

AF09Z ... AF16Z 4-pole contactors

25 to 30 A AC-1

24 V DC operated - low consumption



AF09Z-40-00

1SBC101529V0014

Description

AF09Z ... AF16Z 4-pole contactors are mainly used for controlling non-inductive or slightly inductive loads (i.e. resistance furnaces...) and generally for controlling power circuits up to 690 V AC and 440 V DC. These contactors are of the block type design with 4 main poles.

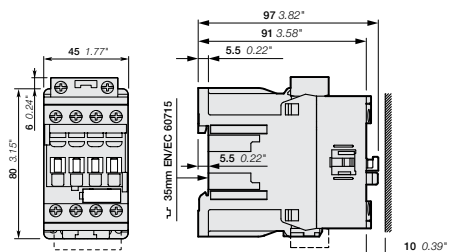
- control circuit: DC operated with electronic coil interface allowing low holding consumption up to 1.7 W and reduced panel energy consumption
- allow direct control by PLC-output ≥ 250 mA 24 V DC
- very distinct closing and opening
- built-in surge suppression
- add-on auxiliary contact blocks for front or side mounting and a wide range of accessories.

Ordering details

IEC	UL/CSA	Rated control circuit voltage U_c	Auxiliary contacts fitted	Type	Order code	Weight
Rated operational current $\theta \leq 40$ °C AC-1	General use rating 600 V AC					Pkg (1 pce)
A	A	V DC				kg
4 N.O. main poles						
25	25	24	0 0	AF09Z-40-00-30	1SBL136201R3000	0.430
30	30	24	0 0	AF16Z-40-00-30	1SBL176201R3000	0.430
2 N.O. + 2 N.C. main poles						
25	25	24	0 0	AF09Z-22-00-30	1SBL136501R3000	0.430
30	30	24	0 0	AF16Z-22-00-30	1SBL176501R3000	0.430

Note: AF.Z contactors with 24 V DC control voltage need to respect the connection polarities indicated close to the coil terminals: A1+ for the positive pole and A2- for the negative pole.

