




Contactors – TeSys D

| | | | |
|------------------------------------------------------|----------------------|-------------------------------------------------------------------------------------|-------|
| Contactors with standard coils | From 9 to 150 A |  | B8/2 |
| Contactors with low consumption coils | From 9 to 65 A | | B8/3 |
| Contactors conforming to UL and CSA | From 25 to 160 A | | B8/8 |
| Reversing pre-assembled contactors | From 9 to 150 A |  | B8/9 |
| Contactors for capacitor banks switching | From 12.5 to 60 kVAR |  | B8/13 |
| Auxiliary contact blocks – accessories – spare coils | | | B8/14 |

Mini contactors – TeSys SK, K

| Type of product | Range | | Pages |
|----------------------------------------------------|----------------|---------------------------------------------------------------------------------------|-------|
| Mini contactors TeSys SK | Up to 6 A |  | B8/29 |
| Mini contactors TeSys K | From 6 to 16 A |  | B8/31 |
| Reversing pre-assembled mini contactors TeSys K | From 6 to 16 A |  | B8/35 |
| Auxiliary contact blocks - accessories | | | B8/41 |

Contactors for use in modular enclosures / Din rail

| | | | |
|--------------------------------------------------------|---------------------|---------------------------------------------------------------------------------------|-------|
| Mini contactors TeSys SKGC | Up to 20 A |  | B8/44 |
| Modular contactors TeSys GC | From 16 to 100 A |  | B8/46 |
| Dual tariff contactors TeSys GY | 16, 25, 40 or 100 A |  | B8/47 |
| Impulse relay TeSys GF | Up to 16 A |  | B8/48 |
| Auxiliary contact blocks - accessories TeSys GC, GY | | | B8/49 |

TeSys contactors

TeSys D contactors for motor control

up to 75 kW at 400 V, in category AC-3

For connection by screw clamp terminals and lugs

TeSys D



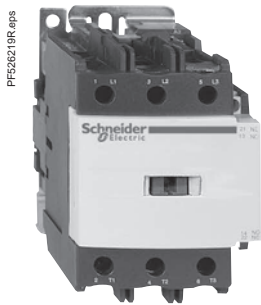
LC1 D09●●



LC1 D25●●



LC1 D65A●●



LC1 D95●●



LC1 D115●●

3-pole contactors

Standard power ratings of 3-phase motors
50-60 Hz in category AC-3
($\theta \leq 60^\circ\text{C}$)

220 V 380 V 415 V 440 V 500 V 660 V 1000 V
230 V 400 V 690 V

Rated operational current in AC-3 440 V up to

Instantaneous auxiliary contacts



Basic reference, to be completed by adding the control voltage code ⁽²⁾

Fixing ⁽¹⁾

Weight ⁽³⁾

| 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 ⁽⁴⁾ and control by screw clamp terminal | | | | | | | | | | | | |
| 11 | 18.5 | 22 | 22 | 22 | 30 | – | 40 | 1 | 1 | LC1D40A●● ⁽⁵⁾ | | 0.850 |
| 15 | 22 | 25 | 30 | 30 | 33 | – | 50 | 1 | 1 | LC1D50A●● ⁽⁵⁾ | | 0.855 |
| 18.5 | 30 | 37 | 37 | 37 | 37 | – | 65 | 1 | 1 | LC1D65A●● ⁽⁵⁾ | | 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: LC1 D09●● becomes LC1 D096●●.

Separate components

Auxiliary contact blocks and add-on modules: see pages B8/15 to B8/21.

⁽¹⁾ LC1 D09 to D65A: clip-on mounting on 35 mm rail AM1 DP or screw fixing.

LC1 D80 to D95 ~: clip-on mounting on 35 mm rail AM1 DP or 75 mm rail AM1 DL or screw fixing.

LC1 D80 to D95 ~: clip-on mounting on 75 mm rail AM1 DL or screw fixing.

LC1 D115 and D150: clip-on mounting on 2 x 35 mm rails AM1 DP or screw fixing.

⁽²⁾ 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

LC1 D09...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

LC1 D80...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

LC1 D09...D65A (coils with integral suppression device fitted as standard)

U 0.75...1.25 Uc JD BD CD ED ND SD FD GD MD UD RD

LC1 D80...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 – –

LC1 D115 and D150 (coils with integral 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

LC1 D09...D38 (coils with integral suppression device fitted as standard)

U 0.8...1.25 Uc AL JL ZL BL EL FL ML UL

For other voltages between 5 and 690 V, see pages B8/25 to B8/28.

⁽³⁾ The weights indicated are for contactors with a.c. control circuit. For d.c. or low consumption control circuit, add 0.160 kg from LC1 D09 to D38, 0.075 kg from LC1 D40A to D65A and 1 kg for LC1 D80 and D95.

⁽⁴⁾ BTR screws: hexagon socket head. In accordance with local electrical wiring regulations, a size 4 insulated Allen key must be used (reference LAD ALLEN4, see page B8/21).

⁽⁵⁾ For low consumption kit LA4 DBL (see page B8/19).

Selection:

Characteristics:

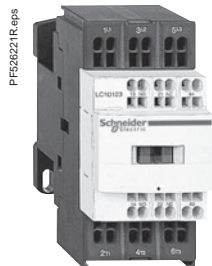
Dimensions:

Schemes:

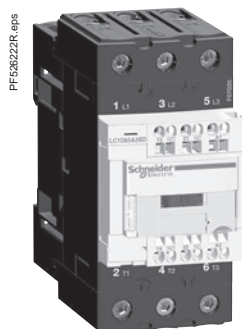
TeSys contactors

TeSys D contactors for motor control
up to 30 kW at 400 V, in category AC-3
For connection by spring terminals

TeSys D



LC1 D123●●



LC1 D65A●●

3-pole contactors

Standard power ratings of 3-phase motors
50-60 Hz in category AC-3
($\theta \leq 60^\circ\text{C}$)

Rated
operational
current in
AC-3 440 V
up to

Instan-
taneous
auxiliary
contacts

Basic reference,
to be completed by adding
the control voltage code ⁽²⁾

Fixing ⁽¹⁾

| | | | | | | |
|-------|-------|-------|-------|-------|-------|--------|
| 220 V | 380 V | 415 V | 440 V | 500 V | 660 V | 1000 V |
| 230 V | 400 V | | | | 690 V | |



| 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 ⁽⁴⁾ | 1 | 1 | LC1D323●● |

Power connections by EverLink® BTR screw connectors ⁽⁵⁾ and control by spring terminals

| | | | | | | | | | |
|------|------|----|----|----|----|----|---|---|---------------------------|
| 11 | 18.5 | 22 | 22 | 22 | 30 | 40 | 1 | 1 | LC1D40A3●● ⁽⁶⁾ |
| 15 | 22 | 25 | 30 | 30 | 33 | 50 | 1 | 1 | LC1D50A3●● ⁽⁶⁾ |
| 18.5 | 30 | 37 | 37 | 37 | 37 | 65 | 1 | 1 | LC1D65A3●● ⁽⁶⁾ |

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 LC1 D09 and LC1 D12 only, replace the figure 3 with a 9 in the references selected above.

Example: LC1 D093●● becomes LC1 D099●●.

Separate components

Auxiliary contact blocks and add-on modules: see pages B8/15 to B8/21.

⁽¹⁾ LC1 D09 to D32: clip-on mounting on 35 mm rail AM1 DP or screw fixing.

⁽²⁾ 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 |
|-------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|-------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

LC1 D09...D65A

| 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 |
|-------|----|----|----|----|----|----|-----|-----|-----|-----|-----|
|-------|----|----|----|----|----|----|-----|-----|-----|-----|-----|

LC1 D09...D65A (coils with built-in suppression 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 |
|-----------|---|----|----|----|----|-----|-----|-----|
|-----------|---|----|----|----|----|-----|-----|-----|

LC1 D09...D32 (coils with integral suppression device fitted as standard)

| U 0.8...1.25 Uc | AL | JL | ZL | BL | EL | FL | ML | UL |
|-----------------|----|----|----|----|----|----|----|----|
|-----------------|----|----|----|----|----|----|----|----|

For other voltages between 5 and 690 V, see pages B8/25 to B8/28.

⁽³⁾ The weights indicated are for contactors with a.c. control circuit.

For d.c. or low consumption control circuit, add 0.160 kg from LC1 D09 to D32 and 0.075 kg from LC1 D40A to D65A.

⁽⁴⁾ Must be wired with 2 x 4 mm² cables in parallel on the upstream side. On the downstream side, outgoing terminal block LAD 331 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).

⁽⁵⁾ BTR screws: hexagon socket head. In accordance with local electrical wiring regulations, a size 4 insulated Allen key must be used (reference LAD ALLEN4, see page B8/21).

⁽⁶⁾ For low consumption kit LA4 DBL (see page B8/19).

TeSys contactors

TeSys D, 3-pole contactors

For control in category AC-1, from 25 to 200 A

TeSys D



LC1 D09●●



LC1 D65A●●

3-pole contactors

| Non inductive loads maximum current ($\theta \leq 60^\circ\text{C}$) utilisation category AC-1 | Number of poles | Instantaneous auxiliary contacts | Basic reference, to be completed by adding the control voltage code ⁽¹⁾ | Weight ⁽³⁾ |
|--------------------------------------------------------------------------------------------------|-----------------|----------------------------------|------------------------------------------------------------------------------------|-----------------------|
| | | | Fixing ⁽²⁾ | |

A kg

Connection by screw clamp terminals

| | | | | | |
|----|---|---|---|-------------------------|----------------|
| 25 | 3 | 1 | 1 | LC1D09●● or LC1D12●● | 0.320 0.325 |
| 32 | 3 | 1 | 1 | LC1D18●● | 0.330 |
| 40 | 3 | 1 | 1 | LC1D25●● | 0.370 |
| 50 | 3 | 1 | 1 | LC1D32●● or LC1D38●● | 0.375 0.380 |

Connection by EverLink®, BTR screw connectors ⁽⁴⁾

| | | | | | |
|----|---|---|---|------------------------------------------------------------|----------------|
| 60 | 3 | 1 | 1 | LC1D40A●● ⁽⁷⁾ | 0.850 |
| 80 | 3 | 1 | 1 | LC1D50A●● ⁽⁷⁾ or LC1D65A●● ⁽⁵⁾⁽⁷⁾ | 0.855 0.860 |

Connection by screw clamp terminals or connectors

| | | | | | |
|-----|---|---|---|------------------------------------------|----------------|
| 125 | 3 | 1 | 1 | LC1D80●● or LC1D95●● ⁽⁵⁾ | 1.590 1.610 |
| 200 | 3 | 1 | 1 | LC1D115●● or LC1D150●● ⁽⁶⁾ | 2.500 2.500 |

3-pole contactors for connection by lugs

In the references selected above, insert a figure **6** before the voltage code.

Example: **LC1 D09●●** becomes **LC1 D096●●**.

⁽¹⁾ 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 |
|-------------------------------------------------------------------------------------------------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| LC1 D09...D150 (coils D115 and D150 fitted with integral suppression device as standard) | | | | | | | | | | | | | |
| 50/60 Hz | B7 | D7 | E7 | F7 | FE7 | M7 | P7 | U7 | Q7 | V7 | N7 | R7 | - |
| LC1 D80...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 |
|--------------------------------------------------------------------------------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|
| LC1 D09...D65A (coils with integral suppression device fitted as standard) | | | | | | | | | | | |
| U 0.7...1.25 Uc | JD | BD | CD | ED | ND | SD | FD | GD | MD | UD | RD |
| LC1 or LP1 D80 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 | - | - |
| LC1 D115 and D150 (coils with integral 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 |
|----------------------------------------------------------------------------------|----|----|----|----|----|-----|-----|-----|
| LC1 D09...D38 (coils with integral suppression device fitted as standard) | | | | | | | | |
| U 0.8...1.25 Uc | AL | JL | ZL | BL | EL | FL | ML | UL |

For other voltages between 5 and 690 V, see pages B8/25 to B8/28.

⁽²⁾ **LC1 D09 to D65A**: clip-on mounting on 35 mm rail **AM1 DP** or screw fixing.

LC1 D80 and D95: clip-on mounting on 35 mm rail **AM1 DP** or 75 mm rail **AM1 DL** or screw fixing.

LC1 or LP1 D80 to D95: clip-on mounting on 75 mm rail **AM1 DL** or screw fixing.

LC1 D115 and D150: clip-on mounting on 2 x 35 mm rails **AM1 DP** or screw fixing.

⁽³⁾ The weights indicated are for contactors with a.c. control circuit. For d.c. or low consumption control circuit, add 0.160 kg from **LC1 D09 to D38**, 0.075 kg from **LC1 D40A to D65A** and 1 kg for **LC1 D80 and D95**.

⁽⁴⁾ BTR screws: hexagon socket head. In accordance with local electrical wiring regulations, a size 4 insulated Allen key must be used (reference **LAD ALLEN4**, see page B8/21).

⁽⁵⁾ Selection according to the number of operating cycles, see AC-1 curve, page A5/28.

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

⁽⁷⁾ For low consumption kit **LA4 DBL** (see page B8/19).

Selection:

Characteristics:

Dimensions:

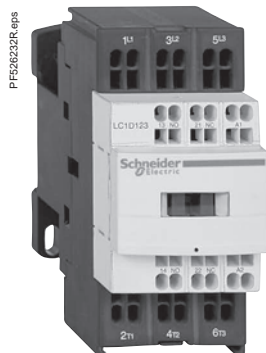
Schemes:

TeSys contactors

TeSys D, 3-pole contactors

For control in category AC-1, from 25 to 200 A

TeSys D



LC1 D123●●



LC1 D65A3●●

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 LC1 D09 and LC1 D12 only, in the references selected from the previous page, insert a figure 9 before the voltage code. Example: **LC1 D09●●** becomes **LC1 D099●●**.

3-pole contactors

| Non inductive loads maximum current ($\theta \leq 60^\circ\text{C}$) utilisation category AC-1 | Number of poles | Instantaneous auxiliary contacts | Basic reference, to be completed by adding the control voltage code ⁽¹⁾ | Weight ⁽³⁾ | |
|--------------------------------------------------------------------------------------------------|-----------------|----------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|-------------------------|
| | | | Fixing ⁽²⁾ | | |
| Connection by spring terminals | | | | kg | |
| 16 | 3 | 1 | 1 | LC1D093●● ⁽⁴⁾ or LC1D123●● ⁽⁴⁾ | 0.320 0.325 |
| 25 | 3 | 1 | 1 | LC1D183●● ⁽⁵⁾ or LC1D253●● ⁽⁶⁾ or LC1D323●● ⁽⁶⁾ | 0.335 0.325 0.325 |

Power connections by EverLink® BTR screw connectors ⁽⁷⁾ and control by spring terminals

| | | | | | |
|----|---|---|---|---------------------------------------------------------------------------------|----------------|
| 60 | 3 | 1 | 1 | LC1D40A3●● ⁽⁹⁾ | 0.850 |
| 80 | 3 | 1 | 1 | LC1D50A3●● ^{(8) (9)} or LC1D65A3●● ^{(8) (9)} | 0.855 0.860 |

Separate components

Auxiliary contact blocks and add-on modules: see pages B8/15 to B8/21.

⁽¹⁾ 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 |
|-----------------------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| LC1 D09...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 |
|-----------------------------------------------------------------------------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|
| LC1 D09...D65A (coils with integral suppression device fitted as standard) | | | | | | | | | | | |
| U 0.75...1.25 U _c | JD | BD | CD | ED | ND | SD | FD | GD | MD | UD | RD |

Low consumption

| Volts | 5 | 12 | 20 | 24 | 48 | 110 | 220 | 250 |
|----------------------------------------------------------------------------------|----|----|----|----|----|-----|-----|-----|
| LC1 D09...D38 (coils with integral suppression device fitted as standard) | | | | | | | | |
| U 0.8...1.25 U _c | AL | JL | ZL | BL | EL | FL | ML | UL |

For other voltages between 5 and 690 V, see pages B8/25 to B8/28.

⁽²⁾ **LC1 D09** to **D65A**: clip-on mounting on 35 mm rail **AM1 DP** or screw fixing.

⁽³⁾ The weights indicated are for contactors with a.c. control circuit. For d.c. or low consumption control circuit, add 0.160 kg from **LC1 D09** to **D38** and 0.075 kg from **LC1 D40A** to **D65A**.

⁽⁴⁾ 20 A with 2 x 2.5 mm² cables connected in parallel.

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

⁽⁶⁾ 40 A with 2 x 4 mm² cables connected in parallel.

⁽⁷⁾ BTR screws: hexagon socket head. In accordance with local electrical wiring regulations, a size 4 insulated Allen key must be used (reference **LAD ALLEN4**, see page B8/21).

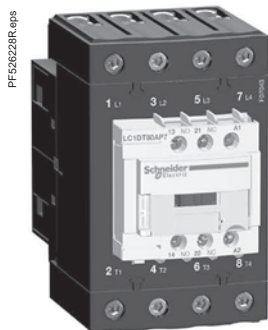
⁽⁸⁾ Selection according to the number of operating cycles, see AC-1 curve, page A5/28.

⁽⁹⁾ For low consumption kit **LA4 DBL** (see page B8/19).

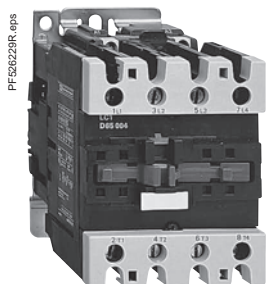
TeSys D



LC1 DT20●●



LC1 DT80A●●



LC1 D65008●●

4-pole contactors for connection by screw clamp terminals or connectors

| Non inductive loads maximum current ($\theta \leq 60^\circ \text{C}$) utilisation category AC-1 | Number of poles | Instantaneous auxiliary contacts | Basic reference, to be completed by adding the control voltage code ⁽¹⁾ Fixing ⁽²⁾ | Weight ⁽³⁾ |
|---------------------------------------------------------------------------------------------------|-----------------|----------------------------------|-------------------------------------------------------------------------------------------------------------|-----------------------|
| | | | | |

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●● or LP1D40008●● | 1.440 2.210 |
| 80 | 2 | 2 | – | – | LC1D65008●● or LP1D65008●● | 1.450 2.220 |
| 125 | 4 | – | – | – | LC1D80004●● or LP1D80004●● | 1.760 2.685 |
| | 2 | 2 | – | – | LC1D80008●● or LP1D80008●● | 1.840 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: LC1 DT20●● becomes LC1 DT206●●.

⁽¹⁾ 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 |
|---------------------------------------------------------------------------------------------------------------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| LC1 D09...D150 and LC1 DT20...DT80A (coils D115 and D150 fitted with integral suppression device as standard) | | | | | | | | | | | | | |
| 50/60 Hz | B7 | D7 | E7 | F7 | FE7 | M7 | P7 | U7 | Q7 | V7 | N7 | R7 | – |
| LC1 D80...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 |
|-------------------------------------------------------------------------------------------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|
| LC1 D09...D65A and LC1 DT20...DT80A (coils with integral suppression device fitted as standard) | | | | | | | | | | | |
| U 0.7...1.25 Uc | JD | BD | CD | ED | ND | SD | FD | GD | MD | UD | RD |
| LC1 or 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 | – | – |
| LC1 D115 (coils with integral 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 |
|-----------------------------------------------------------------------------------------------|----|----|----|----|----|-----|-----|-----|
| LC1 D09...D38 and LC1 DT20...DT40 (coils with integral suppression device fitted as standard) | | | | | | | | |
| U 0.8...1.25 Uc | AL | JL | ZL | BL | EL | FL | ML | UL |

For other voltages between 5 and 690 V, see pages B8/25 to B8/28.

