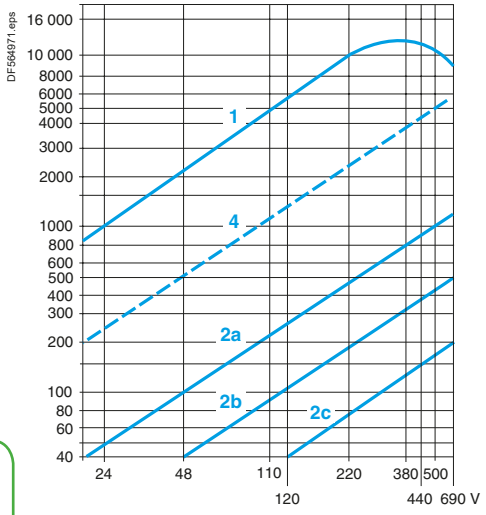
*(1) For mains supplies with a high level of interference (voltage surge > 800 V), use a suppressor module **LA4KE1FC** (50…129 V) or **LA4KE1UG** (130…250 V), see page B8/49.*
*(2) **LC1K12, LC1K16...** : 0.85…1.15 Uc.*

Ref.
Contactors

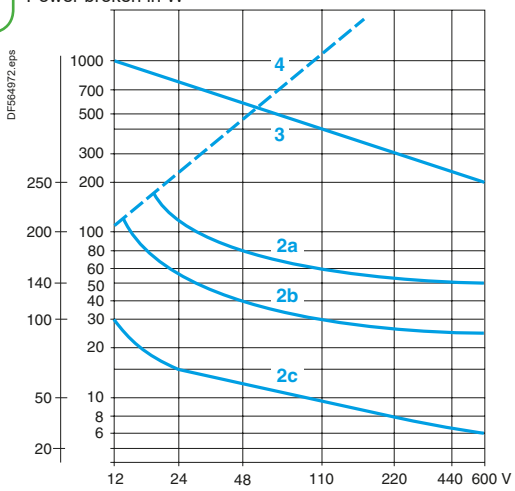
## Auxiliary contact characteristics of contactors and instantaneous contact blocks

| | | | | |
|---|---|---|---|---|
| Number of auxiliary contacts | On LC●K or LP●K 3-pole | | | 1 |
| | On LA1K | | | 2 or 4 |
| Rated operational voltage (Ue) | Up to | | **V** | 690 |
| Rated insulation voltage (Ui) | Conforming to IEC 60947 | | **V** | 690 |
| | Conforming to UL 60947-5-1, CSA C22.2 n° 60947-5-1 | | **V** | 600 |
| Conventional thermal current (Ith) | For ambient temperature ≤ 50 °C | | **A** | 10 |
| Frequency of the operational current | | | **Hz** | Up to 400 |
| Minimum switching capacity | U min | | **V** | 17 |
| | I min | | **mA** | 5 |
| Short-circuit protection | Conforming to IEC 60947, gG fuse | | **A** | 10 |
| Rated making capacity | Conforming to IEC 60947 | I rms | **A** | 110 |
| Short-time rating | Permissible for | 1 s | **A** | 80 |
| | | 500 ms | **A** | 90 |
| | | 100 ms | **A** | 110 |
| Insulation resistance | | | **MΩ** | > 10 |
| Non-overlap distance | LA1K: linked contacts conforming to INRS, BIA and CNA specifications | | **mm** | 0.5 (see schemes pages B8/96 and B8/98) |

Power broken in VA




Power broken in W




## Operational power of contacts conforming to IEC 60947

### a.c. supply, category AC-15

Electrical durability (valid for up to 3600 operating cycles/hour) on an inductive load such as the coil of an electromagnet: making current (cos φ 0.7) = 10 times the power broken (cos φ 0.4).

| Operating cycles | V | 24 | 48 | 110/ 127 | 220/ 230 | 380/ 400 | 440 | 600/ 690 |
|---|---|---|---|---|---|---|---|---|
| 1 million operating cycles | **VA** | 48 | 96 | 240 | 440 | 800 | 880 | 1200 |
| 3 million operating cycles | **VA** | 17 | 34 | 86 | 158 | 288 | 317 | 500 |
| 10 million operating cycles | **VA** | 7 | 14 | 36 | 66 | 120 | 132 | 200 |
| Occasional making capacity | **VA** | 1000 | 2050 | 5000 | 10000 | 14000 | 13000 | 9000 |

### d.c. supply, category DC-13

Electrical durability (valid for up to 1200 operating cycles/hour) on an inductive load such as the coil of an electromagnet, without economy resistor, the time constant increasing with the load.

| Operating cycles | V | 24 | 48 | 110 | 220 | 440 | 600 |
|---|---|---|---|---|---|---|---|
| 1 million operating cycles | **W** | 120 | 80 | 60 | 52 | 51 | 50 |
| 3 million operating cycles | **W** | 55 | 38 | 30 | 28 | 26 | 25 |
| 10 million operating cycles | **W** | 15 | 11 | 9 | 8 | 7 | 6 |
| Occasional making capacity | **W** | 720 | 600 | 400 | 300 | 230 | 200 |

1. Breaking limit of contacts valid for:
   - maximum of 50 operating cycles at 10 s intervals (power broken = making current x cos φ 0.7).
2. Electrical durability of contacts for:
   - 1 million operating cycles (2a)
   - 3 million operating cycles (2b)
   - 10 million operating cycles (2c).
3. Breaking limit of contacts valid for:
   - maximum of 20 operating cycles at 10 s intervals with current passing for 0.5 s per operating cycle.
4. Thermal limit.

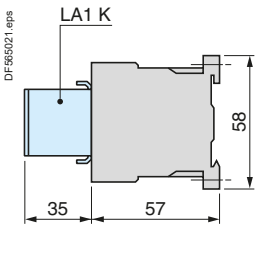
References:
pages B8/39 to B8/46
Dimensions:
pages B8/95 and B8/97
Schemes:
pages B8/96 and B8/98

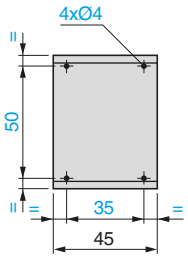
# Dimensions and mounting

## Contactors

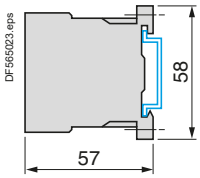
### LC1K, LC7K, LP1K, LP4K

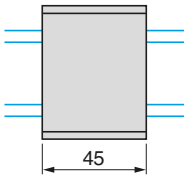
On panel



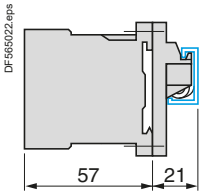

On mounting rail NSYSDR200BD or NSYSDR200 (⎓ 35 mm)

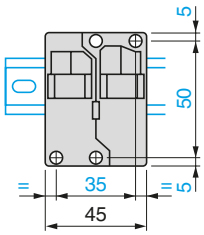


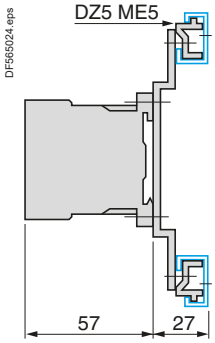

### LA9D973

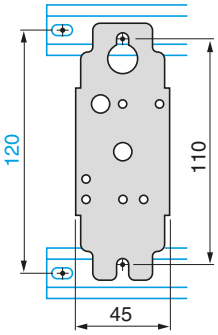
On one asymmetrical rail DZ5MB with clip-on mounting plates



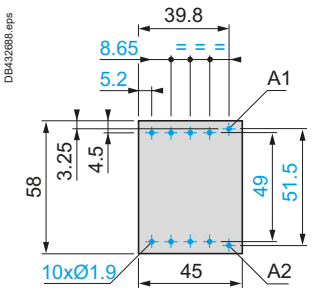




### DX1AP25



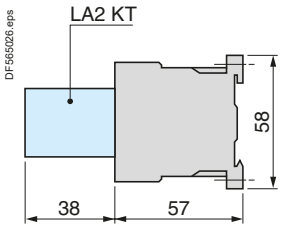

On printed circuit board




## Electronic time delay contact blocks

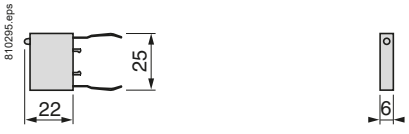
### LA2KT


On contactor

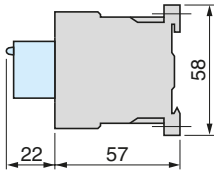



## Suppressor modules

### LA4K●




On contactor LC1K or LP1K




References:
pages B8/39 to B8/42

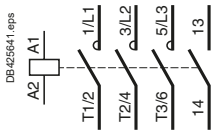
Characteristics:
pages B8/91 to B8/94

Schemes:
page B8/96

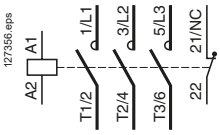
## Schemes

### 3-pole contactors

3 P + N/O

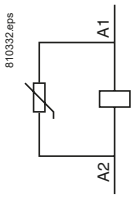



3 P + N/C

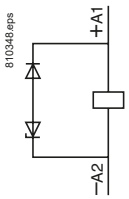



### With integral suppression device

**LC7K**

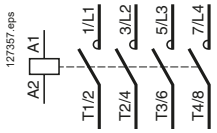



**LP4K**

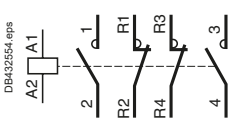



### 4-pole contactors

4 P

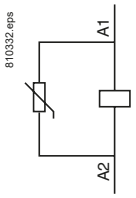



2 P N/O + 2 P N/C

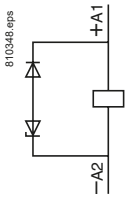



### With integral suppression device

**LC7K**



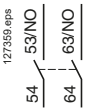

**LP4K**




### Instantaneous auxiliary contacts LA1K

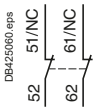
**LA1KN20, KN207, KN203**

2 N/O




**LA1KN02, KN027, KN023**

2 N/C

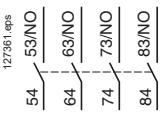



**LA1KN11, KN117, KN113**

1 N/O + 1 N/C

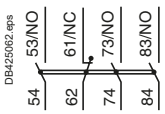

**LA1KN40, KN407, KN403**

4 N/O



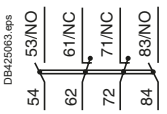

**LA1KN31, KN317, KN313**

3 N/O + 1 N/C



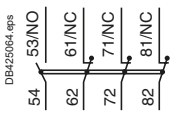

**LA1KN22, KN227, KN223**

2 N/O + 2 N/C



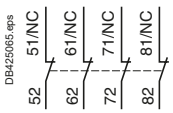

**LA1KN13, KN137, KN133**

1 N/O + 3 N/C




**LA1KN04, KN047, KN043**

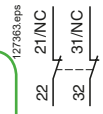
4 N/C




### Terminal referencing conforming to standard EN 50012

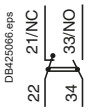
**LA1KN02M**

2 N/C



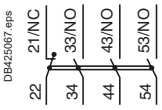

**LA1KN11M**

1 N/O + 1 N/C



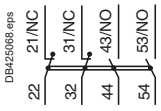

**LA1KN31M**

3 N/O + 1 N/C



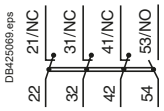

**LA1KN22M**

2 N/O + 2 N/C



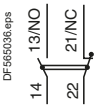

**LA1KN13M**

1 N/O + 3 N/C



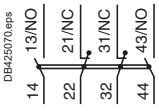

**LA1KN11P**

1 N/O + 1 N/C




**LA1KN22P**

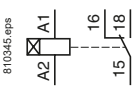
2 N/O + 2 N/C




### Electronic time delay contact blocks

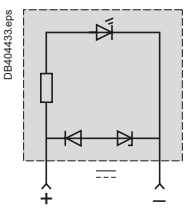
**LA2KT**

1 C/O

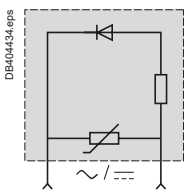



### Suppressor modules

**LA4KC**




**LA4KE**





References:
pages B8/39 to B8/42

Characteristics:
pages B8/91 to B8/94

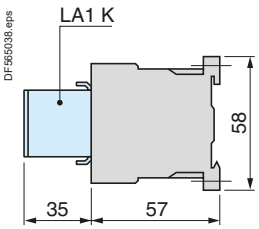
Dimensions:
page B8/95

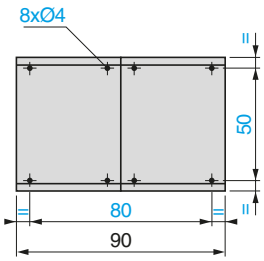
# Dimensions and mounting

## Reversing contactors

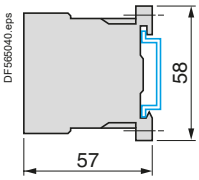
### LC2K, LC8K, LP2K, LP5K

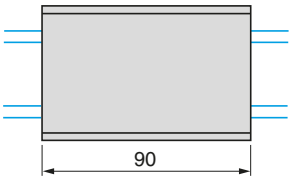
On panel




On mounting rail NSYSDR200BD or NSYSDR200 (⎓ 35 mm)

