



English

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## AF16-30-10-13

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### General Information

**Extended Product Type:**

AF16-30-10-13

**Product ID:**

1SBL177001R1310

**EAN:**

3471523110632

**Catalog Description:**

AF16-30-10-13 100-250V50/60HZ-DC Contactor

**Long Description:**

The AF16-30-10-13 is a 3 pole - 690 V IEC or 600 UL contactor with 1 built-in auxiliary contact and screw terminals, controlling motors up to 7.5 kW / 400 V AC (AC-3) or 10 hp / 480 V UL and switching power circuits up to 30 A (AC-1) or 30 A UL general use. Thanks to the AF technology, the contactor has a wide control voltage range (100-250 V 50/60 Hz and DC), managing large control voltage variations,

reducing panel energy consumptions and ensuring distinct operations in unstable networks. Furthermore, surge protection is built-in, offering a compact solution. AF contactors have a block type design, can be easily extended with add-on auxiliary contact blocks and an additional wide range of accessories.

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**Ordering****Minimum Order Quantity:**

1 piece

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**Customs Tariff Number:**

85364900

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**Popular Downloads****Instructions and Manuals:**

[1SBC101027M6801](#)

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**CAD Dimensional Drawing:**

[2CDC001079B0201](#)

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**Dimensions****Product Net Width:**

45 mm

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**Product Net Depth / Length:**

77 mm

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**Product Net Height:**

86 mm

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**Product Net Weight:**

0.27 kg

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**Technical****Number of Main Contacts NO:**

3

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**Number of Main Contacts NC:**

0

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**Number of Auxiliary Contacts NO:**

1

**Number of Auxiliary Contacts NC:**

0

**Standards:**

IEC/EN 60947-1, IEC/EN 60947-4-1, UL 60947-4-1, CSA C22.2 No. 60947-4-1

**Rated Operational Voltage:**

Auxiliary Circuit 690 V

Main Circuit 690 V

**Rated Frequency (f):**

Auxiliary Circuit 50 / 60 Hz

Control Circuit 50 / 60 Hz

Main Circuit 50 / 60 Hz

**Conventional Free-air Thermal Current ( $I_{th}$ ):**acc. to IEC 60947-4-1, Open Contactors  $\Theta = 40\text{ °C}$  35 Aacc. to IEC 60947-5-1,  $\Theta = 40\text{ °C}$  16 A**Rated Operational Current AC-1 ( $I_e$ ):**

