

AF 3-pole contactors

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Ordering details

4 to 45 kW / 5 to 60 hp

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55 to 200 kW / 75 to 300 hp

AF116 ... AF146	AC / DC operated	5/88
AF190 ... AF370	AC / DC operated	5/90
Main accessories		5/92
AF116 ... AF146	AC / DC operated with 1 N.O. + 1 N.C.	5/94
AF190 ... AF370	AC / DC operated with 1 N.O. + 1 N.C.	5/96
Main accessories		5/98

200 to 560 kW / 350 to 900 hp

AF400 ... AF750	AC / DC operated with 1 N.O. + 1 N.C.	5/100
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4 to 45 kW / 5 to 60 hp - 2-stack

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55 to 560 kW / 75 to 900 hp

AF116 ... AF146	AC / DC operated with 2 N.O. + 2 N.C.	5/110
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3-pole contactors, for motor control and power switching



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AC / DC Control supply				Type	AF09	AF12	AF16	AF26	AF30	AF38	AF40	AF52	AF65	AF80	AF96
IEC	AC-3	Rated operational power	220 - 230 - 240 V	kW	2.2	3	4	6.5	9	11	11	15	18.5	22	25
		$\theta \leq 60^\circ\text{C}$ for AF09 ... AF370	380 - 400 V	kW	4	5.5	7.5	11	15	18.5	18.5	22	30	37	45
		$\theta \leq 55^\circ\text{C}$ for AF400 ... AF2650	415 V	kW	4	5.5	9	11	15	18.5	22	30	37	45	55
		440 V	kW	4	5.5	9	15	18.5	22	22	30	37	45	55	
		500 V	kW	5.5	7.5	9	15	18.5	22	22	30	37	45	55	
		690 V	kW	5.5	7.5	9	15	18.5	22	22	30	37	45	55	
		1000 V	kW	—	—	—	—	—	—	—	—	—	—	35	40
Rated operational current	380 - 400 V	A	9	12	18	26	32	38	40	53	65	80	96		
AC-1	Rated operational current	$\theta \leq 40^\circ\text{C}$, 690 V	A	25	28	30	45	50	50	70	100	105	125	130	

UL / CSA	1-phase motor rating	120 V	hp	0.75	1	1.5	2	2	2	3	3	5	7.5	7.5
		240 V	hp	1.5	2	3	3	5	5	7.5	10	15	15	20
	3-phase motor rating	200 - 208 V	hp	2	3	5	7.5	10	10	10	15	20	25	30
		220 - 240 V	hp	2	3	5	7.5	10	10	15	20	25	30	30
		440 - 480 V	hp	5	7.5	10	15	20	25	30	40	50	60	60
		550 - 600 V	hp	7.5	10	15	20	25	30	40	50	60	75	75
	General use rating	600 V	A	25	28	30	45	50	50	60	80	90	105	115
NEMA	NEMA Size			00	0	—	1	—	—	2	—	—	3	—

Main accessories

Auxiliary contact blocks	Front mounting	CA4-10 (1 x N.O.) CA4-01 (1 x N.C.)
	Side mounting	CAL4-11 (1 x N.O. + 1 x N.C.)
Timers	Electronic	TEF4-ON TEF4-OFF
Interlocking units	Mechanical	VM4
	Mechanical / Electrical	VM96-4
Connection sets	For reversing contactors	VEM4
Surge suppressors		BER16-4 BER38-4 BER65-4 BER96-4
		Built-in surge protection

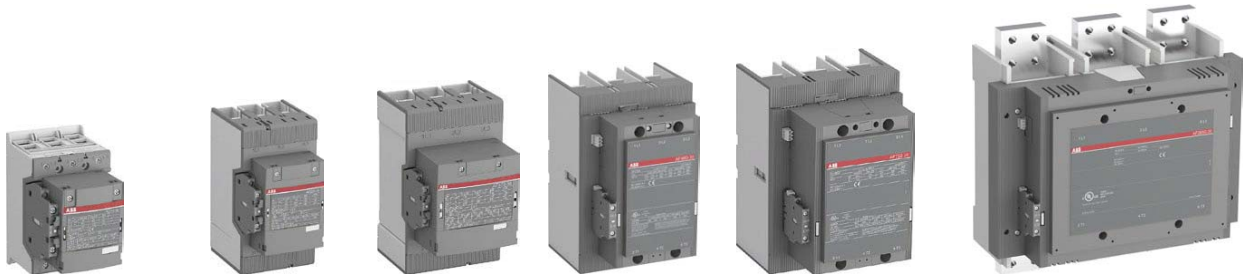
Overload relays

Thermal relays		Class 10 (Class 10A for TF140, TA200DU)	TF42 (0.10...38 A)	TF65 (22...67 A)	TF96 (40...96 A)
Electronic relays		Class 10E, 20E, 30E	EF19 (0.10...18.9 A)	EF19 (0.10...18.9 A) EF45 (9...45 A)	EF65 (20...70 A) EF96 (36...100 A)

Manual motor starters



Thermal / magnetic protection Class 10	MS116 (0.10...32 A) lcs up to 50 kA for class 10 A	MS450 (28...50 A) lcs up to 50 kA
	MS132 (0.10...32 A) lcs up to 100 kA	MS495 (45...100 A) lcs up to 50 kA
Magnetic only types	MO132 (0.16...32 A) lcs up to 100 kA	MS497 (22...100 A) lcs up to 100 kA
	MO450 (40...50 A) lcs up to 50 kA	MO495 (63...100 A) lcs up to 50 kA
Accessories	For contactor mounting	BEA16-4 BEA38-4



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	AF116	AF140	AF146	AF190	AF205	AF265	AF305	AF370	AF400	AF460	AF580	AF750	AF1250	AF1350	AF1650	AF2050	AF2650
	30	37	45	55	55	75	90	110	110	132	160	220	—	257	315	—	—
	55	75	75	90	110	132	160	200	200	250	315	400	—	475	560	—	—
	55	75	75	90	110	132	160	200	220	250	355	425	—	500	630	—	—
	75	90	90	110	132	160	160	200	220	250	355	450	—	560	710	—	—
	75	90	90	110	132	160	200	250	250	315	400	520	—	560	710	—	—
	55	75	90	132	160	200	250	315	315	355	500	600	—	800	1000	—	—
	—	—	75	110	132	132	132	132	220	280	355	400	—	—	—	—	—
	116	140	146	190	205	265	305	370	400	460	580	750	—	860	1060	—	—
	160	200	225	275	350	400	500	600	600	700	800	1050	1260	1350	1650	2050	2650

—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
30	40	40	50	60	75	100	125	125	125	150	200	250	—	—	—	—	—
40	50	50	60	75	100	125	150	150	200	250	300	—	400	450	—	—	—
75	100	100	125	150	200	250	300	350	400	500	600	—	800	900	—	—	—
100	125	125	150	200	250	300	350	400	500	600	700	—	1000	1150	—	—	—
160	200	200	250	300	350	400	520	550	650	750	900	1210	1350	1650	2100	2700	—
—	4	—	—	—	5	—	—	—	6	—	7	—	—	8	—	—	—

CAL19-11 (1 x N.O. + 1 x N.C.)								CAL18-11 (1 x N.O. + 1 x N.C.)									
VM19 (for same size contactors)								VM750H VM750V				VM1650H					
BER140-4			BER205-4			BER370-4			BEM460-30			BEM750-30					

TF140DU (66...142 A) $\theta \leq 55^\circ\text{C}$		TA200DU (66...200 A) $\theta \leq 55^\circ\text{C}$		EF370 (115...380 A)		EF460 (150...500 A)		EF750 (250...800 A)		E1250DU (375...1250 A)	
EF146 (54...150 A)		EF205 (63...210 A)									

Short-circuit protection devices
MCCB and switch-fuses



1SBC101908S0201 - Rev. A

AF09 ... AF38 3-pole contactors

4 to 18.5 kW

AC / DC operated



AF09-30-10

1SBC101011V0014



AF26-30-00

1SBC101001V0014

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Description

AF09 ... AF38 contactors are mainly used for controlling 3-phase motors and power circuits up to 690 V AC and 220 V DC. These contactors are of the block type design with 3 main poles.

- control circuit: AC or DC operated with electronic coil interface accepting a wide control voltage range (e.g. 100...250 V AC and DC), only 4 control voltage ranges covering 24...500V 50/60 Hz and 20...500 V DC
- can manage large control voltage variations
- reduced panel energy consumption
- 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.

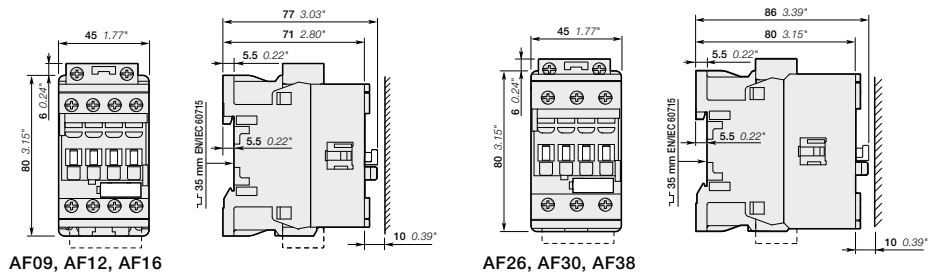
Ordering details

IEC Rated operational power 400 V AC-3 kW	UL/CSA 3-phase motor rating 480 V AC-1 A	General use rating 600 V AC hp	General use rating A	Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted	Type (1)	Order code	Weight Pkg (1 pce) kg	
				V 50/60 Hz	V DC					
4	25	5	25	24...60	-	(2)	1 0	AF09-30-10-41	1SBL137001R4110	0.270
							0 1	AF09-30-01-41	1SBL137001R4101	0.270
							1 0	AF09-30-10-12	1SBL137001R1210	0.270
							0 1	AF09-30-01-12	1SBL137001R1201	0.270
							1 0	AF09-30-10-13	1SBL137001R1310	0.270
							0 1	AF09-30-01-13	1SBL137001R1301	0.270
5.5	28	7.5	28	24...60	-	(2)	1 0	AF12-30-10-41	1SBL157001R4110	0.270
							0 1	AF12-30-01-41	1SBL157001R4101	0.270
							1 0	AF12-30-10-12	1SBL157001R1210	0.270
							0 1	AF12-30-01-12	1SBL157001R1201	0.270
							1 0	AF12-30-10-13	1SBL157001R1310	0.270
							0 1	AF12-30-01-13	1SBL157001R1301	0.270
7.5	30	10	30	24...60	-	(2)	1 0	AF16-30-10-41	1SBL177001R4110	0.270
							0 1	AF16-30-01-41	1SBL177001R4101	0.270
							1 0	AF16-30-10-12	1SBL177001R1210	0.270
							0 1	AF16-30-01-12	1SBL177001R1201	0.270
							1 0	AF16-30-10-13	1SBL177001R1310	0.270
							0 1	AF16-30-01-13	1SBL177001R1301	0.270
11	45	15	45	24...60	-	(2)	1 0	AF26-30-10-41	1SBL237001R4100	0.310
							0 0	AF26-30-00-12	1SBL237001R1200	0.310
							0 0	AF26-30-00-13	1SBL237001R1300	0.310
							0 0	AF26-30-00-14	1SBL237001R1400	0.350
							0 0	AF26-30-00-14	1SBL237001R1400	0.350
							0 0	AF26-30-00-14	1SBL237001R1400	0.350
15	50	20	50	24...60	-	(2)	0 0	AF30-30-00-41	1SBL277001R4100	0.310
							0 0	AF30-30-00-12	1SBL277001R1200	0.310
							0 0	AF30-30-00-13	1SBL277001R1300	0.310
							0 0	AF30-30-00-14	1SBL277001R1400	0.350
							0 0	AF30-30-00-14	1SBL277001R1400	0.350
							0 0	AF30-30-00-14	1SBL277001R1400	0.350
18.5	50	25	50	24...60	-	(2)	0 0	AF38-30-00-41	1SBL297001R4100	0.310
							0 0	AF38-30-00-12	1SBL297001R1200	0.310
							0 0	AF38-30-00-13	1SBL297001R1300	0.310
							0 0	AF38-30-00-14	1SBL297001R1400	0.350
							0 0	AF38-30-00-14	1SBL297001R1400	0.350
							0 0	AF38-30-00-14	1SBL297001R1400	0.350

(1) For other auxiliary contacts arrangements, please contact your ABB local sales organization.

(2) For 24...60 V 50/60 Hz - 20...60 V DC, use AF.Z-30...-21.

Main dimensions mm, inches



AF09Z ... AF38Z 3-pole contactors

4 to 18.5 kW

AC / DC operated - low consumption



AF09Z-30-10



AF26Z-30-00

Description

AF09Z ... AF38Z contactors are mainly used for controlling 3-phase motors and power circuits up to 690 V AC and 220 V DC. These contactors are of the block type design with 3 main poles.

- control circuit: AC or DC operated with electronic coil interface accepting a wide control voltage range (e.g. 100...250 V AC and DC), only 4 control voltage ranges covering 24...250 V 50/60 Hz and 12...250 V DC
- can manage large control voltage variations
- allow direct control by PLC-output ≥ 24 V DC 500 mA
- reduced panel energy consumption
- very distinct closing and opening
- can withstand short voltage dips and voltage sags (SEMI F47-0706 conditions of use on request).
- built-in surge suppression
- add-on auxiliary contact blocks for front or side mounting and a wide range of accessories.

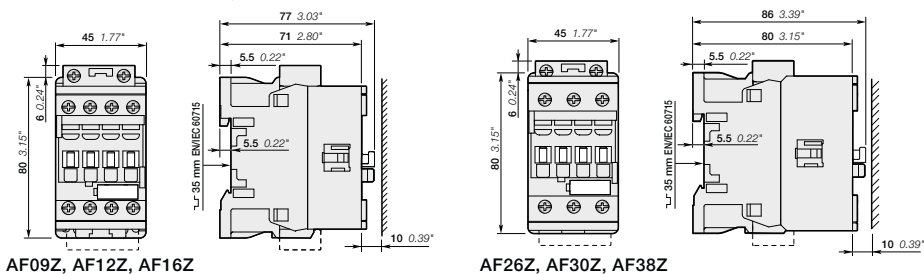
Ordering details

IEC Rated operational power 400 V AC-3 kW	UL/CSA 3-phase motor rating 480 V AC-1 A	General use rating 600 V AC hp	General use rating 600 V AC A	Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted	Type (1)	Order code	Weight Pkg (1 pce) kg				
				V 50/60 Hz	V DC								
4	25	5	25	-	12...20	1 0	AF09Z-30-10-20	1SBL136001R2010	0,310				
						0 1	AF09Z-30-01-20	1SBL136001R2001	0,310				
						1 0	AF09Z-30-10-21	1SBL136001R2110	0,310				
						0 1	AF09Z-30-01-21	1SBL136001R2101	0,310				
						1 0	AF09Z-30-10-22	1SBL136001R2210	0,310				
						0 1	AF09Z-30-01-22	1SBL136001R2201	0,310				
				48...130	48...130	1 0	100...250	100...250	100...250	1 0	AF09Z-30-10-23	1SBL136001R2310	0,310
										0 1	AF09Z-30-01-23	1SBL136001R2301	0,310
										1 0	AF12Z-30-10-20	1SBL156001R2010	0,310
										0 1	AF12Z-30-01-20	1SBL156001R2001	0,310
										1 0	AF12Z-30-10-21	1SBL156001R2110	0,310
										0 1	AF12Z-30-01-21	1SBL156001R2101	0,310
5.5	28	7.5	28	-	12...20	1 0	AF12Z-30-10-22	1SBL156001R2210	0,310				
						0 1	AF12Z-30-01-22	1SBL156001R2201	0,310				
						1 0	AF12Z-30-10-23	1SBL156001R2310	0,310				
						0 1	AF12Z-30-01-23	1SBL156001R2301	0,310				
						1 0	AF16Z-30-10-20	1SBL176001R2010	0,310				
						0 1	AF16Z-30-01-20	1SBL176001R2001	0,310				
7.5	30	10	30	-	12...20	1 0	AF16Z-30-10-21	1SBL176001R2110	0,310				
						0 1	AF16Z-30-01-21	1SBL176001R2101	0,310				
						1 0	AF16Z-30-10-22	1SBL176001R2210	0,310				
						0 1	AF16Z-30-01-22	1SBL176001R2201	0,310				
						1 0	AF16Z-30-10-23	1SBL176001R2310	0,310				
						0 1	AF16Z-30-01-23	1SBL176001R2301	0,310				
11	45	15	45	-	12...20	0 0	AF26Z-30-00-20	1SBL236001R2000	0,350				
						0 0	AF26Z-30-00-21	1SBL236001R2100	0,350				
						0 0	AF26Z-30-00-22	1SBL236001R2200	0,350				
						0 0	AF26Z-30-00-23	1SBL236001R2300	0,350				
15	50	20	50	-	12...20	0 0	AF30Z-30-00-20	1SBL276001R2000	0,350				
						0 0	AF30Z-30-00-21	1SBL276001R2100	0,350				
						0 0	AF30Z-30-00-22	1SBL276001R2200	0,350				
						0 0	AF30Z-30-00-23	1SBL276001R2300	0,350				
18.5	50	25	50	-	12...20	0 0	AF38Z-30-00-20	1SBL296001R2000	0,350				
						0 0	AF38Z-30-00-21	1SBL296001R2100	0,350				
						0 0	AF38Z-30-00-22	1SBL296001R2200	0,350				
						0 0	AF38Z-30-00-23	1SBL296001R2300	0,350				

(1) For other auxiliary contacts arrangements, please contact your ABB local sales organization.

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.

Main dimensions mm, inches



AF40 ... AF96 3-pole contactors

18.5 to 45 kW

AC / DC operated



AF40-30-00

1SBC101014V0014

5



AF80-30-00

1SBC101018V0014

Description

AF40 ... AF96 contactors are mainly used for controlling 3-phase motors and power circuits up to 690 V AC and 220 V DC. These contactors are of the block type design with 3 main poles.

- control circuit: AC or DC operated with electronic coil interface accepting a wide control voltage range (e.g. 100...250 V AC and DC), only 4 control voltage ranges covering 24...500 V 50/60 Hz and 20...500 V DC
 - can manage large control voltage variations
 - reduced panel energy consumption
 - 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.

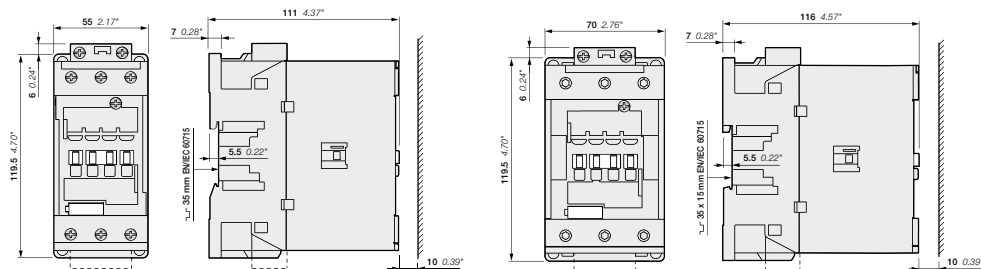
Ordering details

IEC		UL / CSA		Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted	Type (1)	Order code	Weight
Rated operational power	current $\theta \leq 40^\circ\text{C}$	3-phase motor rating 480 V	General use rating 600 V AC						Pkg (1 pce)
				400 V AC-3	AC-1				
18.5	70	30	60	24...60	-	0 0	AF40-30-00-41	1SBL347001R4100	0.970
				24...60	20...60 (2)	0 0	AF40-30-00-11	1SBL347001R1100	0.970
				48...130	48...130	0 0	AF40-30-00-12	1SBL347001R1200	0.970
				100...250	100...250	0 0	AF40-30-00-13	1SBL347001R1300	0.950
				250...500	250...500	0 0	AF40-30-00-14	1SBL347001R1400	0.950
22	100	40	80	24...60	-	0 0	AF52-30-00-41	1SBL367001R4100	0.970
				24...60	20...60 (2)	0 0	AF52-30-00-11	1SBL367001R1100	0.970
				48...130	48...130	0 0	AF52-30-00-12	1SBL367001R1200	0.970
				100...250	100...250	0 0	AF52-30-00-13	1SBL367001R1300	0.950
				250...500	250...500	0 0	AF52-30-00-14	1SBL367001R1400	0.950
30	105	50	90	24...60	-	0 0	AF65-30-00-41	1SBL387001R4100	0.970
				24...60	20...60 (2)	0 0	AF65-30-00-11	1SBL387001R1100	0.970
				48...130	48...130	0 0	AF65-30-00-12	1SBL387001R1200	0.970
				100...250	100...250	0 0	AF65-30-00-13	1SBL387001R1300	0.950
				250...500	250...500	0 0	AF65-30-00-14	1SBL387001R1400	0.950
37	125	60	105	24...60	-	0 0	AF80-30-00-41	1SBL397001R4100	1.220
				24...60	20...60 (2)	0 0	AF80-30-00-11	1SBL397001R1100	1.220
				48...130	48...130	0 0	AF80-30-00-12	1SBL397001R1200	1.220
				100...250	100...250	0 0	AF80-30-00-13	1SBL397001R1300	1.170
				250...500	250...500	0 0	AF80-30-00-14	1SBL397001R1400	1.170
45	130	60	115	24...60	-	0 0	AF96-30-00-41	1SBL407001R4100	1.220
				24...60	20...60 (2)	0 0	AF96-30-00-11	1SBL407001R1100	1.220
				48...130	48...130	0 0	AF96-30-00-12	1SBL407001R1200	1.220
				100...250	100...250	0 0	AF96-30-00-13	1SBL407001R1300	1.170
				250...500	250...500	0 0	AF96-30-00-14	1SBL407001R1400	1.170

(1) For other auxiliary contacts arrangements, please contact your ABB local sales organization.

(2) AF...30-...-11 not suitable for direct control by PLC-output.

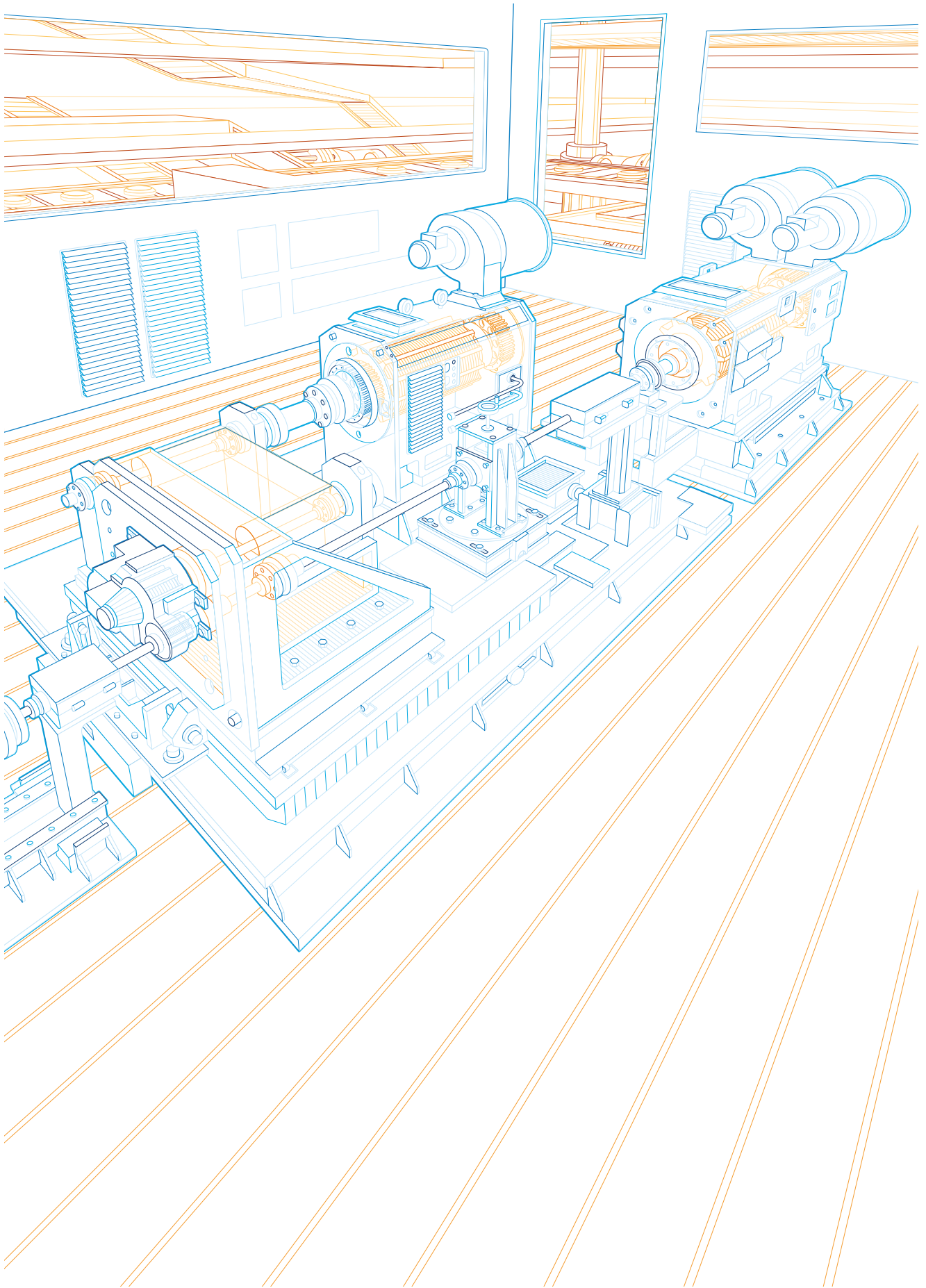
Main dimensions mm, inches



AF40, AF52, AF65

AF80, AF96

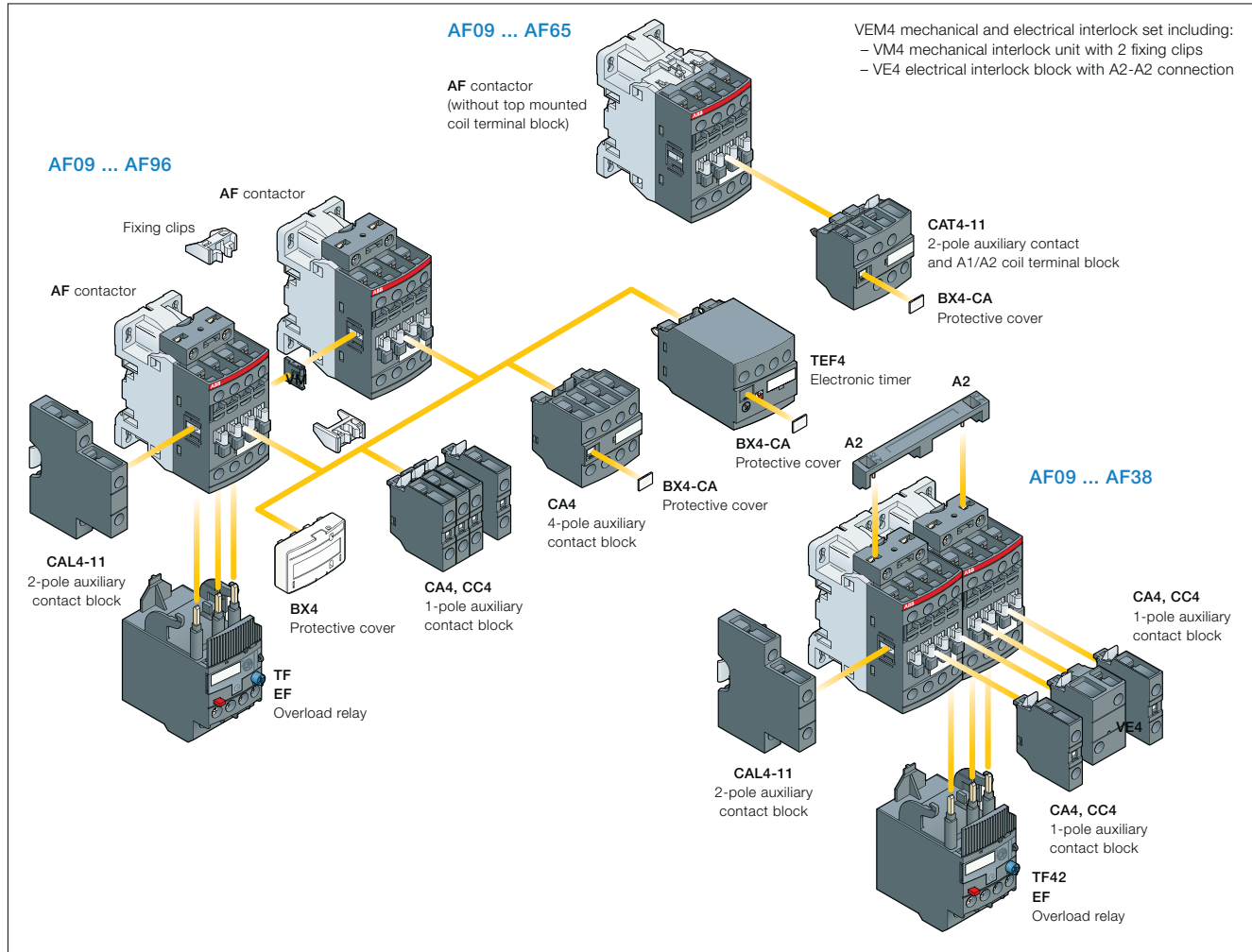
1SBC101740S0201 - Rev. A



AF09 ... AF96 3-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	Electrical and mechanical interlock set (between 2 contactors)	Auxiliary contact blocks	
			1-pole CA4	2-pole CAT4-11	4-pole CA4	TEF4	VEM4	Left side	Right side
			1-pole CC4					2-pole CAL4-11	
			Max. N.C. built-in and 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						
AF09 ... AF16	3	0	0	1					
AF09 ... AF16	3	0	1	0					
AF26 ... AF38	3	0	0	0					
			Max. add-on N.C. auxiliary contacts: 6 N.C. max. on positions 1, 1 ±30°, 2, 3, 4, 5						
AF40 ... AF65	3	0	0	0					
AF80, AF96	3	0	0	0					

Overload relays fitting details (1)

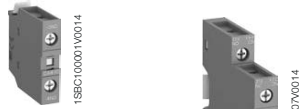
Contactor types	Thermal overload relays	Electronic overload relays
AF09 ... AF38	TF42 (0.10...38 A)	EF19 (0.10...19 A)
AF26 ... AF38	TF42 (0.10...38 A)	EF45 (9...45 A)
AF40 ... AF65	TF65 (22...67 A)	EF65 (20...70 A)
AF80, AF96	TF96 (40...96 A)	EF96 (36...100 A)

The addition of an overload relay on the contactor does not prevent fitting of many other accessories as shown above.

(1) Direct mounting - No kit required.

AF09 ... AF96 3-pole contactors

Main accessories



CA4-10



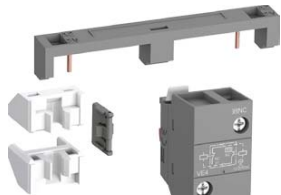
CAL4-11



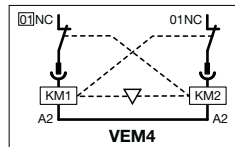
CA4-22E



CAT4-11E



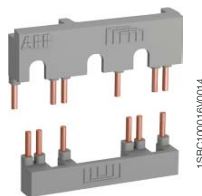
VEM4



TEF4-ON



BEA16-4



BER16-4

Ordering details (1)

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

Front-mounted instantaneous auxiliary contact blocks

AF09 ... AF96	1 0	- -	CA4-10	1SBN010110R1010	1	0.014
	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
AF09 ... AF16...-30-10	2 2	- -	CA4-22M	1SBN010140R1122	1	0.055
AF26 ... AF96...-30-00	2 2	- -	CA4-22E	1SBN010140R1022	1	0.055
AF09 ... AF16...-30-01	2 2	- -	CA4-22U	1SBN010140R1322	1	0.055

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

AF09 ... AF96	- -	1 0	CC4-10	1SBN010111R1010	1	0.014
	- -	0 1	CC4-01	1SBN010111R1001	1	0.014

Side-mounted instantaneous auxiliary contact blocks

AF09 ... AF96	1 1	- -	CAL4-11	1SBN010120R1011	1	0.040
	1 1	- -	CAL4-11-T	1SBN010120T1011	10	0.040

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

AF09 ... AF16...-30-10	1 1	- -	CAT4-11M	1SBN010151R1111	1	0.040
AF26 ... AF65...-30-00	1 1	- -	CAT4-11E	1SBN010151R1011	1	0.040
AF09 ... AF16...-30-01	1 1	- -	CAT4-11U	1SBN010151R1311	1	0.040

Note: CAT4 not suitable for AF.Z contactors with DC control voltage 12...20 V DC.

Mechanical interlock unit

AF09 ... AF38			VM4	1SBN030105T1000	10	0.005
AF40 ... AF96			VM96-4	1SBN033405T1000	10	0.006

Note: VM4 and VM96-4 include 2 fixing clips (BB4) to maintain together both contactors.

Mechanical and electrical interlock set

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

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 voltage 12...20 V DC.

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

Electronic timers

AF09 ... AF96	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.

Connecting links with manual motor starters

AF09 ... AF16	with	MS116-0.16 ... MS116-25, MS132-0.16 ... MS132-25	BEA16-4	1SBN081306T1000	10	0.025
AF26 ... AF38	with	MS116-0.16 ... MS116-16, MS132-0.16 ... MS132-10	BEA26-4	1SBN082306T1000	10	0.025
	with	MS116-20 ... MS116-32, MS132-12 ... MS132-32	BEA38-4	1SBN082306T2000	10	0.030

Connection sets for reversing contactors

AF09 ... AF16		BER16-4	1SBN081311R1000	1	0.045
AF26 ... AF38		BER38-4	1SBN082311R1000	1	0.100
AF40 ... AF65		BER65-4	1SBN083411R1000	1	0.175
AF80 ... AF96		BER96-4	1SBN083911R1000	1	0.250

Connection sets for star-delta starting

AF09 ... AF16	With or without VM4	BEY16-4	1SBN081313R2000	1	0.050
AF26 ... AF38	With or without VM4	BEY38-4	1SBN082713R2000	1	0.110
AF40 ... AF65	With or without VM96-4	BEY65-4	1SBN083413R2000	1	0.200
AF80 ... AF96	With or without VM96-4	BEY96-4	1SBN083913R2000	1	0.250

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

AF116 ... AF146 3-pole contactors

55 to 75 kW

AC / DC operated



AF146-30-00

1SFC101005V0001

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AF146-30-00B

1SFC101006V0001

Description

AF116 ... AF140 contactors are mainly used for controlling 3-phase motors and power circuits up to 690 V AC, AF146 up to 1000 V AC. These contactors are of the block type design with 3 main poles.

- control circuit: AC or DC operated with electronic coil interface accepting a wide control voltage range (e.g. 100...250 V AC and DC), only 4 coils to cover control voltages between 24...500 V 50/60 Hz and 20...500 V DC
- can manage large control voltage variations
- reduced panel energy consumption
- very distinct closing and opening
- can withstand short voltage dips and voltage sags (SEMI F47 conditions of use on request).
- built-in surge suppression
- add-on auxiliary contact blocks for side mounting and a wide range of accessories.

Ordering details

IEC		UL / CSA		Rated control circuit voltage		Auxiliary contacts fitted	Type (1)	Order code	Weight
Rated operational power	current $\theta \leq 40^\circ\text{C}$	3-phase motor rating	General use rating	Uc min. ... Uc max.	V 50/60 Hz: V DC				
400 V AC-3	AC-1	480 V	600 V AC						kg
kW	A	hp	A						

For connection with built-in cable clamps

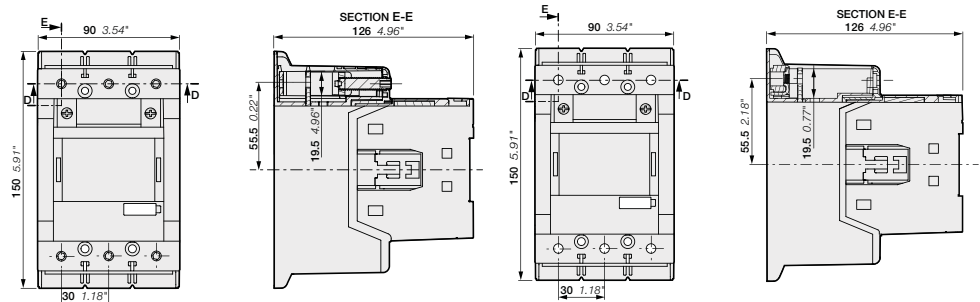
55	160	75	160	24..60	20..60	0 0	AF116-30-00-11	1SFL427001R1100	1.750
				48..130	48...130	0 0	AF116-30-00-12	1SFL427001R1200	1.750
				100..250	100...250	0 0	AF116-30-00-13	1SFL427001R1300	1.750
				250...500	250...500	0 0	AF116-30-00-14	1SFL427001R1400	1.750
75	200	100	200	24..60	20...60	0 0	AF140-30-00-11	1SFL447001R1100	1.750
				48..130	48...130	0 0	AF140-30-00-12	1SFL447001R1200	1.750
				100..250	100...250	0 0	AF140-30-00-13	1SFL447001R1300	1.750
				250...500	250...500	0 0	AF140-30-00-14	1SFL447001R1400	1.750
75	225	100	200	24..60	20..60	0 0	AF146-30-00-11	1SFL467001R1100	1.750
				48..130	48...130	0 0	AF146-30-00-12	1SFL467001R1200	1.750
				100..250	100...250	0 0	AF146-30-00-13	1SFL467001R1300	1.750
				250...500	250...500	0 0	AF146-30-00-14	1SFL467001R1400	1.750

With bar connections

55	160	75	160	24..60	20..60	0 0	AF116-30-00B-11	1SFL427002R1100	1.500
				48..130	48...130	0 0	AF116-30-00B-12	1SFL427002R1200	1.500
				100..250	100...250	0 0	AF116-30-00B-13	1SFL427002R1300	1.500
				250...500	250...500	0 0	AF116-30-00B-14	1SFL427002R1400	1.500
75	200	100	200	24..60	20...60	0 0	AF140-30-00B-11	1SFL447002R1100	1.500
				48..130	48...130	0 0	AF140-30-00B-12	1SFL447002R1200	1.500
				100..250	100...250	0 0	AF140-30-00B-13	1SFL447002R1300	1.500
				250...500	250...500	0 0	AF140-30-00B-14	1SFL447002R1400	1.500
75	225	100	200	24..60	20..60	0 0	AF146-30-00B-11	1SFL467002R1100	1.500
				48..130	48...130	0 0	AF146-30-00B-12	1SFL467002R1200	1.500
				100..250	100...250	0 0	AF146-30-00B-13	1SFL467002R1300	1.500
				250...500	250...500	0 0	AF146-30-00B-14	1SFL467002R1400	1.500

(1) For other auxiliary contacts arrangements, please contact your ABB local sales organization.

