

Section 18

Contactors and Starters-IEC



TeSys D Contactors



TeSys F Contactors



TeSys GV3P



TeSys GV2P



TeSys U



TeSys H



TeSys U Self-Protected Combo Starter

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18 CONTACTORS AND STARTERS-IEC

TeSys™ K Non-Reversing Mini-Contactors



LC1K09

Table 18.1: AC Operating Coils

| Maximum Horsepower Ratings | | | | | | Maximum Current (A) | | Continuous Current Rating (A) | Type of Connection | Auxiliary Contacts | | Catalog Number ^{[1][2][3][4]} |
|----------------------------|-------|-------------|-------|-------|-------|---------------------|---------------|-------------------------------|--------------------|--------------------|------|--|
| Single-Phase | | Three-Phase | | | | Inductive AC3 | Resistive AC1 | | | N.O. | N.C. | |
| 115 V | 230 V | 200 V | 230 V | 460 V | 575 V | | | | | | | |
| 1/2 | 1 | 1.5 | 1.5 | 3 | 3 | 6 | 20 | 10 | Screw-clamp | 1 | — | LC1K0610 |
| | | | | | | | | | | — | 1 | LC1K0601 |
| 1/2 | 1.5 | 2 | 3 | 5 | 5 | 9 | 20 | 20 | Screw-clamp | 1 | — | LC1K0910 |
| | | | | | | | | | | — | 1 | LC1K0901 |
| 1 | 2 | 3 | 3 | 7.5 | 10 | 12 | 20 | 20 | Screw-clamp | 1 | — | LC1K1210 |
| | | | | | | | | | | — | 1 | LC1K1201 |

Table 18.2: TeSys K Contactors with Spring Terminal Clamps^[5]

| Maximum Horsepower Ratings | | | | | | Maximum Current (A) | | Continuous Current Ratings (A) | Catalog Number ^[1] |
|----------------------------|-------|-------------|-------|-------|-------|---------------------|---------------|--------------------------------|-------------------------------|
| Single-Phase | | Three-Phase | | | | Inductive AC3 | Resistive AC1 | | |
| 115 V | 230 V | 200 V | 230 V | 460 V | 575 V | | | | |
| 1/3 | 1 | 1.5 | 1.5 | 3 | 3 | 6 | 20 | 10 | LC•K06••3 |
| 1/3 | 1.5 | 2 | 2 | 5 | 5 | 9 | 20 | 10 | LC•K09••3 |
| 1/3 | 1.5 | 2 | 2 | 5 | 5 | 12 | 20 | 10 | LC•K12••3 |

Table 18.3: Coil Voltage Codes for AC Contactors

Up to and including 240 V coil with integral suppression device available. Add 2 to the code required (for example, J72).

| Vac 50/60 Hz | 12 | 24 | 42 | 48 | 110 | 120 | 127 | 200/ 208 | 220/ 230 | 230 | 230/ 240 | 277 | 380/ 400 | 400/ 415 | 440 | 480 | 600 |
|--------------|----|----|----|----|-----|-----|-----|-------------|-------------|-----|-------------|-----|-------------|-------------|-----|-----|-----|
| Code | J7 | B7 | D7 | E7 | F7 | G7 | FC7 | L7 | M7 | P7 | U7 | UE7 | Q7 | N7 | R7 | T7 | X7 |

Table 18.4: DC Operating Coils

| Maximum Horsepower Ratings | | | | | | Maximum Current (A) | | Continuous Current Rating (A) | Type of Connection | Auxiliary Contacts | | Catalog Number ^{[2][3][4][6]} |
|----------------------------|-------|-------------|-------|-------|-------|---------------------|---------------|-------------------------------|--------------------|--------------------|------|--|
| Single-Phase | | Three-Phase | | | | Inductive AC3 | Resistive AC1 | | | N.O. | N.C. | |
| 115 V | 230 V | 200 V | 230 V | 460 V | 575 V | | | | | | | |
| 1/2 | 1 | 1.5 | 1.5 | 3 | 3 | 6 | 20 | 10 | Screw-clamp | 1 | — | LP1K0610 |
| | | | | | | | | | | — | 1 | LP1K0601 |
| 1/2 | 1.5 | 2 | 3 | 5 | 5 | 9 | 20 | 20 | Screw-clamp | 1 | — | LP1K0910 |
| | | | | | | | | | | — | 1 | LP1K0901 |
| 1 | 2 | 3 | 3 | 7.5 | 10 | 12 | 20 | 20 | Screw-clamp | 1 | — | LP1K1210 |
| | | | | | | | | | | — | 1 | LP1K1201 |

Table 18.5: Coil Voltage Codes for DC Contactors

Coil with integral suppression device available. Add 3 to the code required (for example, JD3). ^[7]

| Vdc | 12 | 20 | 24 | 36 | 48 | 60 | 72 | 100 | 110 | 125 | 200 | 220 | 230 | 240 | 250 |
|------|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|
| Code | JD | ZD | BD | CD | ED | ND | SD | KD | FD | GD | LD | MD | MPD | MUD | UD |

[1] Complete the catalog number with the coil voltage code from Table 18.3 Coil Voltage Codes for AC Contactors, page 18-2 (for example, LC1K0610G7).
 [2] For spring terminal clamps, add a 3 before the coil voltage code (for example, LC2K06103G7). Spring terminal clamps reduce some of the HP and continuous current ratings of the TeSys K contactors. For ratings, please refer to Table 18.2 TeSys K Contactors with Spring Terminal Clamps, page 18-2.
 [3] For solder pin terminals, add a 5 before the coil voltage code (for example, LC1K09105B7).
 [4] For slip-on terminals, add a 7 before the coil voltage code (for example, LC1K12107M7).
 [5] Applies to all TeSys K contactors (LC1K, LC2K, LC7K, LC8K, LP1K, LC2K, LP4K and LP5K).
 [6] Complete the catalog number with the coil voltage code from Table 18.5 Coil Voltage Codes for DC Contactors, page 18-2 (for example, LP1K09004BD).
 [7] 3 W inrush.



LP4K09

Table 18.6: DC—Low Consumption Operating Coils (devices have built-in transient suppression)

| Maximum Horsepower Ratings | | | | | | Maximum Current (A) | | Continuous Current Rating (A) | Type of Connection | Auxiliary Contacts | | Catalog Number ^[8] ^[9] ^[10] ^[11] |
|----------------------------|-------|-------------|-------|-------|-------|---------------------|---------------|-------------------------------|--------------------|--------------------|------|--|
| Single-Phase | | Three-Phase | | | | Inductive AC3 | Resistive AC1 | | | N.O. | N.C. | |
| 115 V | 230 V | 200 V | 230 V | 460 V | 575 V | | | | | | | |
| 1/2 | 1 | 1.5 | 1.5 | 3 | 3 | 6 | 20 | 10 | Screw-clamp | 1 | — | LP4K0610 |
| | | | | | | | | | | — | 1 | LP4K0601 |
| 1/2 | 1.5 | 2 | 3 | 5 | 5 | 9 | 20 | 20 | Screw-clamp | 1 | — | LP4K0910 |
| | | | | | | | | | | — | 1 | LP4K0901 |
| 1 | 2 | 3 | 3 | 7.5 | 10 | 12 | 20 | 20 | Screw-clamp | 1 | — | LP4K1210 |
| | | | | | | | | | | — | 1 | LP4K1201 |

Table 18.7: Coil Voltage Codes for DC Contactors—Low Consumption ^[12]

| Vdc | 12 | 24 | 48 | 72 |
|------|-----|-----|-----|-----|
| Code | JW3 | BW3 | EW3 | SW3 |

TeSys™ K Overload Relays

Table 18.8: Overload Relays for 3-Pole Contactors with Screw-Clamp Terminals



LR2K0316

| Current Setting Range (A) | Catalog Number | LR2K overload relays: <ul style="list-style-type: none"> • AC or DC protection • Ambient compensated bimetallic • Class 10 • Single phase sensitivity • Manual or auto reset • Full load current dial |
|---------------------------|--------------------------|--|
| 0.11 to 0.16 | LR2K0301 | |
| 0.16 to 0.23 | LR2K0302 | |
| 0.23 to 0.36 | LR2K0303 | |
| 0.36 to 0.54 | LR2K0304 | |
| 0.54 to 0.8 | LR2K0305 | |
| 0.8 to 1.2 | LR2K0306 | |
| 1.2 to 1.8 | LR2K0307 | |
| 1.8 to 2.6 | LR2K0308 | |
| 2.6 to 3.7 | LR2K0310 | |
| 3.7 to 5.5 | LR2K0312 | |
| 5.5 to 8 | LR2K0314 | |
| 8 to 11.5 | LR2K0316 | |
| 10 to 14 | LR2K0321 ^[13] | |

Accessories: TeSys™ K Contactors and Accessories, page 18-14
Dimensions: TeSys K Contactor Dimensions, page 18-63



E164862

CCN NLDX

(screw terminals)



LR43364

Class 3211 04



E164862

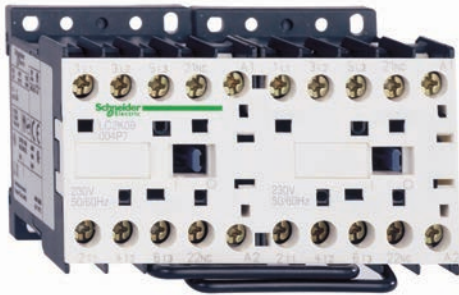
CCN NLDX2

(slip-on and solder-pin terminals)



[8] Complete the catalog number with the coil voltage code from Table 18.7 Coil Voltage Codes for DC Contactors—Low Consumption, page 18-3 (for example, LC2K0610BD).
 [9] For spring terminal clamps, add a 3 before the coil voltage code (for example, LC2K06103G7). Spring terminal clamps reduce some of the HP and continuous current ratings of the TeSys K contactors. For ratings, please refer to Table 18.2 TeSys K Contactors with Spring Terminal Clamps, page 18-2.
 [10] For solder pin terminals, add a 5 before the coil voltage code (for example, LP1K09105BW3).
 [11] For slip-on terminals, add a 7 before the coil voltage code (for example, LP1K12107BW3).
 [12] 1.8 W inrush.
 [13] Not UL Listed.

TeSys™ K Reversing Mini-Contactors



LC2K0910

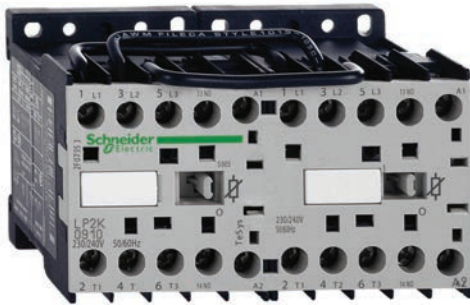
Table 18.9: AC Operating Coils

| Maximum Horsepower Ratings | | | | | | Maximum Current (A) | | Continuous Current Rating (A) | Type of Connection | Auxiliary Contacts | | Catalog Number ^[14] ^{[15][16][17]} |
|----------------------------|-------|-------------|-------|-------|-------|---------------------|---------------|-------------------------------|--------------------|--------------------|------|---|
| Single-Phase | | Three-Phase | | | | Inductive AC3 | Resistive AC1 | | | N.O. | N.C. | |
| 115 V | 230 V | 200 V | 230 V | 460 V | 575 V | | | | | | | |
| 1/2 | 1 | 1.5 | 1.5 | 3 | 3 | 6 | 20 | 10 | Screw-clamp | 1 | — | LC2K0610 |
| | | | | | | | | | | — | 1 | LC2K0601 |
| 1/2 | 1.5 | 2 | 3 | 5 | 5 | 9 | 20 | 20 | Screw-clamp | 1 | — | LC2K0910 |
| | | | | | | | | | | — | 1 | LC2K0901 |
| 1 | 2 | 3 | 3 | 7.5 | 10 | 12 | 20 | 20 | Screw-clamp | 1 | — | LC2K1210 |
| | | | | | | | | | | — | 1 | LC2K1201 |

Table 18.10: Coil Voltage Codes for AC Contactors

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

| Vac 50/60 Hz | 12 | 24 | 42 | 48 | 110 | 120 | 127 | 200/ 208 | 220/ 230 | 230 | 230/ 240 | 277 | 380/ 400 | 400/ 415 | 440 | 480 | 600 |
|-----------------|----|----|----|----|-----|-----|-----|-------------|-------------|-----|-------------|-----|-------------|-------------|-----|-----|-----|
| Code | J7 | B7 | D7 | E7 | F7 | G7 | FC7 | L7 | M7 | P7 | U7 | UE7 | Q7 | N7 | R7 | T7 | X7 |



LP2K0910

Table 18.11: DC Operating Coils

| Maximum Horsepower Ratings | | | | | | Maximum Current (A) | | Continuous Current Rating (A) | Type of Connection | Auxiliary Contacts | | Catalog Number ^{[15][16][17][18]} |
|----------------------------|-------|-------------|-------|-------|-------|---------------------|---------------|-------------------------------|--------------------|--------------------|------|---|
| Single-Phase | | Three-Phase | | | | Inductive AC3 | Resistive AC1 | | | N.O. | N.C. | |
| 115 V | 230 V | 200 V | 230 V | 460 V | 575 V | | | | | | | |
| 1/2 | 1 | 1.5 | 1.5 | 3 | 3 | 6 | 20 | 10 | Screw-clamp | 1 | — | LP2K0610 |
| | | | | | | | | | | — | 1 | LP2K0601 |
| 1/2 | 1.5 | 2 | 3 | 5 | 5 | 9 | 20 | 20 | Screw-clamp | 1 | — | LP2K0910 |
| | | | | | | | | | | — | 1 | LP2K0901 |
| 1 | 2 | 3 | 3 | 7.5 | 10 | 12 | 20 | 20 | Screw-clamp | 1 | — | LP2K1210 |
| | | | | | | | | | | — | 1 | LP2K1201 |

Table 18.12: Coil Voltage Codes for DC Contactors

Coil with integral suppression device available. Add 3 to the code required. Example: JD3. ^[19]

| Vdc | 12 | 20 | 24 | 36 | 48 | 60 | 72 | 100 | 110 | 125 | 200 | 220 | 230 | 240 | 250 |
|------|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|
| Code | JD | ZD | BD | CD | ED | ND | SD | KD | FD | GD | LD | MD | MPD | MUD | UD |

[14] Complete the catalog number with the coil voltage code from Table 18.10 Coil Voltage Codes for AC Contactors, page 18-4 (for example, LC2K0610G7).
 [15] For spring terminal clamps, add a 3 before the coil voltage code (for example, LC2K06103G7). Spring terminal clamps reduce some of the HP and continuous current ratings of the TeSys K contactors. For ratings, please refer to TeSys K Contactors with Spring Terminal Clamps, page 18-2.
 [16] For solder pin terminals, add a 5 before the coil voltage code (for example, LC2K09105B7).
 [17] For slip-on terminals, add a 7 before the coil voltage code (for example, LC2K12107M7).
 [18] Complete the catalog number with the coil voltage code from Table 18.12 Coil Voltage Codes for DC Contactors, page 18-4 (for example, LC2K0610BD).
 [19] 3 W inrush.

Table 18.13: DC—Low Consumption Operating Coils (devices have built-in transient suppression)

| Maximum Horsepower Ratings | | | | | | Maximum Current (A) | | Continuous Current Rating (A) | Type of Connection | Auxiliary Contacts | | Catalog Number ^[20] ^{[21][22][23]} |
|----------------------------|-------|-------------|-------|-------|-------|---------------------|---------------|-------------------------------|--------------------|--------------------|------|---|
| Single-Phase | | Three-Phase | | | | Inductive AC3 | Resistive AC1 | | | N.O. | N.C. | |
| 115 V | 230 V | 200 V | 230 V | 460 V | 575 V | | | | | | | |
| 1/2 | 1 | 1.5 | 1.5 | 3 | 3 | 6 | 20 | 10 | Screw-clamp | 1 | — | LP5K0610 |
| | | | | | | | | | | — | 1 | LP5K0601 |
| 1/2 | 1.5 | 2 | 3 | 5 | 5 | 9 | 20 | 20 | Screw-clamp | 1 | — | LP5K0910 |
| | | | | | | | | | | — | 1 | LP5K0901 |
| 1 | 2 | 3 | 3 | 7.5 | 10 | 12 | 20 | 20 | Screw-clamp | 1 | — | LP5K1210 |
| | | | | | | | | | | — | 1 | LP5K1201 |

Table 18.14: Coil Voltage Codes for DC Contactors—Low Consumption^[24]

| Vdc Code | 12 | 24 | 48 | 72 |
|----------|-----|-----|-----|-----|
| | JW3 | BW3 | EW3 | SW3 |



LC2K090045

Table 18.15: AC Operating Coils

| Maximum Horsepower Ratings | | | | | | Maximum Current (A) | | Continuous Current Rating (A) | Type of Connection | Power Poles | | Catalog Number ^{[25][26][27]} ^[28] |
|---|-------|-------------|-------|-------|-------|---------------------|---------------|-------------------------------|--------------------|-------------|------|---|
| Single-Phase | | Three-Phase | | | | Inductive AC3 | Resistive AC1 | | | N.O. | N.C. | |
| 115 V | 230 V | 200 V | 230 V | 460 V | 575 V | | | | | | | |
| 4-Pole Mini Contactor | | | | | | | | | | | | |
| 1/2 | 1.5 | 2 | 3 | 5 | 5 | 9 | 20 | 20 | Screw-clamp | 4 | — | LC1K09004 |
| 1 | 2 | 3 | 3 | 7.5 | 10 | 12 | 20 | 20 | Screw-clamp | 2 | 2 | LC1K09008 |
| 4-Pole Mechanically Interlocked Contactors | | | | | | | | | | | | |
| 1/2 | 1.5 | 2 | 3 | 5 | 5 | 9 | 20 | 20 | Screw-clamp | 4 | — | LC2K09004 |
| 1 | 2 | 3 | 3 | 7.5 | 10 | 12 | 20 | 20 | Screw-clamp | 4 | — | LC2K12004 |

Table 18.16: Coil Voltage Codes for AC Contactors

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

| Vac 50/60 Hz Code | 12 | 24 | 42 | 48 | 110 | 120 | 127 | 200/208 | 220/230 | 230 | 230/240 | 277 | 380/400 | 400/415 | 440 | 480 | 660/690 |
|-------------------|----|----|----|----|-----|-----|-----|---------|---------|-----|---------|-----|---------|---------|-----|-----|---------|
| | J7 | B7 | D7 | E7 | F7 | G7 | FC7 | L7 | M7 | P7 | U7 | UE7 | Q7 | N7 | R7 | T7 | Y7 |

Table 18.17: DC Operating Coils

| Maximum Horsepower Ratings | | | | | | Maximum Current (A) | | Continuous Current Rating (A) | Type of Connection | Power Poles | | Catalog Number ^{[29][26][27]} ^[28] |
|---|-------|-------------|-------|-------|-------|---------------------|---------------|-------------------------------|--------------------|-------------|------|---|
| Single-Phase | | Three-Phase | | | | Inductive AC3 | Resistive AC1 | | | N.O. | N.C. | |
| 115 V | 230 V | 200 V | 230 V | 460 V | 575 V | | | | | | | |
| 4-Pole Mini Contactor | | | | | | | | | | | | |
| 1/2 | 1.5 | 2 | 3 | 5 | 5 | 9 | 20 | 20 | Screw-clamp | 4 | — | LP1K09004 |
| 1 | 2 | 3 | 3 | 7.5 | 10 | 12 | 20 | 20 | Screw-clamp | 2 | 2 | LP1K09008 |
| 4-Pole Mechanically Interlocked Contactors | | | | | | | | | | | | |
| 1/2 | 1.5 | 2 | 3 | 5 | 5 | 9 | 20 | 20 | Screw-clamp | 4 | — | LP2K09004 |
| 1 | 2 | 3 | 3 | 7.5 | 10 | 12 | 20 | 20 | Screw-clamp | 4 | — | LP2K12004 |

Table 18.18: Coil Voltage Codes for DC Contactors

Coil with integral suppression device available. Add 3 to the code required. Example: JD3^[30]

| Vdc Code | 12 | 20 | 24 | 36 | 48 | 60 | 72 | 100 | 110 | 125 | 200 | 220 | 230 | 240 | 250 |
|----------|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|
| | JD | ZD | BD | CD | ED | ND | SD | KD | FD | GD | LD | MD | MPD | MUD | UD |

Overload Relays: 3-Pole Reversing Mini-Contactors, page 18-4
 Accessories: TeSys K Contactors and Accessories, page 18-14
 Dimensions: TeSys K Contactor Dimensions, page 18-63

[20] Complete the catalog number with the coil voltage code from Table 18.14 Coil Voltage Codes for DC Contactors—Low Consumption, page 18-5 (for example, LP4K09004BW3).
 [21] For spring terminal clamps, add a 3 before the coil voltage code (for example, LC2K06103G7). Spring terminal clamps reduce some of the HP and continuous current ratings of the TeSys K contactors. For ratings, please refer to TeSys K Contactors with Spring Terminal Clamps, page 18-2.
 [22] For solder pin terminals, add a 5 before the coil voltage code (for example, LC1K090045B7).
 [23] For slip-on terminals, add a 7 before the coil voltage code (for example, LC1K120047M7).
 [24] 1.8 W inrush.
 [25] Complete the catalog number with the coil voltage code from Table 18.16 Coil Voltage Codes for AC Contactors, page 18-5 (for example, LC1K09004G7).
 [26] For spring terminal clamps, add a 3 before the coil voltage code (for example, LC2K06103G7). Spring terminal clamps reduce some of the HP and continuous current ratings of the TeSys K contactors. For ratings, please refer to TeSys K Contactors with Spring Terminal Clamps, page 18-2.
 [27] For solder pin terminals, add a 5 before the coil voltage code (for example, LC1K090045B7).
 [28] For slip-on terminals, add a 7 before the coil voltage code (for example, LC1K120047M7).
 [29] Complete the catalog number with the coil voltage code from Table 18.18 Coil Voltage Codes for DC Contactors, page 18-5 (for example, LP2K09004BD).
 [30] 3 W inrush.

Table 18.19: DC—Low Consumption Operating Coils (devices have built-in transient suppression)

| Maximum Horsepower Ratings | | | | | | Maximum Current (A) | | Continuous Current Rating (A) | Type of Connection | Power Poles | | Catalog Number ^{[31][32][33]} ^[34] |
|---|-------|-------------|-------|-------|-------|---------------------|---------------|-------------------------------|--------------------|-------------|------|---|
| Single-Phase | | Three-Phase | | | | Inductive AC3 | Resistive AC1 | | | N.O. | N.C. | |
| 115 V | 230 V | 200 V | 230 V | 460 V | 575 V | | | | | | | |
| 4-Pole Mini Contactor | | | | | | | | | | | | |
| 1/2 | 1.5 | 2 | 3 | 5 | 5 | 9 | 20 | 20 | Screw-clamp | 4 | — | LP4K09004 |
| 1 | 2 | 3 | 3 | 7.5 | 10 | 12 | 20 | 20 | Screw-clamp | 2 | 2 | LP4K09008 |
| 4-Pole Mechanically Interlocked Contactors | | | | | | | | | | | | |
| 1/2 | 1.5 | 2 | 3 | 5 | 5 | 9 | 20 | 20 | Screw-clamp | 4 | — | LP5K09004 |
| 1 | 2 | 3 | 3 | 7.5 | 10 | 12 | 20 | 20 | Screw-clamp | 4 | — | LP5K12004 |

Table 18.20: Coil Voltages for DC Contactors—Low Consumption^[35]

| Vdc | 12 | 24 | 48 | 72 |
|------|-----|-----|-----|-----|
| Code | JW3 | BW3 | EW3 | SW3 |

Overload Relays: [TeSys™ K Reversing Mini-Contactors, page 18-4](#)
 Accessories: [TeSys K Contactors and Accessories, page 18-14](#)
 Dimensions: [TeSys K Contactor Dimensions, page 18-63](#)

[31] Complete the catalog number with the coil voltage code from [Table 18.20 Coil Voltages for DC Contactors—Low Consumption, page 18-6](#) (for example, LP4K09004**BW3**).
 [32] For spring terminal clamps, add a **3** before the coil voltage code (for example, LC2K06103G7). Spring terminal clamps reduce some of the HP and continuous current ratings of the TeSys K contactors. For ratings, please refer to [TeSys K Contactors with Spring Terminal Clamps, page 18-2](#).
 [33] For solder pin terminals, add a **5** before the coil voltage code (for example, LP4K09004**5BW3**).
 [34] For slip-on terminals, add a **7** before the coil voltage code (for example, LP4K12004**7M7**).
 [35] 1.8 W inrush.

TeSys™ D Catalog Number Interpretation

Table 18.21: TeSys D Contactors—Interpretation of the Catalog Number^[36]

| LC | | D | | A | | | |
|--|--------------------|--|------------------|---|---------------------|----------------------------|------------------|
| Full Voltage, Non-Reversing | 1 | | | | | | |
| Full Voltage, Reversing | 2 | | | | | | |
| TeSys D 3 Pole Contactors, 9–150 A | | | | | | | |
| Contactor AC-3 Full Load Amperes (FLA) | | | | | | | |
| 9 A FLA | | | 09 | | | | |
| 12 A FLA | | | 12 | | | | |
| 18 A FLA | | | 18 | | | | |
| 25 A FLA | | | 25 | | | | |
| 32 A FLA | | | 32 | | | | |
| 38 A FLA | | | 38 | | | | |
| 40 A FLA | | | 40 | | | | |
| 50 A FLA | | | 50 | | | | |
| 65 A FLA | | | 65 | | | | |
| 80 A FLA | | | 80 | | | | |
| 95 A FLA | | | 95 | | | | |
| 115 A FLA | | | 115 | | | | |
| 150 A FLA | | | 150 | | | | |
| Everlink Power Connection (40–65 A only) | | | | A | | | |
| No Everlink Power Connection (9–38 A, 80–150 A) | | | | Blank | | | |
| Termination Options (choose one) | | | | | | | |
| Screw Termination | | | | | Blank | | |
| Spring Terminations ^[37] | | | | | 3 | | |
| Ring Tongue Terminations ^[38] | | | | | 6 | | |
| Slip-on Terminations (9–12 A only) | | | | | 9 | | |
| Coil Voltage (choose one) | | | | | | | |
| AC Coils (50/60 Hz) | | DC Low Consumption Coils 9–38 A only | | AC/DC Electronic Coils 9–38 A, 40–65 A Everlink only | | DC Coils (Standard) | |
| Voltage | Coil Code | Voltage | Coil Code | Voltage | Coil Code | Voltage | Coil Code |
| 12 V | J7 | 5 V | AL | 24–60 V | BNE | 12 V | JD |
| 21 V | Z7 | 12 V | JL | 48–130 V | EHE | 21 V | ZD |
| 24 V | B7 | 21 V | ZL | 100–250 V | KUE | 24 V | BD |
| 36 V | C7 | 24 V | BL | 250–415 Vac | USE ^[39] | 36 V | CD |
| 42 V | D7 | 48 V | EL | 250–500 Vdc | | 48 V | ED |
| 48 V | E7 | 72 V | SL | | | 60 V | ND |
| 60 V | EE7 | 96 V | DL | | | 72 V | SD |
| 100 V | K7 | 110 V | FL | | | 110 V | FD |
| 110 V | F7 | 220 V | ML | | | 125 V | GD |
| 115 V | FE7 | 250 V | UL | | | 220 V | MD |
| 120 V | G7 | | | | | 250 V | UD |
| 127 V | FC7 | DC Electronic Low Consumption Coils 40–65 A Everlink only | | | | 440 V | RD |
| 200 V | L7 | Voltage | Coil Code | | | | |
| 208 V | LE7 | 24 V | BBE | | | | |
| 220 V | M7 | | | | | | |
| 230 V | P7 | | | | | | |
| 240 V | U7 | | | | | | |
| 277 V | W7 | | | | | | |
| 380 V | Q7 | | | | | | |
| 400 V | V7 | | | | | | |
| 415 V | N7 | | | | | | |
| 440 V | R7 | | | | | | |
| 480 V | T7 | | | | | | |
| 500 V | S7 | | | | | | |
| 575 V | SC7 | | | | | | |
| 600 V | X7 | | | | | | |
| 660 V | Y5 (50 Hz only) | | | | | | |

^[36] Use this table **only** to interpret current catalog numbers. Some combinations are not available.
^[37] For spring terminal versions of LC1D09–LC1D65A, add **3** to the catalog number prior to adding the voltage code (for example, LC1D12G7 becomes LC1D123G7, and LC1D40AG7 becomes LC1D40A3G7). Note that 40–65 A spring terminals are only on the control terminations and not on power terminations).
^[38] For ring tongue versions of LC1D09–LC1D65A and LC1DT20–LC1DT80A, add **6** to the catalog number prior to adding the voltage code (for example, LC1D09G7 becomes LC1D096G7, and LC1D50AG7 becomes LC1D50A6G7).
^[39] Available in 2018.

TeSys™ D Non-Reversing Contactors



Table 18.22: TeSys D Contactors—3 or 4 Pole, Screw Terminal Connections

| Maximum Horsepower Ratings | | | | | | Maximum Current (A) | | Continuous Current Rating (A) | No. of Poles | | Instantaneous Auxiliary Contacts | | Catalog Number [40] |
|----------------------------|-------|-------------|-------|-------|-------|---------------------|---------------|-------------------------------|--------------|------|----------------------------------|------|---------------------|
| Single-Phase | | Three-Phase | | | | Inductive AC3 | Resistive AC1 | | N.O. | N.C. | N.O. | N.C. | |
| 115 V | 230 V | 200 V | 230 V | 460 V | 575 V | | | | | | | | |
| 1/3 | 1 | 2 | 2 | 5 | 7.5 | 9 | 20 | 25 | 3 | 0 | 1 | 1 | LC1D09 [41][42][43] |
| — | — | — | — | — | — | — | | | 4 | | | | LC1DT20 [41] |
| — | — | — | — | — | — | — | 25 | 25 | 2 | 2 | 1 | 1 | LC1D098 [41] |
| 1/2 | 2 | 3 | 3 | 7.5 | 10 | 12 | | | 3 | | | | LC1D12 [41][42][43] |
| — | — | — | — | — | — | — | 32 | 32 | 4 | 0 | 1 | 1 | LC1DT25 [41] |
| — | — | — | — | — | — | — | | | 2 | | | | LC1D128 [41] |
| 1 | 3 | 5 | 5 | 10 | 15 | 18 | 40 | 40 | 3 | 0 | 1 | 1 | LC1D18 [41][42] |
| — | — | — | — | — | — | — | | | 4 | | | | LC1DT32 [41] |
| — | — | — | — | — | — | — | 50 | 50 | 2 | 2 | 1 | 1 | LC1D188 [41] |
| 2 | 3 | 7.5 | 7.5 | 15 | 20 | 25 | | | 3 | | | | LC1D25 [41][41] |
| — | — | — | — | — | — | — | 60 | 60 | 4 | 0 | 1 | 1 | LC1D40 [41] |
| — | — | — | — | — | — | — | | | 2 | | | | LC1D258 [41] |
| 2 | 5 | 10 | 10 | 20 | 25 | 32 | 80 | 80 | 3 | 0 | 1 | 1 | LC1D32 [41][42] |
| 2 | 5 | 10 | 10 | 20 | 25 | 38 | | | 3 | | | | LC1D38 [41][42] |
| 3 | 5 | 10 | 10 | 30 | 30 | 40 | 125 | 110 | 3 | 0 | 1 | 1 | LC1D40A [41] |
| — | — | — | — | — | — | — | | | 4 | | | | LC1DT60A [41] |
| 3 | 7.5 | 15 | 15 | 40 | 40 | 50 | 200 | 160 | 3 | 0 | 1 | 1 | LC1D50A [41] |
| 5 | 10 | 20 | 20 | 40 | 50 | 65 | | | 3 | | | | LC1D65A [41] |
| — | — | — | — | — | — | — | 200 | 160 | 4 | 0 | 0 | 0 | LC1D80A [41] |
| 7.5 | 15 | 25 | 30 | 60 | 60 | 80 | | | 3 | | | | LC1D80 |
| — | — | — | — | — | — | — | 200 | 160 | 4 | 0 | 0 | 0 | LC1D80004 [44] |
| — | — | — | — | — | — | — | | | 2 | | | | LC1D80008 [44] |
| 7.5 | 15 | 25 | 30 | 60 | 60 | 95 | 200 | 160 | 3 | 0 | 1 | 1 | LC1D95 |
| — | — | 30 | 40 | 75 | 100 | 115 | | | 3 | | | | LC1D115 |
| — | — | 40 | 50 | 100 | 125 | 150 | 200 | 160 | 3 | 0 | 1 | 1 | LC1D150 |
| — | — | — | — | — | — | — | | | 4 | | | | LC1D115004 |

Table 18.23: TeSys D Coil Voltage Codes [45]

| Contactor | Hz | 24 V | 48 V | 110 V | 120 V | 125 V | 208 V | 220 V | 240 V | 250 V | 440 V | 480 V | 600 V |
|------------------------------------|-------|------|------|-------|-------|-------|-------|---------|-------|-------|-------|---------|---------|
| AC | | | | | | | | | | | | | |
| D09–D150 | 50/60 | B7 | E7 | F7 | G7 | — | LE7 | M7 | U7 | — | — | T7 [46] | X7 [46] |
| LC1D80–LC1D150 | 50 | B5 | E5 | F5 | — | — | — | M5 [46] | U5 | — | — | — | — |
| | 60 | B6 | E6 | F6 | G6 | — | L6 | M6 | U6 | — | — | T6 | X6 [46] |
| DC | | | | | | | | | | | | | |
| D09–D38, DT20–D258 Low Consumption | — | BL | EL | FL | — | — | — | ML | — | UL | — | — | — |
| D09–D150 | — | BD | ED | FD | — | GD | — | MD | — | UD | RD | — | — |

[40] Complete the catalog number by adding the coil voltage code from Table 18.23 TeSys D Coil Voltage Codes, page 18-8 for example, LC1D09G7.
 [41] For ring tongue versions of LC1D09–LC1D65A and LC1DT20–LC1DT80A, add 6 to the catalog number prior to adding the voltage code (for example, LC1D09G7 becomes LC1D096G7 and LC1D50AG7 becomes LC1D50A6G7).
 [42] For spring terminals versions of LC1D09–LC1D65A, add 3 to the catalog number prior to adding the voltage code (for example, LC1D12G7 becomes LC1D123G7 and LC1D40AG7 becomes LC1D40A3G7. Note that 40–65 A spring terminals are only on the control terminations and not on power terminations).
 [43] For slip-on connector versions of LC1D09 and LC1D12 only, add 9 to the catalog number prior to adding the voltage code (for example, LC1D09G7 becomes LC1D099G7).
 [44] For DC version of these devices, replace the C with a P (for example, LC1D80004** becomes LP1D80004**). This applies only to 80 A, 4-pole devices.
 [45] For additional voltage codes refer to the Control and Protection Components Catalog [MKTED210011EN](#).
 [46] Not available for LC1D80–LC1D150.

TeSys™ D Overload Relays

Table 18.24: TeSys D Overload Relays—Ambient Compensated, Bimetallic, Direct Mounting

| Current Setting Range (A) | For Direct Mounting to LC1D/LC2D... | Class 10 with Single-Phase Sensitivity | Class 10 without Single-Phase Sensitivity | Class 20 with Single-Phase Sensitivity | Class 20 without Single-Phase Sensitivity |
|---------------------------|-------------------------------------|--|---|--|---|
| 0.10–0.16 | D09–D38 | LRD01 | LR3D01 | — | — |
| 0.16–0.25 | | LRD02 | LR3D02 | — | — |
| 0.25–0.40 | | LRD03 | LR3D03 | — | — |
| 0.40–0.63 | | LRD04 | LR3D04 | LRD04L | LR3D04L |
| 0.63–1 | | LRD05 | LR3D05 | LRD05L | LR3D05L |
| 1–1.6 | | LRD06 | LR3D06 | LRD06L | LR3D06L |
| 1.6–2.5 | | LRD07 | LR3D07 | LRD07L | LR3D07L |
| 2.5–4 | | LRD08 | LR3D08 | LRD08L | LR3D08L |
| 4–6 | | LRD10 | LR3D10 | LRD10L | LR3D10L |
| 5.5–8 | | LRD12 | LR3D12 | LRD12L | LR3D12L |
| 7–10 | LRD14 | LR3D14 | LRD14L | LR3D14L | |
| 9–13 | D12–D38 | LRD16 | LR3D16 | LRD16L | LR3D16L |
| 12–18 | D18–D38 | LRD21 | LR3D21 | LRD21L | LR3D21L |
| 16–24 | | LRD22 | LR3D22 | — | — |
| 17–24 | | — | — | LRD22L | LR3D22L |
| 23–32 | D25–D38 | LRD32 | LR3D32 | LRD32L | LR3D32L |
| 30–38 | D32–D38 | LRD35 | LR3D35 | — | — |
| 9–13 | D40A–D65A | LRD313 | LR3D313 | LRD313L | — |
| 12–18 | D40A–D65A | LRD318 | LR3D318 | LRD318L | — |
| 17–25 | D40A–D65A | LRD325 | LR3D325 | LRD325L | — |
| 23–32 | D40A–D65A | LRD332 | LR3D332 | LRD332L | — |
| 30–40 | D40A–D65A | LRD340 | LR3D340 | LRD340L | — |
| 37–50 | D40A–D65A | LRD350 | LR3D350 | LRD350L | — |
| 48–65 | D40A–D65A | LRD365 | LR3D365 | LRD365L | — |
| 17–25 | D40–D95 | LRD3322 | LR3D3322 | LRD3322L | LR3D3522 |
| 23–32 | D40–D95[47] | LRD3353 | LR3D3353 | LRD3353L | LR3D3553 |
| 30–40 | D40–D95[47] | LRD3355 | LR3D3355 | LRD3355L | LR3D3555 |
| 37–50 | D50–D95[47] | LRD3357 | LR3D3357 | LRD3357L | LR3D3557 |
| 48–65 | D50–D95[47] | LRD3359 | LR3D3359 | LRD3359L | LR3D3559 |
| 55–70 | D65–D95 | LRD3361 | LR3D3361 | LRD3361L | LR3D3561 |
| 63–80 | D65–D95 | LRD3363 | LR3D3363 | LRD3363L | LR3D3563 |
| 80–104 | D95 | LRD3365 | — | — | — |
| 80–104 | D115–D150 | LRD4365 | — | — | — |
| 95–120 | D115–D150 | LRD4367 | — | — | — |
| 110–140 | D150 | LRD4369 | — | — | — |

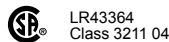
Table 18.25: TeSys LR9D Electronic Overload Relays ^{New!}

| Current Setting Range (A) | For Direct Mounting Beneath Contactor LC1D/LC2D | Class 5/10/20/30 Selectable |
|---------------------------|---|-----------------------------|
| 0.1–0.5 | D09–D38 | LR9D01 |
| 0.4–2 | D09–D38 | LR9D02 |
| 1.6–8 | D09–D38 | LR9D08 |
| 6.4–32 | D09–D38 | LR9D32 |
| 22–110 | N/A (Separate Mounting Only) | LR9D110S |

Table 18.26: TeSys D Overload Relays—Solid State

| Current Setting Range (A) | For Direct Mounting Beneath Contactor LC1 | Class 10 | Class 20 | Class 10/20 Selectable |
|---------------------------|---|----------|----------|------------------------|
| 60–100 | D115–D150 | LR9D5367 | LR9D5567 | LR9D67 |
| 90–150 | D115–D150 | LR9D5369 | LR9D5569 | LR9D69 |

TeSys D contactor accessories: TeSys™ D & F Auxiliary Contacts, Time Delay, Mechanical Latch, page 18-15
 TeSys D overload relay accessories: TeSys D Overload Relay Accessories, page 18-22
 TeSys D replacement coils: TeSys™ D AC Coils, page 18-43
 Dimensions: TeSys™ D Contactors, AC and DC Coil, page 18-51 to TeSys™ D Thermal Overload Relay Dimensions, page 18-59
 TeSys T: see TeSys™ T Motor Management System, page 16-101



[47] Direct mount to old D2 style D40 to D65 (no Everlink terminations) and to D80 and D95 only.