(690 V) 40 °C 30 A

(690 V) 60 °C 30 A

(690 V) 70 °C 26 A

**Rated Operational Current AC-3 ( $I_e$ ):**

(415 V) 60 °C 18 A

(440 V) 60 °C 18 A

(500 V) 60 °C 15 A

(690 V) 60 °C 10.5 A

(380 / 400 V) 60 °C 18 A

(220 / 230 / 240 V) 60 °C 18 A

**Rated Operational Current AC-3e ( $I_e$ ):**

(415 V) 60 °C 18 A

(440 V) 60 °C 18 A

(500 V) 60 °C 15 A

(690 V) 60 °C 10.5 A

(380 / 400 V) 60 °C 18 A

(220 / 230 / 240 V) 60 °C 18 A

**Rated Operational Power AC-3 ( $P_e$ ):**

(400 V) 7.5 kW

(415 V) 9 kW

(440 V) 9 kW

(500 V) 9 kW

(690 V) 9 kW

(380 / 400 V) 7.5 kW

(220 / 230 / 240 V) 4 kW

**Rated Operational Power AC-3e ( $P_e$ ):**

(415 V) 9 kW

(440 V) 9 kW

(500 V) 9 kW

(690 V) 9 kW

(380 / 400 V) 7.5 kW

(220 / 230 / 240 V) 4 kW

**Rated Operational Current AC-15 ( $I_e$ ):**

(500 V) 2 A

(690 V) 2 A

(24 / 127 V) 6 A

(220 / 240 V) 4 A

(400 / 440 V) 3 A

**Rated Short-time Withstand Current Low Voltage ( $I_{cw}$ ):**

at 40 °C Ambient Temp, in Free Air, from a Cold State 10 s 150 A  
 at 40 °C Ambient Temp, in Free Air, from a Cold State 15 min 35 A  
 at 40 °C Ambient Temp, in Free Air, from a Cold State 1 min 60 A  
 at 40 °C Ambient Temp, in Free Air, from a Cold State 1 s 300 A  
 at 40 °C Ambient Temp, in Free Air, from a Cold State 30 s 80 A  
 for 0.1 s 140 A  
 for 1 s 100 A

**Maximum Breaking Capacity:**

cos phi=0.45 (cos phi=0.35 for  $I_e > 100$  A) at 440 V 250 A  
 cos phi=0.45 (cos phi=0.35 for  $I_e > 100$  A) at 690 V 106 A

**Maximum Electrical Switching Frequency:**

(AC-1) 600 cycles per hour  
 (AC-15) 1200 cycles per hour  
 (AC-2 / AC-4) 300 cycles per hour  
 (AC-3) 1200 cycles per hour  
 (DC-13) 900 cycles per hour

**Rated Operational Current DC-1 ( $I_e$ ):**

(110 V) 1-Pole, 40 °C 20 A  
 (110 V) 1-Pole, 60 °C 20 A  
 (110 V) 1-Pole, 70 °C 20 A  
 (110 V) 2 Poles in Series, 40 °C 30 A  
 (110 V) 2 Poles in Series, 60 °C 30 A  
 (110 V) 2 Poles in Series, 70 °C 26 A  
 (110 V) 3 Poles in Series, 40 °C 30 A  
 (110 V) 3 Poles in Series, 60 °C 30 A  
 (110 V) 3 Poles in Series, 70 °C 26 A  
 (220 V) 2 Poles in Series, 40 °C 20 A  
 (220 V) 2 Poles in Series, 60 °C 20 A  
 (220 V) 2 Poles in Series, 70 °C 20 A  
 (220 V) 3 Poles in Series, 40 °C 30 A  
 (220 V) 3 Poles in Series, 60 °C 30 A  
 (220 V) 3 Poles in Series, 70 °C 26 A  
 (72 V) 1-Pole, 40 °C 30 A  
 (72 V) 1-Pole, 60 °C 30 A  
 (72 V) 1-Pole, 70 °C 26 A  
 (72 V) 2 Poles in Series, 40 °C 30 A  
 (72 V) 2 Poles in Series, 60 °C 30 A  
 (72 V) 2 Poles in Series, 70 °C 26 A  
 (72 V) 3 Poles in Series, 40 °C 30 A  
 (72 V) 3 Poles in Series, 60 °C 30 A  
 (72 V) 3 Poles in Series, 70 °C 26 A

**Rated Operational Current DC-3 ( $I_e$ ):**

(110 V) 1-Pole, 40 °C 8 A  
 (110 V) 1-Pole, 60 °C 8 A  
 (110 V) 1-Pole, 70 °C 8 A  
 (110 V) 2 Poles in Series, 40 °C 30 A  
 (110 V) 2 Poles in Series, 60 °C 30 A  
 (110 V) 2 Poles in Series, 70 °C 26 A  
 (110 V) 3 Poles in Series, 40 °C 30 A  
 (110 V) 3 Poles in Series, 60 °C 30 A  
 (110 V) 3 Poles in Series, 70 °C 26 A  
 (220 V) 2 Poles in Series, 40 °C 8 A  
 (220 V) 2 Poles in Series, 60 °C 8 A  
 (220 V) 2 Poles in Series, 70 °C 8 A  
 (220 V) 3 Poles in Series, 40 °C 30 A  
 (220 V) 3 Poles in Series, 60 °C 30 A