Main dimensions mm, inches



AF116, AF140, AF146-30-00

AF116, AF140, AF146-30-00B

AF116 ... AF146 3-pole contactors with built-in PLC interface

55 to 75 kW

AC / DC operated



AF146-30-00



AF146-30-00B

Description

AF116 ... AF146 contactors are mainly used for controlling 3-phase motors and power circuits up to 690 V AC, AF146 up to 1000 V AC. These contactors are of the block type design with 3 main poles.

- control circuit: AC or DC operated with electronic coil interface accepting a wide control voltage range (e.g. 100...500 V AC and DC), only 2 coils to cover control voltages between 100...500 V 50/60 Hz and 100...250 V DC
- can manage large control voltage variations
- reduced panel energy consumption
- very distinct closing and opening
- can withstand short voltage dips and voltage sags (SEMI F47 conditions of use on request).
- built-in surge suppression
- add-on auxiliary contact blocks for side mounting and a wide range of accessories.

Ordering details

IEC		UL / CSA		Rated control circuit voltage		Auxiliary contacts fitted	Type (1)	Order code	Weight
Rated power	operational current $\theta \leq 40^\circ\text{C}$	3-phase motor rating	General use rating	Uc min. ...	Uc max.				
400 V AC-3	AC-1	480 V	600 V AC	V 50/60 Hz	V DC				kg
kW	A	hp	A						

For connection with built-in cable clamps

55	160	75	160	100...250	100...250	0 0	AF116-30-00-33	1SFL427001R3300	1.750
				250...500	250...500	0 0	AF116-30-00-34	1SFL427001R3400	1.750
75	200	100	200	100...250	100...250	0 0	AF140-30-00-33	1SFL447001R3300	1.750
				250...500	250...500	0 0	AF140-30-00-34	1SFL447001R3400	1.750
75	225	100	200	100...250	100...250	0 0	AF146-30-00-33	1SFL467001R3300	1.750
				250...500	250...500	0 0	AF146-30-00-34	1SFL467001R3400	1.750

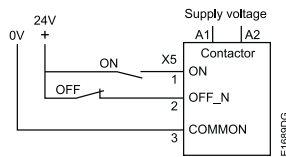
With bar connections

55	160	75	160	100...250	100...250	0 0	AF116-30-00B-33	1SFL427002R3300	1.500
				250...500	250...500	0 0	AF116-30-00B-34	1SFL427002R3400	1.500
75	200	100	200	100...250	100...250	0 0	AF140-30-00B-33	1SFL447002R3300	1.500
				250...500	250...500	0 0	AF140-30-00B-34	1SFL447002R3400	1.500
75	225	100	200	100...250	100...250	0 0	AF146-30-00B-33	1SFL467002R3300	1.500
				250...500	250...500	0 0	AF146-30-00B-34	1SFL467002R3400	1.500

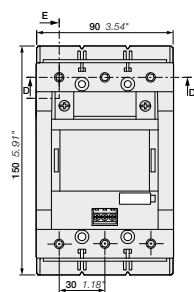
(1) For other auxiliary contacts arrangements, please contact your ABB local sales organization.

AF116 ... AF146 are equipped with low voltage inputs for control, for example by a PLC.

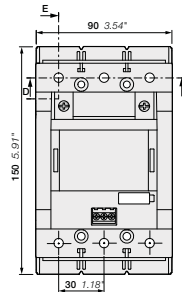
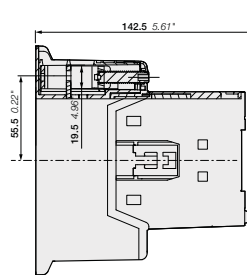
Control inputs



Main dimensions mm, inches



AF116, AF140, AF146-30-00



AF116, AF140, AF146-30-00B

AF190 ... AF370 3-pole contactors

90 to 200 kW

AC / DC operated



AF205-30-00

1SFC10102V0001

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AF370-30-00

1SFC10107V0001

Description

AF190 ... AF370 contactors are mainly used for controlling 3-phase motors and power circuits up to 1000 V AC. These contactors are of the block type design with 3 main poles.

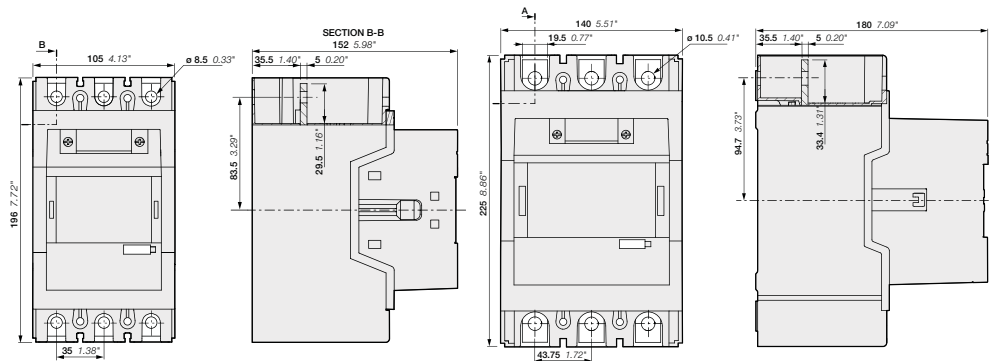
- control circuit: AC or DC operated with electronic coil interface accepting a wide control voltage range (e.g. 100...250 V AC and DC), only 4 coils to cover control voltages between 24...500 V 50/60 Hz and 20...500 V DC
 - can manage large control voltage variations
 - reduced panel energy consumption
 - very distinct closing and opening
 - can withstand short voltage dips and voltage sags (SEMI F47 conditions of use on request).
- built-in surge suppression
- add-on auxiliary contact blocks for side mounting and a wide range of accessories.

Ordering details

IEC		UL / CSA		Rated control circuit voltage		Auxiliary contacts fitted	Type (1)	Order code	Weight
Rated operational power	current $\theta \leq 40^\circ\text{C}$	3-phase motor rating	General use rating	Uc min. ... Uc max.					
400 V AC-3	AC-1	480 V	600 V AC	V 50/60 Hz	V DC			Pkg (1 pce)	kg
90	275	125	250	24...60	20...60	0 0	AF190-30-00-11	1SFL487002R1100	3.000
				48...130	48...130	0 0	AF190-30-00-12	1SFL487002R1200	3.000
				100...250	100...250	0 0	AF190-30-00-13	1SFL487002R1300	3.000
				250...500	250...500	0 0	AF190-30-00-14	1SFL487002R1400	3.000
110	350	150	300	24...60	20...60	0 0	AF205-30-00-11	1SFL527002R1100	3.000
				48...130	48...130	0 0	AF205-30-00-12	1SFL527002R1200	3.000
				100...250	100...250	0 0	AF205-30-00-13	1SFL527002R1300	3.000
				250...500	250...500	0 0	AF205-30-00-14	1SFL527002R1400	3.000
140	400	200	350	24...60	20...60	0 0	AF265-30-00-11	1SFL547002R1100	4.605
				48...130	48...130	0 0	AF265-30-00-12	1SFL547002R1200	4.605
				100...250	100...250	0 0	AF265-30-00-13	1SFL547002R1300	4.605
				250...500	250...500	0 0	AF265-30-00-14	1SFL547002R1400	4.605
160	500	250	400	24...60	20...60	0 0	AF305-30-00-11	1SFL587002R1100	4.605
				48...130	48...130	0 0	AF305-30-00-12	1SFL587002R1200	4.605
				100...250	100...250	0 0	AF305-30-00-13	1SFL587002R1300	4.605
				250...500	250...500	0 0	AF305-30-00-14	1SFL587002R1400	4.605
200	600	300	520	24...60	20...60	0 0	AF370-30-00-11	1SFL607002R1100	4.605
				48...130	48...130	0 0	AF370-30-00-12	1SFL607002R1200	4.605
				100...250	100...250	0 0	AF370-30-00-13	1SFL607002R1300	4.605
				250...500	250...500	0 0	AF370-30-00-14	1SFL607002R1400	4.605

(1) For other auxiliary contacts arrangements, please contact your ABB local sales organization.

Main dimensions mm, inches



AF190, AF205

AF265, AF305, AF370

1SFC101089C0201 - Rev. D

AF190 ... AF370 3-pole contactors with built-in PLC interface

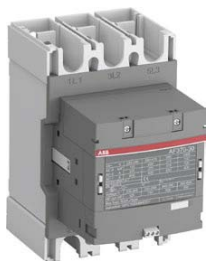
90 to 200 kW

AC / DC operated



1SFC101167V0001

AF205-30-00



1SFC10132V0001

AF370-30-00

Description

- AF190 ... AF370 contactors are mainly used for controlling 3-phase motors and power circuits up to 1000 V AC. These contactors are of the block type design with 3 main poles.
- control circuit: AC or DC operated with electronic coil interface accepting a wide control voltage range (e.g. 100...250 V AC and DC), only 2 coils to cover control voltages between 100...500 V 50/60 Hz and 100...500 V DC
 - can manage large control voltage variations
 - reduced panel energy consumption
 - very distinct closing and opening
 - can withstand short voltage dips and voltage sags (SEMI F47 conditions of use on request).
 - built-in surge suppression
 - add-on auxiliary contact blocks for side mounting and a wide range of accessories.

Ordering details

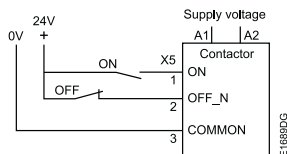
IEC		UL / CSA		Rated control circuit voltage		Auxiliary contacts fitted	Type (1)	Order code	Weight
Rated power	operational current $\theta \leq 40^\circ\text{C}$	3-phase motor rating	General use rating	Uc min. ...	Uc max.				Pkg (1 pce)
400 V AC-3	AC-1	480 V	600 V AC	V 50/60 Hz	V DC				kg
90	275	125	250	100...250	100...250	0 0	AF190-30-00-33	1SFL487002R3300	3.000
				250...500	250...500	0 0	AF190-30-00-34	1SFL487002R3400	3.000
110	350	150	300	100...250	100...250	0 0	AF205-30-00-33	1SFL527002R3300	3.000
				250...500	250...500	0 0	AF205-30-00-34	1SFL527002R3400	3.000
140	400	200	350	100...250	100...250	0 0	AF265-30-00-33	1SFL547002R3300	4.605
				250...500	250...500	0 0	AF265-30-00-34	1SFL547002R3400	4.605
160	500	250	400	100...250	100...250	0 0	AF305-30-00-33	1SFL587002R3300	4.605
				250...500	250...500	0 0	AF305-30-00-34	1SFL587002R3400	4.605
200	600	300	520	100...250	100...250	0 0	AF370-30-00-33	1SFL607002R3300	4.605
				250...500	250...500	0 0	AF370-30-00-34	1SFL607002R3400	4.605

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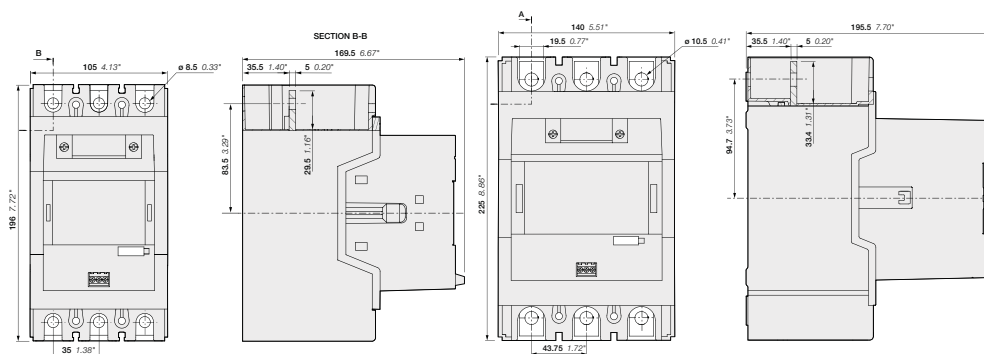
(1) For other auxiliary contacts arrangements, please contact your ABB local sales organization.

AF190 ... AF370 are equipped with low voltage inputs for control, for example by a PLC.

Control inputs



Main dimensions mm, inches



AF190, AF205

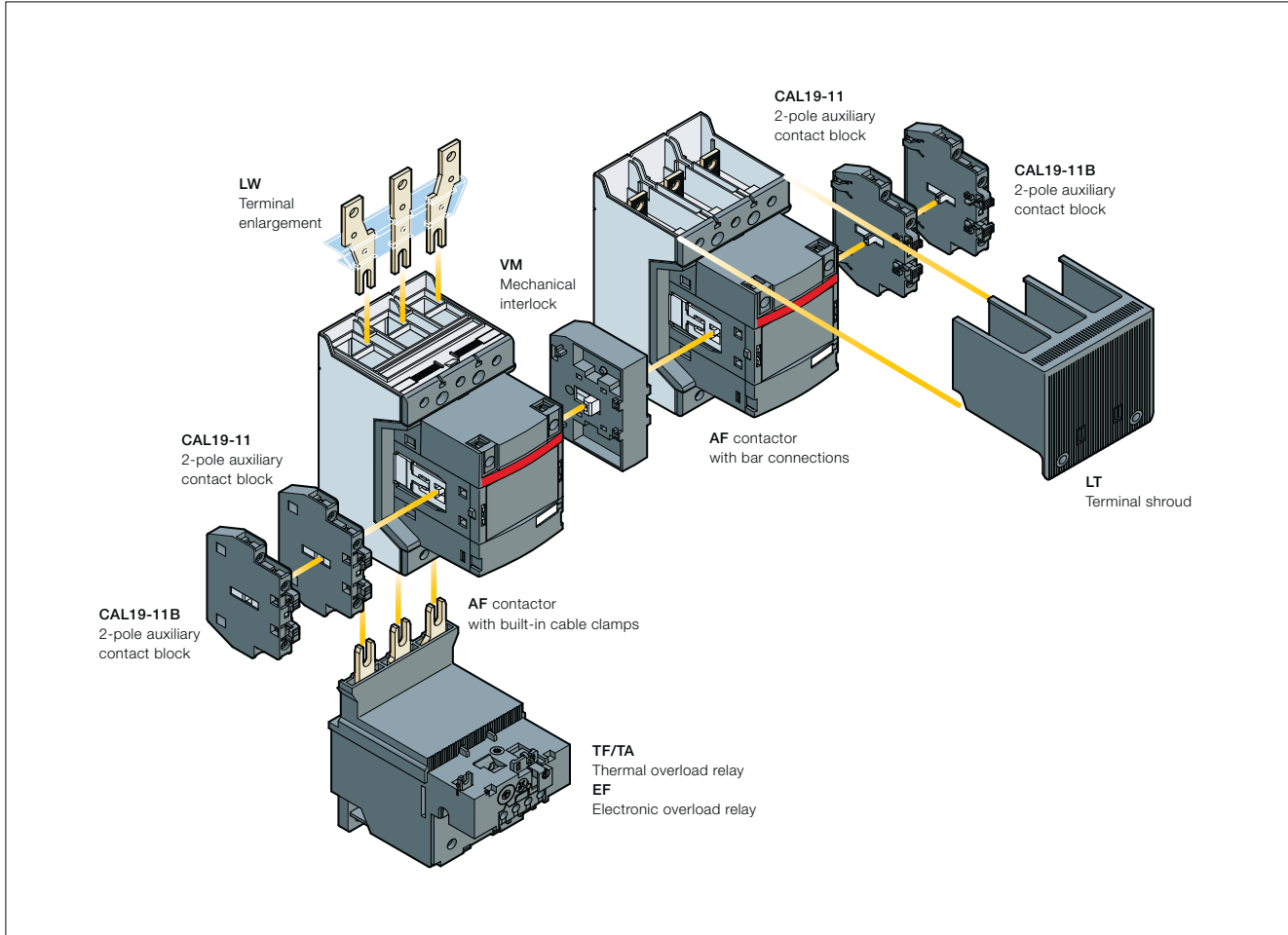
AF265, AF305, AF370

1SFC101165C0201

AF116 ... AF370 3-pole contactors

Main accessories

Main accessories (other accessories available)



5

Main accessory fitting details

Contactor types	Main poles	Available auxiliary contacts	Side-mounted accessories		
			Auxiliary contact blocks		Mechanical interlock units (between two contactors)
			CAL19-11	CAL19-11B	
AF116 ... AF370	3	0 0 0	2 x CAL19-11	+ 2 x CAL19-11B	-
AF116 ... AF370	3	0 0 0	2 x CAL19-11 (1)	+ 2 x CAL19-11B (1)	+ VM... (2)

(1) Total number of auxiliary contact blocks for the two contactors.

(2) Interlock type, according to the contactor ratings (see "Accessories").

Overload relays fitting details (1)

Contactor types	Thermal overload relays	Electronic overload relays
AF116 ... AF140	TF140DU (66...142 A)	EF146 (54...150 A)
AF146	-	EF146 (54...150 A)
AF190, AF205	TA200DU (66...200 A)	EF205 (63...210 A)
AF265 ... AF370	-	EF370 (115...380 A)

The addition of a thermal or electronic overload relay on the contactor does not prevent fitting of many other accessories as shown in "Main accessory fitting details" table.

(1) Direct mounting - No kit required.

1SFC101135/0201

AF116 ... AF370 3-pole contactors

Main accessories



1SFC101071V0001

CAL19-11



1SFC101055V0001

VM19



1SFC101041V0001

LT370-30C



1SFC101049V0001

LX140

Ordering details (1)

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

Side-mounted instantaneous auxiliary contact blocks

AF116 ... AF370	1	1	CAL19-11	1SFN010820R1011	2	0.050
	1	1	CAL19-11B	1SFN010820R3311	2	0.050

Mechanical interlock unit

AF116 ... AF370	VM19	1SFN030300R1000	1	0.054
AF116 ... AF146 and AF190, AF205	VM140/190	1SFN034403R1000	1	0.088
AF190, AF205 and AF265 ... AF370	VM205/265	1SFN035203R1000	1	0.090

Terminal shrouds

AF116 ... AF146, with compression lugs	LT140-30L	1SFN124203R1000	2	0.070
AF190, AF205, with cable clamps	LT205-30C	1SFN124801R1000	2	0.050
AF190, AF205, with compression lugs	LT205-30L	1SFN124803R1000	2	0.220
AF190, AF205, with shorting bar or between contactor and TOL/EOL in DOL-starters	LT205-30Y	1SFN124804R1000	1	0.050
AF265 ... AF370, with cable clamps	LT370-30C	1SFN125401R1000	2	0.035
AF265 ... AF370, with compression lugs	LT370-30L	1SFN125403R1000	2	0.280
AF265 ... AF370, with shorting bar or between contactor and TOL/EOL in DOL-starters	LT370-30Y	1SFN125404R1000	1	0.075
AF265 ... AF370, for use with extending cable clamps, ATK300/2 and OZXB4	LT370-30D	1SFN125406R1000	1	0.150

For contactors	Dimensions		Type	Order code	Pkg qty	Weight (1 pce)
	hole Ø mm	bar mm				

Terminal enlargements

AF116 ... AF146	6.5	13 x 3	LW140	1SFN074207R1000	1	0.115
AF190 ... AF205	10.5	17.5 x 5	LW205	1SFN074807R1000	1	0.260
AF265 ... AF370	10.5	20 x 5	LW370	1SFN075407R1000	1	0.340

Terminal extension

AF116 ... AF146	6.5	13 x 3	LX140	1SFN074210R1000	1	0.072
AF190 ... AF205	8.5	17.5 x 5	LX205	1SFN074810R1000	1	0.180
AF265 ... AF370	10.5	20 x 5	LX370	1SFN075410R1000	1	0.234

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

5

AF116 ... AF146 3-pole contactors

55 to 75 kW

AC / DC operated with 1 N.O. + 1 N.C. auxiliary contacts



AF146-30-11

1SFC101090V0001

5



AF146-30-11B

1SFC101090B0001

Description

- AF116 ... AF140 contactors are mainly used for controlling 3-phase motors and power circuits up to 690 V AC, AF146 up to 1000 V AC. These contactors are of the block type design with 3 main poles.
- control circuit: AC or DC operated with electronic coil interface accepting a wide control voltage range (e.g. 100...250 V AC and DC), only 4 coils to cover control voltages between 24...500 V 50/60 Hz and 20...500 V DC
 - can manage large control voltage variations
 - reduced panel energy consumption
 - very distinct closing and opening
 - can withstand short voltage dips and voltage sags (SEMI F47 conditions of use on request).
 - built-in surge suppression
 - add-on auxiliary contact blocks for side mounting and a wide range of accessories.

Ordering details

IEC		UL / CSA		Rated control circuit voltage		Auxiliary contacts fitted	Type (1)	Order code	Weight
Rated operational power	current $\theta \leq 40^\circ\text{C}$	3-phase motor rating	General use rating	Uc min. ... Uc max.	V 50/60 Hz: V DC				
400 V AC-3	AC-1	480 V	600 V AC						kg
kW	A	hp	A						

For connection with built-in cable clamps

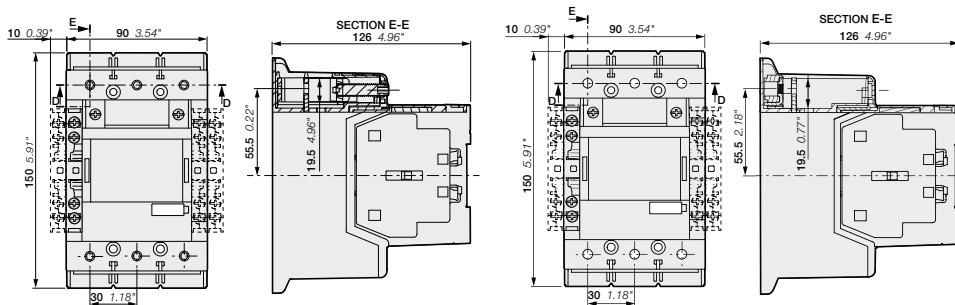
Rated operational power	current $\theta \leq 40^\circ\text{C}$	3-phase motor rating	General use rating	Uc min. ... Uc max.	V 50/60 Hz: V DC	Auxiliary contacts fitted	Type (1)	Order code	Weight
55	160	75	160	24...60	20...60	1 1	AF116-30-11-11	1SFL427001R1111	1.750
				48...130	48...130	1 1	AF116-30-11-12	1SFL427001R1211	1.750
				100...250	100...250	1 1	AF116-30-11-13	1SFL427001R1311	1.750
				250...500	250...500	1 1	AF116-30-11-14	1SFL427001R1411	1.750
75	200	100	200	24...60	20...60	1 1	AF140-30-11-11	1SFL447001R1111	1.750
				48...130	48...130	1 1	AF140-30-11-12	1SFL447001R1211	1.750
				100...250	100...250	1 1	AF140-30-11-13	1SFL447001R1311	1.750
				250...500	250...500	1 1	AF140-30-11-14	1SFL447001R1411	1.750
75	225	100	200	24...60	20...60	1 1	AF146-30-11-11	1SFL467001R1111	1.750
				48...130	48...130	1 1	AF146-30-11-12	1SFL467001R1211	1.750
				100...250	100...250	1 1	AF146-30-11-13	1SFL467001R1311	1.750
				250...500	250...500	1 1	AF146-30-11-14	1SFL467001R1411	1.750

With bar connections

Rated operational power	current $\theta \leq 40^\circ\text{C}$	3-phase motor rating	General use rating	Uc min. ... Uc max.	V 50/60 Hz: V DC	Auxiliary contacts fitted	Type (1)	Order code	Weight
55	160	75	160	24...60	20...60	1 1	AF116-30-11B-11	1SFL427002R1111	1.500
				48...130	48...130	1 1	AF116-30-11B-12	1SFL427002R1211	1.500
				100...250	100...250	1 1	AF116-30-11B-13	1SFL427002R1311	1.500
				250...500	250...500	1 1	AF116-30-11B-14	1SFL427002R1411	1.500
75	200	100	200	24...60	20...60	1 1	AF140-30-11B-11	1SFL447002R1111	1.500
				48...130	48...130	1 1	AF140-30-11B-12	1SFL447002R1211	1.500
				100...250	100...250	1 1	AF140-30-11B-13	1SFL447002R1311	1.500
				250...500	250...500	1 1	AF140-30-11B-14	1SFL447002R1411	1.500
75	225	100	200	24...60	20...60	1 1	AF146-30-11B-11	1SFL467002R1111	1.500
				48...130	48...130	1 1	AF146-30-11B-12	1SFL467002R1211	1.500
				100...250	100...250	1 1	AF146-30-11B-13	1SFL467002R1311	1.500
				250...500	250...500	1 1	AF146-30-11B-14	1SFL467002R1411	1.500

(1) For other auxiliary contacts arrangements, please contact your ABB local sales organization.

Main dimensions mm, inches



AF116, AF140, AF146-30-11

AF116, AF140, AF146-30-11B

1SFC101090C0201 - Rev. C

AF116 ... AF146 3-pole contactors with built-in PLC interface

55 to 75 kW

AC / DC operated with 1 N.O. + 1 N.C. auxiliary contacts



AF146-30-11



AF146-30-11B

Description

- AF116 ... AF140 contactors are mainly used for controlling 3-phase motors and power circuits up to 690 V AC, AF146 up to 1000 V AC. These contactors are of the block type design with 3 main poles.
- control circuit: AC or DC operated with electronic coil interface accepting a wide control voltage range (e.g. 100...250 V AC and DC), only 2 coils to cover control voltages between 100...500 V 50/60 Hz and 100...500 V DC
 - can manage large control voltage variations
 - reduced panel energy consumption
 - very distinct closing and opening
 - can withstand short voltage dips and voltage sags (SEMI F47 conditions of use on request).
 - built-in surge suppression
 - add-on auxiliary contact blocks for side mounting and a wide range of accessories.

Ordering details

IEC		UL / CSA		Rated control circuit voltage		Auxiliary contacts fitted		Type	Order code	Weight
Rated power	operational current $\theta \leq 40^\circ\text{C}$	3-phase motor rating	General use rating	Uc min. ...	Uc max.			(1)		Pkg (1 pce)
400 V AC-3	AC-1	480 V	600 V AC	V 50/60 Hz	V DC					kg

For connection with built-in cable clamps

55	160	75	160	100...250	100...250	1	1	AF116-30-11-33	1SFL427001R3311	1,750
				250...500	250...500	1	1	AF116-30-11-34	1SFL427001R3411	1,750
75	200	100	200	100...250	100...250	1	1	AF140-30-11-33	1SFL447001R3311	1,750
				250...500	250...500	1	1	AF140-30-11-34	1SFL447001R3411	1,750
75	225	100	200	100...250	100...250	1	1	AF146-30-11-33	1SFL467001R3311	1,750
				250...500	250...500	1	1	AF146-30-11-34	1SFL467001R3411	1,750

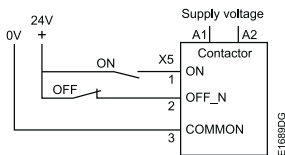
With bar connections

55	160	75	160	100...250	100...250	1	1	AF116-30-11B-33	1SFL427002R3311	1,500
				250...500	250...500	1	1	AF116-30-11B-34	1SFL427002R3411	1,500
75	200	100	200	100...250	100...250	1	1	AF140-30-11B-33	1SFL447002R3311	1,500
				250...500	250...500	1	1	AF140-30-11B-34	1SFL447002R3411	1,500
75	225	100	200	100...250	100...250	1	1	AF146-30-11B-33	1SFL467002R3311	1,500
				250...500	250...500	1	1	AF146-30-11B-34	1SFL467002R3411	1,500

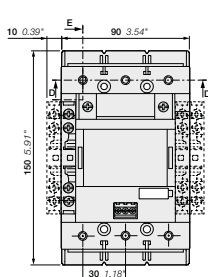
(1) For other auxiliary contacts arrangements, please contact your ABB local sales organization.

AF116 ... AF146 are equipped with low voltage inputs for control, for example by a PLC.

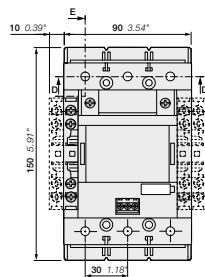
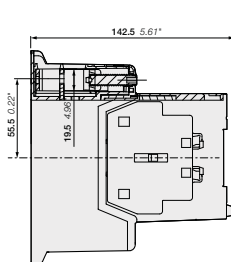
Control inputs



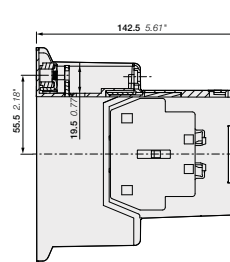
Main dimensions mm, inches



AF116, AF140, AF146-30-11



AF116, AF140, AF146-30-11B



1SFC101166C0201

AF190 ... AF370 3-pole contactors

90 to 200 kW

AC / DC operated with 1 N.O. + 1 N.C. auxiliary contacts



AF205-30-11

1SFC101013W0001

5



AF370-30-11

1SFC101018W0001

Description

AF190 ... AF370 contactors are mainly used for controlling 3-phase motors and power circuits up to 1000 V AC. These contactors are of the block type design with 3 main poles.

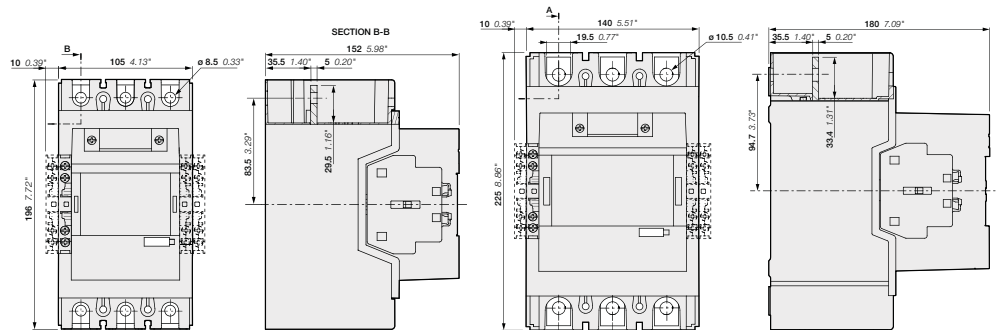
- control circuit: AC or DC operated with electronic coil interface accepting a wide control voltage range (e.g. 100...250 V AC and DC), only 4 coils to cover control voltages between 24...500 V 50/60 Hz and 20...500 V DC
 - can manage large control voltage variations
 - reduced panel energy consumption
 - very distinct closing and opening
 - can withstand short voltage dips and voltage sags (SEMI F47 conditions of use on request).
- built-in surge suppression
- add-on auxiliary contact blocks for side mounting and a wide range of accessories.

Ordering details

IEC		UL / CSA		Rated control circuit voltage		Auxiliary contacts fitted	Type (1)	Order code	Weight
Rated operational power	current $\theta \leq 40^\circ\text{C}$	3-phase motor rating	General use rating	Uc min. ... Uc max.					
400 V AC-3 kW	AC-1 A	480 V hp	600 V AC A	V 50/60 Hz	V DC				kg
90	275	125	250	24...60	20...60	1 1	AF190-30-11-11	1SFL487002R1111	3.000
				48...130	48...130	1 1	AF190-30-11-12	1SFL487002R1211	3.000
				100...250	100...250	1 1	AF190-30-11-13	1SFL487002R1311	3.000
				250...500	250...500	1 1	AF190-30-11-14	1SFL487002R1411	3.000
110	350	150	300	24...60	20...60	1 1	AF205-30-11-11	1SFL527002R1111	3.000
				48...130	48...130	1 1	AF205-30-11-12	1SFL527002R1211	3.000
				100...250	100...250	1 1	AF205-30-11-13	1SFL527002R1311	3.000
				250...500	250...500	1 1	AF205-30-11-14	1SFL527002R1411	3.000
140	400	200	350	24...60	20...60	1 1	AF265-30-11-11	1SFL547002R1111	4.640
				48...130	48...130	1 1	AF265-30-11-12	1SFL547002R1211	4.640
				100...250	100...250	1 1	AF265-30-11-13	1SFL547002R1311	4.640
				250...500	250...500	1 1	AF265-30-11-14	1SFL547002R1411	4.640
160	500	250	400	24...60	20...60	1 1	AF305-30-11-11	1SFL587002R1111	4.640
				48...130	48...130	1 1	AF305-30-11-12	1SFL587002R1211	4.640
				100...250	100...250	1 1	AF305-30-11-13	1SFL587002R1311	4.640
				250...500	250...500	1 1	AF305-30-11-14	1SFL587002R1411	4.640
200	600	300	520	24...60	20...60	1 1	AF370-30-11-11	1SFL607002R1111	4.640
				48...130	48...130	1 1	AF370-30-11-12	1SFL607002R1211	4.640
				100...250	100...250	1 1	AF370-30-11-13	1SFL607002R1311	4.640
				250...500	250...500	1 1	AF370-30-11-14	1SFL607002R1411	4.640

(1) For other auxiliary contacts arrangements, please contact your ABB local sales organization.

Main dimensions mm, inches



AF190, AF205

AF265, AF305, AF370

1SFC101091C0201 - Rev. D

AF190 ... AF370 3-pole contactors with built-in PLC interface

90 to 200 kW

AC / DC operated with 1 N.O. + 1 N.C. auxiliary contacts



AF205-30-11



AF370-30-11

Description

AF190 ... AF370 contactors are mainly used for controlling 3-phase motors and power circuits up to 1000 V AC. These contactors are of the block type design with 3 main poles.

- control circuit: AC or DC operated with electronic coil interface accepting a wide control voltage range (e.g. 100...250 V AC and DC), only 2 coils to cover control voltages between 100...500 V 50/60 Hz and 100...500 V DC
- can manage large control voltage variations
- reduced panel energy consumption
- very distinct closing and opening
- can withstand short voltage dips and voltage sags (SEMI F47 conditions of use on request).
- built-in surge suppression
- add-on auxiliary contact blocks for side mounting and a wide range of accessories.

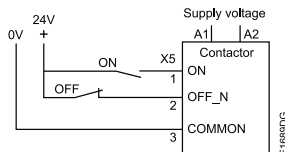
Ordering details

IEC	UL / CSA		Rated control circuit voltage		Auxiliary contacts fitted	Type (1)	Order code	Weight	
Rated operational power	current	3-phase motor rating	General use rating	Uc min. ... Uc max.				Pkg (1 pce)	
400 V AC-3	AC-1	480 V	600 V AC	V 50/60 Hz V DC				kg	
90	275	125	250	100...250 250...500	100...250 250...500	1 1	AF190-30-11-33 AF190-30-11-34	1SFL487002R3311 1SFL487002R3411	3.000 3.000
110	350	150	300	100...250 250...500	100...250 250...500	1 1	AF205-30-11-33 AF205-30-11-34	1SFL527002R3311 1SFL527002R3411	3.000 3.000
140	400	200	350	100...250 250...500	100...250 250...500	1 1	AF265-30-11-33 AF265-30-11-34	1SFL547002R3311 1SFL547002R3411	4.640 4.640
160	500	250	400	100...250 250...500	100...250 250...500	1 1	AF305-30-11-33 AF305-30-11-34	1SFL587002R3311 1SFL587002R3411	4.640 4.640
200	600	300	520	100...250 250...500	100...250 250...500	1 1	AF370-30-11-33 AF370-30-11-34	1SFL607002R3311 1SFL607002R3411	4.640 4.640

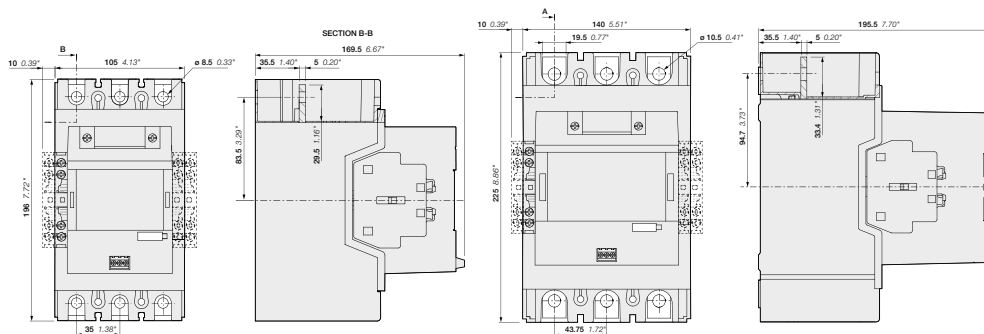
(1) For other auxiliary contacts arrangements, please contact your ABB local sales organization.

AF190 ... AF370 are equipped with low voltage inputs for control, for example by a PLC.

