PRODUCT-DETAILS

AF146-30-22-31

AF146-30-22-31 Contactor

General Information

Extended Product Type	AF146-30-22-31
Product ID	1SFL467001R3122
EAN	7320500560464
Catalog Description	AF146-30-22-31 Contactor
Long Description	The AF146-30-22-31 is a 3 pole - 1000 V IEC or 600 V UL contactor with double clamp, controlling motors up to 75 kW / 400 V AC (AC-3) or 100 hp / 480 V UL and switching power circuits up to 225 A (AC-1) or 200 A UL general use. Thanks to the AF technology, the contactor has a wide control voltage range (24-60 V 50/60 Hz and 20-60 V 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.

Ordering

Minimum Order Quantity	1 piece
Customs Tariff Number	8536490099

Popular Downloads

EPLAN Data	9AAC174540_EPLAN
Data Sheet, Technical Information	1SBC100214C0202
Data Sheet, Technical Information (Part 2)	1SAC200017M0002
Instructions and Manuals	1SFC100003M0201
CAD Dimensional Drawing	2CDC001079B0201

Dimensions

Product Net Width	110 mm
Product Net Depth / Length	138.5 mm
Product Net Height	150 mm
Product Net Weight	1.55 kg

Technical

Number of Main Contacts NO	3
Number of Main Contacts NC	0
Number of Auxiliary Contacts NO	2
Number of Auxiliary Contacts NC	2
Number of Poles	3P
Rated Operational Voltage	Main Circuit 1000 V
Rated Frequency (f)	Main Circuit 50 / 60 Hz
Conventional Free-air Thermal Current (I_{th})	acc. to IEC 60947-4-1, Open Contactors Θ = 40 °C 225 A
Rated Operational Current AC-1 (I_e)	(1000 V) 40 °C 225 A (1000 V) 60 °C 200 A (1000 V) 70 °C 175 A (690 V) 40 °C 225 A (690 V) 60 °C 200 A (690 V) 70 °C 175 A
Rated Operational Current AC-3 (I_e)	(415 V) 60 °C 146 A (440 V) 60 °C 146 A (500 V) 60 °C 130 A (690 V) 60 °C 93 A (1000 V) 60 °C 60 A (380 / 400 V) 60 °C 146 A (220 / 230 / 240 V) 60 °C 146 A
Rated Operational Current AC-3e (I_e)	(415 V) 60 °C 146 A (440 V) 60 °C 146 A (500 V) 60 °C 130 A (690 V) 60 °C 93 A (1000 V) 60 °C 54 A (380 / 400 V) 60 °C 146 A (220 / 230 / 240 V) 60 °C 146 A
Rated Operational Power AC-3 (P_e)	(415 V) 75 kW (440 V) 90 kW (500 V) 90 kW (690 V) 90 kW (380 / 400 V) 75 kW

	(220 / 230 / 240 V) 45 kW
Rated Operational Power AC-3e (P_e)	(415 V) 75 kW (440 V) 90 kW (500 V) 90 kW (690 V) 90 kW (1000 V) 75 kW (380 / 400 V) 75 kW (220 / 230 / 240 V) 45 kW
Rated Breaking Capacity AC-3	8 x Ie AC-3
Rated Breaking Capacity AC-3e	8.5 x Ie AC-3e
Rated Making Capacity AC-3	10 x Ie AC-3
Rated Making Capacity AC-3e	12 x Ie AC-3e
Rated Short-time Withstand Current Low Voltage (I_{cw})	at 40 °C Ambient Temp, in Free Air, from a Cold State 10 s 1168 A at 40 °C Ambient Temp, in Free Air, from a Cold State 15 min 225 A at 40 °C Ambient Temp, in Free Air, from a Cold State 1 min 477 A at 40 °C Ambient Temp, in Free Air, from a Cold State 1 s 1460 A at 40 °C Ambient Temp, in Free Air, from a Cold State 30 s 674 A
Maximum Breaking Capacity	cos phi=0.45 (cos phi=0.35 for Ie > 100 A) at 440 V 3000 A cos phi=0.45 (cos phi=0.35 for Ie > 100 A) at 690 V 1500 A
Rated Insulation Voltage (U_i)	acc. to IEC 60947-4-1 and VDE 0110 (Gr. C) 1000 V acc. to UL/CSA 1000 V
Rated Impulse Withstand Voltage (U_{imp})	Main Circuit 8 kV
Maximum Electrical Switching Frequency	(AC-1) 300 cycles per hour (AC-2 / AC-4) 150 cycles per hour (AC-3) 300 cycles per hour
Mechanical Durability	5 million
Maximum Mechanical Switching Frequency	300 cycles per hour
Coil Operating Limits	(acc. to IEC 60947-4-1) 0.85 x Uc Min. ... 1.1 x Uc Max. (at θ ≤ 70 °C)
Rated Control Circuit Voltage (U_c)	50 Hz 24 ... 60 V 60 Hz 24...60 V DC Operation 20...60 V
Coil Consumption	Holding at Max. Rated Control Circuit Voltage 50 Hz 4.9 V·A Holding at Max. Rated Control Circuit Voltage 50 Hz 2.5 W Holding at Max. Rated Control Circuit Voltage 60 Hz 4.9 V·A Holding at Max. Rated Control Circuit Voltage 60 Hz 2.5 W Holding at Max. Rated Control Circuit Voltage DC 2.7 V·A Holding at Max. Rated Control Circuit Voltage DC 2.7 W Pull-in at Max. Rated Control Circuit Voltage 50 Hz 305 V·A Pull-in at Max. Rated Control Circuit Voltage 60 Hz 305 V·A Pull-in at Max. Rated Control Circuit Voltage DC 420 V·A Pull-in at Max. Rated Control Circuit Voltage DC 420 W
Power Loss	at Rated Operating Conditions AC-1 per Pole 23 W at Rated Operating Conditions AC-3 per Pole 10 W
Operate Time	Between Coil De-energization and NO Contact Opening 40 ... 70 ms Between Coil Energization and NO Contact Closing 20 ... 55 ms
Connecting Capacity Main Circuit	Flexible 2 x 10 ... 70 mm² Rigid Cu-Cable 1 x 10 ... 95 mm²
Connecting Capacity Auxiliary Circuit	Flexible with Ferrule 1x 0.75 ... 2.5 mm² Flexible with Ferrule 2x 0.75 ... 2.5 mm² Flexible with Insulated Ferrule 1x 0.75 ... 2.5 mm² Flexible with Insulated Ferrule 2x 0.75 ... 2.5 mm² Flexible 1x 0.75 ... 2.5 mm² Flexible 2x 0.75 ... 2.5 mm² Solid 1x 1 ... 4 mm² Solid 2x 1 ... 4 mm² Stranded 1x 1 ... 4 mm² Stranded 2x 1 ... 4 mm²
Connecting Capacity	Flexible 1 x 10 ... 70 mm²

