

AF16-30-10-.. / AF16Z-30-10-.. 3-pole Contactors AC / DC Operated - with Screw Terminals

AF16(Z) contactors are used for controlling power circuits up to 690 V AC and 220 V DC. They are mainly used for controlling 3-phase motors, non-inductive or slightly inductive loads.

- AF..(Z) contactors include an electronic coil interface providing reduced pull-in and holding consumption, particularly for AC control circuits
- Only four coils are needed to cover control voltages between 24...500 V 50/60 Hz or 20...500 V DC.
- AF..(Z) offer extended operating limits and are suitable worldwide for different control voltages. e.g.: the coil 100...250 V 50/60 Hz - DC is suitable for Europe (230 V 50 Hz) and for North America (120 V 60 Hz and 208 V 60 Hz).
- AF..(Z) contactors can manage large control voltage variations
- AF.Z contactors equipped with a 24...60 V 50/60 Hz - 20...60 V DC coil allow direct control by 24 V DC 500 mA PLC-output
- AF.Z contactors withstand short voltage dips and voltage sags (SEMI F47-0706 compliance)
- AF..(Z) contactors have built-in surge protection and do not require additional surge suppressors.



		7.5 kW	
		10 hp	

3D CAD outline drawings available on «Control Product 3D» portal

Ordering Details

IEC	UL/CSA	Control voltage		Main contacts	Auxiliary contacts fitted	Type	Order code	EAN	Weight
Rated power	3-phase motor rating	Uc min. ... Uc max.							Pack ^(ing)
400 V	480 V	V 50/60 Hz	V DC						1 piece
kW	hp								kg

3-pole Contactors

7.5	10	24...60	20...60	3 0	1 0	AF16-30-10-11	1SBL 177 001 R1110	3471523110618	0.270
		48...130	48...130	3 0	1 0	AF16-30-10-12	1SBL 177 001 R1210	3471523110625	0.270
		100...250	100...250	3 0	1 0	AF16-30-10-13	1SBL 177 001 R1310	3471523110632	0.270
		250...500	250...500	3 0	1 0	AF16-30-10-14	1SBL 177 001 R1410	3471523110649	0.310

Note: AF16-30-10-11 not suitable for a direct control by PLC-output. AF16-30-10-11 available in some countries: please consult your ABB representative.

3-pole Contactors - Low Consumption



7.5	10	-	12...20	3 0	1 0	AF16Z-30-10-20	1SBL 176 001 R2010	3471523113800	0.310
		24...60	20...60	3 0	1 0	AF16Z-30-10-21	1SBL 176 001 R2110	3471523113817	0.310
		48...130	48...130	3 0	1 0	AF16Z-30-10-22	1SBL 176 001 R2210	3471523113824	0.310
		100...250	100...250	3 0	1 0	AF16Z-30-10-23	1SBL 176 001 R2310	3471523113831	0.310

Note: Only AF.Z contactors with DC control voltage 12...20 V DC need to respect the connection polarities indicated close to the coil terminals: A1+ for the positive pole and A2- for the negative pole

Certifications and Approvals

CE	cULus	CCC	PG	C-Tick					

Main Pole - Utilization Characteristics according to IEC

Standards	IEC 60947-1 / 60947-4-1 and EN 60947-1 / 60947-4-1	
Rated operational voltage U_e max.	690 V	
Rated frequency limits	25 ... 400 Hz	
Conventional free-air thermal current I_{th} acc. to IEC 60947-4-1, open contactors, $\theta \leq 40\text{ °C}$	35 A	
with conductor cross-sectional area	6 mm ²	
AC-1 Utilization category for air temperature close to contactor		
I_e / AC-1 rated operational current	$\theta \leq 40\text{ °C}$	30 A
U _e max. $\leq 690\text{ V}$, 50/60 Hz	$\theta \leq 60\text{ °C}$	30 A
	$\theta \leq 70\text{ °C}$	26 A
with conductor cross-sectional area	6 mm ²	
AC-3 Utilization category for air temperature close to contactor $\theta \leq 60\text{ °C}$ (for 1500 r.p.m., 50 Hz or 1800 r.p.m., 60 Hz, 3-phase motors)		
I_e / AC-3 max. rated operational current	220-230-240 V	18 A
 3-phase motors	380-400 V	18 A
	415 V	18 A
	440 V	18 A
	500 V	15 A
	690 V	10.5 A
	AC-3 rated operational power	220-230-240 V
 1500 r.p.m. 50 Hz 1800 r.p.m. 60 Hz 3-phase motors	380-400 V	7.5 kW
	415 V	9 kW
	440 V	9 kW
	500 V	9 kW
	690 V	9 kW
	Rated making capacity AC-3	10 x I _e AC-3 acc. to IEC 60947-4-1
Rated breaking capacity AC-3	8 x I _e AC-3 acc. to IEC 60947-4-1	
AC-8a Utilization category (without thermal overload relay - U _e 400 V - $\theta \leq 40\text{ °C}$)		
I_e / AC-8a rated operational current	22 A	
AC-8a rated operational power	11 kW	
Short-circuit protection for contactors without thermal O/L relay - Motor protection excluded U _e $\leq 500\text{ V}$ AC - gG type fuse	32 A	
Rated short-time withstand current I_{cw} at 40 °C ambient temperature, in free air from a cold state	1 s	300 A
	10 s	150 A
	30 s	80 A
	1 min	60 A
	15 min	35 A
Maximum breaking capacity	at 440 V	250 A
cos $\phi = 0.45$	at 690 V	106 A
Heat dissipation per pole	I_e / AC-1	1.2 W
	I_e / AC-3	0.35 W
Max. electrical switching frequency	AC-1	600 cycles/h
	AC-3	1200 cycles/h
	AC-2, AC-4	300 cycles/h