Control inputs



Main dimensions mm, inches

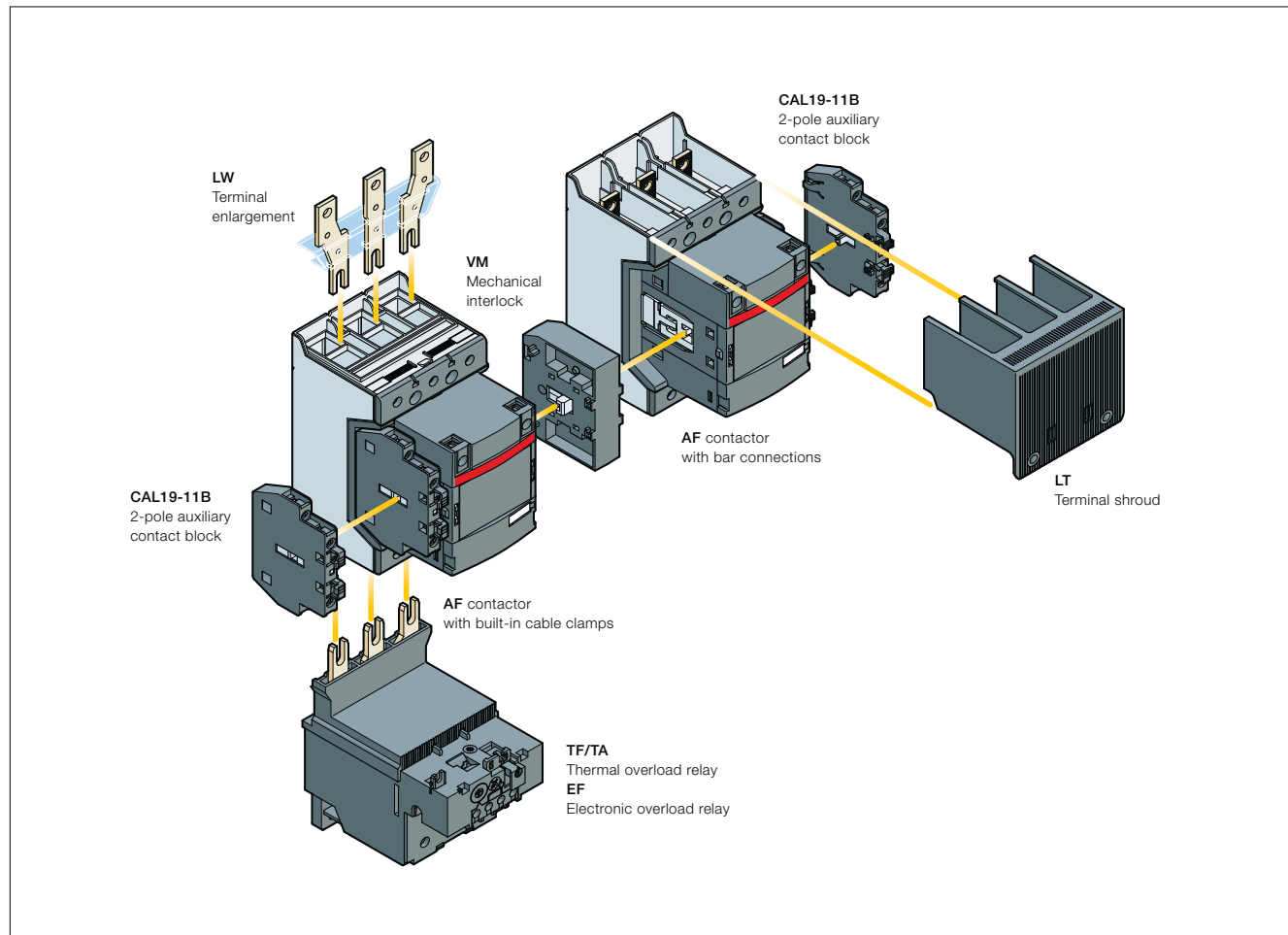


AF190, AF205

AF265, AF305, AF370

AF116 ... AF370 3-pole contactors with 1 N.O. + 1 N.C. auxiliary contacts Main accessories

Main accessories (other accessories available)



5

Main accessory fitting details

Contactor types	Main poles	Available auxiliary contacts	Side-mounted accessories		
			Auxiliary contact blocks		Mechanical interlock units (between two contactors)
			CAL19-11	CAL19-11B	
AF116 ... AF370	3	0 1 1	1 x CAL19-11	+ 2 x CAL19-11B	-
AF116 ... AF370	3	0 1 1	-	+ 2 x CAL19-11B (1)	+ VM... (2)

(1) Total number of auxiliary contact blocks for the two contactors.

(2) Interlock type, according to the contactor ratings (see "Accessories").

Overload relays fitting details (1)

Contactor types	Thermal overload relays	Electronic overload relays
AF116 ... AF140	TF140DU (66...142 A)	EF146 (54...150 A)
AF146	-	EF146 (54...150 A)
AF190, AF205	TA200DU (66...200 A)	EF205 (63...210 A)
AF265 ... AF370	-	EF370 (115...380 A)

The addition of a thermal or electronic overload relay on the contactor does not prevent fitting of many other accessories as shown in "Main accessory fitting details" table.

(1) Direct mounting - No kit required.

AF116 ... AF370 3-pole contactors with 1 N.O. + 1 N.C. auxiliary contacts Main accessories



1SFC101071V0001

CAL19-11



1SFC101030V0001

VM19



1SFC101041V0001

LT370-30C



1SFC101049V0001

LX140

Ordering details (1)

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

Side-mounted instantaneous auxiliary contact blocks

AF116 ... AF370	1	1	CAL19-11	1SFN010820R1011	2	0.050
	1	1	CAL19-11B	1SFN010820R3311	2	0.050

Mechanical interlock unit

AF116 ... AF370		VM19	1SFN030300R1000	1	0.054
AF116 ... AF146 and AF190, AF205		VM140/190	1SFN034403R1000	1	0.088
AF190, AF205 and AF265 ... AF370		VM205/265	1SFN035203R1000	1	0.090

Terminal shrouds

AF116 ... AF146, with compression lugs	LT140-30L	1SFN124203R1000	2	0.070
AF190, AF205, with cable clamps	LT205-30C	1SFN124801R1000	2	0.050
AF190, AF205, with compression lugs	LT205-30L	1SFN124803R1000	2	0.220
AF190, AF205, with shorting bar or between contactor and TOL/EOL in DOL-starters	LT205-30Y	1SFN124804R1000	1	0.050
AF265 ... AF370, with cable clamps	LT370-30C	1SFN125401R1000	2	0.035
AF265 ... AF370, with compression lugs	LT370-30L	1SFN125403R1000	2	0.280
AF265 ... AF370, with shorting bar or between contactor and TOL/EOL in DOL-starters	LT370-30Y	1SFN125404R1000	1	0.075
AF265 ... AF370, for use with extending cable clamps, ATK300/2 and OZXB4	LT370-30D	1SFN125406R1000	1	0.150

For contactors	Dimensions		Type	Order code	Pkg qty	Weight (1 pce)
	hole Ø mm	bar mm				

Terminal enlargements

AF116...AF146	6.5	13 x 3	LW140	1SFN074207R1000	1	0.115
AF190...AF205	10.5	17.5 x 5	LW205	1SFN074807R1000	1	0.260
AF265...AF370	10.5	20 x 5	LW370	1SFN075407R1000	1	0.340

Terminal extension

AF116...AF146	6.5	13 x 3	LX140	1SFN074210R1000	1	0.072
AF190...AF250	8.5	17.5 x 5	LX205	1SFN074810R1000	1	0.180
AF265...AF370	10.5	20 x 5	LX370	1SFN075410R1000	1	0.234

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

AF400 ... AF750 3-pole contactors

200 to 400 kW

AC / DC operated with 1 N.O. + 1 N.C. auxiliary contacts



AF460-30-11

1SFC101022V0001

Description

AF400 ... AF750 contactors are mainly used for controlling 3-phase motors and power circuits up to 1000 V AC or 600 V DC (2). These contactors are of the block type design with 3 main poles.

- control circuit: AC or DC operated with electronic coil interface accepting a wide control voltage range (e.g. 100...250 V AC and DC), only 4 coils to cover control voltages between 48...500 V 50/60 Hz and 24...500 V DC
- can manage large control voltage variations
- reduced panel energy consumption
- very distinct closing and opening
- can withstand short voltage dips and voltages sags (SEMI F47 conditions of use on request).
- built-in surge suppression
- add-on auxiliary contact blocks for side mounting and a wide range of accessories.

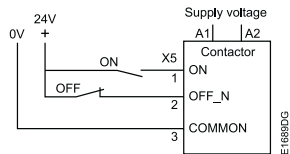
Ordering details

IEC Rated operational power 400 V AC-3 kW	UL/CSA 3-phase motor rating 480 V AC-1 hp	General use rating 600 V AC A	Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted	Type	Order code	Weight Pkg (1 pce) kg	
			V 50/60 Hz	V DC					
200	600	350	550	-	24...60	1 1	AF400-30-11	1SFL577001R6811 (1)	12.000
				48...130	48...130	1 1	AF400-30-11	1SFL577001R6911	12.000
				100...250	100...250	1 1	AF400-30-11	1SFL577001R7011	12.000
				250...500	250...500	1 1	AF400-30-11	1SFL577001R7111	12.000
250	700	400	650	-	24...60	1 1	AF460-30-11	1SFL597001R6811 (1)	12.000
				48...130	48...130	1 1	AF460-30-11	1SFL597001R6911	12.000
				100...250	100...250	1 1	AF460-30-11	1SFL597001R7011	12.000
				250...500	250...500	1 1	AF460-30-11	1SFL597001R7111	12.000
315	800	500	750	-	24...60	1 1	AF580-30-11	1SFL617001R6811 (1)	15.000
				48...130	48...130	1 1	AF580-30-11	1SFL617001R6911	15.000
				100...250	100...250	1 1	AF580-30-11	1SFL617001R7011	15.000
				250...500	250...500	1 1	AF580-30-11	1SFL617001R7111	15.000
400	1050	600	900	-	24...60	1 1	AF750-30-11	1SFL637001R6811 (1)	15.000
				48...130	48...130	1 1	AF750-30-11	1SFL637001R6911	15.000
				100...250	100...250	1 1	AF750-30-11	1SFL637001R7011	15.000
				250...500	250...500	1 1	AF750-30-11	1SFL637001R7111	15.000

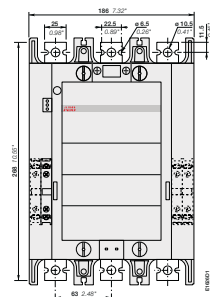
(1) The connection polarities indicated close to the coil terminals must be respected: A1 for the positive pole and A2 for the negative pole.
 (2) Up to 850 V DC for AF580, AF750.

AF400 ... AF750 are equipped with low voltage inputs for control, for example by a PLC.

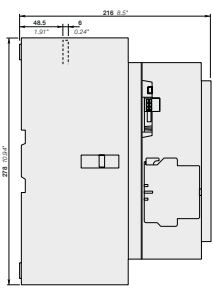
Control inputs



Main dimensions mm, inches



AF400, AF460



AF580, AF750

AF1250 ... AF2650 3-pole contactors

475 to 560 kW and 1260 to 2650 A AC-1

AC / DC operated with 1 N.O. + 1 N.C. auxiliary contacts



AF1250-30-11



AF2650-30-11

Description

AF1250 ... AF2050 contactors are mainly used for controlling power circuits up to 1000 V AC or 850 V DC, AF2650 for controlling power up to 1000 V AC. These contactors are of the block type design with 3 main poles.

- control circuit: AC or DC operated with electronic coil interface accepting a wide control voltage range (e.g. 100...250 V AC and DC)
- only 4 coils for AF1250 to cover control voltages between 48...500 V 50/60 Hz and 24...500 V DC
- only 1 coil for AF1350 ... AF2650 to cover control voltages between 100...250 V 50/60 Hz and 100...250 V DC
- can manage large control voltage variations
- reduced panel energy consumption
- very distinct closing and opening
- can withstand short voltage dips and voltages sags (SEMI F47 conditions of use on request).
- built-in surge suppression
- add-on auxiliary contact blocks for side mounting and a wide range of accessories.

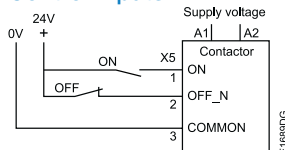
Ordering details

IEC	UL/CSA		Rated control circuit voltage		Auxiliary contacts fitted	Type	Order code	Weight	
Rated power	operational current $\theta \leq 40^\circ\text{C}$	3-phase motor rating	General use rating	Uc (1)					Pkg (1 pce)
400 V AC-3	690 V AC-1	480 V	600 V AC	V 50/60 Hz	V DC			kg	
-	1260	-	1210	-	24...60	1 1	AF1250-30-11	1SFL647001R6811 (1)	16.000
				48...130	48...130	1 1	AF1250-30-11	1SFL647001R6911	16.000
				100...250	100...250	1 1	AF1250-30-11	1SFL647001R7011	16.000
				250...500	250...500	1 1	AF1250-30-11	1SFL647001R7111	16.000
475	1350	800	1350	100...250	100...250	1 1	AF1350-30-11	1SFL657001R7011	34.000
560	1650	900	1650	100...250	100...250	1 1	AF1650-30-11	1SFL677001R7011	35.000
-	2050	-	2100	100...250	100...250	1 1	AF2050-30-11	1SFL707001R7011	35.000
-	2650	-	2700	100...250	100...250	1 1	AF2650-30-11	1SFL667001R7011	45.000

(1) The connection polarities indicated close to the coil terminals must be respected: A1 for the positive pole and A2 for the negative pole.
(2) AF2650: Maximum operational voltage = 1000 V according to UL / CSA.

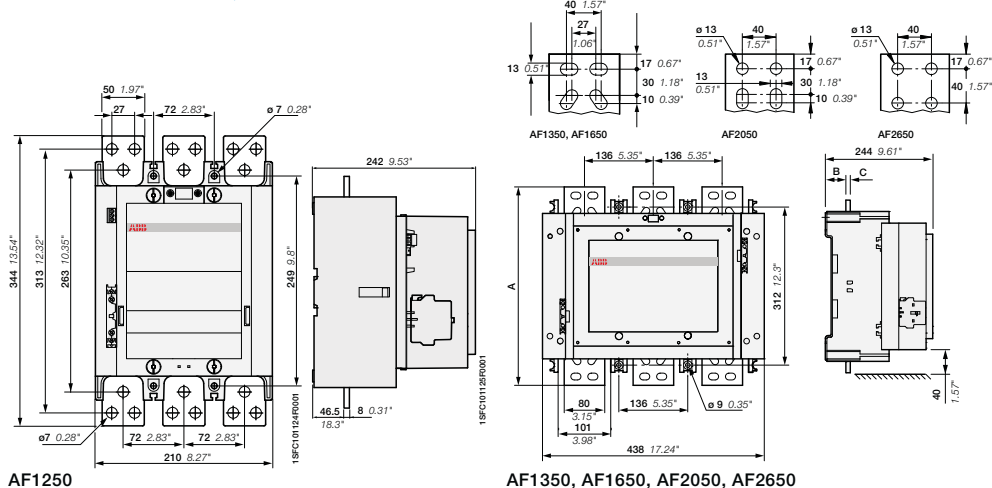
AF1250 ... AF2650 are equipped with low voltage inputs for control, for example by a PLC

Control inputs



	AF1350, AF1650, AF2050	AF2650
A	392 mm / 15.43"	422 mm / 16.61"
B	47 mm / 1.85"	53 mm / 2.09"
C	10 mm / 0.39"	25 mm / 0.98"

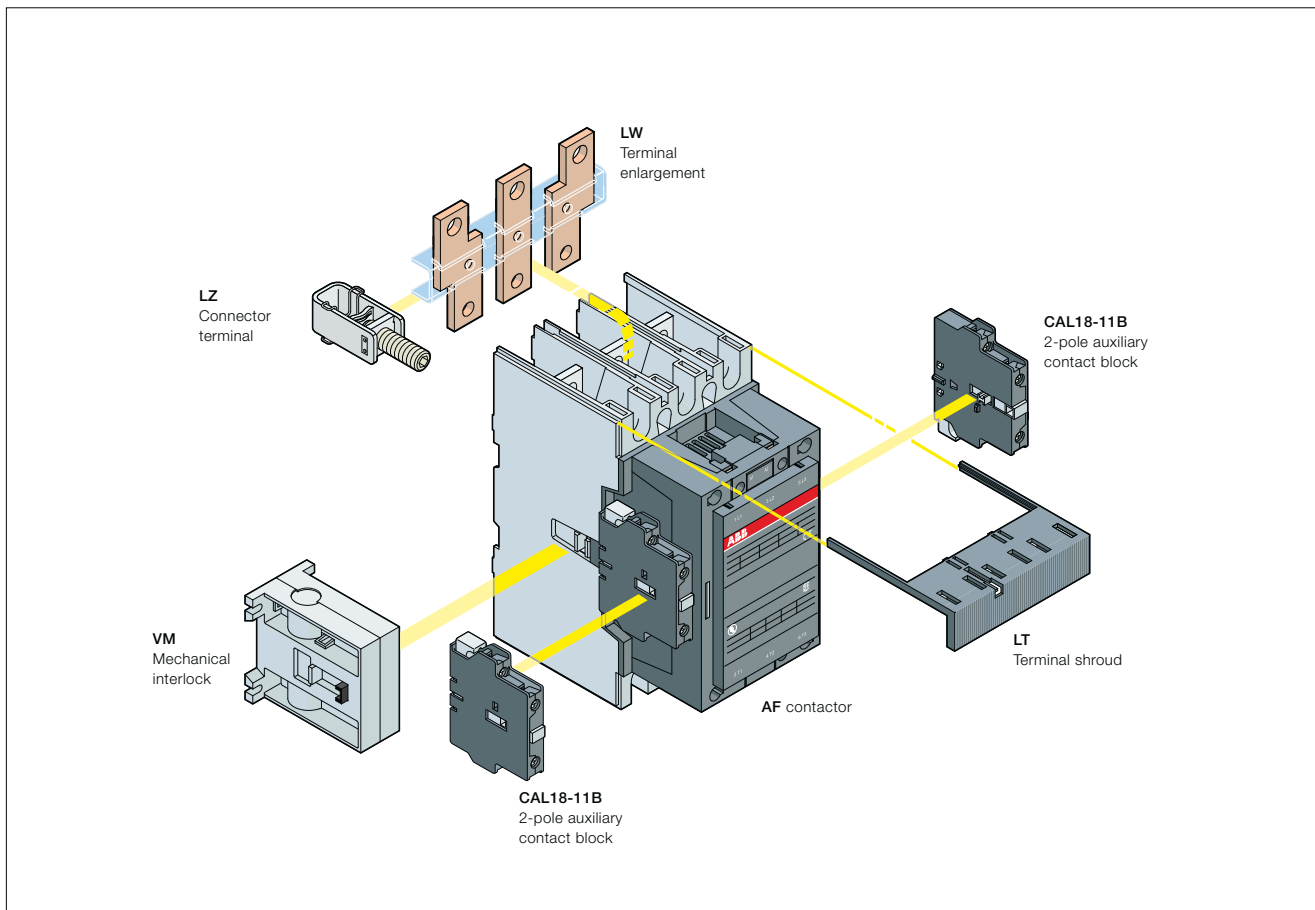
Main dimensions mm, inches



AF400 ... AF2650 3-pole contactors with 1 N.O. + 1 N.C. auxiliary contacts Main accessories

Main accessories (other accessories available)

5



Main accessory fitting details

Contactor types	Main poles	Available auxiliary contacts	Side-mounted accessories	
			Auxiliary contact blocks	Mechanical interlock units (between two contactors)
			CAL18-11	CAL18-11B (3)

Contactors + auxiliary contact blocks

AF400 ... AF2650	3	0	1	1	1 x CAL18-11	+	2 x CAL18-11B	-
------------------	---	---	---	---	--------------	---	---------------	---

Contactors with mechanical interlocking + auxiliary contact blocks

AF400 ... AF2650	3	0	1	1	2 x CAL18-11 (1)	+	4 x CAL18-11B (1)	+	VM...H (2)
------------------	---	---	---	---	------------------	---	-------------------	---	------------

(1) Total number of auxiliary contact blocks for the two contactors.

(2) Interlock type, according to the contactor ratings (see "Accessories").

(3) The CEL18-... auxiliary contact blocks can replace the CAL18-11 and CAL18-11B. Though, no auxiliary contact block can be mounted outside the CEL18-...

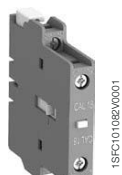
Overload relays fitting details

Contactor types	Thermal overload relays	Electronic overload relays
AF400, AF460	-	EF460 (150...500 A) (4)
AF580, AF750	-	EF750 (250...800 A) (4)
AF1350, AF1650	-	E1250DU (375...1250 A) (4)

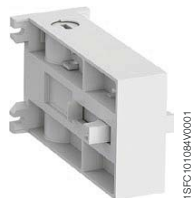
The addition of a thermal or electronic overload relay on the contactor does not prevent fitting of many other accessories as shown in "Main accessory fitting details" table.

(4) Mounting kit required (see "Motor protection").

AF400 ... AF2650 3-pole contactors with 1 N.O. + 1 N.C. auxiliary contacts Main accessories



CAL18-11



VM750H



LT460-AC

Ordering details (1)

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

Side-mounted instantaneous auxiliary contact blocks

AF400 ... AF2650	1	1	CAL18-11	1SFN010720R1011	2	0.050
	1	1	CAL18-11B	1SFN010720R3311	2	0.050

Mechanical interlock unit

AF400 ... AF1250			VM750H	1SFN035700R1000	1	0.200
AF1350 ... AF2650			VM1650H	1SFN036503R1000	1	6.000

Terminal shrouds

AF400, AF460 with connectors			LT460-AC	1SFN125701R1000	2	0.100
AF400, AF460 with lugs			LT460-AL	1SFN125703R1000	2	0.800
AF580 ... AF750 with connectors			LT750-AC	1SFN126101R1000	2	0.120
AF580 ... AF750 with lugs			LT750-AL	1SFN126103R1000	2	0.825

5

For contactors	Dimensions		Type	Order code	Pkg qty	Weight (1 pce)
	hole Ø	bar				kg
	mm	mm				

Terminal enlargements

AF400, AF460	10.5	25 x 5	LW460	1SFN075707R1000	1	0.730
AF580, AF750	13	40 x 6	LW750	1SFN076107R1000	1	1.230
AF1250	13	50 x 10	LW1250	1SFN076407R1000	1	2.000

Terminal extension

AF400, AF460	10.5	25 x 5	LX460	1SFN075710R1000	1	0.500
AF580, AF750	13	40 x 6	LX750	1SFN076110R1000	1	0.850

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

AF09 ... AF38 2-stack 3-pole contactors

4 to 18.5 kW

AC / DC operated



AF09-30-22

1SBC101002V0014



AF26-30-11

1SBC101003V0014



AF26-30-22

1SBC101004V0014

5

Description

AF09 ... AF38 contactors are mainly used for controlling 3-phase motors and power circuits up to 690 V AC and 220 V DC. These contactors are of the block type design with 3 main poles (1st stack):

- 2nd stack with permanently fixed auxiliary contact block. The built-in auxiliary contact elements are mechanically linked (side-marked symbol) and the N.C. auxiliary contacts are mirror elements
- control circuit: AC or DC operated with electronic coil interface accepting a wide control voltage range (e.g. 100...250 V AC and DC), only 4 control voltage ranges covering 24...500 V 50/60 Hz and 20...500 V DC
 - can manage large control voltage variations
 - reduced panel energy consumption
 - very distinct closing and opening.
- built-in surge suppression
- add-on auxiliary contact blocks for side mounting and a wide range of accessories.

Ordering details

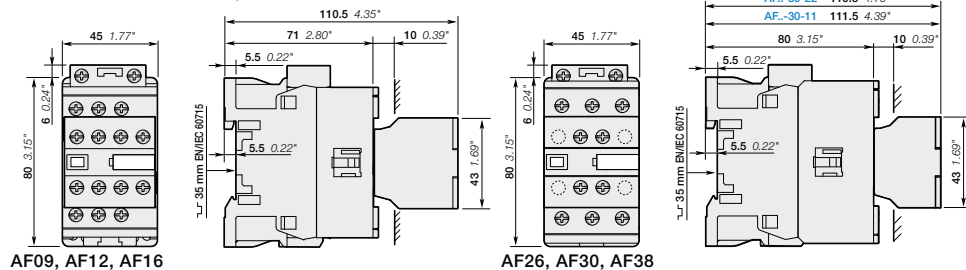
IEC Rated operational power	Rated operational current $\theta \leq 40^\circ\text{C}$	UL/CSA 3-phase motor rating 480 V	General use rating 600 V AC	Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted		Type (1)	Order code	Weight Pkg (1 pce) kg	
				V 50/60 Hz	V DC						
4	25	5	25	24...60	-	(2)	2	2	AF09-30-22-41	1SBL137001R4122	0.320
				48...130	48...130	2	2	AF09-30-22-12	1SBL137001R1222	0.320	
				100...250	100...250	2	2	AF09-30-22-13	1SBL137001R1322	0.320	
				250...500	250...500	2	2	AF09-30-22-14	1SBL137001R1422	0.360	
				24...60	-	(2)	2	2	AF12-30-22-41	1SBL157001R4122	0.320
5.5	28	7.5	28	48...130	48...130	2	2	AF12-30-22-12	1SBL157001R1222	0.320	
				100...250	100...250	2	2	AF12-30-22-13	1SBL157001R1322	0.320	
				250...500	250...500	2	2	AF12-30-22-14	1SBL157001R1422	0.360	
				24...60	-	(2)	2	2	AF16-30-22-41	1SBL177001R4122	0.320
				48...130	48...130	2	2	AF16-30-22-12	1SBL177001R1222	0.320	
7.5	30	10	30	100...250	100...250	2	2	AF16-30-22-13	1SBL177001R1322	0.320	
				250...500	250...500	2	2	AF16-30-22-14	1SBL177001R1422	0.360	
				24...60	-	(2)	1	1	AF26-30-11-41	1SBL237001R4111	0.350
				48...130	48...130	2	2	AF26-30-22-41	1SBL237001R4122	0.360	
				100...250	100...250	1	1	AF26-30-11-12	1SBL237001R1211	0.350	
11	45	15	45	250...500	250...500	1	1	AF26-30-22-12	1SBL237001R1222	0.360	
				100...250	100...250	1	1	AF26-30-11-13	1SBL237001R1311	0.350	
				24...60	-	(2)	2	2	AF26-30-22-13	1SBL237001R1322	0.360
				48...130	48...130	2	2	AF26-30-11-14	1SBL237001R1411	0.390	
				100...250	100...250	2	2	AF26-30-22-14	1SBL237001R1422	0.400	
				24...60	-	(2)	1	1	AF30-30-11-41	1SBL277001R4111	0.350
				48...130	48...130	1	1	AF30-30-22-41	1SBL277001R4122	0.360	
				100...250	100...250	1	1	AF30-30-11-12	1SBL277001R1211	0.350	
				250...500	250...500	2	2	AF30-30-22-12	1SBL277001R1222	0.360	
				100...250	100...250	1	1	AF30-30-11-13	1SBL277001R1311	0.350	
15	50	20	50	250...500	250...500	1	1	AF30-30-22-13	1SBL277001R1322	0.360	
				100...250	100...250	1	1	AF30-30-11-14	1SBL277001R1411	0.390	
				24...60	-	(2)	2	2	AF30-30-22-14	1SBL277001R1422	0.400
				48...130	48...130	1	1	AF38-30-11-41	1SBL297001R4111	0.350	
				100...250	100...250	2	2	AF38-30-22-41	1SBL297001R4122	0.360	
				24...60	48...130	1	1	AF38-30-11-12	1SBL297001R1211	0.350	
				100...250	100...250	2	2	AF38-30-22-12	1SBL297001R1222	0.360	
				250...500	250...500	1	1	AF38-30-11-13	1SBL297001R1311	0.350	
				100...250	100...250	2	2	AF38-30-22-13	1SBL297001R1322	0.360	
				250...500	250...500	1	1	AF38-30-11-14	1SBL297001R1411	0.390	
18.5	50	25	50	250...500	250...500	2	2	AF38-30-22-14	1SBL297001R1422	0.400	

(1) For other auxiliary contacts arrangements, please contact your ABB local sales organization.

(2) For 24...60 V 50/60 Hz - 20...60 V DC, use AF..Z-30...-21.

AF...-30...-11 not suitable for direct control by PLC-output.

Main dimensions mm, inches



1SBC101373S0201 - Rev. C

AF09Z ... AF38Z 2-stack 3-pole contactors

4 to 18.5 kW

AC / DC operated - Low consumption



AF09Z-30-22



AF26Z-30-11



AF26Z-30-22

Description

- AF09Z ... AF38Z contactors are mainly used for controlling 3-phase motors and power circuits up to 690 V AC and 220 V DC. These contactors are of the block type design with 3 main poles (1st stack):
- 2nd stack with permanently fixed auxiliary contact block. The built-in auxiliary contact elements are mechanically linked (side-marked symbol) and the N.C. auxiliary contacts are mirror contacts
 - control circuit: AC or DC operated with electronic coil interface accepting a wide control voltage range (e.g. 100...250 V AC and DC), only 4 control voltage ranges covering 24...250 V 50/60 Hz and 12...250 V DC
 - can manage large control voltage variations, allow direct control by PLC-output ≥ 24 V DC 500 mA, reduced panel energy consumption, very distinct closing and opening,
 - can withstand short voltage dips and voltage sags (SEMI F47-0706 conditions of use on request).
 - built-in surge suppression
 - add-on auxiliary contact blocks for side mounting and a wide range of accessories.

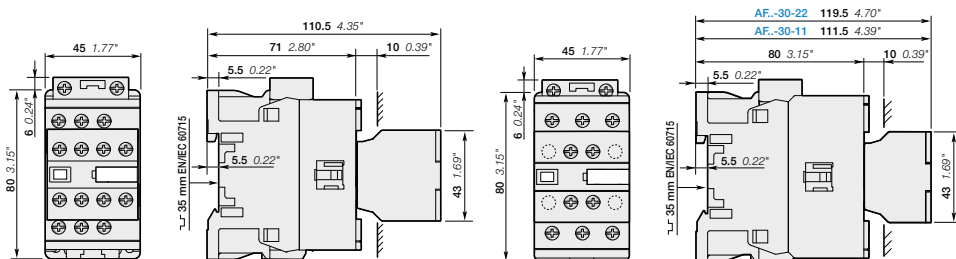
Ordering details

IEC		UL/CSA		Rated control circuit voltage		Auxiliary contacts fitted		Type (1)	Order code	Weight
Rated operational power	Rated operational current $\theta \leq 40^\circ\text{C}$	3-phase motor rating	General use rating	Uc min. ... Uc max.	Uc min. ... Uc max.					Pkg (1 pce)
400 V AC-3	AC-1	480 V	600 V AC	V 50/60 Hz	V DC					kg
4	25	5	25	-	12...20	2	2	AF09Z-30-22-20	1SBL136001R2022	0.360
				24...60	20...60	2	2	AF09Z-30-22-21	1SBL136001R2122	0.360
				48...130	48...130	2	2	AF09Z-30-22-22	1SBL136001R2222	0.360
				100...250	100...250	2	2	AF09Z-30-22-23	1SBL136001R2322	0.360
5.5	28	7.5	28	-	12...20	2	2	AF12Z-30-22-20	1SBL156001R2022	0.360
				24...60	20...60	2	2	AF12Z-30-22-21	1SBL156001R2122	0.360
				48...130	48...130	2	2	AF12Z-30-22-22	1SBL156001R2222	0.360
				100...250	100...250	2	2	AF12Z-30-22-23	1SBL156001R2322	0.360
7.5	30	10	30	-	12...20	2	2	AF16Z-30-22-20	1SBL176001R2022	0.360
				24...60	20...60	2	2	AF16Z-30-22-21	1SBL176001R2122	0.360
				48...130	48...130	2	2	AF16Z-30-22-22	1SBL176001R2222	0.360
				100...250	100...250	2	2	AF16Z-30-22-23	1SBL176001R2322	0.360
11	45	15	45	-	12...20	1	1	AF26Z-30-11-20	1SBL236001R2011	0.390
				24...60	20...60	2	2	AF26Z-30-22-20	1SBL236001R2022	0.400
				24...60	20...60	1	1	AF26Z-30-11-21	1SBL236001R2111	0.390
				48...130	48...130	2	2	AF26Z-30-22-21	1SBL236001R2122	0.400
				48...130	48...130	1	1	AF26Z-30-11-22	1SBL236001R2211	0.390
				100...250	100...250	2	2	AF26Z-30-22-22	1SBL236001R2222	0.400
				100...250	100...250	1	1	AF26Z-30-11-23	1SBL236001R2311	0.390
				100...250	100...250	2	2	AF26Z-30-22-23	1SBL236001R2322	0.400
15	50	20	50	-	12...20	1	1	AF30Z-30-11-20	1SBL276001R2011	0.390
				24...60	20...60	2	2	AF30Z-30-22-20	1SBL276001R2022	0.400
				24...60	20...60	1	1	AF30Z-30-11-21	1SBL276001R2111	0.390
				48...130	48...130	2	2	AF30Z-30-22-21	1SBL276001R2122	0.400
				48...130	48...130	1	1	AF30Z-30-11-22	1SBL276001R2211	0.390
				100...250	100...250	2	2	AF30Z-30-22-22	1SBL276001R2222	0.400
				100...250	100...250	1	1	AF30Z-30-11-23	1SBL276001R2311	0.390
				100...250	100...250	2	2	AF30Z-30-22-23	1SBL276001R2322	0.400
18.5	50	25	50	-	12...20	1	1	AF38Z-30-11-20	1SBL296001R2011	0.390
				24...60	20...60	2	2	AF38Z-30-22-20	1SBL296001R2022	0.400
				24...60	20...60	1	1	AF38Z-30-11-21	1SBL296001R2111	0.390
				48...130	48...130	2	2	AF38Z-30-22-21	1SBL296001R2122	0.400
				48...130	48...130	1	1	AF38Z-30-11-22	1SBL296001R2211	0.390
				100...250	100...250	2	2	AF38Z-30-22-22	1SBL296001R2222	0.400
				100...250	100...250	1	1	AF38Z-30-11-23	1SBL296001R2311	0.390
				100...250	100...250	2	2	AF38Z-30-22-23	1SBL296001R2322	0.400

(1) For other auxiliary contacts arrangements, please contact your ABB local sales organization.

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

Main dimensions mm, inches



AF09Z, AF12Z, AF16Z

AF26Z, AF30Z, AF38Z

1SBC101374S0201 - Rev. B

AF40 ... AF65 2-stack 3-pole contactors

18.5 to 30 kW

AC / DC operated



AF40-30-11

1SBC101009V0014

Description

AF40 ... AF65 contactors are mainly used for controlling 3-phase motors and power circuits up to 690 V AC and 220 V DC. These contactors are of the block type design with 3 main poles (1st stack):

- 2nd stack with permanently fixed auxiliary contact block. The built-in auxiliary contact elements are mechanically linked (side-marked symbol) and the N.C. auxiliary contacts are mirror contacts
- control circuit: AC or DC operated with electronic coil interface accepting a wide control voltage range (e.g. 100...250 V AC and DC), only 4 control voltage ranges covering 24...500 V 50/60 Hz and 20...500 V DC
- can manage large control voltage variations
- reduced panel energy consumption
- very distinct closing and opening.
- built-in surge suppression
- add-on auxiliary contact blocks for side mounting and a wide range of accessories.

