

# AF116 ... AF146 3-pole contactors

## 55 to 75 kW

### AC / DC operated



AF146-30-11

1SFC101007V0001



AF146-30-11B

1SFC101008V0001



CAL19-11

1SFC101071V0001



LT140-30L

1SFC101038V0001

### Description

AF116 ... AF146 contactors are mainly used for controlling 3-phase motors and power circuits.

### Ordering details

#### 3-pole contactors for connection with built-in cable clamps

| IEC<br>Rated operational<br>power<br>400 V<br>AC-3<br>kW | UL/CSA<br>3-phase<br>motor<br>rating<br>480 V<br>General<br>use<br>rating<br>600 V AC<br>A | Rated control circuit<br>voltage<br>Uc<br>V 50/60 Hz: V DC | Auxiliary<br>contacts<br>fitted | Type | Order code                   | Weight<br>Pkg<br>(1 pce)<br>kg |  |
|--|--|--|---------------------------------|------|------------------------------|--------------------------------|--|
|  |  |  |                                 |      |                              |                                | Rated operational<br>current<br>$\theta \leq 40^\circ\text{C}$<br>690 V<br>AC-1<br>A |
| 55   | 160  | 75   | 160                             | 1 1  | AF116-30-11-11               | 1SFL427001R1111                | 1.750  |
|  |  |  |                                 | 1 1  | AF116-30-11-12               | 1SFL427001R1211                | 1.750  |
|  |  |  |                                 | 1 1  | AF116-30-11-13               | 1SFL427001R1311                | 1.750  |
|  |  |  |                                 | 1 1  | AF116-30-11-14 <sup>1)</sup> | 1SFL427001R1411                | 1.750  |
| 75   | 200  | 100  | 200                             | 1 1  | AF140-30-11-11               | 1SFL447001R1111                | 1.750  |
|  |  |  |                                 | 1 1  | AF140-30-11-12               | 1SFL447001R1211                | 1.750  |
|  |  |  |                                 | 1 1  | AF140-30-11-13               | 1SFL447001R1311                | 1.750  |
|  |  |  |                                 | 1 1  | AF140-30-11-14 <sup>1)</sup> | 1SFL447001R1411                | 1.750  |
| 75   | 225  | 100  | 200                             | 1 1  | AF146-30-11-11               | 1SFL467001R1111                | 1.750  |
|  |  |  |                                 | 1 1  | AF146-30-11-12               | 1SFL467001R1211                | 1.750  |
|  |  |  |                                 | 1 1  | AF146-30-11-13               | 1SFL467001R1311                | 1.750  |
|  |  |  |                                 | 1 1  | AF146-30-11-14 <sup>1)</sup> | 1SFL467001R1411                | 1.750  |

#### 3-pole contactors with bar connections

|    |     |     |     |     |                               |                 |       |
|----|-----|-----|-----|-----|-------------------------------|-----------------|-------|
| 55 | 160 | 75  | 160 | 1 1 | AF116-30-11B-11               | 1SFL427002R1111 | 1.500 |
|    |     |     |     | 1 1 | AF116-30-11B-12               | 1SFL427002R1211 | 1.500 |
|    |     |     |     | 1 1 | AF116-30-11B-13               | 1SFL427002R1311 | 1.500 |
|    |     |     |     | 1 1 | AF116-30-11B-14 <sup>1)</sup> | 1SFL427002R1411 | 1.500 |
| 75 | 200 | 100 | 200 | 1 1 | AF140-30-11B-11               | 1SFL447002R1111 | 1.500 |
|    |     |     |     | 1 1 | AF140-30-11B-12               | 1SFL447002R1211 | 1.500 |
|    |     |     |     | 1 1 | AF140-30-11B-13               | 1SFL447002R1311 | 1.500 |
|    |     |     |     | 1 1 | AF140-30-11B-14 <sup>1)</sup> | 1SFL447002R1411 | 1.500 |
| 75 | 225 | 100 | 200 | 1 1 | AF146-30-11B-11               | 1SFL467002R1111 | 1.500 |
|    |     |     |     | 1 1 | AF146-30-11B-12               | 1SFL467002R1211 | 1.500 |
|    |     |     |     | 1 1 | AF146-30-11B-13               | 1SFL467002R1311 | 1.500 |
|    |     |     |     | 1 1 | AF146-30-11B-14 <sup>1)</sup> | 1SFL467002R1411 | 1.500 |

1) Coil 250...500 V, 50/60 Hz and DC available in April 2013

Note: AF contactors type -00 and -22 on request.