⁽²⁾ LC1 D09 to D38 and LC1 DT20 to DT80A: clip-on mounting on 35 mm rail AM1 DP or screw fixing.

LC1 D80 ~: clip-on mounting on 35 mm rail AM1 DP or 75 mm rail AM1 DL or screw fixing.

LC1 or LP1 D80 ---: clip-on mounting on 75 mm rail AM1 DL or screw fixing.

LC1 D115 and D150: clip-on mounting on 2 x 35 mm rails AM1 DP or screw fixing.

⁽³⁾ The weights indicated are for contactors with a.c. control circuit. For d.c. or low consumption control circuit, add 0.160 kg from LC1 D09 to D38, 0.075 kg from LC1 DT60A and D80A and 1 kg for LC1 D80.

TeSys contactors

TeSys D, 4-pole contactors

For control in category AC-1, 25 to 200 A

TeSys D

4-pole contactors

| Non inductive loads maximum (i ≤ 60 °C) utilisation category AC-1 | Number of poles | Instantaneous auxiliary contacts | Basic reference, to be completed by adding the voltage code ⁽¹⁾ | Weight ⁽³⁾ |
|-------------------------------------------------------------------|-----------------|----------------------------------|----------------------------------------------------------------------------|-----------------------|
| | | | Fixing ⁽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 B8/15 to B8/21.

⁽¹⁾ 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 |
|-------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|-------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

LC1 D09...D25 and LC1 DT20...DT80A (coils with integral suppression device fitted as standard)

| | | | | | | | | | | | | | |
|----------|----|----|----|----|-----|----|----|----|----|----|----|----|---|
| 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 |
|-------|----|----|----|----|----|----|-----|-----|-----|-----|-----|
|-------|----|----|----|----|----|----|-----|-----|-----|-----|-----|

LC1 D09...D25 and LC1 DT20...DT80A (coils with integral suppression device fitted as standard)

| | | | | | | | | | | | |
|-----------------------------|----|----|----|----|----|----|----|----|----|----|----|
| U 0.7...1.25 U _c | JD | BD | CD | ED | ND | SD | FD | GD | MD | UD | RD |
|-----------------------------|----|----|----|----|----|----|----|----|----|----|----|

Low consumption

| Volts --- | 5 | 12 | 20 | 24 | 48 | 110 | 220 | 250 |
|-----------|---|----|----|----|----|-----|-----|-----|
|-----------|---|----|----|----|----|-----|-----|-----|

LC1 D09...D25 and LC1 DT20...DT40 (coils with integral suppression device fitted as standard)

| | | | | | | | | |
|-----------------------------|----|----|----|----|----|----|----|----|
| U 0.8...1.25 U _c | AL | JL | ZL | BL | EL | FL | ML | UL |
|-----------------------------|----|----|----|----|----|----|----|----|

For other voltages between 5 and 690 V, see pages B8/25 to B8/28.

⁽²⁾ LC1 D09 to D38 and LC1 DT20 to DT80A: clip-on mounting on 35 mm rail AM1DP or screw fixing.

⁽³⁾ The weights indicated are for contactors with a.c. control circuit. For d.c. or low consumption control circuit, add 0.160 kg from LC1 D09 to D38, 0.075 kg for LC1 DT60A and DT80A.

TeSys contactors

For the North American market,
Conforming to UL and CSA standards
25 to 160 A

TeSys D



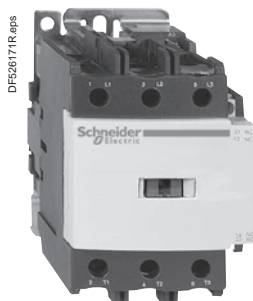
LC1 D09●●



LC1 D25●●



LC1 D65A●●



LC1 D95●●

Contactors

| Standard power ratings of motors 50/60 Hz | | | | | | Associated cable type 75 °C-Cu | Continuous current | Type of contactor required Basic reference, to be completed ⁽¹⁾ Fixing, connection ⁽²⁾ |
|-------------------------------------------|-------|----------------|-------|-------|-------|--------------------------------|--------------------|--------------------------------------------------------------------------------------------------------------------|
| Single-phase 1 Ø | | 3-phase 3 Ø | | | | | | |
| 115 V | 230 V | 200 V | 230 V | 460 V | 575 V | | | |
| | 240 V | 208 V | 240 V | 480 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 screw connectors (4) 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●● |

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 2/0 | 160 | LC1D115●● |
| - | - | 40 | 50 | 100 | 125 | AWG 3/0 | 160 | LC1D150●● |

Applications with High-Fault Short-Circuit ratings

For contactors LC1 D40A to LC1 D65A, the High-Fault Short-Circuit ratings are 50 kA at 480 V and 25 kA at 600 V.

Application example

For a 15 HP-230 V motor

Select a contactor type **LC1 D50A**.

Information: the contactor rating selected corresponds to "size 2", the associated cable is type AWG3 75 °C-Cu.

⁽¹⁾ 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 |
|-------------------------------------------------------------------------------------------------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| LC1 D09...D150 (D115 and D150 coils with integral suppression device fitted as standard) | | | | | | | | | | | | | | | | |
| 50/60 Hz | B7 | D7 | E7 | F7 | FE7 | G7 | LE7 | M7 | P7 | U7 | Q7 | V7 | N7 | R7 | T7 | S7 |
| LC1 D80...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 |
|--------------------------------------------------------------------------------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|
| LC1 D09...D65A (coils with integral suppression device fitted as standard) | | | | | | | | | | | |
| U 0.7...1.25 Uc | JD | BD | CD | ED | ND | SD | FD | GD | MD | UD | RD |
| LC1 D80 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 | - | - |
| LC1 D115 and D150 (coils with integral 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 | 72 | 110 | 220 | 250 |
|----------------------------------------------------------------------------------|----|----|----|----|----|----|-----|-----|-----|
| LC1 D09...D38 (coils with integral suppression device fitted as standard) | | | | | | | | | |
| U 0.7...1.25 Uc | AL | JL | ZL | BL | EL | SL | FL | ML | UL |

⁽²⁾ **LC1 D09 to D65A**: clip-on mounting on 35 mm L_J rail **AM1 DP** or screw fixing.

LC1 D80 and LC1 D95: clip-on mounting on 35 mm L_J rail **AM1 DP** or 75 mm L_J rail **AM1 DL** or screw fixing.

LC1 D115 and D150: clip-on mounting on 2 x 35 mm L_J rails **AM1 DP** or screw fixing.

TeSys contactors

TeSys D, 3-pole reversing contactors for motor control up to 75 kW at 400 V, in category AC-3
Horizontally mounted, pre-assembled

TeSys D



LC2 D12●●



LC2 D65A●●



LC2 D115●●

3-pole reversing contactors for connection by screw clamp terminals

Pre-wired power connections.

| Standard power ratings of 3-phase motors 50-60 Hz in category AC-3 ($\theta \leq 60^\circ\text{C}$) | | | | | | | Rated operational current in AC-3 440 V up to | Instan- taneous auxiliary contacts per contactor | Contactors supplied with coil Basic reference, to be completed by adding the control voltage code ⁽²⁾ | Weight ⁽³⁾ |
|-------------------------------------------------------------------------------------------------------------|----------------|-------|-------|-------|----------------|--------|--------------------------------------------------------------|-----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|--------------------------|
| 220 V 230 V | 380 V 400 V | 415 V | 440 V | 500 V | 660 V 690 V | 1000 V | | | | |
| kW | kW | kW | kW | kW | kW | kW | A | | Fixing ⁽¹⁾ | 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●● ⁽⁴⁾ | 0.687 |
| 3 | 5.5 | 5.5 | 5.5 | 7.5 | 7.5 | – | 12 | 1 | 1 | LC2D12●● ⁽⁴⁾ | 0.697 |
| 4 | 7.5 | 9 | 9 | 10 | 10 | – | 18 | 1 | 1 | LC2D18●● ⁽⁴⁾ | 0.707 |
| 5.5 | 11 | 11 | 11 | 15 | 15 | – | 25 | 1 | 1 | LC2D25●● ⁽⁴⁾ | 0.787 |
| 7.5 | 15 | 15 | 15 | 18.5 | 18.5 | – | 32 | 1 | 1 | LC2D32●● ⁽⁴⁾ | 0.797 |
| 9 | 18.5 | 18.5 | 18.5 | 18.5 | 18.5 | – | 38 | 1 | 1 | LC2D38●● ⁽⁴⁾ | 0.807 |
| 11 | 18.5 | 22 | 22 | 22 | 30 | – | 40 | 1 | 1 | LC2D40A●● ⁽⁵⁾ | 1.870 |
| 15 | 22 | 25 | 30 | 30 | 33 | – | 50 | 1 | 1 | LC2D50A●● ⁽⁵⁾ | 1.880 |
| 18.5 | 30 | 37 | 37 | 37 | 37 | – | 65 | 1 | 1 | LC2D65A●● ⁽⁵⁾ | 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 LC2 D09 to LC2 D38, LC2 D115 and LC2 D150, in the references selected above, insert a figure 6 before the voltage code. Example: **LC2 D09●●** becomes **LC2 D096●●**.
To build a 40 to 65 A reversing contactor, for connection by lugs, order 2 contactors **LC1 D●●A6** and mechanical interlock **LAD 4CM** (see page B8/23).

Component parts

Auxiliary contact blocks and add-on modules: see pages B8/15 to B8/21.

⁽¹⁾ LC2 D09 to D65A: clip-on mounting on 35 mm rail **AM1 DP** or screw fixing.

LC2 D80 and D95: clip-on mounting on 35 mm rail **AM1 DP** or 75 mm rail **AM1 DL** or screw fixing.

LC2 D115 and D150: clip-on mounting on 35 mm rail **AM1 DP** or screw fixing.

⁽²⁾ Standard control circuit voltages (for other voltages between 16 and 690 V, please consult your Regional Sales Office):

a.c. supply

| Volts | 24 | 42 | 48 | 110 | 115 | 220 | 230 | 240 | 380 | 400 | 415 | 440 | 500 |
|-------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|-------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

LC2 D09...D150 (D115 and D150 coils with integral suppression device fitted as standard))

| | | | | | | | | | | | | | |
|----------|----|----|----|----|-----|----|----|----|----|----|----|----|----|
| 50/60 Hz | B7 | D7 | E7 | F7 | FE7 | M7 | P7 | U7 | Q7 | V7 | N7 | R7 | S7 |
|----------|----|----|----|----|-----|----|----|----|----|----|----|----|----|

LC2 D80...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 |
|-------|----|----|----|----|----|----|-----|-----|-----|-----|-----|
|-------|----|----|----|----|----|----|-----|-----|-----|-----|-----|

LC2 D09...D65A (coils with integral suppression device fitted as standard)

| | | | | | | | | | | | |
|------------------------------|----|----|----|----|----|----|----|----|----|----|----|
| U 0.75...1.25 U _c | JD | BD | CD | ED | ND | SD | FD | GD | MD | UD | RD |
|------------------------------|----|----|----|----|----|----|----|----|----|----|----|

Low consumption

| Volts --- | 5 | 12 | 20 | 24 | 48 | 110 | 220 | 250 |
|-----------|---|----|----|----|----|-----|-----|-----|
|-----------|---|----|----|----|----|-----|-----|-----|

LC2 D09...D38 (coils with integral suppression device fitted as standard)

| | | | | | | | | |
|-----------------------------|----|----|----|----|----|----|----|----|
| U 0.8...1.25 U _c | AL | JL | ZL | BL | EL | FL | ML | UL |
|-----------------------------|----|----|----|----|----|----|----|----|

For other voltages between 5 and 690 V, see pages B8/25 to B8/28.

⁽³⁾ The weights indicated are for contactors with a.c. control circuit. For d.c. or low consumption control circuit, add 0.330 kg for **LC2 D09 to D38**, 0.150 kg for **LC1 D40A to D65A**.

⁽⁴⁾ For reversing contactors with electrical interlocking pre-wired at the factory, add suffix **V** to the references selected above.
Example: **LC2 D09P7** becomes **LC2 D09P7V**.

⁽⁵⁾ For low consumption kit **LA4 DBL** (see page B8/19).

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

TeSys contactors

TeSys D, 3-pole reversing contactors for motor control up to 15 kW at 400 V, in category AC-3
Horizontally mounted, pre-assembled

TeSys D



LC2 D123●●

3-pole reversing contactors, for connection by spring terminals

Pre-wired power connections.

Mechanical interlock without electrical interlocking.

| Standard power ratings of 3-phase motors 50-60 Hz in category AC-3 ($\theta \leq 60^\circ\text{C}$) | | | | | | 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 ⁽²⁾ | Weight ⁽³⁾ |
|-------------------------------------------------------------------------------------------------------|-------|-------|-------|-------|-------|-----------------------------------------------|------------------------------------------------|----------------------------------------------------------------------------------------------------------|-----------------------|
| 220 V | 380 V | 415 V | 440 V | 500 V | 660 V | A | | Fixing ⁽¹⁾ | kg |
| 230 V | 400 V | | | 690 V | | | | | |

| For connection by spring terminals | | | | | | | | | | kg |
|------------------------------------|-----|-----|-----|------|------|-------------------|---|---|-----------|-------|
| 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 ⁽⁴⁾ | 1 | 1 | LC2D323●● | 0.797 |

Power connection by EverLink[®], BTR screw connectors ⁽⁵⁾ and control by spring terminals

| | | | | | | | | | | |
|------|------|----|----|----|----|----|---|---|---------------------------|-------|
| 11 | 18.5 | 22 | 22 | 22 | 30 | 40 | 1 | 1 | LC2D40A3●● ⁽⁶⁾ | 1.870 |
| 15 | 22 | 25 | 30 | 30 | 33 | 50 | 1 | 1 | LC2D50A3●● ⁽⁶⁾ | 1.880 |
| 18.5 | 30 | 37 | 37 | 37 | 37 | 65 | 1 | 1 | LC2D65A3●● ⁽⁶⁾ | 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 LC2 D09 and LC2 D12 only, in the references selected above, replace the figure 3 before the voltage code with a figure 9.

Example: LC2 D093●● becomes LC2 D099●●.

Component parts

Auxiliary contact blocks and add-on modules: see pages B8/15 to B8/21.

⁽¹⁾ LC2 D09 to D32: clip-on mounting on 35 mm rail AM1 DP or screw fixing.

⁽²⁾ 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 |
| LC2 D09...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 | | |
| LC2 D09...D65A (coils with integral suppression device fitted as standard) | | | | | | | | | | | | | |
| U 0.75...1.25 U _c | JD | BD | CD | ED | ND | SD | FD | GD | MD | UD | RD | | |
| Low consumption | | | | | | | | | | | | | |
| Volts --- | 5 | 12 | 20 | 24 | 48 | 110 | 220 | 250 | | | | | |
| LC2 D09...D38 (coils with integral suppression device fitted as standard) | | | | | | | | | | | | | |
| U 0.8...1.25 U _c | AL | JL | ZL | BL | EL | FL | ML | UL | | | | | |

For other voltages between 5 and 690 V, see pages B8/25 to B8/28.

⁽³⁾ 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 LC2 D09 to D38, 0.150 kg for LC1 D40A to D65A.

⁽⁴⁾ Must be wired with 2 x 4 mm² cables in parallel on the upstream side. On the downstream side, outgoing terminal block LAD 331 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).

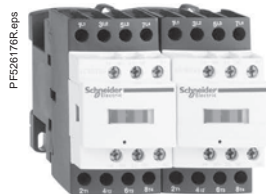
⁽⁵⁾ BTR screws: hexagon socket head. In accordance with local electrical wiring regulations, a size 4 insulated Allen key must be used (reference LAD ALLEN4, see page B8/21).

⁽⁶⁾ For low consumption kit LA4 DBL (see page B8/19).

TeSys contactors

TeSys D, 4-pole changeover contactor pairs for control in category AC-1, 20 to 200 A

TeSys D



LC2 DT20●●

Pre-assembled. Pre-wired power connections

For connection by screw clamp terminals or connectors

LC2 DT20 to LC2 DT40: mechanical interlock without electrical interlocking.

LC2 D80004: order separately 2 auxiliary contact blocks LAD N●1 to obtain electrical interlocking between the 2 contactors (see page B8/15).

For electrical interlocking incorporated in the mechanical interlock, please consult your Regional Sales Office.

LC2 D115004: mechanical interlock with integral, pre-wired electrical interlocking.

| Utilisation category AC-1 Non-inductive loads Maximum rated operational current ($\theta \leq 60^\circ\text{C}$) | Instantaneous auxiliary contacts per contactor | | Contactors supplied with coil | Weight kg |
|--------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|---|--------------------------------------------------------------------------------------------------------------|--------------|
| | | | Basic reference, to be completed by adding the voltage code ⁽¹⁾ Fixing ⁽²⁾ | |
| 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 B8/15 to B8/21.

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⁾ LC2 DT20 to LC2 DT80: clip-on mounting on 35 mm \perp rail AM1 DP or screw fixing.

LC2 D80: clip-on mounting on 35 mm \perp rail AM1 DP or 75 mm \perp rail AM1 DL or screw fixing.

LC2 D115: clip-on mounting on 2 x 35 mm \perp rails AM1 DP or screw fixing.

⁽³⁾ For these operational currents, order 2 identical contactors and a mechanical interlock LAD 4CM (see page B8/23).

TeSys contactors

TeSys D, 4-pole changeover contactor pairs for control in category AC-1, 20 A

TeSys D

Pre-assembled. Pre-wired power connections

For connection by spring terminals.

| Utilisation category AC-1 Non-inductive loads Maximum rated operational current ($\theta \leq 60^\circ\text{C}$) | Instantaneous auxiliary contacts per contactor | Contactors supplied with coil Basic reference, to be completed by adding the control voltage code ⁽¹⁾ Fixing ⁽²⁾ |
|--------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| A | | |
| 20 | 1 1 | LC2DT203●● |

For customer assembly

Power connection by EverLink[®], BTR screw connectors ⁽³⁾ and control by spring terminals

| | | |
|----|-----|----------------------------|
| 60 | 1 1 | LC1DT60A3●● ⁽⁴⁾ |
| 80 | 1 1 | LC1DT80A3●● ⁽⁴⁾ |

Separate components

Auxiliary contact blocks and add-on modules: see pages B8/15 to B8/21.

⁽¹⁾ 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 |
|-----------------------------------------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| LC2 DT20...DT40, LC1 DT60...DT80 | | | | | | | | | | | | | |
| 50/60 Hz | B7 | D7 | E7 | F7 | FE7 | M7 | P7 | U7 | Q7 | V7 | N7 | R7 | - |
| LC2 D80004...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 |
|-----------------------------------------------------------------------------------------------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|
| LC2 DT20...DT40, LC1 DT60...DT80 (coils with integral suppression device fitted as standard) | | | | | | | | | | | |
| 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 |
|------------------------------------------------------------------------------------|----|----|----|----|----|-----|-----|-----|
| LC2 DT20...DT40 (coils with integral suppression device fitted as standard) | | | | | | | | |
| U 0.8...1.25 Uc | AL | JL | ZL | BL | EL | FL | ML | UL |

For other voltages between 5 and 690 V, see pages B8/25 to B8/28.

⁽²⁾ Clip-on mounting on 35 mm rail AM1 DP or screw fixing.