(220 V) 3 Poles in Series, 70 °C 26 A  
 (72 V) 1-Pole, 40 °C 30 A  
 (72 V) 1-Pole, 60 °C 30 A  
 (72 V) 1-Pole, 70 °C 26 A  
 (72 V) 2 Poles in Series, 40 °C 30 A  
 (72 V) 2 Poles in Series, 60 °C 30 A  
 (72 V) 2 Poles in Series, 70 °C 26 A  
 (72 V) 3 Poles in Series, 40 °C 30 A  
 (72 V) 3 Poles in Series, 60 °C 30 A  
 (72 V) 3 Poles in Series, 70 °C 26 A

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**Rated Operational Current DC-5 ( $I_{\theta}$ ):**

(110 V) 1-Pole, 40 °C 4 A  
 (110 V) 1-Pole, 60 °C 4 A  
 (110 V) 1-Pole, 70 °C 4 A  
 (110 V) 2 Poles in Series, 40 °C 20 A  
 (110 V) 2 Poles in Series, 60 °C 20 A  
 (110 V) 2 Poles in Series, 70 °C 20 A  
 (110 V) 3 Poles in Series, 40 °C 30 A  
 (110 V) 3 Poles in Series, 60 °C 30 A  
 (110 V) 3 Poles in Series, 70 °C 26 A  
 (220 V) 2 Poles in Series, 40 °C 4 A  
 (220 V) 2 Poles in Series, 60 °C 4 A  
 (220 V) 2 Poles in Series, 70 °C 4 A  
 (220 V) 3 Poles in Series, 40 °C 16 A  
 (220 V) 3 Poles in Series, 60 °C 16 A  
 (220 V) 3 Poles in Series, 70 °C 16 A  
 (72 V) 1-Pole, 40 °C 16 A  
 (72 V) 1-Pole, 60 °C 16 A  
 (72 V) 1-Pole, 70 °C 16 A  
 (72 V) 2 Poles in Series, 40 °C 30 A  
 (72 V) 2 Poles in Series, 60 °C 30 A  
 (72 V) 2 Poles in Series, 70 °C 26 A  
 (72 V) 3 Poles in Series, 40 °C 30 A  
 (72 V) 3 Poles in Series, 60 °C 30 A  
 (72 V) 3 Poles in Series, 70 °C 26 A

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**Rated Operational Current DC-13 ( $I_{\theta}$ ):**

(24 V) 6 A / 144 W  
 (48 V) 2.8 A / 134 W  
 (72 V) 1 A / 72 W  
 (110 V) 0.55 A / 60 W  
 (125 V) 0.55 A / 69 W  
 (220 V) 0.27 A / 60 W  
 (250 V) 0.27 A / 68 W  
 (400 V) 0.15 A / 60 W  
 (500 V) 0.13 A / 65 W  
 (600 V) 0.1 A / 60 W

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**Rated Insulation Voltage ( $U_i$ ):**

acc. to IEC 60947-4-1 690 V  
 acc. to IEC 60947-5-1 690 V  
 acc. to UL/CSA 600 V

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**Rated Impulse Withstand Voltage ( $U_{imp}$ ):**

6 kV

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**Maximum Mechanical Switching Frequency:**

3600 cycles per hour

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**Rated Control Circuit Voltage ( $U_c$ ):**

50 Hz 100 ... 250 V  
 60 Hz 100 ... 250 V

DC Operation 100 ... 250 V

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**Operate Time:**

Between Coil De-energization and NC Contact Closing 13 ... 98 ms  
Between Coil De-energization and NO Contact Opening 11 ... 95 ms  
Between Coil Energization and NC Contact Opening 38 ... 90 ms  
Between Coil Energization and NO Contact Closing 40 ... 95 ms

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**Mounting on DIN Rail:**

TH35-15 (35 x 15 mm Mounting Rail) acc. to IEC 60715  
TH35-7.5 (35 x 7.5 mm Mounting Rail) acc. to IEC 60715