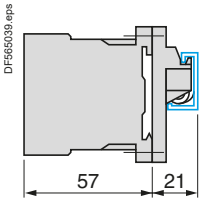


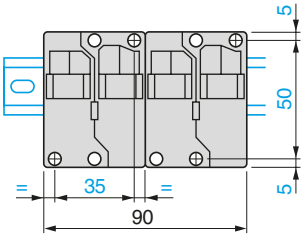



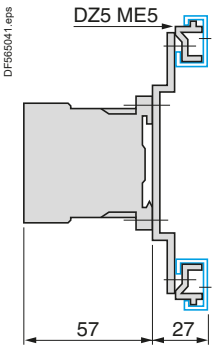

### 2 x LA9D973

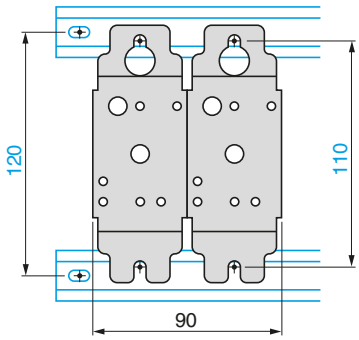
### 2 x DX1AP25

On one asymmetrical mounting rail DZ5MB with 2 clip-on mounting plates LA9D973 or on 2 mounting plates DX1AP25.

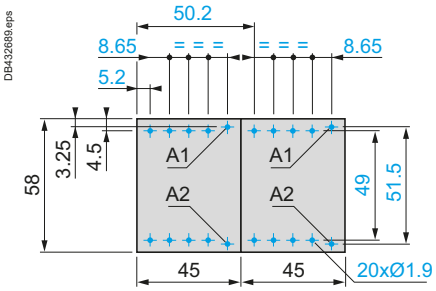


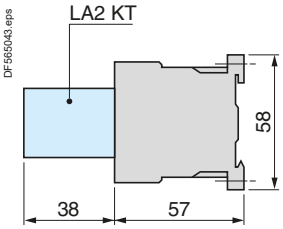

On printed circuit board for reversing contactors or 2 contactors mounted side by side.




## Electronic time delay contact blocks

### LA2KT

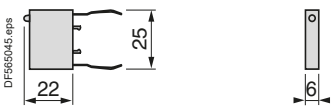
On reversing contactors

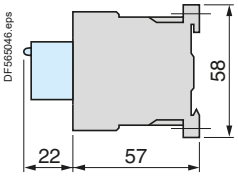




## Suppressor modules

### LA4K●

On reversing contactors LC2K or LP2 K




References:
pages B8/43 to B8/46

Characteristics:
pages B8/91 to B8/94

Schemes:
page B8/98

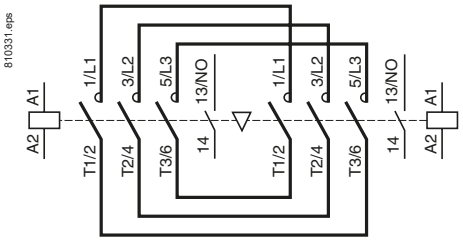
## Schemes

### 3-pole reversing contactors

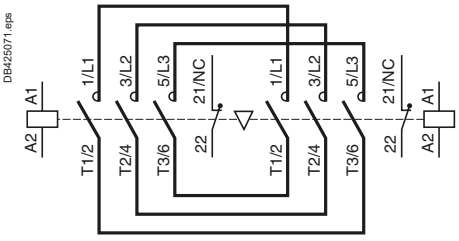
**With integral suppression device**

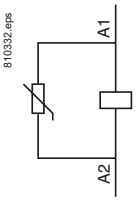
**With screw clamp connections** — **LC8K** — **LP5K**

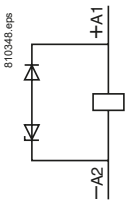
3 P + N/O




3 P + N/C

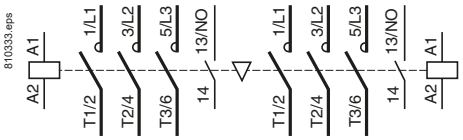


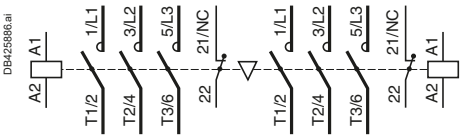




**With Faston connectors or solder pins (printed circuit board)**

3 P + N/O




3 P + N/C

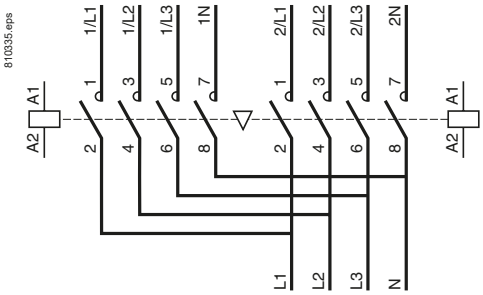



### 4-pole reversing contactors

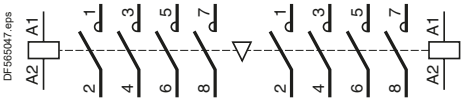
**Integral suppression device**

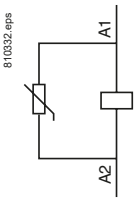
**With screw clamp connections** — **With Faston connectors or solder pins (printed circuit board)** — **LC8K** — **LP5K**

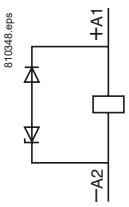
4 P




4 P



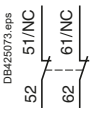



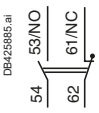



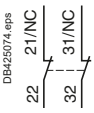

### Instantaneous auxiliary contacts LA1K

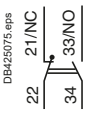
**Terminal referencing conforming to standard EN 50012**

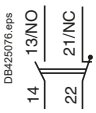
| LA1KN20, KN207, KN203 | LA1KN02, KN027, KN023 | LA1KN11, KN117, KN113 | LAKN02M | LA1KN11M | LA1KN11P |
|---|---|---|---|---|---|
| 2 N/O | 2 N/C | 1 N/O + 1 N/C | 2 N/C | 1 N/O + 1 N/C | 1 N/O + 1 N/C |

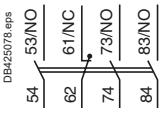



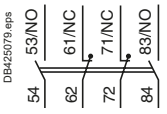



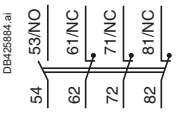



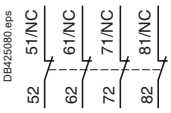




| LA1KN40, KN407, KN403 | LA1KN31, KN317, KN313 | LA1KN22, KN227, KN223 | LAKN13, KN137, KN133 | LA1KN04, KN047, KN043 |
|---|---|---|---|---|
| 4 N/O | 3 N/O + 1 N/C | 2 N/O + 2 N/C | 1 N/O + 3 N/C | 4 N/C |

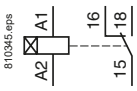




### Electronic time delay contact blocks

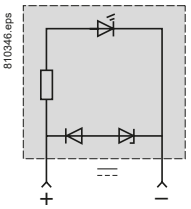
**LA2KT**

1 C/O

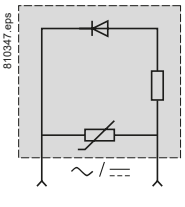



### Suppressor modules

**LA4KC**




**LA4KE**





References:
pages B8/43 to B8/46

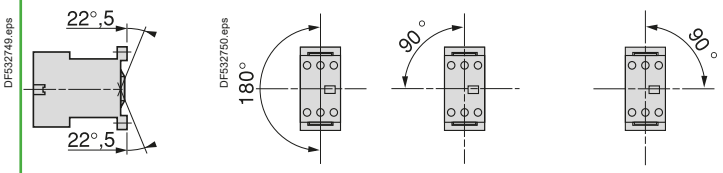
Characteristics:
pages B8/91 to B8/94

Dimensions:
page B8/97

# Characteristics

## Environment

| | | | |
|---|---|---|---|
| Rated insulation voltage (Ui) | Conforming to IEC 60947 | **V** | 690 |
| Conforming to standards | | | IEC 60947, UL 60947-4-1, CSA C22.2 n° 60947-4-1 |
| Approvals | | | cULus |
| Degree of protection | Conforming to IEC 60529 | | Protection against direct finger contact |
| Ambient air temperature around the device | | | |
| | Storage | **°C** | -50…+70 |
| | Operation | **°C** | -20…+50 |
| Maximum operating altitude | Without derating | **m** | 2000 |
| Operating position | | | **Vertical axis** **Horizontal axis** |




Without derating Without derating

| | | | | |
|---|---|---|---|---|
| Cabling, connectors | | | Min. | Max. |
| | Solid conductor | **mm²** | 1 x 1.5 or 2 x 1.5 | 1 x 6 or 2 x 4 |
| | Flexible cable without cable end | **mm²** | 1 x 0.5 or 2 x 0.35 | 1 x 6 or 2 x 2.5 |
| | Flexible cable with cable end | **mm²** | 1 x 0.35 or 2 x 0.35 | 1 x 6 or 2 x 1.5 |
| Tightening torque | Pozidriv n° 1 head | **N.m** | 0.8 | |
| Terminal referencing | | | Conforming to standards EN 50005 | |

Ref.
Contactors

References:
pages B8/51 and B8/52
Dimensions, schemes:
page B8/103

# Characteristics

## Pole characteristics

| Mini-contactor type | | | | LC1SKGC2 | LC1SKGC3 and LC1SKGC4 |
|---|---|---|---|---|---|
| Conventional thermal current (Ith) | For ambient temperature ≤ 55 °C | | **A** | 20 | 20 |
| Rated operational frequency | | | **Hz** | 50/60 | |
| Frequency limit of the operational current | | | **Hz** | up to 400 | |
| Rated operational voltage (Ue) | | | **V** | 690 | |
| Rated making capacity | I rms conforming to IEC 60947 | | **A** | 50 | 85 |
| Rated breaking capacity (for Ue ≤ 400 V) | Conforming to IEC 60947 (I rms) | | **A** | 40 | 68 |
| Permissible short time rating | In free air for a time "t" from cold state (θ ≤ 55 °C) | | **A** | 40 | 60 |
| Short-circuit protection | gl fuse U ≤ 440 V | | **A** | 20 | 20 |
| Average impedance per pole | At Ith and 50 Hz | | **mΩ** | 4 | 4 |
| Maximum rated operational current | For temperature ≤ 55 °C | AC-3 (Ue ≤ 400 V) | **A** | 5 | 9 |
| | | AC-1 | **A** | 20 | 20 |
| Use in category AC-1 resistive circuits, heating, lighting (Ue ≤ 440 V) | Increase in rated operational current by paralleling of 2 poles | | **A** | 32 | 32 |