⁽³⁾ BTR screws: hexagon socket head. In accordance with local electrical wiring regulations, a size 4 insulated Allen key must be used (reference LAD ALLEN4, see page B8/21).

⁽⁴⁾ For these operational currents, order 2 identical contactors and a mechanical interlock LAD 4CM (see page B8/23).

TeSys contactors

For switching 3-phase capacitor banks,
used for power factor correction

Direct connection without choke inductors

Special contactors

Special contactors **LC1 D●K** are designed for switching 3-phase, single or multiple-step capacitor banks (up to 6 steps). Over 6 steps, it is recommended to use chokes in order to limit the inrush current and thus improve the lifetime of the installation. The contactors conform to standards IEC 60070 and 60831, UL and CSA.

Contactors 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.

The patented design of the add-on block (n° 90 119-20) ensures safety and long life of the installation.

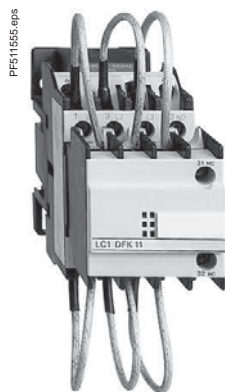
Operating conditions

There is no need to use choke inductors for either single or multiple-step capacitor banks. Short-circuit protection must be provided by gI type fuses rated at 1.7...2 In.

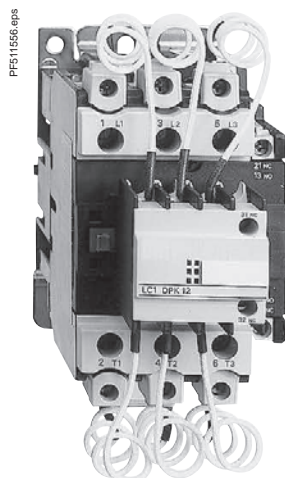
Maximum operational power

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

| | | |
|---------------------------------------|-----------------------------|--------------------------------|
| Prospective peak current at switch-on | LC1 D●K | 200 In |
| Maximum operating rate | LC1 DFK, DGK, DLK, DMK, DPK | 240 operating cycles/hour |
| | LC1 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 |



LC1 DFK11●●



LC1 DPK12●●

| Operational power at 50/60 Hz ⁽¹⁾ $\theta \leq 55^\circ\text{C}$ ⁽²⁾ | | | Instantaneous auxiliary contacts | | Tightening torque on cable end | Basic reference, to be completed by adding the voltage code ⁽³⁾ | Weight |
|-----------------------------------------------------------------------------------------------|-------|-------|----------------------------------|-----|--------------------------------|----------------------------------------------------------------------------|--------|
| 220 V | 400 V | 660 V | N/O | N/C | N.m | | kg |
| kVAR | kVAR | kVAR | | | | | |
| 240 V | 440 V | 690 V | | | | | |
| 6.7 | 12.5 | 18 | 1 | 2 | 1.7 | LC1DFK●● | 0.430 |
| 8.5 | 16.7 | 24 | 1 | 2 | 1.7 | LC1DGK●● | 0.450 |
| 10 | 20 | 30 | 1 | 2 | 2.5 | LC1DLK●● | 0.600 |
| 15 | 25 | 36 | 1 | 2 | 2.5 | LC1DMK●● | 0.630 |
| 20 | 33.3 | 48 | 1 | 2 | 5 | LC1DPK●● | 1.300 |
| 25 | 40 | 58 | 1 | 2 | 5 | LC1DTK●● | 1.300 |
| 40 | 60 | 92 | 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.

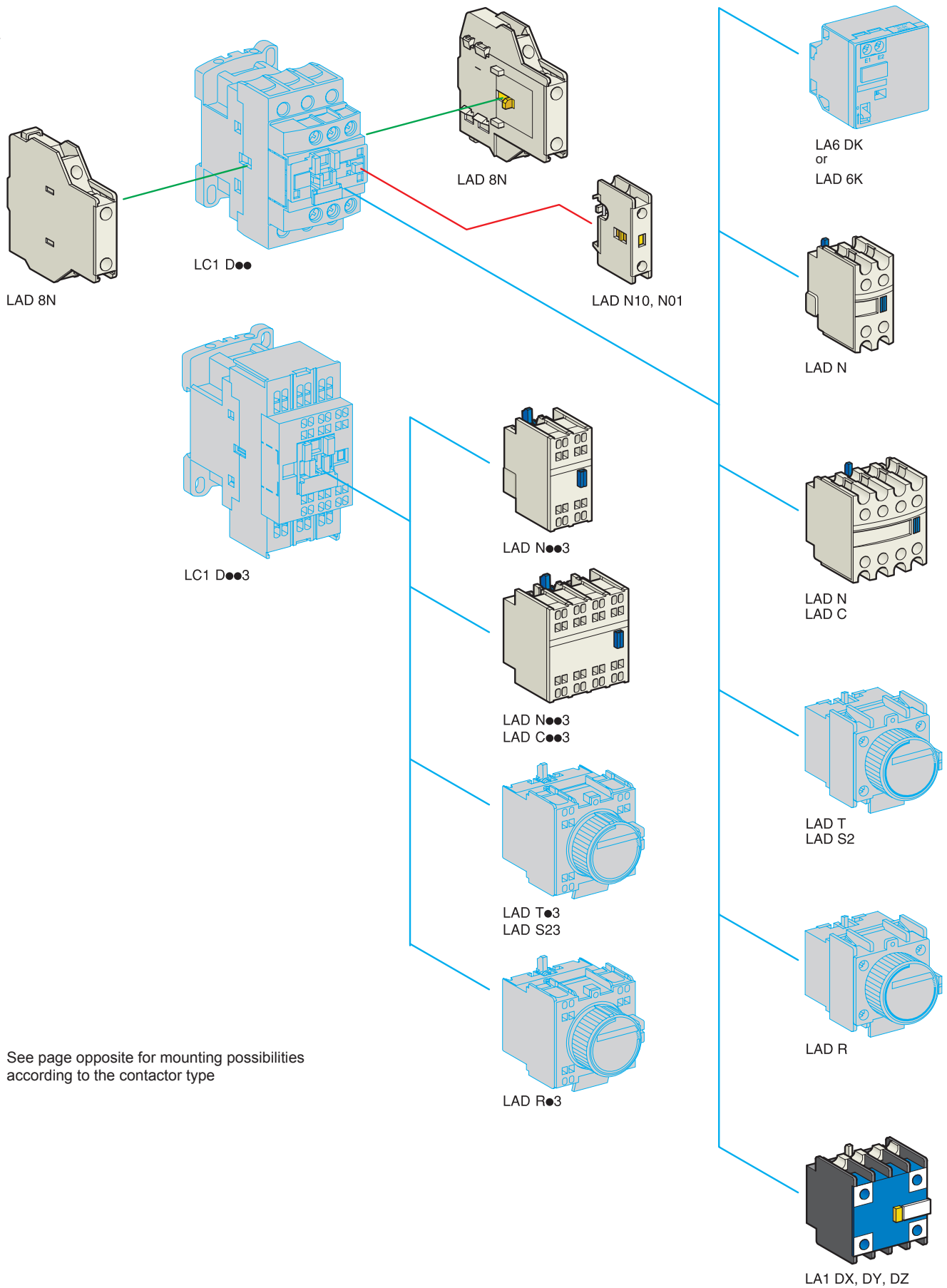
Example: 50 kVAR 3-step capacitor bank. Temperature: 50 °C and U = 400 V or 440 V. One 25 kVAR step: contactor LC1 DMK, one 15 kVAR step: contactor LC1 DGK, and one 10 kVAR step: contactor LC1 DFK.

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



See page opposite for mounting possibilities according to the contactor type

TeSys contactors






TeSys D contactors and reversing contactors

Instantaneous auxiliary contact blocks

Instantaneous auxiliary contact blocks for connection by screw clamp terminals

For use in normal operating environments

In order to mount an LAD 8N on an LC1 D80 to D95, a set of shims must be ordered separately, see page B8/21.

| Clip-on mounting (1) | Number of contacts per block | Composition | | | | | Reference |
|------------------------------------------------------------------|------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------|
| | |  |  |  |  |  | |
| Front | 1 | - | - | - | 1 | - | LADN10 |
| | | - | - | - | - | 1 | LADN01 |
| | 2 | - | - | - | 1 | 1 | LADN11 |
| | | - | - | - | 2 | - | LADN20 |
| | 4 | - | - | - | 2 | 2 | LADN22 LADN22S (4) |
| | | - | - | - | 1 | 3 | LADN13 |
| | | - | - | - | 4 | - | LADN40 |
| - | | - | - | - | 4 | LADN04 | |
| 4 incl. 1 N/O & 1 N/C make before break | - | - | - | 3 | 1 | LADN31 | |
| | - | - | - | 2 | 2 | LADC22 | |
| | - | - | - | 1 | 1 | LAD8N11 | |
| Side (contact blocks compatible with AC coil contactors only) | 2 | - | - | - | 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 |
| | 4 | - | 2 | 2 | - | - | LA1DY20 (2) |
| | | - | 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: LAD N11 becomes LAD N116.

Instantaneous auxiliary contact blocks for connection by spring terminals

This type of connection is not possible for LAD 8, LAD N 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: LAD N11 becomes LAD N113.

Instantaneous auxiliary contact blocks for connection by Faston connectors

This type of connection is not possible for LAD 8, LAD N 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: LAD N11 becomes LAD N119.

(1) Maximum number of auxiliary contacts that can be fitted:

| Contactors | Type | Number of poles and size | Instantaneous auxiliary contacts | | | | Time delay Front mounted | |
|----------------------------|------|-------------------------------|----------------------------------|---------------|------------|------------|--------------------------|------|
| | | | Side mounted | Front mounted | | | | |
| | | | | 1 contact | 2 contacts | 4 contacts | | |
| ~ | 3P | LC1 D09...D38 | 1 on LH side | and | - | 1 | or 1 | or 1 |
| | | LC1 D40A...D65A | 1 on LH or 1 on RH side | and | - | 1 | or 1 | or 1 |
| | | LC1 D80 and D95 (50/60 Hz) | 1 on each side | or | 2 | and 1 | or 1 | or 1 |
| | | LC1 D80 and D95 (50 or 60 Hz) | 1 on each side | and | 2 | and 1 | or 1 | or 1 |
| | | LC1 D115 and D150 | 1 on LH side | and | - | 1 | or 1 | or 1 |
| | 4P | LC1 DT20...DT40 | 1 on LH side | and | - | 1 | or 1 | or 1 |
| | | LC1 DT60A and DT80A | 1 on LH or 1 on RH side | and | - | 1 | or 1 | or 1 |
| | | LC1 D40008, D65008 and D80 | 1 on each side | or | 1 | or 1 | or 1 | or 1 |
| | | LC1 D115 | 1 on each side | and | 1 | or 1 | or 1 | or 1 |
| | | LC1 D09...D38 | - | - | - | 1 | or 1 | or 1 |
| --- | 3P | LC1 D40A...D65A | - | - | - | 1 | or 1 | or 1 |
| | | LC1 D80 and D95 | - | - | - | 1 | or 1 | or 1 |
| | | LC1 D115 and D150 | 1 on LH side | and | - | 1 | or 1 | or 1 |
| | 4P | LC1 DT20...DT40 | - | - | - | 1 | or 1 | or 1 |
| | | LC1 DT60A and DT80A | - | - | - | 1 | or 1 | or 1 |
| LC1 D40008, D65008 and D80 | | - | - | - | 2 | and 1 | or 1 | |
| BC (3) | 3P | LC1 D09...D38 | - | - | - | 1 | - | - |
| | 4P | LC1 DT20...DT40 | - | - | - | 1 | - | - |

(2) Device fitted with 4 earth screen continuity terminals.

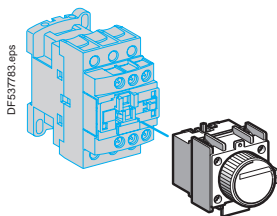
(3) LC: low consumption.

TeSys contactors

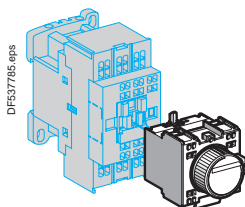
TeSys D contactors and reversing contactors

Time delay auxiliary contact blocks Mechanical latch blocks

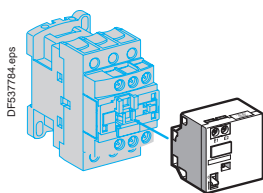
TeSys D



LAD T0



LAD T03



LAD 6K10

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 B8/15.

Sealing cover to be ordered separately, see page B8/21.

LAD T0 and LAD R0: with extended scale from 0.1 to 0.6 s.

LAD S2: 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 | 0.1...3 s | LADT0 |
| | | | 0.1...30 s | LADT2 |
| | | | 10...180 s | LADT4 |
| | | | 1...30 s | LADS2 |
| | | Off-delay | 0.1...3 s | LADR0 |
| | | | 0.1...30 s | LADR2 |
| | | | 10...180 s | LADR4 |
| | | | | |

Time delay auxiliary contact blocks for connection by lugs

Add the figure 6 to the end of the references selected above. Example: LAD T0 becomes LAD T06.

Time delay auxiliary contact blocks for connection by spring terminals

Add the figure 3 to the end of the references selected above. Example: LAD T0 becomes LAD T03.

Time delay auxiliary contact blocks for connection by Faston connectors

Add the figure 9 to the end of the references selected above. Example: LAD T0 becomes LAD T09.

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 | LC1 D09...D38 (∩ or ∩∩) ⁽³⁾ | LAD6K10 |
| | | LC1 DT20...DT40 (∩ or ∩∩) | |
| | | LC1 D40A...D65A (3 P ∩ or ∩∩) | LAD6K10 |
| | | LC1 DT60A and DT80A (4 P ∩ or ∩∩) | |
| | | LC1 D80...D150 (3 P ∩) | LA6DK20 |
| | | LC1 D80 and D115 (3 P ∩∩) | |
| | | LC1 D80 (4 P ∩) | |
| | | LC1 D80 and D115 (4 P ∩) | |
| | | LP1 D80 and LC1 D115 (4 P ∩∩) | |

⁽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 LAD 6K10 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 |

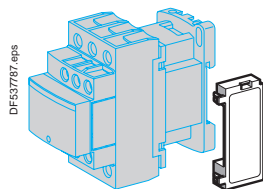
⁽³⁾ The DC, low consumption contactors (coil code ●L) are not compatible with the mechanical latch blocks LAD6K10.

TeSys contactors

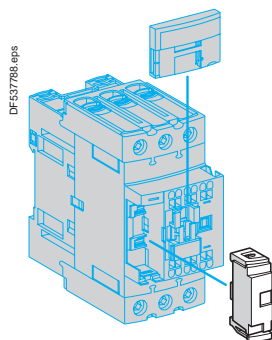
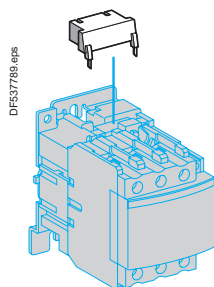
TeSys D contactors and reversing contactors

Suppressor modules

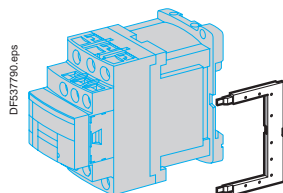
TeSys D



LAD 4●●

LAD 4RC3●, LAD 4V3●,
LAD 4D3U, LAD 4T3●

LA4 D●●



LAD 4DDL or LAD 4TDL

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 U_c 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⁾ Rating | Type | | Reference |
|---------------------------------------|-------------------------------------------------|-----------|-------|-----------|
| | | V ~ | V --- | |
| Clip-on side mounting ⁽³⁾ | D09...D38 (3P) DT20...DT40 | 24...48 | – | LAD4RCE |
| | | 50...127 | – | LAD4RCG |
| | | 110...250 | – | LAD4RCU |
| Clip-on front mounting ⁽³⁾ | D40A...D65A (3P) DT60A...DT80A (4P) | 24...48 | – | LAD4RC3E |
| | | 50...127 | – | LAD4RC3G |
| | | 110...240 | – | LAD4RC3U |
| | | 380...415 | – | LAD4RC3N |
| Screw fixing ⁽⁴⁾ | D80...D150 (3P) D40...D115 (4P) | 24...48 | – | LA4DA2E |
| | | 50...127 | – | LA4DA2G |
| | | 110...240 | – | LA4DA2U |
| | | 380...415 | – | LA4DA2N |

Varistors (peak limiting)

Protection provided by limiting the transient voltage to 2 U_c 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⁾ | D09...D38 (3P) DT20...DT40 | 24...48 | – | LAD4VE |
| | | 50...127 | – | LAD4VG |
| | | 110...250 | – | LAD4VU |
| Clip-on front mounting ⁽³⁾ | D40A...D65A (3P) DT60A...DT80A (4P) | 24...48 | 24...48 | LAD4V3E |
| | | 50...127 | 50...127 | LAD4V3G |
| | | 110...250 | 110...250 | LAD4V3U |
| | | 24...48 | – | LA4DE2E |
| Screw fixing ⁽⁴⁾ | D80...D115 (3P) D80...D115 (4P) | 50...127 | – | LA4DE2G |
| | | 110...250 | – | LA4DE2U |
| | | – | 24...48 | LA4DE3E |
| | | – | 50...127 | LA4DE3G |
| – | – | 110...250 | LA4DE3U | |

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 | – | 24...250 | 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 U_c max. Maximum reduction of transient voltage peaks.

| | | | | |
|-----------------------------------------|-------------------------------------------------------|-----------|-----------|----------|
| Clip-on side mounting ⁽³⁾⁽⁵⁾ | D09...D38 (3P) DT20...DT40 (4P) ⁽²⁾ | 24 | – | LAD4TB |
| | | – | 24 | LAD4TBDL |
| | | 72 | – | LAD4TS |
| | | – | 72 | LAD4TSDL |
| | | – | 125 | LAD4TGDL |
| | | – | 250 | LAD4TUDL |
| Clip-on front mounting ⁽³⁾ | D40A...D65A (3P) DT60A...DT80A (4P) ⁽²⁾ | – | 600 | LAD4TXDL |
| | | 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) D40...D80 (4P) | 12...24 | 12...24 | LA4DB2B |
| | | 25...72 | 25...72 | LA4DB2S |
| | | – | 24 | LA4DB3B |
| | | – | 72 | LA4DB3S |

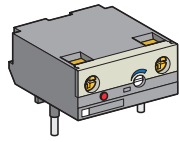
⁽¹⁾ For satisfactory protection, a suppressor module must be fitted across the coil of each contactor.

⁽²⁾ From D09 to D65A and from LC1 DT20 to DT80A, d.c. and low consumption 3-pole contactors 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 LAD 9DL for LC1 D09 to D38 and LC1 DT20 to DT40; reference LAD 9DL3 for LC1 D40A to D65A and LC1 DT60A to DT80A).

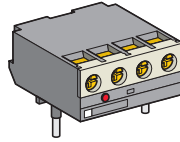
⁽³⁾ Clipping-on makes the electrical connection. The overall size of the contactor remains unchanged.

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

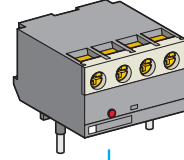
⁽⁵⁾ In order to install these accessories, the existing suppression device must first be removed.