TeSys™ D Reversing Contactors

Each 3-pole device is prewired with line and load side power wiring for reversing applications. Each 4-pole device is prewired with load side power wiring.

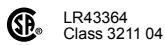
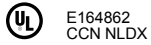
Table 18.27: TeSys D Mechanically-Interlocked Reversing Contactors

| Maximum Horsepower Ratings | | | | | | | Maximum Current (A) | | Continuous Current Rating (A) | No. of N.O. Power Poles | Built In Auxiliary Contacts (per contactor) | | Catalog Number [48] |
|----------------------------|-------|-------------|-------|-------|-------|---------------|---------------------|------|-------------------------------|-------------------------|---|-------------|---------------------|
| Single-Phase | | Three-Phase | | | | Inductive AC3 | Resistive AC1 | N.O. | | | N.C. | | |
| 115 V | 230 V | 200 V | 230 V | 460 V | 575 V | | | | | | | | |
| 1/3 | 1 | 2 | 2 | 5 | 7.5 | 9 | 20 | 25 | 3 | 1 | 1 | LC2D09[49] | |
| — | — | — | — | — | — | — | | | | 4 | 1 | 1 | LC2DT20 |
| 1/2 | 2 | 3 | 3 | 7.5 | 10 | 12 | 25 | 25 | 3 | 1 | 1 | LC2D12[49] | |
| — | — | — | — | — | — | — | | | | 4 | 1 | 1 | LC2DT25 |
| 1 | 3 | 5 | 5 | 10 | 15 | 18 | 32 | 32 | 3 | 1 | 1 | LC2D18[49] | |
| — | — | — | — | — | — | — | | | | 4 | 1 | 1 | LC2DT32 |
| 2 | 3 | 7.5 | 7.5 | 15 | 20 | 25 | 40 | 40 | 3 | 1 | 1 | LC2D25[49] | |
| — | — | — | — | — | — | — | | | | 4 | 1 | 1 | LC2DT40 |
| 2 | 5 | 10 | 10 | 20 | 25 | 32 | 50 | 50 | 3 | 1 | 1 | LC2D32[49] | |
| 2 | 5 | 10 | 10 | 20 | 25 | 38 | | | | 3 | 1 | 1 | LC2D38[49] |
| 3 | 5 | 10 | 10 | 30 | 30 | 40 | 60 | 60 | 3 | 1 | 1 | LC2D40A | |
| — | — | — | — | — | — | — | | | | 4 | — | — | [50] |
| 3 | 7.5 | 15 | 15 | 40 | 40 | 50 | 80 | 70 | 3 | 1 | 1 | LC2D50A | |
| 5 | 10 | 20 | 20 | 40 | 50 | 65 | | | | 3 | 1 | 1 | LC2D65A |
| — | — | — | — | — | — | — | 125 | 80 | 4 | — | — | [50] | |
| 7.5 | 15 | 25 | 30 | 60 | 60 | 80 | | | | 3 | 1 | 1 | LC2D80 |
| — | — | — | — | — | — | — | 200 | 110 | 4 | — | — | [50] | |
| 7.5 | 15 | 25 | 30 | 60 | 60 | 95 | | | | 3 | 1 | 1 | LC2D95 |
| — | — | 30 | 40 | 75 | 100 | 115 | 160 | 80 | 3 | 1 | 1 | LC2D115[51] | |
| — | — | — | — | — | — | — | | | | 4 | — | — | LC2D115004 [51] |
| — | — | — | — | — | — | — | 200 | 160 | 3 | 1 | 1 | LC2D150[51] | |
| — | — | 40 | 50 | 100 | 125 | 150 | | | | 3 | 1 | 1 | LC2D150[51] |



LC2D25

TeSys D contactor accessories: TeSys™ D & F Auxiliary Contacts, Time Delay, Mechanical Latch, page 18-15
 TeSys D replacement coils: TeSys™ D AC Coils, page 18-43
 TeSys D dimensions: TeSys™ D Contactors, AC and DC Coil, page 18-51 to TeSys™ D Thermal Overload Relay Dimensions, page 18-59



TeSys™ D Capacitor Contactors



LC1DFK



LC1D GK



LC1D TK



LC1D WK

Table 18.28: TeSys D Capacitor Contactors

| Maximum Operational Power, kVAR | | | Instantaneous Auxiliary Contacts | | Catalog Number [52] |
|---------------------------------|-------|-------|----------------------------------|------|---------------------|
| Three-Phase | | | N.O. | N.C. | |
| 230 V | 460 V | 575 V | | | |
| 6 | 12.5 | 15 | 1 | 2 | LC1DFK |
| 8 | 16.7 | 20 | 1 | 2 | LC1D GK |
| 10 | 20 | 25 | 1 | 2 | LC1D LK |
| 12.5 | 25 | 30 | 1 | 2 | LC1D MK |
| 16.5 | 33.3 | 40 | 1 | 2 | LC1D PK |
| 20 | 40 | 50 | 1 | 2 | LC1D TK |
| 30 | 60 | 80 | 1 | 2 | LC1D WK12 |

Table 18.29: Coil Voltage Codes for TeSys D Capacitor Contactor (50/60 Hz)

| Voltage | 24 | 48 | 110 | 120 | 220 | 230 | 240 | 380 | 400 | 415 | 440 |
|-----------|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Coil Code | B7 | E7 | F7 | G7 | M7 | P7 | U7 | Q7 | V7 | N7 | R7 |

[48] Includes mechanical interlock without electrical contacts. Installer to complete wiring for electronically interlocking contactor operating coils by using a N.C. auxiliary contact integrated in the contactor or optional LADN or LAD8N auxiliary contact block.

[49] For LC2D09–LC2D38, electrical interlock can be included by adding a V to the end of the catalog number (for example LC2D09B7V).

[50] For these items, order two non-reversing contactors and one mechanical interlock separately. See TeSys™ D Non-Reversing Contactors, page 18-8 for selection.

[51] Includes mechanical interlock (LA9D11502) with prewired electrical contacts for interlocking contactor operating coils.

[52] Complete the catalog number with the voltage code from Table 18.29 Coil Voltage Codes for TeSys D Capacitor Contactor (50/60 Hz), page 18-10 (for example, LC1DFK G7).

TeSys™ F Catalog Number Interpretation

Table 18.30: TeSys F Contactors—Interpretation of the Catalog Number^[53]

| LC | F | | |
|--|-----|-------|--|
| Full Voltage, Non-Reversing | 1 | | |
| Full Voltage, Reversing | 2 | | |
| TeSys F 2, 3, and 4 Pole Contactors 115–800 A | | | |
| Contactor AC-3 Full Load Amperes (FLA) | | | |
| 115 A FLA | 115 | | |
| 150 A FLA | 150 | | |
| 185 A FLA | 185 | | |
| 225 A FLA | 225 | | |
| 265 A FLA | 265 | | |
| 330 A FLA | 330 | | |
| 400 A FLA | 400 | | |
| 500 A FLA | 500 | | |
| 630 A FLA | 630 | | |
| 780 A FLA | 780 | | |
| 800 A FLA | 800 | | |
| Number of Poles | | | |
| 2 Poles (400 A, 500 A, and 630 A only) | | 2 | |
| 3 Poles (all sizes) | | Blank | |
| 4 Poles (all sizes except 800 A) | | 4 | |
| Termination Options—Purchase Lugs Separately | | | |
| Coil Voltage (choose one, noting the contactor size it can be used on) | | | |

| AC Coil Voltage | Coil Code | For use on: | AC Coil Voltage | Coil Code | For use on: |
|-----------------------|-----------|---------------------------|-------------------|-----------|---------------------------|
| 24 V (50 Hz) | B5 | LC1F115–F225 | 230 V (50 Hz) | P5 | LC1F115–F225 |
| 24 V (60 Hz) | B6 | LC1F115–F225 | 230 V (40–400 Hz) | P7 | LC1F115–F800, F1700–F2100 |
| 24 V (40–400 Hz) | B7 | LC1F225–F400 | 240 V (50 Hz) | U5 | LC1F115–F225 |
| 42 V (50 Hz) | D5 | LC1F115–F225 | 240 V (60 Hz) | U6 | LC1F115–F225 |
| 48 V (50 Hz) | E5 | LC1F115–F225 | 240 V (40–400 Hz) | U7 | LC1F115–F780, F1700–F2100 |
| 48 V (60 Hz) | E6 | LC1F115–F225 | 277 V (50 Hz) | W5 | LC1F115–F225 |
| 48 V (40–400 Hz) | E7 | LC1F115–F630 | 277 V (40–400 Hz) | W7 | LC1F115–F780, F1700–F2100 |
| 110 V (50 Hz) | F5 | LC1F115–F225 | 380 V (50 Hz) | Q5 | LC1F115–F225 |
| 110 V (60 Hz) | F6 | LC1F115–F225 | 380 V (60 Hz) | Q6 | LC1F115–F225 |
| 110 V | F7 | LC1F1700, F2100 | 380 V (40–400 Hz) | Q7 | LC1F115–F780, F1700–F2100 |
| 110 V (40–400 Hz) | F7 | LC1F115–F780 | 400 V (50 Hz) | V5 | LC1F115–F225 |
| 115 V (50 Hz) | FE5 | LC1F115–F225 | 400 V (40–400 Hz) | V7 | LC1F115–F800, F1700–F2100 |
| 115 V (40–400 Hz) | FE7 | LC1F115–F780 | 415 V (50 Hz) | N5 | LC1F115–F225 |
| 120 V (60 Hz) | G6 | LC1F115–F225 | 415 V (40–400 Hz) | N7 | LC1F115–F780, F1700–F2100 |
| 120 V (40–400 Hz) | G7 | LC1F115–F400 | 440 V (50 Hz) | R5 | LC1F115–F225 |
| 120 V (40–400 Hz) | F7 | LC1F500–F780, F170–F2100 | 440 V (40–400 Hz) | R7 | LC1F115–F780, F1700–F2100 |
| 127 V (60 Hz) | G6 | LC1F115–F225 | 460/480 V (60 Hz) | Q6 | LC1F115–F225 |
| 127 V (40–400 Hz) | G7 | LC1F115–F780 | 480 V (40–400 Hz) | N7 | LC1F780 |
| 200/208 V (60 Hz) | L6 | LC1F115–F225 | 500 V (50 Hz) | S5 | LC1F115–F225 |
| 200/208 V (40–400 Hz) | L7 | LC1F265–F780 | 500 V (40–400 Hz) | S7 | LC1F115–F780, F1700–F2100 |
| 208 V (40–400 Hz) | L7 | LC1F115–F225 | 600 V (40–400 Hz) | X7 | LC1F500–F630 |
| 220 V (50 Hz) | M5 | LC1F115–F225 | 660 V (60 Hz) | Y6 | LC1F115–F225 |
| 220 V (60 Hz) | M6 | LC1F115–F225 | | | |
| 220 V (40–400 Hz) | M7 | LC1F115–F780, F1700–F2100 | | | |

| DC Coil Voltage | Coil Code | For use on: |
|-----------------|-----------|-------------------------------|
| 24 V | BD | LC1F115–F400 |
| 48 V | ED | LC1F115–F630 |
| 110 V | FD | LC1F115–F780, LC1F1700–F2100 |
| 110 V | FW | LC1F800 |
| 125 V | GD | LC1F115–F780, LC1F1700–F2100 |
| 220 V | MD | LC1F265–F780 |
| 220/240 V | MW | LC1F800 |
| 250 V | UD | LC1F115–F780, LC1F17005–F2100 |
| 380/400 V | QW | LC1F800 |
| 440 V | RD | LC1F115–F780, LC1F1700–F2100 |

[53] Use this table **only** to interpret current catalog numbers. Some combinations are not available.

TeSys™ F Non-Reversing Contactors

Table 18.31: TeSys F Contactors—2, 3, and 4 Pole


| | Maximum Three-Phase Horsepower Ratings | | | | Maximum Current (A) | | Continuous Current Rating (A) | Number of Poles | Catalog Number [54] Panel Mount with Screws |
|--|--|-------|-------|-------|---------------------|----------------|-------------------------------|-----------------|--|
| | 200 V | 230 V | 460 V | 575 V | Inductive AC-3 | Resistive AC-1 | | | |
|  LC1F330 | 30 | 40 | 75 | 100 | 115 | 200 | 175 | 3 | LC1F115 |
| | 40 | 50 | 100 | 125 | 150 | 250 | 200 | 4 | LC1F1154 |
| | | | | | | | | 3 | LC1F150 |
| | 50 | 60 | 125 | 150 | 185 | 275 | 200 | 4 | LC1F1504 |
| | | | | | | | | 3 | LC1F185 |
| | 60 | 75 | 150 | 200 | 225 | 315 | 250 | 4 | LC1F1854 |
| | | | | | | | | 3 | LC1F225 |
| | 60 | 75 | 150 | 200 | 265 | 350 | 285 | 4 | LC1F2254 |
| | | | | | | | | 3 | LC1F265 |
| | 75 | 100 | 200 | 250 | 330 | 400 | 370 | 4 | LC1F2654 |
| 3 | | | | | | | | LC1F330 | |
| 100 | 125 | 250 | 300 | 400 | 500 | 420 | 4 | LC1F3304 | |
| | | | | | | | 2 | LC1F4002 | |
| 150 | 200 | 400 | 500 | 500 | 700 | 700 | 3 | LC1F400 | |
| | | | | | | | 4 | LC1F4004 | |
| 250 | 300 | 600 | 800 | 630 | 1000 | 1000 | 2 | LC1F5002 | |
| | | | | | | | 3 | LC1F500 | |
| 350 | 400 | 800 | 900 | 800 | 1000 | 1000 | 4 | LC1F5004 | |
| | | | | | | | 2 | LC1F6302 | |
| — | 450 | 900 | 900 | 780 | 1600 | 1350 | 3 | LC1F630 | |
| | | | | | | | 4 | LC1F6304 | |
| Current Rated | | | | | 1400 | 1400 | 3 | LC1F800 | |
| | | | | | 1700 | 1700 | 3 | LC1F780 | |
| | | | | | 2100 | 2100 | 3 | LC1F7804 | |
| | | | | | 1400 | 1400 | 3 | LC1F1400 | |
| | | | | | 1700 | 1700 | 3 | LC1F1700 | |
| | | | | | 2100 | 2100 | 3 | LC1F2100 | |

Table 18.32: TeSys F Coil Voltage Codes [55]

| Contactor | Hz | Coil Prefix | 24 V | 48 V | 110 V | 120 V | 208 V | 220 V | 240 V | 440 V | 480 V |
|----------------------------|--------|-------------|------|------|-------|-------|-------|-------|-------|-------|-------|
| AC | | | | | | | | | | | |
| F115, F150, F185, and F225 | 50 | LX1 | B5 | E5 | F5 | — | — | M5 | U5 | — | — |
| | 60 | LX1 | B6 | E6 | F6 | G6 | L6 | M6 | U6 | R6 | Q5 |
| | 40–400 | LX9 | — | E7 | F7 | G7 | L7 | M7 | U7 | R7 | S7 |
| F265 and F330 | 40–400 | LX1 | B7 | E7 | F7 | G7 | L7 | M7 | U7 | R7 | S7 |
| F400–F780 | 40–400 | LX1 | — | E7 | F7 | G7 | L7 | M7 | U7 | R7 | S7 |
| F1400–F2100 | 40–400 | LX1 | — | — | F7 | G7 | L7 | M7 | U7 | R7 | S7 |
| DC [56] | | | | | | | | | | | |
| F115–F330 | | LX4 | BD | ED | FD | GD | MD | UD | RD | | |
| F400–F630 | | LX4 | — | ED | FD | GD | MD | UD | RD | | |
| F780, F1400–F2100 | | LX4 | — | — | FD | GD | MD | UD | RD | | |

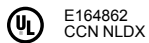
Table 18.33: Coil Voltage Codes for AC and DC Voltages for F800 (includes built-in surge suppressor)

| Vac/Vdc | Hz | Coil Prefix | 110 V | 120 V | 127 V | 220 V | 240 V | 380 V | 400 V | 415 V |
|---------|--------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Code | 40–400 | LX4 | FW | FW | FW | MW | MW | QW | QW | QW |

TeSys™ F Overload Relays

Table 18.34: TeSys F 3-Phase Overload Relays—Solid State, Separate Mounting [57]

| Current Setting Range A | For Direct Mounting to Contactor LC1•••• | Class 10 Catalog Number | Class 20 Catalog Number | Class 10/20 Selectable Catalog Number |
|-------------------------|--|-------------------------|-------------------------|---------------------------------------|
| 30–50 | F115–F185 | LR9F5357 | LR9F5557 | LR9F57 |
| 48–80 | F115–F185 | LR9F5363 | LR9F5563 | LR9F63 |
| 60–100 | F115–F185 | LR9F5367 | LR9F5567 | LR9F67 |
| 90–150 | F115–F185 | LR9F5369 | LR9F5569 | LR9F69 |
| 132–220 | F185[58]–F400 | LR9F5371 | LR9F5571 | LR9F71 |
| 200–330 | F225–F500 | LR9F7375 | LR9F7575 | LR9F75 |
| 300–500 | F330–F500 | LR9F7379 | LR9F7579 | LR9F79 |
| 380–630 | F400–F630, F800 | LR9F7381 | LR9F7581 | LR9F81 |



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TeSys F contactor accessories: TeSys™ D and F Accessories, page 18-16
 TeSys F overload relay accessories: TeSys F Overload Relay Accessories, page 18-22
 TeSys F replacement coils and parts: TeSys F Contact Kits, Arc Chambers, page 18-48, TeSys F AC Coils, page 18-44, and TeSys F DC Coils, page 18-47
 TeSys F dimensions: TeSys F Contactors, Dimensions, page 18-53, TeSys™ F Overload Relay Dimensions, page 18-61

[54] Complete the catalog number with the coil voltage code from Table 18.32 TeSys F Coil Voltage Codes, page 18-12 and Table 18.33 Coil Voltage Codes for AC and DC Voltages for F800, page 18-12 (for example, LC1F115G7). All coils except F780 include 1 N.O. holding circuit interlock contact. The F780 uses 2 coils that must be wired in series.

[55] For additional voltage codes refer to the Control and Protection Components Catalog MKTED210011EN.

[56] DC coils for 3-pole contactors are fitted with built-in surge suppression as standard.

[57] When mounting overload relays LR9F5•57–LR9F5•71 and LR9F57–LR9F71 directly beneath the contactor, supporting the relays with a mounting plate is recommended. With overload relays LR9F7•75–LR9F7•81 and LR9F75–LR9F81, use of a support mounting plate is mandatory. Refer to TeSys F Overload Relay Accessories, page 18-22.

[58] Interconnection kit LA7F407 is required to mount an LR9F5•71 and LR9F71 to an LC1F185.

TeSys™ F Reversing Contactors

Components are available for customer assembly of TeSys F reversing contactors. For example, the following components must be ordered to build a reversing contactor, 75 hp @ 460 V, with a 120 V / 60 Hz coil:



LC1F265

Table 18.35: Example of Components

| Description | Quantity | Catalog Number |
|--|----------|----------------|
| Contactors | 2 | LC1F115G6 |
| Lugs (Suppressor Blocks, Lugs, page 18-21) | 6 | DZ2FF1 |
| Auxiliary contacts | 2 | LADN11 |
| Power connections | 1 | LA9FF976 |
| Mechanical interlock | 1 | LA9FF970 |

Table 18.36: 3-Pole Contactors

| Maximum Three-Phase Horsepower Ratings | | | | Maximum Current (A) | | Continuous Current Rating (A) | Holding Circuit Contact Built Into Coil | | Catalog Number ^[59] |
|--|-------|-------|-------|---------------------|---------------|-------------------------------|---|------|--------------------------------|
| 200 V | 230 V | 460 V | 575 V | Inductive AC3 | Resistive AC1 | | N.O. | N.C. | |
| 30 | 40 | 75 | 100 | 115 | 200 | 175 | 1 | 0 | LC1F115 |
| 40 | 50 | 100 | 125 | 150 | 250 | 200 | 1 | 0 | LC1F150 |
| 50 | 60 | 125 | 150 | 185 | 275 | 200 | 1 | 0 | LC1F185 |
| 60 | 75 | 150 | 150 | 225 | 315 | 250 | 1 | 0 | LC1F225 |
| 60 | 75 | 150 | 200 | 265 | 350 | 285 | 1 | 0 | LC1F265 |
| 75 | 100 | 200 | 250 | 330 | 400 | 370 | 1 | 0 | LC1F330 |
| 100 | 125 | 250 | 300 | 400 | 500 | 420 | 1 | 0 | LC1F400 |
| 150 | 200 | 400 | 500 | 500 | 700 | 700 | 1 | 0 | LC1F500 |
| 250 | 300 | 600 | 800 | 630 | 1000 | 1000 | 1 | 0 | LC1F630 |
| 350 | 400 | 800 | 900 | 800 | 1000 | 1000 | 0 | 0 | LC1F800 |
| — | 450 | 900 | 900 | 780 | 1600 | 1350 | 0 | 0 | LC1F780 |

Table 18.37: Auxiliary Contact (Electrical Interlocking)—2 must be purchased

| For use with | Number of Contacts | Maximum Number of Blocks Per Contactor | Contact Arrangement | | Catalog Number |
|-------------------------------|--------------------|--|---------------------|------|------------------------|
| | | | N.O. | N.C. | |
| LC1F to be ordered separately | 1 | 1 | 1 | — | LADN10 ^[60] |
| | | | — | 1 | LADN01 |
| | 2 | 2 | 1 | 1 | LADN11 |
| | | | 2 | — | LADN20 ^[60] |
| | 4 | 2 | 2 | 2 | LADN22 |
| | | | 1 | 3 | LADN13 |
| | | | 4 | — | LADN40 ^[60] |
| | | | — | 4 | LADN04 |
| | | | 3 | 1 | LADN31 |
| | | | 2 | 2 | LADC22 ^[61] |

Table 18.38: Accessories—For the Assembly of 3-Pole Reversing Contactors (Horizontal Mounting)

| With 2 Identical Contactors ^[62] | Set of Power Connections Catalog Number | Horizontal Mounting Mechanical Interlock Kit Catalog Number |
|---|---|---|
| LC1F115 | LA9FF976 | LA9FF970 |
| LC1F150 | LA9F15076 | LA9FF970 |
| LC1F185 | LA9FG976 | LA9FG970 |
| LC1F225 | LA9F22576 | LA9FG970 |
| LC1F265 | LA9FH976 | LA9FJ970 |
| LC1F330 | LA9FJ976 | LA9FJ970 |
| LC1F400 | LA9FJ976 | LA9FJ970 |
| LC1F500 | LA9FK976 | LA9FJ970 |
| LC1F630, F800 | LA9FL976 | LA9FL970 |

Table 18.39: Definite Purpose Ratings, 3-Phase, Breaking All Lines, 100,000 Cycles (Hermetic Refrigeration Compressor)

| Device | FLA | LRA | | |
|-----------------------|-----|-------|-------|-------|
| | | 240 V | 480 V | 600 V |
| LC1D09 (AC coil only) | 9 | 54 | 45 | 36 |
| LC1D12 (AC coil only) | 12 | 72 | 60 | 48 |
| LC1D18 (AC coil only) | 18 | 108 | 90 | 72 |
| LC1D25 (AC coil only) | 25 | 150 | 125 | 100 |
| LC1D32 (AC coil only) | 32 | 192 | 160 | 128 |
| LC1D40A | 40 | 240 | 200 | 160 |
| LC1D50A | 50 | 300 | 250 | 200 |
| LC1D65A | 65 | 390 | 325 | 260 |
| LC1D80 | 75 | 450 | 375 | 300 |
| LC1D115 | 115 | 690 | 575 | 460 |
| LC1D150 | 150 | 900 | 750 | 600 |

TeSys F contactor accessories: TeSys™ D and F Accessories, page 18-16
 TeSys F overload relay accessories: TeSys F Overload Relay Accessories, page 18-22
 TeSys F replacement coils and parts: TeSys F Contact Kits, Arc Chambers, page 18-48, TeSys F AC Coils, page 18-44, and TeSys F DC Coils, page 18-47
 TeSys F dimensions: TeSys™ F Contactors, Dimensions, page 18-53



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Class 3211 04



^[59] Complete the catalog number with the coil voltage code from TeSys F Coil Voltage Codes, page 18-12 and Coil Voltage Codes for AC and DC Voltages for F800, page 18-12 (for example, LC1F115G7). All coils except F780 include 1 N.O. holding circuit interlock contact. The F780 uses 2 coils that must be wired in series.

^[60] Cannot be used for interlocking.

^[61] Including 1 N.O. + 1 N.C. make-before-break overlapping contacts.

^[62] For two contactors of different size, refer to pages Component parts, Vertical Mounting, page 18-20

TeSys™ K Contactors

Table 18.40: Instantaneous Auxiliary Contact Blocks



| Type of connection | Auxiliary Contacts | | Catalog Number | |
|--|--------------------|------|-------------------------|----------|
| | N.O. | N.C. | | |
| Clip-on front mounting, 1 block per contactor and 2 blocks per pair of mechanically interlocked contactors | 2 | — | LA1KN20 | |
| | — | 2 | LA1KN02 | |
| | 1 | 1 | LA1KN11 | |
| | 4 | — | LA1KN40 ^[1] | |
| | 3 | 1 | LA1KN31 ^[1] | |
| | 2 | 2 | LA1KN22 ^[1] | |
| | 1 | 3 | LA1KN13 ^[1] | |
| | — | 4 | LA1KN04 ^[1] | |
| | Screw clamp | 2 | — | LA1KN207 |
| | | — | 2 | LA1KN027 |
| 1 | | 1 | LA1KN117 | |
| 4 | | — | LA1KN407 ^[1] | |
| 3 | | 1 | LA1KN317 ^[1] | |
| 2 | | 2 | LA1KN227 ^[1] | |
| 1 | | 3 | LA1KN137 ^[1] | |
| — | | 4 | LA1KN047 ^[1] | |
| Slip-on 1 x 0.250 in. or 2 x 0.110 in. | | 2 | — | LA1KN207 |
| | | — | 2 | LA1KN027 |
| | 1 | 1 | LA1KN117 | |
| | 4 | — | LA1KN407 ^[1] | |
| | 3 | 1 | LA1KN317 ^[1] | |
| | 2 | 2 | LA1KN227 ^[1] | |

Table 18.41: Electronic Time Delay Auxiliary Contact Blocks

| Clip-on front mounting, 1 block per contactor and 2 blocks per pair of mechanically interlocked contactors | | | | |
|--|----------|------------------|----------|----------------|
| Voltage (V) | Type | Timing Range (S) | Contacts | Catalog Number |
| 24–48 Vac or Vdc | On-delay | 1–30 | SPDT | LA2KT2E |
| 110–240 Vac | On-delay | 1–30 | SPDT | LA2KT2U |

NOTE: Relay outputs, with single pole double throw, 240 Vac/Vdc, 2 A max.
Maximum switching capacity 250 VA / 150 W
Operating temperature: –10 to +60°C (14 to 140°F)
Reset time: 1.5 s during time delay, 0.5 after time delay

Table 18.42: Suppressor Module with Incorporated LED Indicator



| Clip-on front mounting | | | |
|------------------------|---------------|-----------------|-------------------------|
| Voltage range | Type | Sold in lots of | Catalog Number |
| 12–24 Vac/Vdc | Varistor | 5 | LA4KE1B ^[2] |
| 32–48 Vac/Vdc | Varistor | 5 | LA4KE1E ^[2] |
| 50–129 Vac/Vdc | Varistor | 5 | LA4KE1FC ^[2] |
| 130–250 Vac/Vdc | Varistor | 5 | LA4KE1UG ^[2] |
| 12–24 Vdc | Diode + Zener | 5 | LA4KC1B ^[3] |
| 32–48 Vdc | Diode + Zener | 5 | LA4KC1E ^[3] |
| 220–250 Vac | RC | 5 | LA4KA1U ^[4] |

Table 18.43: Paralleling Links

| Description | Sold in lots of | Catalog Number |
|--|-----------------|----------------|
| For 2 poles with screw-clamp terminals | 4 | LA9E01 |
| For 4 poles with screw-clamp terminals | 2 | LA9E02 |

Table 18.44: Power Connectors

| Description | Sold in lots of | Catalog Number |
|---|-----------------|----------------|
| Set of 6 power connections for reversing contactors with screw-clamp terminals | 100 | LA9K0969 |
| Set of 4 power connections for changeover contactors with screw-clamp terminals | 100 | LA9K0970 |

Table 18.45: Marking Strips

| Description | Sold in lots of | Catalog Number |
|-----------------------------------|-----------------|----------------|
| Clips onto front of the contactor | 100 | LA9D90 |

Table 18.46: Accessories for Overload Relays

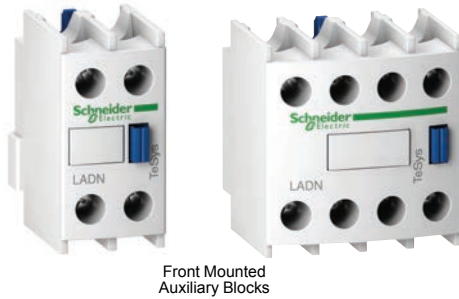
| Description | Type of Connection | Catalog Number |
|---|--------------------|----------------|
| Terminal block for separate clip-on mounting of the overload relay onto 35 mm omega rail (AM1DP200) | Screw-clamp | LA7K0064 |



[1] Block of 4 contacts cannot be used with LP4K or LP5K contactors.
 [2] Protection by limitation of the transient voltage to 2 Uc maximum. Maximum reduction of the transient voltage peaks. Slight time delay on drop-out (1.1–1.5 times normal).
 [3] No overvoltage or oscillation frequency. Polarized component. Slight time delay on drop-out (1.1–1.5 times normal).
 [4] Protection by limitation of the transient voltage to 3 Uc maximum and limitation of the oscillation frequency. Slight time delay on drop-out (1.2 times normal).

TeSys™ D and F Auxiliary Contacts, Time Delay, Mechanical Latch

Table 18.47: Standard, Instantaneous Auxiliary Contact Blocks



Front Mounted Auxiliary Blocks

| Snap-On Mounting | Number of Contacts | Contact Arrangement | | Catalog Number [5] |
|---|--------------------|---------------------|------|--------------------|
| | | N.O. | N.C. | |
| To front of LC•DT20–D258 (4P), LC•D09–D150 [5] or To right side of LC•F | 4 [5] | 2 | 2 | LADN22 [6] |
| | | 1 | 3 | LADN13 [6] |
| | | 4 | 0 | LADN40 [6] |
| | | 0 | 4 | LADN04 [6] |
| | | 3 | 1 | LADN31 [6] |
| | | 2 | 2 | LADC22 [6] [7] |
| To front of LC•D80–D150 or To left side of LC•F | 2 | 1 | 1 | LADN11 [6] |
| | | 2 | 0 | LADN20 [6] |
| | | 0 | 2 | LADN02 [6] |
| To front of LC•D80–D150 or To left side of LC•F | 1 | 1 | 0 | LADN10 [8] |
| | | 0 | 1 | LADN01 [8] |
| To side of LC•D09 to D150 only (not for use on TeSys F) | 2 | 1 | 1 | LAD8N11 [9] |
| | | 2 | 0 | LAD8N20 [9] |

Table 18.48: Instantaneous Blocks with Dust-Tight Auxiliary Contacts (IP54) NEMA 12

| Snap-On Mounting | Standard Contacts | | Dust-Tight Contacts | | Catalog Number |
|---|-------------------|------|---------------------|------|----------------|
| | N.O. | N.C. | N.O. | N.C. | |
| To front of LP•D40–D80, LC•DT20–D258 (4P), LC•D09 to D95 or To right side of LC•F | — | — | 2 | — | LA1DX20 |
| | 2 | — | 2 | — | LA1DZ40 |
| | 1 | 1 | 2 | — | LA1DZ31 |
| | — | — | 2 | — | LA1DY20 [10] |

Table 18.49: Pneumatic Time Delay Contact Blocks

| Snap-On Mounting | Time Delay Contacts | | Type | Range of Time Delay | Catalog Number [11] |
|--|---------------------|------|--------------------------------|---------------------|---------------------|
| | N.O. | N.C. | | | |
| To front of LP•D40–D80, LC•DT20–D258 (4P), LC•D09 to D150 or To right side of LC•F | 1 | 1 | On energization (on delay) | 0.1 to 3 s [12] | LADT0 |
| | | | | 0.1 to 30 s | LADT2 |
| | | | | 10 to 180 s | LADT4 |
| | 1 | 1 | On de-energization (off-delay) | 1 to 30 s [13] | LADS2 |
| | | | | 0.1 to 3 s [12] | LADR0 |
| | | | | 0.1 to 30 s | LADR2 |
| | | | 10 to 180 s | LADR4 | |

Table 18.50: Mechanical Latch Blocks with Manual or Electrical Unlatch (TeSys D only)

| Front snap-on mounting onto | Application | Catalog Number [14] |
|-----------------------------|--|---------------------|
| LC•D09 to D65A | For silent operation and energy conservation | LAD6K10 [15] [16] |
| LC1D80 to D150, LP1D80 | For silent operation and energy conservation | LA6DK20 [15] |

Table 18.51: Coil Voltage Codes for LA6DK Mechanical Latch Blocks

| Volts | 12 | 24 | 32/36 | 42/48 | 60/72 | 100 | 110/127 | 200/208 | 220/240 | 380/415 | 440/480 | 500/600 |
|----------|----|----|-------|-------|-------|-----|---------|---------|---------|---------|---------|---------|
| AC or DC | J | B | C | E | EN | K | F | L | M | Q | R | S |

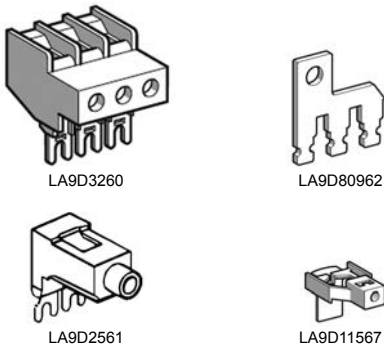
TeSys D contactors: TeSys™ D Non-Reversing Contactors, page 18-8 and TeSys™ D Reversing Contactors, page 18-10
 TeSys D overload relay accessories: TeSys D Overload Relay Accessories, page 18-22
 TeSys D replacement coils: TeSys™ D AC Coils, page 18-43
 TeSys D dimensions: TeSys™ D Contactors, AC and DC Coil, page 18-51 to TeSys™ D Thermal Overload Relay Dimensions, page 18-59



[5] For low consumption coils (LC1D09–D38 only), only one front-mounted two-contact block allowed. No side-mounted contact blocks allowed.
 [6] For spring terminal versions of these blocks, add a 3 to the end of the catalog number (for example, LADN223). For slip-on versions, add 9 to the end of the catalog number (for example, LADN229).
 [7] Including 1 N.O. + 1 N.C. make-before break overlapping contacts.
 [8] This block cannot be added to the LC1D 09–D38 contactors; a maximum of 2 blocks can be mounted on the LC1D40A-LC1/LP1D80 contactors only.
 [9] 1 block may be added to the left side of LC1D09–D38, AC coils only; only 1 block may be added to either side of the LC1D40A-D80 contactors, AC coils only. Cannot be installed on TeSys D contactors with DC coils.
 [10] Device supplied with 4 ground terminal points.
 [11] For spring terminal versions of these blocks, add a 3 to the end of the catalog number (for example, LADT23).
 [12] Scale range is expanded between 0.1 and 0.6 seconds on the dial for more accurate settings at the lower end of the range.
 [13] Switching time between the opening of the N.C. contact and the closing of the N.O. contact: 40 ms ± 15 ms.
 [14] To complete the catalog number, add the coil voltage code from Table 18.51 Coil Voltage Codes for LA6DK Mechanical Latch Blocks, page 18-15 (for example, LAD6K10F).
 [15] Does not include internal coil clearing contact.
 [16] Low consumption DC contactors (and relays) (code coil •L) are not compatible with the LAD6K10• mechanical latching blocks.

TeSys™ D and F Accessories

Table 18.52: For Power Pole or Control Connection

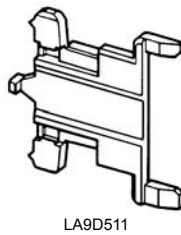


| Description | | | For use with contactors LC1/LP1 | Sold in lots of | Catalog Number |
|--|------------------------------------|------------------------------|---------------------------------|-----------------|----------------|
| Connectors for larger cable sizes | 4 poles | #8 AWG (10 mm ²) | DT20, DT25 | 1 | LAD92560 |
| | 3 poles | #4 AWG (25 mm ²) | D09–D38 | 1 | LA9D3260 |
| Everlink™ terminal block | 3 poles | | D40A–D65A | 1 | LAD96560 |
| Links for the parallel connection of: | 2 poles | | D09–D38 | 10 | LA9D2561 |
| | | | D40A–D65A | 1 | LAD9P32 |
| | | | D80, D95 | 2 | LA9D80961 |
| | | | F115 | 4 | LA9FF602 |
| | | | F150, F185 | 4 | LA9FG602 |
| | | | F225, F265, F330, F400 | 4 | LA9FH602 |
| | | | F500 | 4 | LA9FK602 |
| | 3 poles (wye-delta shorting strap) | | F630, F800 | 4 | LA9FL602 |
| | | | D09–D38 | 10 | LAD9P3 |
| | | | D40A–D65A | 1 | LAD9P33 |
| | | | D80, D95 | 1 | LA9D80962 |
| | | | F115 | 1 | LA9FF601 |
| | | | F150, F185 | 1 | LA9FG601 |
| | | | F225, F265, F330, F400 | 1 | LA9FH601 |
| 4 poles | | F500 | 1 | LA9FK601 | |
| | | F630, F800 | 1 | LA9FL601 | |
| Second coil connection | | DT20, DT25 | 2 | LA9D1263 | |
| | | D80, D95 | 2 | LA9D80963 | |
| Control circuit take-off from main pole | | LP1D80 | 10 | LA9D09966 | |
| | | D80, D95 | 10 | LA9D8067 | |
| | | D115, D150 | 10 | LA9D11567 | |
| Spreaders for increasing pole pitch to 45 mm | | D115, D150 | 3 | GV7AC03 | |
| Replacement power terminal block | | D115, D150 | 1 | LA9D115603 | |

Table 18.53: For Marking

| Description | For use with contactors LC1/LP1 | Sold in lots of | Catalog Number |
|--|--|-----------------|----------------|
| Reference label holder snap-on 8 x 22 mm | 4-pole contactors D80–D115 | 100 | LA9D92 |
| Reference label holder snap-on 8 x 18 mm 3 poles | D09–D65A, DT20–DT80A, LADN, LADT, LADR | 100 | LAD90 |
| Sheet of 300 labels self adhesive 7 x 21 mm | For holder LA9D92 | 1 | LA9D93 |

Table 18.54: For Mounting



| Description | For use with contactors LC1/LP1 | Sold in lots of | Catalog Number |
|--|---------------------------------|-----------------|----------------|
| Set of shims for mounting LAD8N and LA8DN | D80 to D95 | 1 | LA9D511 |
| Retrofit plate for replacement of LC1D40–D65 with LC1D40A–D65A | D40A–D65A | 1 | LAD7X3 |
| 35 mm DIN Rail – 2 meters long | LC1D09 to D80 | 10 | AM1DP200 |

Table 18.55: Replacement Contacts

| | For use with contactors | | Catalog Number |
|------------|-------------------------|---------|----------------|
| Three-pole | LC1D115 | 3 poles | LA5D1158031 |
| | LC1D150 | 3 poles | LA5D150803 |
| Four-pole | LC1D115 | 4 poles | LA5D115804 |

Table 18.56: Arc Chambers

| | For use with contactors | | Catalog Number |
|------------|-------------------------|---------|----------------|
| Three-pole | LC1D115 | 3 poles | LA5D11550 |
| | LC1D150 | 3 poles | LA5D15050 |
| Four-pole | LC1D115 | 4 poles | LA5D115450 |

TeSys D contactors: TeSys™ D Non-Reversing Contactors, page 18-8 and TeSys™ D Reversing Contactors, page 18-10
 TeSys D overload relay accessories: TeSys D Overload Relay Accessories, page 18-22
 TeSys D contactor accessories: TeSys™ D & F Auxiliary Contacts, Time Delay, Mechanical Latch, page 18-15
 TeSys D replacement coils: TeSys™ D AC Coils, page 18-43
 TeSys D dimensions: TeSys™ D Contactors, AC and DC Coil, page 18-51 to TeSys™ D Thermal Overload Relay Dimensions, page 18-59
 TeSys F contactors: TeSys™ F Non-Reversing Contactors, page 18-12 and TeSys™ F Reversing Contactors, page 18-13
 TeSys F replacement coils and parts: TeSys F Contact Kits, Arc Chambers, page 18-48, TeSys F AC Coils, page 18-44, and TeSys F DC Coils, page 18-47



LA4DA1U

RC and Varistor Coil Suppressors

RC Coil Suppressor

- Limitation of transient voltage to 300% of nominal voltage maximum.
- Oscillating frequency limited to 400 Hz maximum. Slight increase in drop-out time (1.2 to 2 times normal).