Main dimensions mm, inches



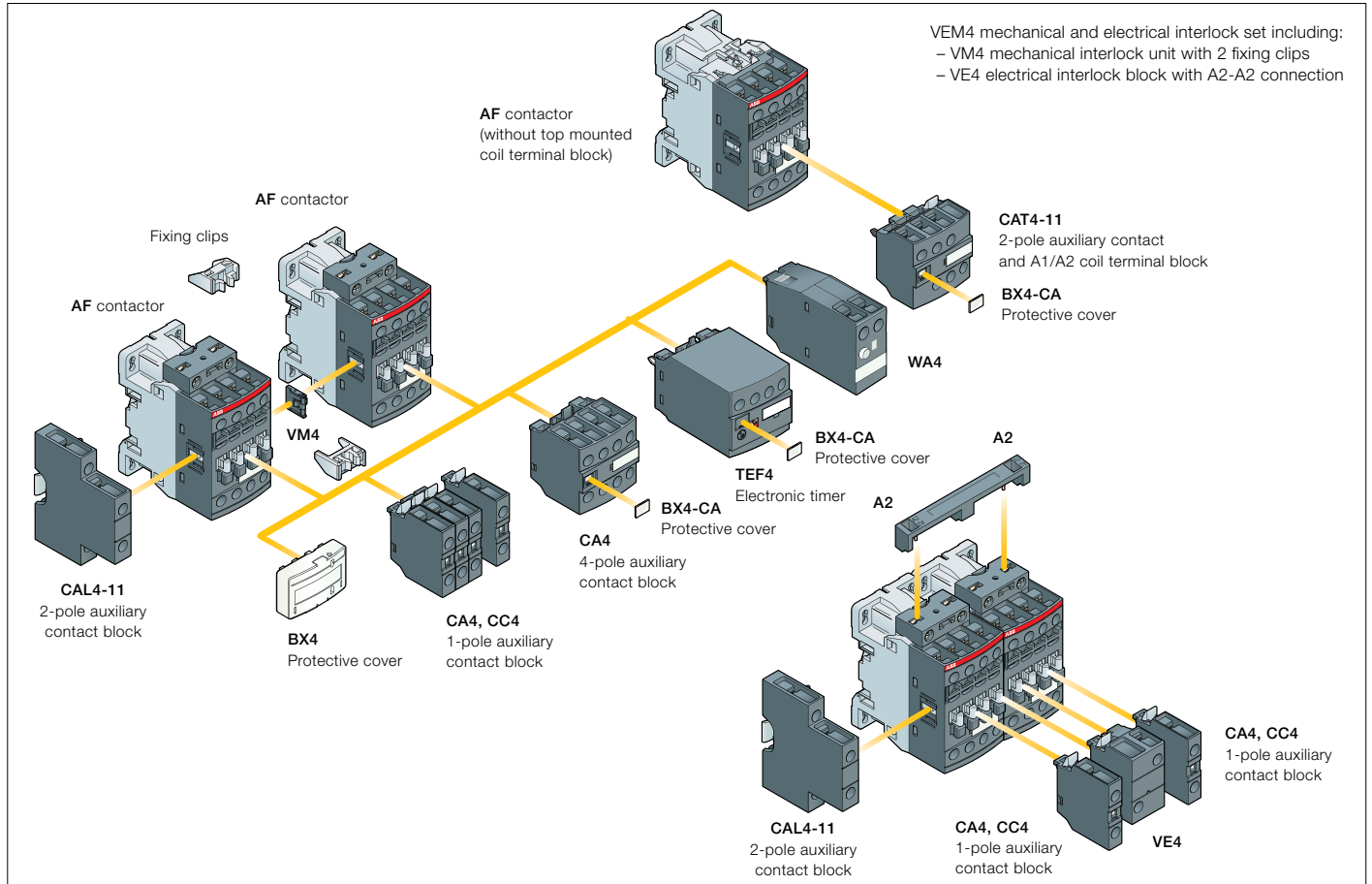
AF09Z, AF16Z

1SBC100329S0201 - Rev. A

AF09 ... AF80 4-pole contactors

Main accessories

Contactor and main accessories (other accessories available)



Main accessory fitting details

Many configurations of accessories are possible depending on whether these are front-mounted or side-mounted.

Contactor types	Main poles	Built-in auxiliary contacts	Front-mounted accessories						Side-mounted accessories		
			Auxiliary contact blocks			Electronic timer	Mechanical latching unit	Electrical and mechanical interlock set (between 2 contactors)	Auxiliary contact blocks		
			1-pole CA4	1-pole CC4 (2)	2-pole CAT4-11	4-pole CA4	TEF4 (2)	WA4 (1) (2)	VEM4	Left side	Right side
			AF09 ... AF16: max. add-on N.C. auxiliary contacts: 4 N.C. max. on positions 1, 2, 3, 4 and 3 N.C. max. on positions 1 ±30°, 5								
			AF26 ... AF38: max. add-on N.C. auxiliary contacts: 3 N.C. max. on positions 1, 2, 3, 4 and 2 N.C. max. on positions 1 ±30°, 5								
AF09 ... AF16	4 0	0 0	4 max.	or 1	or 1	or 1	or 1	or 1	-	+ 1	-
AF26 ... AF38	4 0	0 0	2 max.	or 1	-	or 1	or 1	or 1	-	+ 1	+ 1
			3 max.	-	-	-	-	-	+ 1	+ 1	or 1
			Max. add-on N.C. auxiliary contacts: 6 N.C. max. on positions 1, 1 ±30°, 2, 3, 4, 5								
AF40 ... AF52	4 0	0 0	4 max.	or 1	or 1	or 1	or 1	or 1	-	+ 1	+ 1
AF80, AF96	4 0	0 0	4 max.	-	or 1	or 1	or 1	or 1	-	+ 1	+ 1
			Max. add-on N.C. auxiliary contacts: 3 N.C. max. on positions 1, 2, 3, 4 and 2 N.C. max. on positions 1 ±30°, 5								
AF09 ... AF16	2 2	0 0	4 max.	or 1	or 1	or 1	or 1	or 1	-	+ 1	-
AF26 ... AF38	2 2	0 0	2 max.	or 1	-	or 1	or 1	or 1	-	+ 1	+ 1
			Max. add-on N.C. auxiliary contacts: 2 N.C. max. on positions 1, 1 ±30°, 2, 3, 4, 5								
AF40	2 2	0 0	4 max.	or 1	or 1	or 1	or 1	or 1	-	+ 1	-
			4 max.	-	or 1	or 1	or 1	or 1	-	+ 1	+ 1
AF80	2 2	0 0	4 max.	-	or 1	or 1	or 1	or 1	-	+ 1	+ 1
AF09Z ... AF16Z 24 V DC (coil 30)			AF09Z ... AF16Z-40-00: max. add-on N.C. auxiliary contacts: 4 N.C. max. on positions 1, 2, 3, 4 and 3 N.C. max. on positions 1 ±30°, 5								
			AF09Z ... AF16Z-22-00: max. add-on N.C. auxiliary contacts: 3 N.C. max. on positions 1, 2, 3, 4 and 2 N.C. max. on positions 1 ±30°, 5								
AF09Z, AF16Z	4 0 / 2 2	0 0	4 max.	-	or 1	-	-	-	-	or 1	+ 1
			2 max.	-	-	-	-	-	-	+ 1	or 1

(1) accept 1-pole CA4 auxiliary contacts (1 block on each side of the mechanical latch) in respect to the total number of built-in or additional N.C. auxiliary contacts
 (2) For CC4, CE5, WA4, TEF4 accessory use with contactors coil 30, please consult your ABB local sales organization.

AF09 ... AF80 4-pole contactors

Main accessories



CA4-10



CAL4-11



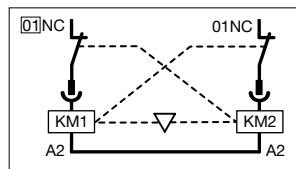
CA4-22E



CAT4-11E



VEM4



TEF4-ON



WA4-13

Ordering details (1)

For contactors	Auxiliary contacts	Type	Order code	Pkg qty	Weight (1 pce)
					kg

Front-mounted instantaneous auxiliary contact blocks

AF09 ... AF80-40-00	1 0	- -	CA4-10	1SBN010110R1010	1	0.014
AF09 ... AF80-22-00	1 0	- -	CA4-10-T	1SBN010110T1010	10	0.014
	0 1	- -	CA4-01	1SBN010110R1001	1	0.014
	0 1	- -	CA4-01-T	1SBN010110T1001	10	0.014
	2 2	- -	CA4-22E	1SBN010140R1022	1	0.055
	3 1	- -	CA4-31E	1SBN010140R1031	1	0.055
	4 0	- -	CA4-40E	1SBN010140R1040	1	0.055
AF09 ... AF16...-40-00	0 4	- -	CA4-04E	1SBN010140R1004	1	0.055