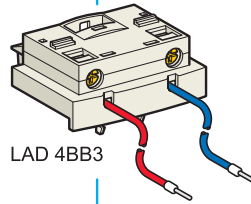
LA4 DT



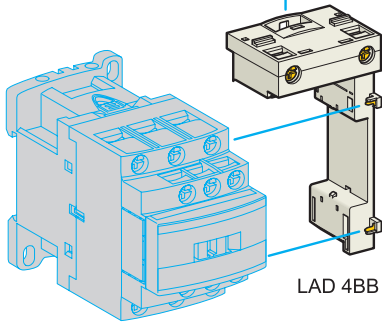
LA4 DFB



LA4 DWB

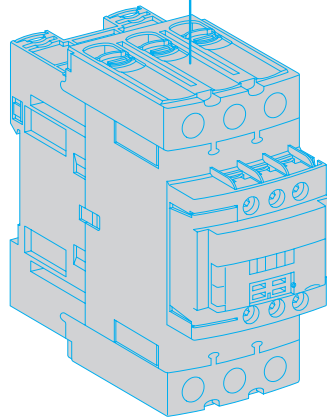


LAD 4BB3

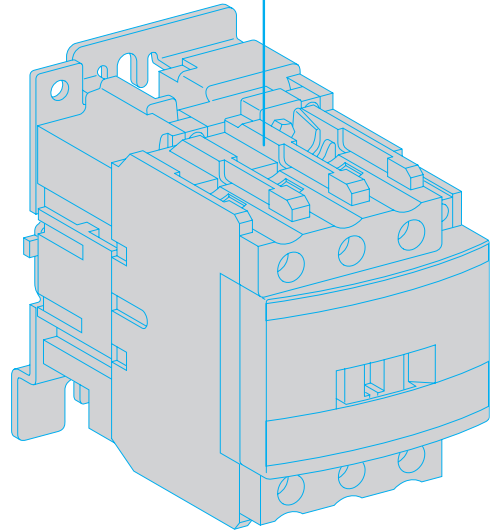


LAD 4BB

LC1 D09...D38



LC1 D40A...D65A



LC1 D80...D95

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

TeSys contactors

TeSys D contactors and reversing contactors

Accessories

TeSys D

Electronic serial timer modules ⁽¹⁾

- 3-pole contactors LC1 D09 to D38: mounted using adapter LAD 4BB, to be ordered separately, see below.
- 3-pole contactors LC1 D40A to D65A: mounted using adapter LAD 4BB3, to be ordered separately, see below.
- 3-pole contactors LC1 D80 to D150 and 4-pole contactors LC1 D40 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 | | |
| LC1 D09...D65A (3P) | LC1 D80...D150 (3P) | 0.1...2 s | LA4DT0U |
| | | 1.5...30 s | LA4DT2U |
| | | 25...500 s | LA4DT4U |

Interface modules

- 3-pole contactors LC1 D09 to D38: mounted using adapter LAD 4BB, to be ordered separately, see below.
- 3-pole contactors LC1 D40A to D65A: mounted using adapter LAD4 BB3, to be ordered separately, see below.

Relay interface

| Operational voltage ~ | | Supply voltage E1-E2 (---) | Reference |
|-----------------------|--|----------------------------|-----------|
| 24...250 V | | | |
| LC1 D09...D150 (3P) | | 24 V | LA4DFB |

Relay interface with "AUTO-I" manual override switch (output forced "ON"), solid state type

| Operational voltage ~ | | Supply voltage E1-E2 (---) | Reference |
|-----------------------|---------------------|----------------------------|-----------|
| 24...250 V | 100...250 V | | |
| LC1 D09...D65A (3P) | LC1 D80...D115 (3P) | 24 V | LA4DWB |

Low consumption kit

| For use on contactors | Composition | Reference |
|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| LC1 D40A...D65A (3P) ⁽²⁾ | Kit comprising: <ul style="list-style-type: none"> ■ a retrofit coil LAD 4BB3 ■ a relay interface module LA4 DFB. | LA4DBL |

Retrofit: coil for 3-pole contactor

For adapting existing wiring to a new product

| For use on contactors | | Reference | |
|-----------------------|--------------------------|---------------|----------|
| LC1 D09...D38 | Without coil suppression | LAD4BB | |
| | With coil suppression | ~ 24...48 V | LAD4BBVE |
| | | ~ 50...127 V | LAD4BBVG |
| LC1 D40A...65A | Without coil suppression | ~ 110...250 V | LAD4BBVU |
| | | | LAD4BB3 |

⁽¹⁾ For 24 V operation, the contactor must be fitted with a 21 V coil (code Z).
See pages B8/25 to B8/28.

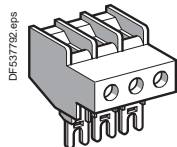
⁽²⁾ The kit is compatible with a coil voltage of ~ 24 V to ~ 250 V (B7 to U7) and --- 24 V to --- 250 V (BD to UD).

TeSys contactors

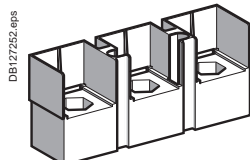
TeSys D contactors and reversing contactors

Accessories

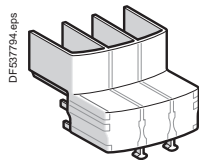
TeSys D



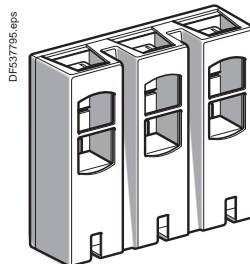
LA9 D3260



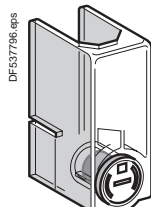
LA9 D11550



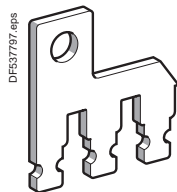
LAD 96570



LA9 D11560



LA9 D11570



LA9 D80962



LA9 D11567

Accessories for main pole and control connections

| Description | For use with contactors LC1 | | Sold in lots of | Unit reference | |
|------------------------------------------------------------------------------------------------|-----------------------------|-----------------|-----------------|-----------------------------|--------------------------|
| | ~ | --- | | | |
| Connectors for cable, size (1 connector) | 4-pole 10 mm ² | DT20, DT25 | DT20, DT25 | 1 LAD92560 | |
| | 3-pole 25 mm ² | D09...D38 | D09...D38 | 1 LA9D3260 | |
| EverLink® terminal block | 3-pole | D40A...D65A | D40A...D65A | 1 LAD96560 | |
| Connectors for cables (2 connectors) | 3-pole 120 mm ² | D115, D150 | D115, D150 | 1 LA9D115603 | |
| | 4-pole 120 mm ² | 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...D65A6 | D40A6...D65A6 | 1 LAD96570 | |
| | 4-pole | D1156, D1506 | D1156, D1506 | 1 LA9D115703 ⁽¹⁾ | |
| IP 20 covers for lug type terminals (for mounting with circuit breakers GV3 P●●6 and GV3 L●●6) | 3 poles | D60A6...D80A6 | D60A6...D80A6 | 1 LAD96580 | |
| | | D1156, D1506 | D1156, D1506 | 1 LA9D115704 | |
| Links for parallel connection of | 2 poles | D40A6...D65A6 | D40A6...D65A6 | 1 LAD96575 | |
| | | D09...D38 | D09...D38 | 10 LA9D2561 | |
| | | DT20, DT25 (4P) | DT20, DT25 (4P) | 10 LA9D1261 | |
| | | DT32, DT40 (4P) | DT32, DT40 (4P) | 10 LAD96061 | |
| | | D40A...D65A | D40A...D65A | 1 LAD9P32 | |
| | | D80, D95 | D80 | 2 LA9D80961 | |
| | | 3 poles | D09...D38 | D09...D38 | 10 LAD9P3 ⁽²⁾ |
| | | | D40A...D65A | D40A...D65A | 1 LAD9P33 |
| | 4 poles | D80, D95 | D80, D95 | 1 LA9D80962 | |
| | | DT20, DT25 | DT20, DT25 | 2 LA9D1263 | |
| | | D80, D95 | 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.

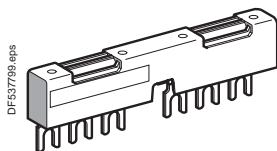
⁽²⁾ Separate connecting bar for connecting 2 poles in parallel.

TeSys contactors

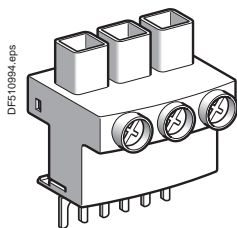
TeSys D contactors and reversing contactors

Accessories

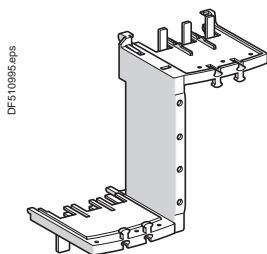
TeSys D



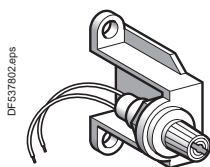
GV2 G245



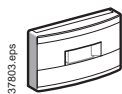
GV1 G09



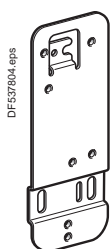
GV3 S



LA9 D941



LAD 9ET●



LAD 7X3

Sets of contacts and arc chambers

| Description | For contactor | Reference | |
|------------------|---------------|-------------|-------------|
| Sets of contacts | 3-pole | LC1 D115 | LA5D1158031 |
| | | LC1 D150 | LA5D150803 |
| | 4-pole | LC1 D115004 | LA5D115804 |
| Arc chambers | 3-pole | LC1 D115 | LA5D115550 |
| | | LC1 D150 | LA5D150550 |
| | 4-pole | LC1 D115004 | LA5D115450 |

Power connection accessories

| | | |
|-----------------------------------------------------|-------------------------------------------------------------------------|-------------|
| Terminal block | For supply to one or more GV2 G busbar sets | GV1G09 |
| Set of 63 A busbars for parallelling of contactors | 2 contactors LC1 D09...D18 or D25...D38 | GV2G245 |
| | 4 contactors LC1 D09...D18 or D25...D38 | GV2G445 |
| Set of 115 A busbars for parallelling of contactors | 2 contactors LC1 D40A...D65A | GV3G264 |
| | 3 contactors LC1 D40A...D65A | GV3G364 (1) |
| Set of S-shape busbars | For circuit breakers GV3 P●● and GV3 L●● and contactors LC1 D40A...D65A | 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 LAD T, LAD R | 1 | LA9D901 |
| Safety cover preventing access to the moving contact carrier | LC1 D09...D65A and DT20...DT80A | 1 | LAD9ET1 |
| Red cover (for safety chain indication) | LC1 D80 and D95 | 1 | LAD9ET3 |
| | LC1 D115 and D150 | 1 | LAD9ET4 |
| Red cover (for safety chain indication) | LC1 D80 and D95 | 1 | LAD9ET3S |
| Red cover (for safety chain indication) | LC1 D115 and D150 | 1 | LAD9ET4S |

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) LC1 D80...D115, LAD N (4 contacts), LA6 DK | 10 | LAD21 |
| Sheet of 112 blank legends, self-adhesive, 8 x 12 mm (2) | LAD N (2 contacts), LAD T, LAD R, LRD | 10 | LAD22 |
| Sheet of 64 blank legends for marking using plotter or 8 x 33 mm engraver | Contactors (except 4P) LC1 D80...D115, LAD (4 contacts), LA6 DK | 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, LC1 D80...D115, LA6 DK | 100 | LA9D92 |
| Marker holder snap-in, 8 x 18 mm | LC1 D09...D65A, LC1 DT20...DT80A, LAD N (4 contacts), LAD T, LAD R | 100 | LAD90 |
| Bag of 300 blank legends self-adhesive, 7 x 21 mm | On holder LA9 D92 | 1 | LA9D93 |
| "SIS Label" labelling software supplied on CD-Rom | Multi-language version: English, French, German, Italian, Spanish | 1 | XBY2U |

Mounting accessories

| | | | |
|-------------------------------------|------------------------------------------------------------|---|-----------|
| Retrofit plate for screw fixing | For replacement of LC1 D40 to D65 with LC1 D40A to D65A | 1 | LAD7X3 |
| Mounting plate | For replacement of LC1 F115 or F150 with LC1 D115 or D150 | 1 | LA9D730 |
| Set of shims | For fitting side mounting blocks LAD 8N on LC1 D80 and D95 | 1 | LA9D511 |
| Size 4 Allen key, insulated, 1000 V | For use on contactors LC1 D40A to LC1 D150 | 5 | LADALLEN4 |

(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 LC1 D65A supplied directly + 1 contactor LC1 D65A and 1 contactor LC1 D50 A supplied via the busbar set = 115 A. This combination is compatible with busbar set GV3 G364.

(2) These legends are for sticking onto the safety cover of the contactors or add-on block, if fitted.

TeSys contactors

Capacitive delayed opening devices

For TeSys D contactors

TeSys D

References

These devices prevent inadvertent opening of a contactor in the event of a brief volt drop or momentary supply failure.

| Control circuit: d.c. supply | | | | |
|--------------------------------------------------------------------------|--------------------------------------------------|--------------------------------------|--------------------------------|----------------|
| For use with contactor | | Corresponding delayed opening device | | |
| Type ⁽¹⁾ | Contact reference to be completed ⁽²⁾ | Supply voltage 50/60 Hz | Non-adjustable delay time (Tr) | Reference |
| | | V | s | |
| LC1 D09, LC1 D12, LC1 D18, LC1 D25, LC1 D32 or LC1 D38 | LC1 D●●PD | 110...115 | 1.5...5 | LAZR90F |
| | LC1 D●●QD | 120...127 | 2.5...5 | LAZR90F |
| | LC1 D●●TD | 220 | 4...8 | LAZR90M |
| | LC1 D●●VD | 240 | 5...10 | LAZR90M |
| | LC1 D●●WD | 380 | 4...8 | LAZR90Q |
| | LC1 D●●XD | 415...440 | 5.5...13 | LAZR90Q |
| LC1 D40, LC1 D50 or LC1 D65 | LC1 D●●PD | 110...115 | 0.5...1 | LAZR90F |
| | LC1 D●●QD | 120...127 | 0.5...1.5 | LAZR90F |
| | LC1 D●●TD | 220...240 | 1...2.5 | LAZR90M |
| | LC1 D●●WD | 380 | 1...2.5 | LAZR90Q |
| | LC1 D●●XD | 415...440 | 1...3 | LAZR90Q |

| | | | | |
|---------|------------------|-----------|---------|----------------|
| LC1 D80 | LC1 D●●PD | 110...120 | 0.4...1 | LAZR90F |
| | LC1 D●●QD | 120...127 | 0.5...1 | LAZR90F |
| | LC1 D●●TD | 220 | 0.5...2 | LAZR90M |
| | LC1 D●●VD | 240 | 1...2.5 | LAZR90M |
| | LC1 D●●WD | 380 | 1...2 | LAZR90Q |
| | LC1 D●●XD | 415...440 | 1...2.5 | LAZR90Q |

| Add-on blocks for delayed opening devices | | | | |
|-------------------------------------------|-------------------------------------|---------------------|---------------------------|----------------|
| Application | For use with delayed opening device | Operational voltage | Non-adjustable delay time | Reference |
| | | V | s | |
| To double the delay time | LAZR90F | 110...127 | Tr x 2 | LAZR91F |
| | LAZR90M | 220...240 | Tr x 2 | LAZR91M |
| | LAZR90Q | 380...440 | Tr x 2 | LAZR91Q |

(1) These contactors can be supplied as standard for this application or can be adapted by replacing the coil (except for contactors LC1 D09●●●● to LC1 D38●●●● on which the coil is not replaceable).
 (2) Reference to be completed: see page B8/2.



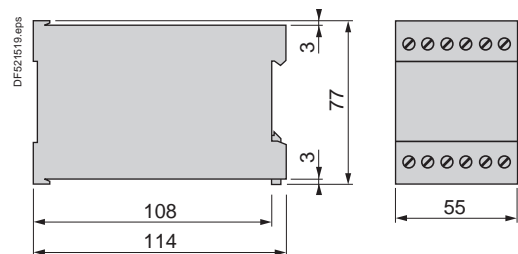
LAZR90F



LAZR91F

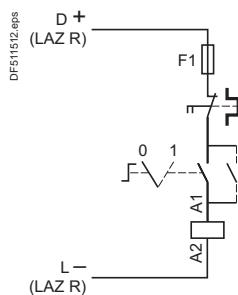
Dimensions

LAZR9●●



Schemes

LAZR9●● + LC1 D



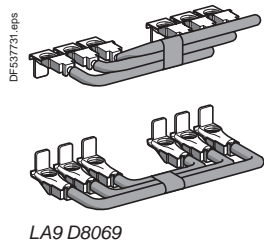
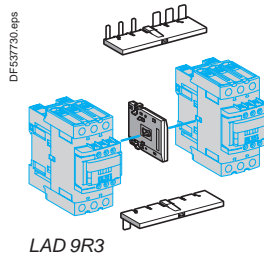
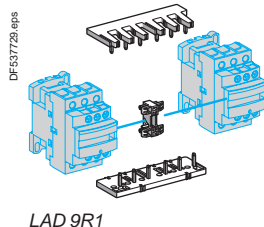
Other versions

Delayed opening devices for use with other types of contactor. Please consult your Regional Sales Office.

TeSys contactors

Component parts for assembling reversing contactors for motor control, low-speed/high-speed starters and star-delta starters

TeSys D



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: ■ a mechanical interlock LAD 9V2 with electrical interlocking LAD 9V1 ■ a set of power connections LAD 9V5 (parallel) and LAD 9V6 (reversing). | LC1 D09 to D38 | LAD9R1V |
| Kit comprising: ■ a mechanical interlock LAD 9V2 without electrical interlocking ■ a set of power connections LAD 9V5 (parallel) and LAD 9V6 (reversing). | LC1 D09 to D38 | LAD9R1 |
| Kit comprising: ■ a mechanical interlock LAD 4CM ■ a set of power connections LA9 D65A69 . | LC1 D40A to D65A | LAD9R3 |
| Mechanical interlocks | | |
| Mechanical interlock with integral electrical interlocking | LC1 D80 and D95 (~) | LA9D4002 |
| | LC1 D80 and D95 (---) | LA9D8002 |
| | LC1 D115 and D150 | LA9D11502 |
| Mechanical interlock without integral electrical interlocking | LC1 D09 to D38 | LAD9V2 |
| | LC1 D40A to D65A | LAD4CM |
| | LC1 D80 and D95 (~) | LA9D50978 |
| | LC1 D80 and D95 (---) | LA9D80978 |

Sets of power connections

| | | |
|----------------------------------------------------------------------|------------------------------------------------------------|-----------------------------------------|
| Comprising: ■ a set of parallel bars ■ a set of reverser bars. | LC1 D09 to D38 with screw clamp terminals or connectors | LAD9V5 + LAD9V6 |
| | LC1 D09...D32 with spring terminal connections | LAD9V12 + LAD9V13 ⁽²⁾ |
| | LC1 D40A to D65A | LA9D65A69 |
| | LC1 D80 and D95 (~) | LA9D8069 |
| | LC1 D80 and D95 (---) | LA9D8069 |
| | LC1 D115 and D150 | LA9D11569 |

For low-speed/high-speed starter

| Description | For 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 |

For star-delta starter

| Description | For contactors | Reference |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------------------|
| Mounting kit comprising: ■ 1 time delay contact block LAD S2 (LC1 D09...D80) , ■ power circuit connections (LC1 D09...D80), ■ hardware required for fixing the contactors onto the mounting plate (LC1 D80). | LC1 D09 and D12 | LAD91217 |
| | LC1 D18 to D32 | LAD93217 |
| | LC1 D40A and D50A | LAD9SD3 |
| Equipment mounting plates | LC1 D80 | LA9D8017 |
| | LC1 D09, D12 and D18 | LA9D12974 |
| | LC1 D32 | LA9D32974 |
| | LC1 D40A and D50A | – |
| | LC1 D80 | LA9D80973 |

(1) To order the 2 contactors: see pages B8/3 and B8/9.