### Auxiliary contact blocks

|   | Auxiliary contacts | Type      | Order code      | Pkg<br>qty | Weight<br>(1 pce)<br>kg |
|---|--------------------|-----------|-----------------|------------|-------------------------|
| Side mounted instantaneous contact blocks                                 | 1 1                | CAL19-11  | 1SFN010820R1011 | 2          | 0.040                   |
| Side mounted instantaneous contact blocks<br>mounting outside other block | 1 1                | CAL19-11B | 1SFN010820R3311 | 2          | 0.040                   |

### Terminal shrouds

|                                      | Type      | Order code      | Pkg<br>qty | Weight<br>(1 pce)<br>kg |
|--------------------------------------|-----------|-----------------|------------|-------------------------|
| For connection with compression lugs | LT140-30L | 1SFN124203R1000 | 2          | 0.070                   |

# Overload relays for AF116 ... AF146 3-pole contactors



EF146



TF140DU

## Description

### Ordering details Electronic overload relays

| Setting range | Short-circuit protective device | Trip class    | Type  | Order code      | Weight (1 pce) kg |
|---------------|---------------------------------|---------------|-------|-----------------|-------------------|
| <b>A</b>      |                                 |               |       |                 |                   |
| 54...150      | 315 A, Fuse type gG             | E10, E20, E30 | EF146 | 1SAX351001R1101 | 0.890             |



### Ordering details Thermal overload relays

| Setting range | Short-circuit protective device | Trip class | Type        | Order code      | Weight (1 pce) kg |
|---------------|---------------------------------|------------|-------------|-----------------|-------------------|
| <b>A</b>      |                                 |            |             |                 |                   |
| 66...90       | 125 A, Fuse type gG             | 10 A       | TF140DU-90  | 1SAZ431201R1001 | 0.880             |
| 80...110      | 160 A, Fuse type gG             | 10 A       | TF140DU-110 | 1SAZ431201R1002 | 0.820             |
| 100...135     | 200 A, Fuse type gG             | 10 A       | TF140DU-135 | 1SAZ431201R1003 | 0.820             |
| 110...142     | 200 A, Fuse type gG             | 10 A       | TF140DU-142 | 1SAZ431201R1004 | 0.820             |

# AF116 ... AF146 3-pole contactors

## Technical data

### Main pole - Utilization characteristics according to IEC

| Contactor types  | AC / DC operated     | AF116                          | AF140              | AF146              |
|--|----------------------|--------------------------------|--------------------|--------------------|
| Standards  |                      | IEC 60947-4-1 and EN 60947-4-1 |                    |                    |
| Rated operational voltage U <sub>e</sub> max.  |                      | 690 V                          | 690 V              | 1000 V             |
| Rated frequency (without derating)   |                      | 50 / 60 Hz                     |                    |                    |
| <b>AC-1 Utilization category</b>   |                      |                                |                    |                    |
| For air temperature close to contactor   |                      |                                |                    |                    |
| <b>I<sub>e</sub> / Rated operational current AC-1</b>  | <b>θ ≤ 40 °C</b>     | 160 A                          | 200 A              | 225 A              |
| U <sub>e</sub> max. ≤ 690 V, 50/60 Hz  | <b>θ ≤ 60 °C</b>     | 145 A                          | 175 A              | 200 A              |
|  | <b>θ ≤ 70 °C</b>     | 130 A                          | 160 A              | 175 A              |
| With conductor cross-sectional area  |                      | 70 mm <sup>2</sup>             | 70 mm <sup>2</sup> | 95 mm <sup>2</sup> |
| <b>AC-3 Utilization category</b>   |                      |                                |                    |                    |
| For air temperature close to contactor θ ≤ 55 °C   |                      |                                |                    |                    |
| <b>I<sub>e</sub> / Max. rated operational current AC-3</b>   |                      |                                |                    |                    |
| <br>3-phase motors  | <b>220-230-240 V</b> | 116 A                          | 140 A              | 146 A              |
|  | <b>380-400 V</b>     | 116 A                          | 140 A              | 146 A              |
|  | <b>415 V</b>         | 116 A                          | 140 A              | 146 A              |
|  | <b>440 V</b>         | 116 A                          | 140 A              | 146 A              |
|  | <b>500 V</b>         | 110 A                          | 130 A              | 130 A              |
|  | <b>690 V</b>         | 65 A                           | 80 A               | 93 A               |
|  | <b>1000 V</b>        | –                              | –                  | 60 A               |
|  |                      |                                |                    |                    |
| <b>Rated operational power AC-3</b>  |                      |                                |                    |                    |
| <br>1500 r.p.m. 50 Hz<br>1800 r.p.m. 60 Hz<br>3-phase motors | <b>220-230-240 V</b> | 30 kW                          | 37 kW              | 45 kW              |
|  | <b>380-400 V</b>     | 55 kW                          | 75 kW              | 75 kW              |
|  | <b>415 V</b>         | 55 kW                          | 75 kW              | 75 kW              |
|  | <b>440 V</b>         | 75 kW                          | 90 kW              | 90 kW              |
|  | <b>500 V</b>         | 75 kW                          | 90 kW              | 90 kW              |
|  | <b>690 V</b>         | 55 kW                          | 75 kW              | 90 kW              |
|  | <b>1000 V</b>        | –                              | –                  | 75 kW              |
|  |                      |                                |                    |                    |
| <b>Short-circuit protection device for contactors</b>  |                      |                                |                    |                    |
| without thermal overload relay - Motor protection excluded   |                      |                                |                    |                    |
| U <sub>e</sub> ≤ 500 V AC - gG type fuse   |                      | 200 A                          | 315 A              | 315 A              |
| <b>Max. electrical switching frequency</b>   | <b>AC-1</b>          | 300 cycles/h                   |                    |                    |
|  | <b>AC-3</b>          | 300 cycles/h                   |                    |                    |
| Connection capacity (min. ... max.)  |                      |                                |                    |                    |
| <b>Main conductors (poles)</b>   |                      |                                |                    |                    |
| Stranded   | <b>1 or 2 x</b>      | 10 ... 95 mm <sup>2</sup>      |                    |                    |
| Flexible   | <b>1 or 2 x</b>      | 10 ... 70 mm <sup>2</sup>      |                    |                    |