## Auxiliary contact characteristics of mini-contactors

| | | | |
|---|---|---|---|
| Rated operational voltage (Ue) | Up to | **V** | 690 |
| Rated insulation voltage (Ui) | Conforming to IEC 60947 | **V** | 690 |
| Conventional thermal current (Ith) | For ambient temperature ≤ 55 °C | **A** | 10 |
| Frequency of the operational current | | **Hz** | Up to 400 |
| Short-circuit protection | Conforming to IEC 60947, gl fuse | **A** | 10 |

## Operational power of contacts conforming to IEC 60947

**a.c. supply, category AC-15**

Electrical durability (valid for up to 3600 operating cycles/hour) on an inductive load such as the coil of an electromagnet: making current (cos φ 0.7) = 10 times the power broken (cos φ 0.4).

| | V | 24 | 48 | 110/127 | 220/230 | 380/400 | 440 |
|---|---|---|---|---|---|---|---|
| 1 million operating cycles | **VA** | 48 | 96 | 240 | 440 | 800 | 880 |
| 3 million operating cycles | **VA** | 17 | 34 | 86 | 158 | 288 | 317 |
| 10 million operating cycles | **VA** | 7 | 14 | 36 | 66 | 120 | 132 |
| Occasional making capacity | **VA** | 1000 | 2050 | 5000 | 10000 | 14000 | 13000 |

**d.c. supply, category DC-13**

Electrical durability (valid for up to 1200 operating cycles/hour) on an inductive load such as the coil of an electromagnet, without economy resistor, the time constant increasing with the load.

| | V | 24 | 48 | 110 | 220 | 440 | 440 |
|---|---|---|---|---|---|---|---|
| 1 million operating cycles | **W** | 120 | 80 | 60 | 52 | 51 | 880 |
| 3 million operating cycles | **W** | 55 | 38 | 30 | 28 | 26 | 317 |
| 10 million operating cycles | **W** | 15 | 11 | 9 | 8 | 7 | 132 |
| Occasional making capacity | **W** | 720 | 600 | 400 | 300 | 230 | 13000 |

Ref.
Contactors

References:
pages B8/51 and B8/52
Dimensions, schemes:
page B8/103

# Characteristics

## Control circuit characteristics

| Mini-contactor type | | | LC1SKGC2 | LC1SKGC3 and LC1SKGC4 |
|---|---|---|---|---|
| Rated control circuit voltage (Uc) | | **V** | ∿ 24…400 | |
| Control voltage limits (θ ≤ 55 °C) | Operation | | 0.85…1.1 Uc | |
| | For drop-out | | ≥ 0.20 Uc | |
| Average coil consumption at 20 °C and at Uc | | | | |
| | Inrush | **VA** | 16 | 23 |
| | Sealed | **VA** | 4.2 | 4.9 |
| Heat dissipation | | **W** | 1.4 | 1.5 |
| Operating time at 20 °C and at Uc | | | | |
| Between coil energisation and | opening of the N/C contacts | **ms** | 8…16 | |
| | closing of the N/O contacts | **ms** | 7…14 | |
| Between coil de-energisation and | opening of the N/O contacts | **ms** | 6…8 | |
| | closing of the N/C contacts | **ms** | 8…10 | |
| Maximum operating rate | In operating cycles per hour | | 1200 | |
| Mechanical durability at Uc in millions of operating cycles | 50/60 Hz coil | | 10 | |

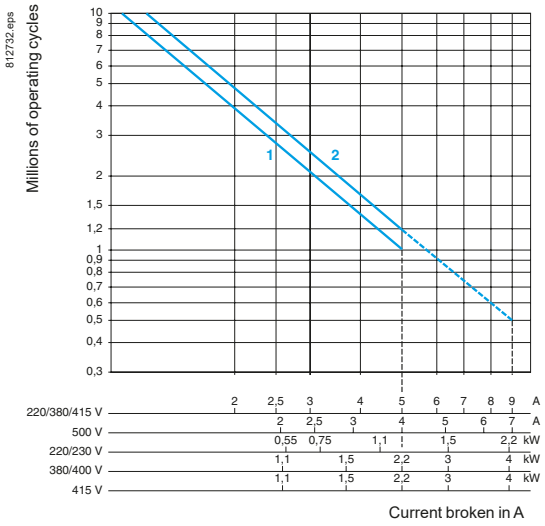
Ref.
Contactors

References:
pages B8/51 and B8/52
Dimensions, schemes:
page B8/103

# Durability curves

## Use in category AC-3 (Ue ⩽ 440 V)

Control of 3-phase asynchronous squirrel cage motors with breaking whilst running.
The current broken (Ic) in category AC-3 is equal to the rated operational current of the motor.

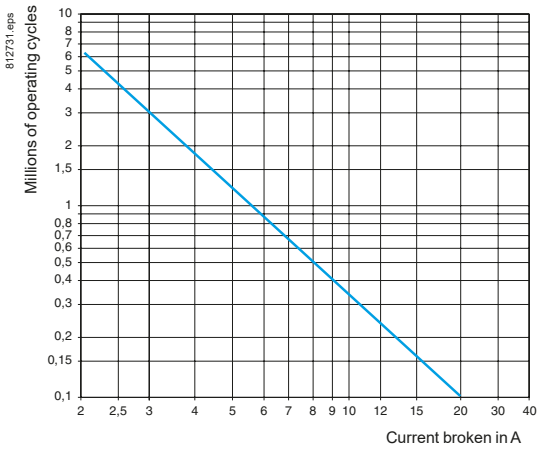



1. LC1SKGC2
2. LC1SKGC3 and SKGC4

- - - - - only up to 415 V

## Use in category AC-1 (Ue ⩽ 440 V)

Control of resistive circuits (cos φ ⩾ 0.95).
The current broken (Ic) in category AC-1 is equal to the current (Ie) normally drawn by the load.

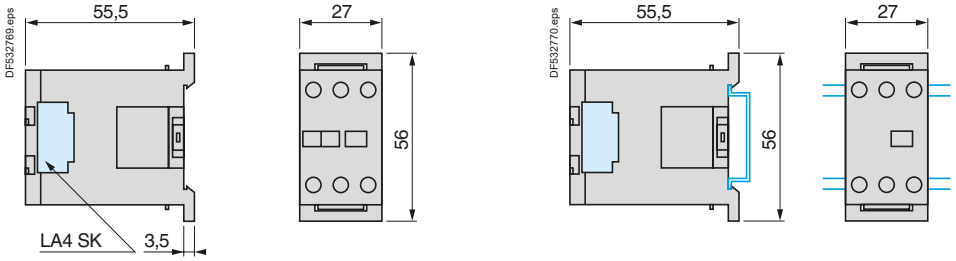



Ref.
Contactors

# Dimensions, mounting and schemes

## Dimensions — Mini-contactors LC1SKGC2

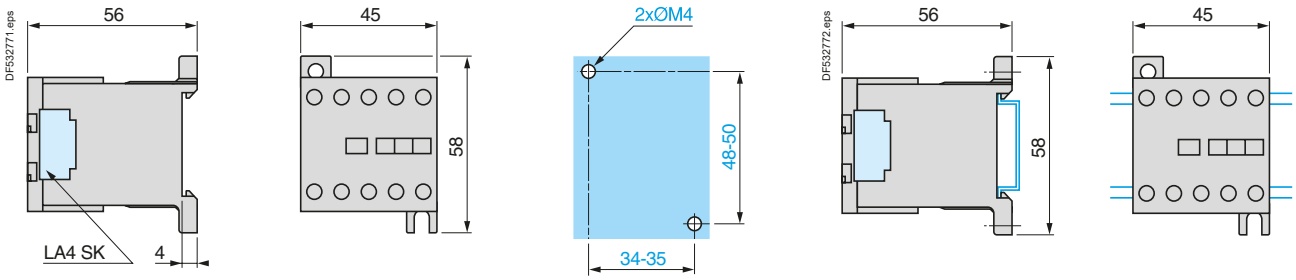
### Mounting — On mounting rail NSYSDR200BD or NSYSDR200 (⎓ 35 mm)




## Dimensions — Mini-contactors LC1SKGC3 and SKGC4

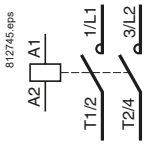
### Mounting — On panel

### Mounting — On mounting rail NSYSDR200BD or NSYSDR200 (⎓ 35 mm)



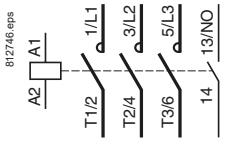

## 2-pole mini-contactors

### LC1SKGC2

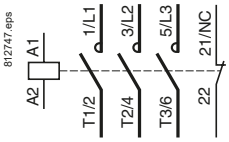



## 3-pole mini-contactors

### LC1SKGC310

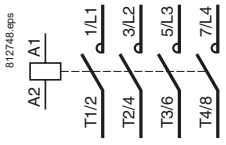



### LC1SKGC301




## 4-pole mini-contactors

### LC1SKGC400




References:
pages B8/51 and B8/52
Characteristics:
pages B8/99 to B8/101
Curves:
page B8/102


*GC25*

**TeSys GC contactors are designed for use in modular panels and enclosures.**
These contactors feature:

■ **Easy installation:**
□ quick clip-on fixing and locking onto 35 mm omega rail
□ easy connection by means of ready-to-tighten, captive, pozidrive screw terminals.
■ **Compact size:**
All units have a common depth of 60 mm and width in modules of 17.5 mm (width of one module: 17.5 mm).

■ **User safety:**
□ use of materials conforming to strictest fire safety standards
□ live parts protected against direct finger contact
□ completely safe operation
□ state indication on front panel.

## Standards

This range of modular contactors has been designed taking into account the requirements of international standard IEC 61095.
This standard is specific to “Electromagnetic contactors for domestic and similar use”.
It has very strict requirements, meeting the expectations of users, with regard to the safety of equipment and persons in “premises and areas accessible to the public”.
Conformity with this standard makes it possible to obtain the following quality labels without the need for additional tests: NF-USE, VDE, CEBEC, etc.

## Applications

TeSys GC modular contactors are designed for switching all single-phase, 3-phase or 4-phase loads up to 100 A.

## Power switching

These contactors have multiple applications in industrial, agricultural and commercial premises, hospitals and the home, i.e. wherever switching of a specific supply is required:
■ lighting
■ heating
■ ventilation
■ motorised shutters or gates.