(2) To assemble a reversing contactor with spring terminal connections, the following components must be ordered:

- 1 mechanical interlock **LAD 9V2**,

- 1 upstream power connection kit and 1 downstream power connection kit.

Upstream power connection kit **LAD 9V10**: installed in the Quickfit system with power connection module **LAD 34**.

(If module **LAD 34** is not used, replace **LAD 9V10** with **LAD 9V12**).

Downstream power connection kit **LAD 9V11**: installed in the Quickfit system with outgoing terminal block **LAD 331**.

(If **LAD 331** is not used, replace **LAD 9V11** with **LAD 9V13**).

TeSys contactors

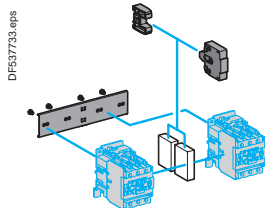
Component parts for assembling changeover contactor pairs

TeSys D

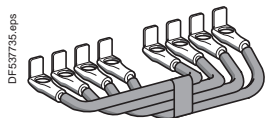
For 4-pole changeover contactor pairs (3-phase distribution + neutral)

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: ■ a mechanical interlock LAD 9V2 with electrical interlocking LAD 9V1, ■ a set of power connections (changeover) LAD 9V7. | LC1 DT20 to DT40 with screw clamps or connectors | LADT9R1V |
| Kit comprising: ■ a mechanical interlock LAD 9V2 without electrical interlocking, ■ a set of power connections (changeover) LAD 9V7. | LC1 DT20 to DT40 with screw clamps or connectors | LADT9R1 |
| Mechanical interlocks | | |
| With integral electrical interlocking | LC1 D80004 | LA9D4002 |
| | LP1 D80004 | LA9D8002 |
| | LC1 D115004 | LA9D11502 |
| Without integral electrical interlocking | LC1 DT20 to DT40 with screw clamps or connectors | LAD9V2 ⁽²⁾ |
| | LC1 DT203 to DT403 with spring terminals | LAD9V2 ⁽²⁾ |
| | LC1 DT60A and DT80A | LAD4CM |
| | LC1 D80004 | LA9D50978 |
| | LP1 D80004 | LA9D80978 |
| Sets of power connections | | |
| Comprising a set of parallel bars | LC1 D80004 | LA9D8070 |
| | LP1 D80004 | LA9D8070 |
| | LC1 D115004 | LA9D11570 |
| | LC1 DT203 to DT403 with spring terminals | LAD9V9 |
| | LC1 D80004 | LA9D8070 ⁽²⁾ |
| | LP1 D80004 | LA9D8070 ⁽²⁾ |
| 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 |
| Mechanical interlocks | | |
| Without integral electrical interlocking | LC1 D40A...D65A | LAD9R3S |
| With integral electrical interlocking | LC1 D115 and D150 | LA9D11502 |
| Sets of power connections | | |
| Comprising a set of parallel bars | LC1 D115 and D150 | LA9D11571 |



LA9 D50978



LA9 D8070

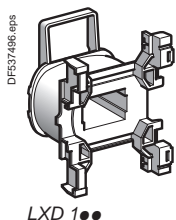
⁽¹⁾ To order the 2 contactors: see pages B8/3 and B8/9.

⁽²⁾ Order 2 contact blocks **LAD No 1** to build the electrical interlock, see page B8/15.

TeSys contactors

a.c. coils for TeSys D, 3 or 4-pole contactors

TeSys D



For ~ contactors LC1 D09...D38 and LC1 DT20...DT40

Specifications

Average consumption at 20 °C:

- inrush ($\cos \varphi = 0.75$) 70 VA,
- sealed ($\cos \varphi = 0.3$) 50 Hz: 7 VA, 60 Hz: 7.5 VA.

Operating range ($\theta \leq 60$ °C): 50 Hz: 0.8...1.1 U_c , 60 Hz: 0.85...1.1 U_c .

| Control circuit voltage U_c | 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 |
| 127 | 158.5 | 6.1 | LXD1FC7 |
| 200 | 410.7 | 15 | LXD1L7 |
| 208 | 430.4 | 16 | LXD1LE7 |
| 220 | 515.4 | 18 | LXD1M7 ⁽³⁾ |
| 230 | 538.6 | 20 | LXD1P7 |
| 240 | 562.3 | 22 | LXD1U7 |
| 277 | 800.7 | 29 | LXD1W7 |
| 380 | 1551 | 55 | LXD1Q7 ⁽⁴⁾ |
| 400 | 1633 | 60 | LXD1V7 |
| 415 | 1694 | 65 | LXD1N7 |
| 440 | 1993 | 73 | LXD1R7 |
| 480 | 2398 | 87 | LXD1T7 |
| 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⁾ 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 B8/54 and B8/66).

⁽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 B8/54 and B8/66).

For \sim contactors LC1 D40A...D65A, LC1 DT60A and LC1 DT80A

Specifications

Average consumption at 20 °C:

■ inrush ($\cos \varphi = 0.75$) 160 VA,

■ sealed ($\cos \varphi = 0.3$) 50 Hz: 15 VA, 60 Hz: 15 VA.

Operating range ($\theta \leq 60$ °C): 50 Hz: 0.8...1.1 U_c , 60 Hz: 0.85...1.1 U_c .

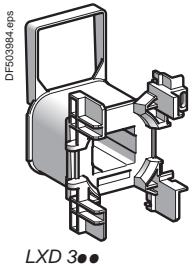
| Control circuit voltage U_c | Average resistance at 20 °C $\pm 10\%$ | Inductance of closed circuit | Reference ⁽¹⁾ |
|-------------------------------|----------------------------------------|------------------------------|--------------------------|
| V | Ω | H | |
| | | | 50/60 Hz |
| 12 | 0.49 | 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 |
| 127 | 60.29 | 3.34 | LXD3FC7 |
| 200 | 149 | 8.27 | LXD3L7 |
| 208 | 105 | 6.22 | LXD3LE7 |
| 220 | 182 | 10 | LXD3M7 ⁽³⁾ |
| 230 | 192 | 10.9 | LXD3P7 |
| 240 | 202 | 11.9 | LXD3U7 |
| 277 | 193 | 11 | LXD3W7 |
| 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 |
| 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 B8/54 and B8/66).

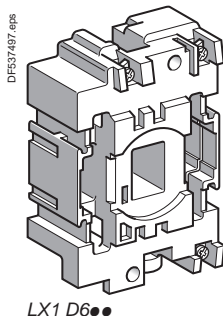
⁽⁴⁾ Suitable for use on 400 V / 50 Hz. In this case, apply a coefficient of 0.6 to the mechanical durability of the contactor (see page B8/54 and B8/66).



For 3 or 4-pole contactors LC1D40, D50, D65, D80, D95

Specifications

Average consumption at 20 °C:

■ inrush ($\cos \varphi = 0.75$) 50 Hz: 200 VA, 60 Hz: 220 VA■ sealed ($\cos \varphi = 0.3$) 50 Hz: 20 VA, 60 Hz: 22 VA.Operating range ($\theta \leq 55$ °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 % | | Reference ⁽¹⁾ |
|-------------------------------|-------------------------------------------|------------------------------|--------------------------|-------------------------------------------|--------------|--------------------------|
| | | | | 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 ($\cos \varphi = 0.75$) 50/60 Hz: 245 VA at 50 Hz■ sealed ($\cos \varphi = 0.3$) 50/60 Hz: 26 VA at 50 Hz.Operating range ($\theta \leq 55$ °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 B8/54 and B8/66. 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 B8/54 and B8/66.

For 3 or 4-pole contactors LC1 D115**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 % | | Reference ⁽¹⁾ |
|----------------------------|-----------------------------------|------------------------------|--------------------------|-----------------------------------|-------|--------------------------|
| | | | | Ω | H | |
| 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 | – | – | – |

For 3 or 4-pole contactors LC1 D115, LC1 D150**Specifications**

Average consumption at 20 °C:

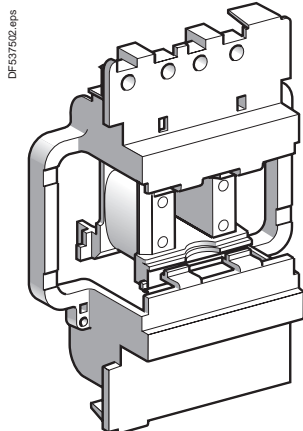
■ inrush: cos φ = 0.9 - 280 to 350 VA

■ 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 % | | Reference ⁽¹⁾ |
|----------------------------|-----------------------------------|------------------------------|--------------------------|-----------------------------------|--------|--------------------------|
| | | | | Ω | H | |
| 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.

LX1 D8●●

Technical Data for Designers

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TeSys D:

- > characteristics B8/53 to B8/64
- > dimensions B8/65 to B8/75

TeSys SK:

- > characteristics B8/76 to B8/79
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TeSys K:

- > characteristics B8/81 to B8/84
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Standard IEC tests - Contactors
conforming to UL/CSA B8/115

TeSys D

| Environment | | | D09...D18 DT20 and DT25 | D25...D38 DT32 and DT40 | D40A...D65A DT60A and DT80A | D80...D95 | 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 508, CSA C22.2 n°14. | | | | | |
| Product certifications | | | UL, CSA ⁽¹⁾ , CCC, GOST GL, DNV, 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 | | | | | |
| Protective treatment | Conforming to IEC 60068-2-30 | | "TH" | | | | | |
| Ambient air temperature around the device | Storage | °C | -60...+80 | | | | | |
| | Operation | °C | -5...+60 | | | | | |
| | Permissible | °C | -40...+70, for operation at U _c | | | | | |
| Maximum operating altitude | Without derating | m | 3000 | | | | | |
| Operating positions ⁽³⁾ | Without derating in the following positions | | | | | | | |
| | Positions that are not permissible | | For ~ contactors LC1 D09 to LC1 D65A. | | | | | |
| Flame resistance | Conforming to UL 94 | | V1 | | | | | |
| | Conforming to IEC 60695-2-1 | °C | 850 | | | | | |
| Shock resistance ⁽⁴⁾ 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 ⁽⁴⁾ 5...300 Hz | Contactor open | | 2 gn | | | | | |
| | Contactor closed | | 4 gn | 4 gn | 4 gn | 3 gn | 4 gn | |

(1) Contactor LC1 D95 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) When mounting on a vertical rail, use a stop.

(4) Without modifying the contact states, in the most unfavourable direction (coil energised at U_e).

TeSys D

Pole characteristics

| 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

| | | | | | |
|----------------------------------------------------------|------------------------------|-----------|-----------------------------------------------------------------|----|------|
| 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 |
| | | Sealed | 50/60 Hz coil | VA | 70 |
| | | | 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 |
| | | Sealed | 50/60 Hz coil | VA | 70 |
| | | | 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 LC1 D093 and LC1 D123 (20 A possible with 2 x 2.5 mm² in parallel),

25 A for LC1 D183 to LC1 D323 (32 A possible for LC1 D183 connected with 2 x 4 mm² cables in parallel; 40 A possible for LC1 D253 and LC1 D323 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.

| D32 | D38 | D40A | DT60A | D50A | D65A | DT80A | D80 | D95 | D115 | D150 |
|-------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 32 | 38 | 40 | – | 50 | 65 | – | 80 | 95 | 115 | 150 |
| 50 ⁽¹⁾ | 50 | 60 | 60 | 80 | 80 | 80 | 125 | 125 | 200 | 200 |
| 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 |
| 50 | 50 | 60 | 60 | 80 | 80 | 80 | 125 | 125 | 200 | 200 |
| 550 | 550 | 800 | 800 | 900 | 1000 | 1000 | 1100 | 1100 | 1260 | 1660 |
| 550 | 550 | 800 | 800 | 900 | 1000 | 1000 | 1100 | 1100 | 1100 | 1400 |
| 430 | 430 | 720 | 720 | 810 | 900 | 900 | 990 | 1100 | 1100 | 1400 |
| 260 | 310 | 320 | 320 | 400 | 520 | 520 | 640 | 800 | 950 | 1200 |
| 138 | 150 | 165 | 165 | 208 | 260 | 260 | 320 | 400 | 550 | 580 |
| 60 | 60 | 72 | 72 | 84 | 110 | 110 | 135 | 135 | 250 | 250 |
| 63 | 63 | 80 | 80 | 100 | 125 | 125 | 200 | 200 | 250 | 315 |
| 63 | 63 | 80 | 80 | 100 | 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 | 1.6 | 0.8 | 0.8 | 0.6 | 0.6 |
| 2 | 3 | 2.4 | – | 3.7 | 6.3 | – | 5.1 | 7.2 | 7.9 | 13.5 |
| 5 | 5 | 5.4 | 5.8 | 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 | | |
| 70 | 160 | | | | | 245 | | 280...350 | | |
| – | – | | | | | 20 | | 22 | | |
| 0.3 | 0.3 | | | | | 0.3 | | 0.3 | | |
| 7 | 15 | | | | | 26 | | 2...18 | | |
| – | – | | | | | 220 | | 300 | | |
| 0.75 | 0.75 | | | | | 0.75 | | 0.8 | | |
| 70 | 140 | | | | | 245 | | 280...350 | | |
| – | – | | | | | 22 | | 22 | | |
| 0.3 | 0.3 | | | | | 0.3 | | 0.3 | | |
| 7.5 | 13 | | | | | 26 | | 2...18 | | |
| 2...3 | 4...5 | | | | | 6...10 | | 3...8 | | |
| 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 |

TeSys D

Power circuit connections

Screw clamp terminal connections

| Contactor type | LC1 | D09 and D12 DT20 and DT25 | D18 (3P) | D25 (3P) | D32 | D38 | D18 and D25 (4P) DT32 and DT40 | D40A to D65A 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 | mm ² | 1...4 | 1.5...6 | 2.5...10 | | 2.5...10 | 1...35 | 4...50 | 10...120 |
| | 2 conductors | mm ² | 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 | mm ² | 1...4 | 1...6 | 1...10 | | 2.5...10 | 1...35 | 4...50 | 10...120 |
| | 2 conductors | mm ² | 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 | mm ² | 1...4 | 1.5...6 | 1.5...10 | | 2.5...16 | 1...35 | 4...50 | 10...120 |
| | 2 conductors | mm ² | 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 mm ² 8: 35 mm ² | 9 | 12 |

Spring terminal connections ⁽²⁾

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

Connection by bars or lugs

| | | | | | | | | | | |
|--------------------------------|--------------------|-----|------|------|------|------|------|------|--------|--------|
| 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 | Philips | | 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)

| | | | | | | | | | | |
|----------------------------------|--------------------|-----------------|---------|---------|---------|---------|---------|---------|---------|---------|
| Flexible cable without cable end | 1 conductor | mm ² | 1...4 | 1...4 | 1...4 | 1...4 | 1...4 | 1...4 | 1...4 | 1...2.5 |
| | 2 conductors | mm ² | 1...4 | 1...4 | 1...4 | 1...4 | 1...4 | 1...4 | 1...4 | 1...2.5 |
| Flexible cable with cable end | 1 conductor | mm ² | 1...4 | 1...4 | 1...4 | 1...4 | 1...4 | 1...4 | 1...4 | 1...2.5 |
| | 2 conductors | mm ² | 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 | mm ² | 1...4 | 1...4 | 1...4 | 1...4 | 1...4 | 1...4 | 1...4 | 1...2.5 |
| | 2 conductors | mm ² | 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⁾

| | | | | | | | | | | |
|----------------------------------|--------------|-----------------|-----|-----|-----|-----|---|-----|------------|---|
| Flexible cable without cable end | 1 conductor | mm ² | 2.5 | 2.5 | 2.5 | 2.5 | – | 2.5 | 0.75...2.5 | – |
| | 2 conductors | mm ² | 2.5 | 2.5 | 2.5 | 2.5 | – | 2.5 | 0.75...2.5 | – |

Connection by bars or lugs

| | | | | | | | | | | |
|-------------------|--------------------|-----|------|------|------|------|------|------|------|------|
| 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 | 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 LAD ALLEN4, see page B8/21).

⁽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.

TeSys D

d.c. control circuit characteristics

| Contactor type | | | LC1 D09...D38 LC1 DT20...DT40 | LC1 D40A...D65A LC1 DT60A and DT80A | LC1 or LP1 D80 LC1 D95 | LC1 D115 and LC1 D150 | |
|----------------------------------------------------------|---------------------------------|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|---------------------------|---------------------------|-----------|
| 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 |
| | | | <i>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.</i> | | | | |
| 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

| | | | | | |
|----------------------------------------------------------|------------------------------------|--------|----------------|----------|---|
| 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 (0.7...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.