Table 18.57: Resistor/Capacitor Circuit (RC) for Reduction of Electrical Noise in AC Contactor Coils

| Installed by | Mounting on | Operating Voltage 50/60 Hz | Catalog Number |
|--|---|----------------------------|----------------|
| Snapping into the cavity on the right side without tools ^[17] | LC•D09 to D38 (3P), LC1DT20 to DT40 (4P) | 24–28 Vac | LAD4RCE |
| | | 50–127 Vac | LAD4RCG |
| | | 110–240 Vac | LAD4RCU |
| Snap-on mounting, and connection without tools to the contactor coil terminals | LC1D40A to 65A (3P), LC1DT60A to DT80A (4P) | 24–48 Vac | LAD4RC3E |
| | | 50–127 Vac | LAD4RC3G |
| | | 110–240 Vac | LAD4RC3U |
| | | 380–415 Vac | LAD4RC3N |
| Screw connection to the contactor coil terminals | LC•D80 to D150 (3P), LC1D80 to D115 (4P) | 24–48 Vac | LA4DA2E |
| | | 50–127 Vac | LA4DA2G |
| | | 110–240 Vac | LA4DA2U |
| | | 380–415 Vac | LA4DA2N |

Varistor Coil Suppressor

- Limitation of transient voltage value to 200% of nominal voltage maximum.
- Maximum reduction of transient voltage peaks. Slight increase in drop-out time (1.1 to 1.5 times normal).

Table 18.58: Varistor (Peak Limiting) for Reduction of Electrical Noise in AC Contactor Coils

| Installed by | Mounting on | Operating Voltage | Catalog Number |
|--|--|-------------------|----------------|
| Snapping into the cavity on the right side without tools ^[17] | LC•D09 to D38 (3P), LC1DT20 to DT40 (4P) | 24–48 Vac | LAD4VE |
| | | 50–127 Vac | LAD4VG |
| | | 110–250 Vac | LAD4VU |
| Snap-on mounting, and connection without tools to the contactor coil terminals | LC1D40A to D65A (3P), LC1DT60A to DT80A (4P) | 24–48 Vac/Vdc | LAD4V3E |
| | | 50–127 Vac/Vdc | LAD4V3G |
| | | 110–250 Vac/Vdc | LAD4V3U |
| Screw connection to the contactor coil terminals | LC•D80 to D115 (3P), LC1D80 to D115 (4P) | 24–48 Vac | LA4DE2E |
| | | 50–127 Vac | LA4DE2G |
| | | 110–250 Vac | LA4DE2U |
| Screw connection to the contactor coil terminals | LC•D80 to D95 (3P), LC1D80 (4P) | 24–48 Vdc | LA4DE3E |
| | | 50–127 Vdc | LA4DE3G |
| | | 110–250 Vdc | LA4DE3U |

Diode Coil Suppressor

- No overvoltage or oscillating frequency.
- Polarized component. Increased drop-out time (6–10 times normal).

Table 18.59: Diode for Reduction of Electrical Noise in DC Contactor Coils

| Installed on the upper part by | Mounting on | Operating Voltage, DC | Catalog Number |
|---|---|-----------------------|----------------|
| Snap-on mounting and connection w/o tools to the contactor coil terminals | LC•D09 to D38 (3P), LC1DT20 to DT40 (4P) | 24–250 Vdc | LAD4DDL |
| Clip-on front mounting | LC•D40A to D65A (3P), LC1DT60A to DT80A (4P) | 24–250 Vdc | LAD4D3U |
| Screw connection of wire to the contactor coil terminals | LC•D80 to D95 (3P), LC1D80 (4P) | 24–250 Vdc | LA4DC3U |



LA4DC3U

[17] Installing the suppressor into the cavity makes the electrical connection. Overall width of the contactor remains the same.

Bidirectional Diode Coil Suppressor

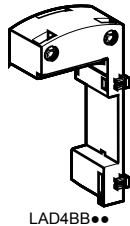
- Protection provided by limiting the transient voltage to 2 Uc max.
- Maximum reduction of transient voltage peaks



LAD4T3B

Table 18.60: Bidirectional Peak Limiting Diode

| Installed by | Mounting on | Operating Voltage | | Catalog Number |
|--|---|-------------------|---------|----------------|
| | | Vac (50/60 Hz) | Vdc | |
| Snapping into the cavity on the right side of the contactor [18] | LC•D09 to D38 (3P)[19] LC1DT20 to DT40 (4P) | 24 | — | LAD4TB |
| | | — | 24 | LAD4TBDL |
| | | 72 | — | LAD4TS |
| | | — | 72 | LAD4TSDL |
| | | — | 125 | LAD4TGDL |
| | | — | 250 | LAD4TUDL |
| Clip-on front mounting and connection without tools to the contactor coil terminals [19] | LC•D40A to D65A (3P), LC1DT60A to DT80A (4P) | — | 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 mounting [20] | LC•D80 to D95 (3P), LC1D80 (4P) | 12–24 | 12–24 | LA4DB2B |
| | | 25–72 | 25–72 | LA4DB2S |
| | | — | 24 | LA4DB3B |
| | | — | 72 | LA4DB3S |



LAD4BB••

Table 18.61: Cabling Accessories

| Usage | Mounting on | Operating Voltage 50/60 Hz | Catalog Number | |
|---|-----------------|----------------------------------|--|----------------------------------|
| For adapting existing wiring to a new product or for use with top-mounting accessory. | LC1D09 to D38 | Without coil suppression | LAD4BB | |
| | | With coil suppression (varistor) | 24-48 Vac 50-127 Vac 110-250 Vac | LAD4BBVE LAD4BBVG LAD4BBVU |
| | | Without coil suppression | LAD4BB3 | |
| For adapting existing wiring to a new product or for use with top-mounting accessory | LC1D40A to D65A | Without coil suppression | LAD4BB3 | |

TeSys D contactors: TeSys™ D Non-Reversing Contactors, page 18-8 and TeSys™ D Reversing Contactors, page 18-10
 TeSys D contactor accessories: TeSys™ D & F Auxiliary Contacts, Time Delay, Mechanical Latch, page 18-15
 TeSys D overload relay accessories: TeSys D Overload Relay Accessories, page 18-22
 TeSys D replacement coils: TeSys™ D AC Coils, page 18-43
 TeSys D dimensions: TeSys™ D Contactors, AC and DC Coil, page 18-51 to TeSys™ D Thermal Overload Relay Dimensions, page 18-59

TeSys™ D Electronic Timers and Interface Modules

The following accessories require use of cabling accessories (LAD4BB••) for proper mounting. See Bidirectional Diode Coil Suppressor, page 18-18 for illustration.

Table 18.62: Electronic Serial Timer Modules

| Type | Operational Voltage [21] | | Time Delay | Catalog Number |
|----------|--------------------------|-------------|------------|----------------|
| | 24–250 Vac | 100–250 Vac | | |
| On-delay | LC1D09–D65A | LC1D80–D150 | 0.1–2 s | LA4DT0U |
| | | | 1.5–30 s | LA4DT2U |
| | | | 25–500 s | LA4DT4U |



LA4DFE

Table 18.63: Interface Modules

| Interface Type[22] | Operational Voltage | | Input Voltage | Catalog Number |
|-----------------------------|---------------------|-------------|---------------|----------------|
| | 24–250 Vac | 100–250 Vac | | |
| Relay | LC1D09–D150 | — | 24 Vdc | LA4DFB |
| | LC1D09–D150 | — | 48 Vdc | LA4DFE |
| Relay Plus Manual Operation | LC1D09–D150 | — | 24 Vdc | LA4DLB |
| | LC1D09–D150 | — | 48 Vdc | LA4DLE |
| Solid State | LC1D09–D65A | LC1D80–D115 | 24 Vdc | LA4DWB |

Table 18.64: Automatic-Manual-Stop Control Modules

| Operational Voltage | | Catalog Number |
|---------------------|-------------|----------------|
| 24–100 Vac | 100–250 Vac | |
| LC1D09–D150 | — | LA4DMK |

Table 18.65: TeSys Safety-Chain Identification System ^{New!}

| Description | Compatibility | Package Qty | Catalog Number |
|--|------------------------------|-------------|----------------|
| Red retrofit contactor safety cover | LC1D09 to D65A, CAD32, CAD50 | 10 | LAD9ET1S |
| | LC1D80 | 1 | LAD9ET3S |
| | LC1D115 to D150 | 1 | LAD9ET4S |
| Red auxiliary contact block, 2 N.O. + 2 N.C. | LC1D09 to D150, CAD32, CAD50 | 1 | LADN22S |
| Red retrofit safety sticker | TeSys U | 10 | LU9ET1S |



LAD9ET1S



LADN22S



LU9ET1S

[18] Installing the suppressor into the cavity makes the electrical connection. Overall width of the contactor remains the same.

[19] For LC•D09–LC•D65A with DC or low consumption DC coils, 3-pole contactors are fitted with built-in bidirectional diode suppression as standard.

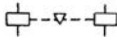
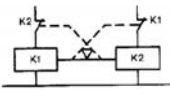
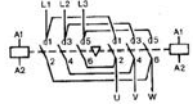
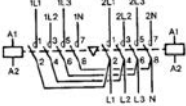
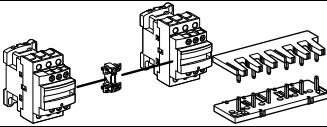
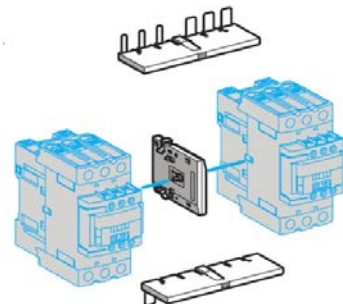
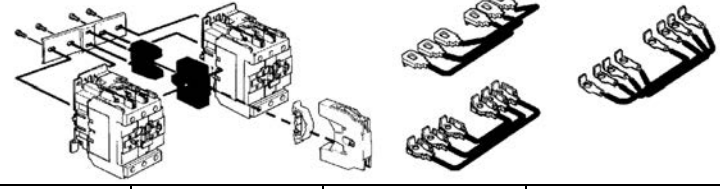
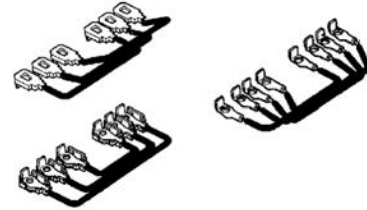
[20] Mounting at the top of the contactor on coil terminals A1 and A2.

[21] For 24 V operation, the contactor must be fitted with a 21 V coil: coil voltage code Z5 for 50 Hz; Z6 for 60 Hz; and ZD for DC.

[22] Adapter required for D09–D65A, see Cabling Accessories, page 18-18.

TeSys™ D Reversing Contactors

Table 18.66: Contactors

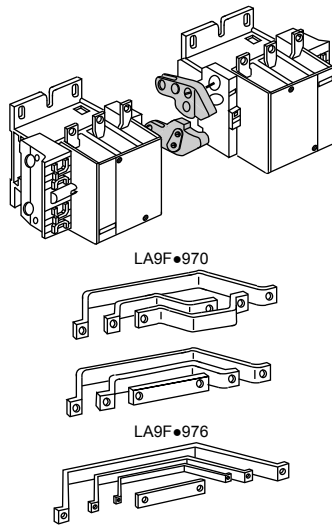
| Reversing contactors comprising two identical, horizontally mounted contactors: | Mechanical interlock | | Set of power connections | |
|---|--|--|---|---|
| | Without electrical interlock | With incorporated electrical interlock (2 N.C. contacts) | Reversing contactors for motor control | Four pole contactors |
| |  |  |  |  |
| | Catalog Number | Catalog Number | Catalog Number | Catalog Number |
| LC1D09, LC1D12, LC1D18, LC1D25, LC1D32, LC1D38 | LAD9R1 [23] | LAD9R1V [23] | Included with kit | — |
| LC1DT20, LC1DT25, LC1DT32, LC1DT40 | LADT9R1 [23] | LADT9R1V [23] | — | Included with kit |
| |  | | | |
| LC1D40A, D50A, D65A | LAD4CM LAD9R3 [24] | — | LA9D65A69 | — |
| |  | | | |
| LC1D80 and D95 (AC coil) | LA9D50978 | LA9D4002 | LA9D8069 | LA9D8070 |
| LC1D80 and D95 (DC coil) | LA9D80978 | LA9D8002 | LA9D8069 | LA9D8070 |
| |  | | | |
| LC1D115 and LC1D150 | Not Available | LA9D11502 | LA9D11569 | LA9D11570 (4P) (D115 only) |
| |  | | | |

TeSys D contactors: TeSys™ D Non-Reversing Contactors, page 18-8 and TeSys™ D Reversing Contactors, page 18-10
 TeSys D contactor accessories: TeSys™ D & F Auxiliary Contacts, Time Delay, Mechanical Latch, page 18-15
 TeSys D replacement coils: TeSys™ D AC Coils, page 18-43
 TeSys D dimensions: TeSys™ D Contactors, AC and DC Coil, page 18-51 to TeSys™ D Thermal Overload Relay Dimensions, page 18-59

[23] Kit including mechanical interlock and wiring.
 [24] Kit combines both LAD4CM and LA9D65A69

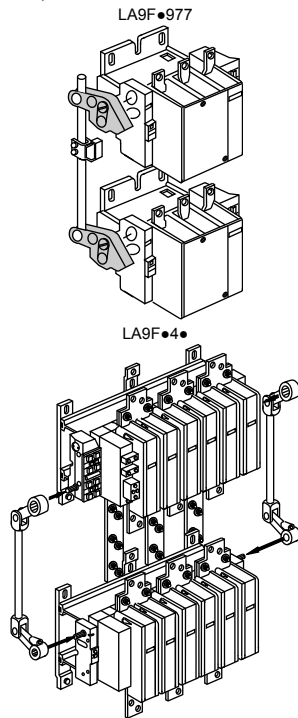
TeSys™ F Component Parts and Vertical Mounting

Table 18.67: Component Parts for the Assembly of F-Line 3-pole Reversing Contactors



| With 2 Identical Contactors | Set of Power Connections Cat. No. | Mechanical Interlock Kit Cat. No. |
|-----------------------------|-----------------------------------|-----------------------------------|
| Horizontal Mounting | | |
| LC1F115 | LA9FF976 | LA9FF970 |
| LC1F150 | LA9F15076 | LA9FF970 |
| LC1F185 | LA9FG976 | LA9FG970 |
| LC1F225 | LA9F22576 | LA9FG970 |
| LC1F265 | LA9FH976 | LA9FJ970 |
| LC1F330 | LA9FJ976 | LA9FJ970 |
| LC1F400 | LA9FJ976 | LA9FJ970 |
| LC1F500 | LA9FK976 | LA9FJ970 |
| LC1F630 or F800 | LA9FL976 | LA9FL970 |
| Vertical Mounting | | |
| LC1F115 or F150 | [25] | LA9FF4F |
| LC1F185 or F225 | [25] | LA9FG4G |
| LC1F265 | [25] | LA9FH4H |
| LC1F330 | [25] | LA9FJ4J |
| LC1F400 | [25] | LA9FJ4J |
| LC1F500 | [25] | LA9FK4K |
| LC1F630 or F800 | [25] | LA9FL4L |
| LC1F780 | [26] | LA9FX970 [26] |

Table 18.68: Component Parts for the Assembly of TeSys F 3-pole or 4-pole Transfer Contactors

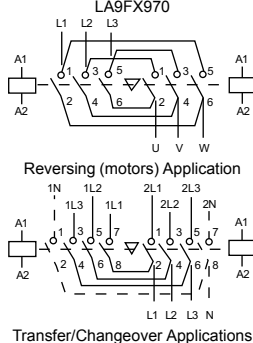


| Mounting | Set of Power Connections | | Mechanical Interlock Kit Cat. No. |
|----------------------------|--------------------------|-----------|-----------------------------------|
| | Three-Pole | Four-Pole | |
| Horizontal Mounting | | | |
| LC1F115/4 | LA9FF982 | LA9FF977 | LA9FF970 |
| LC1F150/4 | LA9F15082 | LA9F15077 | LA9FF970 |
| LC1F185/4 | LA9FG982 | LA9FG977 | LA9FG970 |
| LC1F225/4 | LA9F22582 | LA9F22577 | LA9FG970 |
| LC1F265/4 | LA9FH982 | LA9FH977 | LA9FJ970 |
| LC1F330/4 | LA9FJ982 | LA9FJ977 | LA9FJ970 |
| LC1F400/4 | LA9FJ982 | LA9FJ977 | LA9FJ970 |
| LC1F500/4 | LA9FK982 | LA9FK977 | LA9FJ970 |
| LC1F630/4 | LA9FL982 | LA9FL977 | LA9FL970 |
| Vertical Mounting | | | |
| LC1F115/4 or F150/4 | [25] | [25] | LA9FF4F |
| LC1F185/4 or F225/4 | [25] | [25] | LA9FG4G |
| LC1F265/4 | [25] | [25] | LA9FH4H |
| LC1F330/4 | [25] | [25] | LA9FJ4J |
| LC1F400/4 | [25] | [25] | LA9FJ4J |
| LC1F500/4 | [25] | [25] | LA9FK4K |
| LC1F630/4 | [25] | [25] | LA9FL4L |
| LC1F780 | [26] | — | LA9FX970 [26] |
| LC1F7804 | — | [27] | LA9FX971 [27] |

Table 18.69: Vertical Mounting of 2 Contactors of Different Ratings [28]

| Upper Contactor | Lower Contactor [29] | Mechanical Interlock Kit Cat. No. |
|---------------------|----------------------|-----------------------------------|
| LC1F185/4 or F225/4 | LC1F115/4 or F150/4 | LA9FG4F |
| LC1F265/4 or F330/4 | LC1F115/4 or F150/4 | LA9FH4F |
| LC1F265/4 or F330/4 | LC1F185/4 or F225/4 | LA9FH4G |
| LC1F400/4 | LC1F115/4 or F150/4 | LA9FJ4F |
| | LC1F185/4 or F225/4 | LA9FJ4G |
| | LC1F265/4 or F330/4 | LA9FJ4H |
| LC1F500/4 | LC1F115/4 or F150/4 | LA9FK4F |
| | LC1F185/4 or F225/4 | LA9FK4G |
| | LC1F265/4 or F330/4 | LA9FK4H |
| LC1F630/4 or F800 | LC1F400/4 | LA9FK4J |
| | LC1F115/4 or F150/4 | LA9FL4F |
| | LC1F185/4 or F225/4 | LA9FL4G |
| | LC1F265/4 or F330/4 | LA9FL4H |
| | LC1F500/4 | LA9FL4J |

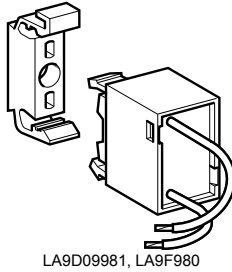
TeSys F contactors: TeSys™ F Non-Reversing Contactors, page 18-12 and TeSys™ F Reversing Contactors, page 18-13
 TeSys F contactor accessories: TeSys™ D and F Accessories, page 18-16
 TeSys F overload relay accessories: TeSys F Overload Relay Accessories, page 18-22
 TeSys F replacement coils and parts: TeSys F Contact Kits, Arc Chambers, page 18-48, TeSys F AC Coils, page 18-44, and TeSys F DC Coils, page 18-47
 TeSys F dimensions: TeSys™ F Contactors, Dimensions, page 18-53, TeSys™ F Overload Relay Dimensions, page 18-61



[25] Power connection to be assembled by the customer.
 [26] Double mechanical interlock with 2 mechanical links and 3 power connection bars.
 [27] Double mechanical interlock with 2 mechanical links and 4 power connection bars.
 [28] With identical or different numbers of poles.
 [29] Lower contactor must have equal or lesser current rating.

TeSys™ F Contactors

Table 18.70: Suppressor Blocks



| Operating limit: up to 220 V, 50/60 Hz coils | | |
|--|--|----------------|
| Description | For Use with coils | Catalog Number |
| Suppressor block (clip-on mounting to coil) | LX1FF, FG, FH, F115, F150, F185, F225, F265, F330 | LA9F980 |
| | LX1FJ, FK, FL, FX, F400, F500, F630, F780, LX9FF, FG, FH, F115, F150, F185, F225, F265, F330 | LA9D09980 |
| Mounting bracket (for 35 mm DIN rail or panel mounting) for suppressor block | | LA9D09981 |

Table 18.71: Lugs and Lug Kits [30]

| Contactor Type LC1 | Lug Kit Catalog Number Contactor Only | Cable Size AWG range | Overload Relay | Directly mounted to contactor | Lugs Required | | Cable size AWG range | |
|--------------------|---------------------------------------|----------------------|----------------------------------|-------------------------------|-----------------------------------|-----------------------|------------------------|-----------------------|
| | | | | LC1 | Line side of contactor | Load side of overload | Line side of contactor | Load side of overload |
| F115 | DZ2FF6 | 14 to 2/0 | LR9F5•57 to F5•69, LR9F57 to F69 | F115 | 3 each DZ2FF1 | 3 each DZ2FG1 | 14 to 2/0 | 6 to 3/0 |
| F150, F185 | DZ2FG6 | 6 to 3/0 | LR9F5•57 to F5•71, LR9F57 to F71 | F150 to F185 | 1 each DZ2FG6 | | 6 to 3/0 | |
| — | — | — | LR9F5•71, LR9F71 | F225, F265 | 1 each DZ2FH6 | | 6 to 300 MCM | |
| F225, F265, F330 | DZ2FH6 | 6 to 300 MCM | LR9F7•75 to F7•79, LR9F75 to F79 | F265 or F330 | 3 each DZ2FH1 | — | 6 to 300 MCM | 4 to 500 MCM |
| F400 | DZ2FJ6 | 4 to 500 MCM | LR9F7•75 to F7•81, LR9F75 to F81 | F400 | 3 each DZ2FJ1 | — | 4 to 500 MCM | 4 to 500 MCM |
| F500 | DZ2FK6 | 2 x 2 to 600 MCM | LR9F7•75 to F7•81, LR9F75 to F81 | F500 | 3 each DZ2FK1 | — | 2x2 to 600 MCM | 4 to 500 MCM |
| F630, F800 | DZ2FL6 | 3 x 2 to 600 MCM | LR9F7•81, LR9F81 | F630 | 1 each DZ2FL1 DZ2FL2 DZ2FL3 | 1 each DZ2FR1 | 3x2 to 600 MCM | 4 to 500 MCM |
| F780 | DZ2FX6 | 4 x 1/0 to 750 MCM | — | — | — | — | — | — |

Table 18.72: Lugs, 2- and 4-Pole [31]

| Contactor Type LC1 | Lug Kit Catalog Number | Qty. Required | | AL/CU Cable Size |
|--------------------|------------------------|---------------|--------|--------------------|
| | | 2-Pole | 4-Pole | |
| F115 | DZ2FF1 | 4 | 8 | 14 to 2/0 |
| F150, F185 | DZ2FG1 | 4 | 8 | 6 to 3/0 |
| F225, F265, F330 | DZ2FH1 | 4 | 8 | 6 to 300 MCM |
| F400 | DZ2FJ1 | 4 | 8 | 4 to 500 MCM |
| F500 | DZ2FK1 | 4 | 8 | 2 X 2 to 600 MCM |
| F630 | DZ2FL• [32] | [32] | [32] | 3 X 2 to 600 MCM |
| F780 | DZ2FX1 | 4 | 8 | 4 X 1/0 to 750 MCM |

These clear plastic protective shrouds are an effective means to meet international touch-safe requirements for power terminals. They are designed to be used with power cables that have been bolted to the terminal.

NOTE: The protection shrouds do not attach to contactors or overloads using DZ2F lug kits.

Table 18.73: Power Terminal Protection Shrouds

| For Use With 2-, 3-, And 4-pole Contactors | Number of Shrouds Per Set | Catalog Number |
|---|---------------------------|----------------|
| LC1F115 | 6 | LA9F701 |
| LC1F150, F185 | 6 | LA9F702 |
| LC1F225, F265, F330, F400 and F4002, F500 and F5002 | 6 | LA9F703 |
| LC1F630, F6302 and F800 | 6 | LA9F704 |
| LC1F1154 | 8 | LA9F706 |
| LC1F1504 and F1854 | 8 | LA9F707 |
| LC1F2254, F2654, F3304, F4004, F5004 | 8 | LA9F708 |
| LC1F6304 | 8 | LA9F709 |

For contactors LC1F115, LC1F150, and LC1F185, an available touch-safe terminal block may be used in place of lugs for power connections.

Table 18.74: Insulated Terminal Blocks

| For contactor type LC1 | For overload relay LR9 | Maximum Cable Size | Catalog Number |
|------------------------|--|--------------------|----------------|
| F115, F150, F185 | F5•57, F5•63, F5•67, F5•69, F57, F63, F67, F69 | 300 MCM | LA9F103 |

TeSys F contactor accessories: TeSys™ D and F Accessories, page 18-16
 TeSys F overload relay accessories: TeSys F Overload Relay Accessories, page 18-22
 TeSys F replacement coils and parts: TeSys F Contact Kits, Arc Chambers, page 18-48, F AC, page 18-44, and TeSys F DC Coils, page 18-47
 TeSys F dimensions: TeSys™ F Contactors, Dimensions, page 18-53, TeSys™ F Overload Relay Dimensions, page 18-61

- [30] Lug kits ending in the number 6 include 6 identical lugs. In some cases the LR9F overload relay mounted directly on the load side of an LC1F contactor will require a different size lug for your choice of contactor and overload. If the two sizes are different, order 3 of each size lug. Mounting hardware (screws, washers, and nuts) are provided with the contactors and overload relays, not with the lugs.
- [31] Lugs for LC1F contactors and overload relays must be ordered separately. Each kit consists of one lug. Mounting hardware (screws, washers, nuts) are provided with the contactors, not the lugs.
- [32] For 2-pole F630 contactors, order two DZ2FL1 (L1 and T2), and two DZ2FL3 (L2 and T1). For 4-pole F6304, order two DZ2FL1 (L1 and T4), four DZ2FL2 (L2, T2, L3, T3) and two DZ2FL3 (L4 and T1).

TeSys D Overload Relay Accessories

Table 18.75: Mounting Kits and Plates^[1]



LA7D901



LA7D03

| Description | For use with overload relays: | Cat. No. |
|---|---|----------|
| Separate mounting kits for mounting to 35 mm DIN rail or for panel mounting with screws | LRD01-35 and LR3D01-35 | LAD7B10 |
| | LRD01-35 and LRD01-35 for ring tongue terminals | LAD7B106 |
| | LRD04L-32L, LR3D04L-32L, and LR9D01-32 | LAD7B205 |
| Mounting plates for screw mounting at 110 mm (4.3 in.) centers | LRD3●●●, LR3D3●●●, LR2D35●● | LA7D3064 |
| | LRD01-35, LR3D01-35, LR2D15●● | DX1AP25 |
| | LRD3●●●, LR3D3●●, LR2D35●● | LA7D902 |

Table 18.76: Accessories

| Description | For use with | Standard Packaging | Catalog Number |
|--|--|--------------------|-----------------------|
| Prewiring kit allows direct connection of the N.C. contact of relay LRD01-D32 or LR3D01-D32 to the contactor | LC1D09 to D18 | 10 | LAD7C1 |
| | LC1D25 to D38 | 10 | LAD7C2 |
| Stop button locking device | All relays except LRD01-D32, LR3D01-D32 and LR9D | 10 | LA7D901 |
| Remote stop/tripping or electrical reset ^[2] | LRD01-D32, LRD3, LR3D01-D32, LR3D3 | 1 | LAD703 ^[3] |
| | All relays except LRD01-D32, LR3D01-D31 | 1 | LA7D03 ^[3] |
| Reset by flexible cable 500 mm (19.6 in.) | LRD01-D32, LRD3, LR3D3 | 1 | LAD7305 |

Table 18.77: Control Circuit Voltages for LA7D03 and LAD703

| Volts | 12 | 24 | 48 | 110 | 220/230 | 380/400 | 415/440 |
|-------------|------------------|----|----|-----|---------|---------|---------|
| AC 50/60 Hz | J ^[4] | B | E | F | M | Q | N |
| DC | J | B | E | F | M | — | — |

TeSys F Overload Relay Accessories

Table 18.78: Mounting Plate for Overload Relay



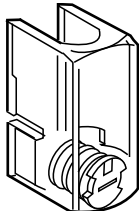
LA7F90●

| For use with relays | Catalog Number |
|---|----------------|
| LR9F5●57, F5●63, F5●67, F5●69, F5●71, F57, F63, F67, F69, and F71 | LA7F901 |
| LR9F7●75, F7●79, F5●81, F75, F79, and F81 | LA7F902 |

These clear plastic protective shrouds are an effective means to meet international finger-safe requirements for power terminals. They are designed to be used with power cables that have been bolted to the terminal.

NOTE: Protection shrouds do not attach to contactors/overloads using DZ2F lug kits.

Table 18.79: Power Terminal Protection Shrouds, Single-Pole



LA9F70●

| For use with relays | Catalog Number |
|---------------------------------------|----------------|
| LR9F5●57, F57 | LA9F701 |
| LR9F5●63, F5●67, F5●69, F63, F67, F69 | LA9F702 |
| LR9F5●71, F71 | LA9F705 |
| LR9F7●75, F7●79, F7●81, F75, F79, F81 | LA9F703 |

Table 18.80: Power Terminal Protection Shrouds, 3-Pole



LA7F701

| For use with relays | Catalog Number |
|---|----------------|
| LR9F5●57, F5●63, F5●67, F5●69, F57, F63, F67, F69 | LA7F701 |
| LR9F5●71, F71 | LA7F702 |
| LR9F7●75, F7●79, F7●81, F75, F79, F81 | LA7F703 |

Table 18.81: Connection Accessories (for Mounting Overload Relays Beneath Reversing Contactors)^[5]

| Application | For relays | For contactor | Set of 3 Busbars Catalog Number |
|-------------|---|------------------|---------------------------------|
| | LR9F5●57, F5●63, F5●67, F5●69, F69, F71 | LC1F115 | LA7F401 |
| | LR9F5●57, F5●63 | LC1F150 and F185 | LA7F402 |
| | LR9F5●71, F71 | LC1F185 | LA7F407 |
| | LR9F5●71, F71 | LC1F225 and F265 | LA7F403 |
| | LR9F7●75, F5●79, F75, F79 | LC1F225 to F400 | LA7F404 |
| | LR9F7●81, F81 | LC1F400 | LA7F404 |
| | LR9F7●75, F7●79, F7●81, F75, F79, F81 | LC1F500 | LA7F405 |
| | LR9F7●81, F81 | LC1F630 and F800 | LA7F406 |

Table 18.82: Marking Accessories

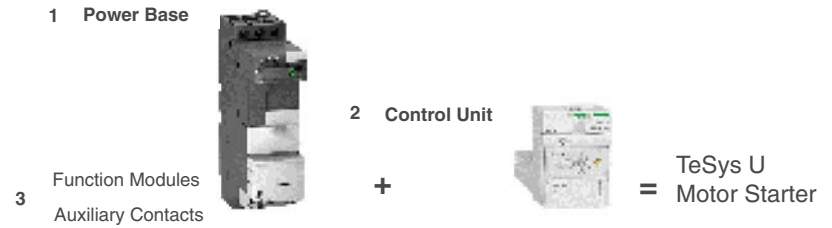
| Description | Sold in units of: | Catalog Number |
|------------------------|-------------------|----------------|
| Marker holder, snap-in | 100 | LA7D903 |

Main overload selection: TeSys D AC and DC Contactors, page 18-7 and TeSys™ F AC and DC Contactors, page 18-11
 TeSys D dimensions: TeSys™ D Open Starter Dimensions, page 18-57 and TeSys™ D Thermal Overload Relay Dimensions, page 18-59
 TeSys F dimensions: TeSys™ F Contactors, Dimensions, page 18-53, TeSys™ F Overload Relay Dimensions, page 18-61
 TeSys T: see TeSys™ T Motor Management System, page 16-101

[1] When using mounting plates, separate mounting kits are also required.
 [3] Part number to be completed by adding coil voltage code, (for example, LAD703F).
 [4] Not available for LRD01-D32, LR3D01-D32.
 [5] Mounting plate required.

TeSys™ U Motor Starter

The TeSys U motor starter is integrated, making it simple to choose and install. It consists of a control unit snapped in a power base. TeSys U can be configured to fit specific applications as well. Optional accessories include a reverser, a current limiter, predictive maintenance options, and communication options. For detailed information about TeSys U, visit our website.



Selecting TeSys U Motor Starters in Three Steps

Table 18.83: Step 1. Select Power Base (Only two different bases up to 32 A)

| Control Connection | Max. Current (A) | Maximum Horsepower Ratings | | | | | | Self-Protected Starter Base Catalog Number |
|---------------------------------------|------------------|----------------------------|-------|-------|-------|--------------|-------|---|
| | | Three-Phase | | | | Single-Phase | | |
| | | 200 V | 230 V | 460 V | 575 V | 115 V | 230 V | |
| With non-removable screw terminations | 12 | 3 | 3 | 7.5 | 10 | 1.5 | 2 | LUB12 |
| | 32 | 10 | 10 | 20 | 25 | 2 | 5 | LUB32 |
| Without screw terminations | 12 | 3 | 3 | 7.5 | 10 | 1.5 | 2 | LUB120 ^[1] |
| | 32 | 10 | 10 | 20 | 25 | 2 | 5 | LUB320 ^[1] |



Table 18.84: Step 2. Select Control Unit ^[2]

| Setting Range (A) | Standard 3-phase Class 10 trip ^[3] | Advanced 3-phase Class 10 trip ^[3] | Advanced single-phase Class 10 trip ^[3] | Advanced 3-phase Class 20 trip ^[3] |
|-------------------|---|---|--|---|
| 0.15–0.6 | LUCAX6●● | LUCBX6●● | LUCCX6●● | LUCDX6●● |
| 0.3–1.4 | LUCA1X●● | LUCB1X●● | LUCC1X●● | LUCD1X●● |
| 1.25–5.0 | LUCA05●● | LUCB05●● | LUCC05●● | LUCD05●● |
| 3–12 | LUCA12●● | LUCB12●● | LUCC12●● | LUCD12●● |
| 4.5–18 | LUCA18●● | LUCB18●● | LUCC18●● | LUCD18●● |
| 8–32 | LUCA32●● | LUCB32●● | LUCC32●● | LUCD32●● |

Table 18.85: Voltage Codes

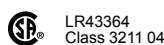
| Volts | 24 | 48–72 | 110–240 |
|----------|-------------------|-------------------|---------|
| DC | BL ^[4] | — | — |
| AC | B | — | — |
| DC or AC | — | ES ^[5] | FU |

Table 18.86: Step 3. Select Auxiliary Contacts (optional)

| Terminals | Contact Indicates | Contact Normal Status | Contact State for Each Mode ^[6] | | | | | | | Catalog Number |
|---|-------------------|-----------------------|--|-------|-----|--------------------|------------------------------|--|---|----------------|
| | | | Off | Ready | Run | Short Circuit Trip | Overload Trip (Manual Reset) | Overload Trip (Remote/Auto Reset) ^[7] | | |
| Auxiliary Contact Blocks | | | | | | | | | | |
| Screw | Ready condition | N.O. | O | I | I | O | O | I | I | LUA1C11 |
| | Fault condition | N.C. | I | I | I | O | O | I | I | LUA1C20 |
| Screw | Ready condition | N.O. | O | I | I | O | O | I | I | LUA1C20 |
| | Fault condition | N.O. | O | O | O | I | I | O | O | LUA1C20 |
| Auxiliary Contact Function Modules | | | | | | | | | | |
| Screw | Pole state | 2 N.O. | O | O | I | O | O | I | I | LUFN20 |
| Screw | Pole state | 1 N.O. and 1 N.C. | O | I | O | I | O | I | I | LUFN11 |
| Screw | Pole state | 2 N.C. | 1 | I | I | O | I | I | I | LUFN02 |

Table 18.87: Accessories

| Accessory | Quick Description | For details & selection, see: |
|--|--|---|
| Current limiter | Increases the breaking capacity to 130 kA @ 460 V and to 65 kA @ 575 V | Line Phase Barrier, Reverser, page 18-25 |
| Reverser | Stacked or side mounted (LU6MB0●●● only) | Line Phase Barrier, Reverser, page 18-25 |
| Line phase barrier | Required for use as a self-protected combination starter (UL 508 Type E) | Line Phase Barrier, Reverser, page 18-25 |
| Multifunction control unit | Has functions for monitoring and predictive maintenance | Line Phase Barrier, Reverser, page 18-25 |
| Function modules | Fault differentiation, thermal overload, motor load indication | Line Phase Barrier, Reverser, page 18-25 |
| Communication modules | Integrates into existing networks, major protocols are available | Communication Modules and Control Circuit Accessories, page 18-26 |
| Soft starter + TeSys U | Use Altistart U01soft starter with TeSys U | Altistart Drive and TeSys U Motor Starter, page 18-42 |
| Powerbus | Use TeSys U with a prewired system | Communication Modules and Control Circuit Accessories, page 18-26 |
| Configuration and connection accessories | SoMove software, bus bar, external handle | GV2 Cabling Accessories—Bus Bars, page 18-26 |



Accessories: Power Base and Plug-in Accessories, page 18-24 to Powerbus, page 18-26
 Dimensions: TeSys U Starter Dimensions, page 18-64
 Overload Relays: TeSys™ K Overload Relays, page 18-3
 Accessories: Aux Contact Blocks, page 18-14
 Dimensions: TeSys K Contactor Dimensions, page 18-63

^[1] For use with reversing modules or communication modules with prewired connector
^[2] The control unit contains solid-state overload relay and control power source for TeSys U. For more details on the different control units, their functions, and placement on the power base, see Power Base and Plug-in Accessories, page 18-24
^[3] Complete the catalog number by adding appropriate code from Table 18.85 Voltage Codes, page 18-23 (for example, LUCAX6FU).
^[4] DC voltage with range of 0.90 to 1.10 of nominal.
^[5] 48–72 Vdc; 48 Vac
^[6] I indicates closed contact; O indicates open contact
^[7] Requires multifunction or advanced control unit plus fault differentiation module LUFDA10.