Front-mounted auxiliary contact blocks with N.O. leading contact and N.C. lagging contact (2)

AF09 ... AF80-40-00	- -	1 0	CC4-10	1SBN010111R1010	1	0.014
AF09 ... AF80-22-00	- -	0 1	CC4-01	1SBN010111R1001	1	0.014

Side-mounted instantaneous auxiliary contact blocks

AF09 ... AF80-40-00	1 1	- -	CAL4-11	1SBN010120R1011	1	0.040
AF09 ... AF80-22-00	1 1	- -	CAL4-11-T	1SBN010120T1011	10	0.040

Front-mounted instantaneous auxiliary contact and A1/A2 coil terminal blocks

AF09 ... AF52...-40-00	1 1	- -	CAT4-11E	1SBN010151R1011	1	0.040
AF09 ... AF40...-22-00						

Note: CAT4 not suitable for AF..Z contactors with DC control voltages 12...20 V DC (coil 20) and 24 V DC (coil 30).

Mechanical interlock unit

AF09 ... AF38...-40-00			VM4	1SBN030105T1000	10	0.005
AF40 ... AF80...-40-00			VM96-4	1SBN033405T1000	10	0.006

Note: VM4 includes 2 fixing clips (BB4) to maintain together both contactors.

Mechanical and electrical interlock set

AF09, AF16...-40-00	0 2	- -	VEM4	1SBN030111R1000	1	0.035
AF26, AF38...-40-00						

Note: - VEM4 includes a VM4 mechanical interlock unit with 2 fixing clips (BB4), a VE4 electrical interlock block. VE4 block must be used with A2-A2 connection to respect the electrical connection diagram.

- VEM4 not suitable for AF..Z contactors with DC control voltages 12...20 V DC (coil 20) and 24 V DC (coil 30).

For contactors	Time delay range selected by switch	Delay type	Auxiliary contacts	Type	Order code	Pkg qty	Weight (1 pce)
							kg

Electronic timers (2)

AF09 ... AF80	0.1...1 s	ON-delay	1 1	TEF4-ON	1SBN020112R1000	1	0.065
	1...10 s						
	10...100 s	OFF-delay	1 1	TEF4-OFF	1SBN020114R1000	1	0.065

Note: Rated control circuit voltage U_c 24...240 V 50/60 Hz or DC.

(1) For more information, refer to main catalog "Accessories" section.

Mechanical latching unit (2)

AF09 ... AF52				WA4-13	1SBN040100R1013	1	0.080
AF80				WA4-96-13	1SBN040200R1013	1	0.080

Note: coil 13 for U_c 100...250 V 50/60 Hz or DC. For other rated control circuit voltages between 24...500 V 50/60 Hz / DC or 24 V DC - 500 mA PLC control, refer to main catalog "Accessories" section.

(1) For more information, refer to main catalog "Accessories" section.

(2) For CC4, CE5, WA4, TEF4 accessory use with contactors coil 30, please consult your ABB local sales organization.