TeSys D

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) | |

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

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

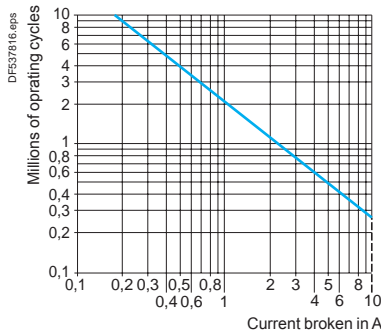
Electrical durability (valid for up to 3600 operating cycles/hour) on an inductive load such as the coil of an electromagnet: making current (cos φ 0.7) = 10 times the power broken (cos φ 0.4).

| 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 |

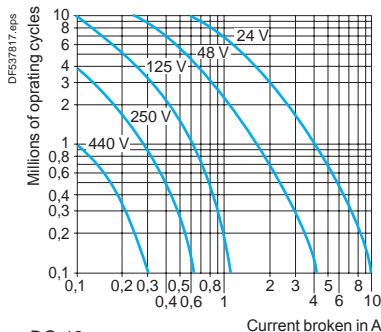
d.c. supply, category DC-13

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 | – | – |



AC-15



DC-13

| Environment | | | | | | |
|----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|-------------------------------------------------------------|----------------------------------------------|---------------|---------------|----|
| Contact block type | | LAD N or LAD C | LAD T and LAD S | LAD R | LAD 8 | |
| Conforming to standards | | IEC 60947-5-1, NF C 63-140, VDE 0660, BS 4794, EN 60947-5-1 | | | | |
| Product certifications | | UL, CSA | | | | |
| Protective treatment | Conforming to IEC 60068 | "TH" | | | | |
| Degree of protection | Conforming to VDE 0106 | Protection against direct finger contact IP 2X | | | | |
| Ambient air temperature around the device | Storage | °C | -60...+80 | | | |
| | Operation | °C | -5...+60 | | | |
| | Permissible for operation at U _c | °C | -40...+70 | | | |
| 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 | mm ² | Min: 1 x 1; max: 2 x 2.5 | | | |
| | Spring terminal connections | Flexible or solid cable without cable end | mm ² | Max: 2 x 2.5 | | |
| Instantaneous and time delay contact characteristics | | | | | | |
| Number of contacts | | | 1, 2 or 4 | 2 | 2 | 2 |
| Rated operational voltage (U _e) | Up to | V | 690 | | | |
| Rated insulation voltage (U _i) | Conforming to IEC 60947-5-1 | V | 690 | | | |
| | Conforming to UL, CSA | V | 600 | | | |
| Conventional thermal current (I _{th}) | 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 and VDE 0660, gG fuse | A | 10 | | | |
| Rated making capacity | Conforming to IEC 60947-5-1 | I rms | ~: 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 LAD C22 | 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 B8/61 | | | |

| Environment | | | | | | | | |
|--------------------------------------------------------------------|-------------------------------------------------------------------------------------|--|------------------------------------------------|--------------------------|-----------------------|----------|---------------------------------------|---|
| Contact block type | | | LA1 DX | LA1 DZ | | LA1 DY | | |
| | | | | Protected | Non protected | | | |
| Conforming to standards | | | IEC 60947-5-1, VDE 0660 | | | | | |
| Product certifications | | | UL, CSA | | | | | |
| Protective treatment | Conforming to IEC 60068 | | "TH" | | | | | |
| Degree of protection | Conforming to VDE 0106 | | Protection against direct finger contact IP 2X | | | | | |
| Ambient air temperature | Storage and operation | | °C | -25...+70 | | | | |
| 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 | | | | |
| Number of contacts | | | 2 | 2 | 2 | 2 | | |
| Contact characteristics | | | | | | | | |
| Rated operational voltage (Ue) | Up to | | V | 50 | 50 | 690 | 24 | |
| 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 | 500 | 500 | – | 50 | |
| Frequency of the operational current | | | Hz | – | – | 25...400 | – | |
| Minimum switching capacity | U min | | V | 3 | 3 | 17 | 3 | |
| | I min | | mA | 0.3 | 0.3 | 5 | 0.3 | |
| 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 | > 10 | > 10 | > 10 | |
| Mechanical durability | In millions of operating cycles | | | 5 | 5 | 30 | 5 | |
| Materials and technology used for dust and damp protected contacts | | | | Silver - Single break | Silver - Single break | – | Gold - Single break with crossed bars | |

TeSys contactors

Auxiliary contact blocks with dust and damp protected contacts for TeSys D contactors

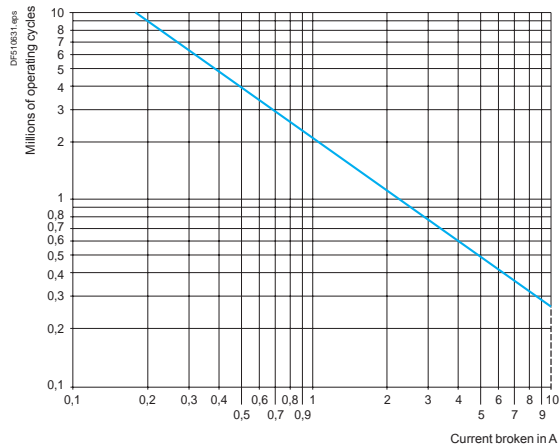
TeSys D

Rated 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 ($\cos \varphi 0.7$) = 10 times the power broken ($\cos \varphi 0.4$).

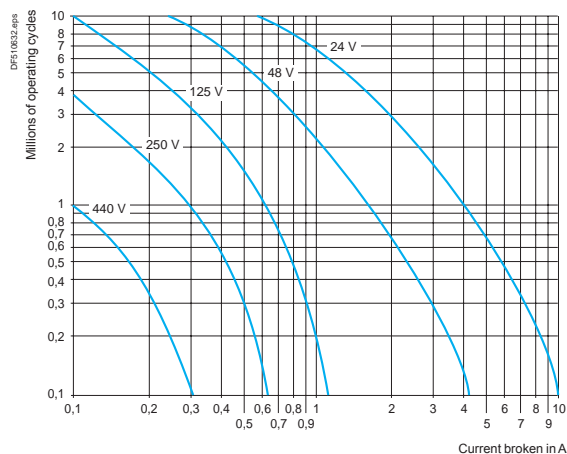
| Operating cycles | V | 24 | 48 | 115 | 230 | 400 | 440 | 600 |
|------------------|----|----|-----|-----|-----|-----|------|------|
| 1 million | VA | 60 | 120 | 280 | 560 | 960 | 1050 | 1440 |
| 3 million | VA | 16 | 32 | 80 | 160 | 280 | 300 | 420 |
| 10 million | VA | 4 | 8 | 20 | 40 | 70 | 80 | 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 | 120 | 90 | 75 | 68 | 61 |
| 3 million | W | 70 | 50 | 38 | 33 | 28 |
| 10 million | W | 25 | 18 | 14 | 12 | 10 |



Environment

| | | | |
|-------------------------------------------|---------------------------------|----|------------------------------------------------|
| Conforming to standards | | | IEC 60947-5-1 |
| Product certifications | | | UL, CSA |
| Protective treatment | Conforming to IEC 60068 | | "TH" |
| Degree of protection | Conforming to VDE 0106 | | 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

| Module type | | | LA4 DA, LAD 4RC, LAD 4RC3 | LA4 DB, LAD 4T, LAD 4T3 | LA4 DC, LAD 4D3 | LA4 DE, LAD 4V, LAD 4V3 |
|------------------------------------|-----------|----|---------------------------|-----------------------------------|-----------------|-------------------------|
| 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⁾

| Mechanical latch block type | | | LAD 6K10 | LA6 DK20 |
|-------------------------------|---------------------------------|-----|--------------------------------|----------------------------------------|
| For use on contactor | | | LC1 D09...D65A DT20...DT80A | LC1 D80...D150 LP1 D80 and LC1 D115 |
| 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 LA6 DK or LAD 6K latch coil and the LC1 D operating coil must not be energised simultaneously.

The duration of the LA6 DK or LAD 6K and LC1 D control signals must be ≥ 100 ms.

TeSys D

Environment

| Module type | | LA4 DT (On-delay) | |
|--------------------------------------------|-------------------------------------------------------------------------------------|-------------------|------------------------------------------------|
| Conforming to standards | | | IEC 60255-5 |
| Product certifications | | | UL, CSA |
| Protective treatment | Conforming to IEC 60068 | | "TH" |
| Degree of protection | Conforming to VDE 0106 | | Protection against direct finger contact IP 2X |
| Ambient air temperature around the device | Storage | °C | -40...+80 |
| | Operation | °C | -25...+55 |
| | For operation at U _c | °C | -25...+70 |
| Rated insulation voltage (U _i) | Conforming to IEC 60947-1 | V | 250 |
| Cabling | Phillips n° 2 and Ø6 mm Flexible or solid conductor with or without cable end | mm ² | Min: 1 x 1; max: 2 x 2.5 |

Control circuit characteristics

| | | | |
|-------------------------------------------------|-----------------------------|---|----------------------------|
| Built-in protection | Of the input | | By varistor |
| | Contactors coil suppression | | By varistor |
| Rated control circuit voltage (U _c) | | V | ~ or ≡; 24...250 |
| Permissible variation | | | 0.8...1.1 U _c |
| Type of control | | | By mechanical contact only |

Timing characteristics

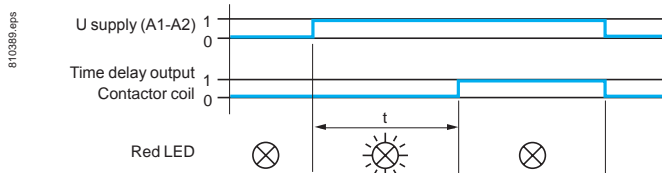
| | | | |
|--------------------------------|--------------------------|----|--------------------------------------|
| Timing ranges | | s | 0.1...2; 1.5...30; 25...500 |
| Repeat accuracy | 0...40 °C | | ±3 % (10 ms minimum) |
| Reset time | During time delay period | ms | 150 |
| | After time delay 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 LA4 DT



TeSys contactors

Interface modules

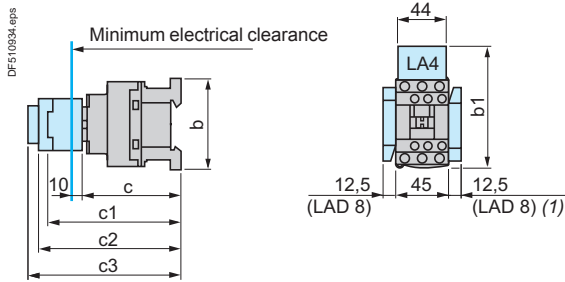
for TeSys D contactors

TeSys D

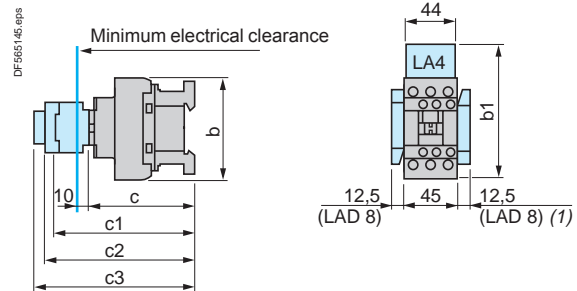
| Environment | | | | |
|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|------------------------------------------------------------------------|-------------------------------------------|
| Conforming to standards | | | IEC 60255-5 | |
| Product certifications | | | UL, CSA | |
| Protective treatment | Conforming to IEC 60068 | | "TH" | |
| Degree of protection | Conforming to VDE 0106 | | 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 U _c | °C | -25...+70 | |
| Other characteristics | | | | |
| Module type | | | LA4 DFB With relay | LA4 DWB Solid state |
| Conventional thermal current (I _{th}) | 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 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 | LC1 D80...D150 | – |
| | | ~ 100...250 V | – | LC1 D80...D115 |
| | | ~ 380...415 V | – | – |
| Mounting with cabling adapter LAD 4BB | With coil | ~ 24...250 V | LC1 D09...D38, LC1 DT20...DT40 | LC1 D09...D38, LC1 DT20...DT40 |
| | | ~ 380...415 V | – | – |
| Mounting with cabling adapter LAD 4BB3 | With coil | ~ 24...250 V | LC1 D40A...D65A | LC1 D40A...D65A |
| | | ~ 380...415 V | LC1 D40A...D65A | LC1 D40A...D65A |
| Total operating time at U _c (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. | | | |
| | | | LC1 D09...D38, LC1 DT20...DT40 | LC1 D40A...D65A |
| | With LA4 DFB | "C" | ms | 20...30 |
| | | "O" | ms | 16...24 |
| Cabling | 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 | |

TeSys D

LC1 D09...D18 (3-pole)



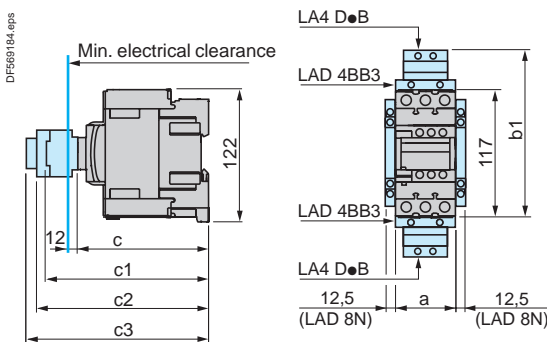
LC1 D25...D38 (3-pole), LC1 DT20...DT40 (4-pole)



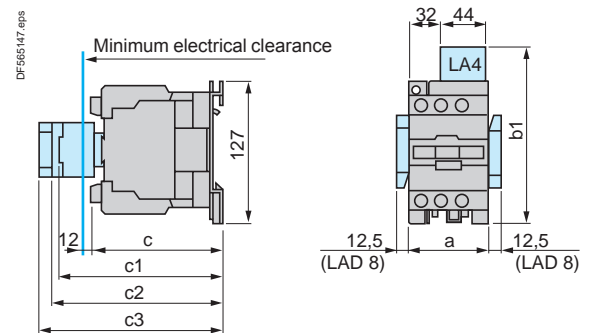
| LC1 | D09...D18 | D093... D123 | D099... D129 | D25... D38 | D183... D323 | D098, D128, DT20 and DT25 | DT203 and DT253 | DT32 and DT40 | D188, D258, DT323 and DT403 |
|--------------------------------------|--------------------|--------------------|----------------------|--------------------|--------------------|------------------------------|--------------------|------------------|--------------------------------|
| b without add-on blocks | 77 | 99 | 80 | 85 | 99 | 85 | 99 | 91 | 105 |
| b1 with LAD 4BB | 94 | 107 | 95,5 | 98 | 107 | 98 | - | - | - |
| with LA4 D●2 | 110 ⁽¹⁾ | 123 ⁽¹⁾ | 111,5 ⁽¹⁾ | 114 ⁽¹⁾ | 123 ⁽¹⁾ | 114 | - | - | - |
| with LA4 DF, DT | 119 ⁽¹⁾ | 132 ⁽¹⁾ | 120,5 ⁽¹⁾ | 123 ⁽¹⁾ | 132 ⁽¹⁾ | 129 | - | - | - |
| with LA4 DW, 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 LAD N or C (2 or 4 contacts) | 117 | 117 | 117 | 123 | 123 | 123 | 123 | 131 | 131 |
| c2 with LA6 DK10, LAD 6K10 | 129 | 129 | 129 | 135 | 135 | 135 | 135 | 143 | 143 |
| c3 with LAD T, R, S | 137 | 137 | 137 | 143 | 143 | 143 | 143 | 151 | 151 |
| with LAD T, R, S and sealing cover | 141 | 141 | 141 | 147 | 147 | 147 | 147 | 155 | 155 |

(1) Including LAD 4BB.

LC1 D40A...D65A (3-pole), LC1 DT60A...DT80A (4-pole)



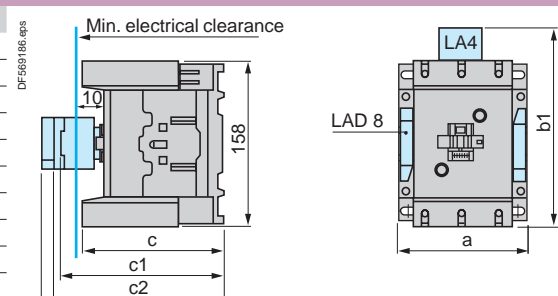
LC1 D80 and D95 (3-pole), LC1 D80004 and D80008 (4-pole), D40008 and D65008 (4-pole)



| LC1 | D40A...D65A | DT60A...DT80A | D40008 | D80 | D95, D65008 | D80004 | D80008 |
|------------------------------------|-------------|---------------|--------|-----|-------------|--------|--------|
| a | 55 | 70 | 85 | 85 | 85 | 96 | 96 |
| b1 with LA4 D●2 | - | - | 135 | 135 | 135 | 135 | 135 |
| with LA4 DB3 or LAD 4BB3 | 136 | - | - | 135 | - | - | - |
| with LA4 DF, DT | 157 | - | 142 | 142 | 142 | 142 | 142 |
| with LA4 DM, 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 LAD N (1 contact) | - | - | 139 | 150 | 150 | 150 | 150 |
| with LAD N or C (2 or 4 contacts) | 150 | 150 | 147 | 158 | 158 | 158 | 158 |
| c2 with LAD 6K10 or LA6 DK | 163 | 163 | 159 | 170 | 170 | 170 | 170 |
| c3 with LAD T, R, S | 171 | 171 | 167 | 178 | 178 | 178 | 178 |
| with LAD T, R, S and sealing cover | 175 | 175 | 171 | 182 | 182 | 182 | 182 |

LC1 D115 and D150 (3-pole), LC1 D115004 (4-pole)

| LC1 | D115, D150 | D115004 | D1150046 |
|--------------------------------------|------------|---------|----------|
| a | 120 | 150 | 155 |
| b1 with LA4 DA2 | 174 | 174 | 174 |
| with LA4 DF, DT | 185 | 185 | 185 |
| with LA4 DM, DL | 188 | 188 | 188 |
| with LA4 DW | 188 | 188 | 188 |
| c without cover or add-on blocks | 132 | 132 | 115 |
| with cover, without add-on blocks | 136 | - | - |
| c1 with LAD N or C (2 or 4 contacts) | 150 | 150 | 150 |
| c2 with LA6 DK20 | 155 | 155 | 155 |
| c3 with LAD T, R, S | 168 | 168 | 168 |



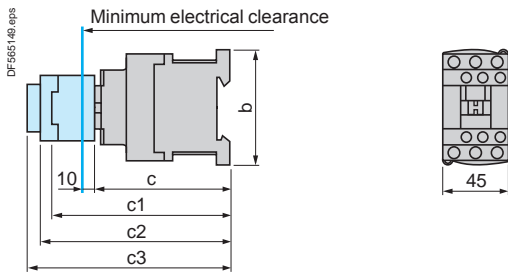
TeSys contactors

TeSys D contactors

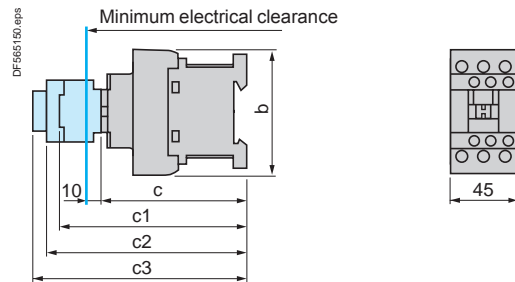
Control circuit: d.c. or low consumption

TeSys D

LC1 D09...D18 (3-pole)

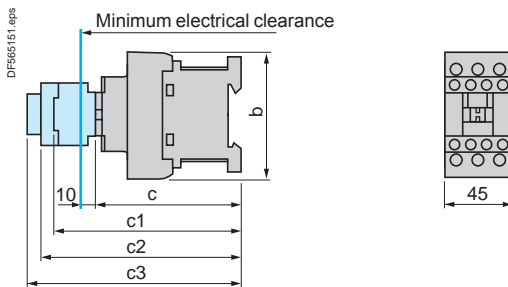


LC1 D25...D38 (3-pole)



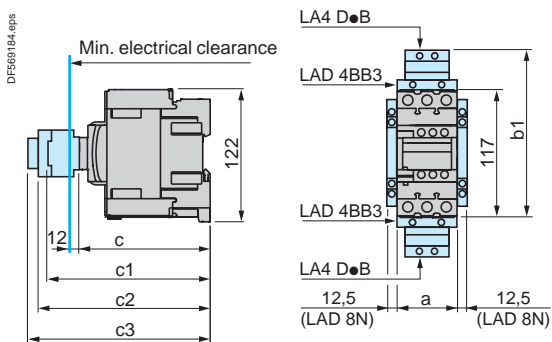
| LC1 | D09...D18 | D093...D123 | D099...D129 | D25...D38 | D183...D323 |
|--------------------------------------|-----------|-------------|-------------|-----------|-------------|
| b | 77 | 99 | 80 | 85 | 99 |
| c without cover or add-on blocks | 93 | 93 | 93 | 99 | 99 |
| with cover, without add-on blocks | 95 | 95 | 95 | 101 | 101 |
| c1 with LAD N or C (2 or 4 contacts) | 126 | 126 | 126 | 132 | 132 |
| c2 with LA6 DK10 | 138 | 138 | 138 | 144 | 144 |
| c3 with LAD T, R, S | 146 | 146 | 146 | 152 | 152 |
| with LAD T, R, S and sealing cover | 150 | 150 | 150 | 156 | 156 |

LC1 DT20...DT40 (4-pole)