	Flexible 2 x 10 ... 70 mm² Rigid Cu-Cable 1 x 10 ... 95 mm²
Wire Stripping Length	Auxiliary Circuit 9 mm Control Circuit 9 mm
Degree of Protection	acc. to IEC 60529, IEC 60947-1, EN 60529 Coil Terminals IP20 acc. to IEC 60529, IEC 60947-1, EN 60529 Main Terminals IP00
Recommended Screw Driver	Main Circuit M6 Control Circuit M3.5
Tightening Torque	Auxiliary Circuit 1 N·m Cable Lug 9 N·m Control Circuit 1 N·m Main Circuit 8 N·m
Terminal Type	Double Clamp
Product Name	Block Contactor

Technical UL/CSA

Maximum Operating Voltage UL/CSA	Main Circuit 1000 V
General Use Rating UL/CSA	(1000 V AC) 200 A
Horsepower Rating UL/CSA	(200 ... 208 V AC) Three Phase 40 hp (220 ... 240 V AC) Three Phase 50 hp (440 ... 480 V AC) Three Phase 100 hp (550 ... 600 V AC) Three Phase 125 hp
Tightening Torque UL/CSA	Auxiliary Circuit 9 in·lb Control Circuit 9 in·lb Main Circuit 71 in·lb
Full Load Amps Motor Use	(200 ... 208 V AC) Three Phase 120 A (220 ... 240 V AC) Three Phase 130 A (440 ... 480 V AC) Three Phase 124 A (550 ... 600 V AC) Three Phase 125 A

Environmental

Ambient Air Temperature	Close to Contactor Fitted with Thermal O/L Relay (0.85 ... 1.1 Uc) -25 ... 55 °C Close to Contactor without Thermal O/L Relay (0.85 ... 1.1 Uc) -40 ... 70 °C Close to Contactor for Storage -40 ... 70 °C
Maximum Operating Altitude Permissible	Without Derating 3000 m

Material Compliance

Conflict Minerals Reporting Template (CMRT)	9AKK108467A5658
REACH Declaration	2CMT2021-006202
RoHS Declaration	2CMT2021-006277
RoHS Information	Following EU Directive 2011/65/EU and Amendment 2015/863 July 22, 2019
Toxic Substances Control Act - TSCA	2CMT2023-006525
WEEE B2C / B2B	Business To Business
WEEE Category	5. Small Equipment (No External Dimension More Than 50 cm)

ABB EcoSolutions

End Of Life	1SFC100112M0001

Disassembling Instructions	
Environmental Product Declaration - EPD	1SFC100092D0201

Certificates and Declarations

A2L Certificate – UL	9AKK108468A6693
ABS Certificate	14-LD1092198-PDA
Declaration of Conformity - CE	2CMT2015-005439
Declaration of Conformity - UKCA	2CMT2020-006118
UL Certificate	20120925-E36588

Container Information

Package Level 1 Units	box 1 piece
Package Level 1 Width	207 mm
Package Level 1 Depth / Length	216 mm
Package Level 1 Height	150 mm
Package Level 1 Gross Weight	1.75 kg
Package Level 1 EAN	7320500560464

External Classifications and Standards

Object Classification Code	Q
ETIM 7	EC000066 - Power contactor, AC switching
ETIM 8	EC000066 - Power contactor, AC switching
ETIM 9	EC000066 - Power contactor, AC switching
eClass	V11.0 : 27371003
UNSPSC	39121529
IDEA Granular Category Code (IGCC)	4758 >> Iec Contactors

Categories

Low Voltage Products and Systems → Control Products → Contactors → Block Contactors → AF Contactors → AF146