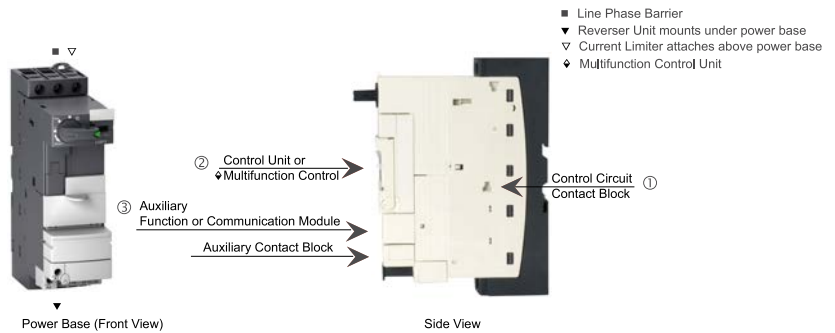
Control Units and Functions

Table 18.88: Control Units and Functions

| Reference | Standard LUCA | LUCB | Advanced LUCC | LUCD | Multifunction LUCM |
|----------------------------------|------------------|---|------------------|------|-----------------------|
| Protection type | | | | | |
| Class 10 | | | | | |
| Class 20 | | | | | |
| Class 5–30 | | | | | |
| Single Phase: LUCC Class 10 only | | | | | |
| Protection functions | | | | | |
| Short circuit | | | | | |
| Over current | | | | | |
| Thermal overload | | | | | |
| Phase loss | | | | | |
| Phase imbalance | | | | | |
| Ground fault | | | | | |
| Underload, long start, jam | | | | | |
| Control functions | | | | | |
| Manual reset | | | | | |
| Automatic or local/remote reset | | | | | |
| Fault differentiation | | | | | |
| Thermal alarm | | | | | |
| Motor load display | | | | | |
| Fault history | | | | | |
| Alarm threshold adjustment | | | | | |
| Tripping test | | | | | |
| | | = built-in the control unit | | | |
| | | = works with the related function modules (see Line Phase Barrier, Reverser , page 18-25) | | | |

Power Base and Plug-in Accessories

See below where to install accessories on the power base. Only one accessory can be installed in each location.



TeSys™ U Simple Motor Starter

Table 18.89: Line Phase Barrier (optional) [8]



Line Phase Barrier



Reverser Unit Assembled under the Power Base

| Description | Cat. No. |
|---|----------|
| Incoming line phase barrier to allow the TeSys U to be used as a self-protected combination starter according to UL508 Type E | LU9SP0 |

Table 18.90: Reverser

| Control Connection | Max. Current (A) | Maximum Horsepower Ratings | | | | | | Self-Protected Starter Base Catalog Number |
|-------------------------|------------------|----------------------------|-------|-------|--------------|-------|-------|--|
| | | Three-Phase | | | Single-Phase | | | |
| | | 200 V | 230 V | 460 V | 575 V | 115 V | 230 V | |
| With screw terminations | 12 | 3 | 3 | 7.5 | 10 | 1.5 | 2 | LU2B12[9] |
| | 32 | 10 | 10 | 20 | 25 | 2 | 5 | LU2B32[9] |

Table 18.91: Select Control Unit Options [10][11]

| Setting Range (A) | Standard Three-Phase Class 10 trip [12] | Advanced Three-Phase Class 10 trip [12] | Advanced Single-Phase Class 10 trip [12] | Advanced Three-Phase Class 20 trip [12] |
|-------------------|---|---|--|---|
| 0.15–0.6 | LUCAX6●● | LUCBX6●● | LUCCX6●● | LUCDX6●● |
| 0.3–1.4 | LUCA1X●● | LUCB1X●● | LUCC1X●● | LUCD1X●● |
| 1.25–5.0 | LUCA05●● | LUCB05●● | LUCC05●● | LUCD05●● |
| 3–12 | LUCA12●● | LUCB12●● | LUCC12●● | LUCD12●● |
| 4.5–18 | LUCA18●● | LUCB18●● | LUCC18●● | LUCD18●● |
| 8–32 | LUCA32●● | LUCB32●● | LUCC32●● | LUCD32●● |

Table 18.92: Voltage Codes

| Volts | 24 | 48–72 | 110–240 |
|----------|------------|--------|---------|
| DC | BL[13][14] | — | — |
| AC | B | — | — |
| DC or AC | — | ES[15] | FU |

Table 18.93: Reversing Modules for Field Addition

| Mounting | Catalog No. | Wiring Adapter | |
|----------|-------------|----------------|--|
| Beneath | LU2MB0 | LU9MR1C | Note: For LU2MB0 and LU6MB0, voltage code required; must match control unit. |
| Beside | LU6MB0 | LU9MR1 | |

Table 18.94: Current Limiter [16][17]

| Accessory | Application | Technical Data | Mounting | Cat. No. |
|--------------------------|---|-----------------------------------|-----------------------------------|----------|
| Current limiter/isolator | Additional current limiting aspects for the starter | 130 kA at 460 V 65 kA at 575 V | Direct mounting to LUB● and LU2B● | LUALB1 |
| Limiter cartridge | Replacement cartridge for LUALB1 | 130 kA at 460 V 65 kA at 575 V | — | LUALF1 |

Table 18.95: Control Unit Multifunction [16][18]

| Setting Range (A) | Multifunction programmable |
|-------------------|----------------------------|
| 0.15–0.6 | LUCMX6BL |
| 0.3–1.4 | LUCM1XBL |
| 1.25–5.0 | LUCM05BL |
| 3–12 | LUCM12BL |
| 4.5–18 | LUCM18BL |
| 8–32 | LUCM32BL |

Table 18.96: Function Modules [16][19]

| Module | Description | For use with: | Operation Requirements | Catalog Number |
|--|--|--|---|----------------|
| Fault differentiation with manual reset (thermal overload) | Provides indication between an overload trip and a short circuit trip. | Advanced control units only | 24–250 Vac or Vdc (power from control unit) | LUFDH11 |
| Fault differentiation with auto reset | | | | LUFDA10 |
| Thermal overload pre-alarm | Signals when the motor current reaches 1.05 of the full load setting on the control unit. | Advanced control units only | 24–250 Vac or Vdc (power from control unit) | LUFW10 |
| Motor load indication | Provides a signal proportional to the average currents in the three phases divided by the full load current setting of the control unit. The output corresponds to a load status of 0–2 times the full load setting of the control unit. | Advanced or multi-function control units | 4–20 mA (requires separate 24 Vdc power supply) | LUFV2 |
| Parallel wiring | Provides a convenient way to reduce control wiring and allow for connecting starters to a communications network by providing 24 Vdc for the starters. | Advanced or multi-function control units (24 Vdc only) and LU9BN11C or LU9MRC prewired connector | LU9G02 splitter box and PLC network | LUF00 |



Control Unit Multifunction



Alarm Differentiation



Parallel Wiring



Motor Load Indicator

[8] See Power Base and Plug-in Accessories, page 18-24 for placement on the power base.

[9] Voltage code required.

[10] The control unit contains solid-state overload relay and control power source for TeSys U. For more details on the different control units, their functions, and placement on the power base see Power Base and Plug-in Accessories, page 18-24.

[11] Control units for 4.5–18 and 8–32 can be used only with 32 A rated power bases (LUB32, LUB320, and LU2B32).

[12] Complete the catalog number by adding the appropriate code from Table 18.92 Voltage Codes, page 18-25 (for example, LUCAX6FU).

[13] DC voltage with range of 0.90 to 1.10 of nominal.

[14] Voltage code to use for a power base with a communication module.

[15] 48–72 Vdc; 48 Vac

[16] See Power Base and Plug-in Accessories, page 18-24 for placement on the power base.

[17] Increases the breaking capacity of the motor starter.

[18] Offers motor management system capabilities. For more details see the LUCM on Communication Modules and Control Circuit Accessories, page 18-26

[19] Offers customization for specific application requirements.

Communication Modules and Control Circuit Accessories

Table 18.97: Communication Modules [20][21]



| Module | Description | For use with: | Operation Requirements | Catalog Number |
|--------------------------------|---|--|---|----------------|
| AS-Interface Communication | Allows the TeSys U starter to be connected directly to the network using AS-Interface protocols. | Advanced or multi-function control units (24 Vdc only) and LU9BN11C or LU9MRC prewired connector | Requires separate 24 Vdc power supply and AS-Interface network | ASILUFC5 |
| AS-Interface V2 Communication | Allows the TeSys U starter to be connected directly to the network using AS-Interface V2 protocols. | Advanced or multi-function control units (24 Vdc only) and LU9BN11C or LU9MRC prewired connector | Requires separate 24 Vdc power supply and AS-Interface V2 network | ASILUFC51 |
| Modbus™ Communication Protocol | Allows the TeSys U starter to be connected directly to the network using Modbus protocols. | Advanced or multi-function control units (24 Vdc only) and LU9BN11C or LU9MRC prewired connector | Requires separate 24 Vdc power supply | LULC033 |
| Advantys™ STB Communication | Allows the TeSys U starter to be connected to the network using the Advantys STB protocol | Advanced or multi-function control units (24 Vdc only) and LU9BN11L or LU9MRL prewired connector | Requires separate 24 Vdc power supply | LULC15 |
| CANopen Communication | Allows the TeSys U starter to be connected to the network using the CANopen protocol | Advanced or multi-function control units (24 Vdc only) and LU9BN11L or LU9MRL prewired connector | Requires separate 24 Vdc power supply | LULC08 |
| Beckhoff Communication | Allows the TeSys U starter to be connected to the network using the Beckhoff protocol | Advanced or multi-function control units (24 Vdc only) and LU9BN11L or LU9MRL prewired connector | Requires separate 24 Vdc power supply | LULC14 |
| Profibus Communication | Allows the TeSys U starter to be connected to the network using the Profibus protocol | Advanced or multi-function control units (24 Vdc only) and LU9BN11L or LU9MRL prewired connector | Requires separate 24 Vdc power supply | LULC07 |
| DeviceNet™ Communication | Allows the TeSys U starter to be connected to the network using the Device Net protocol | Advanced or multi-function control units (24 Vdc only) and LU9BN11L or LU9MRL prewired connector | Requires separate 24 Vdc power supply | LULC09 |

Table 18.98: Control Circuit Accessories [20]

| Accessory | Application | Technical Data | Mounting | Catalog Number |
|--------------------------------------|---|--|--|--|
| Control circuit contact block | Switches control circuit power via LUB● handle (NEC430-74 compliance) | 5 A at 600 Vac 5 A at 250 Vdc | Side mounting to LUB● and LU2B● only | LUA8E20 |
| Through-the-door operating mechanism | Use to enclose TeSys LUB● only. | NEMA 1, 12, 3R, 4, 4X Black without trip indication | Kit | LU9APN43 |
| | | NEMA 1, 12, 3R, 4, 4X Red/Yellow without trip indication | Kit | LU9APN44 |
| Control circuit filters | Use with electronic or triac output controllers | Up to 150 Vac max. | Directly to coil terminals | Non-reversing Reversing LUA4F11 LUA4F12 |
| Pre-wire connector | Central control when using communication modules | See Table 18.97 Communication Modules, page 18-26 for usage. | Lower power terminals to communication module. | Non-reversing Reversing LU9BN11C LU9BN11L LU9MRL |

Power Bus Bars

Table 18.99: TeSys U Cabling Accessories—Bus Bars

| Description | Application | Pitch | Standard Pack | Catalog Number |
|-----------------------------------|-----------------------------------|-------|---------------|----------------|
| 3-Pole, 63 A Bus Bar | For feeding 2 TeSys U controllers | 45 | 1 | GV2G245 |
| | | 54 | 1 | GV2G254 |
| | | 72 | 1 | GV2G272 |
| | For feeding 3 TeSys U controllers | 45 | 1 | GV2G345 |
| | | 54 | 1 | GV2G354 |
| | | 72 | 1 | GV2G372 |
| | For feeding 4 TeSys U controllers | 45 | 1 | GV2G445 |
| | | 54 | 1 | GV2G454 |
| | | 72 | 1 | GV2G472 |
| For feeding 5 TeSys U controllers | 54 | 1 | GV2G554 | |

Additional accessories and components are available, including:

- Mounting accessories
- Gateways
- Cabling accessories
- Magelis™ remote display unit

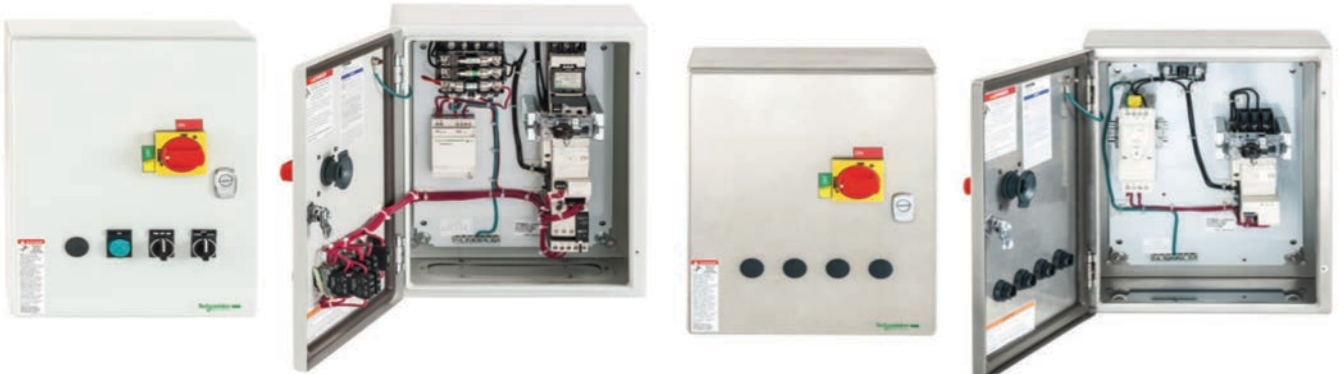
[20] See Power Base and Plug-in Accessories, page 18-24 for placement on the power base.

[21] Communication capabilities can be integrated into existing automation architecture via a variety of protocols.

1. Choose a base configuration

Table 18.100: Base Configurations ^{New!}

| Motor Voltage (V) | Ratings | | Max. Current (A) | Type 1/12/3R enclosure | | Type 4/4X enclosure | |
|-------------------|--------------|-------------|------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| | Max. HP | | | Non-reversing starter | Reversing starter | Non-reversing starter | Reversing starter |
| | Single phase | Three-phase | | Base Configuration Number | Base Configuration Number | Base Configuration Number | Base Configuration Number |
| 115 | 1.5 | | 12 | LE1U16 | LE2U16 | LE1U19 | LE2U19 |
| 230 | 2 | | | | | | |
| 200 | | 3 | | | | | |
| 230 | | 3 | | | | | |
| 460 | | 7.5 | | | | | |
| 575 | | 10 | | | | | |
| 115 | 2 | | 32 | LE1U36 | LE2U36 | LE1U39 | LE2U39 |
| 230 | 5 | | | | | | |
| 200 | | 10 | | | | | |
| 230 | | 10 | | | | | |
| 460 | | 20 | | | | | |
| 575 | | 25 | | | | | |



Type 1/12/3R enclosure

Type 4/4X enclosure

2. Choose Thermal Overload Relay (Plug-in Control Unit)



The thermal overload relay is a control unit that plugs into the TeSys U starter. No tool is needed to install or remove the control unit.

If you do not wish to select the thermal overload relay at this time, select Thermal Overload Relay Type codes N1 or N3 in function of the motor configuration (single phase or 3-phase) in [Thermal Overload Protection Types, page 18-28](#). A thermal overload relay can be selected and ordered later on (independently) before installation.

In order to select a thermal overload relay, you must follow the next 2 steps. First, select the thermal overload protection type code in [Thermal Overload Protection Types, page 18-28](#). Secondly, select the full load ampere code in [Full Load Amperage Code, page 18-28](#).

2.1 Choose the thermal overload protection type

Table 18.101: Thermal Overload Protection Types

| | Advanced Control Unit | | | Multifunction Control Unit | No Control Unit (Ordered later on independently) | |
|---------------------------------------|---|-----|-----|--|---|---------|
| |  | | |  | Single Phase | 3-Phase |
| Thermal Overload Protection Type Code | A ▲ | B ▲ | C ▲ | D ▲ | N1 | N3 |
| Protection Type | | | | | | |
| Single phase, Class 10 | ■ | | | | | |
| 3-phase, Class 10 | | ■ | | | | |
| 3-phase, Class 20 | | | ■ | | | |
| 3-phase, Selectable Class 5–30 | | | | ■ | | |
| Protection Functions | | | | | | |
| Short circuit | ■ | ■ | ■ | ■ | | |
| Over current | ■ | ■ | ■ | ■ | | |
| Thermal overload | ■ | ■ | ■ | ■ | | |
| Phase loss | | ■ | ■ | ■ | | |
| Phase imbalance | | ■ | ■ | ■ | | |
| Ground fault | ■ | ■ | ■ | ■ | | |
| Underload, long start, jam | ◆ | ◆ | ◆ | ■ | | |
| Control Functions | | | | | | |
| Automatic or local/remote reset | ◆ | ◆ | ◆ | ■ | | |
| Fault differentiation | ◆ | ◆ | ◆ | ■ | | |
| Thermal alarm | ◆ | ◆ | ◆ | ■ | | |
| Motor load display | ◆ | ◆ | ◆ | ■ | | |
| Fault history | | | | ■ | | |
| Alarm threshold adjustment | | | | ■ | | |
| Tripping test | ■ | ■ | ■ | ■ | | |

▲ Complete the Thermal Overload Relay Selection by adding the full load amperage code after the thermal overload protection type code.
 ■ Built-in Control Unit.
 ◆ Available when combined with appropriate Function module.

2.2 Choose the Motor Full Load Amperage

Table 18.102: Full Load Amperage Code

| Full Load Amperage Setting Range (A) | Full Load Amperage Code |
|--------------------------------------|-------------------------|
| 0.15–0.6 | A |
| 0.3–1.4 | B |
| 1.25–5.0 | C |
| 3–12 | D |
| 4.5–18 | E |
| 8–32 | F |

3. Choose the Control Power Source

Table 18.103: Control Power Source Code

| Control Circuit Source | System Type | Motor Voltage | | Control Voltage | | Control Power Source Code | | |
|------------------------|-------------------------------------|--|--------------|-----------------|--------------|---------------------------|----|-----|
| | | Voltage | Voltage Type | Voltage | Voltage Type | | | |
| Common Control | Single Phase | 120 | AC | 120 | AC | G7 | | |
| | | 240 | AC | 240 | AC | U7 | | |
| | Three-Phase | 208 | AC | 208 | AC | LE7 | | |
| | | 240 | AC | 240 | AC | U7 | | |
| Separate Control | Single Phase | 120 | AC | 24 | AC | B7 [22] | | |
| | | 120 | AC | 24 | DC | BD [22] | | |
| | | 120 | AC | 120 | AC | G7 [22] | | |
| | | 240 | AC | 24 | AC | B7 [22] | | |
| | | 240 | AC | 24 | DC | BD [22] | | |
| | | 240 | AC | 120 | AC | G7 [22] | | |
| | Three-Phase | 208 | AC | 24 | AC | B7 [22] | | |
| | | 208 | AC | 24 | DC | BD [22] | | |
| | | 208 | AC | 120 | AC | G7 [22] | | |
| | | 240 | AC | 24 | AC | B7 [22] | | |
| | | 240 | AC | 24 | DC | BD [22] | | |
| | | 240 | AC | 120 | AC | G7 [22] | | |
| | | 480 | AC | 24 | AC | B7 [22] | | |
| | | 480 | AC | 24 | DC | BD [22] | | |
| | | 480 | AC | 120 | AC | G7 [22] | | |
| | | 600 | AC | 24 | AC | B7 [23] | | |
| | | 600 | AC | 24 | DC | BD [23] | | |
| | | 600 | AC | 120 | AC | G7 [23] | | |
| | | Factory Installed Control Power Transformer [24] | Single Phase | 120 | AC | 24 | AC | V89 |
| | | | | 240 | AC | 120 | AC | V80 |
| 240 | AC | | | 24 | AC | V82 | | |
| 208 | AC | | | 24 | AC | V90 | | |
| Three-Phase | 208 | | AC | 120 | AC | V84 | | |
| | 240 | | AC | 24 | AC | V82 | | |
| | 240 | | AC | 120 | AC | V80 | | |
| | 480 | | AC | 24 | AC | V83 | | |
| | 480 | | AC | 120 | AC | V81 | | |
| | 600 | | AC | 24 | AC | V91 | | |
| | 600 | | AC | 120 | AC | V86 | | |
| | Factory Installed Power Supply [25] | | Single Phase | 120 | AC | 24 | DC | BD1 |
| | | | | 240 | AC | 24 | DC | BD2 |
| | | | | 208 | AC | 24 | DC | BD2 |
| Three-Phase | | 240 | AC | 24 | DC | BD2 | | |
| | | 480 | AC | 24 | DC | BD2 | | |
| | | 600 | AC | 24 | DC | BD6 | | |

4. Choose Communication Type

If you do not need communication capabilities, select communication code N.

If a Communication protocol is selected, Control Voltage must be 24 Vdc (Control Power Source Codes BD, BD1, BD2 or BD6 only. Refer to [Control Power Source Code](#), page 18-29).

If additional I/O is needed with communication, select communication code N in [Table 18.104 Communication Code](#), page 18-29 and choose between Forms W10, W11, W12, W13 and W14 from [Distributed 6 Input/6 Output Modicon STB with Communication Forms](#), page 18-31.

Table 18.104: Communication Code

| Communication Protocol | Communication Code |
|------------------------|--------------------|
| Modbus | M |
| Modbus TCP/IP | E |
| CANopen | C |
| DeviceNet | D |
| Beckhoff | B |
| Profibus | P |
| Advantys STB | A |
| AS-interface | J |
| AS-interface V2 | K |
| No Communication | N |

5. Choose Factory Modifications

When choosing Factory modifications, the Form code must be added at the end of the catalog number. If several forms are selected, they must be arranged in alphabetical order. There are two types of Forms available: abbreviated forms and standard forms.

[22] Form S must be added at the end of the catalog number.

[23] Form S6 must be added at the end of the catalog number. Current limiter is provided and factory installed.

[24] Two fuses in primary and one fuse in secondary provided as standard.

[25] Fuse holder with 2 fuses provided as standard.

5.1 Abbreviated Forms

Abbreviated forms are defined combinations of the most commonly ordered standard forms and are part of the profiled configurations with short lead time. For example, abbreviated form CP1 is a combination of standard forms C and P51.

Abbreviated forms cannot be mixed with other standard forms, with the exceptions of forms S and S6. If your combination of forms is not available as an abbreviated form, use only standard forms and arrange them in alphabetical order. For example, LE1U16BDG7NCP1S is a valid catalog number with the abbreviated form CP1. If you want to add standard Form P68, the valid catalog number becomes LE1U16BDG7NCP51P68S. LE1U16BDG7NCP1P68S is invalid because abbreviated form CP1 cannot be used with standard form P68.

Table 18.105: Abbreviated Forms

| Factory Modifications | Form |
|--|------|
| Hand/Off/Auto Selector Switch + Red ON LED Standard Pilot Light | CP1 |
| Hand/Off/Auto Selector Switch + Green ON LED Standard Pilot Light | CP2 |
| Hand/Off/Auto Selector Switch + Red ON LED Standard Pilot Light + Green OFF LED Standard Pilot Light | C12 |
| Hand/Off/Auto Selector Switch + Green ON LED Standard Pilot Light + Red OFF LED Standard Pilot Light | C21 |
| Start/Stop Push Buttons + Red ON LED Standard Pilot Light | AP1 |
| Start/Stop Push Buttons + Green ON LED Standard Pilot Light | AP2 |
| Start/Stop Push Buttons + Red ON LED Standard Pilot Light + Green OFF LED Standard Pilot Light | A12 |
| Start/Stop Push Buttons + Green ON LED Standard Pilot Light + Red OFF LED Standard Pilot Light | A21 |
| ON/OFF Selector Switch + Red ON LED Standard Pilot Light | C61 |
| ON/OFF Selector Switch + Green ON LED Standard Pilot Light | C62 |
| ON/OFF Selector Switch + Red ON LED Standard Pilot Light + Green OFF LED Standard Pilot Light | C66 |
| ON/OFF Selector Switch + Green ON LED Standard Pilot Light + Red OFF LED Standard Pilot Light | C67 |
| Red ON LED Standard Pilot Light + Green OFF LED Standard Pilot Light | P12 |
| Green ON LED Standard Pilot Light + Red OFF LED Standard Pilot Light | P21 |

5.2 Standard Forms

Table 18.106: Push Button Forms

| Factory Modifications | Form |
|--|------|
| Start/Stop | A |
| Forward/Reverse/Stop | A1 |
| ON/OFF | A3 |
| Miscellaneous | A11 |
| Stop | A13 |
| Start Push Button + Stop Mushroom Head | A22 |
| Emergency Stop Mushroom Head | A31 |
| Turn-To-Release Emergency Stop Mushroom Head | A32 |

Table 18.107: Selector Switch Forms

| Factory Modifications | Form |
|---------------------------|------|
| Hand/Off/Auto | C |
| Start/Stop | C1 |
| ON/Auto | C2 |
| ON/OFF | C6 |
| Hand/Auto | C8 |
| Forward/OFF/Reverse | C14 |
| Forward/Reverse | C20 |
| Three position | C34 |
| Two position | C35 |
| Keyed Hand/Off/Auto | C36 |
| Keyed Start/Stop | C37 |
| Keyed ON/Auto | C38 |
| Keyed ON/OFF | C39 |
| Keyed Forward/Off/Reverse | C43 |
| Keyed Forward/Reverse | C47 |

Self-Protected Combination Starters

Table 18.108: 22 mm Standard LED Pilot Light Forms

| Factory Modifications | Form |
|---------------------------|------|
| Red ON | P51 |
| Green OFF | P52 |
| White — Not Factory wired | P54 |
| Blue — Not Factory wired | P56 |
| Amber Overload Trip | P68 |
| Yellow SSC Trip | P69 |
| Red OFF | P91 |
| Green ON | P92 |
| Green Forward/Reverse | P95 |
| Red Forward/Reverse | P96 |

Table 18.109: 22 mm Push-to-Test LED Pilot Light Forms

| Factory Modifications | Form |
|---------------------------|------|
| Red ON | P42 |
| Red OFF | P43 |
| Green ON | P45 |
| Green OFF | P46 |
| Blue — Not Factory wired | P66 |
| White — Not Factory wired | P67 |
| Green Forward/Reverse | P79 |
| Red Forward/Reverse | P80 |
| Amber Overload Trip | P88 |
| Yellow SSC Trip | P89 |

Table 18.110: Separate Control Forms

| Factory Modifications | Form |
|--|------|
| Separate Control for starters with line voltage less or equal to 480 V | S |
| Separate Control for starters with line voltage equal to 600 V — Current Limiter is factory installed. | S6 |

Table 18.111: Additional Capacity Forms

| Factory Modifications | Form |
|----------------------------|------|
| 50 VA additional capacity | T10 |
| 100 VA additional capacity | T11 |

NOTE: Fuses are provided. Two fuses in primary and one fuse in secondary.

Table 18.112: Auxiliary Contact Forms

| Factory Modifications | Form |
|--|------|
| 2 N.O. | U8 |
| 1 N.O. and 1 N.C. | U9 |
| 2 N.C. | U10 |
| 1 N.C. fault signaling contact and 1 N.O. contact indicating starter is in "ready" state | U6 |
| 1 N.O. fault signaling contact and 1 N.O. contact indicating starter is in "ready" state | U7 |

Table 18.113: Auxiliary Relay Forms

| Factory Modifications | Form |
|---|-------|
| 4 poles screw clamp Control Relay — 4 N.O. | R1740 |
| 4 poles screw clamp Control Relay — 3 N.O. and 1 N.C. | R1731 |
| 4 poles screw clamp Control Relay — 2 N.O. and 2 N.C. | R1722 |
| Programmable Timer Relay | K1070 |

Table 18.114: Enclosure Forms

| Factory Modifications | Form |
|---|------|
| Oversized enclosure — Only available for Type 1/12/3R | G28 |
| Plain Blank Door — No covered pre-stamped holes | G30 |

Table 18.115: Miscellaneous Forms

| Factory Modifications | Form |
|--|---------------------------------------|
| Nameplate — 2"x1/2" screwed | A241 |
| Nameplate — 3"x1" screwed | A242 |
| Unwired Terminal Block | G50 ^[26] |
| Wired Terminal Block | G56 ^[26] / ^[27] |
| Wire Markers | G105 |
| Padlock Attachment | G122 |
| Transient Suppressor | U11 |
| Black IP65 through the Door Rotary Disconnect Handle | G40 |
| Special Factory Orders | SPL |
| Customer Control Wiring | Y217 |
| Solid Neutral Terminal Block | N |

Table 18.116: Increase Short Circuit Current Rating Forms

| Factory Modifications | Form |
|---|-------|
| 130 kA @480 V — Current Limiter factory installed | Y1261 |

[26] Add number of terminal block points required. Number must be in increments of 5.

[27] Wiring diagram must be provided by customer.

Table 18.117: Soft Starter Forms [28]

| Factory Modifications | Form |
|-----------------------|------|
| Motor FLA < 6A | H1 |
| 6 < Motor FLA < 9A | H2 |
| 9 < Motor FLA < 12A | H3 |
| 12 < Motor FLA < 22A | H4 |
| 22 < Motor FLA < 32A | H5 |

Table 18.118: Distributed 6 Input/6 Output Modicon STB with Communication Forms [29]

| Factory Modifications | Form |
|-----------------------|------|
| DeviceNet Bus | W10 |
| Modbus TCP Bus | W11 |
| Ethernet IP Bus | W12 |
| CANOpen Bus | W13 |
| Profibus Bus | W14 |

Table 18.119: Starter Status Indication Forms

| Factory Modifications | Form |
|--|------|
| Fault Differentiation Module — Manual Reset | U1 |
| Fault Differentiation Module — Automatic or remote reset | U2 |
| Thermal Overload Alarm Module | U3 |
| Motor Load Indication Module | U4 |

TeSys H™ Ultra Compact Starters

TeSys H ultra compact motor starters are extremely compact motor starters for asynchronous motors (AC53a utilization category) and resistive loads (AC51 utilization category). With up to 75% space savings, the 22.5 mm wide starter maintains that width even for a reversing starter! An available safety version features embedded Safe Torque Off and is SIL3 according to IEC 61508-1 and Ple according to ISO 13849-1. TeSys H is ideal for industries such as food and beverage, logistics, and durable goods.

Table 18.120: TeSys H Ultra Compact Motor Starters

| Non-Reversing | | | | | |
|--------------------|-------|-------|---------------------------|----------------|-------------------------|
| Maximum HP Ratings | | | Current Setting Range (A) | | Catalog Number [30][31] |
| 200 V | 230 V | 460 V | Inductive AC53a | Resistive AC51 | |
| 1/2 | 1/2 | 1 | 0.18-2.4 | 0.18-2.4 | LZ1H2X4 |
| 1 | 1.5 | 3 | 1.5-6.5 | 1.5-9.0 | LZ1H6X5 |
| Reversing | | | | | |
| Maximum HP Ratings | | | Current Setting Range (A) | | Catalog Number [30][31] |
| 200 V | 230 V | 460 V | Inductive AC53a | Resistive AC51 | |
| 1/2 | 1/2 | 1 | 0.18-2.4 | - | LZ2H2X4 |
| 1 | 1.5 | 3 | 1.5-6.5 | - | LZ2H6X5 |

Table 18.121: TeSys H Ultra Compact Safety Motor Starters (SIL3)

| Non-Reversing | | | | | |
|--------------------|-------|-------|---------------------------|----------------|-------------------------|
| Maximum HP Ratings | | | Current Setting Range (A) | | Catalog Number [30][31] |
| 200 V | 230 V | 460 V | Inductive AC53a | Resistive AC51 | |
| 1/2 | 1/2 | 1 | 0.18-2.4 | 0.18-2.4 | LZ7H2X4 |
| 1 | 1.5 | 3 | 1.5-6.5 | 1.5-9.0 | LZ7H6X5 |
| Reversing | | | | | |
| Maximum HP Ratings | | | Current Setting Range (A) | | Catalog Number [30][31] |
| 200 V | 230 V | 460 V | Inductive AC53a | Resistive AC51 | |
| 1/2 | 1/2 | 1 | 0.18-2.4 | - | LZ8H2X4 |
| 1 | 1.5 | 3 | 1.5-6.5 | - | LZ8H6X5 |

Table 18.122: TeSys H Voltage Codes

| 24 Vdc | 110-230 Vac (50/60Hz) |
|--------|-----------------------|
| BD | FU |



TeSys H™ Ultra Compact Starter



TeSys H Ultra Compact Safety Starter

[28] Motor Voltage must be equal to or less than 480 Vac and Control Voltage must be 24 Vdc (Control Power Source Codes BD, BD1, or BD2 only). Refer to [Control Power Source Code](#), page 18-29.

[29] Distributed I/O Modicon STB is factory wired.

[30] Complete the catalog number by adding the voltage code from [TeSys H Voltage Codes](#), page 18-32. For example, LZ1H2X4 becomes LZ1H2X4BD.

[31] For spring terminals, add 3 to the catalog number prior to adding the voltage code. For example, LZ1H2X4BD becomes LZ1H2X43BD.

TeSys™ GV Family

The TeSys GV family of products are 3-pole, horsepower rated, UL 508 listed manual starters. They include a manual disconnect, class 10 ambient-compensated thermal overload relay, and instantaneous, magnetic trip mechanism in one compact unit.

Any GV manual starter can be used alone for local manual control of a motor with individual full-load currents up to 220 A. The GV products may also be used in group motor installations in accordance with National Electric Code article 430-53. Group motor installations give you greater panel density for smaller size and require fewer parts and less wiring for installation when compared to conventional panel designs.

The GV2P and GV3P products also have an additional UL508 Type E rating as a stand-alone, self-protected manual combination starter. The UL508 Type E rating requires the addition of line side insulating barrier GV2GH7 for the GV2P or a GV3G66 line side insulating barrier and a GVAM11 short circuit signaling contact for the GV3P. The GV2P and GV3P self-protected manual combination starters may also be combined with specific size contactors from the LC1D product family for a UL508 Type F combination starter construction. These products have a UL-listed short circuit current rating from 10–100 kA depending on application size and voltage. Refer to the Motor Control Solutions for the North American Market data bulletin (8536DB0901) for more information.



GV2ME

Table 18.123: GV2, GV3

| Thermal Setting (A) | Maximum Horsepower Ratings | | | | | | | | | Group Motor Applications Max. Fuse or Circuit Breaker | GV2ME push button [32] Catalog Number | GV2/3P rotary handle Catalog Number |
|---------------------|----------------------------|-------|-------|-------------|-------|-------|-------|-------|-----|--|--|--|
| | Single-Phase | | | Three-Phase | | | | | | | | |
| | 115 V | 200 V | 230 V | 115 V | 200 V | 230 V | 460 V | 575 V | | | | |
| 0.10–0.16 | — | — | — | — | — | — | — | — | — | 450 A | GV2ME01 | GV2P01 |
| 0.16–0.25 | — | — | — | — | — | — | — | — | — | 450 A | GV2ME02 | GV2P02 |
| 0.25–0.40 | — | — | — | — | — | — | — | — | — | 450 A | GV2ME03 | GV2P03 |
| 0.40–0.63 | — | — | — | — | — | — | — | — | — | 450 A | GV2ME04 | GV2P04 |
| 0.63–1 | — | — | — | — | — | — | — | — | 1/2 | 450 A | GV2ME05 | GV2P05 |
| 1–1.6 | — | — | 1/10 | — | — | — | 3/4 | 3/4 | — | 450 A | GV2ME06 | GV2P06 |
| 1.6–2.5 | — | 1/6 | 1/6 | — | 1/2 | 1/2 | 1 | 1.5 | — | 450 A | GV2ME07 | GV2P07 |
| 2.5–4 | 1/8 | 1/4 | 1/3 | — | 3/4 | 3/4 | 2 | 3 | — | 450 A | GV2ME08 | GV2P08 |
| 4–6.3 | 1/4 | 1/2 | 1/2 | 3/4 | 1 | 1.5 | 3 | 5 | — | 450 A | GV2ME10 | GV2P10 |
| 6–10 | 1/2 | 1 | 1.5 | 1 | 2 | 3 | 5 | 7.5 | — | 450 A | GV2ME14 | GV2P14 |
| 9–14 | 3/4 | 2 | 2 | 2 | 3 | 3 | 10 | 10 | — | 450 A | GV2ME16 | GV2P16 |
| 13–18 | 1 | 2 | 3 | 2 | 5 | 5 | 10 | 15 | — | 450 A | GV2ME20 | GV2P20 |
| 17–23 | 1.5 | 3 | 3 | 3 | 5 | 7.5 | 15 | 20 | — | 450 A | GV2ME21 | GV2P21 |
| 20–25 | 2 | — | — | — | 7.5 | 7.5 | 15 | 20 | — | 450 A | GV2ME22 | GV2P22 |
| 24–32 | 2 | 5 | 5 | 5 | 7.5 | 10 | 20 | 25 | — | 450 A | GV2ME32 | GV2P32 |
| 9–13 | 1/2 | — | 1.5 | — | 3 | 3 | 7.5 | 10 | — | — | — | GV3P13 |
| 12–18 | 3/4 | — | 2 | — | 3 | 5 | 7.5 | 10 | — | — | — | GV3P18 |
| 17–25 | 1.5 | — | 3 | — | 5 | 7.5 | 15 | 20 | — | — | — | GV3P25 |
| 23–32 | 2 | — | 3 | — | 7.5 | 7.5 | 20 | 25 | — | — | — | GV3P32 |
| 30–40 | 3 | — | 5 | — | 10 | 10 | 25 | 30 | — | — | — | GV3P40 |
| 37–50 | 3 | — | 7.5 | — | 10 | 10 | 30 | 40 | — | — | — | GV3P50 |
| 48–65 | 3 | — | 10 | — | 15 | 15 | 40 | 50 | — | — | — | GV3P65 |



GV2P



GV3P

Table 18.124: GV7

| Thermal Setting (A) | Maximum Three-Phase Horsepower Ratings | | | | Toggle Operator | |
|---------------------|--|-------|-------|-------|-----------------------------------|-------------------------------|
| | 200 V | 230 V | 460 V | 575 V | Standard Interrupt Catalog No. | High Interrupt Catalog No. |
| 12–20 | — | 5 | 10 | 15 | GV7RE20 | GV7RS20 |
| 15–25 | — | 7.5 | 15 | 20 | GV7RE25 | GV7RS25 |
| 25–40 | — | 10 | 30 | 30 | GV7RE40 | GV7RS40 |
| 30–50 | — | 15 | 30 | 40 | GV7RE50 | GV7RS50 |
| 48–80 | — | 30 | 60 | 75 | GV7RE80 | GV7RS80 |
| 60–100 | — | 30 | 75 | 100 | GV7RE100 | GV7RS100 |
| 90–150 | — | 50 | 100 | 150 | GV7RE150 | GV7RS150 |
| 132–220 | — | 75 | 150 | 200 | GV7RE220 | GV7RS220 |



GV7RE20

Accessories: TeSys™ GV2, GV3, GV7 Manual Starters and Protectors, page 18-37
Dimensions: TeSys Manual Starters and Protectors, page 18-66 and TeSys GV7 Manual Starters and Protectors, page 18-69

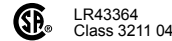
[32] For spring terminals add 3 to the catalog number (for example, GV2ME013). GV2ME32 is not available with spring terminals. For ring terminals, add 6.

Motor Protector Circuit Breakers

Listed to UL 60947-4-1, these manual starters provide built-in thermal and magnetic protection.