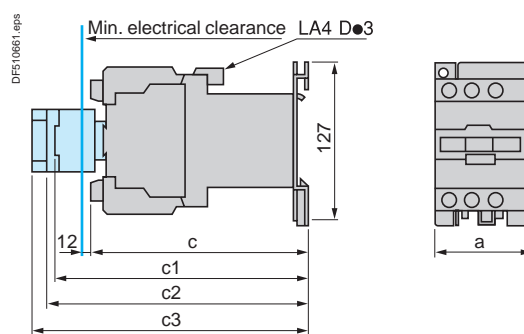


| LC1 | DT20 and DT25 D098 and D128 | DT203 and DT253 D0983 and D1283 | DT32 and DT40 D188...D258 | DT323 and DT403 D1883 and D2583 |
|--------------------------------------|--------------------------------|------------------------------------|------------------------------|------------------------------------|
| b | 85 | 99 | 91 | 105 |
| c with cover | 99 | 99 | 107 | 107 |
| c1 with LAD N or C (2 or 4 contacts) | 123 | 123 | 131 | 131 |
| c2 with LA6 DK10 | 135 | 135 | 143 | 143 |
| c3 with LAD T, R, S | 143 | 143 | 151 | 151 |
| with LAD T, R, S and sealing cover | 147 | 147 | 155 | 155 |

LC1 D40A...D65A (3-pole), LC1 DT60A...DT80A (4-pole)



LC1 D80 and D95 (3-pole), LP1 D80004, LP1 D80008 (4-pole), LP1 D40008 and D65008 (4-pole)

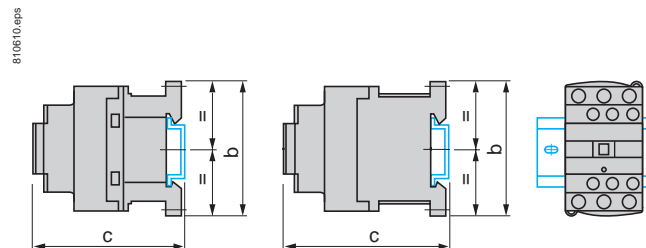


| | LC1 D40A ... D65A | LC1 DT60A...DT80A | LP1 D40008 and D65008 | LC1 D80 and D95 | LP1 D80004 | LP1 D80008 |
|------------------------------------|----------------------|-------------------|--------------------------|-----------------|------------|------------|
| a | 55 | 72 | 85 | 85 | 96 | 96 |
| b1 with LAD 4BB3 | 136 | 136 | - | - | - | - |
| with LA4 DF, 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 LAD N (1 contact) | - | - | 196 | 204 | 204 | 204 |
| with LAD N or C (2 or 4 contacts) | 150 | 150 | 202 | 210 | 210 | 210 |
| c2 with LA6 DK10 | 163 | 163 | 213 | 221 | 221 | 221 |
| c3 with LAD T, R, S | 171 | 171 | 221 | 229 | 229 | 229 |
| with LAD T, R, S and sealing cover | 175 | 175 | 225 | 233 | 233 | 233 |

TeSys D

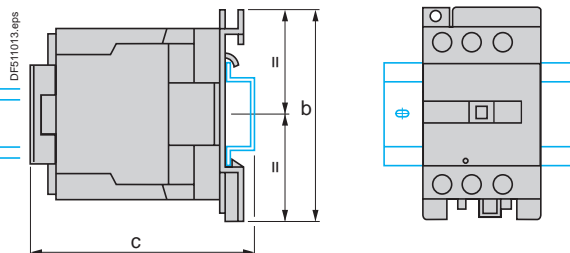
LC1 D09...D38, DT20...DT40

On mounting rail AM1 DP200, DR200 or AM1 DE200 (width 35 mm)



LC1 D40A...D65A, LC1 DT60A and DT80A, LC1 D80 and D95, LC1 D40008 and D65008

On mounting rail AM1 DL200 or DL201 (width 75 mm) ⁽²⁾
On mounting rail AM1 ED●●● or AM1 DE200 (width 35 mm)



Control circuit: a.c.

| LC1 | D09... D18 | D25... D38 | DT20 and DT25 | DT32 and DT40 |
|---------------------------------------|---------------|---------------|------------------|------------------|
| b | 77 | 85 | 85 | 100 |
| c (AM1 DP200 or DR200) ⁽¹⁾ | 88 | 94 | 94 | 109 |
| c (AM1 DE200) ⁽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 (AM1 DP200 or DR200) ⁽¹⁾ | 97 | 103 | 103 | 118 |
| c (AM1 DE200) ⁽¹⁾ | 105 | 110 | 111 | 1236 |

⁽¹⁾ With safety cover.

Control circuit: a.c.

| LC1 | D40A...D65A DT60A...DT80A | D80 and D95 | D40008 and D65008 |
|---------------------------------------|------------------------------|----------------|----------------------|
| b | 122 | 127 | 127 |
| c (AM1 DL200) ⁽¹⁾ | – | 147 | 143 |
| c (AM1 DL201) ⁽¹⁾ | – | 137 | 133 |
| c (AM1 ED●●● or DE200) ⁽¹⁾ | 128 | 137 | 133 |

Control circuit: d.c.

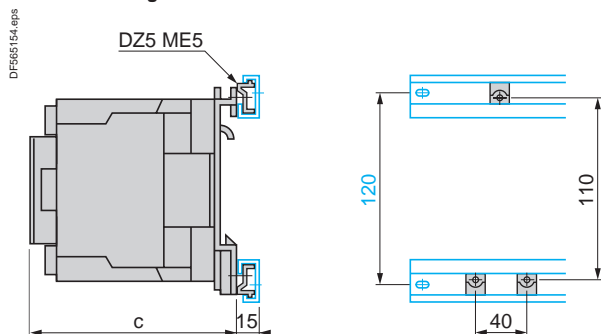
| LC1 | D40A...D65A DT60A...DT80A | D80 and D95 | D40008 and D65008 |
|---------------------------------------|------------------------------|----------------|----------------------|
| c (AM1 DL200) ⁽¹⁾ | – | 205 | 200 |
| c (AM1 DL201) ⁽¹⁾ | – | 195 | 190 |
| c (AM1 ED●●● or DE200) ⁽¹⁾ | 128 | 128 | 190 |

⁽¹⁾ With safety cover.

⁽²⁾ Except for LC1 D40A...D65A, LC1 DT60A and DT80A.

LC1 D80 and D95, LP1 D80

On 2 mounting rails DZ5 MB on 120 mm centres



Control circuit: a.c.

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

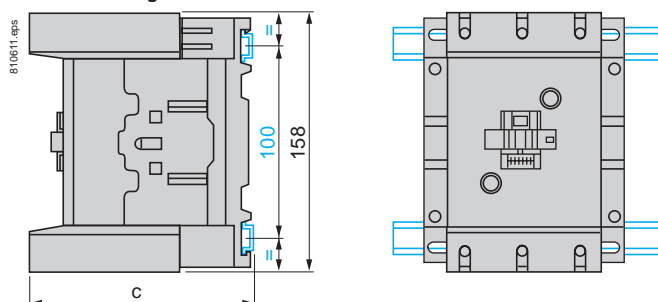
Control circuit: d.c.

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

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

LC1 D115, D150

On 2 mounting rails DZ5 MB on 120 mm centres



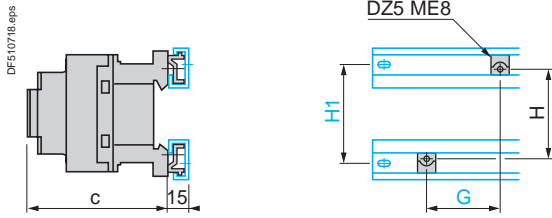
Control circuit: a.c. or d.c.

| LC1 | D115 and D150 | D1156 and D1506 |
|------------------------|---------------|-----------------|
| c (AM1 DP200 or DR200) | 134.5 | 117.5 |
| c (AM1 DE200 or ED●●●) | 142.5 | 125.5 |

TeSys D

LC1 D09...D38 and LC1 DT20...DT40

On 2 mounting rails DZ5 MB



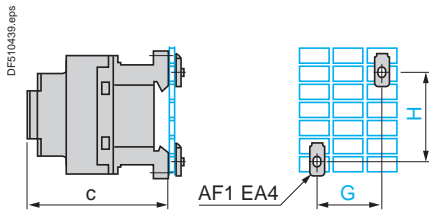
| Control circuit: | a.c. | | d.c. | |
|------------------|-----------|-----------|-----------|-----------|
| LC1 | D09...D18 | D25...D38 | D09...D18 | D25...D38 |
| c with cover | 86 | 92 | 95 | 101 |
| G | 35 | 35 | 35 | 35 |
| H | 60 | 60 | 70 | 70 |
| H1 | 70 | 70 | 70 | 70 |

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 |

LC1 D09...D38 and LC1 DT20...DT40

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

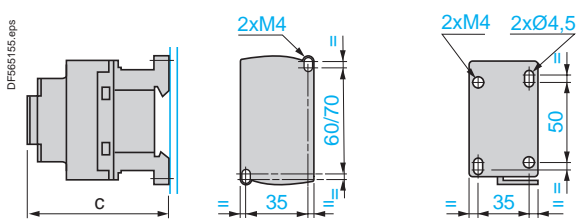


| Control circuit: | a.c. | | d.c. | |
|------------------|-----------|-----------|-----------|-----------|
| LC1 | D09...D18 | D25...D38 | D09...D18 | D25...D38 |
| c with cover | 86 | 92 | 95 | 101 |
| G | 35 | 35 | 35 | 35 |
| H | 60/70 | 60/70 | 70 | 70 |

| 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 |

LC1 D09...D38, LC1 DT20...DT40

Panel mounted

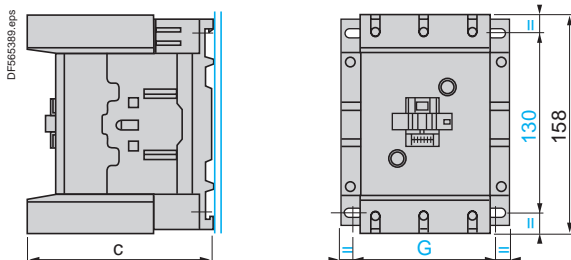


| Control circuit: | a.c. | | d.c. | |
|------------------|-----------|-----------|-----------|-----------|
| LC1 | D09...D18 | D25...D38 | D09...D18 | D25...D38 |
| c with cover | 86 | 92 | 95 | 101 |

| 4-pole contactors | DT20 and DT25 | DT32 and DT40 | DT20 and DT25 | DT32 and DT40 |
|-------------------|---------------|---------------|---------------|---------------|
| c with cover | 90 | 98 | 90 | 98 |

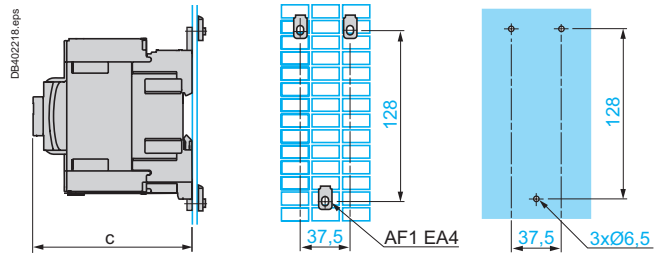
LC1 D115, D150

Panel mounted



LC1 D40A...D65A, LC1 DT60A...DT80A

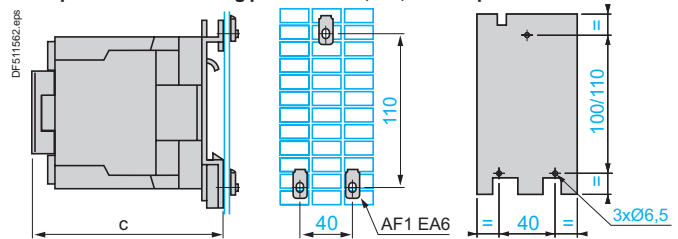
On pre-slotted mounting plate AM1 PA, PB, PC and panel mounted



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

LC1 D80 and D95, LC1 D40008 and D65008, LP1 D80

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 |

| 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 | - | - |

Selection:

Characteristics:

References:

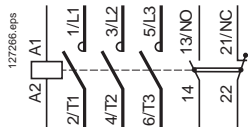
Schemes:

TeSys D

Contactors

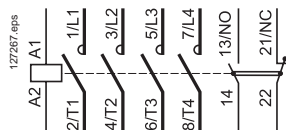
3-pole contactors (References: pages B8/2 to B8/5)

LC1 D09 to D150

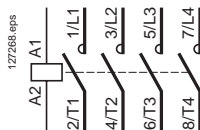


4-pole contactors (References: pages B8/6 and B8/7)

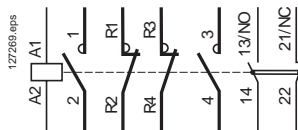
LC1 DT20 to DT80A



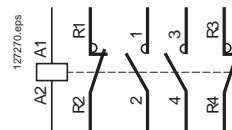
LC1 D115004



LC1 D098 to D258



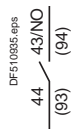
LC1 and LP1 D4008 to D8008



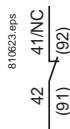
Front mounting add-on contact blocks

Instantaneous auxiliary contacts (References: page B8/41)

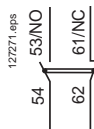
1 N/O LAD N10⁽¹⁾



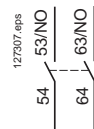
1 N/C LAD N01⁽¹⁾



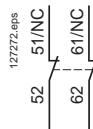
1 N/O + 1 N/C LAD N11



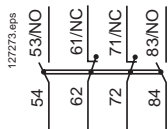
2 N/O LAD N20



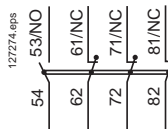
2 N/C LAD N02



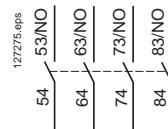
2 N/O + 2 N/C LAD N22



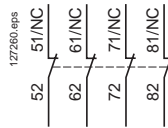
1 N/O + 3 N/C LAD N13



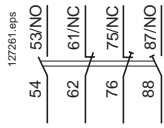
4 N/O LAD N40



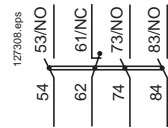
4 N/C LAD N04



2 N/O + 2 N/C including 1 N/O + 1 N/C make before break LAD C22

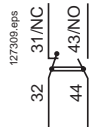


3 N/O + 1 N/C LAD N31

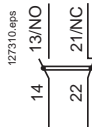


Instantaneous auxiliary contacts conforming to standard EN 50012 (References: page B8/41)

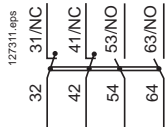
1 N/O + 1 N/C LAD N11G



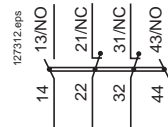
1 N/O + 1 N/C LAD N11P



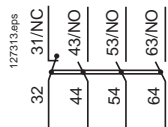
2 N/O + 2 N/C LAD N22G



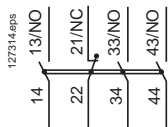
2 N/O + 2 N/C LAD N22P



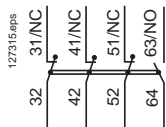
3 N/O + 1 N/C LAD N31G



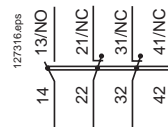
3 N/O + 1 N/C LAD N31P



1 N/O + 3 N/C LAD N13G



1 N/O + 3 N/C LAD N13P



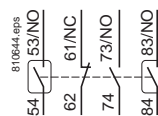
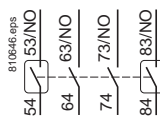
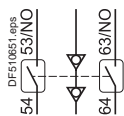
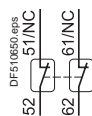
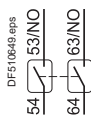
(1) Items in brackets refer to blocks mounted on right-hand side of contactor.

TeSys D

Front mounting add-on contact blocks

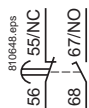
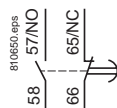
Dust and damp protected instantaneous auxiliary contacts (References: page B8/41)

| | | | | |
|------------------------------------|------------------------------------|-----------------------------------|-------------------------------------------------------------|-----------------------------------------------------------------------|
| 2 N/O (24-50 V) LA1 DX20 | 2 N/C (24-50 V) LA1 DX02 | 2 N/O (5-24 V) LA1 DY20 | 2 N/O protected (24-50 V) 2 N/O standard LA1 DZ40 | 2 N/O protected (24-50 V) + 1 N/O + 1 N/C standard LA1 DZ31 |
|------------------------------------|------------------------------------|-----------------------------------|-------------------------------------------------------------|-----------------------------------------------------------------------|



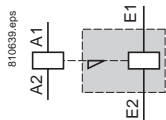
Time delay auxiliary contacts (References: page B8/16)

| | | |
|----------------------------------------|-----------------------------------------|-------------------------------------------------------|
| On-delay 1 N/O + 1 N/C LAD T | Off-delay 1 N/O + 1 N/C LAD R | On-delay 1 N/C + 1 N/O break before make LAD S |
|----------------------------------------|-----------------------------------------|-------------------------------------------------------|



Mechanical latch blocks (References: page B8/16)

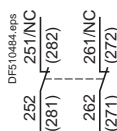
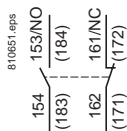
LAD 6K10 and LA6 DK20



Side mounting add-on contact blocks

Instantaneous auxiliary contacts (References: page B8/41)

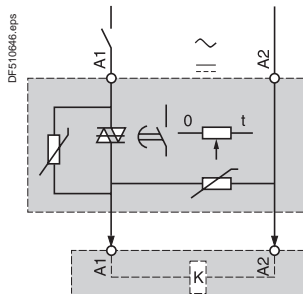
| | | |
|----------------------------------------------|--------------------------------------|--------------------------------------|
| 1 N/O + 1 N/C LAD 8N11 ⁽¹⁾ | 2 N/O LAD 8N20 ⁽¹⁾ | 2 N/O LAD 8N02 ⁽¹⁾ |
|----------------------------------------------|--------------------------------------|--------------------------------------|



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

Electronic serial timer modules

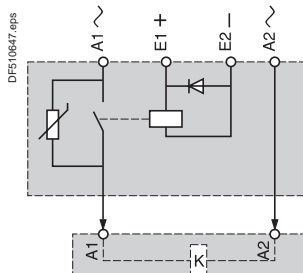
On-delay LA4 DT•U



Interface modules

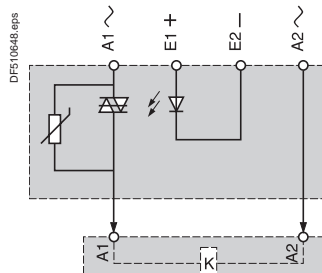
Relay output

LA4 DFB



Solid state

LA4 DWB



References: page B8/85.

Selection:

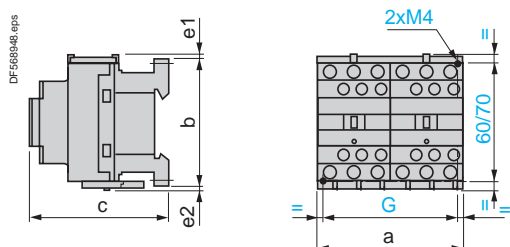
Characteristics:

References:

Dimensions:

TeSys D

LC2 D09 to D38 2 x LC1 D09 to D38

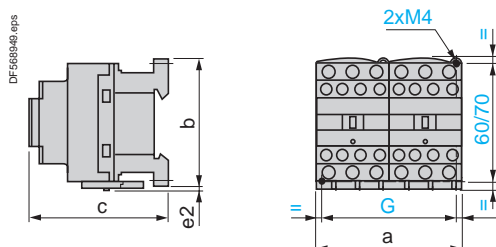


| LC2 or 2 x LC1 | a | b | c ⁽¹⁾ | e1 | e2 | G |
|----------------|----|----|------------------|----|-----|----|
| D09 to D18 ~ | 90 | 77 | 86 | 4 | 1.5 | 80 |
| D093 to D123 ~ | 90 | 99 | 86 | - | - | 80 |
| D09 to D18 - | 90 | 77 | 95 | 4 | 1.5 | 80 |
| D093 to D123 - | 90 | 99 | 95 | - | - | 80 |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

e1 and e2: including cabling.