AF09 ... AF80 4-pole contactors

Technical data

Main pole - Utilization characteristics according to IEC

Contactor types	AC / DC operated	AF09	AF16	AF26	AF38	AF40	AF52	AF80
Standards		IEC 60947-1 / 60947-4-1 and EN 60947-1 / 60947-4-1						
Rated operational voltage U_e max.		690 V						
Rated frequency (without derating)		50 / 60 Hz						
Conventional free-air thermal current I_{th}								
acc. to IEC 60947-4-1, open contactors, $\theta \leq 40^\circ\text{C}$		35 A	35 A	55 A	55 A	105 A	105 A	125 A
With conductor cross-sectional area		6 mm ²	6 mm ²	16 mm ²	16 mm ²	35 mm ²	35 mm ²	50 mm ²
AC-1 Utilization category								
For air temperature close to contactor								
I_e / Rated operational current AC-1	$\theta \leq 40^\circ\text{C}$	25 A	30 A	45 A	55 A	70 A	100 A	125 A
U_e max. ≤ 690 V, 50/60 Hz	$\theta \leq 60^\circ\text{C}$	25 A	30 A	40 A	45 A	60 A	80 A	105 A
	$\theta \leq 70^\circ\text{C}$	22 A	26 A	32 A	37 A	50 A	70 A	90 A
With conductor cross-sectional area		4 mm ²	6 mm ²	10 mm ²	16 mm ²	35 mm ²	35 mm ²	50 mm ²
AC-3 Utilization category								
For air temperature close to contactor $\theta \leq 60^\circ\text{C}$								
I_e / Max. rated operational current AC-3 (1)								
	220-230-240 V	9 A	18 A	23.2 A	23.2 A	40 A	53 A	80 A
	380-400 V	9 A	18 A	22 A	22 A	40 A	53 A	80 A
	415 V	9 A	18 A	21.2 A	21.2 A	40 A	53 A	80 A
	440 V	9 A	18 A	20 A	20 A	40 A	53 A	80 A
	500 V	9.5 A	15 A	17.6 A	17.6 A	35 A	45 A	65 A
	690 V	7 A	10.5 A	10.5 A	10.5 A	25 A	35 A	49 A
Rated operational power AC-3 (1)								
	220-230-240 V	2.2 kW	4 kW	5.5 kW	5.5 kW	11 kW	15 kW	22 kW
	380-400 V	4 kW	7.5 kW	11 kW (3)	11 kW (3)	18.5 kW	22 kW	37 kW
	415 V	4 kW	9 kW	11 kW	11 kW	22 kW	30 kW	45 kW
	440 V	4 kW	9 kW	11 kW	11 kW	22 kW	30 kW	45 kW
	500 V	5.5 kW	9 kW	11 kW	11 kW	22 kW	30 kW	45 kW
	690 V	5.5 kW	9 kW	9 kW	9 kW	22 kW	30 kW	45 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						
Short-circuit protection device for contactors								
Without thermal overload relay - Motor protection excluded								
$U_e \leq 500$ V AC - gG type fuse		25 A	32 A	50 A	63 A	80 A	110 A	160 A
Rated short-time withstand current I_{cw}								
	1 s	300 A	300 A	450 A	450 A	1000 A	1000 A	1200 A
At 40 °C ambient temperature,	10 s	150 A	150 A	300 A	300 A	600 A	600 A	780 A
in free air from a cold state	30 s	80 A	80 A	225 A	225 A	350 A	350 A	450 A
	1 min	60 A	60 A	150 A	150 A	250 A	250 A	300 A
	15 min	35 A	35 A	55 A	55 A	110 A	110 A	140 A
Maximum breaking capacity N.O. main pole	at 440 V	250 A	250 A	-	-	950 A	950 A	1100 A
$\cos \varphi = 0.45$	at 690 V	106 A	106 A	-	-	600 A	600 A	750 A
	N.C. Main pole	at 440 V	-	-	-	600 A	-	900 A
	at 690 V	-	-	-	-	300 A	-	750 A
Power dissipation per pole								
	I_e / AC-1	0.8 W	1.2 W	1.6 W	2.3 W	3 W	6.3 W	8 W
	I_e / AC-3	0.1 W	0.35 W	0.42 W	0.42 W	1 W	1.7 W	3.2 W
Max. electrical switching frequency	AC-1	600 cycles/h						



3-phase motors



1500 r.p.m. 50 Hz
1800 r.p.m. 60 Hz
3-phase motors

(1) For the corresponding kW/A values of 1500 r.p.m, 50 Hz or 1800 r.p.m, 60 Hz, 3-phase motors, see "Motor Rated Operational Powers and Currents"

(2) For the protection of motor starters against short circuits, see "Coordination with Short-circuit Protection Devices".

(3) 400 V 3-phase motors only.

AF09 ... AF80 4-pole contactors

Technical data

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

Contactor types	AC / DC operated	AF09	AF16	AF26	AF38	AF40	AF52	AF80
Standards		UL 508, CSA C22.2 N°14				UL 60947-4-1, CSA-C22.2 No. 60947-4-1		
Max. operational voltage		600 V						
UL / CSA general use rating								
	600 V AC	25 A	30 A	45 A	55 A	60 A	80 A	105 A
With conductor cross-sectional area		AWG 10	AWG 10	AWG 8	AWG 6	AWG 6	AWG 4	AWG 2
1 pole	80 V DC	25 A (1)	30 A (1)	45 A	55 A	60 A	80 A	105 A
2 poles in serie	160 V DC	25 A (1)	30 A (1)	45 A	55 A	60 A	80 A	105 A
3 poles in serie	240 V DC	25 A	30 A	45 A	55 A	60 A	80 A	105 A
4 poles in serie	320 V DC	25 A	30 A	45 A	55 A	60 A	80 A	105 A
With conductor cross-sectional area		AWG 10	AWG 10	AWG 8	AWG 8	AWG 6	AWG 4	AWG 2
Max. electrical switching frequency								
For general use		600 cycles/h						

Note: 4-pole contactors fitted with 2 N.O. + 2 N.C. main poles, see "General technical data".
 (1) 20 A for AF09...22-00 and AF16...22-00.

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Main pole utilization characteristics - 4 N.O. non-reversing contactors

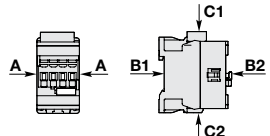
Contactor types	AC / DC operated	AF09	AF16	AF26	AF38	AF40	AF52	AF80
Lighting application - UL / CSA - breaking all lines								
Electrical discharge lamps (ballast)								
1-phase per pole	347 V AC	20 A	30 A	45 A	50 A	-	-	-
3-phase break all lines	600 V AC	20 A	30 A	45 A	50 A	-	-	-
Elevator control, load switching, 500 000 electrical operating cycles acc. to CSA B44.1 / ASME 17.5 paragraph 19.2.1								
1-phase								
Horse power rating	110-120 V AC	-	1/2 hp	-	-	-	-	-
	220-240 V AC	-	1-1/2 hp	-	-	-	-	-
3-phase								
Horse power rating	200-208 V AC	-	3 hp	-	-	-	-	-
	220-240 V AC	-	3 hp	-	-	-	-	-
	440-480 V AC	-	7-1/2 hp	-	-	-	-	-
	550-600 V AC	-	10 hp	-	-	-	-	-

Note: 4-pole contactors fitted with 2 N.O. + 2 N.C. main poles, see "General technical data".