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AF40-30-22

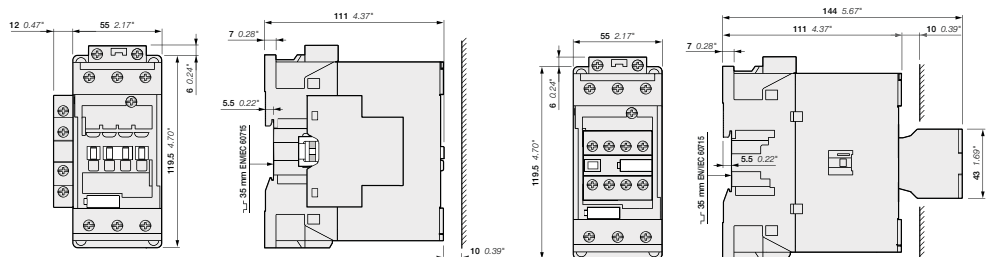
1SBC101008V0014

Ordering details

IEC Rated operational power 400 V AC-3 kW	UL / CSA 3-phase motor rating 480 V hp AC-1 A	General use rating 600 V AC A	Rated control circuit voltage Uc min. ... Uc max.		Auxiliary contacts fitted	Type (1)	Order code	Weight Pkg (1 pce) kg					
			V 50/60 Hz	V DC									
18.5	70	30	60	24...60	-	1 1	AF40-30-11-41	1SBL347001R4111	1.010				
					2 2	AF40-30-22-41	1SBL347001R4122	1.020					
				24...60	20...60 (2)	1 1	AF40-30-11-11	1SBL347001R1111	1.010				
						2 2	AF40-30-22-11	1SBL347001R1122	1.020				
				48...130	48...130	1 1	AF40-30-11-12	1SBL347001R1211	1.010				
						2 2	AF40-30-22-12	1SBL347001R1222	1.020				
				100...250	100...250	1 1	AF40-30-11-13	1SBL347001R1311	0.990				
						2 2	AF40-30-22-13	1SBL347001R1322	1.000				
				250...500	250...500	1 1	AF40-30-11-14	1SBL347001R1411	0.990				
						2 2	AF40-30-22-14	1SBL347001R1422	1.000				
				22	100	40	80	24...60	-	1 1	AF52-30-11-41	1SBL367001R4111	1.010
									2 2	AF52-30-22-41	1SBL367001R4122	1.020	
24...60	20...60 (2)	1 1	AF52-30-11-11					1SBL367001R1111	1.010				
		2 2	AF52-30-22-11					1SBL367001R1122	1.020				
48...130	48...130	1 1	AF52-30-11-12					1SBL367001R1211	1.010				
		2 2	AF52-30-22-12					1SBL367001R1222	1.020				
100...250	100...250	1 1	AF52-30-11-13					1SBL367001R1311	0.990				
		2 2	AF52-30-22-13					1SBL367001R1322	1.000				
250...500	250...500	1 1	AF52-30-11-14					1SBL367001R1411	0.990				
		2 2	AF52-30-22-14					1SBL367001R1422	1.000				
30	105	50	90					24...60	-	1 1	AF65-30-11-41	1SBL387001R4111	1.010
									2 2	AF65-30-22-41	1SBL387001R4122	1.020	
				24...60	20...60 (2)	1 1	AF65-30-11-11	1SBL387001R1111	1.010				
						2 2	AF65-30-22-11	1SBL387001R1122	1.020				
				48...130	48...130	1 1	AF65-30-11-12	1SBL387001R1211	1.010				
						2 2	AF65-30-22-12	1SBL387001R1222	1.020				
				100...250	100...250	1 1	AF65-30-11-13	1SBL387001R1311	0.990				
						2 2	AF65-30-22-13	1SBL387001R1322	1.000				
				250...500	250...500	1 1	AF65-30-11-14	1SBL387001R1411	0.990				
						2 2	AF65-30-22-14	1SBL387001R1422	1.000				

(1) For other auxiliary contacts arrangements, please contact your ABB local sales organization.
 (2) AF...-30...-11 not suitable for direct control by PLC-output.

Main dimensions mm, inches



AF40, AF52, AF65-30-11-..

AF40, AF52, AF65-30-22-..

1SBC101741S0201 - Rev. A

AF80 ... AF96 2-stack 3-pole contactors

37 to 45 kW

AC / DC operated



1SBC10107V0014

AF80-30-11

Description

AF80 ... AF96 contactors are mainly used for controlling 3-phase motors and power circuits up to 690 V AC and 220 V DC. These contactors are of the block type design with 3 main poles (1st stack):

- 2nd stack with permanently fixed auxiliary contact block. The built-in auxiliary contact elements are mechanically linked (side-marked symbol) and the N.C. auxiliary contacts are mirror contacts
- control circuit: AC or DC operated with electronic coil interface accepting a wide control voltage range (e.g. 100...250 V AC and DC), only 4 control voltage ranges covering 24...500 V 50/60 Hz and 20...500 V DC
 - can manage large control voltage variations
 - reduced panel energy consumption
 - very distinct closing and opening.
- built-in surge suppression
- add-on auxiliary contact blocks for side mounting and a wide range of accessories.

Ordering details



1SBC101007V0014

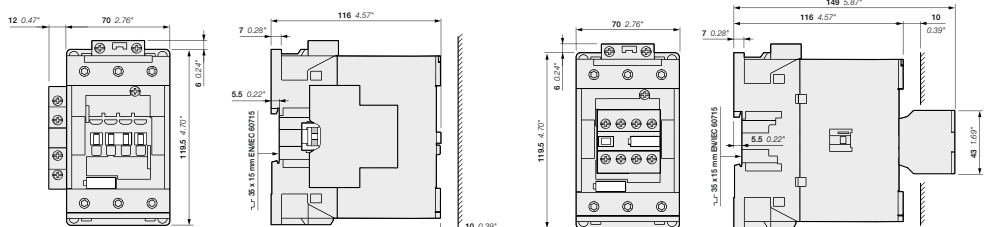
AF80-30-22

IEC		UL / CSA		Rated control circuit voltage		Auxiliary contacts fitted	Type (1)	Order code	Weight				
Rated power	operational current $\theta \leq 40^\circ\text{C}$	3-phase motor rating	General use rating	Uc min. ... Uc max.						Pkg (1 pce)			
400 V AC-3	AC-1	480 V	600 V AC	V 50/60 Hz	V DC				kg				
37	125	60	105	24...60	-	1 1	AF80-30-11-41	1SBL397001R4111	1,260				
					2 2	AF80-30-22-41	1SBL397001R4122	1,270					
				24...60	20...60 (2)	1 1	AF80-30-11-11	1SBL397001R1111	1,260				
						2 2	AF80-30-22-11	1SBL397001R1122	1,270				
				48...130	48...130	1 1	AF80-30-11-12	1SBL397001R1211	1,260				
						2 2	AF80-30-22-12	1SBL397001R1222	1,270				
				100...250	100...250	1 1	AF80-30-11-13	1SBL397001R1311	1,210				
						2 2	AF80-30-22-13	1SBL397001R1322	1,220				
				250...500	250...500	1 1	AF80-30-11-14	1SBL397001R1411	1,210				
						2 2	AF80-30-22-14	1SBL397001R1422	1,220				
				45	130	60	115	24...60	-	1 1	AF96-30-11-41	1SBL407001R4111	1,260
									2 2	AF96-30-22-41	1SBL407001R4122	1,270	
24...60	20...60 (2)	1 1	AF96-30-11-11					1SBL407001R1111	1,260				
		2 2	AF96-30-22-11					1SBL407001R1122	1,270				
48...130	48...130	1 1	AF96-30-11-12					1SBL407001R1211	1,260				
		2 2	AF96-30-22-12					1SBL407001R1222	1,270				
100...250	100...250	1 1	AF96-30-11-13					1SBL407001R1311	1,210				
		2 2	AF96-30-22-13					1SBL407001R1322	1,220				
250...500	250...500	1 1	AF96-30-11-14					1SBL407001R1411	1,210				
		2 2	AF96-30-22-14					1SBL407001R1422	1,220				

(1) For other auxiliary contacts arrangements, please contact your ABB local sales organization.

(2) AF.-30-...-11 not suitable for direct control by PLC-output.

Main dimensions mm, inches



AF80, AF96-30-11-..

AF80, AF96-30-22-..

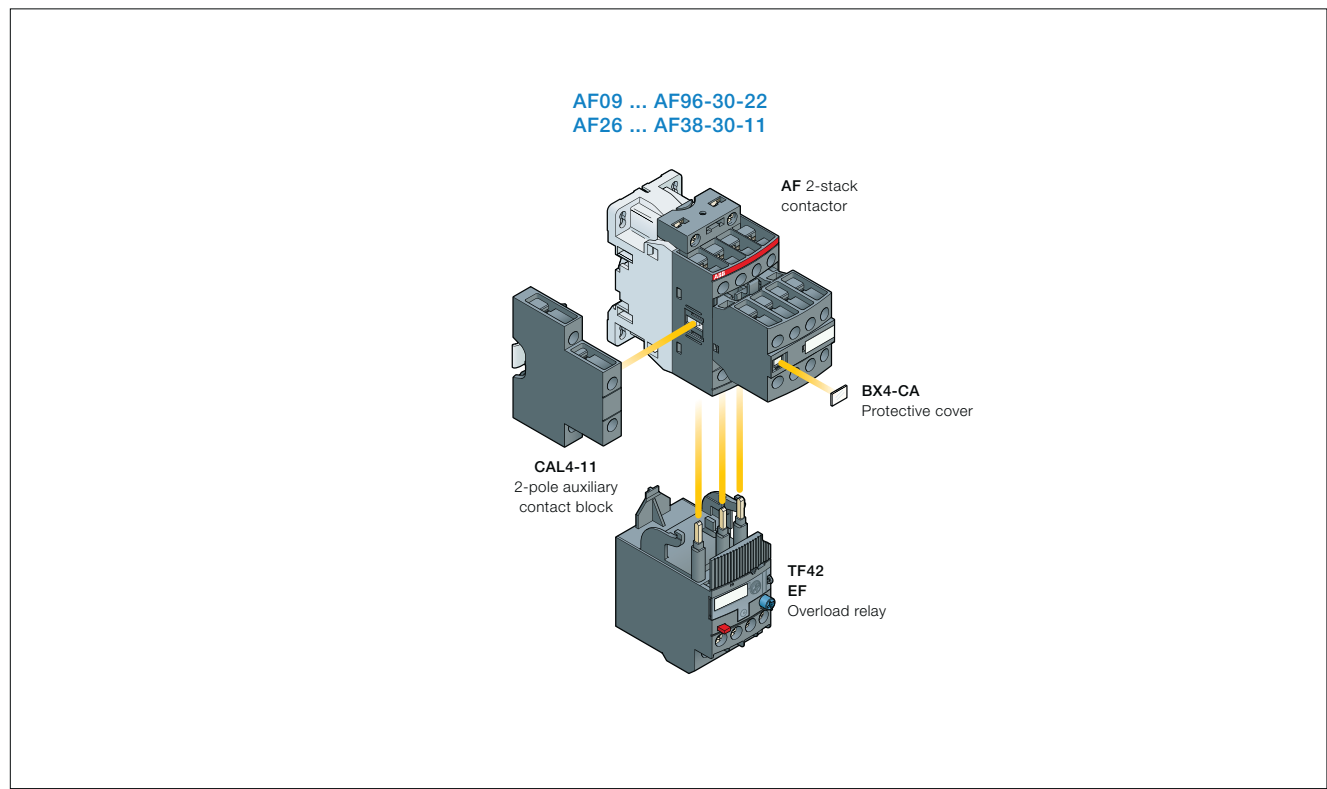
1SBC101742S0201 - Rev. A

AF09 ... AF96 2-stack 3-pole contactors

Main accessories

Contactor and main accessories (other accessories available)

5



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	Electrical and mechanical interlock set (between 2 contactors)		Auxiliary contact blocks		
			1-pole CA4	2-pole CAT4-11	4-pole CA4	TEF4	VEM4	Left side 2-pole CAL4-11	Right side		
AF26 ... AF38	3 0	1 1	-	-	-	-	-	-	+	1	+ 1
AF40 ... AF65	3 0	1 1	4 max.	or 1	or 1	or 1	-	-	-	-	+ 1
AF80 ... AF96	3 0	1 1	4 max.	-	or 1	or 1	-	-	-	-	+ 1
AF09 ... AF96	3 0	2 2	-	-	-	-	-	-	+	1	-
AF40 ... AF96	3 0	2 2	-	-	-	-	-	-	+	1	+ 1

Overload relays fitting details (1)

Contactor types	Thermal overload relays	Electronic overload relays
AF09 ... AF38	TF42 (0.10...38 A)	EF19 (0.10...19 A)
AF26 ... AF38	TF42 (0.10...38 A)	EF45 (9...45 A)
AF40 ... AF65	TF65 (22...67 A)	EF65 (20...70 A)
AF80, AF96	TF96 (40...96 A)	EF96 (36...100 A)

The addition of an overload relay on the contactor does not prevent fitting of many other accessories as shown above.

(1) Direct mounting - No kit required.

AF09 ... AF96 2-stack 3-pole contactors

Main accessories



CAL4-11



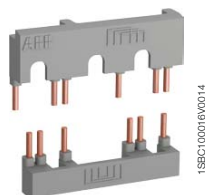
VM4



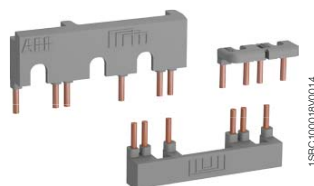
BEA16-4



TEF4-ON



BER16-4



BEY16-4

Ordering Details (1)

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

Side-mounted instantaneous auxiliary contact blocks

AF09 ... AF96	1 1	- -	CAL4-11	1SBN010120R1011	1	0.040
	1 1	- -	CAL4-11-T	1SBN010120T1011	10	0.040

Mechanical interlock unit

AF09 ... AF38			VM4	1SBN030105T1000	10	0.005
AF40 ... AF96			VM96-4	1SBN033405T1000	10	0.006

Note: VM4 and VM96-4 include 2 fixing clips (BB4) to maintain together both contactors.

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

Electronic timers

AF40 ... AF96-30-11	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.

Connecting links with manual motor starters

AF09 ... AF16	with MS116-0.16 ... MS116-25, MS132-0.16 ... MS132-25	BEA16-4	1SBN081306T1000	10	0.025
AF26 ... AF38	with MS116-0.16 ... MS116-16, MS132-0.16 ... MS132-10	BEA26-4	1SBN082306T1000	10	0.025
	with MS116-20 ... MS116-32, MS132-12 ... MS132-32	BEA38-4	1SBN082306T2000	10	0.030

Connection sets for reversing contactors

AF09 ... AF16		BER16-4	1SBN081311R1000	1	0.045
AF26 ... AF38		BER38-4	1SBN082311R1000	1	0.100
AF40 ... AF65		BER65-4	1SBN083411R1000	1	0.175
AF80 ... AF96		BER96-4	1SBN083911R1000	1	0.250

Connection sets for star-delta starting

AF09 ... AF16	with or without VM4	BEY16-4	1SBN081313R2000	1	0.050
AF26 ... AF38	with or without VM4	BEY38-4	1SBN082713R2000	1	0.110
AF40 ... AF65	with or without VM96-4	BEY65-4	1SBN083413R2000	1	0.200
AF80 ... AF96	with or without VM96-4	BEY96-4	1SBN083913R2000	1	0.250

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

AF116 ... AF146 3-pole contactors

55 to 75 kW

AC / DC operated with 2 N.O. + 2 N.C. auxiliary contacts



AF146-30-22

1SFC101009V0001

5



AF146-30-22B

1SFC101010V0001

Description

AF116 ... AF140 contactors are mainly used for controlling 3-phase motors and power circuits up to 690 V AC, AF146 up to 1000 V AC. These contactors are of the block type design with 3 main poles.

- control circuit: AC or DC operated with electronic coil interface accepting a wide control voltage range (e.g. 100...250 V AC and DC), only 4 coils to cover control voltages between 24...500 V 50/60 Hz and 20...500 V DC
- can manage large control voltage variations
- reduced panel energy consumption
- very distinct closing and opening
- can withstand short voltage dips and voltage sags (SEMI F47 conditions of use on request).
- built-in surge suppression
- add-on auxiliary contact blocks for side mounting and a wide range of accessories.

Ordering details

IEC		UL / CSA		Rated control circuit voltage	Auxiliary contacts fitted	Type (1)	Order code	Weight
Rated operational power	current $\theta \leq 40^\circ\text{C}$	3-phase motor rating	General use rating	Uc min. ... Uc max.				Pkg (1 pce)
400 V AC-3 kW	AC-1 A	480 V hp	600 V AC A	V 50/60 Hz; V DC				kg

For connection with built-in cable clamps

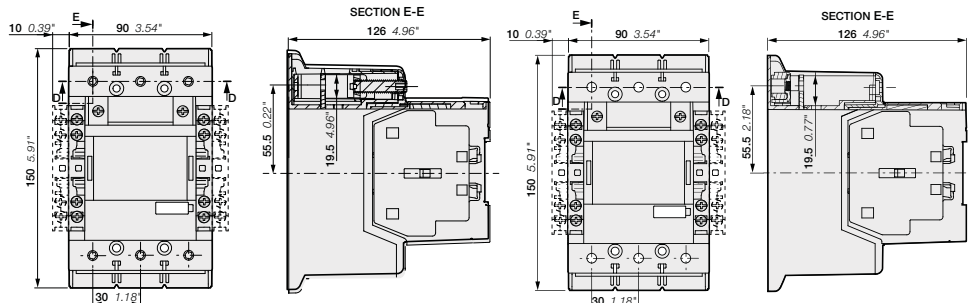
Rated operational power	current $\theta \leq 40^\circ\text{C}$	3-phase motor rating	General use rating	Rated control circuit voltage	Auxiliary contacts fitted	Type (1)	Order code	Weight	
55	160	75	160	24...60	20...60	2 2	AF116-30-22-11	1SFL427001R1122	1.750
				48...130	48...130	2 2	AF116-30-22-12	1SFL427001R1222	1.750
				100...250	100...250	2 2	AF116-30-22-13	1SFL427001R1322	1.750
				250...500	250...500	2 2	AF116-30-22-14	1SFL427001R1422	1.750
75	200	100	200	24...60	20...60	2 2	AF140-30-22-11	1SFL447001R1122	1.750
				48...130	48...130	2 2	AF140-30-22-12	1SFL447001R1222	1.750
				100...250	100...250	2 2	AF140-30-22-13	1SFL447001R1322	1.750
				250...500	250...500	2 2	AF140-30-22-13	1SFL447001R1422	1.750
75	225	100	200	24...60	20...60	2 2	AF146-30-22-11	1SFL467001R1122	1.750
				48...130	48...130	2 2	AF146-30-22-12	1SFL467001R1222	1.750
				100...250	100...250	2 2	AF146-30-22-13	1SFL467001R1322	1.750
				250...500	250...500	2 2	AF146-30-22-14	1SFL467001R1422	1.750

With bar connections

Rated operational power	current $\theta \leq 40^\circ\text{C}$	3-phase motor rating	General use rating	Rated control circuit voltage	Auxiliary contacts fitted	Type (1)	Order code	Weight	
55	160	75	160	24...60	20...60	2 2	AF116-30-22B-11	1SFL427002R1122	1.500
				48...130	48...130	2 2	AF116-30-22B-12	1SFL427002R1222	1.500
				100...250	100...250	2 2	AF116-30-22B-13	1SFL427002R1322	1.500
				250...500	250...500	2 2	AF116-30-22B-14	1SFL427002R1422	1.500
75	200	100	200	24...60	20...60	2 2	AF140-30-22B-11	1SFL447002R1122	1.500
				48...130	48...130	2 2	AF140-30-22B-12	1SFL447002R1222	1.500
				100...250	100...250	2 2	AF140-30-22B-13	1SFL447002R1322	1.500
				250...500	250...500	2 2	AF140-30-22B-14	1SFL447002R1422	1.500
75	225	100	200	24...60	20...60	2 2	AF146-30-22B-11	1SFL467002R1122	1.500
				48...130	48...130	2 2	AF146-30-22B-12	1SFL467002R1222	1.500
				100...250	100...250	2 2	AF146-30-22B-13	1SFL467002R1322	1.500
				250...500	250...500	2 2	AF146-30-22B-14	1SFL467002R1422	1.500

(1) For other auxiliary contacts arrangements, please contact your ABB local sales organization.

Main dimensions mm, inches



AF116, AF140, AF146-30-22

AF116, AF140, AF146-30-22B

1SFC101092C0201 - Rev. C

AF116 ... AF146 3-pole contactors with built-in PLC interface

55 to 75 kW

AC / DC operated with 2 N.O. + 2 N.C. auxiliary contacts



AF146-30-22



AF146-30-22B

Description

- AF116 ... AF146 contactors are mainly used for controlling 3-phase motors and power circuits up to 690 V AC, AF146 up to 1000 V AC. These contactors are of the block type design with 3 main poles.
- control circuit: AC or DC operated with electronic coil interface accepting a wide control voltage range (e.g. 100...250 V AC and DC), only 2 coils to cover control voltages between 100...500 V 50/60 Hz and 100...500 V DC
 - can manage large control voltage variations
 - reduced panel energy consumption
 - very distinct closing and opening
 - can withstand short voltage dips and voltage sags (SEMI F47 conditions of use on request).
 - built-in surge suppression
 - add-on auxiliary contact blocks for side mounting and a wide range of accessories.

Ordering details

IEC		UL / CSA		Rated control circuit voltage		Auxiliary contacts fitted	Type (1)	Order code	Weight
Rated power	operational current $\theta \leq 40^\circ\text{C}$	3-phase motor rating	General use rating	Uc min. ...	Uc max.				
400 V AC-3	AC-1	480 V	600 V AC	V 50/60 Hz	V DC				kg
kW	A	hp	A						

For connection with built-in cable clamps

55	160	75	160	100...250	100...250	2	2	AF116-30-22-33	1SFL427001R3322	1,750
				250...500	250...500	2	2	AF116-30-22-34	1SFL427001R3422	1,750
75	200	100	200	100...250	100...250	2	2	AF140-30-22-33	1SFL447001R3322	1,750
				250...500	250...500	2	2	AF140-30-22-34	1SFL447001R3422	1,750
75	225	100	200	100...250	100...250	2	2	AF146-30-22-33	1SFL467001R3322	1,750
				250...500	250...500	2	2	AF146-30-22-34	1SFL467001R3422	1,750

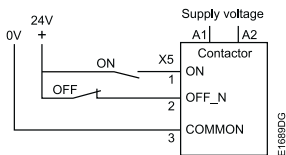
With bar connections

55	160	75	160	100...250	100...250	2	2	AF116-30-22B-33	1SFL427002R3322	1,500
				250...500	250...500	2	2	AF116-30-22B-34	1SFL427002R3422	1,500
75	200	100	200	100...250	100...250	2	2	AF140-30-22B-33	1SFL447002R3322	1,500
				250...500	250...500	2	2	AF140-30-22B-34	1SFL447002R3422	1,500
75	225	100	200	100...250	100...250	2	2	AF146-30-22B-33	1SFL467002R3322	1,500
				250...500	250...500	2	2	AF146-30-22B-34	1SFL467002R3422	1,500

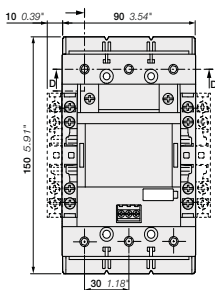
(1) For other auxiliary contacts arrangements, please contact your ABB local sales organization.

AF116 ... AF146 are equipped with low voltage inputs for control, for example by a PLC.

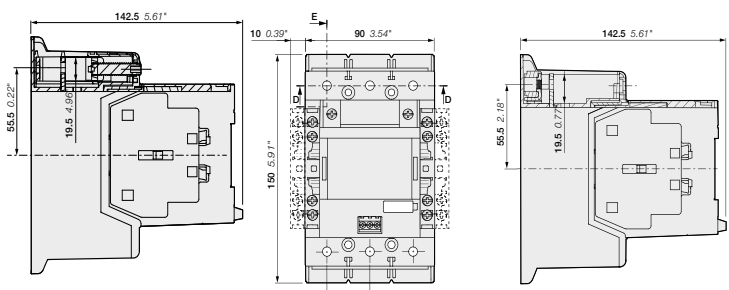
Control inputs



Main dimensions mm, inches



AF116, AF140, AF146-30-22



AF116, AF140, AF146-30-22B

AF190 ... AF370 3-pole contactors

90 to 200 kW

AC / DC operated with 2 N.O. + 2 N.C. auxiliary contacts



AF205-30-22

1SFC1010140001



AF370-30-22

1SFC1010200001

Description

AF190 ... AF370 contactors are mainly used for controlling 3-phase motors and power circuits up to 1000 V AC. These contactors are of the block type design with 3 main poles.

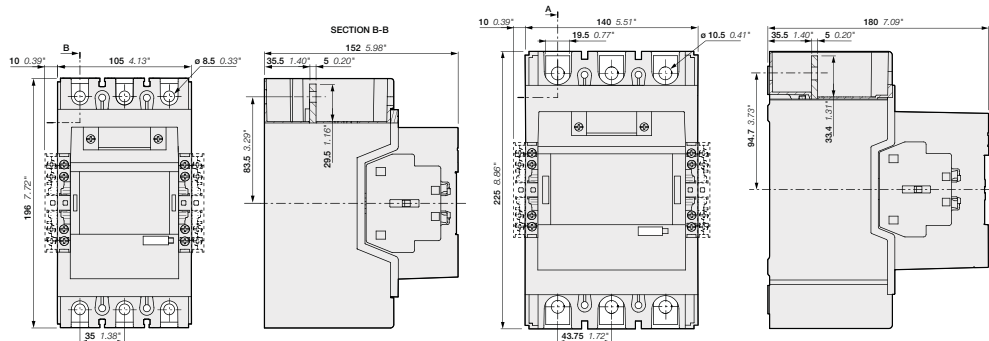
- control circuit: AC or DC operated with electronic coil interface accepting a wide control voltage range (e.g. 100...250 V AC and DC), only 4 coils to cover control voltages between 24...500 V 50/60 Hz and 20...500 V DC
 - can manage large control voltage variations
 - reduced panel energy consumption
 - very distinct closing and opening
 - can withstand short voltage dips and voltage sags (SEMI F47 conditions of use on request).
- built-in surge suppression
- add-on auxiliary contact blocks for side mounting and a wide range of accessories.

Ordering details

IEC		UL / CSA		Rated control circuit voltage		Auxiliary contacts fitted		Type	Order code	Weight
Rated operational power	current $\theta \leq 40^\circ\text{C}$	3-phase motor rating	General use rating	Uc min. ... Uc max.				(1)		Pkg (1 pce)
400 V AC-3 kW	AC-1 A	480 V hp	600 V AC A	V 50/60 Hz	V DC					kg
90	275	125	250	24...60	20...60	2	2	AF190-30-22-11	1SFL487002R1122	3.000
				48...130	48...130	2	2	AF190-30-22-12	1SFL487002R1222	3.000
				100...250	100...250	2	2	AF190-30-22-13	1SFL487002R1322	3.000
				250...500	250...500	2	2	AF190-30-22-14	1SFL487002R1422	3.000
110	350	150	300	24...60	20...60	2	2	AF205-30-22-11	1SFL527002R1122	3.000
				48...130	48...130	2	2	AF205-30-22-12	1SFL527002R1222	3.000
				100...250	100...250	2	2	AF205-30-22-13	1SFL527002R1322	3.000
				250...500	250...500	2	2	AF205-30-22-14	1SFL527002R1422	3.000
140	400	200	350	24...60	20...60	2	2	AF265-30-22-11	1SFL547002R1122	4.675
				48...130	48...130	2	2	AF265-30-22-12	1SFL547002R1222	4.675
				100...250	100...250	2	2	AF265-30-22-13	1SFL547002R1322	4.675
				250...500	250...500	2	2	AF265-30-22-14	1SFL547002R1422	4.675
160	500	250	400	24...60	20...60	2	2	AF305-30-22-11	1SFL587002R1122	4.675
				48...130	48...130	2	2	AF305-30-22-12	1SFL587002R1222	4.675
				100...250	100...250	2	2	AF305-30-22-13	1SFL587002R1322	4.675
				250...500	250...500	2	2	AF305-30-22-14	1SFL587002R1422	4.675
200	600	300	520	24...60	20...60	2	2	AF370-30-22-11	1SFL607002R1122	4.675
				48...130	48...130	2	2	AF370-30-22-12	1SFL607002R1222	4.675
				100...250	100...250	2	2	AF370-30-22-13	1SFL607002R1322	4.675
				250...500	250...500	2	2	AF370-30-22-14	1SFL607002R1422	4.675

(1) For other auxiliary contacts arrangements, please contact your ABB local sales organization.

Main dimensions mm, inches



AF190, AF205

AF265, AF305, AF370

1SFC101093C0201 - Rev. D

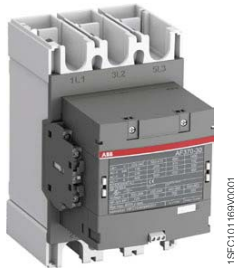
AF190 ... AF370 3-pole contactors with built-in PLC interface

90 to 200 kW

AC / DC operated with 2 N.O. + 2 N.C. auxiliary contacts



AF205-30-22



AF370-30-22

Description

AF190 ... AF370 contactors are mainly used for controlling 3-phase motors and power circuits up to 1000 V AC. These contactors are of the block type design with 3 main poles.

- control circuit: AC or DC operated with electronic coil interface accepting a wide control voltage range (e.g. 100...250 V AC and DC), only 2 coils to cover control voltages between 100...500 V 50/60 Hz and 100...500 V DC
- can manage large control voltage variations
- reduced panel energy consumption
- very distinct closing and opening
- can withstand short voltage dips and voltage sags (SEMI F47 conditions of use on request).
- built-in surge suppression
- add-on auxiliary contact blocks for side mounting and a wide range of accessories.

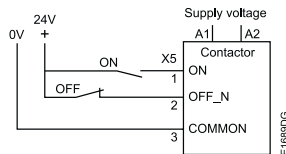
Ordering details

IEC	UL / CSA		Rated control circuit voltage		Auxiliary contacts fitted	Type (1)	Order code	Weight	
Rated operational power	current $\theta \leq 40^\circ\text{C}$	3-phase motor rating	General use rating	Uc min. ... Uc max.				Pkg (1 pce)	
400 V AC-3	AC-1	480 V	600 V AC	V 50/60 Hz V DC				kg	
90	275	125	250	100...250 250...500	100...250 250...500	2 2 2 2	AF190-30-22-33 AF190-30-22-34	1SFL487002R3322 1SFL487002R3422	3.000 3.000
110	350	150	300	100...250 250...500	100...250 250...500	2 2 2 2	AF205-30-22-33 AF205-30-22-34	1SFL527002R3322 1SFL527002R3422	3.000 3.000
140	400	200	350	100...250 250...500	100...250 250...500	2 2 2 2	AF265-30-22-33 AF265-30-22-34	1SFL547002R3322 1SFL547002R3422	4.675 4.675
160	500	250	400	100...250 250...500	100...250 250...500	2 2 2 2	AF305-30-22-33 AF305-30-22-34	1SFL587002R3322 1SFL587002R3422	4.675 4.675
200	600	300	520	100...250 250...500	100...250 250...500	2 2 2 2	AF370-30-22-33 AF370-30-22-34	1SFL607002R3322 1SFL607002R3422	4.675 4.675

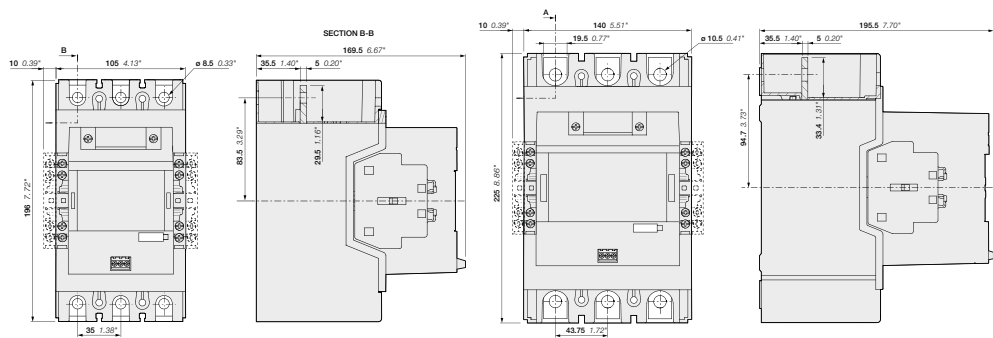
(1) For other auxiliary contacts arrangements, please contact your ABB local sales organization.

AF190 ... AF370 are equipped with low voltage inputs for control, for example by a PLC.

Control inputs



Main dimensions mm, inches



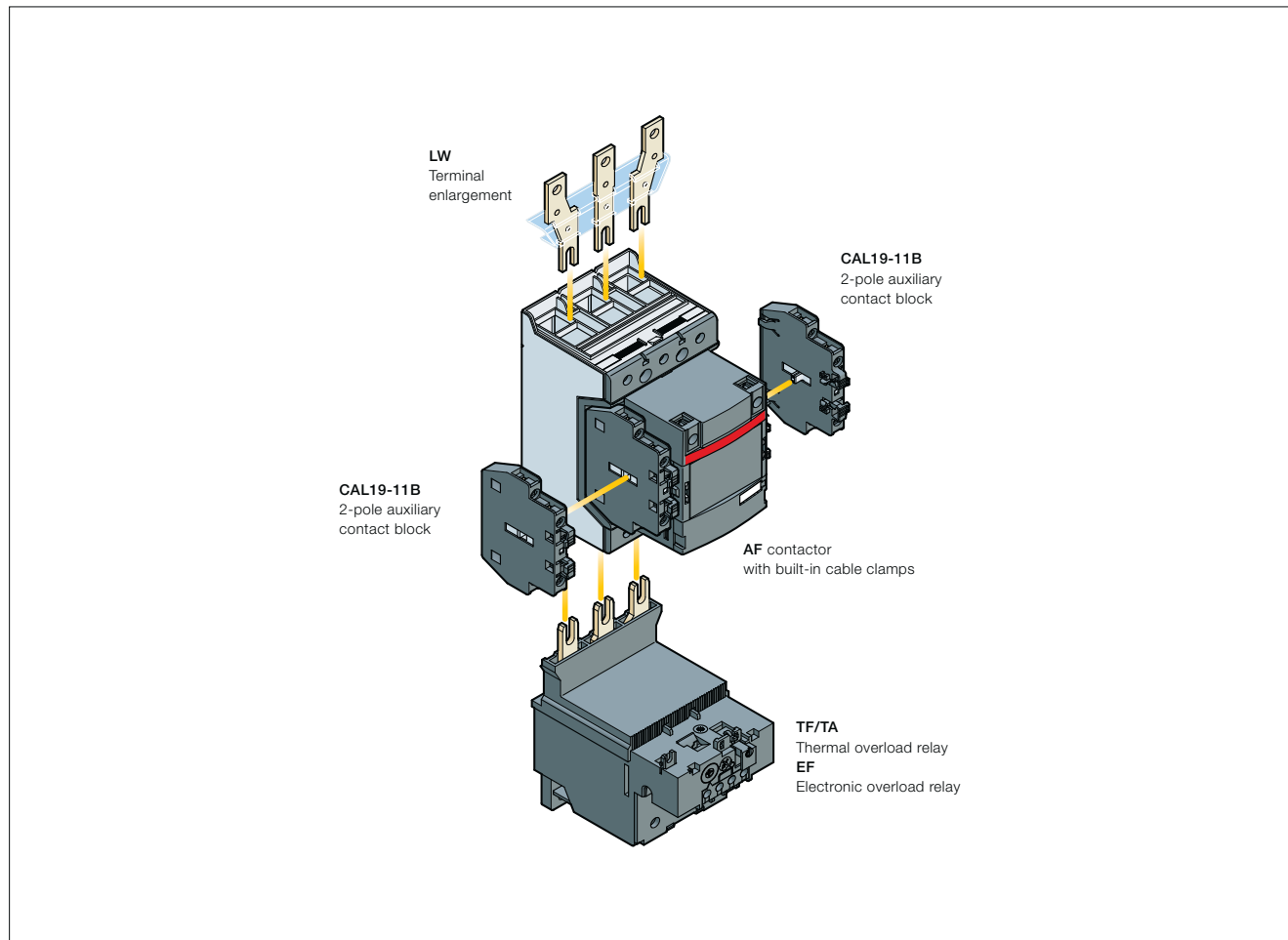
AF190, AF205

AF265, AF305, AF370

AF116 ... AF370 3-pole contactors with 2 N.O. + 2 N.C. auxiliary contacts Main accessories

Main accessories (other accessories available)

5



Main accessory fitting details

Contactor types	Main poles	Available auxiliary contacts	Side-mounted accessories		
			Auxiliary contact blocks		Mechanical interlock units (between two contactors)
			CAL19-11	CAL19-11B	
AF116 ... AF370	3	0 2 2	-	+ 2 x CAL19-11B	-

Overload relays fitting details (1)

Contactor types	Thermal overload relays	Electronic overload relays
AF116 ... AF140	TF140DU (66...142 A)	EF146 (54...150 A)
AF146	-	EF146 (54...150 A)
AF190, AF205	TA200DU (66...200 A)	EF205 (63...210 A)
AF265 ... AF370	-	EF370 (115...380 A)

The addition of a thermal or electronic overload relay on the contactor does not prevent fitting of many other accessories as shown in "Main accessory fitting details" table.

(1) Direct mounting - No kit required.

AF116 ... AF370 3-pole contactors with 2 N.O. + 2 N.C. auxiliary contacts Main accessories



1SFC101071V0001

CAL19-11



1SFC101041V0001

LT370-30C



1SFC101049V0001

LX140

Ordering details (1)

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

Side-mounted instantaneous auxiliary contact blocks

AF116 ... AF370	1	1	CAL19-11B	1SFN010820R3311	2	0.050
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Terminal shrouds

AF116 ... AF146, with compression lugs	LT140-30L	1SFN124203R1000	2	0.070
AF190, AF205, with cable clamps	LT205-30C	1SFN124801R1000	2	0.050
AF190, AF205, with compression lugs	LT205-30L	1SFN124803R1000	2	0.220
AF190, AF205, with shorting bar or between contactor and TOL/EOL in DOL-starters	LT205-30Y	1SFN124804R1000	1	0.050
AF265 ... AF370, with cable clamps	LT370-30C	1SFN125401R1000	2	0.035
AF265 ... AF370, with compression lugs	LT370-30L	1SFN125403R1000	2	0.280
AF265 ... AF370, with shorting bar or between contactor and TOL/EOL in DOL-starters	LT370-30Y	1SFN125404R1000	1	0.075
AF265 ... AF370, for use with extending cable clamps, ATK300/2 and OZXB4	LT370-30D	1SFN125406R1000	1	0.150

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For contactors	Dimensions		Type	Order code	Pkg qty	Weight (1 pce)
	hole Ø mm	bar mm				

Terminal enlargements

AF116...AF146	6.5	13 x 3	LW140	1SFN074207R1000	1	0.115
AF190...AF205	10.5	17.5 x 5	LW205	1SFN074807R1000	1	0.260
AF265...AF370	10.5	20 x 5	LW370	1SFN075407R1000	1	0.340

Terminal extension

AF116...AF146	6.5	13 x 3	LX140	1SFN074210R1000	1	0.072
AF190...AF250	8.5	17.5 x 5	LX205	1SFN074810R1000	1	0.180
AF265...AF370	10.5	20 x 5	LX370	1SFN075410R1000	1	0.234

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

AF400 ... AF750 3-pole contactors

200 to 400 kW

AC / DC operated with 2 N.O. + 2 N.C. auxiliary contacts



AF460-30-22

1SFC101091V0001



AF750-30-22

1SFC101091V0001

Description

AF400 ... AF750 contactors are mainly used for controlling 3-phase motors and power circuits up to 690 V AC or 600 V DC (2). These contactors are of the block type design with 3 main poles.