Table 18.125: PowerPact™ Electronic Motor Protector Circuit Breakers (Manual Starters) ^{New!}

| Electronic Trip Unit Type | Frame | Sensor Rating | Trip Unit | Full Load Ampere Rating (FLA) | Isd (x FLA) | G Interrupting | J Interrupting | L Interrupting | R Interrupting |
|---------------------------|---------|---------------|-----------|-------------------------------|-------------|----------------|----------------|----------------|----------------|
| | | | | | | Cat. No. | Cat. No. | Cat. No. | Cat. No. |
| Standard ^[33] | H-Frame | 30 | 2.2 M | 14-25 | 5-13 x FLA | HGL36030M38X | HJL36030M38X | HLL36030M38X | HRL36030M38X |
| | | 50 | | 14-42 | 5-13 x FLA | HGL36050M38X | HJL36050M38X | HLL36050M38X | HRL36050M38X |
| | | 100 | | 30-80 | 5-13 x FLA | HGL36100M38X | HJL36100M38X | HLL36100M38X | HRL36100M38X |
| | | 150 | | 58-130 | 5-13 x FLA | HGL36150M38X | HJL36150M38X | HLL36150M38X | HRL36150M38X |
| | | 250 | | 114-217 | 5-13 x FLA | HGL36250M38X | HJL36250M38X | HLL36250M38X | HRL36250M38X |
| | L-Frame | 400 | 2.3 M | 190-348 | 5-13 x FLA | LGL36400M38X | LJL36400M38X | LLL36400M38X | LRL36400M38X |
| | | 600 | | 312-520 | 5-13 x FLA | LGL36600M38X | LJL36600M38X | LLL36600M38X | LRL36600M38X |



TeSys™ GV2 Accessories and Enclosures

Table 18.126: GV2 Mounting Accessories

| Description | Application | Standard Pack ^[34] | Catalog Number |
|---------------------------|---|-------------------------------|----------------|
| Common mounting plate | For GV2 plus any 3-pole LC1D09 thru LC1D25 contactor (supplied with GV1G02 connector) | 1 | GK2AF01 |
| Adapter plate | For screw mounting of GV2M | 10 | GV2AF02 |
| Combination block | Interconnect for GV2 plus any 3-pole LC1K or LP1K contactor | 10 | GV2AF01 |
| | Interconnect GV2 and LC1D09 thru D32 | 10 | GV2AF3 |
| | Interconnect GV2 and LC1D09 thru D32 mounted on LAD31 | 10 | GV2AF4 |
| 7.5 mm compensation plate | To allow mounting of GV2M and GV2P on a common bus bar | 10 | GV1F03 |
| Mounting plate | For mounting GV2ME or GV2P and contactor LC1D09 thru D32 | 10 | LAD31 |
| | | 10 | LAD311 |

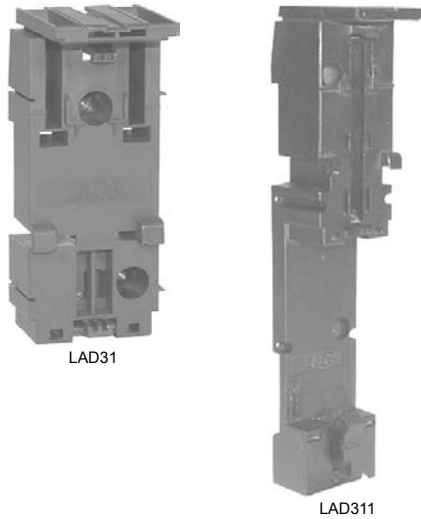


Table 18.127: GV2 Cabling Accessories—Bus Bars

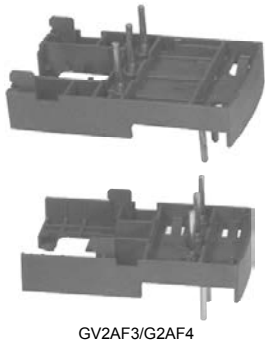
| Description | Application | Pitch | Standard Pack ^[34] | Catalog Number |
|----------------------------|----------------------------|-------|-------------------------------|----------------|
| 3-Pole, 63 A Bus Bar | For feeding 2 GV2 starters | 45 | 1 | GV2G245 |
| | | 54 | 1 | GV2G254 |
| | | 72 | 1 | GV2G272 |
| | For feeding 3 GV2 starters | 45 | 1 | GV2G345 |
| | | 54 | 1 | GV2G354 |
| | For feeding 4 GV2 starters | 45 | 1 | GV2G445 |
| 54 | | 1 | GV2G454 | |
| 72 | | 1 | GV2G472 | |
| For feeding 5 GV2 starters | | 54 | 1 | GV2G554 |

Table 18.128: GV2 Other Cabling Accessories

| Description | Application | Standard Pack ^[34] | Catalog Number |
|---------------------------|---|-------------------------------|----------------|
| Terminal blocks | Top feed for use with bus bars | 1 | GV1G09 |
| | Bottom feed, to be used with bus bars; can be fitted with GV1L3 current limiter | 1 | GV2G05 |
| Protective end cover | To cover unused bus bar outlets | 5 | GV1G10 |
| 3-pole flexible connector | For connecting a GV2 to an LC1D09 thru D25 contactor | 10 | GV1G02 |
| Incoming line spacer | For GV2P when used in UL 508 Type E applications ^[35] | 1 | GV2GH7 |

Table 18.129: GV2 Other Accessories

| Description | Application | Standard Pack ^[34] | Catalog Number |
|---|--|-------------------------------|----------------|
| Visible isolation block—GV2P | Front mounting, 3-pole visible isolation on incoming side of GV2P | 1 | GV2AK00 |
| Current limiter—GV2 | Increases interrupt capacity when attached to GV2ME or GV2P | 1 | GV1L3 |
| Through-the-door operating mechanism kits | NEMA 1, 12, Black with trip indication, for use with GV2P | 1 | GV2APN01 |
| | NEMA 1, 12, Red/Yellow with trip indication, for use with GV2P | 1 | GV2APN02 |
| | NEMA 3R, 4, 4X, Red/Yellow without trip indication, for use with GV2P | 1 | GV2APN04 |
| Angle bracket | Operating mechanism support shaft for deep enclosures (≥ 250 mm), for use with GV2P | 1 | GVAPK11 |
| Mounting bracket | Mounting bracket for installing GV2P operating mechanism | 1 | GVAPH02 |
| Operating mechanism short shaft | One-piece short shaft for installing operating mechanisms in shallow enclosures, for use with GV2P, GV3P and TeSys U | 1 | GVAPA2 |
| SoLink non-reversing communications link | Connection module for directly mounted GV2 and TeSys D contactor to PLC | 5 | LAD5C11 |
| SoLink reversing communications link | Connection module for directly mounted GV2 and reversing TeSys D contactor to PLC | 3 | LAD5C12 |
| Laser tool | Laser tool for installing through-the-door kits | 1 | GVAPL01 |



[33] The standard trip unit offers Class 5, 10, and 20 and phase unbalance or phase loss protection.

[34] Orders must specify multiples of quantities listed.

[35] Cannot be used with front-mounted auxiliary contact block.

Table 18.130: GV2 Enclosures

| Description | Listing | Mounting | Enclosure Rating | Max. Side Mounting Aux. Contacts | | Catalog Number |
|--|----------------------------|------------------------------------|------------------|----------------------------------|------------|----------------|
| | | | | Left Side | Right Side | |
| Enclosures for GV2ME with or without accessories | CSA Listed. Not UL Listed. | Surface mounting | NEMA 1, IP41 | 1 | 1 | GV2MC01 |
| | | | NEMA 12/4, IP55 | 1 | 1 | GV2MC02 |
| | | Flush mounting | NEMA 1, IP41 | 1 | 1 | GV2MP01 |
| | | | NEMA 12/4, IP55 | 1 | 1 | GV2MP02 |
| | | Flush mounting, front face reduced | NEMA 1, IP41 | 0 | 1 | GV2MP03 |
| | | | NEMA 12/4, IP55 | 0 | 1 | GV2MP04 |

Table 18.131: GV2 Enclosures Accessories

| Description | Type | Standard Pack ^[36] | Catalog Number | |
|---|--|---------------------------------|----------------|---------|
| Padlocking device for GV2M (when padlocked, starter is automatically in Off position) | — | 1 | GV2V01 | |
| Mushroom head stop push button (40 mm, red) ^[37] | Spring return | 1 | GV2K011 | |
| | Latching | Key release (Ronis key no. 455) | 1 | GV2K021 |
| | | Turn to Release | 1 | GV2K031 |
| | Latching / Padlockable Turn to Release | 1 | GV2K04 | |
| Sealing kit | For enclosures GV2MC01 and GV2MP01 | 10 | GV2E01 | |
| Pilot Light (neon) | 110 V | Green | 10 | GV2SN13 |
| | 110 V | Red | 10 | GV2SN14 |
| | 110 V | Orange | 10 | GV2SN15 |
| | 110 V | White | 10 | GV2SN17 |
| | 220/240 V | Green | 10 | GV2SN23 |
| | 220/240 V | Red | 10 | GV2SN24 |
| | 220/240 V | Orange | 10 | GV2SN25 |
| | 220/240 V | White | 10 | GV2SN27 |
| | 380/440 V | Green | 10 | GV2SN33 |
| | 380/440 V | Red | 10 | GV2SN34 |
| | 380/440 V | Orange | 10 | GV2SN35 |
| | 380/440 V | White | 10 | GV2SN37 |

[36] Orders must specify multiples of quantities listed.
[37] Supplied with IP55 sealing kit.

Voltage Trips

Table 18.132: Voltage Trips



GVAU116

Only one trip or fault signaling contact can be installed per GV2/GV3 device.

| Description | Characteristics | Voltage | Frequency | Cat. No.[38] |
|---------------------------|---|-----------|-----------|--------------|
| Voltage trips GV2 or GV3P | Undervoltage or Shunt trip (external mounting, 1 block right side only) | 24 V | 50 Hz | GVA●025 |
| | | | 60 Hz | GVA●026 |
| | | 48 V | 50 Hz | GVA●055 |
| | | | 60 Hz | GVA●056 |
| | | 100–110 V | 50/60 Hz | GVA●107 |
| | | 110–115 V | 50 Hz | GVA●115 |
| | | | 60 Hz | GVA●116 |
| | | 120–127 V | 50 Hz | GVA●125 |
| | | 127 V | 60 Hz | GVA●115 |
| | | 200 V | 50 Hz | GVA●207 |
| | | 200–220 V | 60 Hz | GVA●207 |
| | | 220–240 V | 50 Hz | GVA●225 |
| | | | 60 Hz | GVA●226 |
| | | 380–400 V | 50 Hz | GVA●385 |
| | | | 60 Hz | GVA●386 |
| | | 415–440 V | 50 Hz | GVA●415 |
| | | 415 V | 60 Hz | GVA●416 |
| | | 440 V | 60 Hz | GVA●385 |
| 480 V | 60 Hz | GVA●415 | | |
| 500 V | 50 Hz | GVA●505 | | |
| 600 V | 60 Hz | | | |

Table 18.133: Voltage Trips—Technical Data (GV2AU, GV2AS)

| Rated Voltage—660 Vac | | | | | |
|-----------------------|----------------|----------------|-----------------|------------------|---------------------|
| Model | Inrush | Sealed | Pick-Up Voltage | Drop-Out Voltage | Operating Time [39] |
| GVAU | 12 VA / 8 W | 3.5 VA / 1.1 W | 0.8–1.1 | 0.35–0.7 | 10–15 ms |
| GVAS | 14 VA / 10.5 W | 5 VA / 1.6 W | 0.7–1.1 | 0.2–0.75 | 10–15 ms |

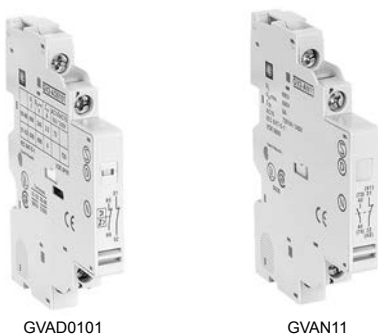
Table 18.134: Auxiliary Contact Blocks [40]



GVAE11

| Description | Mounting Location | Max. No. of Blocks | Contact Type | Sold in lots of | Cat. No. |
|---|---------------------|--------------------|---------------------|-----------------|-------------|
| Instantaneous auxiliary contacts GV2 or GV3P | Front [41][42] | 1 | N.O. or N.C. [43] | 1 | GVAE11 |
| | | | N.O. + N.C. | 10 | GVAE11 [44] |
| | N.O. + N.O. | 1 | GVAE20 [44] | | |
| Fault signaling contact + instantaneous auxiliary contact GV2 or GV3P | Left Hand Side [45] | 2 | N.O. + N.C. | 1 | GVAN11 [44] |
| | | | N.O. + N.O. | 1 | GVAN20 [44] |
| | | | N.O. (fault) + N.O. | 1 | GVAD1010 |
| | | | N.O. (fault) + N.C. | 1 | GVAD1001 |
| Short circuit signaling contact GV2 or GV3P | Left Hand Side | 1 | N.C. (fault) + N.O. | 1 | GVAD0110 |
| | | | N.C. (fault) + N.C. | 1 | GVAD0101 |
| Short circuit signaling contact GV2 or GV3P | Left Hand Side | 1 | SPDT | 1 | GVAM11 |

Table 18.135: GV3P Accessories



GVAD0101

GVAN11

| Accessory | Application / Use With | Standard Pack | Cat. No. |
|---|--|---------------|----------|
| Through-the-door operating mechanism kits | NEMA 1, 12, Black with trip indication, for use with GV3P | 1 | GV3APN01 |
| | NEMA 1, 12, Red/Yellow, with trip indication, for use with GV3P | 1 | GV3APN02 |
| | NEMA 3R, 4, 4X Red/Yellow without trip indication, for use with GV3P | 1 | GV3APN04 |
| Angle bracket | Operating mechanism support shaft for deep enclosures (≥ 300 mm), for use with GV3P | 1 | GVAPK12 |
| Mounting bracket | Mounting bracket for installing GV3P operating mechanism | 1 | GVAPH03 |
| 3-pole, 115 A busbar | For feeding 2 GV3P starters, 64 mm pitch | 1 | GV3G264 |
| | For feeding 3 GV3P starters, 64 mm pitch | 1 | GV3G364 |
| Incoming line spacer | Line spacer for GV3P when used in UL 508 Type E applications. One spacer required on line side. | 1 | GV3G66 |
| IP 20 cover | IP20 protective cover for ring tongue versions of GV3P and 3-pole TeSys D Everlink contactors. Two covers required for line and load side. | 1 | LAD96570 |
| Padlocking device | For use with up to 4 padlocks (not supplied), Ø 6 mm shank maximum | 1 | GV2V03 |
| Operating mechanism short shaft | One-piece short shaft for installing operating mechanisms in shallow enclosures, for use with GV2P, GV3P and TeSys U | 1 | GVAPA2 |
| SoLink non-reversing communications link | Connection module for directly mounted GV3 and TeSys D contactor to PLC | 5 | LAD5C31 |
| SoLink reversing communications link | Connection module for directly mounted GV3 and reversing TeSys D contactor to PLC | 3 | LAD5C32 |
| Laser tool | Laser tool for installing through-the-door kits | 1 | GVAPL01 |
| S-shaped busbar | For connecting GV3P starters and LC1D40A-65A contactors side by side without intrawiring | 1 | GV3S |

[38] To order an undervoltage trip: replace the bullet (●) with a U (for example, GVAU025).
To order a shunt trip: replace the bullet (●) with an S (for example, GVAS025).

[39] From the loss of voltage at the trip terminals to the opening of the starter contacts.

[40] One trip or one fault signaling can be fitted per GV3.

[41] Cannot be used with GV2GH7 insulator.

[42] Mounting of a GVAE contact block or a GV2AK00 visible isolation block on GV2P.

[43] Choice of N.C. or N.O. contact operation, depending on which way the reversible block is mounted.

[44] For spring terminals, add 3 to the catalog number (for example, GVAE113).

[45] The GVAD is always mounted next to the starter.

TeSys™ GV2, GV3, GV7 Manual Starters and Protectors

Table 18.136: GV7 Auxiliary Contact Blocks (auxiliary contact functions depends on location inside the device)



GV7AE11

| Description | Mounting Location | Max. No. of Blocks | Contact Type | Catalog Number |
|------------------|-------------------|--------------------|--------------|----------------|
| Standard | | | | |
| Instantaneous | Inside Device | 2 per device | N.O. + N.C. | GV7AE11 |
| Trip Indication | | 1 per device | N.O. + N.C. | |
| Fault Indication | | 1 per device | N.O. + N.C. | |
| Low Level | | | | |
| Instantaneous | Inside Device | 2 per device | N.O. + N.C. | GV7AB11 |
| Trip Indication | | 1 per device | N.O. + N.C. | |
| Fault Indication | | 1 per device | N.O. + N.C. | |

Table 18.137: GV7 Voltage Trips



GV7AD111



GV7AS055

| Description | Mounting Location | Max. No. of Blocks | Voltage | Catalog Number | |
|-------------------|-------------------|--------------------|-----------------|----------------|----------|
| Undervoltage Trip | Inside Device | 1 per device | 48 Vac | 50 Hz | GV7AU055 |
| | | | 110–130 Vac | 50/60 Hz | GV7AU107 |
| | | | 200–240 Vac | 50/60 Hz | GV7AU207 |
| | | | 380–440/480 Vac | 50/60 Hz | GV7AU387 |
| | | | 525 Vac | 50 Hz | GV7AU525 |
| Shunt Trip | Inside Device | 1 per device | 48 Vac | 50 Hz | GV7AS055 |
| | | | 110–130 Vac | 50/60 Hz | GV7AS107 |
| | | | 200–240 Vac | 50/60 Hz | GV7AS207 |
| | | | 380–440/480 Vac | 50/60 Hz | GV7AS387 |
| | | | 525 Vac | 50 Hz | GV7AS525 |
| Fault Indication | Inside Device | 1 per device | 24–130 | – | GV7AD111 |
| | | | 110–415 | – | GV7AD112 |

Table 18.138: GV7 Wiring Accessories



GV7AC01



GV7RE20

| Description | Application | Catalog Number |
|--|--|----------------|
| Box Lugs | Sold in lots of 3 for GV7R•20–150[46] | GV7AC021 |
| | Sold in lots of 3 for GV7R•220[46] | GV7AC022 |
| Phase Barriers, Bus Bars & Shrouds | | |
| Terminal Extension Kit | Increases center distance between phases to 45 mm | GV7AC03 |
| Terminal Shroud Kit | Covers terminal connections for touch safe protection | GV7AC01 |
| Phase Barriers | Provides maximum phase separation at connection points | GV7AC04 |
| Insulating Barriers | Provides insulation between connectors and backplate | GV7AC05 |
| Busbars and Covers | Connect to LC1F115–185 contactor | GV7AC06 |
| | Connect to LC1F225–265 contactor | GV7AC07 |
| Operating Handles and Accessories | | |
| Black rotary operating handle with black legend plate (mounts directly on device) | | GV7AP03 |
| Red rotary operating handle with yellow legend plate (mounts directly on device) | | GV7AP04 |
| Conversion accessory to mount the device directly on panel door | | GV7AP05 |
| Black rotary operating handle with black legend plate and extension kit (185–600 mm) | | GV7AP01 |
| Red rotary operating handle with yellow legend plate and extension kit (185–600 mm) | | GV7AP02 |
| Padlocking device for toggle handle (max. 38 mm padlocks) | | GV7V01 |

Table 18.139: Operating Handles



GV7AC021



GV7V01

| Accessory | Description | Catalog Number |
|---------------------------|--|----------------|
| Operating Handle (Qty: 1) | NEMA 1/12 Black handle with trip indication | GVAPB54 |
| | NEMA 1/12 Red/Yellow handle with trip indication | GVAPR54 |
| | NEMA 3R/4/4X Black handle without trip indication | GVAPB65 |
| | NEMA 3R/4/4X Red/Yellow handle without trip indication | GVAPR65 |

Dimensions: TeSys GV2 and GV3 Manual Starter and Protector Dimensions, page 18-66 and TeSys GV7 Manual Starter and Protector Dimensions, page 18-69



GV7AP03



GVAPB54



GVAPR54

[46] Wire size: GV7AC021 = 14 to 3/0 AWG; GV7AC022 = 14 AWG to 350 kcmil.

Enclosed TeSys™ D Starters

TeSys D enclosed full-voltage starters are available in Type 1 and Type 12/3R enclosures. The enclosed TeSys D offer accepts standard TeSys D accessories and all Insta-Kits™ control units and control power transformer kits. Standard capacity control power transformers with built-in fuse block can be installed in the standard enclosure. For extra capacity, please refer to your local distributor or Schneider Electric sales office.

Table 18.140: Enclosed Full Voltage Non-Reversing Starters

| Max. Horsepower Ratings | | | | | | Auxiliary Contacts On Each Contactor | | Current Rating of Contactor | Catalog Number | |
|-------------------------|-------|-------------|-------|-------|-------|--------------------------------------|------|-----------------------------|-----------------|-----------------|
| Single-Phase | | Three-Phase | | | | N.O. | N.C. | | Type 1 | Type 12/3R |
| 115 V | 230 V | 200 V | 230 V | 460 V | 575 V | | | | | |
| 1/3 | 1 | 2 | 2 | 5 | 7.5 | 1 | 1 | 9 | LE1D093A62***** | LE1D093A72***** |
| 1/2 | 2 | 3 | 3 | 7.5 | 10 | 1 | 1 | 12 | LE1D123A62***** | LE1D123A72***** |
| 1 | 3 | 5 | 5 | 10 | 15 | 1 | 1 | 18 | LE1D183A62***** | LE1D183A72***** |
| 2 | 3 | 5 | 7.5 | 15 | 20 | 1 | 1 | 25 | LE1D253A62***** | LE1D253A72***** |
| 2 | 5 | 7.5 | 10 | 20 | 25 | 1 | 1 | 32 | LE1D323A62***** | LE1D323A72***** |
| 3 | 5 | 10 | 10 | 30 | 30 | 1 | 1 | 40 | LE1D403A62***** | LE1D403A72***** |
| 3 | 7.5 | 12 | 15 | 40 | 40 | 1 | 1 | 50 | LE1D503A62***** | LE1D503A72***** |
| 5 | 10 | 20 | 20 | 40 | 50 | 1 | 1 | 65 | LE1D653A62***** | LE1D653A72***** |
| 7.5 | 15 | 30 | 30 | 60 | 60 | 1 | 1 | 80 | LE1D803A62***** | LE1D803A72***** |

Table 18.141: Enclosed Full Voltage Reversing Starters

| Max. Horsepower Ratings | | | | | | Auxiliary Contacts On Each Contactor | | Current Rating of Contactor | Catalog Number | |
|-------------------------|-------|-------------|-------|-------|-------|--------------------------------------|------|-----------------------------|-----------------|-----------------|
| Single-Phase | | Three-Phase | | | | N.O. | N.C. | | Type 1 | Type 12/3R |
| 115 V | 230 V | 200 V | 230 V | 460 V | 575 V | | | | | |
| 1/3 | 1 | 2 | 2 | 5 | 7.5 | 1 | 1 | 9 | LE2D093A62***** | LE2D093A72***** |
| 1/2 | 2 | 3 | 3 | 7.5 | 10 | 1 | 1 | 12 | LE2D123A62***** | LE2D123A72***** |
| 1 | 3 | 5 | 5 | 10 | 15 | 1 | 1 | 18 | LE2D183A62***** | LE2D183A72***** |
| 2 | 3 | 5 | 7.5 | 15 | 20 | 1 | 1 | 25 | LE2D253A62***** | LE2D253A72***** |
| 2 | 5 | 7.5 | 10 | 20 | 25 | 1 | 1 | 32 | LE2D323A62***** | LE2D323A72***** |
| 3 | 5 | 10 | 10 | 30 | 30 | 1 | 1 | 40 | LE2D403A62***** | LE2D403A72***** |
| 3 | 7.5 | 12 | 15 | 40 | 40 | 1 | 1 | 50 | LE2D503A62***** | LE2D503A72***** |
| 5 | 10 | 20 | 20 | 40 | 50 | 1 | 1 | 65 | LE2D653A62***** | LE2D653A72***** |
| 7.5 | 15 | 30 | 30 | 60 | 60 | 1 | 1 | 80 | LE2D803A62***** | LE2D803A72***** |

Table 18.142: Overload Relay Range (Select code from below)^[47]

| Code | Range | For use on Contactors |
|------|-----------|-------------------------|
| 01 | 0.1–0.16 | D09–D32 ^[48] |
| 02 | 0.16–0.25 | D09–D32 ^[48] |
| 03 | 0.25–0.40 | D09–D32 ^[48] |
| 04 | 0.40–0.63 | D09–D32 ^[48] |
| 05 | 0.63–1.0 | D09–D32 ^[48] |
| 06 | 1.0–1.6 | D09–D32 ^[48] |
| 07 | 1.6–2.5 | D09–D32 ^[48] |
| 08 | 2.5–4 | D09–D32 |
| 10 | 4–6 | D09–D32 |
| 12 | 5.5–8 | D09–D32 |
| 13 | 9–13 | D40, D50, D65 |
| 14 | 7–10 | D09–D32 |
| 16 | 9–13 | D12–D32 |
| 18 | 12–18 | D40, D50, D65 |
| 21 | 12–18 | D18–D32 |
| 22 | 16–24 | D25–D32 ^[48] |
| | 17–25 | D25–D32 ^[49] |
| | 17–25 | D80 |
| 25 | 17–25 | D40, D50, D65 |
| 30 | 23–28 | D25–D32 ^[48] |
| 32 | 23–32 | D25–D32 |
| 32 | 23–32 | D40, D50, D65 |
| 40 | 30–40 | D40, D50, D65 |
| 50 | 37–50 | D40, D50, D65 |
| 53 | 30–38 | D80 |
| 55 | 30–40 | D80 |
| 57 | 37–50 | D80 |
| 59 | 48–65 | D80 |
| 61 | 55–70 | D65–D80 |
| 63 | 63–80 | D65–D80 |
| 65 | 48–65 | D40, D50, D65 |

Table 18.143: Catalog Number Nomenclature

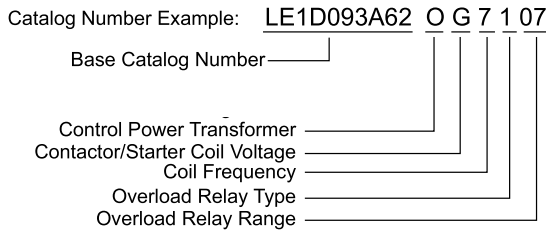


Table 18.144: Control Power Transformer

Select letter for primary voltage of CPT:

| Voltage | No Transformer used | 208 | 240 | 480 | 600 |
|---------|---------------------|-----|-----|-----|-----|
| Code | O ^[50] | L | M | T | X |

NOTE: If control transformer is used, the only options available are 24 or 120 V as the secondary of the transformer. Also, DC voltages are not available when control power transformer is used.

Table 18.145: Contactor/Starter Coil Voltage

Select coil voltage from table:

| Voltage | 24 | 120 | 208 | 240 | 480 | 600 |
|---------|----|-----|-----|-----|-----|-----|
| AC | B | G | L | U | T | X |
| DC | B | — | — | — | — | — |

Coil Frequency

Select:

7 = dual frequency coils (50/60 Hz)

6 = 60 Hz.

D=DC

NOTE: For 9 to 65 A contactors, only dual frequency coils are available; 80 A contactors, the 24–240 V coils are dual frequency only (50/60 Hz). The 480–600 V coils are 60 Hz. only. See catalog MKTED210011EN for other restrictions.

Overload relay type

Select:

0 = No overload relay

1 = Class 10 Trip

2 = Class 20 Trip

TeSys D dimensions: TeSys D Combination Starter Dimensions, page 18-62

[47] If no overload relay is required, leave this portion of the catalog blank.

[48] Available for Class 10 only.

[49] Available for Class 20 only.

[50] Letter O, not zero.

TeSys™ D Enclosed Fusible, Circuit Breaker and Non-Fusible

IEC combination starters combine the requirements of motor overload and short circuit protection in one convenient compact package. All devices provide Type 2 Coordination through 30 hp at 460 V. Devices are available in Type 1 and Type 12/3R enclosures. The IEC combination starter line accepts standard TeSys D accessories and all Insta-Kits™ pilot devices and control power transformer kits. Standard capacity control power transformers with built-in fuse block can be installed in the standard enclosure. For extra capacity, please refer to your local distributor or nearest Square D/Schneider Electric sales office.

NOTE: Use tables and notes from [Enclosed FVRS, Overload Relays](#), page 18-38 to complete the catalog numbers.

Table 18.146: Enclosed Full Voltage Non-Reversing Fusible Combination Starters

| Maximum Three-Phase Horsepower Ratings | | | | Fuse Clip Rating | | Auxiliary Contacts | | Current Rating of Contactor | Catalog Number | |
|--|-------|-------|-------|------------------|----------|--------------------|------|-----------------------------|-----------------|-----------------|
| 200 V | 230 V | 460 V | 575 V | Amperes | UL Class | N.O. | N.C. | | Type 1 | Type 12/3R |
| 2 | 2 | 5 | 7.5 | 30 A | CC | 1 | 1 | 9 | LE1D096B62●●●●● | LE1D096B72●●●●● |
| 3 | 3 | 7.5 | 10 | 30 A | CC | 1 | 1 | 12 | LE1D126B62●●●●● | LE1D126B72●●●●● |
| 5 | 5 | 10 | 15 | 30 A | J | 1 | 1 | 18 | LE1D186B62●●●●● | LE1D186B72●●●●● |
| 5 | 7.5 | 15 | 20 | 30 A | J | 1 | 1 | 25 | LE1D256B62●●●●● | LE1D256B72●●●●● |
| 7.5 | 10 | 20 | 25 | 60 A | J | 1 | 1 | 32 | LE1D326C62●●●●● | LE1D326C72●●●●● |
| 10 | 10 | 30 | 30 | 60 A | J | 1 | 1 | 40 | LE1D406C62●●●●● | LE1D406C72●●●●● |

Table 18.147: Enclosed Full Voltage Reversing Fusible Combination Starters

| Maximum Three-Phase Horsepower Ratings | | | | Fuse Clip Rating | | Aux. Contacts Each Contactor | | Current Rating of Contactor | Catalog Number | |
|--|-------|-------|-------|------------------|----------|------------------------------|------|-----------------------------|-----------------|-----------------|
| 200 V | 230 V | 460 V | 575 V | Amperes | UL Class | N.O. | N.C. | | Type 1 | Type 12/3R |
| 2 | 2 | 5 | 7.5 | 30 A | CC | 1 | 1 | 9 | LE2D096B62●●●●● | LE2D096B72●●●●● |
| 3 | 3 | 7.5 | 10 | 30 A | CC | 1 | 1 | 12 | LE2D126B62●●●●● | LE2D126B72●●●●● |
| 5 | 5 | 10 | 15 | 30 A | J | 1 | 1 | 18 | LE2D186B62●●●●● | LE2D186B72●●●●● |
| 5 | 7.5 | 15 | 20 | 30 A | J | 1 | 1 | 25 | LE2D256B62●●●●● | LE2D256B72●●●●● |
| 7.5 | 10 | 20 | 25 | 60 A | J | 1 | 1 | 32 | LE2D326C62●●●●● | LE2D326C72●●●●● |
| 10 | 10 | 30 | 30 | 60 A | J | 1 | 1 | 40 | LE2D406C62●●●●● | LE2D406C72●●●●● |

Table 18.148: Enclosed Full Voltage Non-Reversing Circuit Breaker Combination Starters

| Maximum Three-Phase Horsepower Ratings | | | | Auxiliary Contacts | | Circuit Breaker Maximum Current Rating | Current Rating of Contactor | Catalog Number | |
|--|-------|-------|-------|--------------------|------|--|-----------------------------|-----------------|-----------------|
| 200 V | 230 V | 460 V | 575 V | N.O. | N.C. | | | Type 1 | Type 12/3R |
| 2 | 2 | 5 | 7.5 | 1 | 1 | 15 A | 9 | LE1D097D62●●●●● | LE1D097D72●●●●● |
| 3 | 3 | 7.5 | 10 | 1 | 1 | 15 A | 12 | LE1D127D62●●●●● | LE1D127D72●●●●● |
| 5 | 5 | 10 | 15 | 1 | 1 | 30 A | 18 | LE1D187E62●●●●● | LE1D187E72●●●●● |
| 5 | 7.5 | 15 | 20 | 1 | 1 | 30 A | 25 | LE1D257E62●●●●● | LE1D257E72●●●●● |
| 7.5 | 10 | 20 | 25 | 1 | 1 | 50 A | 32 | LE1D327F62●●●●● | LE1D327F72●●●●● |
| 10 | 10 | 30 | 30 | 1 | 1 | 50 A | 40 | LE1D407F62●●●●● | LE1D407F72●●●●● |

Table 18.149: Enclosed Full Voltage Reversing Circuit Breaker Combination Starters

| Maximum Three-Phase Horsepower Ratings | | | | Auxiliary Contacts Each Contactor | | Circuit Breaker Maximum Current Rating | Current Rating of Contactor | Catalog Number | |
|--|-------|-------|-------|-----------------------------------|------|--|-----------------------------|-----------------|-----------------|
| 200 V | 230 V | 460 V | 575 V | N.O. | N.C. | | | Type 1 | Type 12/3R |
| 2 | 2 | 5 | 7.5 | 1 | 1 | 15 A | 9 | LE2D097D62●●●●● | LE2D097D72●●●●● |
| 3 | 3 | 7.5 | 10 | 1 | 1 | 15 A | 12 | LE2D127D62●●●●● | LE2D127D72●●●●● |
| 5 | 5 | 10 | 15 | 1 | 1 | 30 A | 18 | LE2D187E62●●●●● | LE2D187E72●●●●● |
| 5 | 7.5 | 15 | 20 | 1 | 1 | 30 A | 25 | LE2D257E62●●●●● | LE2D257E72●●●●● |
| 7.5 | 10 | 20 | 25 | 1 | 1 | 50 A | 32 | LE2D327F62●●●●● | LE2D327F72●●●●● |
| 10 | 10 | 30 | 30 | 1 | 1 | 50 A | 40 | LE2D407F62●●●●● | LE2D407F72●●●●● |

Table 18.150: Enclosed Full Voltage Non-Reversing Non-Fused Combination Starters

| Maximum Three-Phase Horsepower Ratings | | | | Auxiliary Contacts | | Current Rating of Contactor | Catalog Number | |
|--|-------|-------|-------|--------------------|------|-----------------------------|-----------------|-----------------|
| 200 V | 230 V | 460 V | 575 V | N.O. | N.C. | | Type 1 | Type 12/3R |
| 2 | 2 | 5 | 7.5 | 1 | 1 | 9 | LE1D096A62●●●●● | LE1D096A72●●●●● |
| 3 | 3 | 7.5 | 10 | 1 | 1 | 12 | LE1D126A62●●●●● | LE1D126A72●●●●● |
| 5 | 5 | 10 | 15 | 1 | 1 | 18 | LE1D186A62●●●●● | LE1D186A72●●●●● |
| 5 | 7.5 | 15 | 20 | 1 | 1 | 25 | LE1D256A62●●●●● | LE1D256A72●●●●● |
| 7.5 | 10 | 20 | 25 | 1 | 1 | 32 | LE1D326A62●●●●● | LE1D326A72●●●●● |
| 10 | 10 | 30 | 30 | 1 | 1 | 40 | LE1D406A62●●●●● | LE1D406A72●●●●● |

Table 18.151: Enclosed Full Voltage Reversing Non-Fused Combination Starters

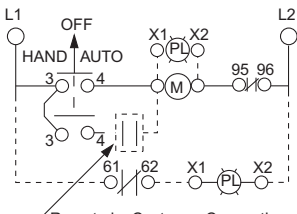
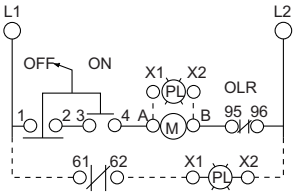
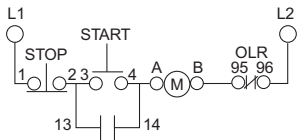
| Maximum Three-Phase Horsepower Ratings | | | | Aux. Contacts Each Contactor | | Current Rating of Contactor | Catalog Number | |
|--|-------|-------|-------|------------------------------|------|-----------------------------|-----------------|-----------------|
| 200 V | 230 V | 460 V | 575 V | N.O. | N.C. | | Type 1 | Type 12/3R |
| 2 | 2 | 5 | 7.5 | 1 | 1 | 9 | LE2D096A62●●●●● | LE2D096A72●●●●● |
| 3 | 3 | 7.5 | 10 | 1 | 1 | 12 | LE2D126A62●●●●● | LE2D126A72●●●●● |
| 5 | 5 | 10 | 15 | 1 | 1 | 18 | LE2D186A62●●●●● | LE2D186A72●●●●● |
| 5 | 7.5 | 15 | 20 | 1 | 1 | 25 | LE2D256A62●●●●● | LE2D256A72●●●●● |
| 7.5 | 10 | 20 | 25 | 1 | 1 | 32 | LE2D326A62●●●●● | LE2D326A72●●●●● |
| 10 | 10 | 30 | 30 | 1 | 1 | 40 | LE2D406A62●●●●● | LE2D406A72●●●●● |

TeSys D dimensions: [TeSys D Combination Starter Dimensions](#), page 18-62

Factory Modifications and Insta-Kits™ Selection

Add the factory modification code to the end of the catalog number created from Enclosed TeSys™ D Starters and Combination Starters, page 18-38. With the use of Insta-Kits™, only one operator scheme is allowed. Only the combinations of operators and pilot lights shown below can be ordered.

Pilot lights will be at the coil voltage indicated in the catalog number for the starter.



From top to bottom: Start/Stop, On-Off Selector Switch, HOA Selector Switch

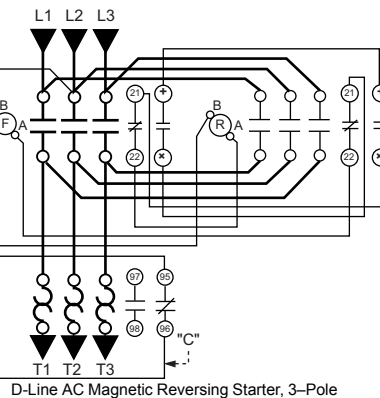
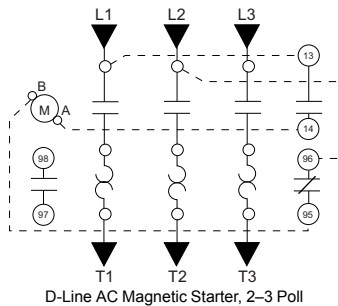


Table 18.152: Factory Modifications

| Description | Factory Modification Code[51] | Insta-Kits (for field installation) |
|--|-------------------------------|-------------------------------------|
| Control Units Only | | |
| For-Rev-Stop Push Button | A06L | LA9CA06LT |
| Start/Stop Push Button | A06G | LA9CA06GT |
| I/O (Start/Stop) Push Button | N/A | N/A |
| I/O Push Button (double touch) | A06I | LA9CA06IO |
| Emergency Stop | N/A | N/A |
| Hand-Off-Auto Selector Switch | A06E | LA9CA06ET |
| On/Off Selector Switch | A06D | LA9CA06DT |
| Start/Mushroom Head Stop Push Button | A06X | LA9CA06XT |
| Pilot Lights only | | |
| LED Pilot light, 24, 120 or 240 V | A16S | LA9CA16ST[52] |
| Green-Red Pilot Light, Direct Supply, 24 or 120 V [53] | A06S | LA9CA06ST[52] |
| Green-Red Transformer Pilot Light, 120, 208/240, 480 or 600 V [53] | A06F | LA9CA06FT[52] |
| Available Combination of Control Units and Pilot Lights | | |
| Hand-Off-Auto Selector Switch w/24, 120, or 240 V LED Pilot Light | A16U | LA9CA16UT[52] |
| Start/Stop Push Button w/ 24, 120 or 240 V LED Pilot Light | A16V | LA9CA16VT[52] |
| On/Off Selector w/ 24, 120 or 240 V LED Pilot Light | A16W | LA9CA16WT[52] |
| Start/Stop Push Button w/ Green-Red Transformer Pilot Light | A06N | LA9CA06NT[52] |
| Start/Stop Push Button w/Green-Red Pilot Light | A06V | LA9CA06VT |
| Hand-Off-Auto Selector Switch w/Green-Red Pilot Light | A06U | LA9CA06UT |
| Hand-Off-Auto Selector Switch w/Green-Red Transformer Pilot Light | A06J | LA9CA06JT[52] |
| On/Off Selector w/Green-Red Pilot Light | A06W | LA9CA06WT |
| On/Off Selector w/Green-Red Transformer Pilot Light | A06H | LA9CA06HT[52] |
| Control Power Transformer | | |
| Standard VA, 2 Fuses in Primary, 1 Fuse in Secondary | A206P | [54] |
| 50 VA extra, 2 Fuses in Primary, 1 Fuse in Secondary | A207P | [54] |
| 100 VA extra, 2 Fuses in Primary, 1 Fuse in Secondary | A208P | [54] |

Table 18.153: Insta-Kits™ Selection

| Total VA | Insta-Kits™ Catalog Number |
|----------|----------------------------|
| 50 | LA9TFD32[52] |
| 100 | LA9TFD80[52] |
| 150 | LA9TFD15[52] |

Table 18.154: Voltage Codes for Pilot Lights

| Voltage (Vac) | 24 | 120 | 208/240 | 480 | 600 |
|---------------|----|-----|---------|-----|-----|
| Code | B | G | M | T | X |

Table 18.155: Voltage Codes for Control Power Transformers

| Primary Voltage | 120 | 208 | 240 | 480 | 600 | 208 | 240 | 480 | 600 |
|-------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Secondary Voltage | 24 | | | | | 120 | | | |
| Code | E | D | C | B | A | L | M | T | X |

[51] Add these forms to the catalog number selected from Overload Relay Range, page 18-38. The numbers as shown are for use in NEMA 1 Enclosures. For uses in NEMA 12/3R change the 6 to a 7 (ex. A06U becomes A07U). Price remains the same. The change DOES NOT apply to control power transformer forms.