AF09 ... AF80 4-pole contactors

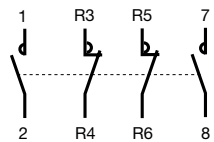
Technical data

General technical data

Contactor types	AC / DC operated	AF09	AF16	AF26	AF38	AF40	AF52	AF80
Rated insulation voltage U_i acc. to IEC 60947-4-1 acc. to UL / CSA		690 V						1000 V
Rated impulse withstand voltage U_{imp}		6 kV						8 kV
Electromagnetic compatibility		Devices complying with IEC 60947-1 / EN 60947-1 - Environment A and B (1)						
Ambient air temperature close to contactor								
Operation		-40...+70 °C						
Storage		-60...+80 °C						
Climatic withstand		Category B according to IEC 60947-1 Annex Q						
Maximum operating altitude (without derating)		3000 m						
Mechanical durability								
Number of operating cycles		10 millions operating cycles						
Max. switching frequency		3600 cycles/h						
Shock withstand acc. to IEC 60068-2-27 and EN 60068-2-27 Mounting position 1								
	Shock direction	1/2 sinusoidal shock for 11 ms: no change in contact position, closed or open position						
 <p>4 N.O. Main poles</p> <p>2 N.O. + 2 N.C. Main poles</p>	A	30 g						20 g
	B1	25 g Closed position / 5 g Open position						20 g Closed position / 5 g Open position
	B2	15 g						10 g
	C1	25 g						20 g
	C2	25 g						20 g
	A	30 g	30 g Closed position / 25 g Open position					20 g
	B1	25 g Closed position / 5 g Open position	25 g Closed position / 5 g Open position					20 g Closed position / 5 g Open position
	B2	15 g	15 g Closed position / 10 g Open position					10 g
	C1	25 g	25 g Closed position / 20 g Open position					20 g
	C2	25 g	25 g Closed position / 20 g Open position					20 g
	Vibration withstand acc. to IEC 60068-2-6		5 ... 300 Hz 4 g Closed position / 2 g Open position					5 ... 300 Hz 3 g Closed position / 2 g Open position

(1) Environment B: all AF09 ... AF38 contactors produced since week 08-2013. AF09 ... AF38-...-12 (48...130 V 50/60 Hz-DC) compliant to environment A only.
For environment B: select AF09 ... AF38-...-22.

Remark for 4-pole contactors fitted with 2 N.O. + 2 N.C. main poles



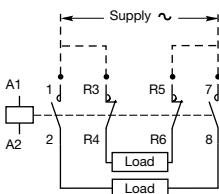
These contactors are suitable for controlling 2 separate circuits, i.e. 2 loads with 2 separate supplies, or 1 circuit comprising 2 separate loads with a single supply (see diagrams below). When the contactor operates there is no mechanical overlapping between the N.O. poles and the N.C. poles: BREAK before MAKE.



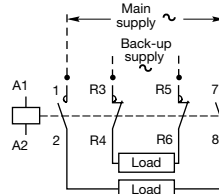
These contactors are not suitable for a reversing starter or for controlling a single load from 2 separate supplies.

Block diagrams

– Single supply and 2 separate loads



– 2 separate supplies and 2 separate loads



AF09 ... AF80 4-pole contactors

Technical data

Magnet system characteristics

Contactor types	AC / DC operated	AF09	AF16	AF26	AF38	AF40	AF52	AF80	
Coil operating limits acc. to IEC 60947-4-1	AC supply	At $\theta \leq 60^\circ\text{C}$ $0.85 \times U_c \text{ min} \dots 1.1 \times U_c \text{ max}$. At $\theta \leq 70^\circ\text{C}$ $0.85 \times U_c \text{ min} \dots U_c \text{ max}$.					at $\theta \leq 70^\circ\text{C}$ $0.85 \times U_c \text{ min} \dots 1.1 \times U_c \text{ max}$		
	DC supply	at $\theta \leq 60^\circ\text{C}$ $0.85 \times U_c \text{ min} \dots 1.1 \times U_c \text{ max}$ - (AF..Z coil 30) $0.85 \dots 1.1 U_c$ at $\theta \leq 70^\circ\text{C}$ (AF) $0.85 \times U_c \text{ min} \dots U_c \text{ max}$ (AF..Z coil 20, 21, 22, 23) $0.85 \times U_c \text{ min} \dots 1.1 \times U_c \text{ max}$ (AF..Z coil 30) U_c					at $\theta \leq 70^\circ\text{C}$ $0.85 \times U_c \text{ min} \dots 1.1 \times U_c \text{ max}$		
AC control voltage 50/60 Hz	Rated control circuit voltage U_c	24...500 V AC							
Coil consumption	Average pull-in value	(AF) 50 VA - (AF..Z coil 21, 22, 23) 16 VA					40 VA		
	Average holding value	(AF) 2.2 VA / 2 W - (AF..Z coil 21, 22, 23) 1.7 VA / 1.5 W					4 VA / 2 W		
DC control voltage	Rated control circuit voltage U_c	12...500 V DC					20...500 V DC		
Coil consumption	Average pull-in value	(AF) 50 W - (AF..Z coil 20, 21, 22, 23) 12 ... 16 W (AF..Z coil 30) 6 W					40 W		
	Average holding value	(AF) 2 W - (AF..Z) 1.7 W					2 W		
PLC-output control		(AF..Z coil 30) $\geq 250 \text{ mA}$ 24 V DC for PLCs and safety PLCs using broken wire detection (AF..Z coil 21) $\geq 500 \text{ mA}$ 24 V DC for PLCs					-		
Drop-out voltage		$\leq 60\%$ of $U_c \text{ min}$.					$\leq 60\%$ of $U_c \text{ min}$.		
Voltage sag immunity acc. to SEMI F47-0706		(AF..Z coil 21, 22, 23) conditions of use on request					conditions of use on request		
Dips withstand $-20^\circ\text{C} \leq \theta \leq +60^\circ\text{C}$		(AF..Z coil 21, 22, 23) 22 ms average for $U_c \geq 24 \text{ V}$ 50/60 Hz or $U_c \geq 20 \text{ V}$ DC					24 ms average		
Operating time									
Between coil energization and:	N.O. contact closing	40...95 ms					48...120 ms		
	N.C. contact opening	38...90 ms					44...115 ms		
Between coil de-energization and:	N.O. contact opening	11...95 ms					16...110 ms		
	N.C. contact closing	13...98 ms					18...113 ms		
Operating time with AF..Z coil 30 - 24 V DC									
Between coil energization and:	N.O. contact closing	27 ... 53 ms					-		
	N.C. contact opening	20 ... 35 ms					-		
Between coil de-energization and:	N.O. contact opening	17 ... 29 ms					-		
	N.C. contact closing	22 ... 57 ms					-		