- control circuit: AC or DC operated with electronic coil interface accepting a wide control voltage range (e.g. 100...250 V AC and DC), only 4 coils to cover control voltages between 48...500 V 50/60 Hz and 24...500 V DC
- can manage large control voltage variations
- reduced panel energy consumption
- very distinct closing and opening
- can withstand short voltage dips and voltages sags (SEMI F47 conditions of use on request).
- built-in surge suppression
- add-on auxiliary contact blocks for side mounting and a wide range of accessories.

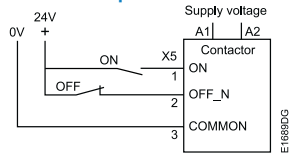
Ordering details

IEC Rated operational power	UL/CSA 3-phase motor rating 480 V	General use rating 600 V AC	Rated control circuit voltage Uc		Auxiliary contacts fitted	Type	Order code	Weight Pkg (1 pce) kg	
			V 50/60 Hz	V DC					
400 V AC-3 kW	690 V AC-1 hp	480 V hp	550	-	24...60	2 2	AF400-30-22	1SFL577001R6822 (1)	12.000
				48...130	48...130	2 2	AF400-30-22	1SFL577001R6922	12.000
				100...250	100...250	2 2	AF400-30-22	1SFL577001R7022	12.000
				250...500	250...500	2 2	AF400-30-22	1SFL577001R7122	12.000
250	700	400	650	-	24...60	2 2	AF460-30-22	1SFL597001R6822 (1)	12.000
				48...130	48...130	2 2	AF460-30-22	1SFL597001R6922	12.000
				100...250	100...250	2 2	AF460-30-22	1SFL597001R7022	12.000
				250...500	250...500	2 2	AF460-30-22	1SFL597001R7122	12.000
315	800	500	750	-	24...60	2 2	AF580-30-22	1SFL617001R6822 (1)	15.000
				48...130	48...130	2 2	AF580-30-22	1SFL617001R6922	15.000
				100...250	100...250	2 2	AF580-30-22	1SFL617001R7022	15.000
				250...500	250...500	2 2	AF580-30-22	1SFL617001R7122	15.000
400	1050	600	900	-	24...60	2 2	AF750-30-22	1SFL637001R6822 (1)	15.000
				48...130	48...130	2 2	AF750-30-22	1SFL637001R6922	15.000
				100...250	100...250	2 2	AF750-30-22	1SFL637001R7022	15.000
				250...500	250...500	2 2	AF750-30-22	1SFL637001R7122	15.000

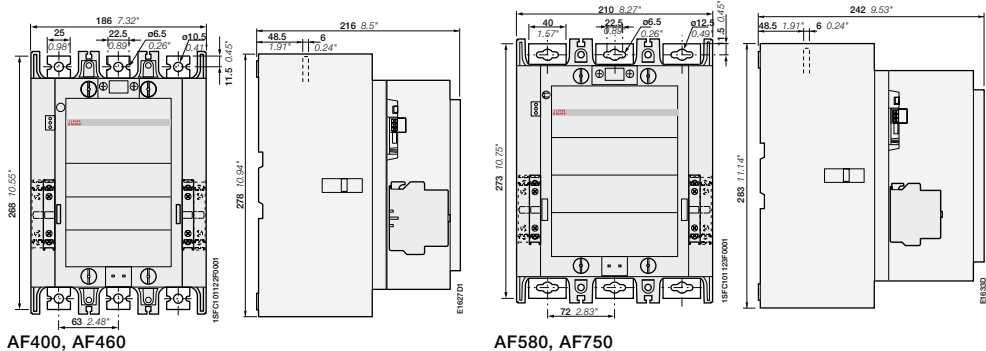
(1) The connection polarities indicated close to the coil terminals must be respected: A1 for the positive pole and A2 for the negative pole.
 (2) Up to 850 V DC for AF580, AF750.

AF400...AF750 are equipped with low voltage inputs for control, for example by a PLC.

Control inputs



Main dimensions mm, inches



AF400, AF460

AF580, AF750

1SFC101014C0201 - Rev. A

AF1250 ... AF2650 3-pole contactors

475 to 560 kW and 1260 to 2650 A AC-1

AC / DC operated with 2 N.O. + 2 N.C. auxiliary contacts



AF1250-30-22



AF2650-30-22

Description

AF1250 ... AF2050 contactors are mainly used for controlling power circuits up to 1000 V AC or 850 V DC, AF2650 for controlling power up to 1000 V AC. These contactors are of the block type design with 3 main poles.

- control circuit: AC or DC operated with electronic coil interface accepting a wide control voltage range (e.g. 100...250 V AC and DC)
- only 4 coils for AF1250 to cover control voltages between 48...500 V 50/60 Hz and 24...500 V DC
- only 1 coil for AF1350 ... AF2650 to cover control voltages between 100...250 V 50/60 Hz and 100...250 V DC
- can manage large control voltage variations
- reduced panel energy consumption
- very distinct closing and opening
- can withstand short voltage dips and voltages sags (SEMI F47 conditions of use on request).
- built-in surge suppression
- add-on auxiliary contact blocks for side mounting and a wide range of accessories.

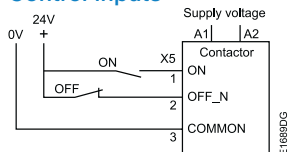
Ordering details

IEC	UL/CSA		Rated control circuit voltage		Auxiliary contacts fitted	Type	Order code	Weight	
Rated power	operational current $\theta \leq 40^\circ\text{C}$	3-phase motor rating	General use rating	Uc (1)					Pkg (1 pce)
400 V AC-3	690 V AC-1	480 V	600 V AC	V 50/60 Hz	V DC			kg	
-	1260	-	1210	-	24...60	2 2	AF1250-30-22	1SFL647001R6822 (1)	16.000
				48...130	48...130	2 2	AF1250-30-22	1SFL647001R6922	16.000
				100...250	100...250	2 2	AF1250-30-22	1SFL647001R7022	16.000
				250...500	250...500	2 2	AF1250-30-22	1SFL647001R7122	16.000
475	1350	800	1350	100...250	100...250	2 2	AF1350-30-22	1SFL657001R7022	34.000
560	1650	900	1650	100...250	100...250	2 2	AF1650-30-22	1SFL677001R7022	35.000
-	2050	-	2100	100...250	100...250	2 2	AF2050-30-22	1SFL707001R7022	35.000
-	2650	-	2700	100...250	100...250	2 2	AF2650-30-22	1SFL667001R7022	45.000

(1) The connection polarities indicated close to the coil terminals must be respected: A1 for the positive pole and A2 for the negative pole.
 (2) AF2650 : Maximum operational voltage = 1000 V according to UL / CSA.

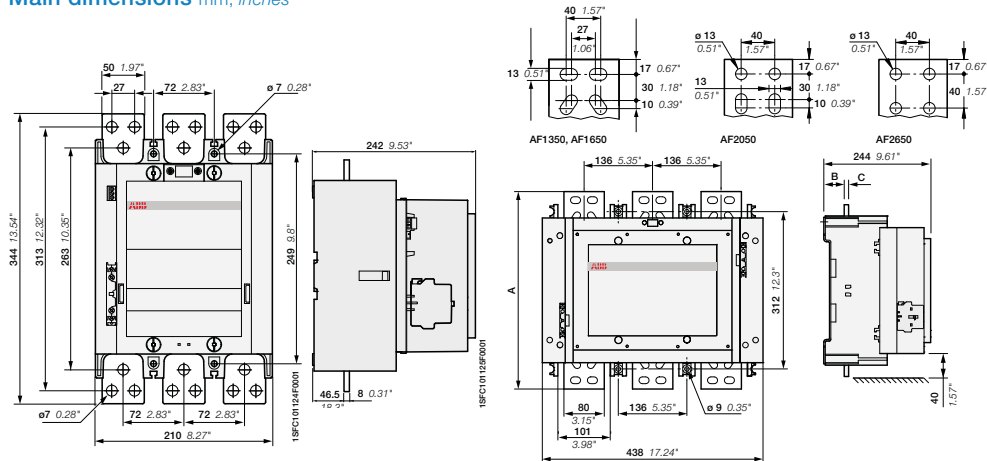
AF1250 ... AF2650 are equipped with low voltage inputs for control, for example by a PLC.

Control inputs



	AF1350, AF1650, AF2050	AF2650
A	392 mm / 15.43"	422 mm / 16.61"
B	47 mm / 1.85"	53 mm / 2.11"
C	10 mm / 0.39"	25 mm / 0.98"

Main dimensions mm, inches



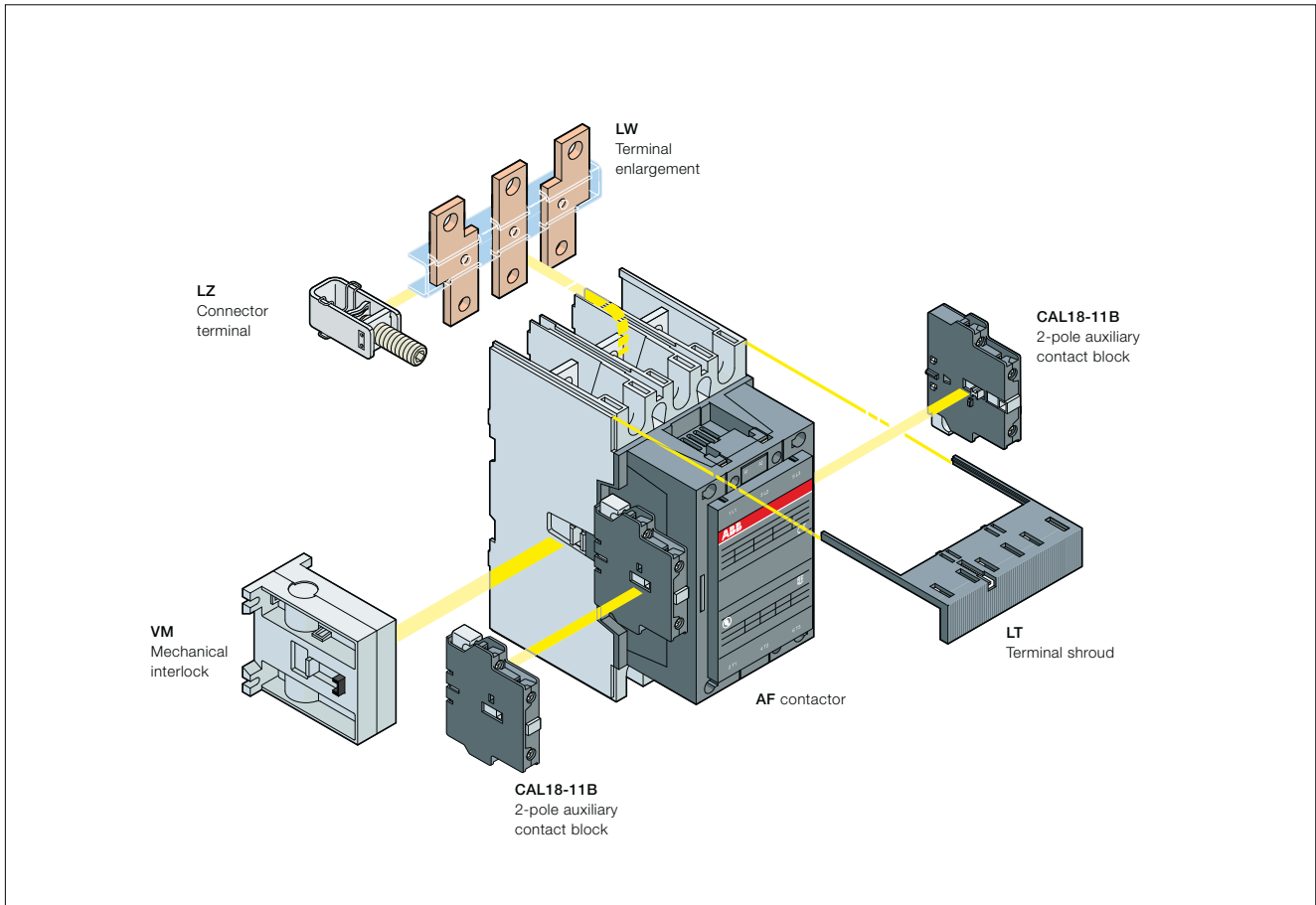
AF1250

AF1350, AF1650, AF2050, AF2650

AF400... AF2650 3-pole contactors with 2 N.O. + 2 N.C. auxiliary contacts Main accessories

Main accessories (other accessories available)

5



Main accessory fitting details

Contactor types	Main poles	Available auxiliary contacts	Side-mounted accessories		Mechanical interlock units (between two contactors)
			Auxiliary contact blocks		
			CAL18-11	CAL18-11B (2)	

Contactors + auxiliary contact blocks

AF145 ... AF2650	3	0	2	2	-	2 x CAL18-11B	-
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Contactors with mechanical interlocking + auxiliary contact blocks

AF400 ... AF2650	3	0	2	2	-	4 x CAL18-11B	+ VM...H (1)
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(1) Interlock type, according to the contactor ratings (see "Accessories").

(2) The CEL18-... auxiliary contact blocks can replace the CAL18-11 and CAL18-11B. Though, no auxiliary contact block can be mounted outside the CEL18-...

Overload relays fitting details

Contactor types	Thermal overload relays	Electronic overload relays
AF400, AF460	-	EF460 (150...500 A) (3)
AF580, AF750	-	EF750 (250...800 A) (3)
AF1350, AF1650	-	E1250DÜ (375...1250 A) (3)

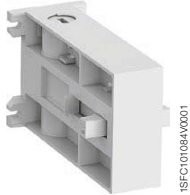
The addition of a thermal or electronic overload relay on the contactor does not prevent fitting of many other accessories as shown in "Main accessory fitting details" table.

(3) Mounting kit required (see "Motor protection").

AF400 ... AF2650 3-pole contactors with 2 N.O. + 2 N.C. auxiliary contacts Main accessories



CAL18-11



VM750H



LT460-AC

Ordering details (1)

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

Side-mounted instantaneous auxiliary contact blocks

AF400 ... AF2650	1	1	CAL18-11B	1SFN010720R3311	2	0.050
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Mechanical interlock unit

AF400 ... AF1250			VM750H	1SFN035700R1000	1	0.200
AF1350 ... AF2650			VM1650H	1SFN036503R1000	1	6.000

Terminal shrouds

AF400, AF460 with connectors			LT460-AC	1SFN125701R1000	2	0.100
AF400, AF460 with lugs			LT460-AL	1SFN125703R1000	2	0.800
AF580 ... AF750 with connectors			LT750-AC	1SFN126101R1000	2	0.120
AF580 ... AF750 with lugs			LT750-AL	1SFN126103R1000	2	0.825

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For contactors	Dimensions		Type	Order code	Pkg qty	Weight (1 pce)
	hole Ø mm	bar mm				

Terminal enlargements

AF400, AF460	10.5	25 x 5	LW460	1SFN075707R1000	1	0.730
AF580, AF750	13	40 x 6	LW750	1SFN076107R1000	1	1.230
AF1250	13	50 x 10	LW1250	1SFN076407R1000	1	2.000

Terminal extension

AF400, AF460	10.5	25 x 5	LX460	1SFN075710R1000	1	0.500
AF580, AF750	13	40 x 6	LX750	1SFN076110R1000	1	0.850

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

AF09 ... AF38 3-pole contactors

Technical data

Main pole - Utilization characteristics according to IEC

Contactor types	AC / DC operated	AF09	AF12	AF16	AF26	AF30	AF38
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, $\theta \leq 40\text{ }^{\circ}\text{C}$		35 A	35 A	35 A	50 A	50 A	50 A
With conductor cross-sectional area		6 mm ²	6 mm ²	6 mm ²	10 mm ²	10 mm ²	10 mm ²
AC-1 Utilization category							
For air temperature close to contactor							
I_e / Rated operational current AC-1	$\theta \leq 40\text{ }^{\circ}\text{C}$	25 A	28 A	30 A	45 A	50 A	50 A
U _e max. $\leq 690\text{ V}$, 50/60 Hz	$\theta \leq 60\text{ }^{\circ}\text{C}$	25 A	28 A	30 A	40 A	42 A	42 A
	$\theta \leq 70\text{ }^{\circ}\text{C}$	22 A	24 A	26 A	32 A	37 A	37 A
With conductor cross-sectional area		4 mm ²	6 mm ²	6 mm ²	10 mm ²	10 mm ²	10 mm ²
AC-3 Utilization category							
For air temperature close to contactor $\theta \leq 60\text{ }^{\circ}\text{C}$							
I_e / Max. rated operational current AC-3 (1)							
	220-230-240 V	9 A	12 A	18 A	26 A	33 A	40 A
	380-400 V	9 A	12 A	18 A	26 A	32 A	38 A
	415 V	9 A	12 A	18 A	26 A	32 A	38 A
	440 V	9 A	12 A	18 A	26 A	32 A	38 A
	500 V	9.5 A	12.5 A	15 A	23 A	28 A	33 A
	690 V	7 A	9 A	10.5 A	17 A	21 A	24 A
Rated operational power AC-3 (1)							
	220-230-240 V	2.2 kW	3 kW	4 kW	6.5 kW	9 kW	11 kW
	380-400 V	4 kW	5.5 kW	7.5 kW	11 kW	15 kW	18.5 kW
	415 V	4 kW	5.5 kW	9 kW	11 kW	15 kW	18.5 kW
	440 V	4 kW	5.5 kW	9 kW	15 kW	18.5 kW	22 kW
	500 V	5.5 kW	7.5 kW	9 kW	15 kW	18.5 kW	22 kW
	690 V	5.5 kW	7.5 kW	9 kW	15 kW	18.5 kW	22 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 50/60 Hz - $\theta \leq 40\text{ }^{\circ}\text{C}$)							
I_e / Rated operational current AC-8a		12 A	16 A	22 A	30 A	40 A	50 A
Rated operational power AC-8a		5.5 kW	7.5 kW	11 kW	15 kW	20 kW	25 kW
Short-circuit protection device for contactors							
without thermal overload relay - Motor protection excluded (2)							
U _e $\leq 500\text{ V}$ AC - gG type fuse		25 A	32 A	32 A	50 A	63 A	63 A
Rated short-time withstand current I_{cw}							
at 40 °C ambient temperature, in free air from a cold state							
	1 s	300 A	300 A	300 A	700 A	700 A	700 A
	10 s	150 A	150 A	150 A	350 A	350 A	350 A
	30 s	80 A	80 A	80 A	225 A	225 A	225 A
	1 min	60 A	60 A	60 A	150 A	150 A	150 A
	15 min	35 A	35 A	35 A	50 A	50 A	50 A
Maximum breaking capacity							
cos $\phi = 0.45$							
	at 440 V	250 A	250 A	250 A	500 A	500 A	500 A
	at 690 V	106 A	106 A	106 A	200 A	200 A	200 A
Power dissipation per pole							
	I _e / AC-1	0.8 W	1 W	1.2 W	1.8 W	2.4 W	2.4 W
	I _e / AC-3	0.1 W	0.2 W	0.35 W	0.6 W	0.9 W	1.3 W
Max. electrical switching frequency							
	AC-1	600 cycles/h					
	AC-3	1200 cycles/h					
	AC-2, AC-4	300 cycles/h					150 cycles/h

(1) For the corresponding kW/A or hp/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-phase motors



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

AF40 ... AF96 3-pole contactors

Technical data

Main pole - Utilization characteristics according to IEC

Contactor types	AC / DC operated	AF40	AF52	AF65	AF80	AF96
Standards		IEC 60947-1 / 60947-4-1 and EN 60947-1 / 60947-4-1				
Rated operational voltage U_e max.		690 V				1000 V
Rated frequency (without derating)		50 / 60 Hz				
Conventional free-air thermal current I_{th}		105 A				
acc. to IEC 60947-4-1, open contactors, $\theta \leq 40\text{ °C}$		105 A	105 A	105 A	130 A	130 A
With conductor cross-sectional area		35 mm ²	35 mm ²	35 mm ²	50 mm ²	50 mm ²
AC-1 Utilization category						
For air temperature close to contactor						
I_e / Rated operational current AC-1	$\theta \leq 40\text{ °C}$	70 A	100 A	105 A	125 A	130 A
U _e max. $\leq 690\text{ V}$, 50/60 Hz	$\theta \leq 60\text{ °C}$	60 A	80 A	90 A	100 A	105 A
	$\theta \leq 70\text{ °C}$	50 A	70 A	80 A	85 A	90 A
With conductor cross-sectional area		25 mm ²	35 mm ²	35 mm ²	50 mm ²	50 mm ²
AC-3 Utilization category						
For air temperature close to contactor $\theta \leq 60\text{ °C}$						
I_e / Max. rated operational current AC-3 (1)						
	220-230-240 V	40 A	53 A	65 A	80 A	96 A
	380-400 V	40 A	53 A	65 A	80 A	96 A
	415 V	40 A	53 A	65 A	80 A	96 A
	440 V	40 A	53 A	65 A	80 A	96 A
	500 V	35 A	45 A	55 A	65 A	80 A
	690 V	25 A	35 A	39 A	49 A	57 A
	1000 V	-	-	-	25 A	30 A
Rated operational power AC-3 (1)						
	220-230-240 V	11 kW	15 kW	18.5 kW	22 kW	25 kW
	380-400 V	18.5 kW	22 kW	30 kW	37 kW	45 kW
	415 V	22 kW	30 kW	37 kW	45 kW	55 kW
	440 V	22 kW	30 kW	37 kW	45 kW	55 kW
	500 V	22 kW	30 kW	37 kW	45 kW	55 kW
	690 V	22 kW	30 kW	37 kW	45 kW	55 kW
	1000 V	-	-	-	35 kW	40 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 50/60 Hz - $\theta \leq 40\text{ °C}$)						
I_e / Rated operational current AC-8a		53 A	70 A	85 A	105 A	120 A
Rated operational power AC-8a		25 kW	37 kW	45 kW	55 kW	65 kW
Short-circuit protection device for contactors						
without thermal overload relay - Motor protection excluded (2)						
U _e $\leq 500\text{ V}$ AC - gG type fuse		100 A	125 A	160 A	160 A	200 A
Rated short-time withstand current I_{cw}						
at 40 °C ambient temperature,	1 s	1000 A	1000 A	1000 A	1200 A	1200 A
in free air from a cold state	10 s	600 A	600 A	600 A	780 A	780 A
	30 s	350 A	350 A	350 A	450 A	450 A
	1 min	250 A	250 A	250 A	300 A	300 A
	15 min	110 A	110 A	110 A	140 A	140 A
Maximum breaking capacity						
cos $\varphi = 0.45$						
	at 440 V	950 A	950 A	950 A	1150 A	1150 A
	at 690 V	600 A	600 A	600 A	750 A	750 A
Power dissipation per pole						
	I _e / AC-1	3 W	6.3 W	7 W	7.6 W	8.2 W
	I _e / AC-3	1 W	1.7 W	2.7 W	3 W	4.5 W
Max. electrical switching frequency						
	AC-1	600 cycles/h				
	AC-3	1200 cycles/h				
	AC-2, AC-4	150 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 or hp/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".

AF116 ... AF370 3-pole contactors

Technical data

Main pole - Utilization characteristics according to IEC

Contactors types	AC / DC operated	AF116	AF140	AF146	AF190	AF205	AF265	AF305	AF370
Standards		IEC 60947-1 / 60947-4-1 and EN 60947-1 / 60947-4-1							
Rated operational voltage U_e max.		690 V	690 V	1000 V	1000 V	1000 V	1000 V	1000 V	1000 V
Rated frequency (without derating)		50 / 60 Hz							
Conventional free-air thermal current I_{th}		160 A	200 A	225 A	275 A	350 A	400 A	500 A	600 A
acc. to IEC 60947-4-1, open contactors, $\theta \leq 40^\circ\text{C}$		70 mm ²	95 mm ²	95 mm ²	150 mm ²	240 mm ² (3)	240 mm ²	300 mm ² (4)	2 x 185 mm ² (4)
With conductor cross-sectional area									
AC-1 Utilization category									
For air temperature close to contactor									
I_e / Rated operational current AC-1	$\theta \leq 40^\circ\text{C}$	160 A	200 A	225 A	275 A	350 A	400 A	500 A	600 A
U _e max. $\leq 690\text{ V}$, 50/60 Hz	$\theta \leq 60^\circ\text{C}$	145 A	175 A	200 A	250 A	300 A	350 A	400 A	500 A
	$\theta \leq 70^\circ\text{C}$	130 A	160 A	175 A	200 A	240 A	290 A	325 A	400 A
I_e / Rated operational current AC-1	$\theta \leq 40^\circ\text{C}$	—	—	225 A	250 A	275 A	350 A	375 A	400 A
U _e max. $\leq 1000\text{ V}$, 50/60 Hz	$\theta \leq 60^\circ\text{C}$	—	—	200 A	225 A	250 A	300 A	325 A	350 A
	$\theta \leq 70^\circ\text{C}$	—	—	175 A	185 A	200 A	240 A	260 A	290 A
With conductor cross-sectional area		70 mm ²	95 mm ²	95 mm ²	150 mm ²	240 mm ² (3)	240 mm ²	300 mm ² (4)	2 x 185 mm ² (4)
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	116 A	140 A	146 A	190 A	205 A	265 A	305 A	370 A
	380-400 V	116 A	140 A	146 A	190 A	205 A	265 A	305 A	370 A
	415 V	116 A	140 A	146 A	190 A	205 A	265 A	305 A	370 A
	440 V	116 A	140 A	146 A	190 A	205 A	265 A	305 A	370 A
	500 V	110 A	130 A	130 A	135 A	165 A	250 A	290 A	315 A
	690 V	65 A	80 A	93 A	135 A	165 A	250 A	290 A	315 A
	1000 V	—	—	60 A	85 A	100 A	100 A	100 A	100 A
Rated operational power AC-3 (1)									
	220-230-240 V	30 kW	37 kW	45 kW	55 kW	55 kW	75 kW	90 kW	110 kW
	380-400 V	55 kW	75 kW	75 kW	90 kW	110 kW	132 kW	160 kW	200 kW
	415 V	55 kW	75 kW	75 kW	90 kW	110 kW	132 kW	160 kW	200 kW
	440 V	75 kW	90 kW	90 kW	110 kW	132 kW	160 kW	160 kW	200 kW
	500 V	75 kW	90 kW	90 kW	90 kW	110 kW	200 kW	200 kW	250 kW
	690 V	55 kW	75 kW	90 kW	132 kW	160 kW	200 kW	250 kW	315 kW
	1000 V	—	—	75 kW	110 kW	132 kW	132 kW	132 kW	132 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 (2)									
U _e $\leq 500\text{ V}$ AC - gG type fuse		250 A	315 A	315 A	355 A	400 A	500 A	500 A	630 A
Rated short-time withstand current I_{cw}	1 s	1300 A	1460 A	1460 A	1900 A	2050 A	2650 A	3050 A	3700 A
at 40 °C ambient temperature,	10 s	928 A	1168 A	1168 A	1520 A	1640 A	2120 A	2440 A	2960 A
in free air from a cold state	30 s	536 A	674 A	674 A	878 A	947 A	1224 A	1409 A	1709 A
	1 min	379 A	477 A	477 A	621 A	670 A	865 A	996 A	1208 A
	15 min	160 A	200 A	225 A	275 A	350 A	400 A	500 A	600 A
Maximum breaking capacity									
cos $\phi = 0.45$	at 440 V	2000 A	3000 A	3000 A	3300 A	3500 A	3800 A	4600 A	5000 A
(cos $\phi = 0.35$ for I _e > 100 A)	at 690 V	1000 A	1500 A	1500 A	2200 A	2500 A	3300 A	3800 A	4000 A
Power dissipation per pole	I _e / AC-1	12 W	18 W	23 W	15 W	25 W	32 W	50 W	72 W
	I _e / AC-3	6 W	9 W	10 W	7 W	8 W	14 W	19 W	27 W
Maximum electrical switching frequency									
	AC-1	300 cycles/h							
	AC-3	300 cycles/h							
	AC-2, AC-4	150 cycles/h							



3-phase motors



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

5

- (1) For the corresponding kW/A or hp/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) For currents above 275A use terminal enlargements or terminal extensions.
- (4) For currents above 450A use terminal enlargements or terminal extensions.

AF400 ... AF2650 3-pole contactors

Technical data

Main pole - Utilization characteristics according to IEC

Contactor types	AC / DC operated	AF400	AF460	AF580	AF750	AF1250	AF1350	AF1650	AF2050	AF2650			
Standards		IEC 60947-1 / 60947-4-1 and EN 60947-1 / 60947-4-1											
Rated operational voltage Ue max.		1000 V											
Rated frequency (without derating)		50/60 Hz											
Conventional free-air thermal current Ith													
acc. to IEC 60947-4-1, open contactors, $\theta \leq 40^\circ\text{C}$		600 A	700 A	800 A	1050 A	1260 A	1350 A	1650 A	2050 A	2650 A			
With conductor cross-sectional area (3)		2x185 mm ²	2x240 mm ²	2x240 mm ²	800 mm ² (4)	1000 mm ² (4)	1000 mm ² (5)	1500 mm ² (5)	2000 mm ² (5)	3000 mm ² (5)			
AC-1 Utilization category													
For air temperature close to contactor													
Ie / Rated operational current AC-1	$\theta \leq 40^\circ\text{C}$	600 A	700 A	800 A	1050 A	1260 A	1350 A	1650 A	2050 A	2650 A			
Ue max. $\leq 690\text{ V}$, 50/60 Hz	$\theta \leq 55^\circ\text{C}$	500 A	600 A	700 A	875 A	1040 A	1150 A	1450 A	1750 A	2350 A			
	$\theta \leq 70^\circ\text{C}$	400 A	480 A	580 A	720 A	875 A	1000 A	1270 A	1500 A	2120 A			
Ie / Rated operational current AC-1	$\theta \leq 40^\circ\text{C}$	600 A	700 A	800 A	1000 A	1260 A	1350 A	1650 A	2050 A	2650 A			
Ue max. $\leq 1000\text{ V}$, 50/60 Hz	$\theta \leq 55^\circ\text{C}$	500 A	600 A	700 A	875 A	1040 A	1150 A	1450 A	1750 A	2350 A			
	$\theta \leq 70^\circ\text{C}$	400 A	480 A	580 A	720 A	875 A	1000 A	1270 A	1500 A	2120 A			
With conductor cross-sectional area		2x185 mm ²	2x240 mm ²	2x240 mm ²	800 mm ² (4)	1000 mm ² (4)	1000 mm ² (5)	1500 mm ² (5)	2000 mm ² (5)	3000 mm ² (5)			
AC-3 Utilization category													
For air temperature close to contactor $\theta \leq 55^\circ\text{C}$													
Ie / Max. rated operational current AC-3 (1)													
	220-230-240 V	400 A	460 A	580 A	750 A	-	860 A	1060 A	1060 A	-			
	380-400 V	400 A	460 A	580 A	750 A	-	860 A	1060 A	1060 A	-			
	415 V	400 A	460 A	580 A	750 A	-	860 A	1060 A	1060 A	-			
	440 V	400 A	460 A	580 A	750 A	-	860 A	1060 A	1060 A	-			
	500 V	400 A	460 A	580 A	750 A	-	800 A	970 A	970 A	-			
	690 V	350 A	400 A	500 A	650 A	-	800 A	970 A	970 A	-			
	1000 V	155 A	200 A	250 A	300 A	-	-	-	-	-			
	Rated operational power AC-3 (1)												
	220-230-240 V	110 kW	132 kW	160 kW	220 kW	-	257 kW	315 kW	-	-			
	380-400 V	200 kW	250 kW	315 kW	400 kW	-	475 kW	560 kW	-	-			
	415 V	220 kW	250 kW	355 kW	425 kW	-	500 kW	630 kW	630 kW	-			
	440 V	220 kW	250 kW	355 kW	450 kW	-	560 kW	710 kW	710 kW	-			
	500 V	250 kW	315 kW	400 kW	520 kW	-	560 kW	710 kW	-	-			
	690 V	315 kW	355 kW	500 kW	600 kW	-	800 kW	1000 kW	1000 kW	-			
	1000 V	220 kW	280 kW	355 kW	400 kW	-	-	-	-	-			
Rated making capacity AC-3		10 x Ie AC-3 acc. to IEC 60947-4-1											
Rated breaking capacity AC-3		8 x Ie AC-3 acc. to IEC 60947-4-1											
Short-circuit protection device for contactors													
without thermal overload relay													
Motor protection excluded (2)													
Ue $\leq 500\text{ V AC}$ - gG type fuse		630 A	800 A	1000 A	1000 A	Please consult us for coordination with circuit-breaker							
Rated short-time withstand current Icw	1 s	4600 A	4600 A	7000 A	7000 A	8000 A	10000 A	12000 A	12000 A	12000 A			
at 40 °C ambient temperature,	10 s	4400 A	4400 A	6400 A	6400 A	7200 A	8000 A	10000 A	10000 A	10000 A			
in free air from a cold state	30 s	3100 A	3100 A	4500 A	4500 A	5200 A	6000 A	7500 A	7500 A	7500 A			
	1 min	2500 A	2500 A	3500 A	3500 A	4000 A	4500 A	5500 A	5500 A	5500 A			
	15 min	840 A	840 A	1300 A	1300 A	1500 A	1600 A	2200 A	2200 A	2800 A			
Maximum breaking capacity													
cos $\phi = 0.45$	at 440 V	4000 A	5000 A	6000 A	7500 A					10000 A	12000 A	8400 A	8400 A
(cos $\phi = 0.35$ for Ie > 100 A)	at 690 V	3500 A	4500 A	5000 A	7000 A					-	-	-	-
Power dissipation per pole													
	Ie / AC-1	30 W	42 W	32 W	50 W	80 W	80 W	80 W	125 W	200 W			
	Ie / AC-3	16 W	21 W	17 W	28 W	-	50 W	50 W	-	-			
Max. electrical switching frequency													
	AC-1	300 cycles/h		300 cycles/h		300 cycles/h		60 cycles/h		60 cycles/h			
	AC-3	300 cycles/h		300 cycles/h		-		60 cycles/h		-			
	AC-2, AC-4	60 cycles/h		60 cycles/h		-		60 cycles/h		-			



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(1) For the corresponding kW/A or hp/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) Conductors with preparation.
 (4) Max. connection bar width 50 mm.
 (5) Max. connection bar width 100 mm.

AF09 ... AF38 3-pole contactors

Technical data

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

Contactor types	AC / DC operated	AF09	AF12	AF16	AF26	AF30	AF38
Standards		UL 508, CSA C22.2 N°60947-4-1					
Max. operational voltage		600 V					
NEMA size		00	0	-	1	-	-
NEMA continuous amp rating	Thermal current	9 A	18 A	-	27 A	-	-
NEMA maximum horse power ratings							
1-phase, 60 Hz	115 V AC	1/3 hp	1 hp	-	2 hp	-	-
	230 V AC	1 hp	2 hp	-	3 hp	-	-
NEMA maximum horse power ratings							
3-phase, 60 Hz	200 V AC	1-1/2 hp	3 hp	-	7-1/2 hp	-	-
	230 V AC	1-1/2 hp	3 hp	-	7-1/2 hp	-	-
	460 V AC	2 hp	5 hp	-	10 hp	-	-
	575 V AC	2 hp	5 hp	-	10 hp	-	-
UL / CSA general use rating							
600 V AC		25 A	28 A	30 A	45 A	50 A	50 A
With conductor cross-sectional area		AWG 10	AWG 10	AWG 10	AWG 8	AWG 8	AWG 8
UL / CSA maximum 1-phase motor rating							
Full load current	120 V AC	13.8 A	16 A	20 A	24 A	24 A	24 A
	240 V AC	10 A	12 A	17 A	17 A	28 A	28 A
Horse power rating	120 V AC	3/4 hp	1 hp	1-1/2 hp	2 hp	2 hp	2 hp
	240 V AC	1-1/2 hp	2 hp	3 hp	3 hp	5 hp	5 hp
UL / CSA maximum 3-phase motor rating							
Full load current (1)	200-208 V AC	7.8 A	11 A	17.5 A	25.3 A	32.2 A	32.2 A
	220-240 V AC	6.8 A	9.6 A	15.2 A	22 A	28 A	28 A
	440-480 V AC	7.6 A	11 A	14 A	21 A	27 A	34 A (3)
	550-600 V AC	9 A	11 A	17 A	22 A	27 A (2)	32 A (3)
Horse power rating (1)	200-208 V AC	2 hp	3 hp	5 hp	7-1/2 hp	10 hp	10 hp
	220-240 V AC	2 hp	3 hp	5 hp	7-1/2 hp	10 hp	10 hp
	440-480 V AC	5 hp	7-1/2 hp	10 hp	15 hp	20 hp	25 hp (3)
	550-600 V AC	7-1/2 hp	10 hp	15 hp	20 hp	25 hp (2)	30 hp (3)
Short-circuit protection device for contactors							
without thermal overload relay - Motor protection excluded							
High fault current		100 kA					
Fuse rating		30 A	30 A	60 A	60 A	100 A	100 A
Fuse type, 600 V		J					
Max. electrical switching frequency							
For general use		600 cycles/h					
For motor use		1200 cycles/h					

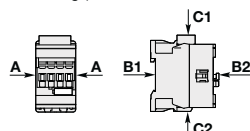
(1) For the corresponding kW/A or hp/A values of 1500 r.p.m, 50 Hz or 1800 r.p.m, 60 Hz, 3-phase motors, see "Motor rated operational powers and currents".