# Characteristics

## Environment

| Contactor type | | | GC16 | GC25 | GC40 | GC63 | GC100 |
|---|---|---|---|---|---|---|---|
| Rated insulation voltage (Ui) | Conforming to IEC 61095 | V | 500 | | | | |
| | Conforming to VDE 0110 | V | 500 | | | | |
| Rated impulse withstand voltage (Uimp) | | kV | 4 in enclosure | | | | |
| Conforming to standards | | | IEC 61095 and IEC 60947-5-1 for auxiliary contacts | | | | |
| Degree of protection | Conforming to IEC 60529 | | Protection against direct finger contact (IP 20 open, IP 40 in enclosure) | | | | |
| Ambient air temperature around the device | Storage | °C | -40…+70 | | | | |
| | Operation | °C | -5…+50 (0.85…1.1 Uc) | | | | |
| Maximum operating altitude | Without derating | m | 3000 | | | | |
| Operating positions | Without derating | | ±30° in relation to normal vertical mounting plane | | | | |
| Shock resistance 1/2 sine wave = 10 ms | Contactor open | | 10 gn | | | | |
| | Contactor closed | | 15 gn | | | | |
| Vibration resistance 5…300 Hz | Contactor open | | 2 gn | | | | |
| | Contactor closed | | 3 gn | | | | |
| Flame resistance | | | Conforming to IEC 61095 | | | | |

## Pole characteristics

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Number of poles | | | 2, 3 or 4 | | | | |
| Rated operational current (Ie) (Ue ≤ 440 V) | In AC-7a (heating) | A | 16 | 25 | 40 | 63 | 100 |
| | In AC-7b (motor control) | A | 5 | 8.5 | 15 | 25 | – |
| Contactor rating | 40 °C | A | 16 | 25 | 40 | 63 | 100 |
| | 50 °C | A | 14 | 22 | 36 | 57 | 87 |
| | 60 °C (1) | A | 13 | 20 | 32 | 50 | 80 |
| Rated operational voltage (Ue) | Up to | V | 250 two-pole contactors, 415 three and four-pole contactors | | | | |
| Frequency limits | Of the operating current | Hz | 400 | | | | |
| Conventional thermal current (Ith) | θ ≤ 50 °C | A | 16 | 25 | 40 | 63 | 100 |
| Rated breaking and making capacity | Conforming to IEC 61095 (AC-7b) I rms 400 V 3-phase | A | 40 | 68 | 120 | 200 | – |
| Permissible short time rating no current flowing for preceding 15 minutes with q ≤ 40 °C | For 10 s | A | 128 | 200 | 320 | 504 | 800 |
| | For 30 s | A | 40 | 62 | 100 | 157 | 250 |
| Short-circuit protection by fuse or circuit breaker U ≤ 440 V | gl fuse | A | 16 | 25 | 40 | 63 | 100 |
| | Circuit breaker $I^2t$ (at 3 kA rms prospective) 230 V | $A^2s$ | 5000 | 10000 | 16000 | 18000 | – |
| | 400 V | $A^2s$ | 9000 | 14000 | 17500 | 20000 | – |
| Electrical durability in operating cycles | AC-7a, AC-7b | | 100000 | 100000 | 100000 | 100000 | 30000 |
| Average impedance per pole | At Ith and 50 Hz | mΩ | 2.5 | 2.5 | 2 | 2 | 1 |
| Power dissipated per pole | For the above operational currents | W | 0.65 | 1.6 | 3.2 | 8 | 10 |
| Maximum cabling c.s.a. Flexible cable without cable end | 1 conductor | $mm^2$ | 6 | 6 | 25 | 25 | 35 |
| | 2 conductors | $mm^2$ | 4 | 4 | 16 | 16 | – |
| Flexible cable with cable end | 1 conductor | $mm^2$ | 6 | 6 | 16 | 16 | 35 |
| | 2 conductors | $mm^2$ | 1.5 | 1.5 | 4 | 4 | – |
| Solid cable without cable end | 1 conductor | $mm^2$ | 6 | 6 | 25 | 25 | 35 |
| | 2 conductors | $mm^2$ | 4 | 4 | 6 | 6 | 10 |
| Tightening torque | Power circuit connections | N.m | 0.8 | 0.8 | 3.5 | 3.5 | 3.5 |

*(1) Ventilation 1/2 module must be fitted.*

References: page B8/53
Dimensions, schemes: pages B8/111 to B8/113

# Characteristics

## Control circuit characteristics

| Contactor type | | | | GC16, GC25 single or 2-pole | GC16, GC25 3 or 4-pole **GC40, GC63** 2-pole | GC40, GC63 3 or 4-pole **GC100** 2-pole | GC100 4-pole |
|---|---|---|---|---|---|---|---|
| Rated control circuit voltage (Uc) | | 50 or 60 Hz | **V** | 12…240 V, for other voltages, please consult your Regional Sales Office | | | |
| Control voltage limits (θ ≤ 50 °C) | 50 Hz coils | Operational | | 0.85…1.1 Uc | | | |
| | | Drop-out | | 0.2…0.75 Uc | | | |
| Average coil consumption at 20 °C and at Uc | ∼ 50 Hz | Inrush | **VA** | 15 | 34 | 53 | 106 |
| | | Sealed | **VA** | 3.8 | 4.6 | 6.5 | 13 |
| Maximum heat dissipation | | 50/60 Hz | **W** | 1.3 | 1.6 | 2.1 | 4.2 |
| Operating time | | Closing "C" | **ms** | 10…30 | | | |
| | | Opening "O" | **ms** | 10…25 | | | |
| Mechanical durability | | In operating cycles | | $10^6$ | | | |
| Maximum operating rate at ambient temperature ≤ 50 °C | | In operating cycles per hour | | 300 | | | |
| Maximum cabling c.s.a. | Flexible cable without cable end | 1 or 2 conductors | **mm²** | 2.5 | | | |
| | Flexible cable with cable end | 1 conductor | **mm²** | 2.5 | | | |
| | | 2 conductors | **mm²** | 1.5 | | | |
| | Solid cable without cable end | 1 or 2 conductors | **mm²** | 1.5 | | | |
| Tightening torque | | | **N.m** | 0.8 | | | |

## Instantaneous auxiliary contact characteristics

| | | | |
|---|---|---|---|
| Rated operational voltage (Ue) | Up to | **V** | 250 |
| Rated insulation voltage (Ui) | Conforming to IEC 60947-5 | **V** | 500 |
| | Conforming to VDE 0110 | **V** | 500 |
| Conventional thermal current (Ith) | For ambient θ ≤ 50 °C | **A** | 5 |
| Mechanical durability | Operating cycles | | $10^6$ |
| Maximum cabling c.s.a. | Flexible or solid conductor | **mm²** | 2.5 |
| Tightening torque | | **N.m** | 0.8 |

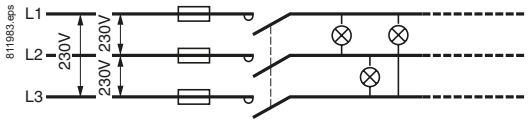
Ref.
Contactors

References: page B8/53
Dimensions, schemes: pages B8/111 to B8/113

## Lighting (Maximum number of lamps depending on the power of each unit) Introduction of installations according to type of supply

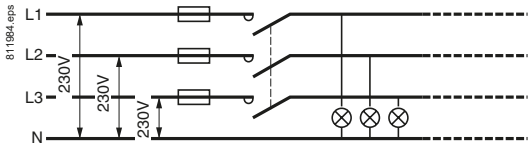
■ Single-phase circuit, 230 V


■ 3-phase circuit, 230 V




The maximum number of lamps which can be operated per phase is equal to the number of lamps in the "single phase 230 V" table divided by $\sqrt{3}$.

■ 3-phase circuit, 400 V (with neutral)




The maximum number of lamps which can be operated per phase is equal to the total number of lamps in the "single-phase 230 V" table.

### Contactor rating for a single-phase 230 V circuit (single-pole)

**Fluorescent lamps with starter**

| Single fitting | Non corrected | | | | | With parallel correction | | | | | Contactor rating |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P (W) | 20 | 40 | 50 | 80 | 110 | 20 | 40 | 58 | 80 | 110 | – |
| $I_B$ (A) | 0.39 | 0.43 | 0.70 | 0.80 | 1.2 | 0.19 | 0.29 | 0.46 | 0.57 | 0.79 | – |
| C (µF) | – | – | – | – | – | 5 | 5 | 7 | 7 | 16 | – |
| Maximum number of lamps | 22 | 20 | 13 | 10 | 7 | 15 | 15 | 10 | 10 | 5 | **16 A** |
| | 30 | 28 | 17 | 15 | 10 | 20 | 20 | 15 | 15 | 7 | **25 A** |
| | 70 | 60 | 35 | 30 | 20 | 40 | 40 | 30 | 30 | 14 | **40 A** |
| | 100 | 90 | 56 | 48 | 32 | 60 | 60 | 43 | 43 | 20 | **63 A** |
| **Twin fitting** | **Non corrected** | | | | | **With series correction** | | | | | **Contactor rating** |
| P (W) | 2 x 18 | 2 x 36 | 2 x 58 | 2 x 80 | 2 x 140 | 2 x 18 | 2 x 36 | 2 x 58 | 2 x 80 | 2 x 140 | – |
| $I_B$ (A) | 0.44 | 0.82 | 1.34 | 1.64 | 2.2 | 0.26 | 0.48 | 0.78 | 0.96 | 1.3 | – |
| C (µF) | – | – | – | – | – | 3.5 | 4.5 | 7 | 9 | 18 | – |
| Maximum number of lamps | 20 | 11 | 7 | 5 | 4 | 30 | 17 | 10 | 9 | 6 | **16 A** |
| | 30 | 16 | 10 | 8 | 6 | 46 | 25 | 16 | 13 | 10 | **25 A** |
| | 50 | 26 | 16 | 13 | 10 | 80 | 43 | 27 | 22 | 16 | **40 A** |
| | 75 | 42 | 25 | 21 | 16 | 123 | 67 | 42 | 34 | 25 | **63 A** |

**High pressure mercury vapour lamps**

| | Non corrected | | | | | | With parallel correction | | | | | | | Contactor rating |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P (W) | 50 | 80 | 125 | 250 | 400 | 700 | 50 | 80 | 125 | 250 | 400 | 700 | 1000 | – |
| $I_B$ (A) | 0.6 | 0.8 | 1.15 | 2.15 | 3.25 | 5.4 | 0.35 | 0.50 | 0.7 | 1.5 | 2.4 | 4 | 5.7 | – |
| C (µF) | – | – | – | – | – | – | 7 | 8 | 10 | 18 | 25 | 40 | 60 | – |
| Maximum number of lamps | 15 | 10 | 8 | 4 | 2 | 1 | 10 | 9 | 9 | 4 | 3 | 2 | – | **16 A** |
| | 20 | 15 | 10 | 6 | 4 | 2 | 15 | 13 | 10 | 6 | 4 | 2 | 1 | **25 A** |
| | 34 | 27 | 20 | 10 | 6 | 4 | 28 | 25 | 20 | 11 | 8 | 5 | 3 | **40 A** |
| | 53 | 40 | 28 | 15 | 10 | 6 | 43 | 38 | 30 | 17 | 12 | 7 | 5 | **63 A** |

*$I_B$: value of current drawn by each lamp at its rated voltage.*
***C**: unit capacitance for each lamp.*
*$I_B$ and **C** correspond to values normally quoted by lamp manufacturers*

References: page B8/53
Dimensions, schemes: pages B8/111 to B8/113

## Contactor rating for a single-phase 230 V circuit (single-pole) (continued)

**Low pressure sodium vapour lamps**

| | Non corrected | | | | | | With parallel correction | | | | | | Contactor rating |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P (W) | 18 | 35 | 55 | 90 | 135 | 180 | 18 | 35 | 55 | 90 | 135 | 180 | – |
| $I_B$ (A) | 0.35 | 1.4 | 1.4 | 2.1 | 3.1 | 3.1 | 0.35 | 0.6 | 0.6 | 0.9 | 0.9 | 0.9 | – |
| C (µF) | – | – | – | – | – | – | 5 | 20 | 20 | 26 | 45 | 40 | – |
| Maximum number of lamps | 18 | 4 | 5 | 3 | 2 | 2 | 14 | 3 | 3 | 2 | 1 | 1 | **16 A** |
| | 34 | 9 | 9 | 6 | 4 | 4 | 21 | 5 | 5 | 4 | 2 | 2 | **25 A** |
| | 57 | 14 | 14 | 9 | 6 | 6 | 40 | 10 | 10 | 8 | 4 | 5 | **40 A** |
| | 91 | 24 | 24 | 19 | 10 | 10 | 60 | 15 | 15 | 11 | 6 | 7 | **63 A** |