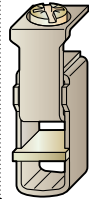
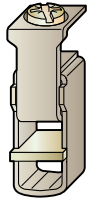
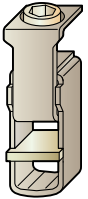














Mounting characteristics and conditions for use

Contactor types	AF09	AF16	AF26	AF38	AF40	AF52	AF80
Mounting positions							
Mounting distances	Max. add-on N.C. auxiliary contacts: see accessory fitting details for a 4-pole contactor AF09 ... AF80						
Fixing	The contactors can be assembled side by side						
On rail according to IEC 60715, EN 60715	35 x 7.5 mm or 35 x 15 mm					35 x 15 mm	
	By screws (not supplied)					2 x M4 or 2 x M6 screws placed diagonally	

AF09 ... AF80 4-pole contactors

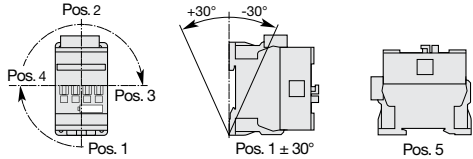
Technical data

Connecting characteristics

Contactor types	AF09	AF16	AF26	AF38	AF40	AF52	AF80
Main terminals							
	Screw terminals with cable clamp		Screw terminals with double connector 2 x (5.5 width x 6.8 depth)		Screw terminals with double connector 2 x (9.3 width x 7.9/10.3 depth)		Screw terminals with double connector 2 x (12.4 width x 9.3/11.1 depth)
Connection capacity (min. ... max.)							
Main conductors (poles)							
 Rigid	Solid ($\leq 4 \text{ mm}^2$)	} 1 x	1...6 mm ²	1.5...16 mm ²	6...35 mm ²	6...70 mm ²	
 Stranded ($\geq 6 \text{ mm}^2$)			2 x	1...6 mm ²	1.5...16 mm ²	6...35 mm ²	6...50 mm ²
 Flexible with non insulated ferrule		1 x	0.75...6 mm ²	1.5...16 mm ²	4...35 mm ²	6...50 mm ²	
 Flexible with insulated ferrule		2 x	0.75...6 mm ²	1.5...16 mm ²	4...35 mm ²	6...50 mm ²	
 Flexible with insulated ferrule		1 x	0.75...4 mm ²	1.5...16 mm ²	4...35 mm ²	6...50 mm ²	
 Flexible with insulated ferrule		2 x	0.75...2.5 mm ²	1.5...16 mm ²	4...35 mm ²	6...50 mm ²	
 Bars or lugs		L <	9.6 mm	-	9.2 mm	12.2 mm	
Connection capacity acc. to UL/CSA	1 or 2 x		AWG 16...10	AWG 16...6	AWG 10...2	AWG 6...1	
Stripping length			10 mm	12 mm	16 mm	17 mm	
Tightening torque			1.5 Nm / 13 lb.in	2.5 Nm / 22 lb.in	4 Nm / 35 lb.in	6 Nm / 53 lb.in	
Auxiliary conductors (coil terminals)							
 Rigid solid		1 x	1...2.5 mm ²				
 Rigid solid		2 x	1...2.5 mm ²				
 Flexible with non insulated ferrule		1 x	0.75...2.5 mm ²				
 Flexible with non insulated ferrule		2 x	0.75...2.5 mm ²				
 Flexible with insulated ferrule		1 x	0.75...2.5 mm ²				
 Flexible with insulated ferrule		2 x	0.75...1.5 mm ²				
 Lugs		L <	8 mm				
Connection capacity acc. to UL/CSA	1 or 2 x		AWG 18...14				
Stripping length			10 mm				
Tightening torque			1.2 Nm / 11 lb.in				
Degree of protection acc. to IEC 60947-1 / EN 60947-1 and IEC 60529 / EN 60529							
Main terminals	IP20				IP10		
Coil terminals	IP20						
Screw terminals	Delivered in open position, screws of unused terminals must be tightened						
Main terminals			M3.5	M4.5	M6		M8
		Screwdriver type	Flat Ø 5.5 / Pozidriv 2		Flat Ø 6.5 / Pozidriv 2		hexagon socket (s = 4 mm)
Coil terminals			M3.5				
		Screwdriver type	Flat Ø 5.5 / Pozidriv 2				