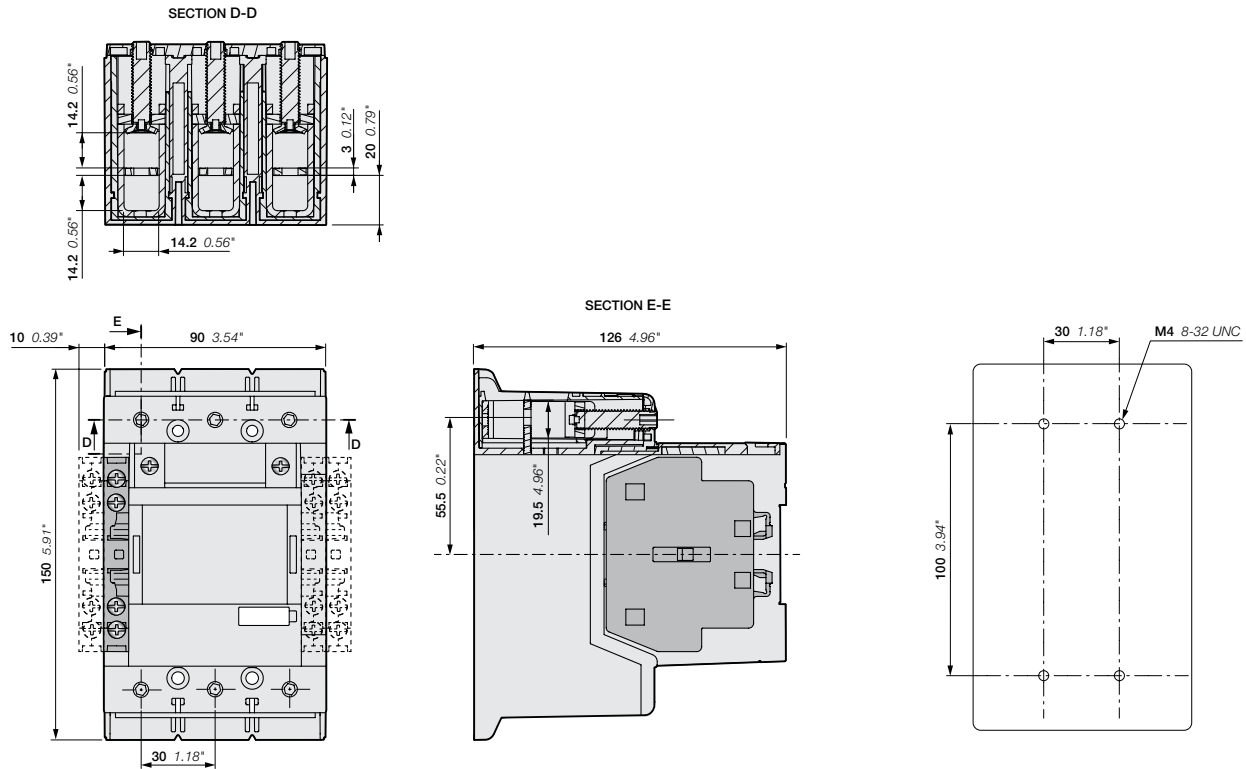
### Main pole - Utilization characteristics according to UL / CSA