**High pressure sodium vapour lamps**

| | Non corrected | | | | | With parallel correction | | | | | Contactor rating |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P (W) | 70 | 150 | 250 | 400 | 1000 | 70 | 150 | 250 | 400 | 1000 | – |
| $I_B$ (A) | 1 | 1.8 | 3 | 4.4 | 10.3 | 0.6 | 0.7 | 1.5 | 2.5 | 6 | – |
| C (µF) | – | – | – | – | – | 12 | 20 | 32 | 45 | 100 | – |
| Maximum number of lamps | 8 | 4 | 2 | 1 | – | 6 | 6 | 2 | 2 | 1 | **16 A** |
| | 12 | 7 | 4 | 3 | 1 | 9 | 9 | 3 | 4 | 2 | **25 A** |
| | 20 | 13 | 8 | 5 | 2 | 18 | 18 | 6 | 8 | 4 | **40 A** |
| | 32 | 18 | 11 | 8 | 3 | 25 | 25 | 9 | 12 | 6 | **63 A** |

**Metal iodine or halogen vapour lamps**

| | Non corrected | | | | | | With parallel correction | | | | | | | Contactor rating |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P (W) | 35 | 70 | 150 | 250 | 400 | 1000 | 39 | 70 | 150 | 250 | 400 | 1000 | 2000 | – |
| $I_B$ (A) | 0.3 | 0.5 | 1 | 1.5 | 2.5 | 6 | 0.3 | 0.5 | 1 | 1.5 | 2.5 | 6 | 5.5 | – |
| C (µF) | – | – | – | – | – | – | 6 | 12 | 20 | 32 | 45 | 85 | 60 | – |
| Maximum number of lamps | 27 | 16 | 8 | 5 | 3 | 1 | 12 | 6 | 4 | 3 | 2 | – | 1 | **16 A** |
| | 40 | 24 | 12 | 8 | 5 | 2 | 18 | 9 | 6 | 4 | 3 | 1 | 2 | **25 A** |
| | 68 | 42 | 20 | 14 | 8 | 4 | 31 | 16 | 10 | 7 | 5 | 3 | 3 | **40 A** |
| | 106 | 64 | 32 | 21 | 13 | 5 | 50 | 25 | 15 | 10 | 7 | 4 | 5 | **63 A** |

**Incandescent and halogen lamps**

| | | | | | | | | | Contactor rating |
|---|---|---|---|---|---|---|---|---|---|
| P (W) | 60 | 75 | 100 | 150 | 200 | 300 | 500 | 1000 | – |
| $I_B$ (A) | 0.26 | 0.32 | 0.44 | 0.65 | 0.87 | 1.3 | 2.17 | 4.4 | – |
| Maximum number of lamps | 30 | 25 | 19 | 12 | 10 | 7 | 4 | 2 | **16 A** |
| | 45 | 38 | 28 | 18 | 14 | 10 | 6 | 3 | **25 A** |
| | 85 | 70 | 50 | 35 | 26 | 18 | 10 | 6 | **40 A** |
| | 125 | 100 | 73 | 50 | 37 | 25 | 15 | 8 | **63 A** |

**Halogen lamps used with transformer**

| | | | | | Contactor rating |
|---|---|---|---|---|---|
| P (W) | 60 | 80 | 105 | 150 | – |
| $I_B$ (A) | 0.26 | 0.35 | 0.45 | 0.65 | – |
| Maximum of lamps | 9 | 8 | 6 | 4 | **16 A** |
| | 14 | 12 | 9 | 6 | **25 A** |
| | 27 | 23 | 18 | 13 | **40 A** |
| | 40 | 35 | 27 | 19 | **63 A** |

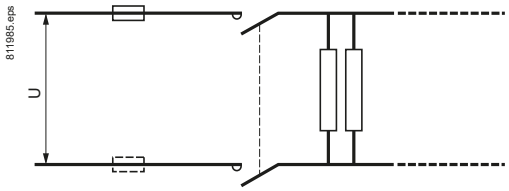
$I_B$ *value of current drawn by each lamp at its rated voltage.*
***C****: unit capacitance for each lamp.*
$I_B$ *and* ***C*** *correspond to values normally quoted by lamp manufacturers*

Ref.
Contactors

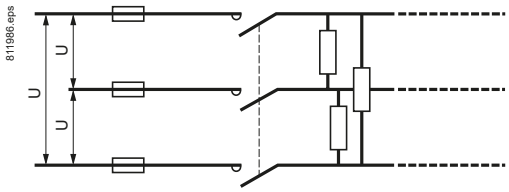
# Characteristics in heating applications

## Heating (AC-7a)

### Single-phase, 2-pole switching




### 3-phase switching




Heating by resistive elements or by infra-red radiators, convectors or radiators, heating ducts, industrial furnaces. The current peak between the hot and cold states must not exceed 2 to 3 In at the moment of switch-on.

**Contactor selection according to power and required electrical life**

| Electrical durability (in operating cycles) | Maximum power (kW) | | | | | Contactor rating |
|---|---|---|---|---|---|---|
| | 100 x $10^3$ | 150 x $10^3$ | 200 x $10^3$ | 500 x $10^3$ | $10^6$ | |
| Single-phase switching 230 V (2-pole) | 3.5 | 3 | 2.2 | 1 | 0.8 | **16 A** |
| | 5.4 | 4.6 | 3.5 | 1.6 | 1.2 | **25 A** |
| | 8.6 | 7.4 | 5.6 | 2.6 | 1.9 | **40 A** |
| | 13.6 | 11.6 | 8.8 | 4 | 3 | **63 A** |
| | 21.6 | 18.4 | 14 | 6.4 | 4.8 | **100 A** |
| 3-phase switching 400 V (3-pole) | 10 | 9 | 6.5 | 3.2 | 2.2 | **16 A** |
| | 16 | 14 | 10 | 5 | 3.5 | **25 A** |
| | 26 | 22 | 17 | 7.5 | 6 | **40 A** |
| | 41 | 35 | 26.5 | 12 | 9 | **63 A** |
| | 64.8 | 55.2 | 42 | 19.2 | 14.4 | **100 A** |



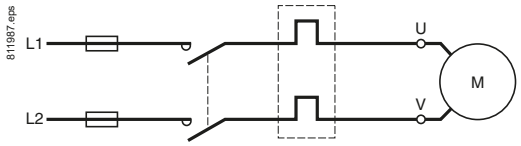
References:
page B8/53

Dimensions, schemes:
pages B8/111 to B8/113

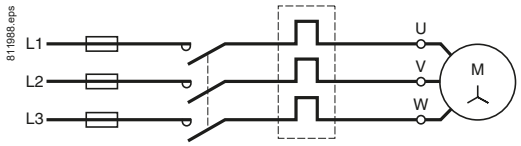
# Characteristics in motor control applications

## Motor control (AC-7b)

### Single-phase circuit, 230 V




### 3-phase circuit, 400 V




### Contactor selection according to maximum power in kW

| **230 V single-phase capacitor motor** (2-pole) | **400 V 3-phase motor** | **Contactor rating** (Ith) |
|---|---|---|
| 0.55 | 2.2 | **16 A** |
| 1.1 | 4 | **25 A** |
| 2.2 | 7.5 | **40 A** |
| 4 | 11 | **63 A** |

Ref.

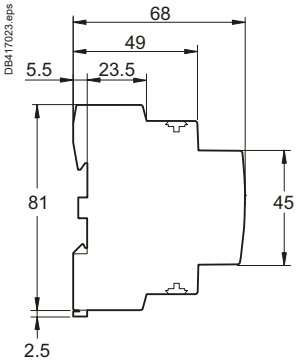
Contactors

# Dimensions

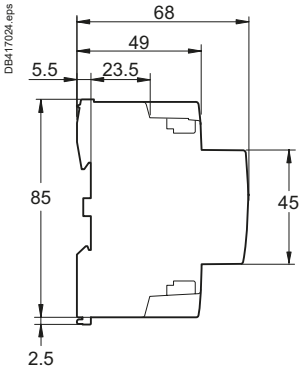
## Dimensions

### Contactors

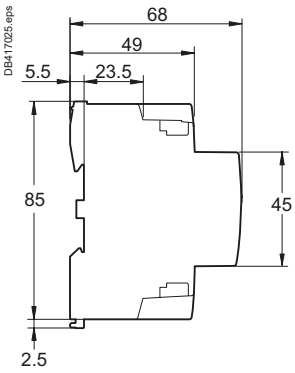
| Common side view | GC1610, 1611, 1620<br>GC2502, 2510, 2511, 2520 | GC1622, 1640<br>GC2504, 2522, 2530, 2540 |
|---|---|---|
| | 1 module | 2 modules |




| Common side view | GC4002, 4011, 4020<br>GC6302, 6311, 6320 | GC4004, 4022, 4030, 4040<br>GC6304, 6322, 6330, 6340 |
|---|---|---|
| | 2 modules | 3 modules |




| Common side view | GC10020 | GC10040 |
|---|---|---|
| | 3 modules | 6 modules |

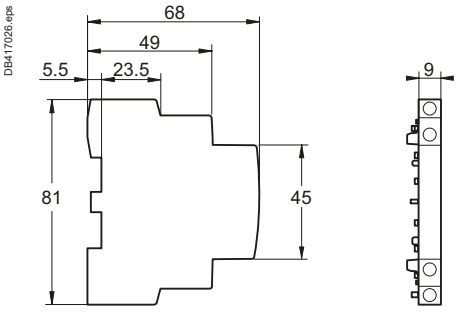



Ref.
Contactors

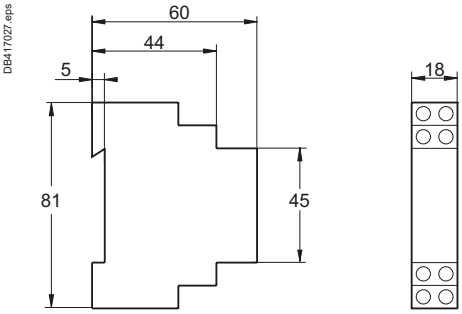
References:
page B8/53
Characteristics:
pages B8/104 to B8/110
Schemes:
page B8/113

## Dimensions

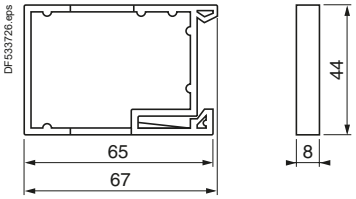
### Auxiliary contacts
**GAC0511, 0531 and 0521**




### Coil suppression blocks
**GAP21 and 23**



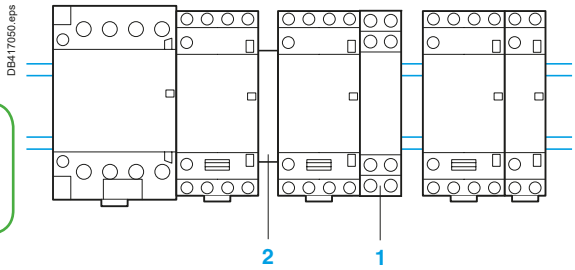

### Clip-on ventilation 1/2 module
**GAC5**



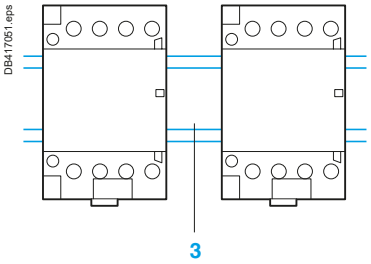

## Mounting

### Setting-up precautions

The contactor controls must be bounce free. If not, connect a coil suppression block **1** (GAP21 or 23) across the coil terminals y 250 V. When several contactors which operate at the same time are mounted side by side, a GAC 5 ventilation 1/2 module **2** must be fitted every 2 contactors.