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Mounting characteristics and conditions for use

Contactor types	AF09	AF16	AF26	AF38	AF40	AF52	AF80
Mounting positions							
Mounting distances	Max. add-on N.C. auxiliary contacts: see accessory fitting details for a 4-pole contactor AF09 ... AF80						
Fixing	The contactors can be assembled side by side						
On rail according to IEC 60715, EN 60715	35 x 7.5 mm or 35 x 15 mm				35 x 15 mm		
By screws (not supplied)	2 x M4 screws placed diagonally				2 x M4 or 2 x M6 screws placed diagonally		

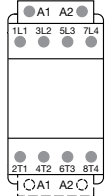
18BC101988S0201 - Rev. A

AF09 ... AF80 4-pole contactors

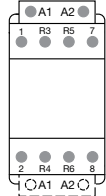
Terminal marking and positioning

AF09 ... AF38 contactors - AC / DC operated

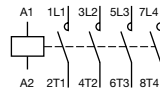
Standard devices without addition of auxiliary contacts



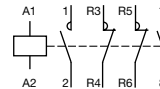
AF09 ... AF80...-40-00



AF09 ... AF40...-22-00
AF80-22-00

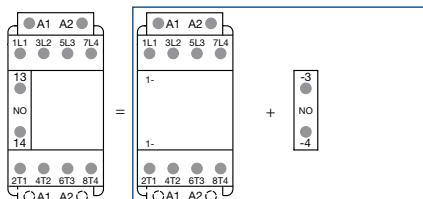


AF09 ... AF80...-40-00

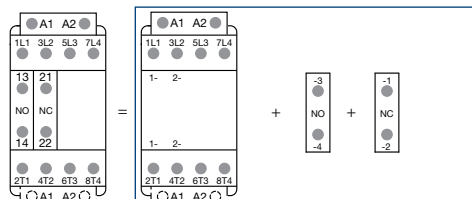


AF09 ... AF40...-22-00
AF80-22-00

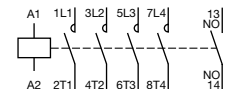
Other possible contact combinations with auxiliary contacts added by the user



Combination 10 = AF09 ... AF80...-40-00 + CA4-10



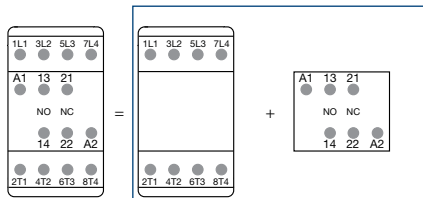
Combination 11 = AF09 ... AF80...-40-00 + CA4-10 + CA4-01



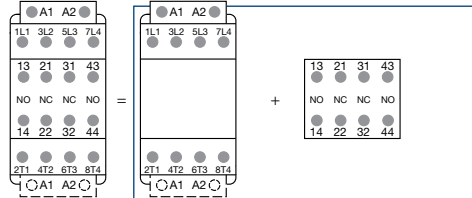
Combination 10



Combination 11



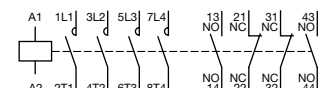
Combination 11 = AF09 ... AF80...-40-00 + CAT4-11E



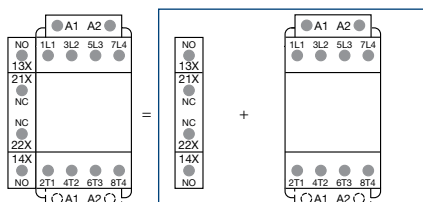
Combination 22 = AF09 ... AF80...-40-00 + CA4-22E



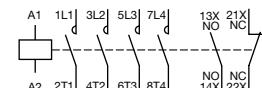
Combination 11



Combination 22



Combination 11 = CAL4-11 + AF09 ... AF80...-40-00

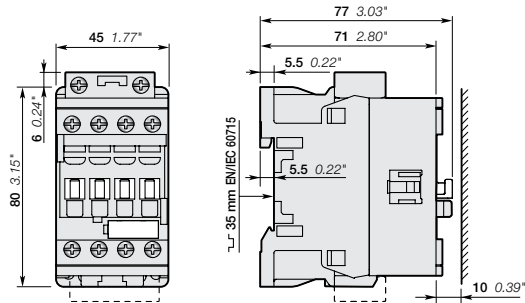


Combination 11

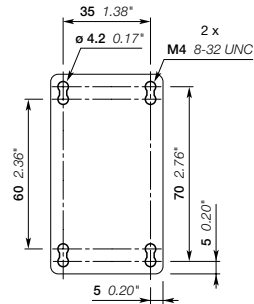
Note: only AF..Z contactor with DC control voltages 12...20 V DC (coil 20) and 24 V DC (coil 30) need to respect the connection polarities indicated close to the coil terminals: A1+ for the positive pole and A2- for the negative pole.