(2) For contactors produced since week 49-2011.

(3) For contactors produced since week 36-2014.

General technical data

Contactor types	AC / DC operated	AF09	AF12	AF16	AF26	AF30	AF38
Rated insulation voltage U_i							
acc. to IEC 60947-4-1		690 V					
acc. to UL / CSA		600 V					
Rated impulse withstand voltage U_{imp}		6 kV					
Electromagnetic compatibility		Devices complying with IEC 60947-1 / EN 60947-1 - Environment A					
Ambient air temperature close to contactor							
Operation	Fitted with thermal overload relay	-25...+60 °C					
	Without thermal overload relay	-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					
	A	30 g					
	B1	25 g closed position / 5 g open position					
	B2	15 g					
	C1	25 g					
	C2	25 g					
Vibration withstand							
acc. to IEC 60068-2-6		5...300 Hz					
		4 g closed position / 2 g open position					



AF40 ... AF96 3-pole contactors

Technical data

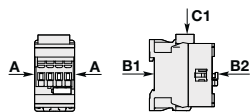
Main pole - Utilization characteristics according to UL / NEMA / CSA

Contactor types	AC / DC operated	AF40	AF52	AF65	AF80	AF96
Standards		UL 60947-4-1, CSA C22.2 N°60947-4-1				
Maximum operational voltage		600 V				
NEMA size		2	-	-	3	-
NEMA continuous amp rating	Thermal current	45 A	-	-	90 A	-
NEMA maximum horse power ratings 1-phase, 60 Hz	115 V AC	3 hp	-	-	-	-
	230 V AC	7.5 hp	-	-	-	-
NEMA maximum horse power ratings 3-phase, 60 Hz	200 V AC	10 hp	-	-	25 hp	-
	230 V AC	15 hp	-	-	30 hp	-
	460 V AC	25 hp	-	-	50 hp	-
	575 V AC	25 hp	-	-	50 hp	-
UL / CSA general use rating 600 V AC		60 A	80 A	90 A	105 A	115 A
With conductor cross-sectional area		AWG 6	AWG 4	AWG 3	AWG 2	AWG 2
UL / CSA maximum 1-phase motor rating						
Full load current	120 V AC	34 A	34 A	56 A	80 A	80 A
	240 V AC	40 A	50 A	68 A	68 A	88 A
Horse power rating	120 V AC	3 hp	3 hp	5 hp	7-1/2 hp	7-1/2 hp
	240 V AC	7-1/2 hp	10 hp	15 hp	15 hp	20 hp
UL / CSA maximum 3-phase motor rating						
Full load current (1)	200-208 V AC	32.2 A	48.3 A	62.1 A	78.2 A	92 A
	220-240 V AC	42 A	54 A	68 A	80 A	80 A
	440-480 V AC	40 A	52 A	65 A	77 A	77 A
	550-600 V AC	41 A	52 A	62 A	77 A	77 A
Horse power rating (1)	200-208 V AC	10 hp	15 hp	20 hp	25 hp	30 hp
	220-240 V AC	15 hp	20 hp	25 hp	30 hp	30 hp
	440-480 V AC	30 hp	40 hp	50 hp	60 hp	60 hp
	550-600 V AC	40 hp	50 hp	60 hp	75 hp	75 hp
Short-circuit protection device for contactors without thermal overload relay - Motor protection excluded						
High fault current		100 kA				
Fuse rating		150 A	150 A	150 A	200 A	200 A
Fuse type, 600 V		J				
Maximum electrical switching frequency						
For general use		600 cycles/h				
For motor use		1200 cycles/h				

(1) For the corresponding kW/A or hp/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".

General technical data

Contactor types	AC / DC operated	AF40	AF52	AF65	AF80	AF96
Rated insulation voltage Ui		690 V				1000 V
acc. to IEC 60947-4-1		600 V				
acc. to UL / CSA		6 kV				
Rated impulse withstand voltage Uimp.		8 kV				
Electromagnetic compatibility		Devices complying with IEC 60947-1 / EN 60947-1 - Environment A and B				
Ambient air temperature close to contactor						
Operation	Fitted with thermal overload relay	-25...+60 °C				
	Without thermal overload relay	-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				
Maximum 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				
	A	25 g				
	B1	25 g closed position / 5 g open position				
	B2	15 g				
	C1	25 g				
	C2	25 g				
Vibration withstand		5...300 Hz				
acc. to IEC 60068-2-6		3 g closed position / 3 g open position				



AF116 ... AF370 3-pole contactors

Technical data

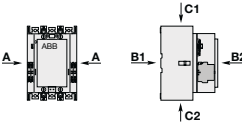
Main pole - Utilization characteristics according to UL / NEMA / CSA

Contactor types	AC / DC operated	AF116	AF140	AF146	AF190	AF205	AF265	AF305	AF370
Standards		UL 60947-1 / 60947-4-1A and CSA 60947-1 / 60947-4-1A							
Maximum operational voltage		600V							
NEMA size		—	4	—	—	—	5	—	—
NEMA continuous amp rating	Thermal current	—	135 A	—	—	—	270 A	—	—
NEMA maximum horse power ratings									
1-phase, 60 Hz	115 V AC	—	—	—	—	—	—	—	—
	230 V AC	—	—	—	—	—	—	—	—
NEMA maximum horse power ratings									
3-phase, 60 Hz	200 V AC	—	40 hp	—	—	—	75 hp	—	—
	230 V AC	—	50hp	—	—	—	100 hp	—	—
	460 V AC	—	100 hp	—	—	—	200 hp	—	—
	575 V AC	—	100 hp	—	—	—	200 hp	—	—
UL / CSA general use rating									
600 V AC		160 A	200 A	200 A	250 A	300 A	350 A	400 A	520 A
With conductor cross-sectional area		AWG 2/0	AWG 3/0	AWG 3/0	MCM 250	MCM 350 (2)	MCM 500	2//AWG 3/0	2//MCM 300
UL / CSA maximum 1-phase motor rating									
Full load current	120 V AC	—	—	—	—	—	—	—	—
	240 V AC	—	—	—	—	—	—	—	—
Horse power rating	120 V AC	—	—	—	—	—	—	—	—
	240 V AC	—	—	—	—	—	—	—	—
UL / CSA maximum 3-phase motor rating									
Full load current (1)	200-208 V AC	92 A	120 A	120 A	150 A	177 A	221 A	285 A	359 A
	220-240 V AC	104 A	130 A	130 A	154 A	192 A	248 A	312 A	360 A
	440-480 V AC	96 A	124 A	124 A	156 A	180 A	240 A	302 A	361 A
	550-600 V AC	99 A	125 A	125 A	144 A	192 A	242 A	289 A	336 A
Horse power rating (1)	200-208 V AC	30 hp	40 hp	40 hp	50 hp	60 hp	75 hp	100 hp	125 hp
	220-240 V AC	40 hp	50 hp	50 hp	60 hp	75 hp	100 hp	125 hp	150 hp
	440-480 V AC	75 hp	100 hp	100 hp	125 hp	150 hp	200 hp	250 hp	300 hp
	550-600 V AC	100 hp	125 hp	125 hp	150 hp	200 hp	250 hp	300 hp	350 hp
Short-circuit protection device for contactors									
without thermal overload relay - Motor protection excluded									
High fault current		100 kA							
Fuse rating		225 A	250 A	250 A	450 A	400 A	500 A	600 A	800 A
Fuse type, 600 V		J							
Maximum electrical switching frequency									
For general use		300 cycles/h							
For motor use		300 cycles/h							

(1) For the corresponding kW/A or hp/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 conductor cross-sectional area above MCM 300 use terminal enlargements LW205.

General technical data

Contactor types	AC / DC operated	AF116	AF140	AF146	AF190	AF205	AF265	AF305	AF370
Rated insulation voltage Ui									
acc. to IEC 60947-4-1		1000 V							
acc. to UL / CSA		600 V							
Rated impulse withstand voltage Uimp.		8 kV							
Electromagnetic compatibility		AF contactors comply with IEC 60947-1 / EN 60947-1 - Environment A							
Ambient air temperature close to contactor									
Operation	Fitted with thermal overload relay	-25 to +55 °C							
	Without thermal overload relay	-40 to +70 °C							
Storage		-40 to +70 °C							
Maximum operating altitude (without derating)		3000 m							
Mechanical durability									
Number of operating cycles		5 million operating cycles							
Maximum switching frequency		300 cycles/h							
Shock withstand									
acc. to IEC 60068-2-27 and EN 60068-2-27									
Mounting position 1		No change in contact position, closed or open position							
	Shock direction	1/2 sinusoidal shock for 11 ms				1/2 sinusoidal shock for 30 ms			
	A	20 g				20 g			
	B1	15 g closed position / 3 g open position				15 g closed position / 3 g open position			
	B2	15 g closed position / 3 g open position				15 g closed position / 3 g open position			
	C1	20 g				20 g			
	C2	20 g				20 g			
Vibration withstand									
acc to IEC 60068-2-6		0.7 g closed position / 0.7 g open position 13.2...100 Hz							

AF400 ... AF2650 3-pole contactors

Technical data

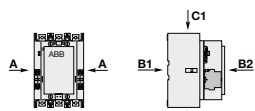
Main pole - Utilization characteristics according to UL / NEMA / CSA

Contactor types	AC / DC operated	AF400	AF460	AF580	AF750	AF1250	AF1350	AF1650	AF2050	AF2650	
Standards		UL 508, CSA C22.2 N°14									
Maximum operational voltage		600 V						1000 V			
NEMA size		-	6	-	7	-	-	8	-	-	
NEMA maximum horse power ratings											
1-phase, 60 Hz	115 V AC	-	-	-	-	-	-	-	-	-	
	230 V AC	-	-	-	-	-	-	-	-	-	
NEMA maximum horse power ratings											
3-phase, 60 Hz	200 V AC	-	150 hp	-	-	-	-	-	-	-	
	230 V AC	-	200 hp	-	300 hp	-	-	450 hp	-	-	
	460 V AC	-	400 hp	-	600 hp	-	-	900 hp	-	-	
	575 V AC	-	400 hp	-	600 hp	-	-	900 hp	-	-	
UL / CSA general use rating											
1000 V AC		550 A	650 A	750 A	900 A	1210 A	1350 A	1650 A	2100 A	2700 A	
UL / CSA maximum 1-phase motor rating											
Full load current	120 V AC	-	-	-	-	-	-	-	-	-	
	240 V AC	-	-	-	-	-	-	-	-	-	
Horse power rating	120 V AC	-	-	-	-	-	-	-	-	-	
	240 V AC	-	-	-	-	-	-	-	-	-	
UL / CSA maximum 3-phase motor rating											
Full load current (1)	200-208 V AC	358.8 A	414 A	552 A	692.3 A	-	954 A	1030 A	-	-	
	220-240 V AC	360 A	480 A	604 A	722 A	-	954 A	1030 A	-	-	
	440-480 V AC	414 A	477 A	590 A	722 A	-	954 A	1030 A	-	-	
	550-600 V AC	382 A	472 A	578 A	672 A	-	944 A	1050 A	-	-	
Horse power rating (1)	200-208 V AC	125 hp	150 hp	200 hp	250 hp	-	-	-	-	-	
	220-240 V AC	150 hp	200 hp	250 hp	300 hp	-	400 A	450 hp	-	-	
	440-480 V AC	350 hp	400 hp	500 hp	600 hp	-	800 A	900 hp	-	-	
	550-600 V AC	400 hp	500 hp	600 hp	700 hp	-	1000 A	1150 hp	-	-	
Short-circuit protection device for contactors											
without thermal overload relay - Motor protection excluded											
Fuse rating		1000 A			1200 A			Please consult us for coordination with circuit-breaker			
Fuse type, 600 V		L									
Maximum electrical switching frequency											
For general use		300 cycles/h					60 cycles/h			15 cycles/h	
For motor use		300 cycles/h					60 cycles/h			-	

(1) For the corresponding kW/A or hp/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".

General technical data

Contactor types	AC / DC operated	AF400	AF460	AF580	AF750	AF1250	AF1350	AF1650	AF2050	AF2650	
Rated insulation voltage Ui											
acc. to IEC 60947-4-1		1000 V									
acc. to UL / CSA		600 V						1000 V			
Rated impulse withstand voltage Uimp		8 kV									
Electromagnetic compatibility		AF contactors complying with IEC 60947-1 / EN 60947-1 - Environment A									
Ambient air temperature close to contactor											
Operation	Fitted with electronic overload relay	-25 to +70 °C									
	Without electronic overload relay	-40 to +70 °C									
Storage		-40 to +70 °C									
Maximum operating altitude (without derating)		3000 m									
Mechanical durability											
Number of operating cycles		3 millions operating cycles				0.5 million operating cycles			0.3 million operating cycles		
Max. switching frequency		300 cycles/h					60 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 30 ms: no change in contact position, closed or open position									
A		5 g									
B1		5 g									
B2		5 g									
C1		5 g									
C2		5 g									



AF09 ... AF38 3-pole contactors

Technical data

Magnet system characteristics

Contactor types	AC / DC operated	AF09	AF12	AF16	AF26	AF30	AF38
Coil operating limits acc. to IEC 60947-4-1	AC supply	At $\theta \leq 60\text{ }^\circ\text{C}$ $0.85 \times U_c \text{ min...} 1.1 \times U_c \text{ max.}$ At $\theta \leq 70\text{ }^\circ\text{C}$ $0.85 \times U_c \text{ min...} U_c \text{ max.}$					
	DC supply	At $\theta \leq 60\text{ }^\circ\text{C}$ $0.85 \times U_c \text{ min...} 1.1 \times U_c \text{ max.}$ At $\theta \leq 70\text{ }^\circ\text{C}$ (AF) $0.85 \times U_c \text{ min...} U_c \text{ max.}$ - (AF..Z) $0.85 \times U_c \text{ min...} 1.1 \times U_c \text{ max.}$					
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) 16 VA					
	Average holding value	(AF) 2.2 VA / 2 W - (AF..Z) 1.7 VA / 1.5 W					
DC control voltage							
Rated control circuit voltage U_c		12...500 V DC					
Coil consumption	Average pull-in value	(AF) 50 W - (AF..Z) 12...16 W					
	Average holding value	(AF) 2 W - (AF..Z) 1.7 W					
PLC-output control		(AF..Z) $\geq 500\text{ mA}$ 24 V DC					
Drop-out voltage		$\leq 60\%$ of $U_c \text{ min.}$					
Voltage sag immunity acc. to SEMI F47-0706		(AF..Z) conditions of use on request					
Dips withstand $-20\text{ }^\circ\text{C} \leq \theta \leq +60\text{ }^\circ\text{C}$		(AF..Z) 22 ms average for $U_c \geq 24\text{ V}$ 50/60 Hz or $U_c \geq 20\text{ V DC}$					
Operating time							
Between coil energization and:	N.O. contact closing	40...95 ms					
	N.C. contact opening	38...90 ms					
Between coil de-energization and:	N.O. contact opening	11...95 ms					
	N.C. contact closing	13...98 ms					

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Mounting characteristics and conditions for use

Contactor types	AC / DC operated	AF09	AF12	AF16	AF26	AF30	AF38
Mounting positions							
Mounting distances		Max. N.C. built-in and add-on N.C. auxiliary contacts: see accessory fitting details for a 3-pole contactor AF09 ... AF38					
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					
	By screws (not supplied)	2 x M4 screws placed diagonally					

AF40 ... AF96 3-pole contactors

Technical data

Magnet system characteristics

Contactor types	AC / DC operated	AF40	AF52	AF65	AF80	AF96
Coil operating limits acc. to IEC 60947-4-1	AC supply	At $\theta \leq 70^\circ\text{C}$ $0.85 \times U_c$ min... $1.1 \times U_c$ max.				
	DC supply	At $\theta \leq 70^\circ\text{C}$ $0.85 \times U_c$ min... $1.1 \times U_c$ max.				
AC control voltage 50/60 Hz						
Rated control circuit voltage U_c		24...500 V AC				
Coil consumption	Average pull-in value	25 VA				40 VA
	Average holding value	4 VA / 2 W				
DC control voltage						
Rated control circuit voltage U_c		20...500 V DC				
Coil consumption	Average pull-in value	25 W				40 W
	Average holding value	2 W				
PLC-output control		-				
Drop-out voltage		$\leq 60\%$ of U_c min.				
Voltage sag immunity acc. to SEMI F47-0706		conditions of use on request				
Dips withstand $-20^\circ\text{C} \leq \theta \leq +60^\circ\text{C}$		24 ms average				
Operating time						
Between coil energization and:	N.O. contact closing	42...100 ms				
	N.C. contact opening	38...95 ms				
Between coil de-energization and:	N.O. contact opening	17...100 ms				
	N.C. contact closing	19...105 ms				

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Mounting characteristics and conditions for use

Contactor types	AC / DC operated	AF40	AF52	AF65	AF80	AF96
Mounting positions						
Max. N.C. built-in and add-on N.C. auxiliary contacts: see accessory fitting details for a 3-pole contactor AF40 ... AF96						
Mounting distances						
The contactors can be assembled side by side						
Fixing						
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				

AF116 ... AF370 3-pole contactors

Technical data

Magnet system characteristics

Contactor types	AC / DC operated	AF116	AF140	AF146	AF190	AF205	AF265	AF305	AF370
Coil operating limits	AC supply	At $\theta \leq 70^\circ\text{C}$ $0.85 \times U_c \text{ min} \dots 1.1 \times U_c \text{ max}$							
acc. to IEC 60947-4-1	DC supply	At $\theta \leq 70^\circ\text{C}$ $0.80 \times U_c \text{ min} \dots 1.1 \times U_c \text{ max}$							
Rated control circuit voltage U_c		24...500 V AC, 20...500 V DC							
Coil consumption									
AC control voltage 50/60 Hz									
24...60 V AC	Average pull-in value	225 VA			165 VA		475 VA		
	Average holding value	5.5 VA			6 VA		8.5 VA		
48...130 V AC	Average pull-in value	170 VA			175 VA		340 VA		
	Average holding value	4 VA			4 VA		17 VA		
100...250 V AC	Average pull-in value	130 VA			220 VA		385 VA		
	Average holding value	6 VA			7 VA		17.5 VA		
250...500 V AC	Average pull-in value	205 VA			185 VA		420 VA		
	Average holding value	16 VA			16 VA		21 VA		
DC control voltage									
20...60 V DC	Average pull-in value	210 W			205 W		400 W		
	Average holding value	2.5 W			2.5 W		3.5 W		
48...130 V DC	Average pull-in value	130 W			130 W		360 W		
	Average holding value	2.5 W			2.5 W		2.5 W		
100...250 V DC	Average pull-in value	135 W			190 W		410 W		
	Average holding value	3 W			2.5 W		4.5 W		
250...500 V DC	Average pull-in value	205 W			190 W		600 W		
	Average holding value	4 W			4 W		4.7 W		
Drop-out voltage		55 % of $U_c \text{ min}$							
Operating time									
Coil supply between A1 - A2									
Between coil energization and:	N.O. contact closing	20...55 ms			25...60 ms		30...60 ms		
Between coil de-energization and:	N.O. contact opening	40...70 ms			45...80 ms		45...80 ms		

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Mounting characteristics and conditions for use

Contactor types	AC / DC operated	AF116	AF140	AF146	AF190	AF205	AF265	AF305	AF370
Mounting positions									
Mounting distances		Max. add-on N.O. or N.C. auxiliary contacts: see accessory fitting details for 3-pole contactor AF116 ... AF370							
Fixing		The contactors can be assembled side by side							
On rail acc. to IEC 60715, EN 60715		-							
By screws (not supplied)		4 x M5							

AF400 ... AF2650 3-pole contactors

Technical data

Magnet system characteristics

Contactor types	AC / DC operated	AF400	AF460	AF580	AF750	AF1250	AF1350	AF1650	AF2050	AF2650	
Coil operating limits acc. to IEC 60947-4-1	AC supply	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 $\theta \leq 70^\circ\text{C}$ $0.80 \times U_c \text{ min} \dots 1.1 \times U_c \text{ max}$									
Rated control circuit voltage U_c		48...500 V AC, 24...500 V DC					100...250 V AC or DC				
Coil consumption											
AC control voltage 50/60 Hz											
48...130 V AC	Average pull-in value	1215 VA		1100 VA		-					
	Average holding value	12 VA		12 VA		-					
100...250 V AC	Average pull-in value	955 VA		880 VA		2450 VA					
	Average holding value	12 VA		12 VA		48 VA					
250 ... 500 V AC	Average pull-in value	950 VA		985 VA		-					
	Average holding value	12 VA		12 VA		-					
DC control voltage											
24...60 V DC											
48...130 V DC	Average pull-in value	900 VA		785 VA		-					
	Average holding value	5 VA		5.5 VA		-					
100...250 V DC	Average pull-in value	1150 VA		1020 VA		-					
	Average holding value	5 VA		5 VA		-					
250 ... 500 V DC	Average pull-in value	895 VA		880 VA		2290 VA					
	Average holding value	5 VA		5 VA		20.5 VA					
250 ... 500 V DC	Average pull-in value	885 VA		910 VA		-					
	Average holding value	7.5 VA		7.5 VA		-					
Drop-out voltage		55 % of $U_c \text{ min.}$									
Voltage sag immunity acc. to SEMI F47		Conditions of use on request									
Dips withstand		$\geq 20 \text{ ms}$									
Operating time											
Coil supply between A1 - A2											
Between coil energization and:	Main contact closing	50...120 ms					50...80 ms				
Between coil de-energization and:	Main contact opening	33...70 ms					35...55 ms				
Control input for PLC's											
Between coil energization and:	Main contact closing	40...60 ms		40...90 ms		40...65 ms					
Between coil de-energization and:	Main contact opening	10...30 ms				10...30 ms					

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Mounting characteristics and conditions for use

Contactor types	AC / DC operated	AF400	AF460	AF580	AF750	AF1250	AF1350	AF1650	AF2050	AF2650
Mounting positions										
Max. add-on N.O. or N.C. auxiliary contacts: see accessory fitting details for 3-pole contactor AF400 ... AF2650										
Mounting distances										
The contactors can be assembled side by side										
Fixing										
On rail according to IEC 60715, EN 60715										
By screws (not supplied)										
		4 x M5		4 x M6		4 x M8				

AF09 ... AF38 3-pole contactors

Technical data

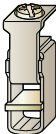















Connecting characteristics

Contactors types	AC / DC operated	AF09	AF12	AF16	AF26	AF30	AF38
Main terminals		 Screw terminals with cable clamp					
Connection capacity (min. ... max.)							
Main conductors (poles)							
 Rigid	Solid ($\leq 4 \text{ mm}^2$)	} 1 x	1...6 mm ²			2.5...10 mm ²	
 Stranded ($\geq 6 \text{ mm}^2$)			2 x 1...6 mm ²			2.5...10 mm ²	
 Flexible with non insulated ferrule		1 x	0.75...6 mm ²			1.5...10 mm ²	
 Flexible with insulated ferrule		2 x	0.75...6 mm ²			1.5...10 mm ²	
 Flexible with insulated ferrule		1 x	0.75...4 mm ²			1.5...10 mm ²	
 Flexible with insulated ferrule		2 x	0.75...2.5 mm ²			1.5...4 mm ²	
 Bars or lugs		L <	9.6 mm			12.5 mm	
Connection capacity acc. to UL/CSA		1 or 2 x	AWG 16...10			AWG 14...8	
Stripping length			10 mm			14 mm	
Tightening torque			1.5 Nm / 13 lb.in			2.5 Nm / 22 lb.in	
Auxiliary conductors (built-in auxiliary terminals + 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							
Coil terminals			1.2 Nm / 11 lb.in				
Built-in auxiliary terminals			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				
Coil terminals			IP20				
Built-in auxiliary terminals			IP20				
Screw terminals							
Delivered in open position, screws of unused terminals must be tightened							
Main terminals			M3.5			M4	
		Screwdriver type	Flat Ø 5.5 / Pozidriv 2			Flat Ø 6.5 / Pozidriv 2	
Coil terminals			M3.5				
		Screwdriver type	Flat Ø 5.5 / Pozidriv 2				
Built-in auxiliary terminals			M3.5				
		Screwdriver type	Flat Ø 5.5 / Pozidriv 2				

AF40 ... AF96 3-pole contactors

Technical data

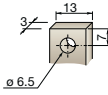
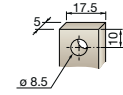
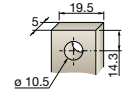











Connecting characteristics

Contactor types	AC / DC operated	AF40	AF52	AF65	AF80	AF96
Main terminals						
		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	6...35 mm ²			6...70 mm ²
	Stranded ($\geq 6 \text{ mm}^2$)	2 x	6...35 mm ²			6...50 mm ²
	Flexible with non insulated ferrule	1 x	4...35 mm ²			6...50 mm ²
		2 x	4...35 mm ²			6...50 mm ²
	Flexible with insulated ferrule	1 x	4...35 mm ²			6...50 mm ²
		2 x	4...35 mm ²			6...50 mm ²
	Bars or lugs	L <	9.2 mm			12.2 mm
Connection capacity acc. to UL/CSA		1 or 2 x	AWG 10...2			AWG 6...1
Stripping length			16 mm			17 mm
Tightening torque			4 Nm / 35 lb.in			6 Nm / 53 lb.in
Auxiliary conductors						
(built-in auxiliary terminals + coil terminals)						
	Rigid solid	1 x	1...2.5 mm ²			
		2 x	1...2.5 mm ²			
	Flexible with non insulated ferrule	1 x	0.75...2.5 mm ²			
		2 x	0.75...2.5 mm ²			
	Flexible with insulated ferrule	1 x	0.75...2.5 mm ²			
		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						
Coil terminals			1.2 Nm / 11 lb.in			
Built-in auxiliary terminals			1.2 Nm / 11 lb.in			
Degree of protection						
acc. to IEC 60947-1 / EN 60947-1 and IEC 60529 / EN 60529						
Main terminals			IP10			
Coil terminals			IP20			
Built-in auxiliary terminals			IP20			
Screw terminals						
Main terminals			Delivered in open position, screws of unused terminals must be tightened			
			M6			M8
		Screwdriver type	Flat Ø 6.5 / Pozidriv 2			Hexagon socket (s = 4 mm)
Coil terminals			M3.5			
		Screwdriver type	Flat Ø 5.5 / Pozidriv 2			
Built-in auxiliary terminals			M3.5			
		Screwdriver type	Flat Ø 5.5 / Pozidriv 2			

AF116 ... AF370 3-pole contactors

Technical data

Connecting characteristics

Contactor types	AC / DC operated	AF116	AF140	AF146	AF190	AF205	AF265	AF305	AF370
Main terminals									
Flat type									
									
Connection capacity (min. ... max.)									
Main conductors (poles)									
	Cu cable - Stranded	1 x	10...95 mm ²		6...150 mm ²		16...300 mm ²		
	Clamp type		LD... included (1)		1SDA066917R1		1SDA055016R1		
	Tightening torque		8 Nm		14 Nm		25 Nm		
	Cu cable - Stranded	2 x	10...95 mm ²		50...120 mm ²		70...185 mm ²		
	Clamp type		LD... included (1)		1SFN074709R1000, LZ185-2C/120		1SCA022194R0890, OZXB4		
	Tightening torque		8 Nm		16 Nm		22 Nm		
	Al cable - Stranded	1 x	–		95...185 mm ²		185...240 mm ²		
	Clamp type		–		1SDA054988R1		1SDA055020R1		
	Tightening torque		–		31 Nm		43 Nm		
	Cu cable - Flexible	1 x	10...70 mm ²		6...120 mm ²		16...240 mm ²		
	Clamp type		LD... included (1)		1SDA066917R1		1SDA055016R1		
	Tightening torque		8 Nm		14 Nm		25 Nm		
	Cu cable - Flexible	2 x	10...70 mm ²		50...95 mm ²		70...185 mm ²		
	Clamp type		LD... included (1)		1SFN074709R1000, LZ185-2C/120		1SCA022194R0890, OZXB4		
	Tightening torque		8 Nm		16 Nm		22 Nm		
	Lugs	W ≤	22 mm (.866 in)		24 mm (.945 in)		32 mm (1.260 in)		
		Ø >	6 mm (.236 in)		8 mm (.315 in)		10 mm (.394 in)		
	Socket type		LL... included		LL... included		LL... included		
	Tightening torque		9 Nm / 80 lb.in		18 Nm / 160 lb.in		28 Nm / 248 lb.in		
Connection capacity acc. to UL / CSA		1 x	AWG 6...3/0		6...300 MCM		4...400 MCM		
	Clamp type		LD... included (1)		ATK185 (2)		ATK300 (2)		
	Tightening torque		8 Nm / 71 lb.in		34 Nm / 301 lb.in		42 Nm / 372 lb.in		
Connection capacity acc. to UL / CSA		2 x	AWG 6...3/0		–		4...500 MCM		
	Clamp type		LD... included (1)		–		ATK300/2 (2)		
	Tightening torque		8 Nm / 71 lb.in		–		42 Nm / 372 lb.in		
Auxiliary conductors									
(coil terminals)									
	Solid / stranded	1 x	1...4 mm ²						
		2 x	1...4 mm ²						
	Flexible	1 x	0.75...2.5 mm ²						
		2 x	0.75...2.5 mm ²						
	Flexible with non insulated ferrule	1 x	0.75...2.5 mm ²						
		2 x	0.75...2.5 mm ²						
	Flexible with insulated ferrule	1 x	0.75...2.5 mm ²						
		2 x	0.75...2.5 mm ²						
	Lugs	L <	8 mm						
		L >	3.5 mm						
Connection capacity acc. to UL / CSA		1 or 2 x	AWG 18...14						
Stripping length			9 mm						
Tightening torque			1.00 Nm / 9 lb.in						
Degree of protection									
acc. to IEC 60947-1 / EN 60947-1 and IEC 60529 / EN 60529									
Main terminals			IP00						
Coil terminals			IP20						
Screw terminals									
Main terminals			M6		M8		M10		
		Screwdriver type	Screws and bolts						
Coil terminals (delivered in open position)			M3.5						
		Screwdriver type	Flat Ø 5.5 mm / Pozidriv 2						

(1) LD... not included for AF116 ... AF146-30...B.

(2) Available in North America only.

AF400 ... AF2650 3-pole contactors

Technical data

Connecting characteristics

Contactor types	AC / DC operated	AF400	AF460	AF580	AF750	AF1250	AF1350	AF1650	AF2050	AF2650
Main terminals Flat type										
Connection capacity (min. ... max.)										
Main conductors (poles)										
	Cu cable - Stranded	2 x	240 mm ²							
	Clamp type		1SDA013922R1							
	Tightening torque		35 Nm							
	Cu cable - Stranded	3 x		185 mm ²						
	Clamp type			1SDA013956R1						
	Tightening torque		35 Nm	45 Nm						
	Al cable - Stranded	2 x	240 mm ²							
	Clamp type		1SDA013922R1							
	Tightening torque		35 Nm							
		3 x		185 mm ²						
	Clamp type			1SDA013956R1						
	Tightening torque		35 Nm	45 Nm						
	Lugs	W ≤	47 mm	50 mm			100 mm			
		Ø >	10 mm	12 mm						
	Tightening torque		35 Nm / 310 lb.in	45 Nm / 398 lb.in						
Connection capacity acc. to UL / CSA										
		2 x	250-500 MCM alt. 2/0			2// 3 x 0.25 in	4/0 AWG - 500 MCM	4//4 x 0.25 in		
	Clamp type		K6TH alt. ATK580			bars, use LW1250	K7TK ATK1350/4	K7TK	bars	
	Tightening torque		275 lb.in				375 lb.in			
Connection capacity acc. to UL / CSA										
		3 x	2/0 AWG-400 MCM	2/0 AWG-500 MCM			1/0-750 MCM			
	Clamp type		K6TJ	ATK750/3			K8TL, K8TM, ATK1650/4	K8TL, K8TM, ATK1650/4, ATK1650/6		
	Tightening torque		275 lb.in	375 lb.in			500 lb.in			
Auxiliary conductors (coil terminals)										
	Solid / stranded	1 x	1...4 mm ²							
		2 x	1...4 mm ²							
	Flexible	1 x	0.75...2.5 mm ²							
		2 x	0.75...2.5 mm ²							
	Flexible with non insulated ferrule	1 x	0.75...2.5 mm ²							
		2 x	0.75...2.5 mm ²							
	Flexible with insulated ferrule	1 x	0.75...2.5 mm ²							
		2 x	0.75...2.5 mm ²							
	Lugs	L ≤	8 mm							
		I >	3.7 mm							
Connection capacity acc. to UL / CSA										
	Tightening torque	Recommended	AWG 18...14							
		Max.	1.00 Nm / 9 lb.in							
			1.20 Nm							
Degree of protection acc. to IEC 60947-1 / EN 60947-1 and IEC 60529 / EN 60529										
	Main terminals		IP00							
	Coil terminals		IP20							
Screw terminals										
	Main terminals		M10	M12						
			Screws and bolts							
	Coil terminals (delivered in open position)		M3.5							
		Screwdriver type	Flat Ø 5.5 mm / Pozidriv 2							

AF09 ... AF96 3-pole contactors

Technical data

Built-in auxiliary contacts according to IEC

Contactor types	AC / DC operated	AF09	AF12	AF16	AF26	AF30	AF38	AF40	AF52	AF65	AF80	AF96
Rated operational voltage U _e max.		690 V										
Rated frequency (without derating)		50 / 60 Hz										
Conventional free air thermal current I _{th} - θ ≤ 40 °C		16 A										
le / Rated operational current AC-15		6 A										
acc. to IEC 60947-5-1	24-127 V 50/60 Hz	4 A										
	220-240 V 50/60 Hz	3 A										
	400-440 V 50/60 Hz	2 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										
le / Rated operational current DC-13		6 A / 144 W										
acc. to IEC 60947-5-1	24 V DC	2.8 A / 134 W										
	48 V DC	1 A / 72 W										
	72 V DC	0.55 A / 60 W										
	110 V DC	0.55 A / 69 W										
	125 V DC	0.27 A / 60 W										
	220 V DC	0.27 A / 68 W										
	250 V DC	0.15 A / 60 W										
	400 V DC	0.13 A / 65 W										
	500 V DC	0.1 A / 60 W										
	600 V DC											
Short-circuit protection device gG type fuse		10 A										
Rated short-time withstand current I _{sw}	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										
Power dissipation per pole at 6 A		0.1 W										
Max. electrical switching frequency	AC-15	1200 cycles/h										
	DC-13	900 cycles/h										
Mechanically linked contacts		Built-in N.O. or N.C. auxiliary contacts and additional N.O. or N.C. auxiliary contacts (CA4, CAL4, CAT4 aux. contact blocks) are mechanically linked contacts.										
acc. to annex L of IEC 60947-5-1												
Mirror contacts		Built-in N.C. auxiliary contacts or additional N.C. auxiliary contacts (CA4, CAL4, CAT4 aux. contact blocks) are mirror contacts.										
acc. to annex F of IEC 60947-4-1												

5

Built-in auxiliary contacts according to UL / CSA

Contactor types	AC / DC operated	AF09	AF12	AF16	AF26	AF30	AF38	AF40	AF52	AF65	AF80	AF96
Max. operational voltage		600 V AC, 600 V DC										
Pilot duty		A600, Q600										
AC thermal rated current		10 A										
AC maximum volt-ampere making		7200 VA										
AC maximum volt-ampere breaking		720 VA										
DC thermal rated current		2.5 A										
DC maximum volt-ampere making-breaking		69 VA										

3-pole contactors

Electrical durability and utilization categories

General

Utilization categories determine the current making and breaking conditions relating to the characteristics of the loads to be controlled by the contactors. International standard IEC 60947-4-1 and European standard EN 60947-4-1 are the standards to be referred to.

If I_c is the current to be broken by the contactor and I_e the rated operational current normally drawn by the load, then:

- Categories AC-1 and AC-3: $I_c = I_e$
- Category AC-2: $I_c = 2.5 \times I_e$
- Category AC-4: $I_c = 6 \times I_e$

Generally speaking $I_c = m \times I_e$ where m is a multiple of the load operational current.

On next pages, the curves corresponding to categories AC-1, AC-3 and AC-4 represent the electrical durability variation of standard contactors in relation to the breaking current I_c .

Electrical durability is expressed in millions of operating cycles.

Curve utilization mode

Electrical durability forecast and contactor selection for categories AC-1, AC-2, AC-3 or AC-4

- Note the characteristics of the load to be controlled:
 - Operational voltage U_e
 - Current normally drawn I_e ($U_e / I_e / kW$ relation for motors, see "Motor rated operational powers and currents").
 - Utilization category AC-1, AC-2, AC-3 or AC-4
 - Breaking current $I_c = I_e$ for AC-1 and for AC-3 ; $I_c = 2.5 \times I_e$ for AC-2 ; $I_c = 6 \times I_e$ for AC-4
- Define the number of operating cycles N required.
- On the diagram corresponding to the operational category, select the contactor with the curve immediately above the intersection point ($I_c ; N$).