It is advisable to mount electronic units at the bottom of the modular panel and to separate them from electromechanical units by a space **3** equal to one module, or by 2 ventilation 1/2 modules (GAC 5).



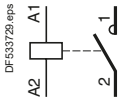

Ref.
Contactors

# Schemes

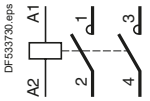
## Schemes

### Contactors

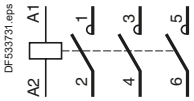
**GC●●10**



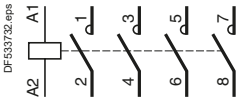

**GC●●20**



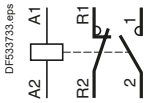

**GC●●30**



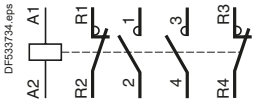

**GC●●40**



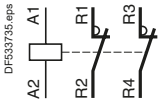

**GC●●11**



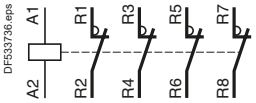

**GC●●22**




**GC●●02**

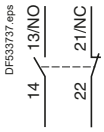



**GC●●04**

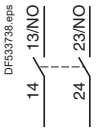



### Auxiliary contacts

**GAC0521**




**GAC0531**




**GAC0511**


Ref.
Contactors

# Characteristics

PB113083_13.eps

*GY25*

**TeSys GY "dual tariff" contactors are designed for use in modular panels and enclosures.**
These contactors feature:
■ **Easy installation:**
□ quick clip-on fixing and locking onto 35 mm omega rail
□ easy connection by means of ready-to-tighten captive, pozidrive screw terminals.
■ **Compact size**
All units have a common depth of 60 mm and width in modules of 17.5 mm (width of one module: 17.5 mm).
■ **User safety:**
□ use of materials conforming to strictest fire safety standards
□ live parts protected against direct finger contact
□ completely safe operation
□ state indication on front panel.
"Dual tariff" contactors are designed for use with Electricity Supply Authority dual tariffs.
They have a 4-position selector switch on the front panel:

| | |
|---|---|
| **"Stop" (O)** | For switching off the load, e.g. for prolonged periods of absence. |
| **"Off peak" Automatic start (A)** | The contactor switches automatically during "off peak" hours as set by the Supply Authority remote control and thus supplies the load, (washing machine, dishwasher, convector heater, water heater) during this period, at an economy rate to the user. |
| **"Peak time" Manual start (I)** | In this position, the contactor supplies the load to cater for additional requirements for hot water, heating, etc., but at the standard rate. The contactor returns automatically to the "off-peak" position at the start of the "off-peak" period. |
| **"Peak time" Manual override with lock** | Facility for setting the contactor to continuous manual operation, ignoring the automation system and the Supply Authority control; setting and locking is achieved by means of a tool, with manual return to the "AUTO" position. |

## Standards

This range of modular contactors has been designed taking into account the requirements of international standard IEC 61095.
This standard is specific to "Electromagnetic contactors for domestic and similar use".
It has very strict requirements, meeting the expectations of users, with regard to the safety of equipment and persons in "premises and areas accessible to the public".
Conformity with this standard makes it possible to obtain the following quality labels without the need for additional tests: NF-USE, VDE, CEBEC, etc.

"Dual tariff" modular contactors are designed for switching all single-phase, 3-phase or 4-phase loads up to 63 A.

TeSys GY contactors have multiple applications in industrial, agricultural and commercial premises, hospitals and the home, i.e. wherever switching of a specific supply is required:
■ lighting,
■ heating, ventilation,
■ motorised shutters or gates.



References:
page B8/54
Dimensions and schemes:
pages B8/117 and B8/118

# Characteristics

## Environment

| Type | | | GY16 | GY25 | GY40 | GY63 |
|---|---|---|---|---|---|---|
| Rated insulation voltage (Ui) | Conforming to IEC 61095 | V | 500 | | | |
| | Conforming to VDE 0110 | V | 500 | | | |
| Rated impulse withstand voltage (Uimp) | | kV | 4 in enclosure | | | |
| Conforming to standards | | | IEC 61095 and IEC 60947-5-1 for auxiliary contacts | | | |
| Product certifications | | | NF-USE, VDE, CEBEC, ÖVE | | | |
| Degree of protection | Conforming to IEC 60529 | | Protection against direct finger contact IP 20 open, IP 40 in enclosure | | | |
| Ambient air temperature around the device | Storage | °C | -40…+70 | | | |
| | Operation | °C | -5…+50 (0.85…1.1 Uc) | | | |
| Maximum operating altitude | Without derating | m | 3000 | | | |
| Operating positions | Without derating | | ±30° in relation to normal vertical mounting plane | | | |
| Shock resistance 1/2 sine wave = 11 ms | Contactor open | | 10 gn | | | |
| | Contactor closed | | 15 gn | | | |
| Vibration resistance 5…300 Hz | Contactor open | | 2 gn | | | |
| | Contactor closed | | 3 gn | | | |
| Flame resistance | | | Conforming to IEC 61095 | | | |

## Pole characteristics

| | | | | | | |
|---|---|---|---|---|---|---|
| Number of poles | | | 2, 3 or 4 | | | |
| Rated operational current (Ie) (Ue ≤ 440 V) | In AC-7a (heating) | A | 16 | 25 | 40 | 63 |
| | In AC-7b (motor control) | A | 5 | 8.5 | 15 | 25 |
| Contactor rating | 40 °C | | 16 | 25 | 40 | 63 |
| | 50 °C | | 14 | 22 | 36 | 57 |
| | 60 °C (1) | | 13 | 20 | 32 | 50 |
| Rated operational voltage (Ue) | Up to | V | 250 - 2-pole contactors, 415 - 3 and 4-pole contactors | | | |
| Frequency limits | Of the operating current | Hz | 400 | | | |
| Conventional thermal current (Ith) | θ ≤ 50 °C | A | 16 | 25 | 40 | 63 |
| Rated breaking and making capacity | Conforming to IEC 61095 (AC-7b) I rms 400 V 3-phase | A | 40 | 68 | 120 | 200 |
| Short time rating with no current flow for the previous previous 15 minutes with θ ≤ 40 °C | For 10 s | A | 128 | 200 | 320 | 504 |
| | For 30 s | A | 40 | 62 | 100 | 157 |
| Short-circuit protection by fuse or circuit breaker U ≤ 440 V | | | | | | |
| gI fuse | | A | 16 | 25 | 40 | 63 |
| Circuit breaker I²t (at 3 kA rms prospective) | 230V | A²s | 5000 | 10000 | 16000 | 18000 |
| | 400V | A²s | 9000 | 14000 | 17500 | 20000 |
| Electrical durability in operating cycles | AC-7a, AC-7b | | 100000 | 100000 | 100000 | 100000 |
| Average impedance per pole | At Ith and 50 Hz | mΩ | 2.5 | 2.5 | 2 | 2 |
| Power dissipated per pole | For the above operational currents | W | 0.65 | 1.6 | 3.2 | 8 |
| Maximum cabling c.s.a. | | | | | | |
| Flexible cable without cable end | 1 conductor | mm² | 6 | 6 | 25 | 25 |
| | 2 conductors | mm² | 4 | 4 | 16 | 16 |
| Flexible cable with cable end | 1 conductor | mm² | 6 | 6 | 16 | 16 |
| | 2 conductors | mm² | 1.5 | 1.5 | 4 | 4 |
| Solid cable without cable end | 1 conductor | mm² | 6 | 6 | 25 | 25 |
| | 2 conductors | mm² | 4 | 4 | 6 | 6 |
| Tightening torque | Power circuit connections | N.m | 0.8 | 0.8 | 3.5 | 3.5 |

*(1) Ventilation 1/2 module must be fitted.*

References: page B8/54
Dimensions and schemes: pages B8/117 and B8/118

# Characteristics

## Control circuit characteristics

| Type | | | | GY16, GY25 single or 2-pole | GY16, GY25 3 or 4-pole / GY40, GY63 2-pole | GY40, GY63 3 or 4-pole |
|---|---|---|---|---|---|---|
| Rated control circuit voltage (Uc) | 50 or 60 Hz | | V | 12…240 V, for other voltages, please consult your Regional Sales Office | | |
| Control voltage limits (θ ≤ 50 °C) | | | | | | |
| 50 Hz coils | Operational | | | 0.85…1.1 Uc | | |
| | Drop-out | | | 0.2…0.75 Uc | | |
| Average consumption at 20 °C and at Uc | | | | | | |
| ∼ 50 Hz | Inrush | | VA | 15 | 34 | 53 |
| | Sealed | | VA | 3.8 | 4.6 | 6.5 |
| Heat dissipation | 50/60 Hz | | W | 1.3 | 1.6 | 2.1 |
| Operating time | Closing "C" | | ms | 10 ... 30 | | |
| | Opening "O" | | ms | 10 ... 25 | | |
| Mechanical durability | In operating cycles | | | $10^6$ | | |
| Maximum operating rate at ambient temperature ≤ 50 °C | In operating cycles per hour | | | 300 | | |
| Maximum cabling c.s.a. | | | | | | |
| Flexible cable without cable end | 1 or 2 conductors | | $mm^2$ | 2.5 | | |
| Flexible cable with cable end | 1 conductor | | $mm^2$ | 2.5 | | |
| | 2 conductors | | $mm^2$ | 1.5 | | |
| Solid cable without cable end | 1 or 2 conductors | | $mm^2$ | 1.5 | | |
| Tightening torque | | | N.m | 0.8 | | |

## Instantaneous auxiliary contact characteristics

| | | | |
|---|---|---|---|
| Rated operational voltage (Ue) | Up to | V | 250 |
| Rated insulation voltage (Ui) | Conforming to IEC 60947-5 | V | 500 |
| | Conforming to VDE 0110 | V | 500 |
| Conventional thermal current (Ith) | For ambient θ ≤ 50 °C | A | 5 |
| Mechanical durability | In operating cycles | | $10^6$ |
| Maximum cabling c.s.a. | Flexible or solid conductor | $mm^2$ | 2.5 |
| Tightening torque | | N.m | 0.8 |

Ref.
Contactors

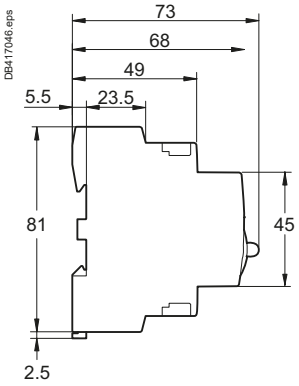
References: page B8/54
Dimensions and schemes: pages B8/117 and B8/118

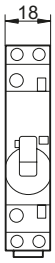
# Dimensions

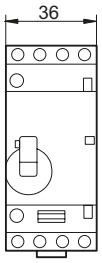
## Dimensions

### "Dual tariff" contactors

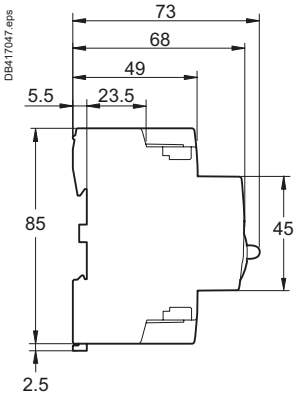
| Common side view | GY1620<br>GY2520 | GY2530, 2540 |
|---|---|---|
| | 1 module | 2 modules |