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

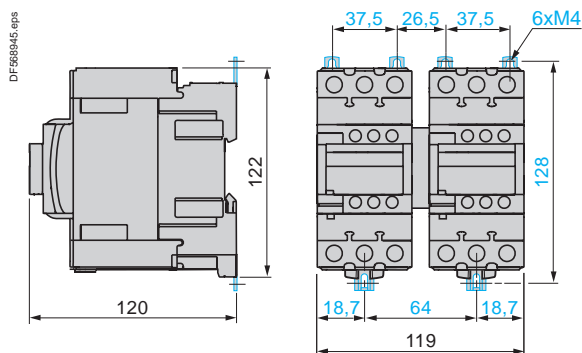
LC2 DT20 to DT40 2 x LC1 DT20 to DT40



| LC2 or 2 x LC1 | a | b | c | G |
|-----------------|----|----|-----|----|
| DT20 and DT25 ~ | 90 | 85 | 92 | 80 |
| DT32 and DT40 ~ | 90 | 91 | 99 | 80 |
| DT20 and DT25 - | 90 | 85 | 102 | 80 |
| DT32 and DT40 - | 90 | 91 | 109 | 80 |

c, e: including cabling.

LC2 D40A to D65A 2 x LC1 D40A to D65A

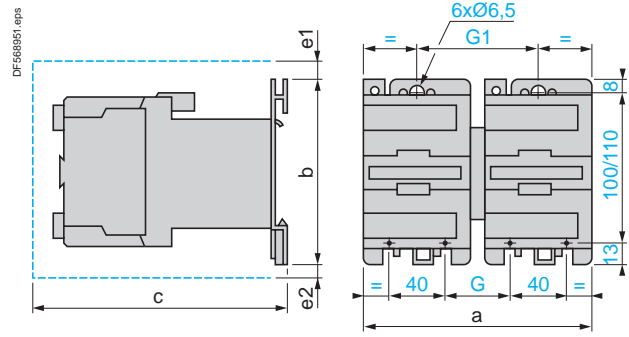
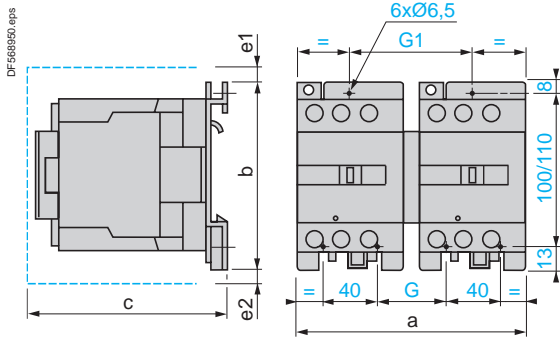


TeSys D

LC2 D80 and D95

2 x LC1 D80 and D95 ~

2 x LC1 D80 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 |

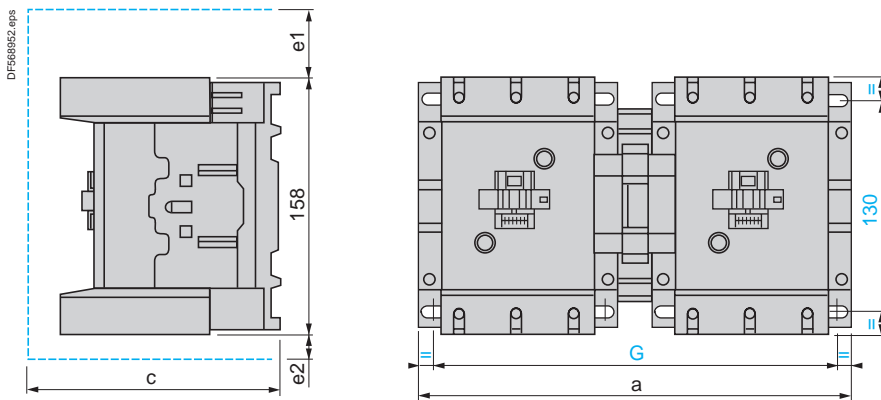
| 2 x LC1 | a | b | c | e1 | e2 | G | G1 |
|-------------|-----|-----|-----|----|----|----|-----|
| D80 and D95 | 207 | 127 | 215 | 13 | 20 | 96 | 111 |

c, e1 and e2: including cabling.

c, e1 and e2: including cabling.

LC2 D115 and D150

2 x LC1 D115 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 |

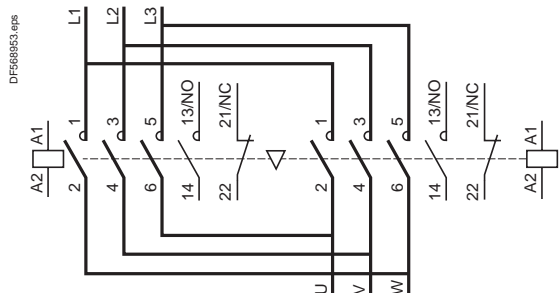
c, e1 and e2: including cabling.

TeSys D

Reversing contactors for motor control

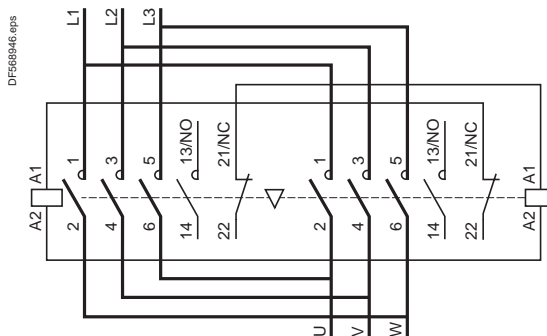
LC2 D09...D150

Horizontally mounted



LAD 9R1V

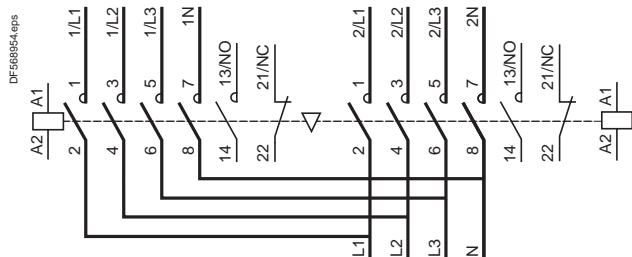
With integral electrical interlocking



Changeover contactor pairs

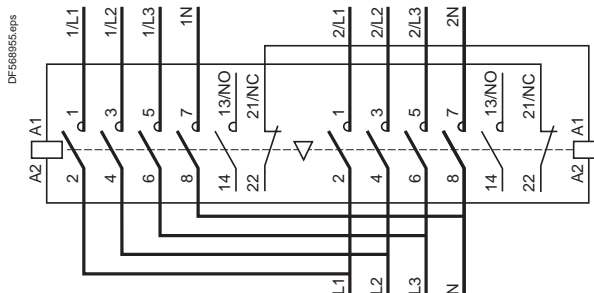
LC2 DT20...DT40

Horizontally mounted



LAD T9R1V

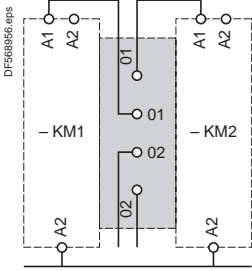
With integral electrical interlocking



TeSys D

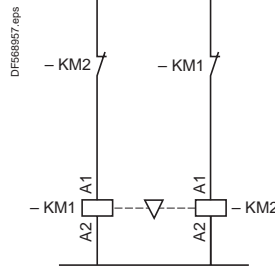
Electrical interlocking of reversing contactors fitted with:

Mechanical interlock with integral electrical contacts
 LA9 D4002, LA9 D8002 and LA9 D11502



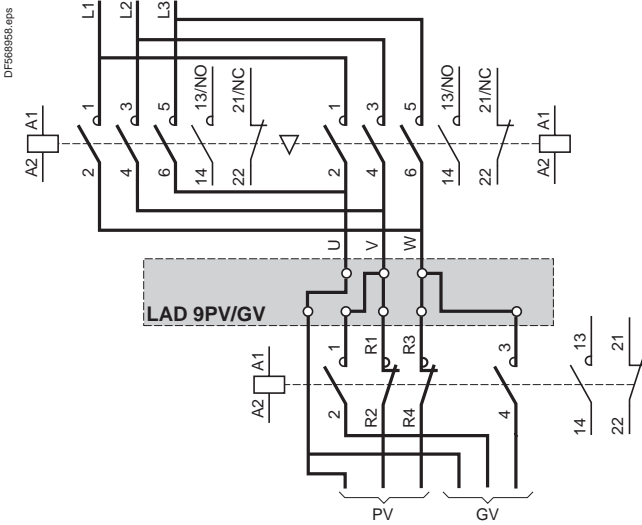
DF569856.eps

Mechanical interlock without integral electrical contacts
 LAD 9V2, LAD 4CM, LA9 D50978 and LA9 D80978



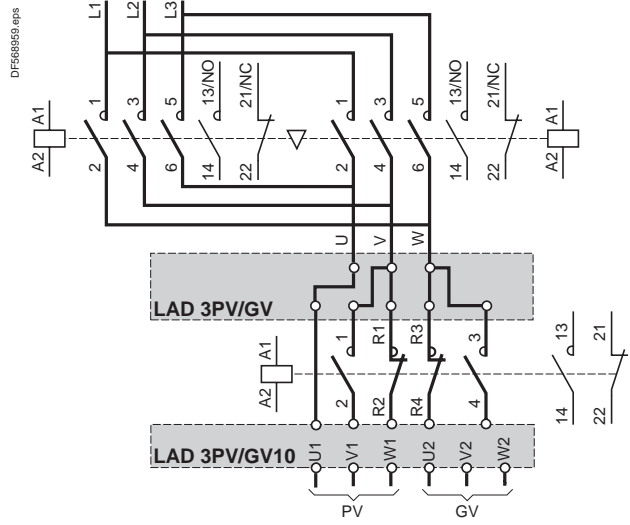
DF569857.eps

Low speed - High speed cabling kit, screw clamp terminals



DF569858.eps

Low speed - High speed cabling kit, spring terminals



DF569859.eps

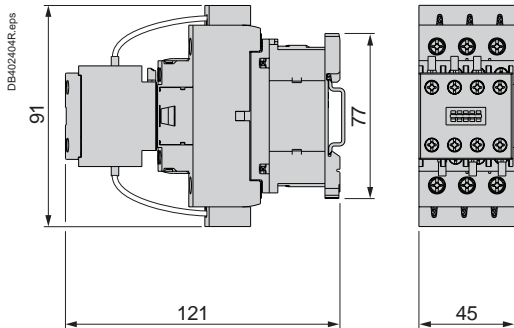
TeSys contactors

For switching 3-phase capacitor banks,
used for power factor correction

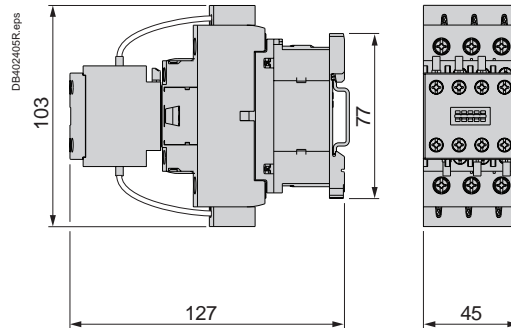
TeSys D

Dimensions

LC1 DFK, DGK



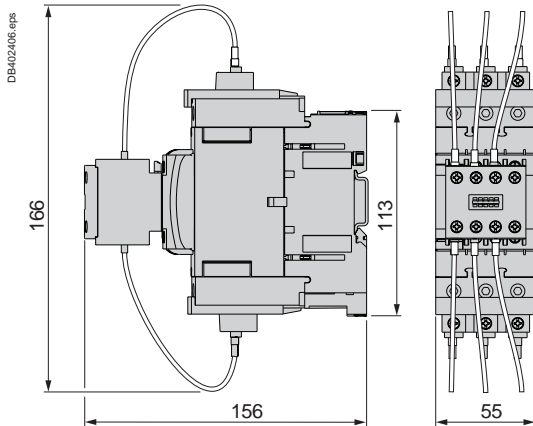
LC1 DLK, DMK



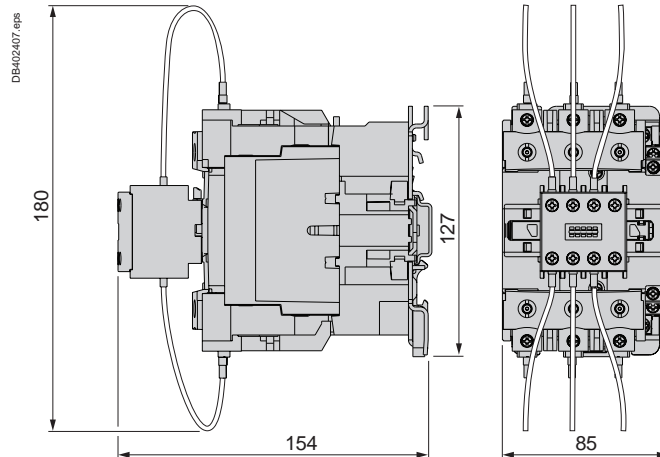
| LC1 | Type of fixing |
|-----|-----------------------------------|
| DFK | LC1 D18 See pages B8/67 and B8/68 |
| DGK | LC1 D18 See pages B8/67 and B8/68 |

| LC1 | Type of fixing |
|-----|-----------------------------------|
| DLK | LC1 D25 See pages B8/67 and B8/68 |
| DMK | LC1 D32 See pages B8/67 and B8/68 |

LC1 DPK, DTK



LC1 DWK

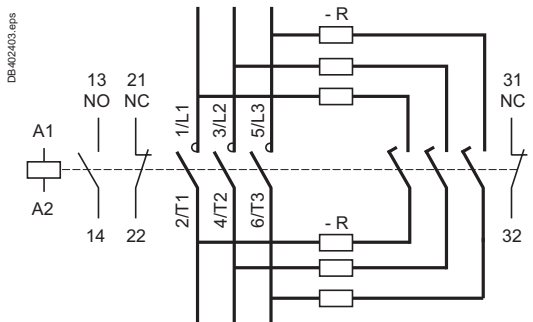


| LC1 | Type of fixing |
|-----|------------------------------------|
| DPK | LC1 D40A See pages B8/67 and B8/68 |
| DTK | LC1 D65A See pages B8/67 and B8/68 |

| LC1 | Type of fixing |
|-----|-----------------------------------|
| DWK | LC1 D80 See pages B8/67 and B8/68 |

Schemes

LC1 D•K



R = Pre-wired resistor connections.

References:

Technical information

Tests according to standard utilisation categories conforming to IEC 60947-4-1 and 5-1

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

Contactors

| | | Electrical durability: making and breaking conditions | | | | | | Occasional duty: making and breaking conditions | | | | | |
|----------------------------------------------------------------|----------------------|----------------------------------------------------------|----|--------------------|----------|---------|--------------------|----------------------------------------------------|---------|--------------------|----------|---------|--------------------|
| a.c. supply | | Making | | | Breaking | | | Making | | | Breaking | | |
| Typical applications | Utilisation category | 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 | le | Ue | 0.95 | le | Ue | 0.95 | 1.5 le | 1.05 Ue | 0.8 | 1.5 le | 1.05 Ue | 0.8 |
| Motors | | | | | | | | | | | | | |
| Slip ring motors: starting, breaking. | AC-2 | 2.5 le | Ue | 0.65 | 2.5 le | Ue | 0.65 | 4 le | 1.05 Ue | 0.65 | 4 le | 1.05 Ue | 0.65 |
| Squirrel cage motors: starting, breaking whilst motor running. | AC-3 | | | | | | | | | | | | |
| | le ≤ ⁽¹⁾ | 6 le | Ue | 0.65 | 1 le | 0.17 Ue | 0.65 | 10 le | 1.05 Ue | 0.45 | 8 le | 1.05 Ue | 0.45 |
| | le > ⁽²⁾ | 6 le | Ue | 0.35 | 1 le | 0.17 Ue | 0.35 | 10 le | 1.05 Ue | 0.35 | 8 le | 1.05 Ue | 0.35 |
| Squirrel cage motors: starting, reversing, inching | AC-4 | | | | | | | | | | | | |
| | le ≤ ⁽¹⁾ | 6 le | Ue | 0.65 | 6 le | Ue | 0.65 | 12 le | 1.05 Ue | 0.45 | 10 le | 1.05 Ue | 0.45 |
| | le > ⁽²⁾ | 6 le | Ue | 0.35 | 6 le | Ue | 0.35 | 12 le | 1.05 Ue | 0.35 | 10 le | 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 | le | Ue | 1 | le | Ue | 1 | 1.5 le | 1.05 Ue | 1 | 1.5 le | 1.05 Ue | 1 |
| Shunt wound motors: starting, reversing, inching | DC-3 | 2.5 le | Ue | 2 | 2.5 le | Ue | 2 | 4 le | 1.05 Ue | 2.5 | 4 le | 1.05 Ue | 2.5 |
| Series wound motors: starting, reversing, inching | DC-5 | 2.5 le | Ue | 7.5 | 2.5 le | Ue | 7.5 | 4 le | 1.05 Ue | 15 | 4 le | 1.05 Ue | 15 |
| Control relays and auxiliary contacts | | | | | | | | | | | | | |
| | | Electrical durability: making and breaking conditions | | | | | | Occasional duty: making and breaking conditions | | | | | |
| a.c. supply | | Making | | | Breaking | | | Making | | | Breaking | | |
| Typical applications | Utilisation category | I | U | cos φ | I | U | cos φ | I | U | cos φ | I | U | cos φ |
| Electromagnets | | | | | | | | | | | | | |
| ≤ 72 VA | AC-14 | - | - | - | - | - | - | 6 le | 1.1 Ue | 0.7 | 6 le | 1.1 Ue | 0.7 |
| > 72 VA | AC-15 | 10 le | Ue | 0.7 | le | Ue | 0.4 | 10 le | 1.1 Ue | 0.3 | 10 le | 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 | le | Ue | 6 P ⁽³⁾ | le | Ue | 6 P ⁽³⁾ | 1.1 le | 1.1 Ue | 6 P ⁽³⁾ | 1.1 le | 1.1 Ue | 6 P ⁽³⁾ |

(1) $le \leq 17 A$ for electrical durability, $le \leq 100 A$ for occasional duty.

(2) $le > 17 A$ for electrical durability, $le > 100 A$ 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.

TeSys contactors

For the North American market

Conforming to UL and CSA

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

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.

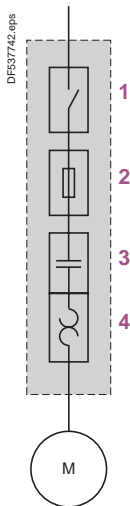
Combination Starters

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 Motor Disconnect (Disconnect switch)
- 2 Motor Branch Circuit Protection (Short-circuit protection)
- 3 Motor Controller (Contactor)
- 4 Motor Overload Protection (Thermal overload relay)

(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.

TeSys contactors

For the North American market

Conforming to UL and CSA

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

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.