Electrical durability forecast and contactor selection for mixed duty motor control: AC-3 ($I_c = I_e$) type switching off while "motor running" and, occasionally, AC-4 ($I_c = 6 \times I_e$) type switching off while "motor accelerating"

- Note the characteristics of the motor to be controlled:
 - Operational voltage U_e
 - Current normally drawn while "motor running" I_e ($U_e / I_e / kW$ relation for motors, see "Motor rated operational powers and currents")
 - Breaking current for AC-3 $I_c = I_e$
 - Breaking current for AC-4 while "motor accelerating" $I_c = 6 \times I_e$
 - Percentage of AC-4 operating cycles K (on the basis of the total number of operating cycles)
- Define the total number of operating cycles N required.
- Note the smallest contactor rating compatible for AC-3 (U_e / I_e) on Main pole utilization characteristic table (see "Technical data").
- For the selected contactor make a note of the following in relation to the voltage using diagram AC-3 in next pages:
 - The number of operating cycles A for $I_c = I_e$ (AC-3)
 - The number of operating cycles B for $I_c = 6 \times I_e$ (AC-4)
- Calculate the estimated number of cycles N' (N' is always below A)

$$N' = \frac{A}{1 + 0.01 K (A/B - 1)}$$

- If N' is too low in relation to the target N , calculate the estimated number of cycles for a higher contactor rating.

Case of uninterrupted duty

For uninterrupted duty, some verifications of preventing maintenance are necessary to check the functionality of the concerned product (consult us).

The combined effect of environmental conditions and the proper temperature of the product may require some disposals. As a matter of fact, for this duty, the use duration prevails over the number of operating cycles.

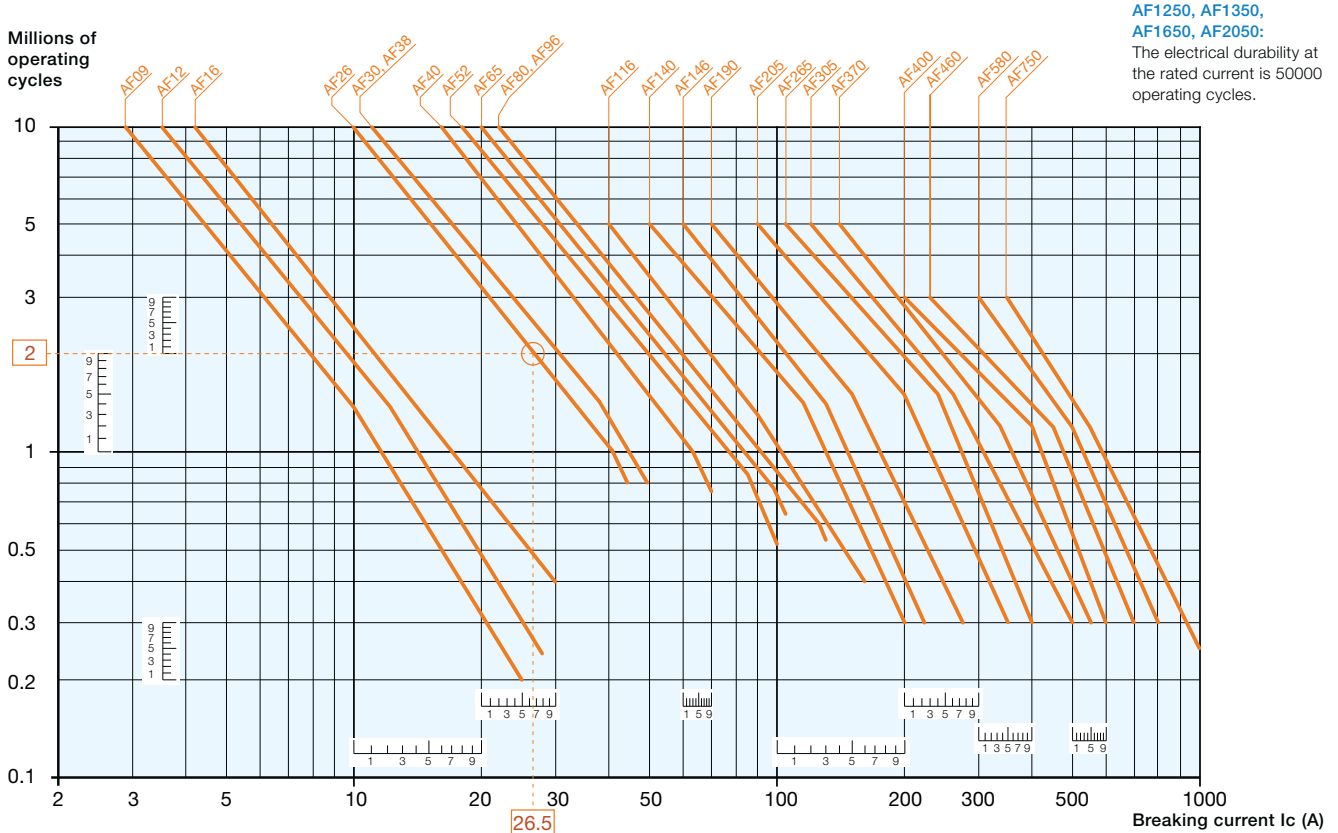
3-pole contactors

Electrical durability

Electrical durability for AC-1 utilization category - $U_e \leq 690\text{ V}$

Switching non-inductive or slightly inductive loads. The breaking current I_c for AC-1 is equal to the rated operational current of the load.

Ambient temperature and maximum electrical switching frequency: see "Technical data".



Example:

$I_c / AC-1 = 26.5\text{ A}$ – Electrical durability required = 2 millions operating cycles.

Using the AC-1 curves above select the AF26 contactor at intersection "O" (26.5 A / 2 millions operating cycles).

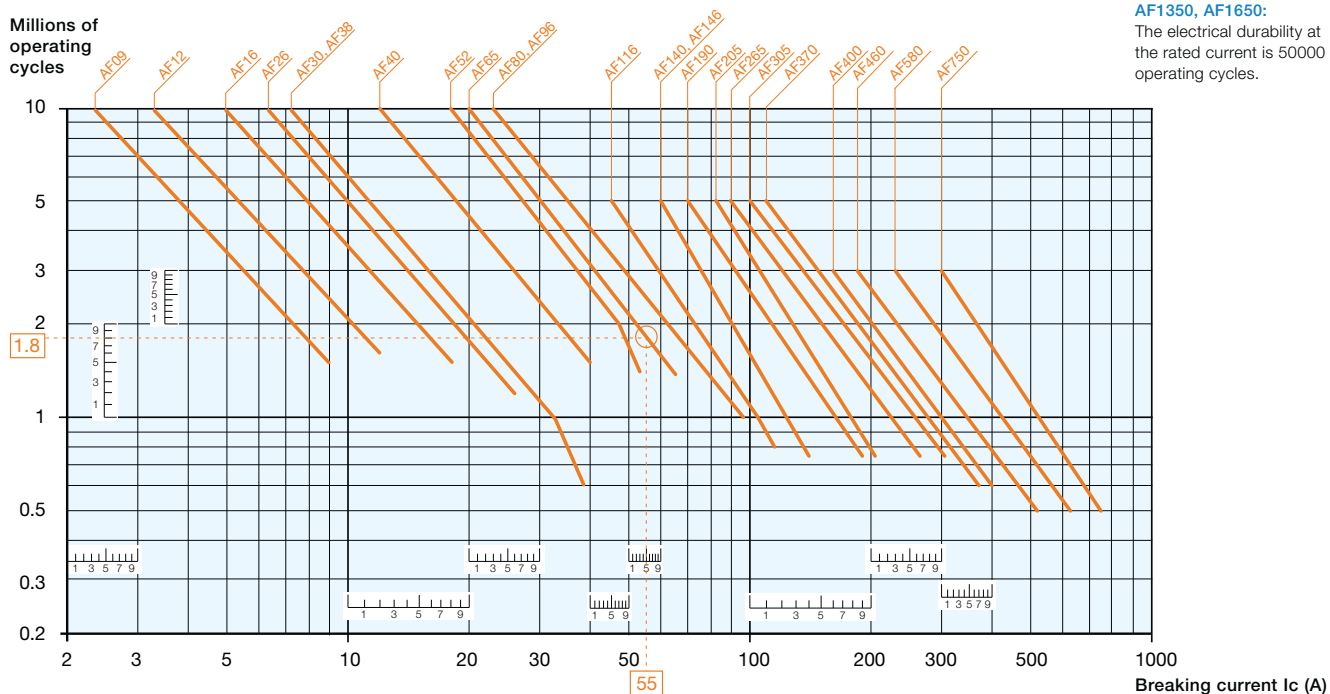
3-pole contactors

Electrical durability

Electrical durability for AC-3 utilization category - $U_e \leq 440$ V.

Switching cage motors: starting and switching off running motors. The breaking current I_c for AC-3 is equal to the rated operational current I_e (I_e = motor full load current).

Ambient temperature and maximum electrical switching frequency: see "Technical data".



Example:

Motor power 30 kW for AC-3 - $U_e = 400$ V and $I_e = 55$ A utilization – Electrical durability required = 1.8 million operating cycles. For AC-3: $I_c = I_e$. Select the AF65 contactor at intersection "○" (55 A / 1.8 million operating cycles) on the curves (AC-3 - $U_e \leq 440$ V).

3-pole contactors

Electrical durability

Electrical durability for AC-3 utilization category - $440\text{ V} < U_e \leq 690\text{ V}$.

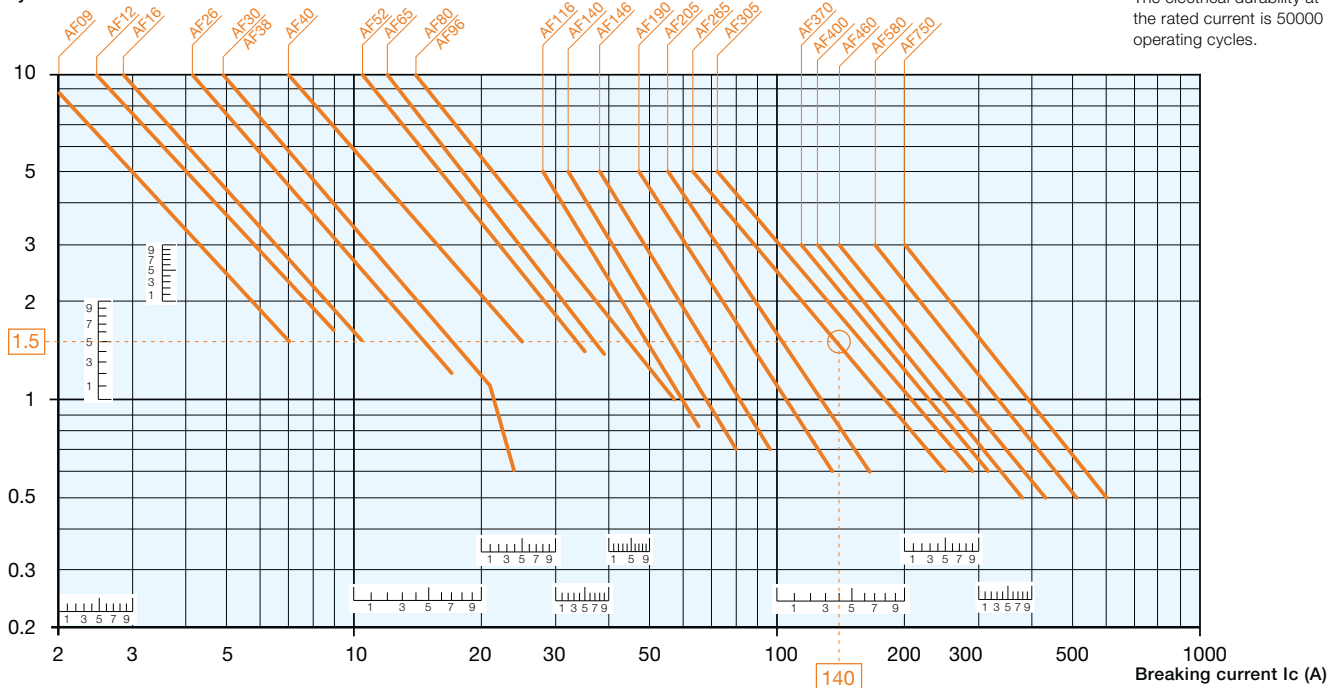
Switching cage motors: starting and switching off running motors. The breaking current I_c for AC-3 is equal to the rated operational current I_e (I_e = motor full load current).

Ambient temperature and maximum electrical switching frequency: see "Technical data".

Millions of operating cycles

AF1350, AF1650:

The electrical durability at the rated current is 50000 operating cycles.



Example:

Motor power 132 kW for AC-3 - $U_e = 660\text{ V}$ and $I_e = 140\text{ A}$ utilization – Electrical durability required = 1.5 million operating cycles.

For AC-3: $I_c = I_e$. Select the AF265 contactor at intersection "O" (140 A / 1.5 million operating cycles) on the curves (AC-3 - $440\text{ V} < U_e \leq 690\text{ V}$).

3-pole contactors

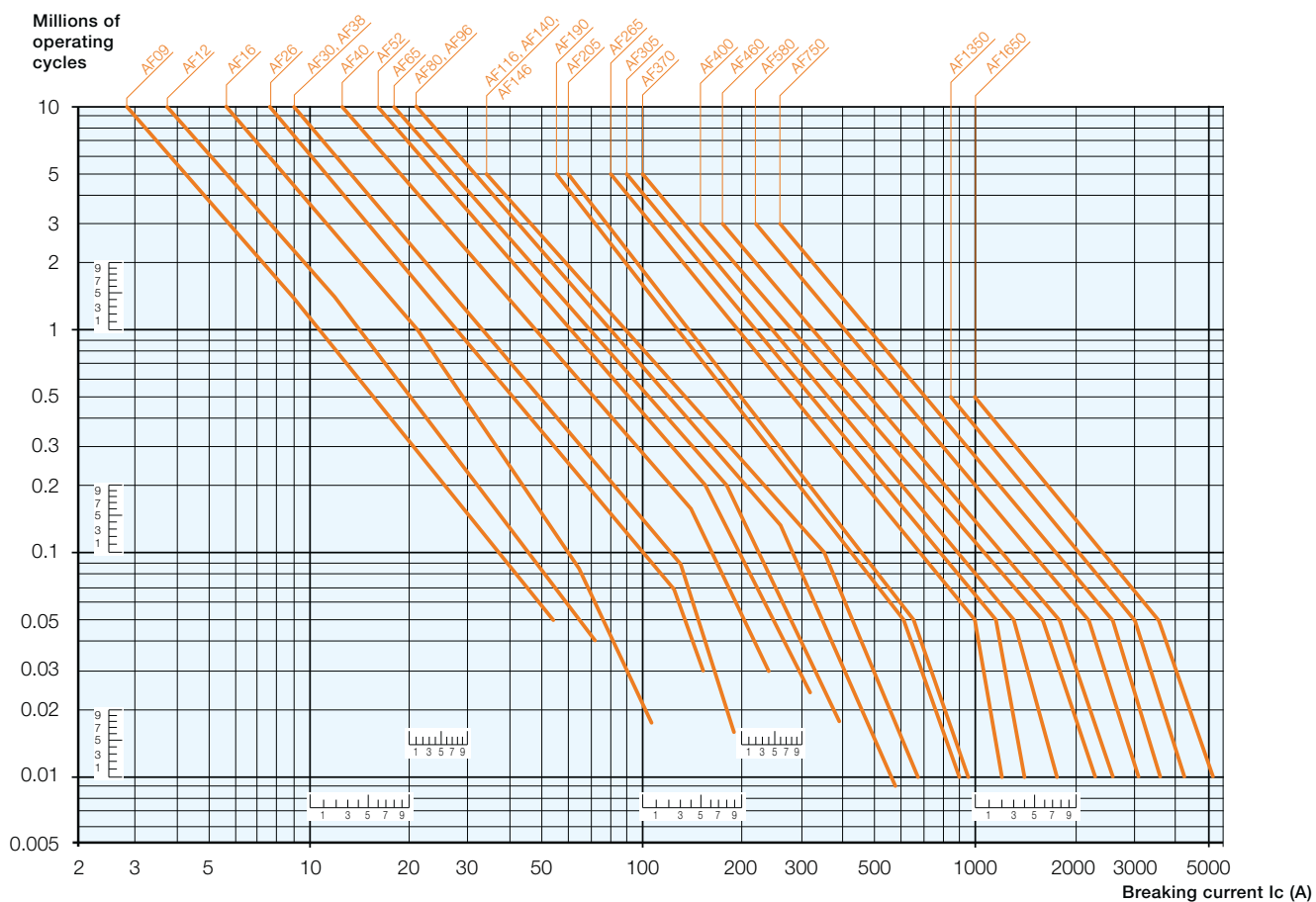
Electrical durability

Electrical durability for AC-2 or AC-4 utilization category - $U_e \leq 440\text{ V}$

Ambient temperature $\leq 60\text{ °C}$ for AF09 ... AF370, $\leq 55\text{ °C}$ for AF400 ... AF1650

Switching cage motors: starting, reverse operation and step-by-step operation. The breaking current I_c is equal to $2.5 \times I_e$ for AC-2 and $6 \times I_e$ for AC-4, keeping in mind that I_e is the motor rated operational current (I_e = motor full-load current).

Maximum electrical switching frequency: see "Technical data".



3-pole contactors

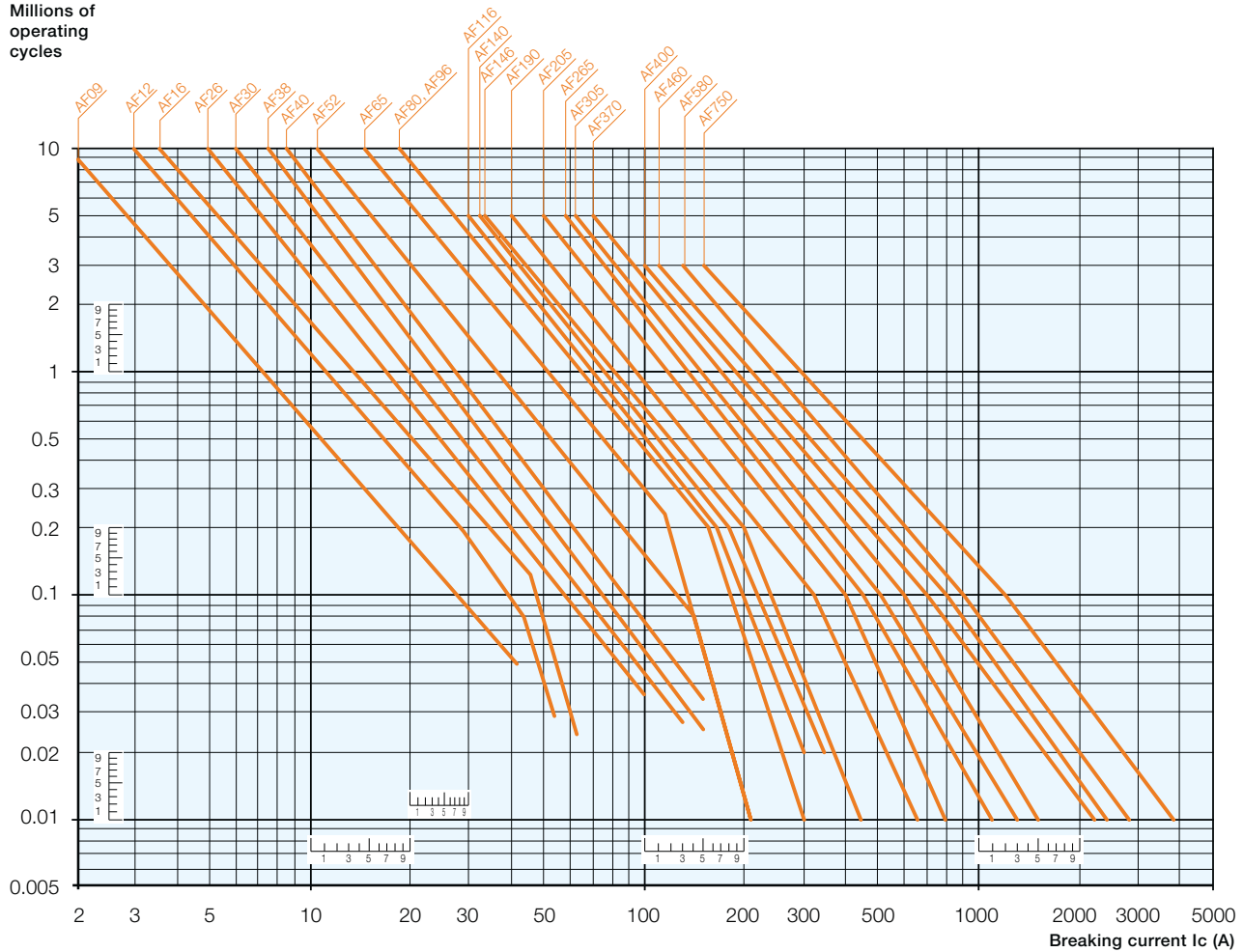
Electrical durability

Electrical durability for AC-2 or AC-4 utilization category - 440 V < U_e ≤ 690 V

Ambient temperature ≤ 60 °C for AF09 ... AF370, ≤ 55 °C for AF400 ... AF750

Switching cage motors: starting, reverse operation and step-by-step operation. The breaking current I_c is equal to 2.5 x I_e for AC-2 and 6 x I_e for AC-4, keeping in mind that I_e is the motor rated operational current (I_e = motor full load current). Maximum electrical switching frequency: see "Technical data".

Millions of operating cycles



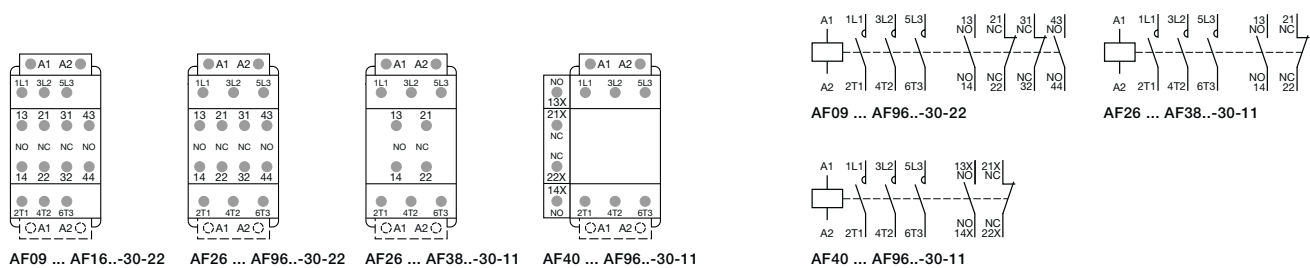
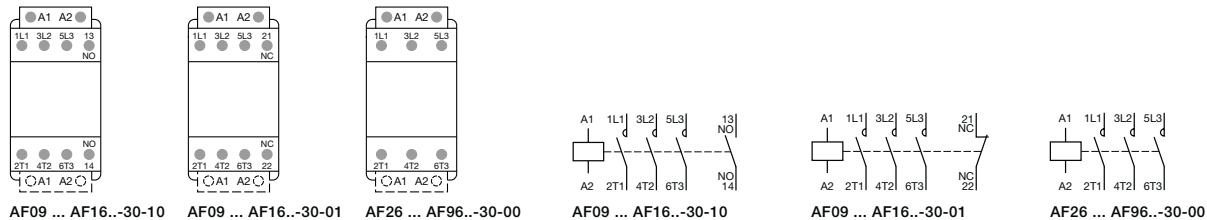
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AF09 ... AF96 3-pole contactors

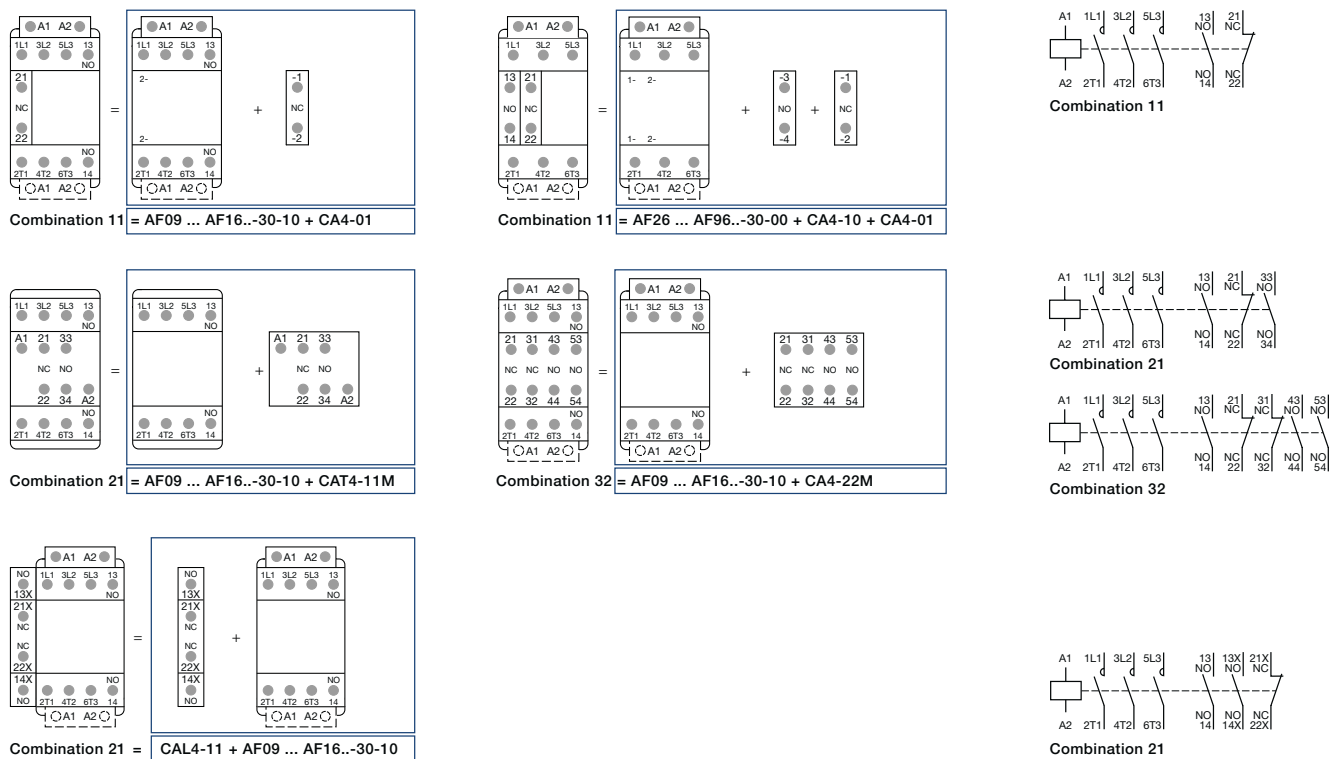
Terminal marking and positioning

AF09 ... AF96 contactors - AC / DC operated

Standard devices without addition of auxiliary contacts



Other possible contact combinations with auxiliary contacts added by the user



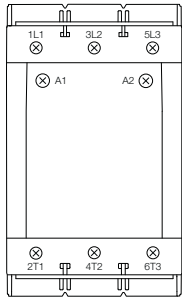
Note: Only AF...Z contactor with DC control voltage 12...20 V DC need to respect the connection polarities indicated close to the coil terminals: A1+ for the positive pole and A2- for the negative pole

AF116 ... AF370 3-pole contactors

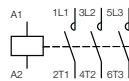
Terminal marking and positioning

AF116 ... AF370 contactors - AC / DC operated

Standard devices without addition of auxiliary contacts



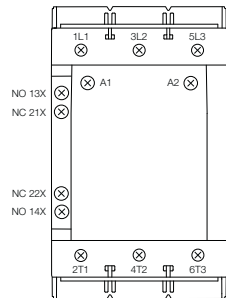
AF116 ... AF370-30-00



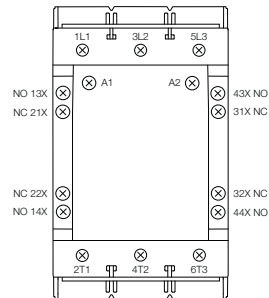
AF116 ... AF370-30-00

5

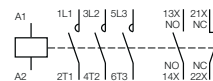
Standard devices with factory mounted auxiliary contacts



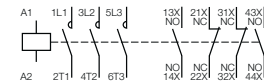
AF116 ... AF370-30-11



AF116 ... AF370-30-22



AF116 ... AF370-30-11



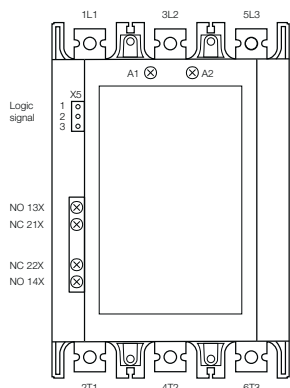
AF116 ... AF370-30-22

AF400 ... AF2650 3-pole contactors

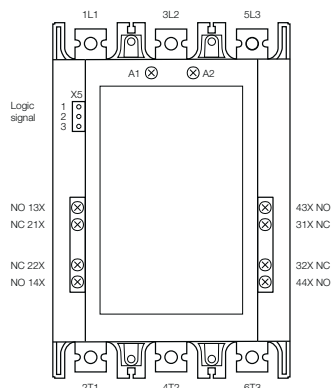
Terminal marking and positioning

AF400 ... AF1250 contactors - AC / DC operated

Standard devices with factory mounted auxiliary contacts

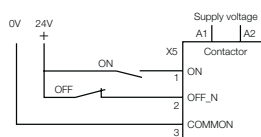


AF400 ... AF1250-30-11

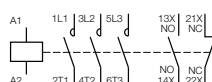


AF400 ... AF1250-30-22

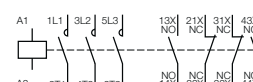
Control with logic signal



AF400 ... AF1250-30-11, AF400 ... AF1250-30-22



AF400 ... AF1250-30-11

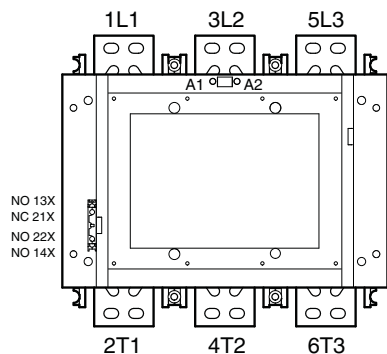


AF400 ... AF1250-30-22

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AF1350 ... AF2650 contactors - AC / DC operated

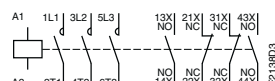
Standard devices with factory mounted auxiliary contacts



AF1350 ... AF2650-30-11



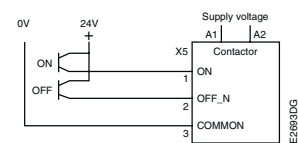
AF1350 ... AF2650-30-11



AF1350 ... AF2650-30-22

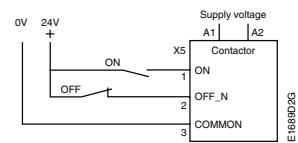
Wiring diagrams

when used with transistor output



AF1350, AF1650

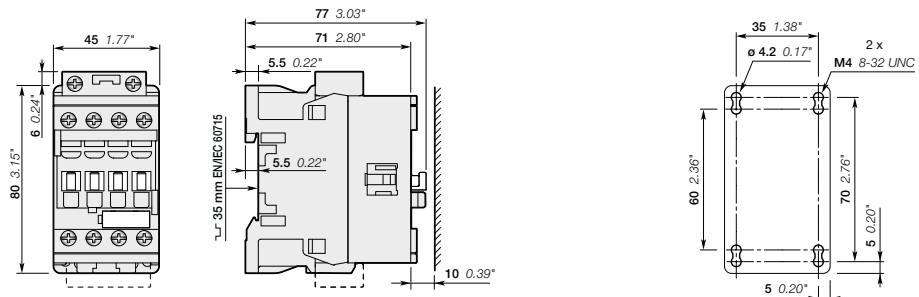
when used with transistor output



E1689D/2G

AF09, AF12, AF16 3-pole contactors

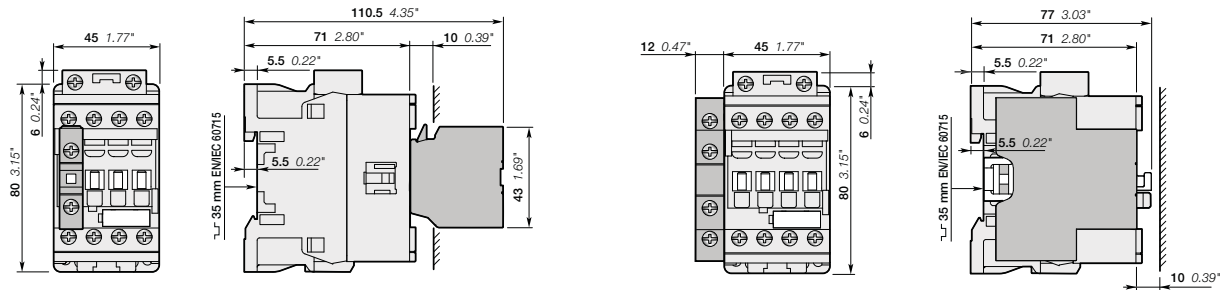
Main dimensions mm, inches



AF09, AF12, AF16

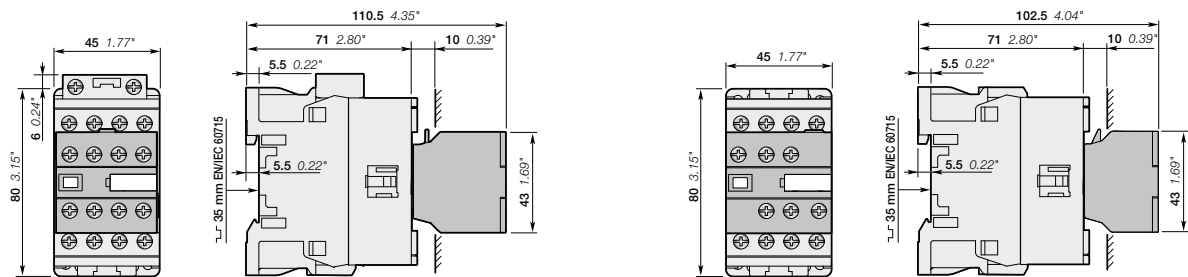
AF09, AF12, AF16

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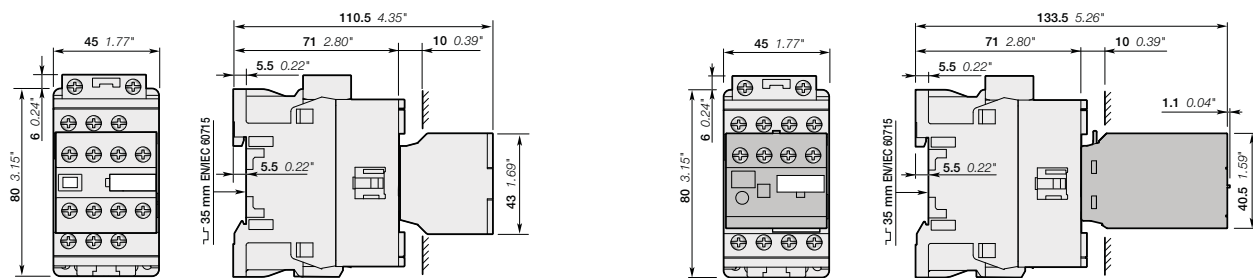
AF09, AF12, AF16
+ CA4, CC4 1-pole auxiliary contact block

AF09, AF12, AF16
+ CAL4-11 2-pole auxiliary contact block



AF09, AF12, AF16
+ CA4 4-pole auxiliary contact block

AF09, AF12, AF16
+ CAT4 2-pole auxiliary contact and coil terminal block



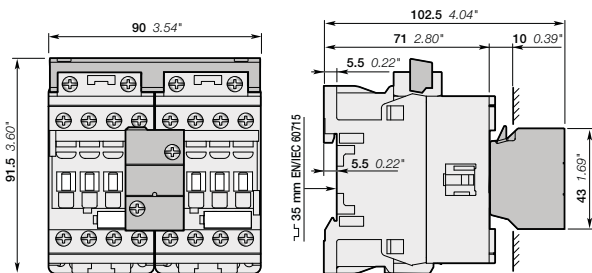
AF09, AF12, AF16...-30-22

AF09, AF12, AF16
+ TEF4 electronic timer

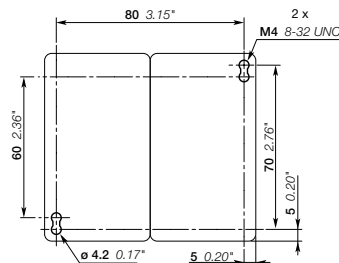
Note: contactor lateral distance to grounded component 2 mm 0.08" min.

AF09, AF12, AF16 3-pole contactors

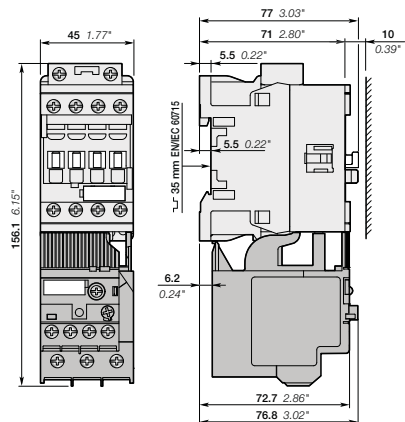
Main dimensions mm, inches



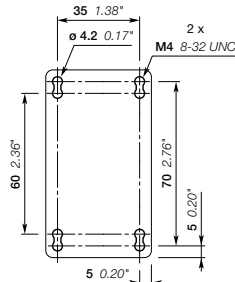
AF09, AF12, AF16
+ VEM4 mechanical and electrical interlock set



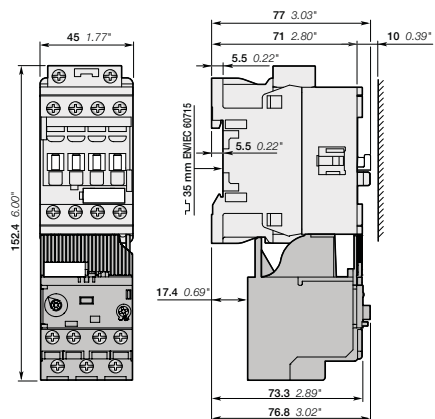
AF09, AF12, AF16
+ VEM4 mechanical and electrical interlock set



AF09, AF12, AF16
+ TF42 thermal overload relay



AF09, AF12, AF16
+ TF42, EF19

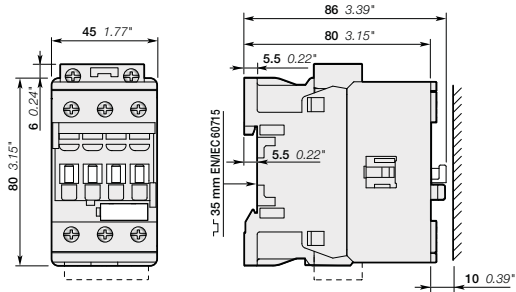


AF09, AF12, AF16 3-pole contactors
+ EF19 electronic overload relay

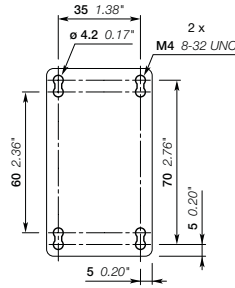
Note: contactor lateral distance to grounded component 2 mm 0.08" min.