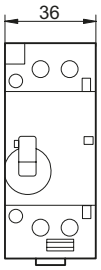


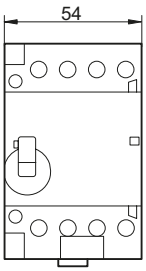




| Common side view | GY4020<br>GY6320 | GY4030, 4040<br>GY6330, 6340 |
|---|---|---|
| | 2 modules | 3 modules |

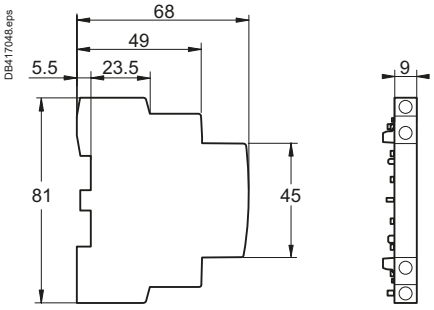


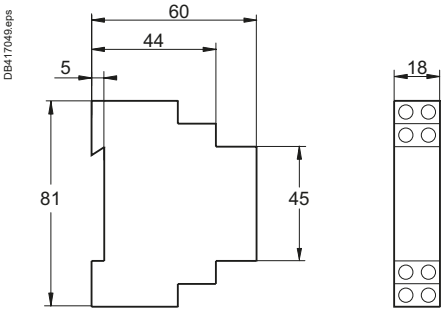

### Auxiliary contacts

**GAC0511, 0531 and 0521**



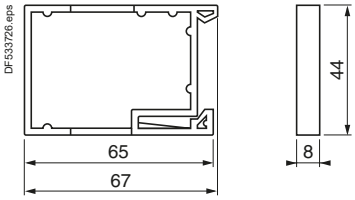

### Coil suppression block

**GAP21 and 23**




### Clip-on ventilation 1/2 module

**GAC5**




References:
page B8/54

Characteristics:
pages B8/114 to B8/116

## Mounting

### Setting-up precautions

The contactor controls must be bounce free. If not, connect a coil suppression block 1 (GAP 21 or 23) across the coil terminals ⩽ 250 V.
When several contactors which operate at the same time are mounted side by side, a GAC5 ventilation 1/2 module 2 must be fitted every 2 contactors.

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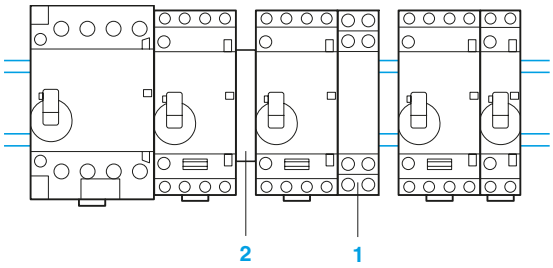


It is advisable to mount electronic units at the bottom of the modular panel and to separate them from electromechanical units by a space equal to one module 3 or by 2 ventilation 1/2 modules GAC5.

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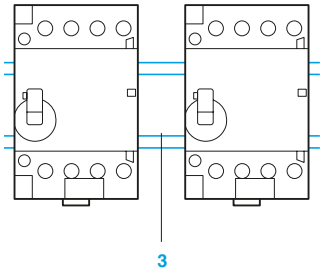


## Schemes

### Contactors

**GY●●20**

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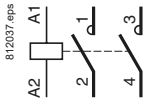
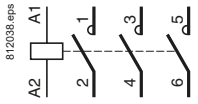



**GY●●30**

812038.eps




**GY●●40**

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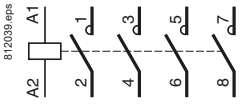
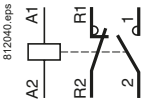



**GY●●11**

812040.eps




### Auxiliary contacts

**GAC0521**

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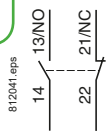


**GAC0531**

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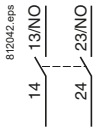


**GAC0511**

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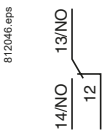



Ref.
Contactors

# Characteristics

PF526284R.eps


*GF1611M7*

**TeSys GF impulse relays are designed for use in modular enclosures.**
They feature:
■ **Easy installation:**
□ quick clip-on fixing and locking onto 35 mm omega rail
□ easy connection by means of ready-to-tighten captive, pozidrive screw terminals.
■ **Compact size**
Units have a common depth of 60 mm and width of 18 mm.
■ **User safety:**
□ live parts protected against direct finger contact
□ completely safe operation
□ state indication on front panel.

## Standards

This range of modular impulse relays has been designed taking into account the requirements of international standard IEC 60669-2.
This standard is specific to “Impulse relays”.
Conformity with this standard makes it possible to obtain the following quality labels without the need for additional tests: NF-USE, VDE, CEBEC, etc.

## Functions

Modular impulse relays are designed for opening and closing of circuits which are remotely controlled by impulses. The position is mechanically maintained.
These impulse relays are used in lighting circuits when there are more than two switching points.

## Power switching

TeSys GF impulse relays have multiple applications in industrial, agricultural and commercial premises, hospitals and the home, i.e. wherever switching of a specific lighting supply is required.



References:
page B8/55
Dimensions, schemes:
page B8/123

# Characteristics

## Environment

| | | | |
|---|---|---|---|
| Rated insulation voltage (Ui) | Conforming to IEC 60947-1-5 | **V** | 400 |
| | Conforming to VDE 0110 | **V** | 400 |
| Rated impulse withstand voltage (Uimp) | | **kV** | 4 in enclosure |
| Conforming to standards | | | IEC 60669-1 and 60669-2 |
| Product certifications | | | NF-USE, CEBEC, ASE, KEMA, N, S, D, FI, VDE |
| Degree of protection | Conforming to IEC 60529 | | Protection against direct finger contact IP 20 open, IP 40 in enclosure |
| Ambient air temperature around the device | Storage | **°C** | -40…+80 |
| | Operation | **°C** | -20…+50 |
| Maximum operating altitude | Without derating | **m** | 2000 |
| Operating positions | Without derating | | ±90° in relation to normal vertical mounting plane |
| Shock resistance 1/2 sine wave = 10 ms | Impulse relay open | | Please consult your Regional Sales Office |
| | Impulse relay closed | | Please consult your Regional Sales Office |
| Vibration resistance 5…300 Hz | Impulse relay open | | 4 gn |
| | Impulse relay closed | | 4 gn |

## Pole characteristics

| | | | | | |
|---|---|---|---|---|---|
| Number of poles | | | | 1 or 2 | |
| Rated operational current (Ie) (Ue ⩽ 250 V) | In AC-7a (heating) | | **A** | 16 | |
| Rated operational voltage | | | **V** | 250 | |
| Conventional thermal current (Ith) | θ ⩽ 50 °C | | **A** | 16 | |
| Permissible short time rating no current flowing for preceding 15 minutes with θ ⩽ 40 °C | For 1 s | | **A** | 320 | |
| | For 10 s | | **A** | 96 | |
| | For 30 s | | **A** | 48 | |
| Short-circuit protection by fuse or circuit breaker | gI fuse | | **A** | 16 | |
| | Circuit breaker $I^2t$ (at 3 kA rms prospective) | | **$A^2s$** | 5000 | |
| Average impedance per pole | At Ith and 50 Hz | | **mΩ** | 4 | |
| Power dissipated per pole | | | **W** | 1 | |
| Maximum cabling c.s.a. | | | | **Min.** | **Max.** |
| | Flexible cable without cable end | 1 conductor | **$mm^2$** | 0.5 | 6 |
| | | 2 conductors | **$mm^2$** | 0.5 | 4 |
| | Flexible cable with cable end | 1 conductor | **$mm^2$** | 0.5 | 6 |
| | | 2 conductors | **$mm^2$** | 0.5 | 4 |
| | Solid cable without cable end | 1 conductor | **$mm^2$** | 0.5 | 6 |
| | | 2 conductors | **$mm^2$** | 0.5 | 4 |
| Tightening torque | Power circuit connections | | **N.m** | 0.8 | |

References: page B8/55
Dimensions, schemes: page B8/123

# Characteristics

## Control circuit characteristics

| | | | | |
|---|---|---|---|---|
| Rated control circuit voltage (Uc) | | | **V** | 12…240 V, for other voltages, please consult your Regional Sales Office |
| Control voltage limits (θ < 50 °C) | | Operating threshold, dual frequency 50/60 Hz | **V** | 0.85…1.1 Uc |
| Average consumption at 20 °C and at Uc | | Inrush at 50 Hz | **VA** | 19 |
| Operating time | | Closing “C” | **ms** | 70 |
| | | Opening “O” | **ms** | 70 |
| Minimum impulse time | | | **ms** | 70 |
| Mechanical durability | | | | $10^6$ operating cycles |
| Electrical durability | | | | |
| | | AC-21 | | 200000 operating cycles |
| | | AC-22 | | 100000 operating cycles |
| Maximum operating rate | | Operating cycles per hour | | 900 |
| Maximum cabling c.s.a. | | | | |
| | Flexible cable without cable end | 1 or 2 conductors | **mm²** | 2.5 |
| | Flexible cable with cable end | 1 conductor | **mm²** | 2.5 |
| | | 2 conductors | **mm²** | 1.5 |
| | Solid cable without cable end | 1 or 2 conductors | **mm²** | 1.5 |
| Tightening torque | | | **N.m** | 0.8 |

Ref.
Contactors

References:
page B8/55

Dimensions, schemes:
page B8/123

# Characteristics in lighting and heating applications

## Lighting circuits

### Fluorescent lamps with starter

| Single fitting | Non corrected | | | With parallel correction | | |
|---|---|---|---|---|---|---|
| Power in W | 18 | 36 | 58 | 18 | 36 | 58 |
| Number of lamps | 70 | 35 | 21 | 50 | 25 | 16 |

| Twin fitting | With series correction | | |
|---|---|---|---|
| Power in W | 2 x 18 | 2 x 36 | 2 x 58 |
| Number of lamps | 56 | 28 | 17 |

### Incandescent lamps: filament lamps

| Power in W | 40 | 60 | 75 | 100 | 200 |
|---|---|---|---|---|---|
| Number of lamps | 40 | 25 | 20 | 16 | 8 |

### Incandescent lamps: halogen lamps

| Power in W | 300 | 500 | 1000 | 1500 |
|---|---|---|---|---|
| Number of lamps | 5 | 3 | 1 | 1 |

### Incandescent lamps: very low voltage halogen lamps

| Power in W | 20 | 50 | 75 | 100 |
|---|---|---|---|---|
| Number of lamps | 70 | 28 | 19 | 4 |

### Low pressure sodium vapour lamps

| | Non corrected | | | |
|---|---|---|---|---|
| Power in W | 55 | 90 | 135 | 180 |
| Number of lamps | 24 | 15 | 10 | 7 |

### High pressure sodium vapour lamps

| | Non corrected | | |
|---|---|---|---|
| Power in W | 250 | 400 | 1000 |
| Number of lamps | 5 | 3 | 1 |

## Heating circuits

### Single-phase 230 V, 2-pole

| Power in kW | 3.6 |
|---|---|



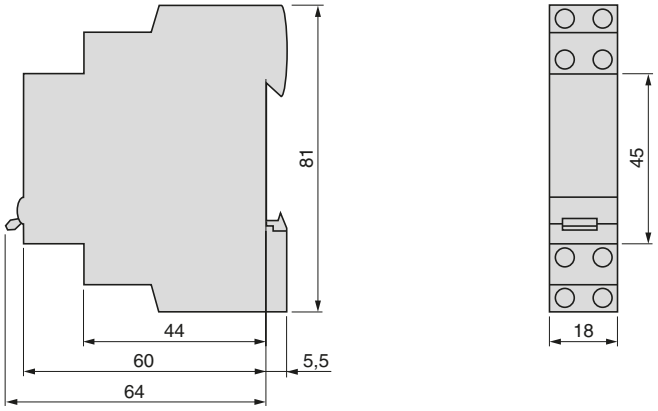
References:
page B8/55
Dimensions, schemes:
page B8/123

# Dimensions and schemes

## Dimensions

### GF1610, GF1611, GF1620

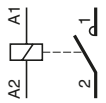
DF534007.eps




## Schemes

### GF1610

DF534008.eps




### GF1611

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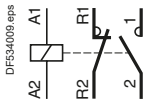


### GF1620

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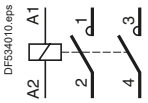



Ref.
Contactors

References:
page B8/55

Characteristics:
pages B8/119 to B8/122

# Test conditions according to IEC utilization categories

Contactor characteristics are established following tests and utilization categories whose are conforming IEC 60947-4-1 and 5-1 standards.