[52] Complete the part number for the Insta-Kits™ by selecting the voltage code from Table 18.153 Insta-Kits™ Selection, page 18-40.

[53] Pilot lights are wired such that the light is on when the contactor is energized. For non-LED type pilot lights, a green lens is installed on the unit when shipped. A red lens is included for use as applicable.

[54] Select Insta-Kits™ from Table 18.153 Insta-Kits™ Selection, page 18-40.

TeSys™ LS1 Fuse Holders

- 45 mm wide (same dimensions as GV2ME)
- Available with screw clamp and spring type terminals
- Mounts directly to LC1D09–D38 contactors (with use of GV2AF3 or GV2AF4)
- Meets application needs for fusible starter
- Uses GV2AE instantaneous contact blocks to open control circuits
- DIN rail mounted



LS1D30

Table 18.156: TeSys LS1 Fuse Holders

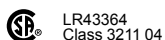
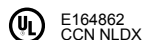
| Description | Fuse Type | Dimensions | | Use In | Catalog Number |
|-------------------------------|-----------|------------|-----------|------------------|----------------|
| | | in. | mm | | |
| Spring terminals, 3-pole | CC, KTK-R | 0.41 x 1.5 | 10.3 x 38 | US Markets | LS1D303 |
| Screw clamp terminals, 3-pole | CC, KTK-R | 0.41 x 1.5 | 10.3 x 38 | US Markets | LS1D30 |
| Spring terminals, 3-pole | aM, gG | 0.39 x 1.5 | 10 x 38 | European Markets | LS1D323 |
| Screw clamp terminals, 3-pole | aM, gG | 0.39 x 1.5 | 10 x 38 | European Markets | LS1D32 |
| Auxiliary main pole adder | aM, gG | 0.39 x 1.5 | 10 x 38 | European Markets | LA8D324[55] |

Table 18.157: Specifications

| Type | LS1D30, LS1D303 | LS1D32, LS1D323, LS1DT32 |
|--|--|--------------------------|
| Max. voltage | 600 V 3 Phase | |
| Max. current | 30 A | |
| Conforming to standards | IEC 60947-1, 60947-2, 60947-4-1, EN60204, BS4841, UL 508, CSA 222.2 No. 14, NFC 63-650, 63-120, 79-130, VDE 0113, 0660 | |
| Product approvals | UL, CSA | BV |
| Protective treatment | "TH" | |
| Ambient air temperature—operation | -58 to 158° F (-50 to +70° C) | |
| Wiring | Number of conductors and cross sectional area (c.s. a.) | |
| Solid cable | 2 x 16–8 AWG (1–6 mm ²) | |
| Flexible cable without cable end | 2 x 14–8 AWG (1–6 mm ²) | |
| Flexible cable with cable end | 2 x 16–10 AWG (1–4 mm ²) | |
| Resistance to mechanical impact conforming to IEC 60947-1 §7-1-6 | 0.5 J | |
| Tightening torque | 15 in-lb (1.7 N•m) | |
| Sensitivity to phase failure | No | |
| Operating Positions | | |
| Rated voltage | 600 V | |

Table 18.158: Environmental Specifications and Approvals

| | |
|---|---|
| Shock resistance | 30 g (conforming to IEC 600 68-2-27) |
| Vibration resistance | 5 g (5 to 150 Hz) (IEC 600 68-2-26) |
| Ambient temperature | -40 to 176 °F (-40 to +80 °C) for storage -4 to 140 °F (-20 to +60 °C) open operation -4 to 104 °F (-20 to +40 °C) enclosed operation |
| Maximum operating rate | 25 operations per hour |
| Operating current of magnetic trip | Approximately 13 times the maximum thermal trip (non-adjustable setting) |



[55] Can be mounted on left-hand or right-hand side of the 3-pole LS1D32 block.

Altistart Drive and TeSys U Motor Starter

Table 18.159: Soft Start / Soft Stop Unit for 0.75 to 15 kW Motors (can be combined with the TeSys U starter)

| Motor | | Starter | |
|---|-------------|-----------------|----------------|
| Motor Power ^[1] | | Nominal Current | Catalog Number |
| 230 V HP | 460 V HP | | |
| 3-phase supply voltage: 200 to 480 V 50/60 Hz | | | |
| 1 | 2 | 6 | ATSU01N206LT |
| 1.5 | 3 | | |
| 2 | 5 | 9 | ATSU01N209LT |
| 3 | 7.5 | 12 | ATSU01N212LT |
| 5 | 10 | 22 | ATSU01N222LT |
| 7.5 | 15 | | |
| 10 | 20 | | |
| | | 32 | ATSU01N232LT |

Table 18.160: Accessories

| Description | Used for Starter | Catalog Number |
|---|------------------|----------------|
| Power connector between ATSU 01N2●●LT and TeSys U | ATSU01N2●●T | VW3G4104 |

Table 18.161: TeSys U Starter and Soft Start Unit Combinations

| Motor Power | | Soft Starter | TeSys U | |
|-------------|-------------|--------------|------------|-----------------------------|
| Voltage | | | Power Base | Control Unit ^[2] |
| 200 V HP | 460 V HP | | | |
| 1 | 2 | ATSU01N206LT | LUB 12 | LUC●05BL |
| 1.5 | 3 | ATSU01N206LT | | LUC●12BL |
| 2 | 5 | ATSU01N209LT | | LUC●12BL |
| 3 | — | ATSU01N212LT | | LUC●12BL |
| — | 7.5 | ATSU01N212LT | | LUC●18BL |
| 5 | 10 | ATSU01N222LT | | LUC●18BL |
| 7.5 | 15 | ATSU01N222LT | LUB 32 | LUC●32BL |
| 10 | 20 | ATSU01N232LT | | LUC●32BL |

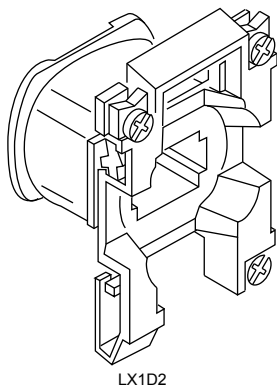


ATSU01●●

E164862
CCN NLDXLR43364
Class 3211 04

[1] Standard motor power ratings, HP power ratings indicated according to standard UL 508.

[2] Depending on the configuration of the chosen TeSys U starter, replace the ● with **A** for standard, **B** for advanced, and **M** for multifunction. See [Selecting TeSys U Motor Starters in Three Steps](#), page 18-23 for a complete list of available control units. Control voltage must be 24 Vdc.



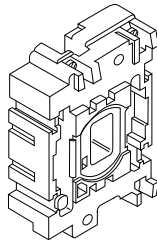
TeSys™ D AC Coils

Table 18.162: For LC1D09–D38, LC1DT20–DT40 Contactors and CAD Relays

| Rated Nominal Voltage | Catalog Number 50/60 Hz |
|----------------------------|---|
| 12 | LXD1J7 |
| 21 ^[1] | LXD1Z7 |
| 24 | LXD1B7 |
| 32 | LXD1C7 |
| 36 | LXD1CC7 |
| 42 | LXD1D7 |
| 48 | LXD1E7 |
| 60 | LXD1EE7 |
| 100 | LXD1K7 |
| 110 | LXD1F7 |
| 115 | LXD1FE7 |
| 120 | LXD1G7 |
| 127 | LXD1FC7 |
| 200 | LXD1L7 |
| 208 | LXD1LE7 |
| 220/230 | LXD1M7 |
| 230 | LXD1P7 |
| 230/240 | LXD1U7 |
| 277 | LXD1W7 |
| 380/400 | LXD1Q7 |
| 400 | LXD1V7 |
| 415 | LXD1N7 |
| 440 | LXD1R7 |
| 480 | LXD1T7 |
| 575 | LXD1SC7 |
| 600 | LXD1X7 |
| Specifications | 50/60 Hz |
| Average consumption | |
| - Inrush (inductance 0.75) | 70 VA |
| - Sealed (inductance 0.3) | 7 VA |
| Operating range@ 60° C | 80–110% of nominal @ 50 Hz, 85–110% of nominal @ 60 Hz |

[1] Voltage for special coils fitted in contactors with serial timer modules, with 24 V supply.

TeSys™ D AC Coils



LX1D6

Table 18.163: For Old D2 Style LC1D40, D50, D65, D80, and D95; For TeSys D LC1D40A, D50A, D65A, DT60A, and DT80A; For TeSys D LC1D115 and D150

| For Old D2 Style LC1D40, D50, D65, D80, D95 | | | | For TeSys D LC1D40A, D50A, D65A, DT60A, DT80A | | | | For TeSys D LC1D115, D150 | | | |
|---|----------------------|----------------------|-------------------------|---|----------------------|----------------------|-------------------------|---------------------------|----------------------|----------------------|-------------------------|
| Rated Nominal Voltage V | Catalog Number 50 Hz | Catalog Number 60 Hz | Catalog Number 50/60 Hz | Rated Nominal Voltage V | Catalog Number 50 Hz | Catalog Number 60 Hz | Catalog Number 50/60 Hz | Rated Nominal Voltage V | Catalog Number 50 Hz | Catalog Number 60 Hz | Catalog Number 50/60 Hz |
| 24 | LX1D6B5 | LX1D6B6 | LX1D6B7 | 12 | LXD3J5 | — | — | 24 | LX1D8B5 | LX1D8B6 | LX1D8B7 |
| 32 | LX1D6C5 | — | — | 24 | — | — | LXD3B7 | 32 | LX1D8C5 | — | LX1D8C7 |
| 42 | LX1D6D5 | — | LX1D6D7 | 32 | — | — | LXD3C7 | 42 | LX1D8D5 | — | LX1D8D7 |
| 48 | LX1D6E5 | LX1D6E6 | LX1D6E7 | 42 | — | — | LXD3D7 | 48 | LX1D8E5 | LX1D8E6 | LX1D8E7 |
| 110 | LX1D6F5 | LX1D6F6 | LX1D6F7 | 48 | — | — | LXD3E7 | 110 | LX1D8F5 | LX1D8F6 | LX1D8F7 |
| 120 | — | LX1D6G6 | LX1D6G7 | 100 | — | — | LXD3K7 | 115 | LX1D8FE5 | — | LX1D8FE7 |
| 127 | LX1D6G5 | — | — | 110 | — | — | LXD3F7 | 120 | — | LX1D8G6 | LX1D8G7 |
| 208 | — | LX1D6L6 | LX1D6L7 | 115 | — | — | LXD3FE7 | 127 | LX1D8FC5 | — | LX1D8FC7 |
| 220 | LX1D6M5 | LX1D6M6 | LX1D6M7 | 120 | — | — | LXD3G7 | 208 | — | LX1D8L6 | LX1D8L7 |
| 230 | LX1D6P5 | — | LX1D6P7 | 127 | — | — | LXD3FC7 | 220/230 | LX1D8M5 | LX1D8M6 | LX1D8M7 |
| 240 | LX1D6U5 | LX1D6U6 | LX1D6U7 | 200 | — | — | LXD3L7 | 230 | LX1D8P5 | — | LX1D8P7 |
| 256 | LX1D6W5 | — | — | 208 | — | — | LXD3LE7 | 240 | LX1D8U5 | LX1D8U6 | LX1D8U7 |
| 277 | — | LX1D6W6 | — | 220 | — | — | LXD3M7 | 277 | — | LX1D8W6 | LX1D8W7 |
| 380 | LX1D6Q5 | LX1D6Q6 | LX1D6Q7 | 230 | — | — | LXD3P7 | 380/400 | LX1D8Q5 | LX1D8Q6 | LX1D8Q7 |
| 400 | LX1D6V5 | — | LX1D6V7 | 240 | — | — | LXD3U7 | 400 | LX1D8V5 | — | LX1D8V7 |
| 415 | LX1D6N5 | — | LX1D6N7 | 277 | — | — | LXD3W7 | 415 | LX1D8N5 | — | LX1D8N7 |
| 440 | LX1D6R5 | LX1D6R6 | LX1D6R7 | 380 | — | — | LXD3Q7 | 440 | LX1D8R5 | LX1D8R6 | LX1D8R7 |
| 480 | — | LX1D6T6 | — | 400 | — | — | LXD3V7 | 480 | — | LX1D8T6 | LX1D8T7 |
| 500 | LX1D6S5 | — | — | 415 | — | — | LXD3N7 | 500 | LX1D8S5 | — | LX1D8S6 |
| 575 | — | LX1D6S6 | — | 440 | — | — | LXD3R7 | — | — | — | — |
| 600 | — | LX1D6X6 | — | 480 | — | — | LXD3T7 | — | — | — | — |
| 660 | LX1D6Y5 | — | — | 500 | — | — | LXD3S7 | — | — | — | — |
| — | — | — | — | 575 | — | — | LXD3SC7 | — | — | — | — |
| — | — | — | — | 600 | — | — | LXD3X7 | — | — | — | — |
| — | — | — | — | 660 | — | — | LXD3YC7 | — | — | — | — |
| — | — | — | — | 690 | — | — | LXD3Y7 | — | — | — | — |

For old style and new TeSys style contactors where the catalog number may or may not include the auxiliary contact arrangement.

For old style and new TeSys style contactors where the catalog number may or may not include the auxiliary contact arrangement.

| Specification | 50 Hz | 60 Hz | 50/60 Hz | Specification | 50 Hz | 60 Hz | 50/60 Hz | Specification | 50 Hz | 60 Hz | 50/60 Hz |
|--|----------------------------|-----------------|----------------------------|---|----------------------------|------------------|---|---|----------------------------|-----------------|---|
| Average consumption:-inrush (inductance 0.75) -sealed (inductance 0.3) | 200 VA 20 VA | 220 VA 22 VA | 245 VA 26 VA | Average consumption:-inrush (inductance 0.3) -sealed (inductance 0.3) | 160 VA 7.0 VA | 140 VA 7.5 VA | 140 VA 7.5 VA (Inductance: 0.9) 18 VA (Inductance: 0.9) | Average consumption:-inrush (inductance 0.8) -sealed (inductance 0.3) | 300 VA 22 VA | 300 VA 22 VA | 350 VA (Inductance: 0.9) 18 VA (Inductance: 0.9) |
| Operating range at $\theta \leq 55^\circ\text{C} / 131^\circ\text{F}$ | 80–110% of nominal voltage | | 85–110% of nominal voltage | Operating range at $\theta \leq 55^\circ\text{C} / 131^\circ\text{F}$ | 85–110% of nominal voltage | | 80–115% of nominal voltage | Operating range at $\theta \leq 55^\circ\text{C} / 131^\circ\text{F}$ | 85–110% of nominal voltage | | 80–115% of nominal voltage |

Table 18.164: TeSys™ F AC Coils (For LC1F115, F150, F185, F225, F265, F330, F400, F500, F630, F780, and F800)

| Device Type | Hz | Catalog Number | Catalog Number Suffix[2] | | | | | | | | | | | | |
|-------------|--------|----------------|--------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | | 24 V | 48 V | 110 V | 120 V | 208 V | 220 V | 240 V | 277 V | 380 V | 415 V | 440 V | 480 V | 600 V |
| F115–F150 | 50 | LX1FF● | 024 | 048 | 110 | 127 | 200 | 220 | 240 | 264 | 380 | 415 | 415 | 500 | 600 |
| | 60 | LX1FF● | 020 | 040 | 092 | 095 | 162 | 184 | 187 | 220 | 316 | 340 | 360 | 380 | 475 |
| | 40–400 | LX9FF●[3] | — | 048 | 110 | 127 | 200 | 220 | 220 | 260 | 380 | 415 | 415 | 500 | — |
| F185, F225 | 50 | LX1FG● | 024 | 048 | 110 | 127 | 200 | 220 | 240 | 264 | 380 | 415 | 415 | 450 | 600 |
| | 60 | LX1FG● | 020 | 040 | 092 | 095 | 162 | 184 | 187 | 220 | 316 | 340 | 360 | 380 | 475 |
| | 40–400 | LX9FG●[3] | — | 048 | 110 | 127 | 200 | 220 | 220 | 260 | 380 | 415 | 415 | 500 | — |
| F265–F330 | 40–400 | LX1FH● | 0242 | 0482 | 1102 | 1272 | 2002 | 2202 | 2402 | 2772 | 3802 | 3802 | 4402 | 5002 | 6002 |
| | 40–400 | LX9FH●[3] | — | 0482 | 1102 | 1272 | 2002 | 2202 | 2402 | 2772 | 3802 | 3802 | — | 5002 | — |
| | 40–400 | LX1FJ● | — | 048 | 110 | 110 | 200 | 220 | 240 | 280 | 380 | 415 | 415 | 415 | 600 |
| F400 | 40–400 | LX9FJ●[3] | 910 | 917 | 925 | 925 | 930 | 931 | 932 | 932 | 936 | 936 | 937 | 937 | —[4] |
| | 40–400 | LX1FK● | — | 048 | 110 | 110 | 200 | 220 | 240 | 280 | 380 | 415 | 415 | 415 | 600 |
| | 40–400 | LX9FK●[3] | 910 | 917 | 925 | 925 | 930 | 931 | 932 | 932 | 936 | 936 | 937 | 937 | —[4] |
| F500 | 40–400 | LX1FL● | — | 048 | 110 | 110 | 200 | 220 | 240 | 260 | 380 | 415 | 415 | 415 | 600 |
| | 40–400 | LX9FL●[3] | 910 | 917 | 924 | 925 | 930 | 930 | 931 | 932 | 935 | 936 | 936 | 937 | —[4] |
| | 40–400 | LX1FX● | — | — | 110 | 110 | 200 | 220 | 220 | 280 | 380 | 415 | 415 | 415 | — |
| F780[5] | 40–400 | LX1FX● | — | — | 110 | 110 | 200 | 220 | 220 | 280 | 380 | 415 | 415 | 415 | — |
| F800 | 50/60 | LX4F8●[3] | — | — | FW | FW | — | MW | MW | — | QW | QW | QW | — | — |
| F1400–F2100 | 40–400 | LX1FK●[3] | — | — | 065 | 070 | — | 110 | 127 | 140 | 200 | 220 | 220 | — | — |

[2] Complete the catalog number by adding the suffix (for example, LX1FF024).

[3] Also requires rectifier DR5TE4U for 110–240 V coils, DR5TE4S for 380–440 V coils.

[4] The 600 V coils for the F400, F500 and F630 do not include an auxiliary contact for holding circuits. If required, select appropriate contacts from Blocks, page 18-15.

[5] LC1F780 contactors operate with 2 coils as a set. The LX1FX● part number includes both coils.

Application Note on Contactor Drop-out Times

Contactors using LX1, FH, FJ, FK, FL, and FX coils have longer drop-out times. For critical applications such as emergency stop functions:

- Select a fast drop-out coil (LX9), or
- Use a maintained contact Stop button, or
- Use an interposing relay.

Table 18.165: Rectifier Table

| Coil | Rectifier Catalog Number |
|----------|--------------------------|
| LX9F•910 | DR5TF4V |
| LX9F•917 | |
| LX4F8FW | |
| LX4F8MW | |
| LX9F•925 | DR5TE4U |
| LX9F•926 | |
| LX9F•931 | |
| LX9F•936 | DR5TE4S |
| LX9F•937 | |
| LX9F•938 | |
| LX4F8QW | |

Table 18.166: AC and DC Coil Part Numbers for LC1F1400 to F2100^[6]

| Control Circuit Voltage of Contactor | Voltage Code | Spare Coil Part Number | Quantity |
|--------------------------------------|--------------|------------------------|----------|
| AC Coils | | | |
| 110 V | F7 | LX1FK065 | 2 |
| 120 V | G7 | LX1FK070 | 2 |
| 220 V | M7 | LX1FK110 | 2 |
| 230 V | P7 | LX1FK110 | 2 |
| 240 V | U7 | LX1FK127 | 2 |
| 277 V | W7 | LX1FK140 | 2 |
| 380 V | Q7 | LX1FK200 | 2 |
| 400 V | V7 | LX1FK200 | 2 |
| 415 V | N7 | LX1FK220 | 2 |
| 440 V | R7 | LX1FK220 | 2 |
| 500 V | S7 | LX1FK240 | 2 |
| DC Coils | | | |
| 110 V | FD | LX4FK055 | 2 |
| 125 V | GD | LX4FK065 | 2 |
| 220 V | MD | LX4FK110 | 2 |
| 250 V | UD | LX4FK125 | 2 |
| 440 V | RD | LX4FK220 | 2 |

TeSys D contactors: TeSys™ D Non-Reversing Contactors, page 18-8 and TeSys™ D Reversing Contactors, page 18-10
 TeSys F contactors: TeSys™ F Non-Reversing Contactors, page 18-12 and TeSys™ F Reversing Contactors, page 18-13
 TeSys D overload relay accessories: TeSys D Overload Relay Accessories, page 18-22
 TeSys D replacement coils: TeSys™ D AC Coils, page 18-43
 Dimensions: TeSys™ D Contactors, AC and DC Coil, page 18-51 to TeSys™ D Thermal Overload Relay Dimensions, page 18-59

[6] These coils are standard parts included when a voltage code is added to the contactor part number LC1F1700 or LC1F2100.

TeSys™ D DC Coils

NOTE: DC coils for new TeSys D contactors LC•D09-D38, LC1DT20-DT40, LC•D40A-65A, LC1DT60A-80A, and LC•D80-D95 are not replaceable.

Table 18.167: For Old D2 LP1D80 and LC1D80^[7]

| Rated Nominal Voltage V | Catalog Number | Catalog Number Wide Range ^[8] |
|-------------------------|----------------|--|
| 12 | LX4D7JD | LX4D7JW |
| 24 | LX4D7BD | LX4D7BW |
| 36 | LX4D7CD | LX4D7CW |
| 48 | LX4D7ED | LX4D7EW |
| 60 | LX4D7ND | — |
| 72 | LX4D7SD | LX4D7SW |
| 110 | LX4D7FD | LX4D7FW |
| 125 | LX4D7GD | — |
| 220 | LX4D7MD | LX4D7MW |
| 250 | LX4D7UD | — |
| 440 | LX4D7RD | — |
| 600 | LX4D7XD | — |

| Specifications | | |
|--|-------------------------|-------------------------|
| Average consumption | 22 W | 23 W |
| Operating range at $\theta < 55\text{ }^{\circ}\text{C} / 131\text{ }^{\circ}\text{F}$ | 80–110% nominal voltage | 70–120% nominal voltage |

Table 18.168: For TeSys D LC1D115, 150

| Rated Nominal Voltage V | Catalog Number |
|-------------------------|----------------|
| 24 | LX4D8BD |
| 48 | LX4D8ED |
| 60 | LX4D8ND |
| 72 | LX4D8SD |
| 110 | LX4D8FD |
| 125 | LX4D8GD |
| 220 | LX4D8MD |
| 250 | LX4D8UD |
| 440 | LX4D8RD |

| | |
|--|-----------------------------|
| Average Consumption | Inrush 365 W, Sealed 5 W |
| Operating range at $\theta < 55\text{ }^{\circ}\text{C} / 131\text{ }^{\circ}\text{F}$ | 70%–120% of nominal voltage |

TeSys D contactors: TeSys™ D Non-Reversing Contactors, page 18-8 and TeSys™ D Reversing Contactors, page 18-10
 TeSys D overload relay accessories: TeSys D Overload Relay Accessories, page 18-22
 TeSys D replacement coils: TeSys™ D AC Coils, page 18-44
 TeSys D dimensions: TeSys™ D Contactors, AC and DC Coil, page 18-51 to TeSys™ D Thermal Overload Relay Dimensions, page 18-59

[7] For old style contactors where the catalog number includes the auxiliary contact arrangement (for example, LP1D8010). The new style TeSys DC controlled contactors (for example, LC1D80BD) do not have replaceable coils.

[8] Wide range coils cannot be used with contactors using both front- and side-mounting auxiliaries.

TeSys F DC Coils

LX4 coils are the standard coils when a voltage code is added to the part number. The LX9 coils may be ordered separately for special applications. LX9 coils do not include a built-in normally open holding circuit contact; a separate auxiliary contact block with an N.O. contact should be added to the contactor. Both the LX4 and LX9 coils can be used on previous TeSys F devices.

Table 18.169: LX4 Coils for LC1F115, F150, F185, F225, F265, F400, F500, F630, F780, F800

| Device Type | Catalog Number | ● Catalog Number Suffix | | | | | | | | | |
|-------------------------|----------------|-------------------------|-----|------|------|------|-------|-------|-------|-------|-------|
| | | 24 V | 36V | 48 V | 60 V | 72 V | 110 V | 125 V | 220 V | 250 V | 440 V |
| F115, F150 | LX4FF● | 024 | 035 | 048 | 060 | 070 | 110 | 125 | 220 | 250 | 440 |
| F185, F225 | LX4FG● | 024 | 035 | 048 | 060 | 070 | 110 | 125 | 220 | 250 | 440 |
| F265, F330 | LX4FH● | 024 | 035 | 048 | 060 | 070 | 110 | 125 | 220 | 250 | 440 |
| F400 | LX4FJ● | — | — | 048 | 060 | 070 | 110 | 125 | 220 | 250 | 440 |
| | LX9FJ●[9] | — | — | 918 | — | — | 926 | 927 | 932 | — | 938 |
| F500 | LX4FK● | — | — | 048 | 060 | 070 | 110 | 125 | 220 | 250 | 440 |
| | LX9FK●[9] | — | — | 918 | — | — | 926 | 927 | 932 | — | 938 |
| F630 | LX4FL● | — | — | 048 | 060 | 070 | 110 | 125 | 220 | 250 | 440 |
| | LX9FL●[9] | — | — | 918 | — | — | 926 | 927 | 932 | — | 938 |
| F780 | LX4FX●[10] | — | — | — | — | — | 110 | 125 | 220 | 250 | 440 |
| F800 | LX4F8●[11] | — | — | — | — | — | FW | FW | MW | — | QW |
| F1400, F1700, and F2100 | LX4FK●[11] | — | — | — | — | — | 055 | 065 | 110 | 125 | 220 |

Table 18.170: LX9 Coils and Resistors

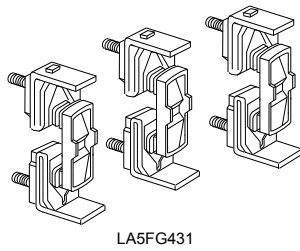
| Coil | Resistor Catalog Number | Qty. Required | Coil | Resistor Catalog Number | Qty. Required | Coil | Resistor Catalog Number | Qty. Required |
|----------|-------------------------|---------------|----------|-------------------------|---------------|----------|-------------------------|---------------|
| LX9FJ918 | DR2SC0047 | 1 | LX9FK918 | DR2SC0039 | 1 | LX9FL918 | DR2SC0047 | 2 |
| LX9FJ926 | DR2SC0030 | 1 | LX9FK926 | DR2SC0220 | 1 | LX9FL925 | DR2SC0270 | 2 |
| LX9FJ927 | DR2SC0390 | 1 | LX9FK927 | DR2SC0330 | 1 | LX9FL926 | DR2SC0330 | 2 |
| LX9FJ932 | DR2SC1200 | 1 | LX9FK932 | DR2SC1000 | 1 | LX9FL931 | DR2SC1000 | 2 |
| LX9FJ938 | DR2SC4700 | 1 | LX9FK938 | DR2SC3300 | 1 | LX9FL937 | DR2SC3900 | 2 |

TeSys F contactors: TeSys™ F Non-Reversing Contactors, page 18-12 and TeSys™ F Reversing Contactors, page 18-13
 TeSys F overload relay accessories: TeSys F Overload Relay Accessories, page 18-22
 TeSys F replacement coils and parts: TeSys F Contact Kits, Arc Chambers, page 18-48, TeSys F AC Coils, page 18-44
 TeSys F dimensions: TeSys F dimensions: TeSys™ F Contactors, Dimensions, page 18-53, TeSys™ F Overload Relay Dimensions, page 18-61

[9] Coil circuit requires a separately mounted resistor. See Table 18.170 LX9 Coils and Resistors, page 18-47.
 [10] LC1F780 contactors operate on 2 coils as a set. The LX4FX part number includes both coils.
 [11] Also requires rectifier DR5TE4U,

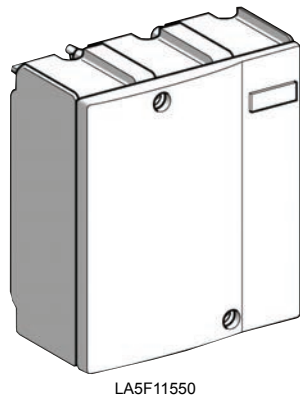
TeSys™ F Contact Kits, Arc Chambers

Table 18.171: Replacement Contact Sets [12]



| | For use on contactors | Number of Poles | Catalog Number |
|------------|-----------------------|-----------------|-----------------|
| Two-pole | LC1F4002 | 2 poles | LA5F400802 |
| | LC1F5002 | 2 poles | LA5F500802 |
| | LC1F6302 | 2 poles | LA5F630802 |
| Three-pole | LC1F115, F150 | 3 poles | LA5FF431 |
| | LC1F185, F225 | 3 poles | LA5FG431 |
| | LC1F265 | 3 poles | LA5FH431 |
| | LC1F330, F400 | 3 poles | LA5F400803 |
| | LC1F500 | 3 poles | LA5F500803 |
| | LC1F630 | 3 poles | LA5F630803 |
| | LC1F780 | 1 pole | LA5F780801 [13] |
| | LC1F800 | 3 poles | LA5F800803 |
| Four-pole | LC1F1504, F1154 | 4 poles | LA5FF441 |
| | LC1F1854, F2254 | 4 poles | LA5FG441 |
| | LC1F2654 | 4 poles | LA5FH441 |
| | LC1F3304, F4004 | 4 poles | LA5F400804 |
| | LC1F5004 | 4 poles | LA5F500804 |
| | LC1F6304 | 4 poles | LA5F630804 |
| | LC1F7804 | 1 pole | LA5F780801 [13] |

Table 18.172: Arc Chambers



| | For use on contactors | Number of Poles | Catalog Number |
|------------|-----------------------|-----------------|-----------------|
| Two-pole | LC1F4002 | 2 poles | LA5F400250 |
| | LC1F5002 | 2 poles | LA5F500250 |
| | LC1F6302 | 2 poles | LA5F630250 |
| Three-pole | LC1F115 | 3 poles | LA5F11550 |
| | LC1F150 | 3 poles | LA5F15050 |
| | LC1F185 | 3 poles | LA5F18550 |
| | LC1F225 | 3 poles | LA5F22550 |
| | LC1F265 | 3 poles | LA5F26550 |
| | LC1F330 | 3 poles | LA5F33050 |
| | LC1F400 | 3 poles | LA5F40050 |
| | LC1F500 | 3 poles | LA5F50050 |
| | LC1F630 | 3 poles | LA5F63050 |
| | LC1F780 | 1 pole | LA5F780150 [13] |
| | LC1F800 | 3 poles | LA5F80050 |
| | LC1F1400 | 6 poles | LA5F140050 |
| | LC1F1700 | 6 poles | LA5F170050 |
| LC1F2100 | 6 poles | LA5F210050 | |
| Four-pole | LC1F1154 | 4 poles | LA5F115450 |
| | LC1F1504 | 4 poles | LA5F150450 |
| | LC1F1854 | 4 poles | LA5F185450 |
| | LC1F2254 | 4 poles | LA5F225450 |
| | LC1F2654 | 4 poles | LA5F265450 |
| | LC1F3304 | 4 poles | LA5F330450 |
| | LC1F4004 | 4 poles | LA5F400450 [14] |
| | LC1F5004 | 4 poles | LA5F500450 [14] |
| | LC1F6304 | 4 poles | LA5F630450 [15] |
| | LC1F7804 | 1 pole | LA5F780150 [13] |

TeSys F contactors: TeSys™ F Non-Reversing Contactors, page 18-12 and TeSys™ F Reversing Contactors, page 18-13

TeSys F overload relay accessories: TeSys F Overload Relay Accessories, page 18-22

TeSys F replacement coils and parts: F AC, page 18-44, and TeSys F DC Coils, page 18-47

TeSys F dimensions: TeSys™ F Contactors, Dimensions, page 18-53, TeSys™ F Overload Relay Dimensions, page 18-61

[12] Supplied per pole are: 2 fixed contacts, 1 moving contact, 2 deflectors, 1 backplate, mounting screws and washers.

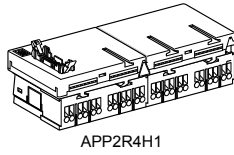
[13] Two identical components per pole are supplied.

[14] Two 2-pole arc chambers.

[15] Single-pole arc chambers.

Splitter Boxes, Power Connections and Accessories

Table 18.173: Splitter Boxes^[1]

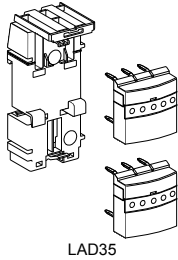


APP2R4H1

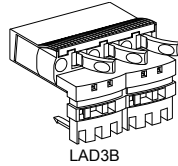
| Description | Type of Control-Command Connection on Control System Side | No. of I/O per Starter | No. of Starters per Unit | Catalog Number |
|-------------------------------------|---|------------------------|--------------------------|----------------|
| 50 A power splitter box | — | — | 2 | LAD322 |
| | — | — | 4 | LAD324 |
| 50 A power and control splitter box | 1 x HE10 8I/8O | 1I/1O | 4 | APP2R4H1 |
| | 1 x HE10 16I and 1 x HE10 8O | 2I/1O | 4 | APP2R4H2 |
| | via module APP1C●●● ^[2] | — | 2 | APP2R2E |
| | — | — | 4 | APP2R4E |
| | AS-Interface | 2I/1O | 2 | APP2R2AS |
| — | 1I/1O | 4 | APP2R4AS | |

Table 18.174: Power Connection Components for One Starter

| Description | Kit Consists Of: | Catalog Number |
|-----------------------------------|--|----------------|
| Assembly and power connection kit | One LAD31 plate for GV2ME and two LAD34 power connection modules | LAD351 |
| Reversing kit ^[3] | One set of bus bars and one mechanical interlock | LAD32 |



LAD35



LAD3B

Table 18.175: Power Connection Accessories for One Starter

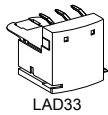
| Description | Max. Connection Cross-Section | Use | Catalog Number |
|--------------------------------------|-------------------------------|--|----------------|
| Upstream terminal block (50 A max) | 16 mm ² (6 AWG) | Power supply for one or two power splitter boxes | LAD3B |
| Downstream terminal block (50 A max) | 6 mm ² (10 AWG) | Connection of motor cables | LAD331 |

Table 18.176: Control Connection Module for One Starter

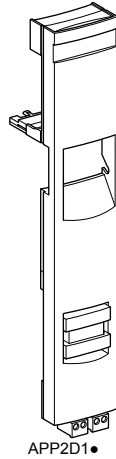
| Description | D-Line Coil Voltage | Type of Coil Control Relay | Type of Starter | Catalog Number |
|--|--------------------------|----------------------------------|-----------------|----------------|
| Control connection module (integrating contact block GVAE20) | 12–240 Vac or 24–125 Vdc | Electromechanical ^[4] | Non-reversing | APP2D1 |
| | | | Reversing | APP2D2 |
| | 24–48 Vdc | Without relay ^[5] | Non-reversing | APP2D1D |
| | | | Reversing | APP2D2D |

Table 18.177: Spare or Replacement Parts

| Description | Type of Control-Command Connection on Control System Side | No. of I/O per Starter | No. of Starters | Sold in Lots of | Catalog Number |
|---|---|------------------------|-----------------|-----------------|----------------|
| Plate for mounting a GV2ME manual starter | — | — | 1 | 10 | LAD311 |
| Power connection module | — | — | 1 | 10 | LAD341 |
| Control-command splitter box (single, for mounting on a power splitter box) | 1 x HE10 8I/8O | 1I/1O | 4 | 1 | APP2R4H3 |
| | 1 x HE10 16I and 1 x HE10 8O | 2I/1O | 4 | 1 | APP2R4H4 |
| | Per module APP1C●●● ^[2] | — | 2 | 1 | APP2R2C |
| | — | — | 4 | 1 | APP2R4C |
| | AS-Interface | 2I/1O | 2 | 1 | APP2R2A |
| — | 1I/1O | 4 | 1 | APP2R4A | |
| Replacement electromechanical relay (for control connection module) | — | — | 1 | 10 | APP2ER |



LAD33



APP2D1●

[1] A total of up to eight starters is permissible after extensions. Use multiple quantities of the same catalog number to create the desired line-up.
 [2] Connection to an APP1C●●● module via APP2CX adapter (LAD35).
 [3] To create a TeSys D reverser, use two LC1D contactors, one assembly and power connection kit, and one reversing kit.
 [4] Relay supplied mounted on the front panel of the control connection.
 [5] The use of TeSys D low consumption contactors is recommended.

TeSys™ AK5 Panel Busbar System

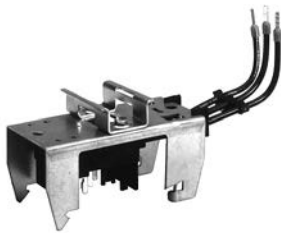
The AK5 pre-fabricated bus bar system provides a quick and easy method of mounting control devices. All components are finger safe, UL Listed, CSA approved and CE marked. Although the AK5 system can be screw mounted onto any type of support, it **must be mounted** on the AM1DL201 DIN rail when component mounting plates incorporating a tap-off are used. When using tap-offs, the nominal operating current of the bus bar (160 A @ 35°) must not be exceeded. Approvals include IEC 439, UL, CSA, DNV and LROS.