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**Mounting by Screws (not supplied):**

2 x M4 screws placed diagonally

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**Connecting Capacity Main Circuit:**

Flexible with Ferrule 1/2x 0.75 ... 6 mm<sup>2</sup>  
Flexible with Insulated Ferrule 1x 0.75 ... 4 mm<sup>2</sup>  
Flexible with Insulated Ferrule 2x 0.75 ... 2.5 mm<sup>2</sup>  
Rigid Solid 1/2x 1 ... 4 mm<sup>2</sup>  
Rigid Stranded 1/2x 1 ... 6 mm<sup>2</sup>

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**Connecting Capacity Auxiliary Circuit:**

Flexible with Ferrule 1/2x 0.75 ... 2.5 mm<sup>2</sup>  
Flexible with Insulated Ferrule 2x 0.75 ... 1.5 mm<sup>2</sup>  
Flexible with Insulated Ferrule 1x 0.75 ... 2.5 mm<sup>2</sup>  
Rigid Solid 1/2x 1 ... 2.5 mm<sup>2</sup>  
Rigid Stranded 1/2x 1 ... 2.5 mm<sup>2</sup>

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**Connecting Capacity Control Circuit:**

Flexible with Ferrule 1/2x 0.75 ... 2.5 mm<sup>2</sup>  
Flexible with Insulated Ferrule 1x 0.75 ... 2.5 mm<sup>2</sup>  
Flexible with Insulated Ferrule 2x 0.75 ... 1.5 mm<sup>2</sup>  
Rigid Solid 1/2x 1 ... 2.5 mm<sup>2</sup>  
Rigid Stranded 1/2x 1 ... 2.5 mm<sup>2</sup>

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**Wire Stripping Length:**

Auxiliary Circuit 10 mm  
Control Circuit 10 mm  
Main Circuit 10 mm

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**Degree of Protection:**

acc. to IEC 60529, IEC 60947-1, EN 60529 Auxiliary Terminals IP20  
acc. to IEC 60529, IEC 60947-1, EN 60529 Coil Terminals IP20  
acc. to IEC 60529, IEC 60947-1, EN 60529 Main Terminals IP20

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**Terminal Type:**

Screw Terminals

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**Technical UL/CSA****Maximum Operating Voltage UL/CSA:**

Main Circuit 600 V

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**General Use Rating UL/CSA:**

(600 V AC) 30 A

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**Horsepower Rating UL/CSA:**



(120 V AC) Single Phase 1-1/2 hp  
(200 ... 208 V AC) Three Phase 5 hp  
(220 ... 240 V AC) Three Phase 5 hp  
(240 V AC) Single Phase 3 hp  
(440 ... 480 V AC) Three Phase 10 hp  
(550 ... 600 V AC) Three Phase 15 hp

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**Connecting Capacity Main Circuit UL/CSA:**

Rigid Solid 1/2x 16-10 AWG  
Rigid Stranded 1/2x 16-10 AWG

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**Connecting Capacity Auxiliary Circuit UL/CSA:**

Rigid Solid 1/2x 18-14 AWG  
Rigid Stranded 1/2x 18-14 AWG

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**Connecting Capacity Control Circuit UL/CSA:**

Rigid Solid 1/2x 18-14 AWG  
Rigid Stranded 1/2x 18-14 AWG

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**Tightening Torque UL/CSA:**

Auxiliary Circuit 11 in-lb  
Control Circuit 11 in-lb  
Main Circuit 13 in-lb

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## Environmental

**Ambient Air Temperature:**

Close to Contactor Fitted with Thermal O/L Relay -25 ... 60 °C  
Close to Contactor without Thermal O/L Relay -40 ... 70 °C  
Close to Contactor for Storage -60 ... +80 °C

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**Climatic Withstand:**

Category B according to IEC 60947-1 Annex Q

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**Maximum Operating Altitude Permissible:**