Built-in Auxiliary Contacts according to IEC

Rated operational voltage U_e max.		690 V
Conventional free air thermal current $I_{th} - \theta \leq 40$ °C		16 A
Rated frequency limits		25 ... 400 Hz
Rated operational current I_e / AC-15		
acc. to IEC 60947-5-1	24-127 V 50/60 Hz	6 A
	220-240 V 50/60 Hz	4 A
	400-440 V 50/60 Hz	3 A
	500 V 50/60 Hz	2 A
	690 V 50/60 Hz	2 A
Making capacity AC-15		10 x I_e AC-15 acc. to IEC 60947-5-1
Breaking capacity AC-15		10 x I_e AC-15 acc. to IEC 60947-5-1
Rated operational current I_e / DC-13		
acc. to IEC 60947-5-1	24 V DC	16 A / 144 W
	48 V DC	2.8 A / 134 W
	72 V DC	1 A / 72 W
	110 V DC	0.55 A / 60 W
	125 V DC	0.55 A / 69 W
	220 V DC	0.27 A / 60 W
	250 V DC	0.27 A / 68 W
	400 V DC	0.15 A / 60 W
	500 V DC	0.13 A / 65 W
	600 V DC	0.1 A / 60 W
Short-circuit protection gG type fuse		10 A
Rated short-time withstand current I_{cw}	for 1.0 s	100 A
	for 0.1 s	140 A
Minimum switching capacity		12 V / 3 mA
with failure rate acc. to IEC 60947-5-4		10^{-7}
Non-overlapping time between N.O. and N.C. contacts		≥ 2 ms
Heat dissipation per pole at 6 A		0.1 W
Max. electrical switching frequency	AC-15	1200 cycles/h
	DC-13	900 cycles/h

Main Pole - Utilization Characteristics according to UL / NEMA / CSA

Standards		UL 508, CSA C22.2 N°14
Rated operational voltage U_e max.		600 V
NEMA size		-
NEMA continuous amp rating	thermal current	
NEMA maximum H.P. ratings 1-phase, 60 Hz	115 V AC	
	230 V AC	
NEMA maximum H.P. ratings 3-phase, 60 Hz	200 V AC	
	230 V AC	
	460 V AC	
	575 V AC	
UL General use rating		
600 V AC		30 A
With conductor cross-sectional area		AWG 10
80 V DC - 1-pole		30 A
With conductor cross-sectional area		AWG 10
UL maximum 1-phase motor rating		
Amp-rating	120 V AC	20 A
	240 V AC	17 A
Motor power	120 V AC	1-1/2 hp
	240 V AC	3 hp
UL maximum 3-phase motor rating		
Amp-rating	200-208 V AC	17.5 A
	220-240 V AC	15.2 A
	440-480 V AC	14 A
	550-600 V AC	17 A
Motor power	200-208 V AC	5 hp
(for 1500 r.p.m., 50 Hz or 1800 r.p.m., 60 Hz 3-phase motors)	220-240 V AC	5 hp
	440-480 V AC	10 hp
	550-600 V AC	15 hp
Short-circuit protection		
for contactors without thermal O/L relay - Motor protection excluded		
Fuse rating		60 A
Fuse type, 600 V		NTD
Max. electrical switching frequency		
for general use		600 cycles/h
for motor use		1200 cycles/h