AK5JB143

Table 18.178: 160 A, 3-Phase Busbar System

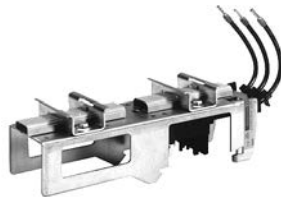
| Maximum number of mounting plates | | | | | | Length | | Catalog Number |
|-----------------------------------|-------|----------------------|-------|-----------------|-------|--------|------|----------------|
| Tap-off | | Standard Width Plate | | Extension Plate | | in. | mm | |
| 1.42 in. | 36 mm | 2.13 in. | 54 mm | 2.80 in. | 71 mm | | | |
| 6 | | 4 | | 2 | | 13.39 | 344 | AK5JB143 |
| 9 | | 6 | | 3 | | 17.64 | 452 | AK5JB144 |
| 12 | | 8 | | 4 | | 21.85 | 560 | AK5JB145 |
| 15 | | 10 | | 5 | | 26.05 | 668 | AK5JB146 |
| 24 | | 16 | | 8 | | 38.69 | 992 | AK5JB149 |
| 27 | | 18 | | 9 | | 42.90 | 1100 | AK5JB1410 |



AK5PA231

Table 18.179: Mounting Plate Tap-off (plugs into busbar mounted on AM1DL201 DIN rail)

| Width | | Thermal Current Amperes | Application | Catalog Number |
|-------|-----|-------------------------|---|----------------|
| in. | mm | | | |
| 2.13 | 54 | 25 A | GV2 with LUS or LUB 12 and 32 contactor reversing contactor | AK5PA231 |
| 2.13 | 54 | 25 A | | AK5PA232 |
| 4.25 | 108 | 25 A | | AK5PA232S |



AK5PA232S

Table 18.180: Bus Tap-off (plugs into busbar for wiring to a separately mounted device)

| Width | | Thermal Current (A) | Length of Leads | | Catalog Number |
|-------|----|---------------------|-----------------|------|----------------|
| in. | mm | | in. | mm | |
| 1.42 | 36 | 32 A | 9.84 | 250 | AK5PC33 |
| 1.42 | 36 | 32 A | 39.37 | 1000 | AK5PC33L |



AK5PC33

Table 18.181: Extension Plates

Used to mount wider components. Bolt to standard mounting plates (after DIN rails are removed).

| Width | | Application | Catalog Number |
|-------|----|--------------------------|----------------|
| in. | mm | | |
| 2.80 | 71 | GV & Reversing contactor | AK5PE27 |



AM1DL201

Table 18.182: Mounting Rail (must be used for mounting plates with tap-offs)

| Description | Depth | Length | Catalog Number |
|------------------|-------|--------|----------------|
| | mm | mm | |
| 75 mm Omega Rail | 15 | 2000 | AM1DL201 |



File E161251
CCN NMTR



File LR 89150
Class 6228-01

TeSys™ D Contactors, AC and DC Coil

Table 18.183: TeSys D 9 to 38 A Contactors, AC and DC Coils

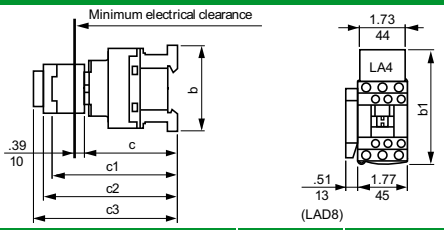
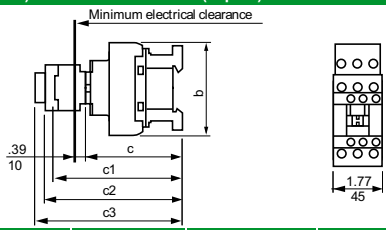
| LC1D09 to D18 | | LC1D25 to D38 (3-pole) and LC1DT20 to DT40 (4-pole) | | | | | | | | |
|---|--|--|--------------------------------|--------------------------------|---------------------------|--------------------------------|--|-----------------------------|---------------------------|--|
|  | |  | | | | | | | | |
| TeSys D contactors: LC1D | | D09 to D18 Inches (mm) | D093 to D123 Inches (mm) | D099 to D129 Inches (mm) | D25 to D38 Inches (mm) | D183 to D323 Inches (mm) | D098, D128, DT20, DT25 Inches (mm) | DT203, DT253 Inches (mm) | DT32, DT40 Inches (mm) | D188, D258, DT323, DT403 Inches (mm) |
| b | AC coil, without add-on accessories | 3.03 (77) | 3.89 (99) | 3.14 (80) | 3.36 (85) | 3.89 (99) | 3.34 (85) | 3.89 (99) | 3.58 (91) | 4.13 (105) |
| | DC coil | 3.03 (77) | 3.89 (99) | 3.14 (80) | 3.36 (85) | 3.89 (99) | 3.34 (85) | 3.89 (99) | 3.58 (91) | 4.13 (105) |
| | AC coil, with LAD4BB | 3.70 (94) | 4.21 (107) | 3.75 (95.5) | 3.85 (98) | 4.21 (107) | 3.85 (98) | — | — | — |
| | AC coil, with LA4D*2 | 4.33 (110) [1] | 4.84 (123) [1] | 4.30 (111.5) [1] | 4.48 (114) [1] | 4.84 (123) [1] | 4.48 (114) | — | — | — |
| b1 | AC coil, with LA4DF, DT | 4.68 (119) [1] | 5.19 (132) [1] | 4.76 (120.5) [1] | 4.84 (123) [1] | 5.19 (132) [1] | 5.02 (129) | — | — | — |
| | AC coil, with LA4DR, DW, DL | 4.96 (126) [1] | 5.67 (139) [1] | 5.0 (127.5) [1] | 5.11 (130) [1] | 5.47 (139) [1] | 7.48 (190) | — | — | — |
| | AC coil, without cover or add-on blocks | 3.30 (84) | 3.30 (84) | 3.30 (84) | 3.54 (90) | 3.54 (90) | 3.54 (90) | 3.54 (90) | 3.85 (98) | 3.85 (98) |
| | AC coil, with cover, without add-on blocks | 3.38 (86) | 3.38 (86) | 3.38 (86) | 3.62 (92) | 3.62 (92) | 3.62 (92) | 3.62 (92) | 3.93 (100) | 3.93 (100) |
| | DC coil, without cover or add-on blocks | 3.66 (93) | 3.66 (93) | 3.66 (93) | 3.89 (99) | 3.89 (99) | — | — | — | — |
| | DC coil, with cover, without add-on blocks | 3.76 (95) | 3.76 (95) | 3.76 (95) | 3.97 (101) | 3.97 (101) | 3.90 (99) | 3.90 (99) | 4.21 (107) | 4.21 (107) |
| c1 | AC coil, with LADN or C (two or four contacts) | 4.60 (117) | 4.60 (117) | 4.60 (117) | 4.84 (123) | 4.84 (123) | 4.84 (123) | 4.84 (123) | 5.15 (131) | 5.15 (131) |
| | DC coil, with LADN or C (two or four contacts) | 4.96 (126) | 4.96 (126) | 4.96 (126) | 5.19 (132) | 5.19 (132) | 4.84 (123) | 4.84 (123) | 5.15 (131) | 5.15 (131) |
| c2 | AC coil, with LAD6K10 | 5.07 (129) | 5.07 (129) | 5.07 (129) | 5.31 (135) | 5.31 (135) | 5.31 (135) | 5.31 (135) | 5.62 (143) | 5.62 (143) |
| | DC coil, with LAD6K10 | 5.43 (138) | 5.43 (138) | 5.43 (138) | 5.66 (144) | 5.66 (144) | 5.31 (135) | 5.31 (135) | 5.62 (143) | 5.62 (143) |
| | AC coil, with LADT, R, S | 5.39 (137) | 5.39 (137) | 5.39 (137) | 5.62 (143) | 5.62 (143) | 5.62 (143) | 5.62 (143) | 5.94 (151) | 5.94 (151) |
| | AC coil, with LADT, R, S and sealing cover | 5.55 (141) | 5.55 (141) | 5.55 (141) | 5.78 (147) | 5.78 (147) | 5.78 (147) | 5.78 (147) | 6.10 (155) | 6.10 (155) |
| | DC coil with LADT, R, S | 5.76 (146) | 5.76 (146) | 5.76 (146) | 5.98 (152) | 5.98 (152) | 5.62 (143) | 5.62 (143) | 5.94 (151) | 5.94 (151) |
| | DC coil with LADT, R, S and sealing cover | 5.90 (150) | 5.76 (146) | 5.76 (146) | 6.14 (156) | 6.14 (156) | 5.78 (147) | 5.78 (147) | 6.10 (155) | 6.10 (155) |

Table 18.184: TeSys D 40 A to 65 A, AC and DC coil

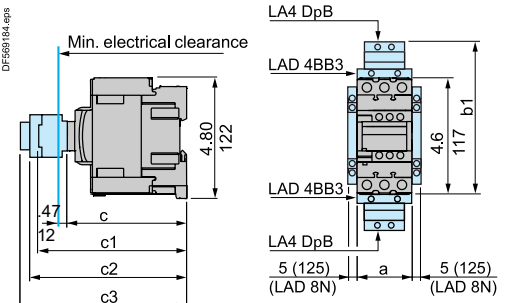
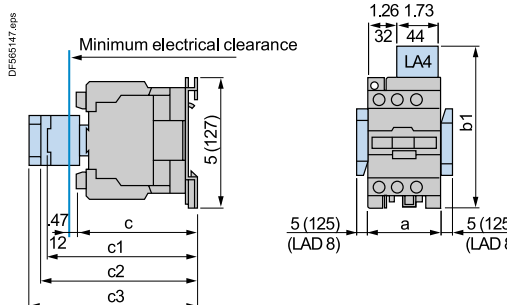
| LC1 D40A–D65A (3P), LC1 DT60A–DT80A (4P) AC OR DC | | LC1 | | D40A–D65A in. (mm) | DT60A–DT80A in. (mm) |
|---|--|-----|-----------------------------------|-----------------------|-------------------------|
|  | | a | with LA4 D*2 | 2.17 (55) | 2.76 (70) |
| | | b1 | with LA4 DB3 or LAD 4BB3 | 5.35 (136) | — |
| | | | with LA4 DF, DT | 6.18 (157) | — |
| | | | with LA4 DM, DW, DL | 6.54 (166) | — |
| | | c | without cover or add-on blocks | 4.65 (118) | 4.65 (118) |
| | | | with cover, without add-on blocks | 4.72 (120) | 4.72 (120) |
| | | c1 | with LADN (1 contact) | — | — |
| | | | with LADN or C (2 or 4 contacts) | 5.91 (150) | 5.91 (150) |
| | | c2 | with LAD 6K10 or LA6 DK | 6.42 (163) | 6.42 (163) |
| | | | with LADT, R, S | 6.73 (171) | 6.73 (171) |
| | | c3 | with LADT, R, S and sealing cover | 6.89 (175) | 6.89 (175) |

Table 18.185: TeSys D80 and D95 AC Coil

| LC1D80 and D95 (3P), LP1 D80004 and D80008 (4P) | | LC1 | | D80 in. (mm) | D95 in. (mm) | D80004 in. (mm) | D80008 in. (mm) |
|---|--|-----|-----------------------------------|-----------------|-----------------|--------------------|--------------------|
|  | | a | with LA4 D*2 | 3.35 (85) | 3.35 (85) | 3.78 (96) | 3.78 (96) |
| | | b1 | with LA4 DB3 or LAD 4BB3 | 5.31 (135) | 5.31 (135) | 5.31 (135) | 5.31 (135) |
| | | | with LA4 DF, DT | 5.59 (142) | 5.59 (142) | 5.59 (142) | 5.59 (142) |
| | | | with LA4 DM, DW, DL | 5.90 (150) | 5.90 (150) | 5.90 (150) | 5.90 (150) |
| | | c | without cover or add-on blocks | 4.92 (125) | 4.92 (125) | 4.92 (125) | 5.51 (140) |
| | | | with cover, without add-on blocks | 5.12 (130) | 5.12 (130) | — | — |
| | | c1 | with LADN (1 contact) | 5.90 (150) | 5.90 (150) | 5.90 (150) | 5.90 (150) |
| | | | with LADN or C (2 or 4 contacts) | 6.22 (158) | 6.22 (158) | 6.22 (158) | 6.22 (158) |
| | | c2 | with LAD 6K10 or LA6 DK | 6.69 (170) | 6.69 (170) | 6.69 (170) | 6.69 (170) |
| | | | with LADT, R, S | 7 (178) | 7 (178) | 7 (178) | 7 (178) |
| | | c3 | with LADT, R, S and sealing cover | 7.16 (182) | 7.16 (182) | 7.16 (182) | 7.16 (182) |

[1] Including LAD4BB

TeSys™ D Contactors, DC Coil

Table 18.186: DC Coil

| LC1D80, D95 (3P), LP1D80004, D80008 (4P) | LC1 | D80 and D95 | D80004 | D80008 | |
|--|-----|------------------------------------|------------|------------|------------|
| | | in. (mm) | in. (mm) | in. (mm) | |
| <p>Minimum electrical clearance</p> <p>1.26 1.73 32 44 LA4</p> <p>5 (127)</p> <p>.47 12 c c1 c2 c3</p> <p>5 (125) (LAD 8) a b1 5 (125) (LAD 8)</p> | a | with LAD 4BB3 | 3.35 (85) | 3.78 (96) | 3.78 (96) |
| | b1 | with LA4 DF, DT | — | — | — |
| | | without cover or add-on blocks | 7.13 (181) | 7.13 (181) | 7.72 (196) |
| | c | with cover, without add-on blocks | 7.32 (186) | — | — |
| | | with LAD N (1 contact) | 8.03 (204) | 8.03 (204) | 8.03 (204) |
| | c1 | with LAD N or C (2 or 4 contacts) | 8.27 (210) | 8.27 (210) | 8.27 (210) |
| | | with LA6 DK10 | 8.70 (221) | 8.70 (221) | 8.70 (221) |
| | c2 | with LAD T, R, S | 9.01 (229) | 9.01 (229) | 9.01 (229) |
| | | with LAD T, R, S and sealing cover | 9.17 (233) | 9.17 (233) | 9.17 (233) |

| LC1D115, D150 (3P), LC1D115004 (4P), AC and DC Coils Panel mounted with 1/4" screws | LC1 | D115, D150 | D115004 | D1150046 | |
|---|-----|------------------------------------|----------|----------|-------|
| | | in. (mm) | in. (mm) | in. (mm) | |
| <p>Min. electrical clearance</p> <p>.39 1.0 6.22 158</p> <p>LAD 8 LA4</p> <p>5 (125) (LAD 8) a b1 5 (125) (LAD 8)</p> <p>c c1 c2 c3</p> <p>With 2 or 4 contacts. + 4 mm with sealing cover.</p> | a | (120) | (150) | (155) | |
| | b1 | with LA4DA2 | (174) | (174) | (174) |
| | | with LA4DF, DT | (185) | (185) | (185) |
| | | with LA4DM, DL | (188) | (188) | (188) |
| | | with LA4DW | (132) | (132) | (115) |
| | c | without cover or add-on blocks | (136) | — | — |
| | | with cover, without add-on blocks | (136) | — | — |
| | c1 | with LAD N or C (2 or 4 contacts) | (150) | (150) | (150) |
| | c2 | with LA6DK20 | (155) | (155) | (155) |
| | c3 | with LAD T, R, S | (168) | (168) | (168) |
| | | with LAD T, R, S and sealing cover | (172) | (172) | (172) |

TeSys™ F Contactors, Dimensions

All dimensions shown in mm.
To convert to inches, divide by 25.4.

LC1F115 to F330

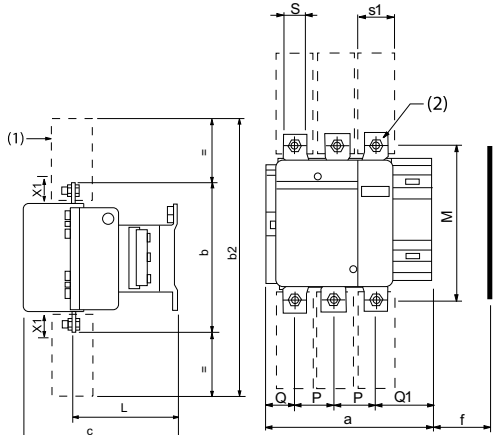


Table 18.187: LC1F115–F330 Dimensions

| LC1 | F115 | | F150 | | F185 | | F225 | | F265 | | F330 | |
|-----|---------|---------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|
| | 3-Pole | 4-Pole | 3-Pole | 4-Pole | 3-Pole | 4-Pole | 3-Pole | 4-Pole | 3-Pole | 4-Pole | 3-Pole | 4-Pole |
| a | 163.5 | 200.5 | 163.5 | 200.5 | 168.5 | 208.5 | 168.5 | 208.5 | 201.5 | 243.5 | 213 | 261 |
| b | 162 | 162 | 170 | 170 | 174 | 174 | 197 | 197 | 203 | 203 | 206 | 206 |
| b1 | 137 | 137 | 137 | 137 | 137 | 137 | 137 | 137 | 145 | 145 | 145 | 145 |
| b2 | 265 | 265 | 301 | 301 | 305 | 305 | 364 | 364 | 370 | 370 | 375 | 375 |
| c | 165 [2] | 165 [2] | 165 [2] | 165 [2] | 176 | 176 | 181 | 181 | 207 | 207 | 219 | 219 |
| f | 131 | 131 | 131 | 131 | 130 | 130 | 130 | 130 | 147 | 147 | 147 | 147 |
| G | 106 | 143 | 106 | 143 | 111 | 151 | 111 | 151 | 142 | 190 | 154.5 | 202.5 |
| G1 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 96 | 96 | 96 | 96 |
| J | 106 | 106 | 106 | 106 | 106 | 106 | 106 | 106 | 106 | 106 | 106 | 106 |
| J1 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 |
| L | 107 | 107 | 107 | 107 | 113.5 | 113.5 | 113.5 | 113.5 | 141 | 141 | 145 | 145 |
| M | 147 | 147 | 150 | 150 | 154 | 154 | 172 | 172 | 178 | 178 | 181 | 181 |
| P | 37 | 37 | 40 | 40 | 40 | 40 | 48 | 48 | 48 | 48 | 48 | 48 |
| Q | 29.5 | 29.5 | 26.5 | 26 | 29 | 29 | 21 | 17 | 39 | 34 | 43 | 43 |
| Q1 | 60 | 60 | 57.5 | 55.5 | 59.5 | 59.5 | 51.5 | 47.5 | 66.5 | 66.5 | 74 | 74 |
| S | 15 | 15 | 20 | 20 | 20 | 20 | 25 | 25 | 25 | 25 | 25 | 25 |
| S1 | 27 | 27 | 34 | 34 | 34 | 34 | 44.5 | 44.5 | 38 | 38 | 44.5 | 44.5 |
| Y | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 38 | 38 | 38 | 38 |
| Z | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | 21.5 | 21.5 | 20.5 | 20.5 |

f = minimum distance required for coil removal.

Table 18.188: LC1F115–F330 Voltage

| | 200 to 500 V | 600 to 1000 V |
|---------------|--------------|---------------|
| LC1F115, F150 | 10 | 15 |
| LC1F185 | 10 | 15 |
| LC1F225, F265 | 10 | 15 |
| LC1F330 | 10 | 15 |

X1: Minimum clearance according to the operational voltage and the breaking capacity.

LC1F400 to F500

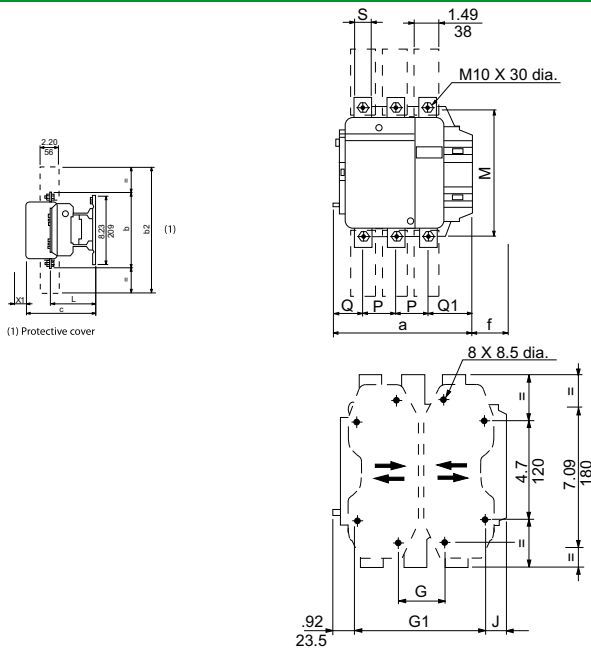


Table 18.189: LC1F400–F500 Dimensions

| LC1 | F400 | | | F500 | | |
|---------|--------|--------|--------|--------|--------|--------|
| | 2-Pole | 3-Pole | 4-Pole | 2-Pole | 3-Pole | 4-Pole |
| a | 213 | 213 | 261 | 233 | 233 | 288 |
| b | 206 | 206 | 206 | 238 | 238 | 238 |
| b2 | 375 | 375 | 375 | 400 | 400 | 400 |
| c | 213 | 213 | 213 | 226 | 226 | 226 |
| f | 119 | 119 | 119 | 141 | 141 | 141 |
| G [3] | 80 | 80 | 80 | 80 | 80 | 140 |
| G min. | 66 | 66 | 66 | 66 | 66 | 66 |
| G max. | 102 | 102 | 150 | 120 | 120 | 175 |
| G1 [3] | 170 | 170 | 170 | 170 | 170 | 230 |
| G1 min. | 156 | 156 | 156 | 156 | 156 | 156 |
| G1 max. | 192 | 192 | 240 | 210 | 210 | 265 |
| J | 19.5 | 19.5 | 67.5 | 39.5 | 39.5 | 34.5 |
| L | 145 | 145 | 145 | 146 | 146 | 146 |
| M | 181 | 181 | 181 | 208 | 208 | 208 |
| P | 48 | 48 | 48 | 55 | 55 | 55 |
| Q | 69 | 43 | 43 | 76 | 46 | 46 |
| Q1 | 96 | 74 | 74 | 102 | 77 | 77 |
| S | 25 | 25 | 25 | 30 | 30 | 30 |

f = Minimum distance required for coil removal.

Table 18.190: LC1F400–F500 Voltage

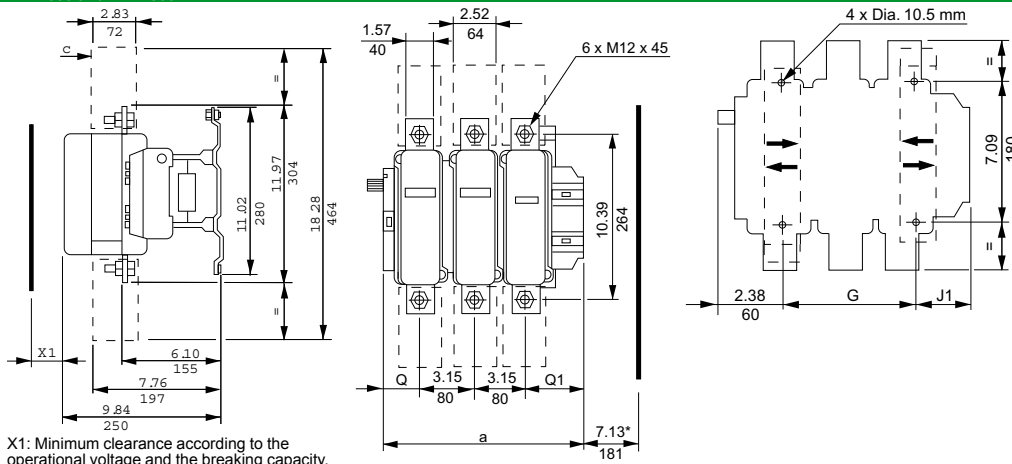
| | 200 to 500 V | 600 to 1000 V |
|---------|--------------|---------------|
| LC1F400 | 15 | 20 |
| LC1F500 | 15 | 20 |

X1: Minimum clearance according to the operational voltage and the breaking capacity.

[2] +6 mm with time delay block (for F115 and F150).
[3] Supplied

Table 18.191: LC1F Dimensions

LC1F630 and LC1F800



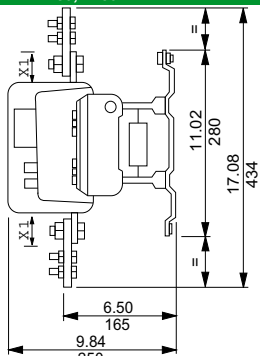
X1: Minimum clearance according to the operational voltage and the breaking capacity.

| | LC1F630 | a | G supplied | G min. | G max. | J1 | Q | Q1 | | | | | | | |
|---|---------|-------|------------|--------|--------|------|-----|-------|-----|------|------|------|-----|------|-----|
| * = minimum distance required for coil removal. | 2 P | 12.17 | 309 | 7.09 | 180 | 3.94 | 100 | 7.68 | 195 | 2.70 | 68.5 | 4.02 | 102 | 5.00 | 127 |
| ♦ Protective terminal cover. | 3 P | 12.17 | 309 | 7.09 | 180 | 3.94 | 100 | 7.68 | 195 | 2.70 | 68.5 | 2.36 | 60 | 3.50 | 89 |
| | 4 P | 15.31 | 389 | 9.45 | 240 | 5.91 | 150 | 10.83 | 275 | 2.70 | 68.5 | 2.36 | 60 | 3.50 | 89 |

| Voltage (V) | 200 to 500 V | 690 to 1000 V | 200 to 690 V | 1000 V |
|-------------|--------------|---------------|--------------|--------|
| F630 | 20 | 30 | — | — |
| F800 | — | — | 10 | 20 |

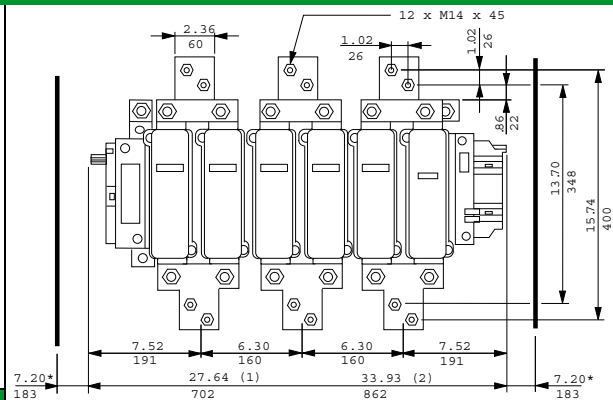
18 CONTACTORS AND STARTERS-IEC

LC1F780, F7804



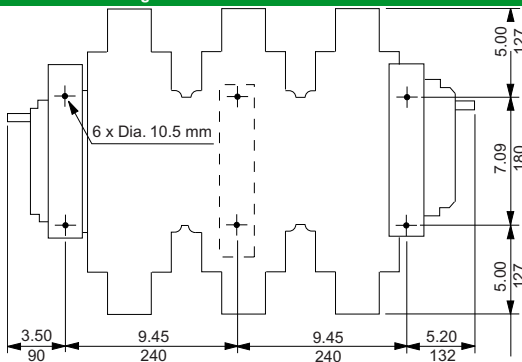
X1: Minimum clearance according to the operational voltage and the breaking capacity.

| Voltage (V) | 200 to 500 V | 690 to 1000 V |
|-------------|--------------|---------------|
| X1 in mm | 30 | 35 |

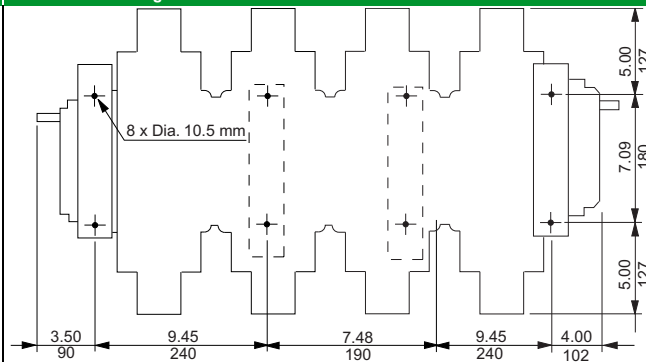


1) Overall length (3 poles).
2) Overall length (4 poles).
* Minimum distance required for coil removal.

LC1F780 mounting



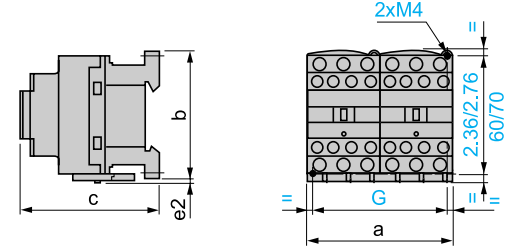
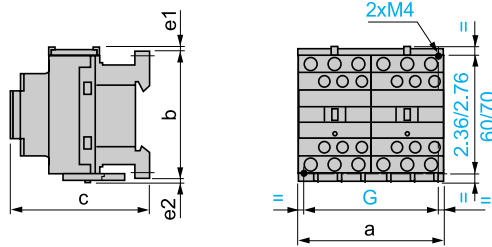
LC1F7804 mounting



TeSys™ D Reversing Contactor Dimensions

Table 18.192: Reversing Contactor Dimensions

**LC2D09–D38
2 x LC1D09 to D38** **LC2DT20 to DT40
2 x LC1 DT20 to DT40**



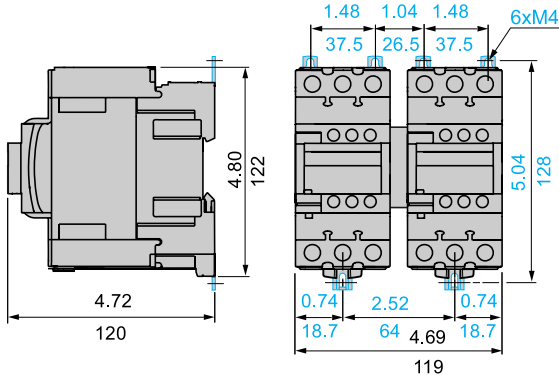
| LC2 or 2 x LC1 | a | b | c ^[4] | e1 | e2 | G |
|------------------------|-----------|-----------|------------------|----------|------------|-----------|
| | in. (mm) | in. (mm) | in. (mm) | in. (mm) | in. (mm) | in. (mm) |
| D09 to D18 (AC Coil) | 3.54 (90) | 3.03 (77) | 3.38 (86) | 0.16 (4) | 0.06 (1.5) | 3.14 (80) |
| D093 to D123 (AC Coil) | 3.54 (90) | 3.9 (99) | 3.38 (86) | — | — | 3.14 (80) |
| D09 to D18 (DC Coil) | 3.54 (90) | 3.03 (77) | 3.74 (95) | 0.16 (4) | 0.06 (1.5) | 3.14 (80) |
| D093 to D123 (DC Coil) | 3.54 (90) | 3.9 (99) | 3.74 (95) | — | — | 3.14 (80) |
| D25 to D38 (AC Coil) | 3.54 (90) | 3.34 (85) | 3.62 (92) | 0.35 (9) | 0.20 (5) | 3.14 (80) |
| D183 to D383 (AC Coil) | 3.54 (90) | 3.9 (99) | 3.62 (92) | — | — | 3.14 (80) |
| D25 and D32 (DC Coil) | 3.54 (90) | 3.34 (85) | 3.98 (101) | 0.35 (9) | 0.20 (5) | 3.14 (80) |
| D183 to D383 (DC Coil) | 3.54 (90) | 3.9 (99) | 3.98 (101) | — | — | 3.14 (80) |

| LC2 or 2 x LC1 | a | b | c | G |
|-------------------------|-----------|-----------|------------|-----------|
| | in. (mm) | in. (mm) | in. (mm) | in. (mm) |
| DT20 and DT25 (AC Coil) | 3.54 (90) | 3.34 (85) | 3.62 (92) | 3.14 (80) |
| DT32 and DT40 (AC Coil) | 3.54 (90) | 3.58 (91) | 3.9 (99) | 3.14 (80) |
| DT20 and DT25 (DC Coil) | 3.54 (90) | 3.34 (85) | 4 (102) | 3.14 (80) |
| DT32 and DT40 (DC Coil) | 3.54 (90) | 3.58 (91) | 4.29 (109) | 3.14 (80) |

c, e: includes cabling

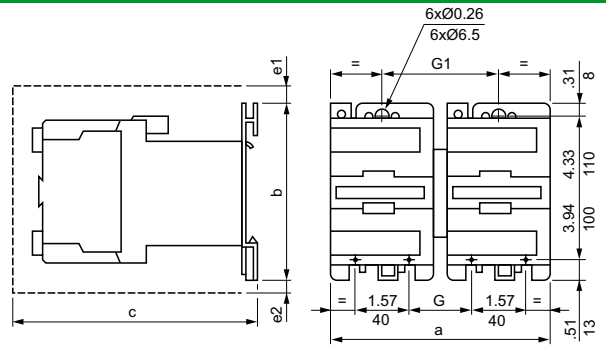
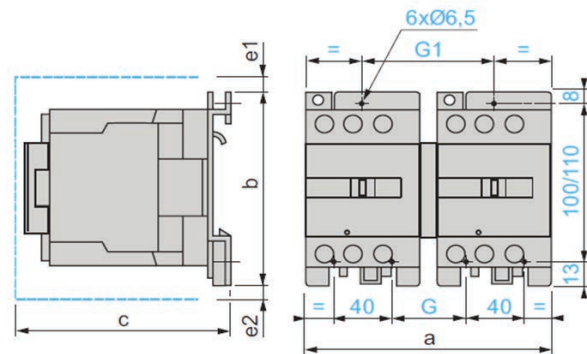
e1 and e2: includes cabling

**LC2D40A to D65A
2 x LC1D40A to D65A**



**LC2D80 and D95
2 x LC1D80 and D95 (AC Coil)**

2 x LC1D80 and D95 (DC Coil)



| LC2 or 2 x LC1 | a | b | c | e1 | e2 | G | G1 |
|----------------|------------|----------|------------|-----------|-----------|-----------|------------|
| | in. (mm) | in. (mm) | in. (mm) | in. (mm) | in. (mm) | in. (mm) | in. (mm) |
| D80 and D95 | 7.17 (182) | 5 (127) | 6.22 (158) | 0.51 (13) | — | 2.24 (57) | 3.78 (96) |
| D80004 | 8.15 (207) | 5 (127) | 6.22 (158) | — | 0.79 (20) | 2.8 (71) | 4.37 (111) |

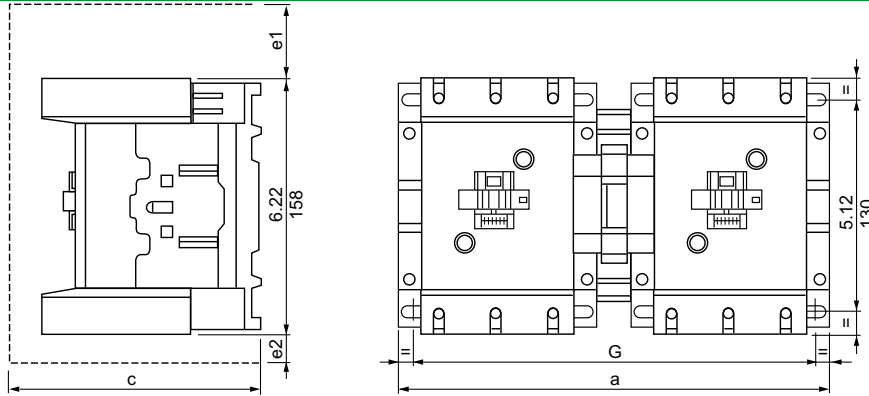
| 2 x LC1 | a | b | c | e1 | e2 | G | G1 |
|-------------|------------|-----------|------------|-----------|-----------|-----------|------------|
| | in. (mm) | in. (mm) | in. (mm) | in. (mm) | in. (mm) | in. (mm) | in. (mm) |
| D80 and D95 | 8.15 (207) | 5.0 (127) | 8.46 (215) | 0.51 (13) | 0.79 (20) | 3.78 (96) | 4.37 (111) |

c, e1 and e2: includes cabling.

c, e1, and e2: includes cabling

[4] With safety cover, without add-on block.

LC2D115 and D150
2 x LC1D115 and D150



| LC2 or 2 x LC1 | a | c | e1 | e2 | G |
|-------------------|-------------|------------|----------|-----------|----------------------|
| | in. (mm) | in. (mm) | in. (mm) | in. (mm) | in. (mm) |
| D115, D150 | 10.47 (266) | 5.83 (148) | 2.2 (56) | 0.71 (18) | 9.53/10.08 (242/256) |
| D115004 | 13.15 (334) | 5.83 (148) | — | 2.36 (60) | 12.2/12.76 (310/324) |

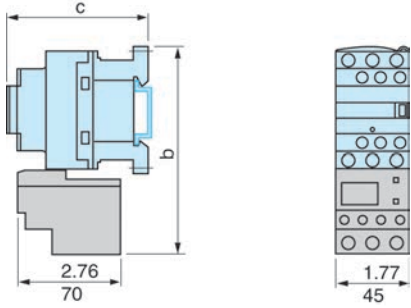
c, e1 and e2 includes cabling

NOTE: For dimensions of TeSys F reversing contactors, please refer to catalog [MKTED210011EN](#).