## Contactors

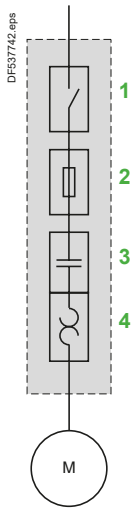
| | | Electrical durability: making and breaking conditions | | | | | | Occasional duty: making and breaking conditions | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **a.c. supply** | | | | | | | | | | | | | |
| **Typical applications** | **Utilisation category** | **Making** | | | **Breaking** | | | **Making** | | | **Breaking** | | |
| | | **I** | **U** | **cos φ** | **I** | **U** | **cos φ** | **I** | **U** | **cos φ** | **I** | **U** | **cos φ** |
| Resistors, non inductive or slightly inductive loads | **AC-1** | Ie | Ue | 0.95 | Ie | Ue | 0.95 | 1.5 Ie | 1.05 Ue | 0.8 | 1.5 Ie | 1.05 Ue | 0.8 |
| **Motors** | | | | | | | | | | | | | |
| Slip ring motors: starting, breaking. | **AC-2** | 2.5 Ie | Ue | 0.65 | 2.5 Ie | Ue | 0.65 | 4 Ie | 1.05 Ue | 0.65 | 4 Ie | 1.05 Ue | 0.65 |
| Squirrel cage motors: starting, breaking whilst motor running. | **AC-3** | | | | | | | | | | | | |
| | Ie ≤ (1) | 6 Ie | Ue | 0.65 | 1 Ie | 0.17 Ue | 0.65 | 10 Ie | 1.05 Ue | 0.45 | 8 Ie | 1.05 Ue | 0.45 |
| | Ie > (2) | 6 Ie | Ue | 0.35 | 1 Ie | 0.17 Ue | 0.35 | 10 Ie | 1.05 Ue | 0.35 | 8 Ie | 1.05 Ue | 0.35 |
| Squirrel cage motors: starting, reversing, inching | **AC-4** | | | | | | | | | | | | |
| | Ie ≤ (1) | 6 Ie | Ue | 0.65 | 6 Ie | Ue | 0.65 | 12 Ie | 1.05 Ue | 0.45 | 10 Ie | 1.05 Ue | 0.45 |
| | Ie > (2) | 6 Ie | Ue | 0.35 | 6 Ie | Ue | 0.35 | 12 Ie | 1.05 Ue | 0.35 | 10 Ie | 1.05 Ue | 0.35 |
| **d.c. supply** | | | | | | | | | | | | | |
| **Typical applications** | **Utilisation category** | **Making** | | | **Breaking** | | | **Making** | | | **Breaking** | | |
| | | **I** | **U** | **L/R** (ms) | **I** | **U** | **L/R** (ms) | **I** | **U** | **L/R** (ms) | **I** | **U** | **L/R** (ms) |
| Resistors, non inductive or slightly inductive loads | **DC-1** | Ie | Ue | 1 | Ie | Ue | 1 | 1.5 Ie | 1.05 Ue | 1 | 1.5 Ie | 1.05 Ue | 1 |
| Shunt wound motors: starting, reversing, inching | **DC-3** | 2.5 Ie | Ue | 2 | 2.5 Ie | Ue | 2 | 4 Ie | 1.05 Ue | 2.5 | 4 Ie | 1.05 Ue | 2.5 |
| Series wound motors: starting, reversing, inching | **DC-5** | 2.5 Ie | Ue | 7.5 | 2.5 Ie | Ue | 7.5 | 4 Ie | 1.05 Ue | 15 | 4 Ie | 1.05 Ue | 15 |

## Control relays and auxiliary contacts

| | | Electrical durability: making and breaking conditions | | | | | | Occasional duty: making and breaking conditions | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **a.c. supply** | | | | | | | | | | | | | |
| **Typical applications** | **Utilisation category** | **Making** | | | **Breaking** | | | **Making** | | | **Breaking** | | |
| | | **I** | **U** | **cos φ** | **I** | **U** | **cos φ** | **I** | **U** | **cos φ** | **I** | **U** | **cos φ** |
| **Electromagnets** | | | | | | | | | | | | | |
| ≤ 72 VA | **AC-14** | - | - | - | - | - | - | 6 Ie | 1.1 Ue | 0.7 | 6 Ie | 1.1 Ue | 0.7 |
| > 72 VA | **AC-15** | 10 Ie | Ue | 0.7 | Ie | Ue | 0.4 | 10 Ie | 1.1 Ue | 0.3 | 10 Ie | 1.1 Ue | 0.3 |
| **d.c. supply** | | | | | | | | | | | | | |
| **Typical applications** | **Utilisation category** | **Making** | | | **Breaking** | | | **Making** | | | **Breaking** | | |
| | | **I** | **U** | **L/R** (ms) | **I** | **U** | **L/R** (ms) | **I** | **U** | **L/R** (ms) | **I** | **U** | **L/R** (ms) |
| Electromagnets | **DC-13** | Ie | Ue | 6 P (3) | Ie | Ue | 6 P (3) | 1.1 Ie | 1.1 Ue | 6 P (3) | 1.1 Ie | 1.1 Ue | 6 P (3) |

*(1) Ie ≤ 17 A for electrical durability, Ie ≤ 100 A for occasional duty.*
*(2) Ie > 17 A for electrical durability, Ie > 100 A for occasional duty.*
*(3) The value 6 P (in watts) is based on practical observations and is considered to represent the majority of d.c. magnetic loads up to the maximum limit of P = 50 W i.e. 6 P = 300 ms = L/R.*
*Above this, the loads are made up of smaller loads in parallel. The value 300 ms is therefore a maximum limit whatever the value of current drawn.*

# North American market - UL CSA classification of motor starter applications




1 Motor Disconnect (Disconnect switch)
2 Motor Branch Circuit Protection (Short-circuit protection)
3 Motor Controller (Contactor)
4 Motor Overload Protection (Thermal overload relay)

## Starters for the North American market

In recent years, the North American market has started to harmonise UL, CSA and ANCE standards, as well as the industrial installation codes provided by national regulations (NEC for the United States, CEC for Canada and MEC for Mexico). (1)
Major improvements, carried out by the Canena (2) are aimed at harmonising product requirements based on IEC (3) standards.
However, the North American codes use specific terminology for defining the functions of a starter.
These functions can be fulfilled by standard IEC products, accompanied by appropriate certifications.

## Combination Starters

Combination Starters are the most common type of packaged motor starter. They are called "Combination" because of their structure and their combined functions. The figure opposite shows the four combined functions that constitute a complete motor starter circuit, defined as a “Motor branch circuit” by the NEC (US National Electric Code) in article 430. Standard UL508 currently gives different types of combination starter that meet the requirements of a "Motor branch circuit".

**Type E**, called “**self-protected combination starter**”, covers all these functions and can be controlled manually (thermal-magnetic circuit breaker) or remotely (starter-controller). Type E starters withstand faults within their declared nominal rating without sustaining damage, after which they can be put back into service. In addition, they can withstand more severe short-circuit and durability performance tests without welding or excessive wear of the contact tips.

**Type F,** called “**Combination motor starter**”, consists of a type E manual starter (thermal-magnetic circuit breaker) combined with a contactor.
These starters are evaluated by means of basic short-circuit tests, but are not considered as “self-protected”.

For this combination, the type E starter must be marked “Combination Motor Controller when used with ...”, followed by the reference of the load side contactor.



*(1)* ***UL****: Underwriters Laboratories,* ***CSA****: Canadian Standards Association,* ***ACNE****: Association of Standardization and Certification,* ***NEC****: National Electric Code,* ***CEC****: Canadian Electrical Code,* ***MEC****: Mexican Electrical Code.*
*(2)* ***Canena****: Council for Harmonization of Electrotechnical Standardization of North America.*
*(3)* ***IEC****: International Electrotechnical Commission.*

## Control panels

To help users properly coordinate their motor control equipment with their distribution system in the event of a fault, article 409 of the 2005 NEC requires panel builders to list the short-circuit withstand rating of their motor control panels.
According to standard UL508A, manufacturers must use the short-circuit withstand value of the lowest rated device as the nominal withstand rating of the panel, unless the devices have been tested together for a higher coordinated rating.
The minimum "**short-circuit current rating**" (SCCR), on motor control components for horsepower ratings of 50 hp or below is 5000 A.

Using a **type E** or **type F** combination starter eliminates the coordination problems of using individual components for the "motor branch circuit protection", "motor controller" and "motor overload protection" functions.
The panel builder uses the declared short-circuit current rating for the combination starter. This value is generally higher than 5000 A.
This makes it easier to list the short-circuit current ratings and to check the compatibility of a UL508A motor control panel within a given distribution system.

## Group protection

Article 430.53 of the NEC allows a single short-circuit protection device to be used for more than one motor circuit if the components used are marked and listed for such use.
Components suitable for use in group protection, known as "**motor group installations**", can be marked in one of the following two ways:

### Case n° 1

The contactor and the motor overload relay are both listed as suitable for group installation.
An inverse time circuit breaker can be used as the short-circuit protection device if it is also listed as suitable for group installation.
The panel builder must therefore make sure that the short-circuit protection device selected (fuses or inverse time circuit breaker) does not exceed the value allowed by article 430.40 for the smallest overload relay used in the circuit.
Once these conditions have been met, the panel builder can reduce the size of the conductor connecting the short-circuit protection device to the individual motor contactor/overload relay, to one third of the size of the upstream circuit conductor supplying the protection device.
The panel builder must limit the length of the motor starter conductor (connecting the short-circuit protection device to the motor contactor/overload relay) to a maximum of 7.6 m (25 feet).

### Case n° 2

The motor contactor and overload relay are listed as suitable for "**tap conductor protection**" in group installations.
This category allows the panel designer to reduce the size of the conductor connecting the short-circuit protection device to the individual motor contactor/overload relay, to one tenth of the size of the upstream circuit conductor supplying the protection device.
The designer must limit the length of this conductor to a maximum of 3.05 m (10 feet).
In both cases, the supply circuits must not be less than 125 % of the connected motor FLA (Full Load Amps) rating.
For panel builders, using **type F** combination starters in group installations simplifies group motor considerations.
Each starter is a fully coordinated motor branch circuit.
The panel builder follows the same NEC requirements for sizing the supply conductors as those required for single motor branch circuits.
The size of the supply conductors can be reduced in accordance with the specifications of article 430.28.
This allows the same flexibility in conductor sizing as that offered in article 430.53 (D), without a requirement to check the short-circuit protection rating marked on the components and the overload relay limit.
A UL508A panel does not need a short-circuit protection device when each motor starter installed is a **type F**.
The upstream short-circuit protection device supplying the starter protects the panel. The panel builder only has to consider the panel/enclosure disconnect requirements specified by the NEC or local codes.