AF09, AF16 4-pole contactors

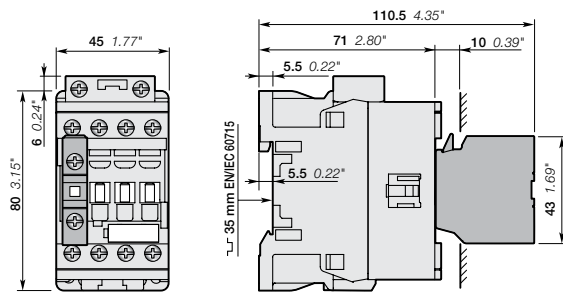
Main dimensions mm, inches



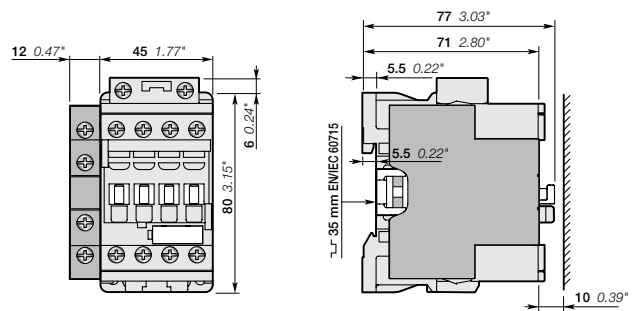
AF09, AF16



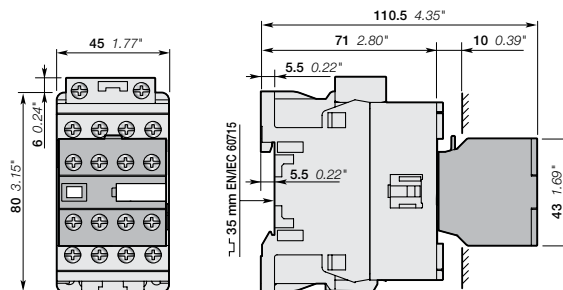
AF09, AF16



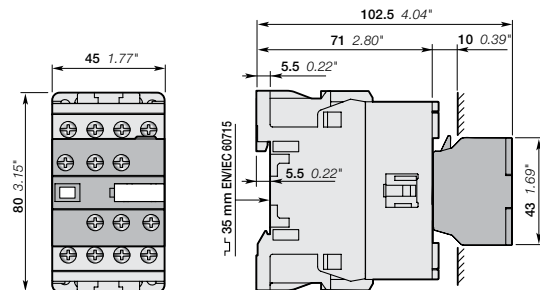
AF09, AF16
+ CA4, CC4 1-pole auxiliary contact block



AF09, AF16
+ CAL4-11 2-pole auxiliary contact block



AF09, AF16
+ CA4 4-pole auxiliary contact block

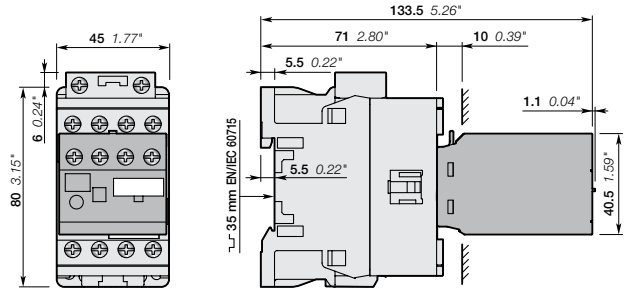


AF09, AF16
+ CAT4 2-pole auxiliary contact and coil terminal block

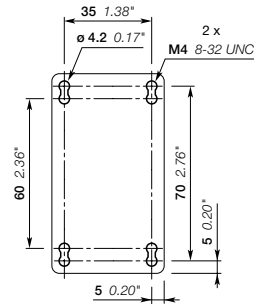
Note: contactor lateral distance to grounded component 2 mm 0.08" min.
24 V DC operated contactor (coil 30) depth + 20 mm 0.79".

AF09, AF16 4-pole contactors

Main dimensions mm, inches

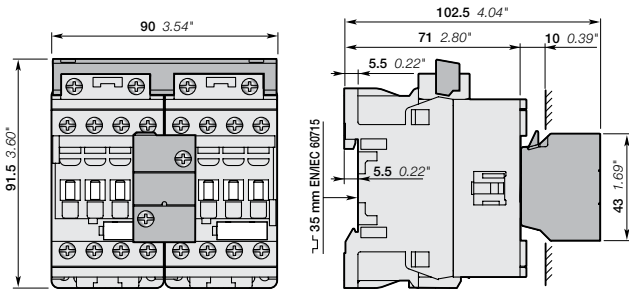


AF09, AF16
+ TEF4 electronic timer

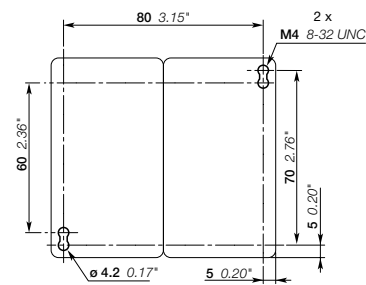


AF09, AF16

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AF09..-40-00, AF16..-40-00
+ VEM4 mechanical and electrical interlock set



AF09..-40-00, AF16..-40-00
+ VEM4 mechanical and electrical interlock set

Note: contactor lateral distance to grounded component 2 mm 0.08 inches min.
24 V DC operated contactor (coil 30) depth + 20 mm 0.79 inches.