TeSys™ D Open Starter Dimensions

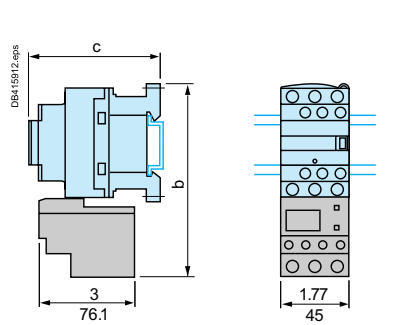
Table 18.193: TeSys D Thermal Overload Relay Dimensions, in. (mm)

LRD01-35
Direct mounting beneath contactors with screw clamp connections



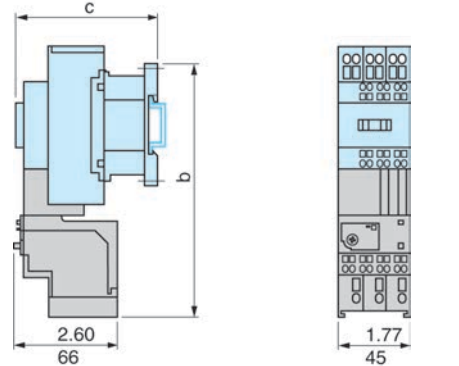
| LC1• | D09–D18 | D25–D38 |
|------|---|------------|
| b | 4.84 (123) | 5.39 (137) |
| c | See TeSys™ D Contactors, AC and DC Coil, page 18-51 | |

LRD04L-32L
Direct mounting beneath contactors with screw clamp connections



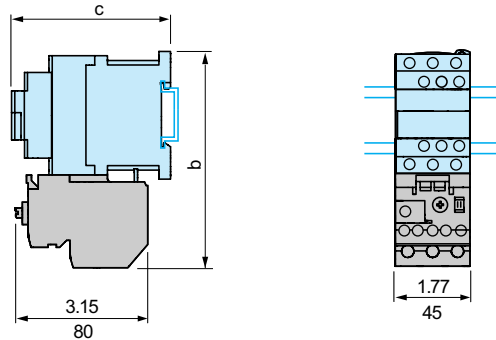
| LC1• | D09–D18 | D25–D38 |
|------|---|------------|
| b | 4.84 (123) | 5.39 (137) |
| c | See TeSys™ D Contactors, AC and DC Coil, page 18-51 | |

LRD013-223
Direct mounting beneath contactors with spring terminal connections



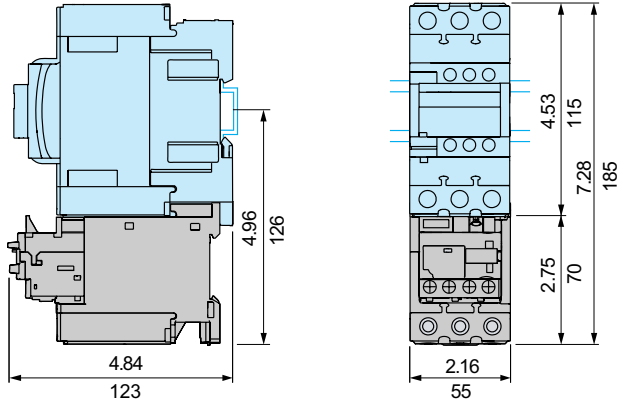
| LC1• | D093–383 |
|------|---|
| b | 6.61 (168) |
| c | See TeSys™ D Contactors, AC and DC Coil, page 18-51 |

LR9D01, 02, 08, and 32

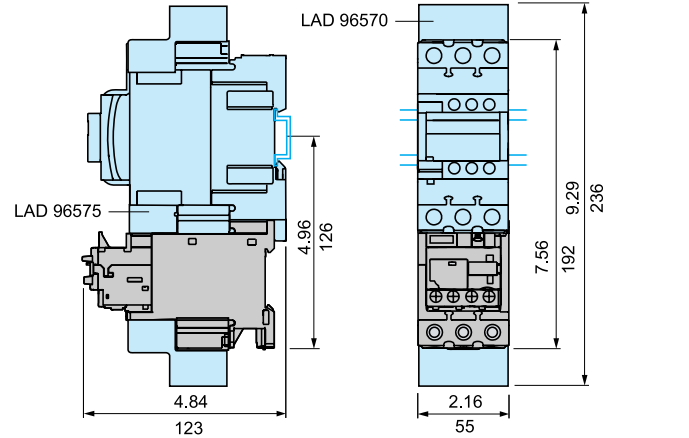


| LC1• | D09–D18 | D25–D38 |
|------|---|---|
| b | 5.12 (130) | 5.51 (140) |
| c | See TeSys™ D Contactors, AC and DC Coil, page 18-51 | See TeSys™ D Contactors, AC and DC Coil, page 18-51 |

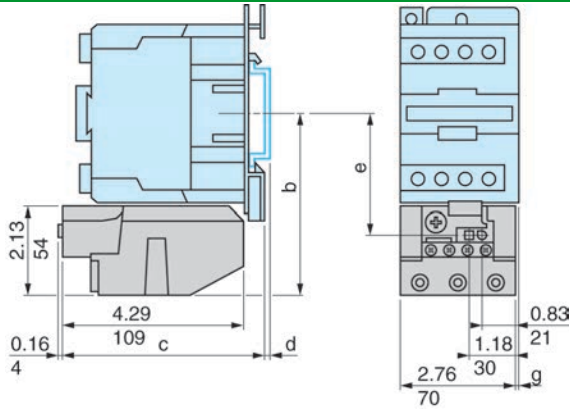
LRD313–365
Direct mounting beneath LC1D40A to D65A with screw clamp connectors or EverLink connectors



LRD3136–3656
Direct mounting beneath contactors LC1D40A6 to D65A6 with lugs

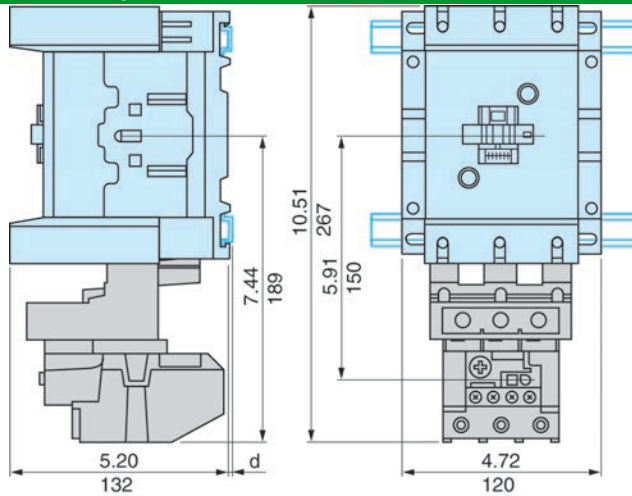


LRD33...
Direct mounting beneath contactors
LC1D80 to D95



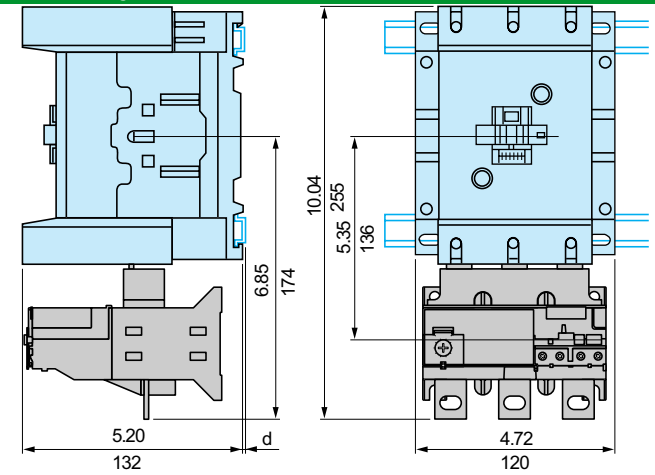
| AM1 d | DL201 0.28 (7) | | | DL200 0.67 (17) | |
|--------------------|-------------------|--------------|-------------|--------------------|-----------|
| | b | c | e | g (3P) | g (4P) |
| AC Control Circuit | | | | | |
| LC1D80 | 4.55 (115.5) | 4.88 (124) | 3.03 (76.9) | 0.37 (9.5) | 0.87 (22) |
| LC1D95 | 4.55 (115.5) | 4.88 (124) | 3.03 (76.9) | 0.37 (9.5) | — |
| DC Control Circuit | | | | | |
| LP1D80 | 4.55 (115.5) | 7.06 (179.4) | 3.03 (76.9) | 0.37 (9.5) | 0.87 (22) |

LRD4...[5]
Direct mounting beneath contactors LC1D115 and D150



| AM1 d | DL200 and DR200 0.10 (2.5) | DE200 and ED... 0.41 (10.5) |
|----------|-------------------------------|--------------------------------|
|----------|-------------------------------|--------------------------------|

LR9D5... and LR9D6...[5]
Direct mounting beneath contactors LC1D115 and D150

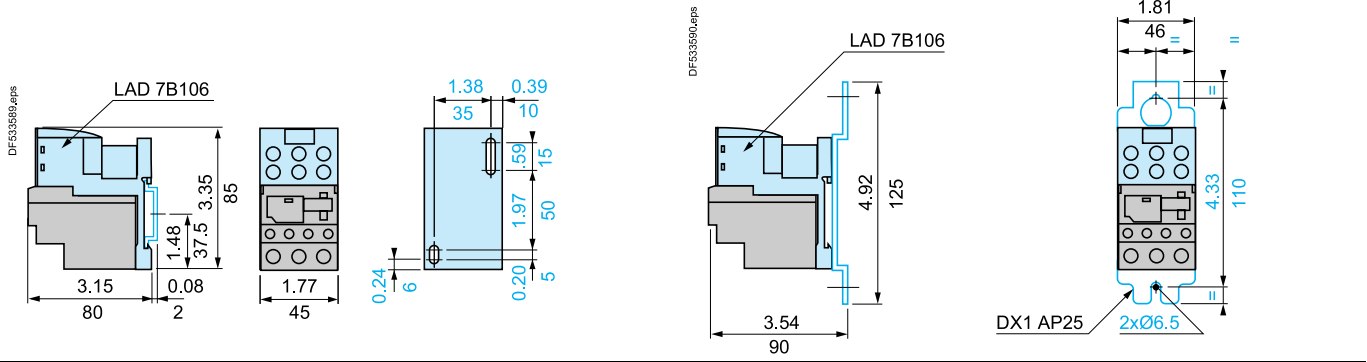


| AM1 d | DP200 and DR200 0.10 (2.5) | DE200 and ED... 0.41 (10.5) |
|----------|-------------------------------|--------------------------------|
|----------|-------------------------------|--------------------------------|

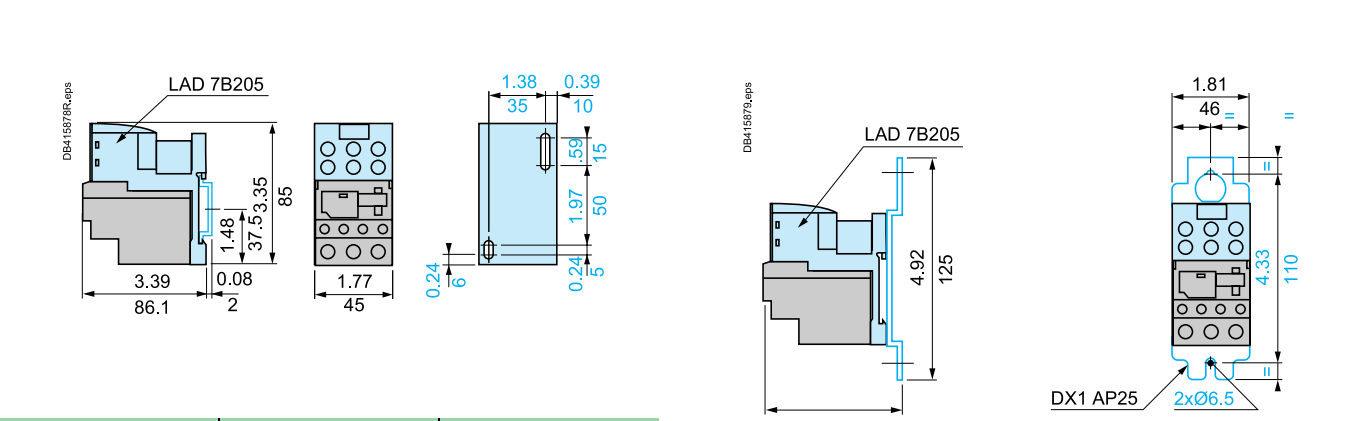
[5] For additional specifications and selection information, see catalog [MKTED210011EN](#)

TeSys™ D Thermal Overload Relay Dimensions

LRD01–35 Independent mounting on 1.97 in. (50 mm) centers or on rail AM1DP200 or DE200 Independent mounting on 4.33 in. (110 mm) centers

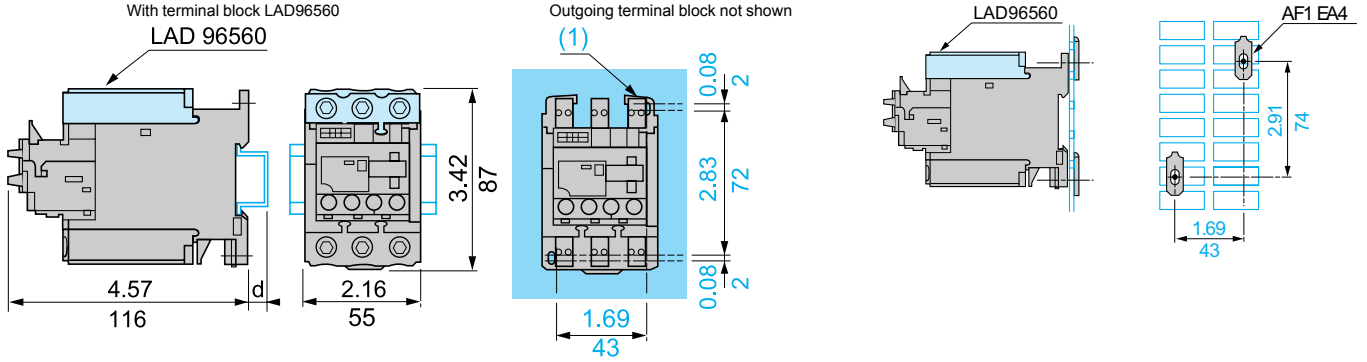


LRD04L–32L Independent mounting on 1.97 in. (50 mm) centers or on rail AM1DP200 or DE200 Independent mounting on 4.33 in. (110 mm) centers



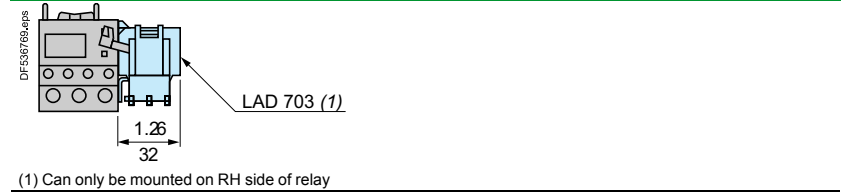
| AM1 | DP200 | DE200 |
|-----|----------|------------|
| d | 0.08 (2) | 0.37 (9.5) |

LRD313–365 Mounting on rail AM1D•200 or ED200 Panel mounting Mounted on plate AM1P



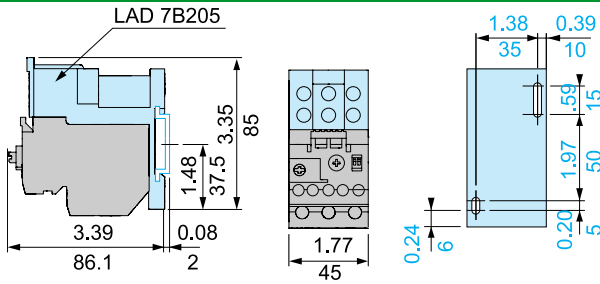
| AM1 | DP200 | DE200 | ED200 |
|-----|----------|------------|------------|
| d | 0.08 (2) | 0.37 (9.5) | 0.37 (9.5) |

LRD01–35 and LRD313–365 Remote tripping or electrical reset

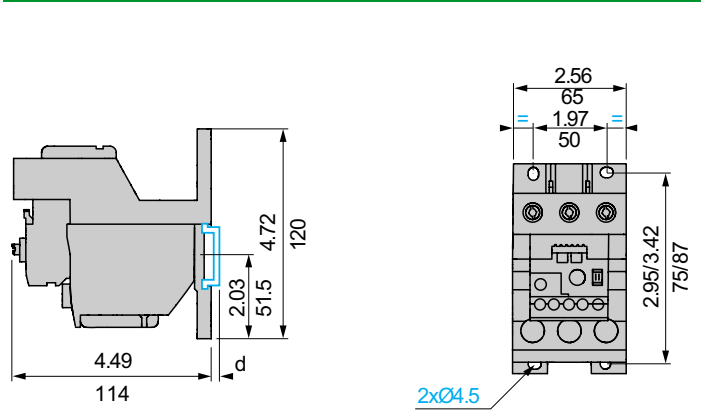


(1) Can only be mounted on RH side of relay

LR9D01-D32

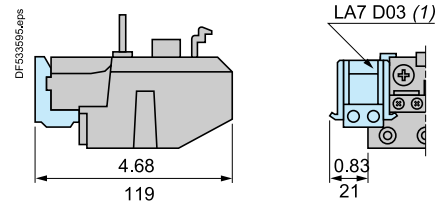
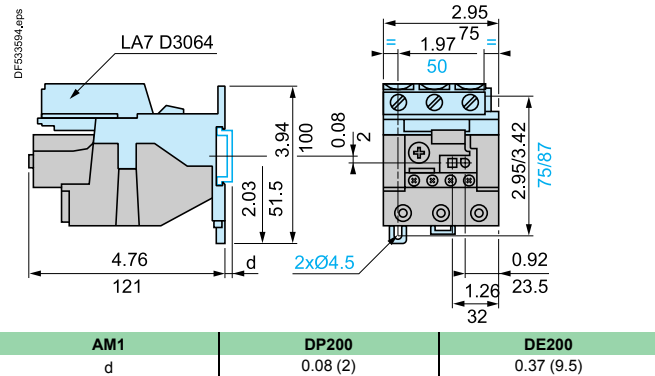


LR9D110S



LRD3... and LR2D35...
Independent mounting on 1.97 in. (50 mm) centers or on rail AM1DP200 or DE200

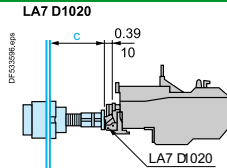
LRD3..., LR2D35..., and LR9D5
Remote tripping or electrical reset



(1) Can be mounted on RH or LH side of relay LRD3..., LR2D35..., or LR9D

| AM1 | DP200 | DE200 |
|-----|----------|------------|
| d | 0.08 (2) | 0.37 (9.5) |

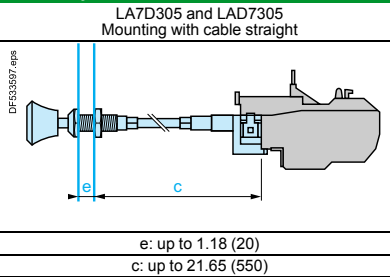
LRD3...
Adapter for door-mounted operator



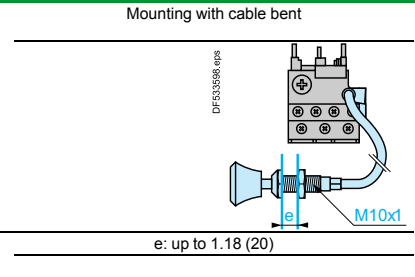
c: adjustable from 0.67 to 4.72 (17 to 120)



LRD, LRD313-365, LRD04-32L, LR9D5, and LR9D6
"Reset" by flexible cable



e: up to 1.18 (20)
c: up to 21.65 (550)



e: up to 1.18 (20)

TeSys™ F Overload Relay Dimensions

All dimensions shown in mm.
To convert to inches, divide by 25.4.

Table 18.194: TeSys F Overload Relay Dimensions

| LR9F5•71, F71 | LR9F5•57, F5•63, F5•67, F5•69, F57, F63, F67, F69 |
|----------------------------|--|
| Common side view | |
| | |
| 1) Terminal shroud LA9F70• | 2) 6.5 x 13.5 for LR9F5•57 and F57. 8.5 x 13.5 for LR9F5•63, F5•67, F5•69, F63, F67, F69. |

| LR9F7•75, F7•79, F7•81, F75, F79, F81 | LR9F7•81, F81 | | | | | | | | | |
|--|--|----|----|---------------|----|----|---------------------------|----|----|--|
| Common side view | (for mounting beneath LC1F630 and LC1F800) | | | | | | | | | |
| | | | | | | | | | | |
| (1) Terminal shroud LA9-F70• | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th></th> <th>P1</th> <th>P2</th> </tr> </thead> <tbody> <tr> <td>LR9F7•75, F75</td> <td>48</td> <td>48</td> </tr> <tr> <td>LR9F7•79, F7•81, F79, F81</td> <td>55</td> <td>55</td> </tr> </tbody> </table> | | P1 | P2 | LR9F7•75, F75 | 48 | 48 | LR9F7•79, F7•81, F79, F81 | 55 | 55 | |
| | P1 | P2 | | | | | | | | |
| LR9F7•75, F75 | 48 | 48 | | | | | | | | |
| LR9F7•79, F7•81, F79, F81 | 55 | 55 | | | | | | | | |

| Direct mounting beneath contactor LC1F | Direct mounting beneath reversing contactors or star-delta contactors |
|--|---|
| | |
| (2) Relay mounting plate, see Mounting Plate for Overload Relay, page 18-22. | (1) Connection accessories, see Connection Accessories, page 18-22. (2) Relay mounting plate, see Mounting Plate for Overload Relay, page 18-22. |

| LC1 contactors | With LR9 relays | b | H1 | H2 | H3 | LC1 contactors | With LR9 relays | b | H4 | H2 | H3 |
|----------------|--|-----|-----|-------|-----|----------------|--|-----|-----|-------|-----|
| F115 | F5•57, F5•63, F5•67, F5•69, F57, F63, F67, F69 | 240 | 30 | 76 | 120 | F115 | F5•57, F5•63, F5•67, F5•69, F57, F63, F67, F69 | 279 | 60 | 76 | 120 |
| F150 | F5•57, F5•63, F5•67, F5•69, F57, F63, F67, F69 | 246 | 30 | 76 | 120 | F150 | F5•57, F5•63, F5•67, F5•69, F57, F63, F67, F69 | 283 | 60 | 76 | 120 |
| F185 | F5•57, F5•63, F5•67, F5•69, F57, F63, F67, F69 | 250 | 30 | 76 | 120 | F185 | F5•57, F5•63, F5•67, F5•69, F57, F63, F67, F69 | 285 | 60 | 76 | 120 |
| F225 | F5•71, F71 | 273 | 40 | 76 | 120 | F225 | F5•71, F71 | 319 | 80 | 76 | 120 |
| | F7•75, F7•79, F75, F79 | 308 | 50 | 108.8 | 120 | | F7•75, F7•79, F75, F79 | 360 | 100 | 108.8 | 120 |
| F265 | F5•71, F71 | 279 | 40 | 76 | 120 | F265 | F5•71, F71 | 332 | 90 | 76 | 120 |
| | F7•75, F7•79, F75, F79 | 314 | 60 | 108.8 | 120 | | F7•75, F7•79, F75, F79 | 363 | 100 | 108.8 | 120 |
| F330 | F7•75, F7•79, F75, F79 | 317 | 60 | 108.8 | 120 | F330 | F7•75, F7•79, F75, F79 | 364 | 100 | 108.8 | 120 |
| F400 | F7•75, F7•79, F7•81, F75, F79, F81 | 317 | 60 | 108.8 | 180 | F400 | F7•75, F7•79, F7•81, F75, F79, F81 | 364 | 100 | 108.8 | 180 |
| F500 | F7•75, F7•79, F7•81, F75, F79, F81 | 346 | 70 | 108.8 | 180 | F500 | F7•75, F7•79, F7•81, F75, F79, F81 | 390 | 110 | 108.8 | 180 |
| F630, F800 | F7•81, F81 | 510 | 110 | 108.8 | 180 | F630, F800 | F7•81, F81 | 509 | 120 | 108.8 | 180 |

TeSys™ D Combination Starter Dimensions

Table 18.195: Non-Combination Starter Dimensions [6]

Non-Combination Starters

| Non-Combination Starters | | Type 1 | | | | | | | | | | Type 12/3R | |
|--------------------------|-----------|--------|-------|------|------|-------|----------|----------|--------|--------|----------|------------|-------|
| Non-Reversing | Reversing | A | B | C | D | E | F | G | H | J | K | D | E |
| D09-32 | — | 6.77 | 10.04 | 6.25 | 5.38 | 9.00 | 1-1.25 | 0.5-0.75 | — | 1-0.25 | 0.5-0.75 | 5.38 | 11.37 |
| D40-65 | D09-32 | 8.66 | 10.83 | 7.21 | 7.25 | 9.75 | 1.25-1.5 | 0.5-0.75 | 1-1.25 | 1-0.25 | 0.5-0.75 | 5.38 | 12.15 |
| D80 | D40-80 | 10.63 | 13.98 | 7.21 | 9.22 | 12.94 | 1.25-1.5 | 0.5-0.75 | 1-1.25 | 1-1.25 | 0.5-0.75 | 5.38 | 15.30 |

Table 18.196: TeSys D Combination Starter Dimensions, Reversing and Non-Reversing

| NEMA 1 | D09-25 (FVNR) | | D09-40 (FVR); D32-40 (FVNR) | |
|--------|---------------|--|-----------------------------|--|
| | | | | |

18 CONTACTORS AND STARTERS-IEC

[6] All dimensions in inches.

TeSys™ K Contactor Dimensions

Table 18.197: TeSys K Contactor Dimensions

| | |
|---|---|
| <p>LR2K Direct mounting under the contactor</p> | <p>Separate mounting with LA7-K0064 terminal block on 35 mm rail (AM1DP200 or AM1DE200)</p> |
| <p>Three-phase</p> | <p>Wiring Scheme</p> |
| <p>LC1, LP1, LP4K Mini-contactors On baseplate</p> | <p>LC2, LC8, LP2, LP5K Reversing mini-contactors On baseplate</p> |
| <p>On AM1DP200 or DE200 rail (35 mm)</p> | <p>On AM1DP200 or DE200 rail (35 mm)</p> |
| <p>On printed circuit board</p> | <p>On printed circuit board for reversing contactors or 2 mini-contactors side-by-side</p> |
| <p>LA2KT Electronic time delay contact blocks</p> | <p>On mini-contactors or reversing mini-contactors</p> |

TeSys™ U Starter Dimensions

Table 18.198: TeSys U Starter Dimensions

| Starter Controllers | | Non-Reversing [7] | | Reversing | |
|---------------------|--|-------------------|--|----------------|--|
| Rail Mounting | | Screw Mounting | | Screw Mounting | |
| | | | | | |

NOTE: Minimum electrical clearance:
X1: 35 mm for Ue = 440 V; and 70 mm for Ue = 500 and 690 V
X2: 0

Reversing Block for Mounting Separately from Power Base

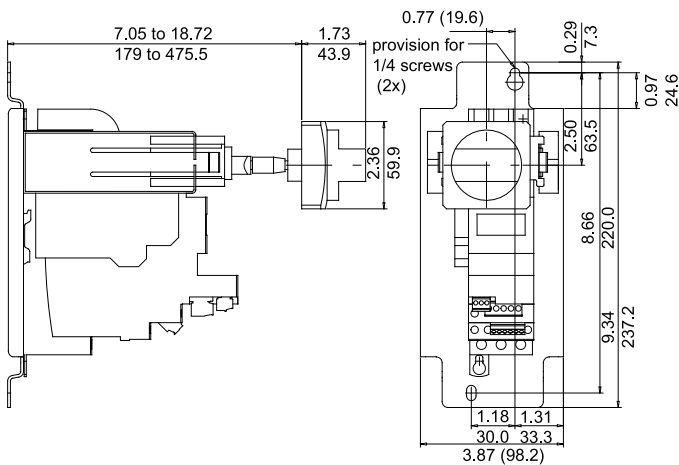
| Rail Mounting | Screw Mounting |
|---------------|----------------|
| | |

Limiter Disconnecter LUALB1[7]

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

Door interlock Mechanisms

LU9APN43 and LU9APN44

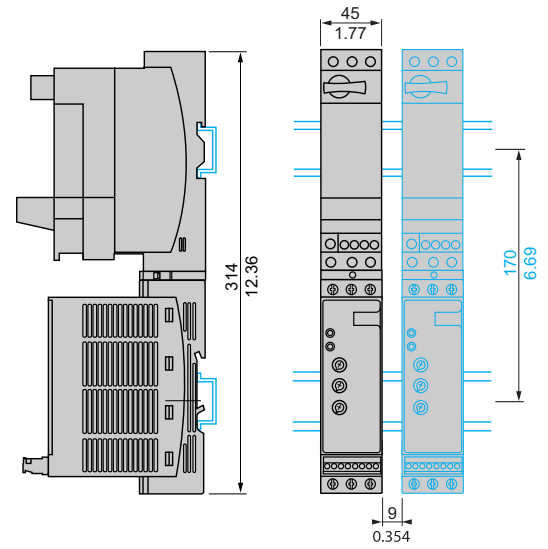
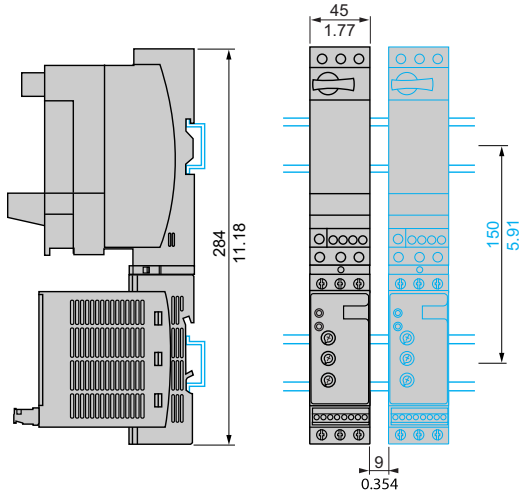


[7] Maximum depth (with Modbus™ communication module)

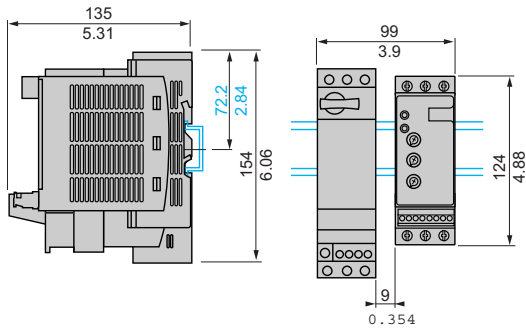
Altistart U01 and TeSys U Soft Starters, Mounting

Table 18.199: Altistart U01 and TeSys U Soft Starters

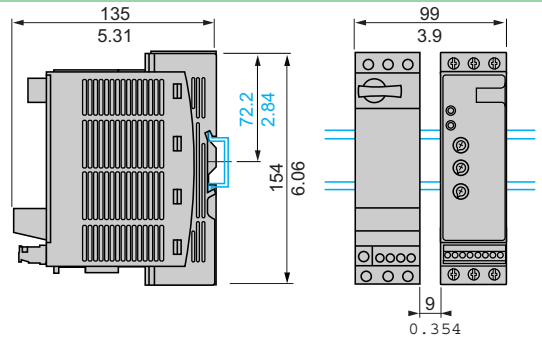
| TeSys U Combination (non-reversing power base) and ATSU01N212LT Mounting on (35 mm) rail with VW3 G4104 connector | TeSys U Combination (non-reversing power base) and ATSU01N222LT to ATSU01N232LT Mounting on (35 mm) rail with VW3G4104 connector |
|--|---|
|--|---|



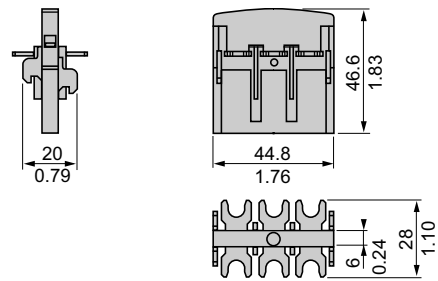
| TeSys U Combination (non-reversing or reversing power base) and ATSU01N2206LT to ATSU01N212LT Side-by-side mounting |
|--|
|--|



| TeSys U Combination (non-reversing or reversing power base) and ATSU01N222LT to ATSU01N232LT Side-by-side mounting |
|---|
|---|



VW3G4104 Power Connector



TeSys GV2 and GV3 Manual Starter and Protector Dimensions

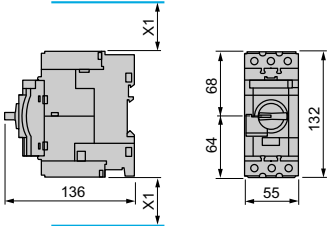
Table 18.200: TeSys GV2 and GV3 Manual Starter and Protector Dimensions

| GV2M | | GV2AD, AM, AN, AU, AS, AX | | GV2AE | | Mounting of GV2M | | | | | |
|--|--|--|--|-----------------------------------|--|--|--|---------------|--|----------------|--|
| | | Block GV2AD, AM, AN Block GV2AU, AS, AX | | | | On 35 mm L-r rail C = 78.5 mm (3.09") on AM1DP200 (35 x 7.5 mm) C = 86 mm (3.39") on AM1DE200, ED200 (35 x 15 mm) | | | | | |
| GV2P | | GV2AD, AM, AN, AU, AS, AX | | GV2AK00 | | Mounting of GV2P | | | | | |
| | | Block GV2AD, AM, AN Block GV2AU, AS, AX | | | | On 35 mm L-r rail C = 98.5 mm (3.88") on AM1DP200 (35 x 7.5 mm) C = 106 mm (4.17") on AM1DE200, ED200 (35 x 15 mm) | | | | | |
| GV2AF4 + LAD31 | | GV2P + GV2GH7 | | GV2P + GV2GH7 + TeSys D contactor | | GV2P + GV2GH7 + TeSys D contactor | | | | | |
| Combination GV2ME + TeSys D range contactor | | Combination GV2P + TeSys D range contactor | | for UL 508 Type E application | | for UL 508 Type E application | | | | | |
| GV2ME + | | LC2D09 to D18 | | LC2D25 and D32 | | GV2P + | | LC2D09 to D18 | | LC2D25 and D32 | |
| b | | 7.4 (188.6) | | 7.8 (199) | | b | | 6.61 (168.1) | | 7.9 (199.5) | |
| c1 | | 3.6 (92.7) | | 3.9 (99) | | c1 | | 4.6 (116.8) | | 4.6 (116.8) | |
| c | | 3.9 (98.2) | | 4.11 (104.5) | | c | | 4.8 (122.3) | | 4.8 (122.3) | |
| d1 | | 3.9 (98.3) | | 3.9 (98.3) | | — | | — | | — | |
| d | | 4.1 (103.8) | | 1.4 (103.8) | | — | | — | | — | |
| Surface mounting enclosure GV2MC0• | | | | | | Flush mounting enclosure GV2MP0• (bracket cut-out) | | | | | |
| 4 knock-outs for 16 mm plastic cable glands or no. 16 conduit. | | | | | | | | | | | |
| | | | | | | | | | | | |
| GV2 | | b | | b1 | | in. | | mm | | mm | |
| MP01, MP02 | | 5.51 | | 140 | | 5.00 | | 127 | | 117 | |
| MP03, MP04 | | 5.24 | | 133 | | 4.61 | | 117 | | 117 | |

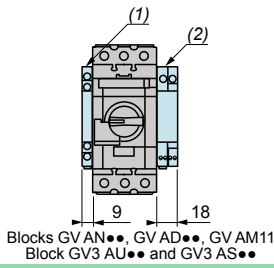
Table 18.201: TeSys GV2 and GV3 Manual Starter and Protector Dimensions (cont'd)

| GV2M with GK2AF01 and LC1K | GV2M with GV2AF01 and LC1K | GV2M with GV2AF01 and LC2K | Adapter Plate GK2AF01 | | |
|---|----------------------------|--|---|----------------------------|------------------|
| Dimensions (mm) | | | | | |
| | | | | | |
| Mounting external operator GV2AP0• | Door cut-out | GV2M on panel with GV2AF02 adapter plate | 7.5 mm height compensation plate GV1F03 | | |
| | | | | | |
| Sets of bus bars, GV2G445, GV2G454, GV2G472 with terminal block GV2G05 | | Sets of bus bars with terminal block GV1G09 | Sets of bus bars GV2G245, GV2G254, GV2G272 | | |
| | | | | | |
| | I | P | I | I | |
| GV2G445 | 0.16 x 1.8 in. (4 x 45 mm) | 7.0 in. (179 mm) | 1.8 in. (45 mm) | 3.5 in. (89 mm) | |
| GV2G454 | 0.16 x 2.1 in. (4 x 54 mm) | 8.1 in. (206 mm) | 2.1 in. (54 mm) | 3.9 in. (98 mm) | |
| GV2G472 | 0.16 x 1.8 in. (4 x 45 mm) | 10.2 in. (260 mm) | 2.8 in. (72 mm) | 4.6 in. (116 mm) | |
| | | | GV2G245 | 0.08 x 1.8 in. (2 x 45 mm) | 3.5 in. (89 mm) |
| | | | GV2G254 | 0.08 x 2.1 in. (2 x 54 mm) | 3.9 in. (98 mm) |
| | | | GV2G272 | 0.08 x 2.8 in. (2 x 72 mm) | 4.6 in. (116 mm) |
| | | | GV2G354 | 0.12 x 2.1 in. (3 x 54 mm) | 6.0 in. (152 mm) |

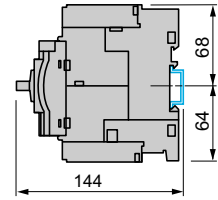
GV3P Dimension Mounting on rail AM1 DE200 or AM1 ED201



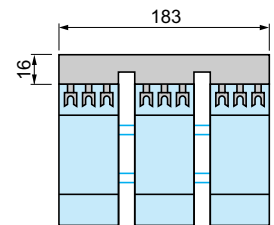
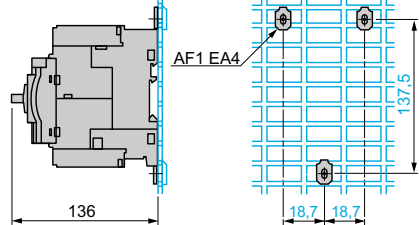
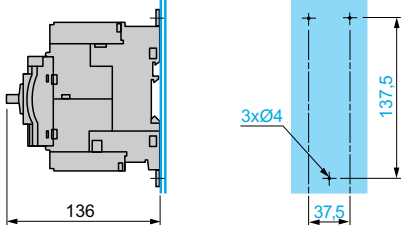
X1 = Electrical clearance (ISC max)
40 mm for Ue < 500 V; 50 mm for Ue < 690 V



Blocks GV AN●●, GV AD●●, GV AM11
Block GV3 AU●● and GV3 AS●●



Mounting on panel, using M4 screws Mounting on pre-slotted mounting plate AM1PA



NOTE: Leave a space of 9 mm between 2 manual motor protectors: either an empty space or side-mounting add-on contact blocks.
Horizontal mounting is possible: please consult your regional sales office.

TeSys GV7 Manual Starter and Protector Dimensions

Table 18.202: TeSys GV7 Manual Starter and Protector Dimensions

| 1 GV7R | Panel Mounting | Flush Mounting | Side by Side |
|--------|----------------|----------------|--------------|
| | | | |

| Minimum Clearance | | x1 | x2 | |
|---|-------------------|-----------|-----------|--|
| | | in. (mm) | in. (mm) | |
| Painted or insulated metal plate, insulation or insulated bar | U < 440 V | 0 (0) | 1.18 (30) | |
| | 440 V < U < 600 V | 0.20 (5) | 1.38 (35) | |
| | U > 600 V | 0.39 (10) | 1.38 (35) | |
| Bare metal plate | U < 440 V | 0.20 (5) | 1.38 (35) | |
| | U > 600 V | 0.79 (20) | 1.38 (35) | |

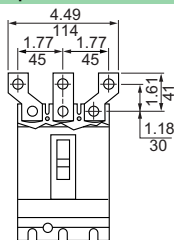
NOTE: Minimum distance between 2 units mounted side by side = 0.

| Motor Controllers GV7R | Add-on Auxiliary Contacts, GV7AE11, GV7AB11 |
|------------------------|--|
| | <p>NOTE: A self-adhesive label, supplied with the contact, can be affixed to the front face of the starter to allow personalized marking according to the function of the contact or contacts.</p> |

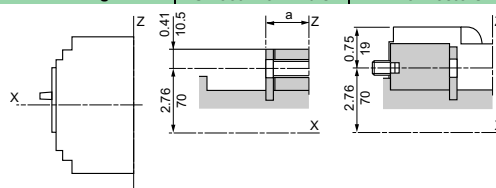
| GV7AU••• | GV7AS••• | GV7AD111, AD112 |
|----------|----------|-----------------|
| | | |

GV7AC03

Spreaders



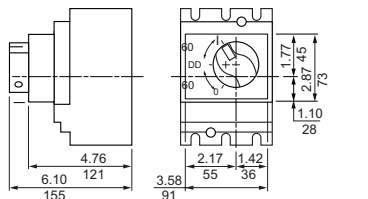
Cabling Smooth Terminals Connectors



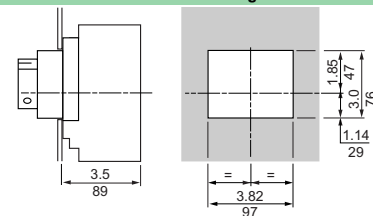
| | a (in./mm) |
|----------|------------|
| GV7R● | 0.77/19.5 |
| GV7R●220 | 0.85/21.5 |

GV7AP03, GV7A04

Direct Rotary Handle



Flush Mounting

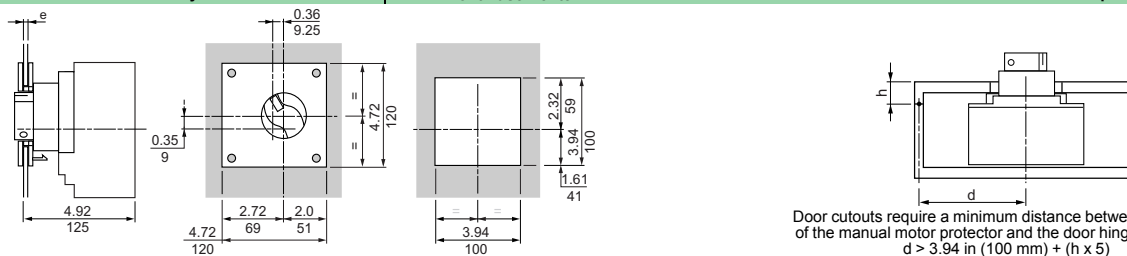


GV7AP03 or GV7AP04, GV7AP05

Direct Rotary Handle

Front Fuse Center

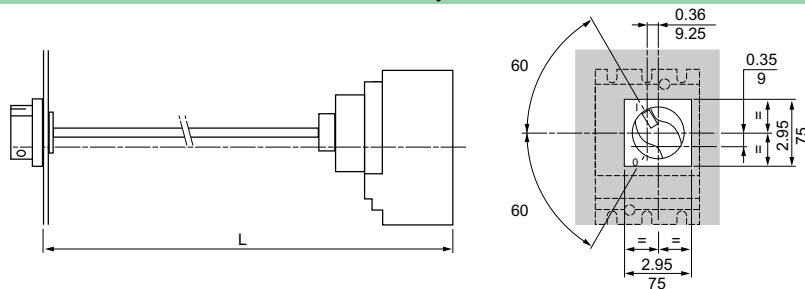
Enclosure Viewed from Top



Door cutouts require a minimum distance between the center of the manual motor protector and the door hinge point (h) of $d \geq 3.94$ in (100 mm) + (h x 5)

GV7AP01, GV7AP02

Extended Rotary Handle



L: 7.28 in. (185 mm) minimum, 23.62 in. (600 mm) maximum.
The shaft of the extended rotary handle GV7AP01 or GV7AP02 must be cut to length: L – 4.96 in. (126 mm)