| Contactor types  | AC / DC operated    | AF116                                       | AF140   | AF146   |
|--|---------------------|---|---------|---------|
| Standards  |                     | UL 60947-4-1A and CSA C22.2 N° 60947-4-1-07 |         |         |
| <b>Max. operational voltage</b>                            |                     | 600 V                                       |         |         |
| <b>UL / CSA General use rating</b>                         |                     |   |         |         |
| 600 VAC  |                     | 160 A                                       | 200 A   | 200 A   |
| With conductor cross-sectional area                        |                     | AWG 2/0                                     | AWG 3/0 | AWG 3/0 |
| <b>UL / CSA maximum 3-phase motor rating</b>               |                     |   |         |         |
| Full load current  | <b>220-208 V AC</b> | 88 A  | 114 A   | 114 A   |
|  | <b>220-240 V AC</b> | 104 A                                       | 130 A   | 130 A   |
|  | <b>440-480 V AC</b> | 96 A  | 124 A   | 124 A   |
|  | <b>550-600 V AC</b> | 99 A  | 125 A   | 125 A   |
|  |                     |   |         |         |
| Horse power rating   | <b>220-208 V AC</b> | 30 hp                                       | 40 hp   | 40 hp   |
|  | <b>220-240 V AC</b> | 40 hp                                       | 50 hp   | 50 hp   |
|  | <b>440-480 V AC</b> | 75 hp                                       | 100 hp  | 100 hp  |
|  | <b>550-600 V AC</b> | 100 hp                                      | 125 hp  | 125 hp  |
|  |                     |   |         |         |
| <b>Short-circuit protection device for contactors</b>      |                     |   |         |         |
| without thermal overload relay - Motor protection excluded |                     |   |         |         |
| Fuse rating  |                     | 250 A                                       | 250 A   | 250 A   |
| Fuse type, 600 V   |                     | J/R   |         |         |
| <b>Connexion capacity acc to UL/CSA</b>                    | <b>1 or 2 x</b>     | AWG 6 ...3/0                                |         |         |

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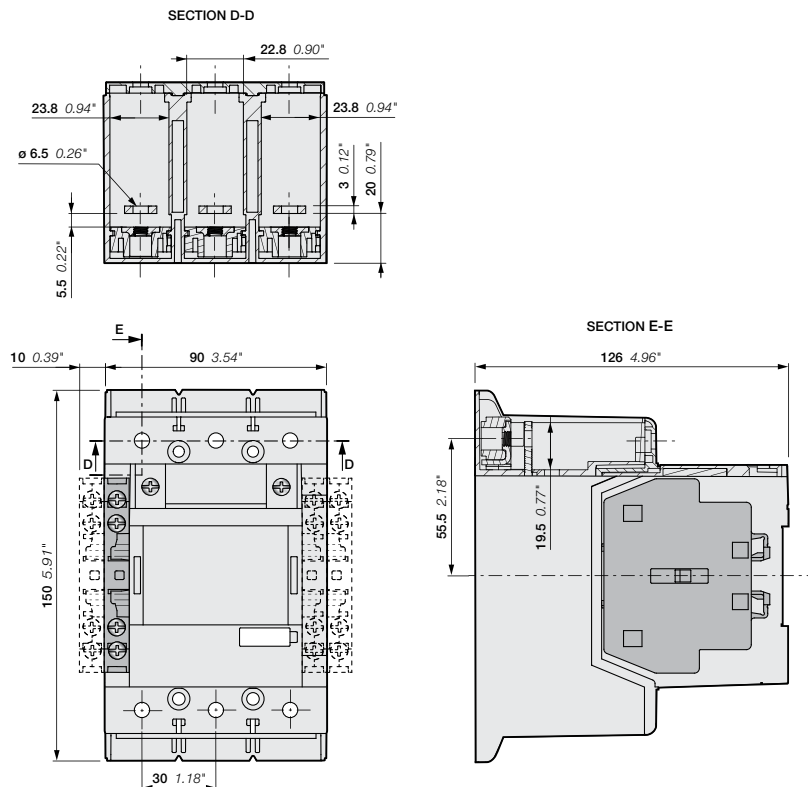
## Dimension drawings

Main dimensions mm, inches



AF116, AF140, AF146-30-00 + CAL19 2-pole auxiliary contact block  
AF116, AF140, AF146-30-11

AF116, AF140, AF146-30-...(B)



AF116, AF140, AF146-30-00B + CAL19 2-pole auxiliary contact block  
AF116, AF140, AF146-30-11B