Without Derating 3000 m

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**Resistance to Shock acc. to IEC 60068-2-27:**

Closed, Shock Direction: B1 25 g  
Open, Shock Direction: B1 5 g  
Shock Direction: A 30 g  
Shock Direction: B2 15 g  
Shock Direction: C1 25 g  
Shock Direction: C2 25 g

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**Resistance to Vibrations:**

4g Closed Position & 2g Open position 5 ... 300 Hz

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## Material Compliance

**Conflict Minerals Reporting Template (CMRT):**

[9AKK108467A5658](#)

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**REACH Declaration:**

[2CMT2021-006202](#)

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**RoHS Information:**

[2CMT2021-006277](#)

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**RoHS Status:**

Following EU Directive 2011/65/EU

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**Toxic Substances Control Act - TSCA:**

[2CMT2023-006525](#)

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**WEEE B2C / B2B:**

Business To Business

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**WEEE Category:**

5. Small Equipment (No External Dimension More Than 50 cm)

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**Circular Value****End of Life Instructions:**

[1SBC101080M6801](#)

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**Eco Transparency****Environmental Product Declaration - EPD:**

[1SBD250584E3000](#)

[2TFP200035A1001](#)

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**Certificates and Declarations****ABS Certificate:**

[ABS\\_20-2060694-PDA](#)

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**BV Certificate:**

[BV\\_2634H24898C0](#)

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**CB Certificate:**

[CB\\_SE-113345](#)

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**CCC Certificate:**

[CCC\\_2010010304445624](#)

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**CQC Certificate:**

[CQC2010010304445624](#)

[CQC2020010304298240](#)

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**Declaration of Conformity - CCC:**

[2020980304001253](#)

[2020980304001082](#)

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**Declaration of Conformity - CE:**

[1SBD250000U1000](#)

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**Declaration of Conformity - UKCA:**

[1SBD250031U1000](#)

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**DNV Certificate:**

[DNV\\_TAE00001AF-4](#)

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**EAC Certificate:**

[EAC\\_RU\\_FRME77B03447](#)

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**GOST Certificate:**

[GOST\\_POCCFR.ME77.B07175.pdf](#)

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**KC Certificate:**

[KC\\_HW02016-15005C](#)

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**LR Certificate:**

[LRS\\_LR23403517TA-02](#)

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**RINA Certificate:**

RINA\_ELE240318XG

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**RMRS Certificate:**

RMRS\_1802705280

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**UL Certificate:**

UL-US-2150887-5

UL-CA-2142658-5

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**UL Listing Card:**

E312527

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## Container Information

**Package Level 1 Units:**

box 1 piece

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**Package Level 1 Width:**

87 mm

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**Package Level 1 Depth / Length:**

79 mm

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**Package Level 1 Height:**

47 mm

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**Package Level 1 Gross Weight:**

0.27 kg

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**Package Level 1 EAN:**

3471523110632

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**Package Level 2 Units:**

box 27 piece

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**Package Level 2 Width:**

250 mm

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**Package Level 2 Depth / Length:**

300 mm

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**Package Level 2 Height:**

315 mm

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**Package Level 2 Gross Weight:**

7.29 kg

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**Package Level 3 Units:**

1296 piece

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## Classifications

**Object Classification Code:**

Q

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**ETIM 4:**

EC000066 - Magnet contactor, AC-switching

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**ETIM 5:**

EC000066 - Magnet contactor, AC-switching

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**ETIM 6:**

EC000066 - Power contactor, AC switching

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**ETIM 7:**

EC000066 - Power contactor, AC switching

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**ETIM 8:**

EC000066 - Power contactor, AC switching

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**eClass:**

V11.0 : 27371003

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**UNSPSC:**

39121529

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**IDEA Granular Category Code (IGCC):**

4758 >> Iec Contactors

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**E-Number (Finland):**

3706243

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**E-Number (Sweden):**

3211372

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