AF26, AF30, AF38 3-pole contactors

Main dimensions mm, inches

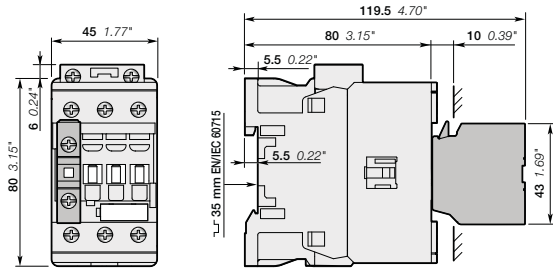


AF26, AF30, AF38

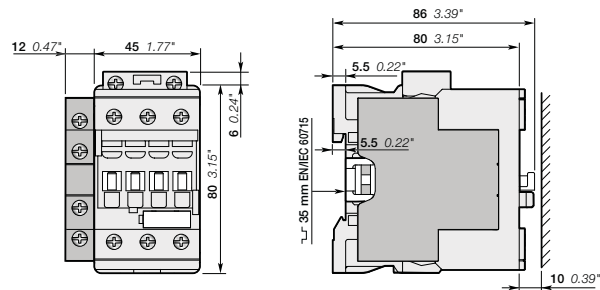


AF26, AF30, AF38

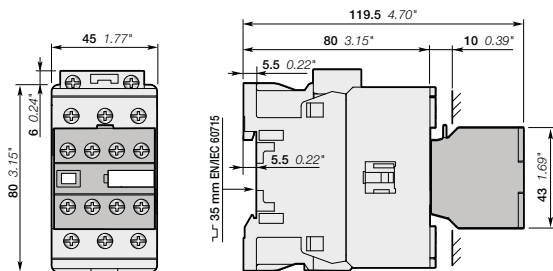
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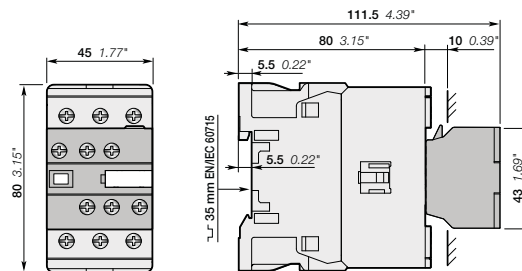
AF26, AF30, AF38
+ CA4, CC4 1-pole auxiliary contact block



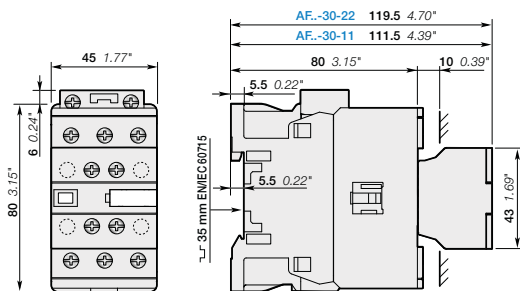
AF26, AF30, AF38
+ CAL4-11 2-pole auxiliary contact block



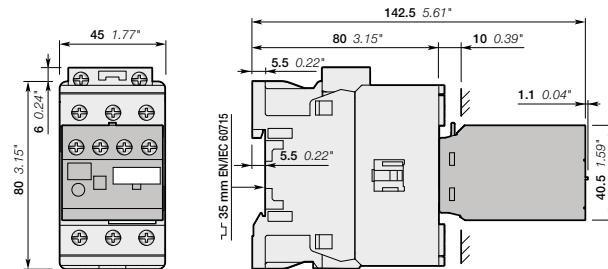
AF26, AF30, AF38
+ CA4 4-pole auxiliary contact block



AF26, AF30, AF38
+ CAT4 2-pole auxiliary contact and coil terminal block



AF26, AF30, AF38...-30-11
AF26, AF30, AF38...-30-22

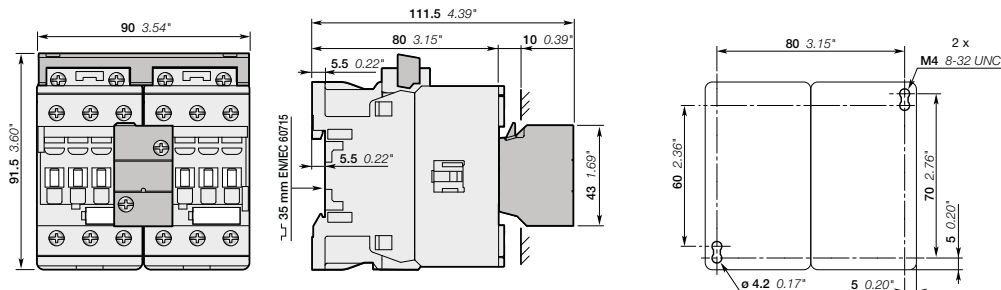


AF26, AF30, AF38
+ TEF4 electronic timer

Note: contactor lateral distance to grounded component 2 mm 0.08" min.

AF26, AF30, AF38 3-pole contactors

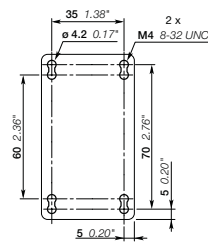
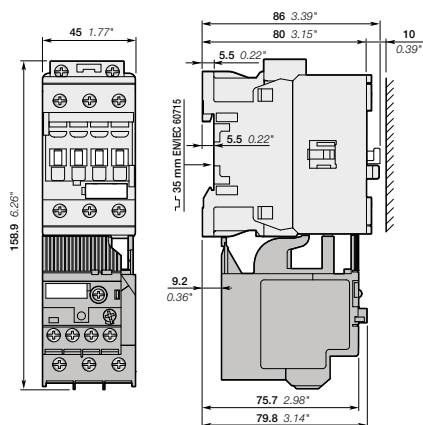
Main dimensions mm, inches



AF26, AF30, AF38
+ VEM4 mechanical and electrical interlock set

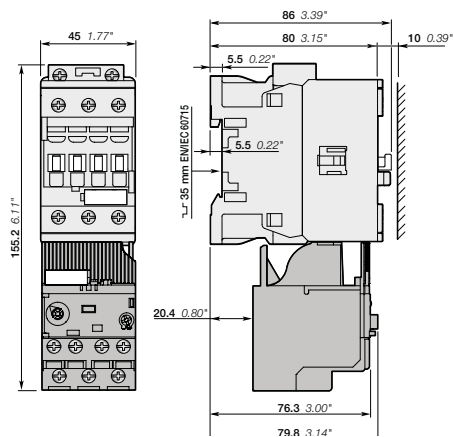
AF26, AF30, AF38
+ VEM4 mechanical and electrical interlock set

5

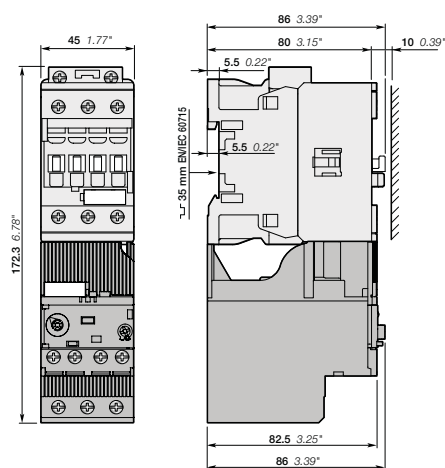


AF26, AF30, AF38
+ TF42, EF19, EF45

AF26, AF30, AF38
+ TF42 thermal overload relay



AF26 3-pole contactors
+ EF19 electronic overload relay



AF26, AF30, AF38 3-pole contactors
+ EF45 electronic overload relay

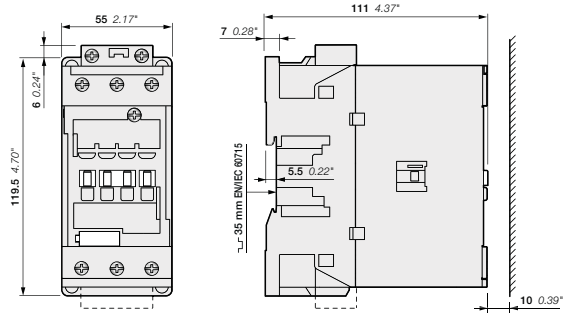
Note: contactor lateral distance to grounded component 2 mm 0.08" min.

1SBC101683S0201 - Rev. A

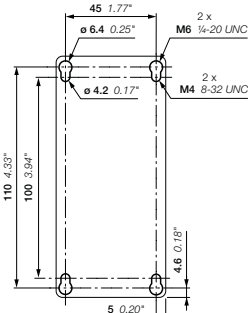
AF40 ... AF65 3-pole contactors

Main dimensions mm, inches

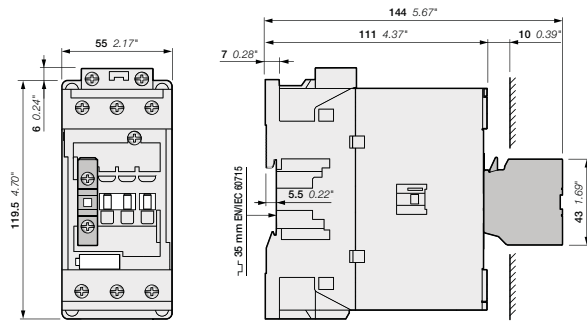
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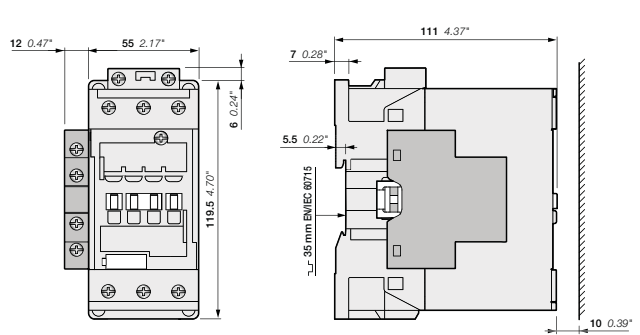
AF40, AF52, AF65



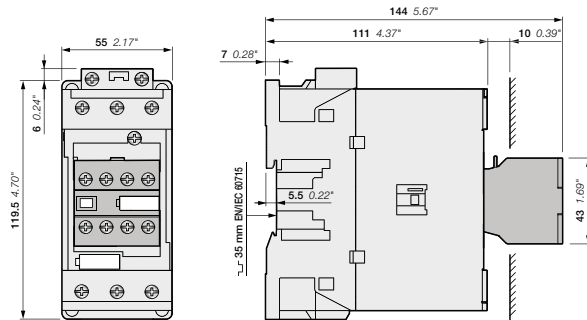
AF40, AF52, AF65



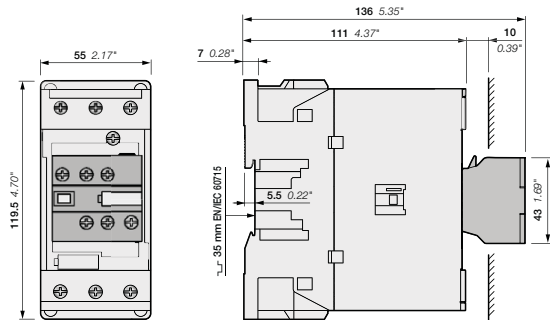
AF40, AF52, AF65
+ CA4, CC4 1-pole auxiliary contact block



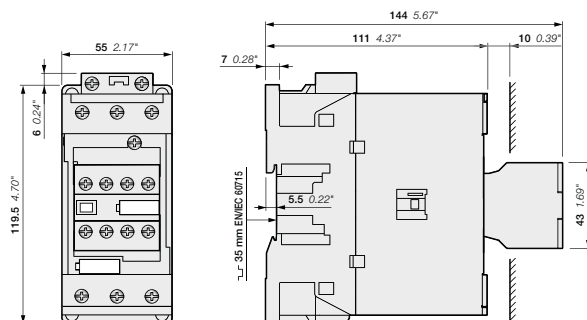
AF40, AF52, AF65-30-00 + CAL4-11 2-pole auxiliary contact block
AF40, AF52, AF65-30-11



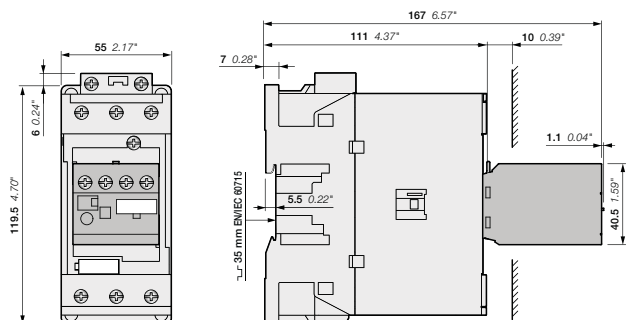
AF40, AF52, AF65
+ CA4 4-pole auxiliary contact block



AF40, AF52, AF65
+ CAT4 2-pole auxiliary contact and coil terminal block



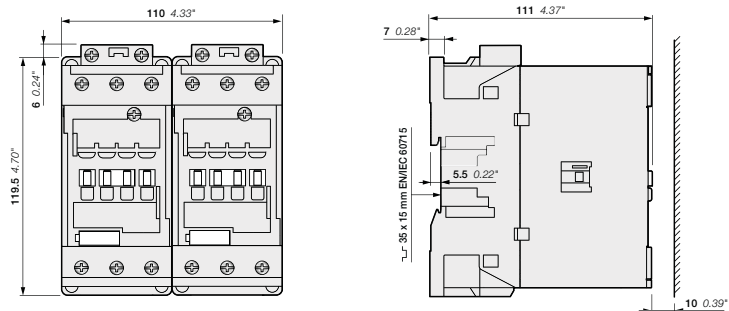
AF40, AF52, AF65...-30-22



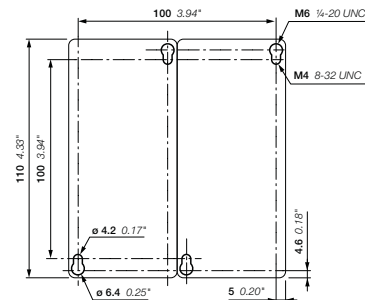
AF40, AF52, AF65
+ TEF4 electronic timer

AF40 ... AF65 3-pole contactors

Main dimensions mm, inches

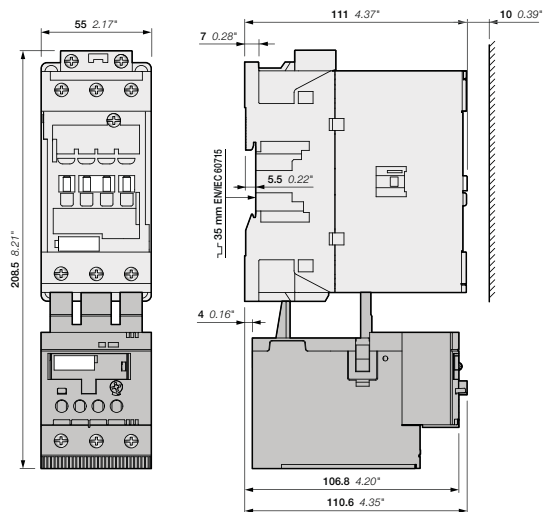


AF40, AF52, AF65
+ VM96-4 mechanical interlock unit

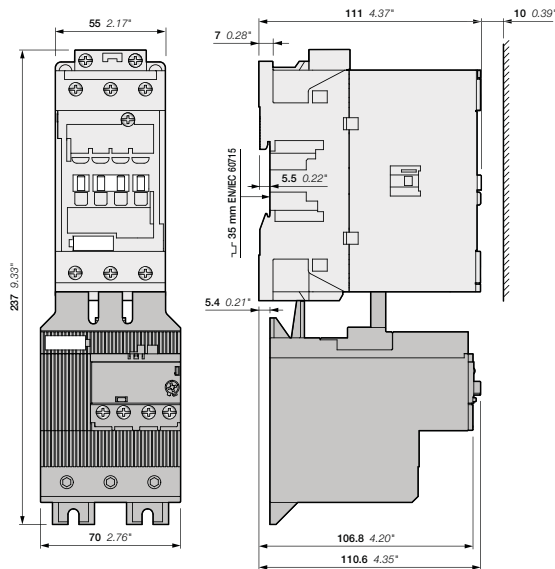


AF40, AF52, AF65
+ VM96-4 mechanical interlock set

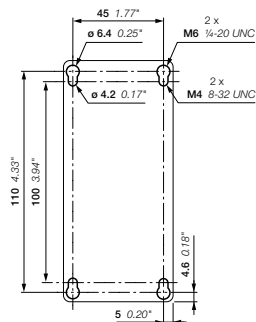
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AF40, AF52, AF65
+ TF65 thermal overload relay



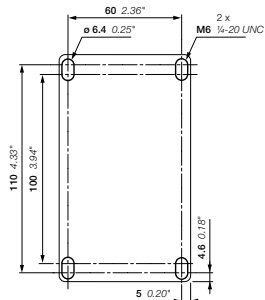
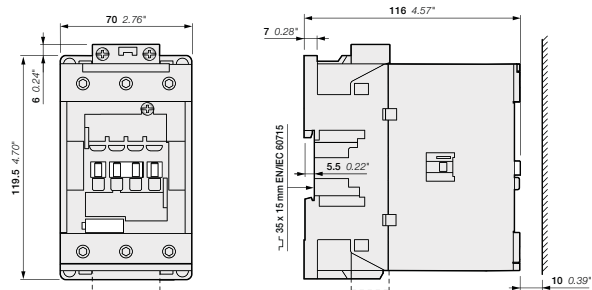
AF40, AF52, AF65
+ EF65 electronic overload relay



AF40, AF52, AF65
+ TF65, EF65

AF80 ... AF96 3-pole contactors

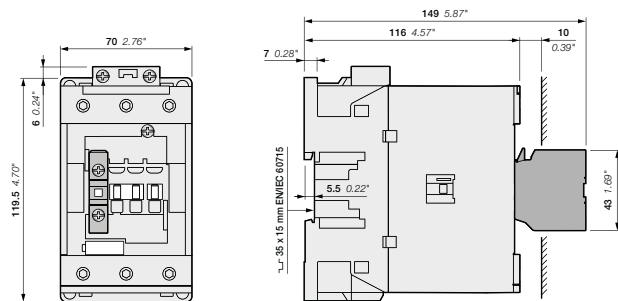
Main dimensions mm, inches



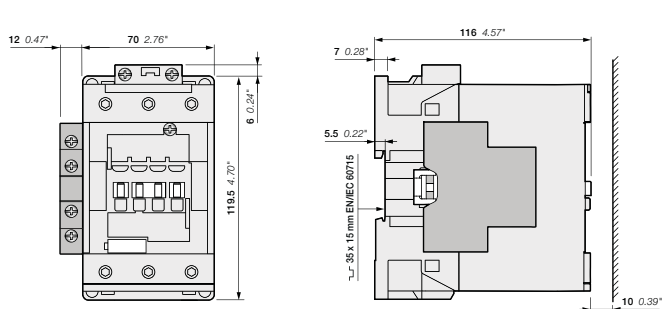
AF80, AF96

AF80, AF96

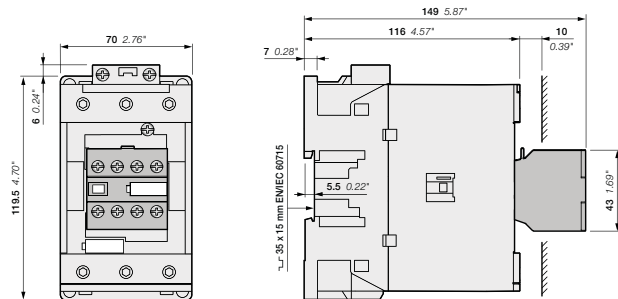
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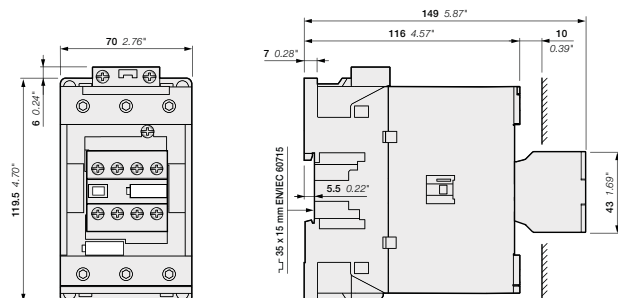
AF80, AF96
+ CA4, CC4 1-pole auxiliary contact block



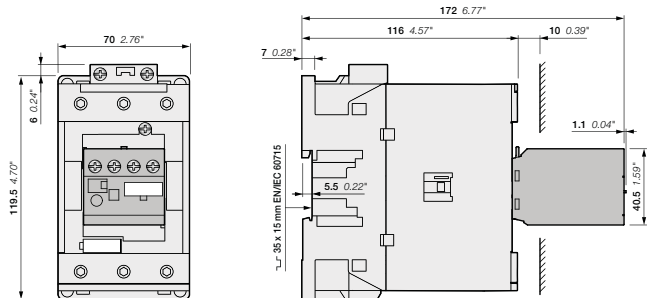
AF80, AF96-30-00 + CAL4-11 2-pole auxiliary contact block
AF80, AF96-30-11



AF80, AF96
+ CA4 4-pole auxiliary contact block



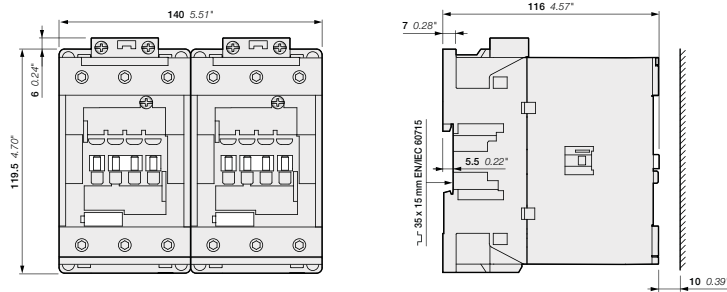
AF80, AF96...-30-22



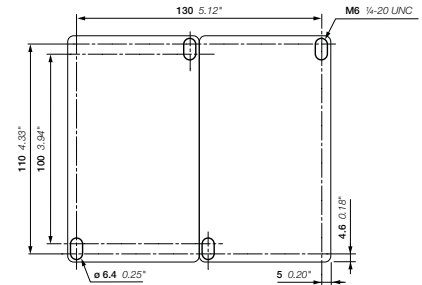
AF80, AF96
+ TEF4 electronic timer

AF80 ... AF96 3-pole contactors

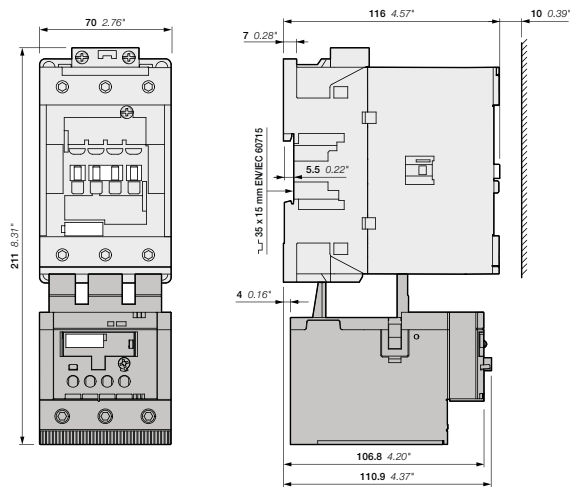
Main dimensions mm, inches



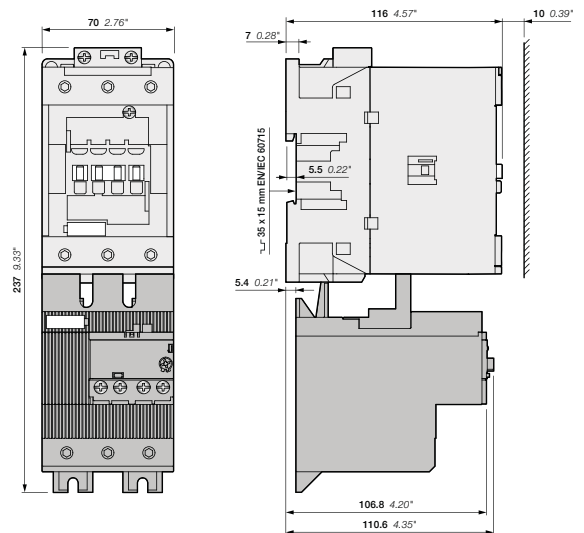
AF80, AF96
+ VM96-4 mechanical interlock unit



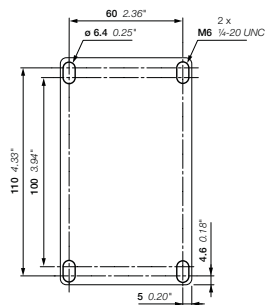
AF80, AF96
+ VM96-4 mechanical interlock set



AF80, AF96
+ TF96 thermal overload relay



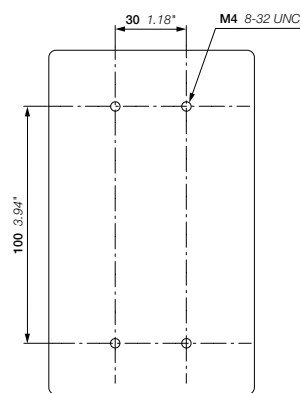
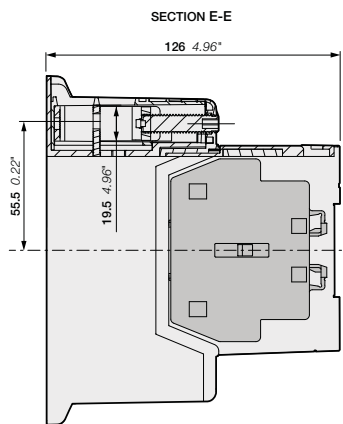
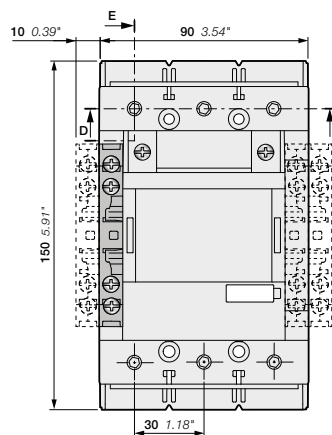
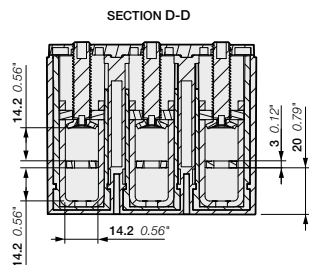
AF80, AF96
+ EF96 electronic overload relay



AF80, AF96
+ TF96, EF96

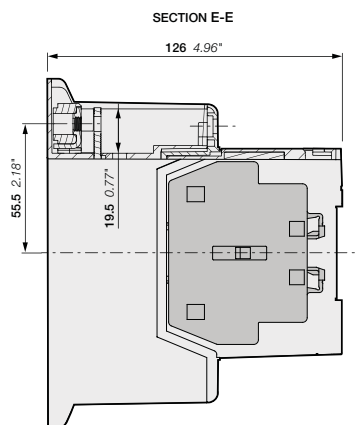
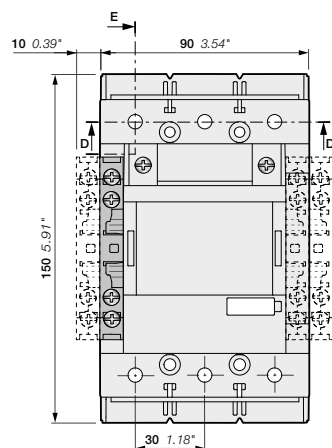
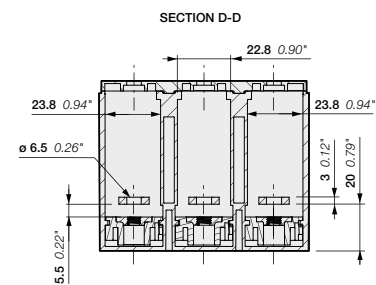
AF116, AF140, AF146 3-pole contactors

Main dimensions mm, inches



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

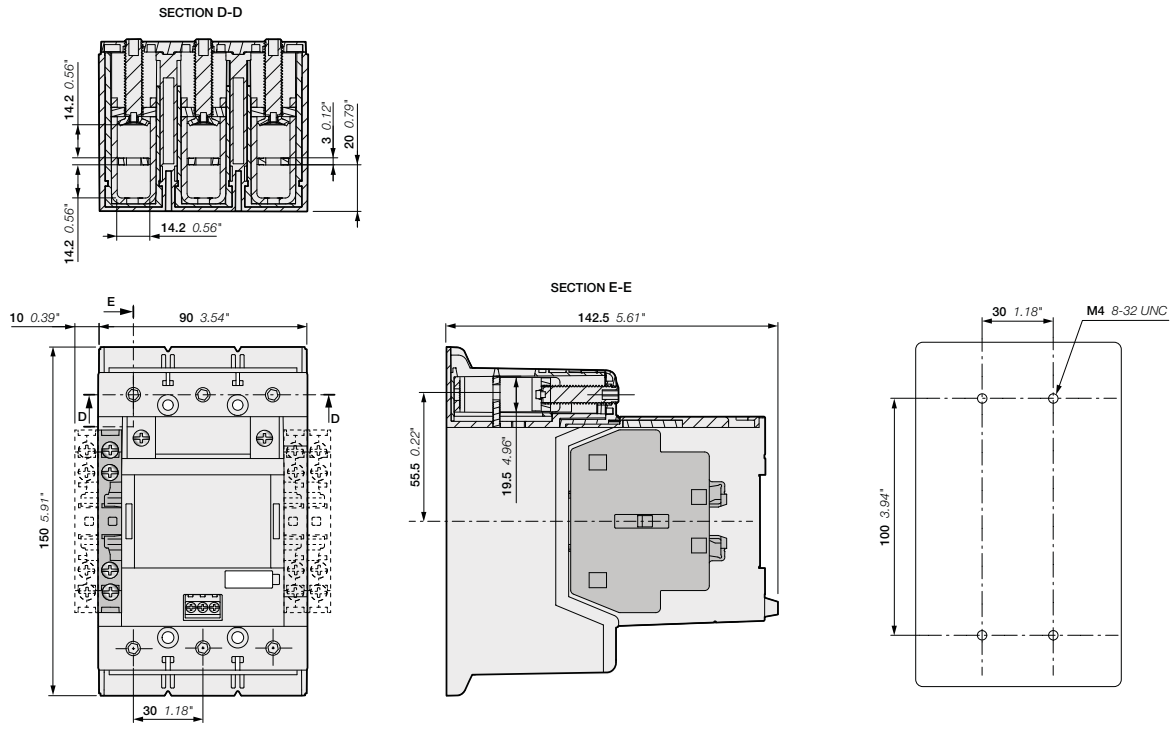
AF116, AF140, AF146-30...(B)



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

AF116, AF140, AF146 3-pole contactors With built-in PLC interface (coil code 33, 34)

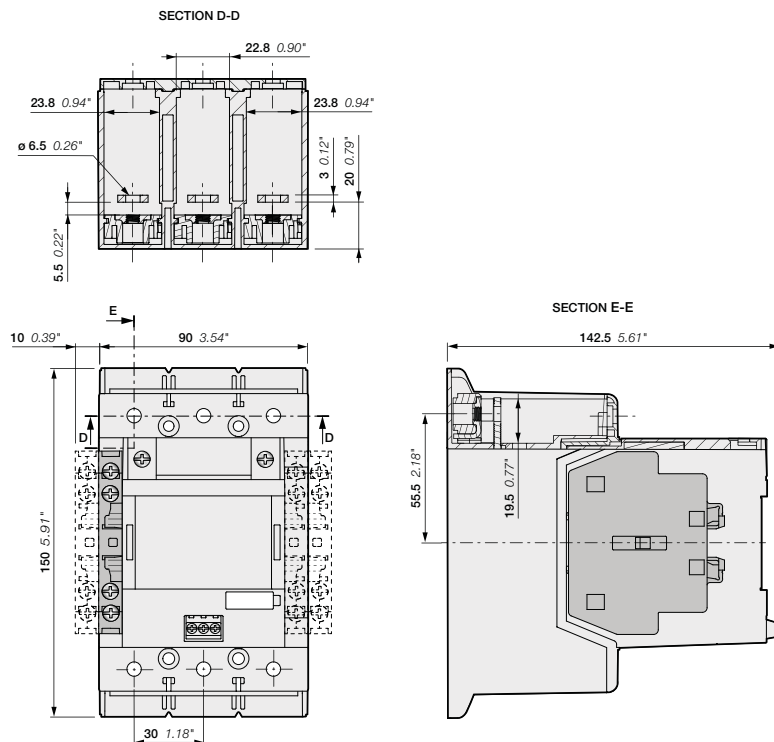
Main dimensions mm, inches



5

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

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



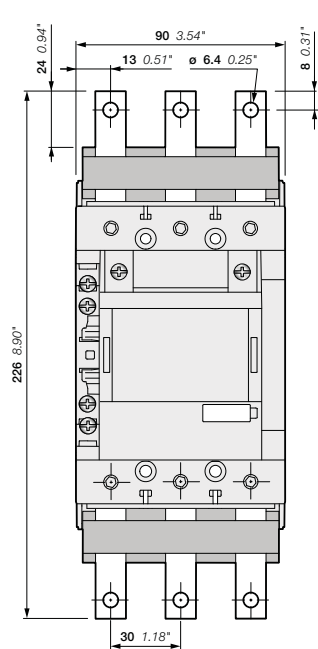
AF116, AF140, AF146-30-00B + CAL19 2-pole auxiliary contact block
AF116, AF140, AF146-30-11B

1SFC101118C0201

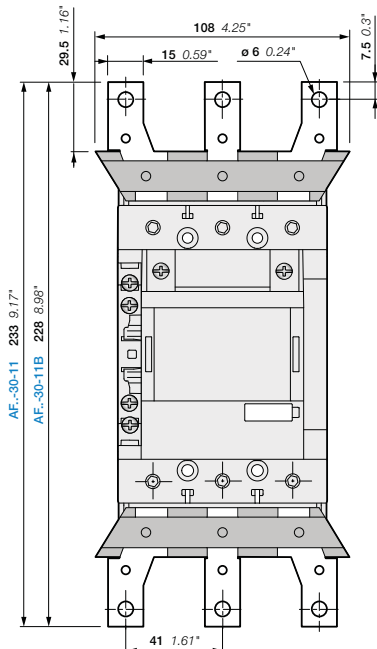
AF116, AF140, AF146 3-pole contactors

Main dimensions mm, inches

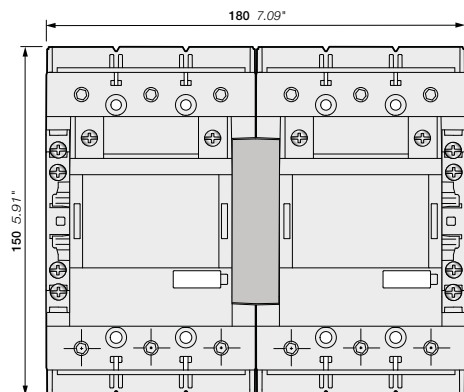
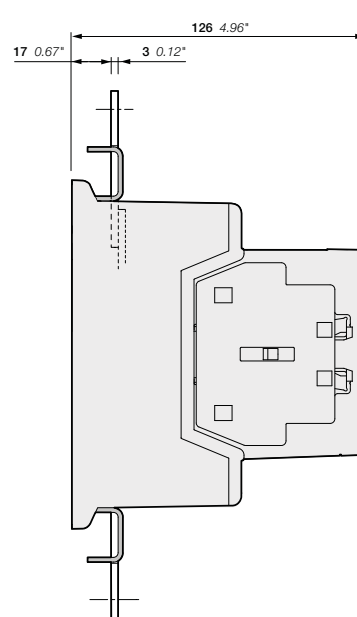
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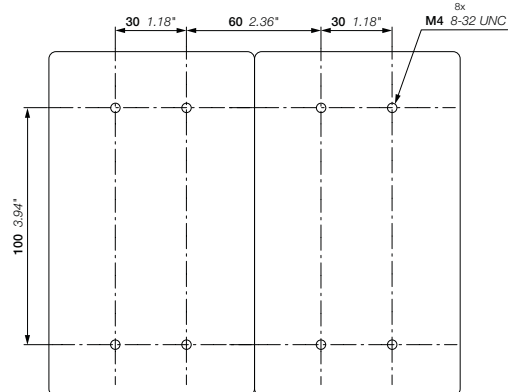
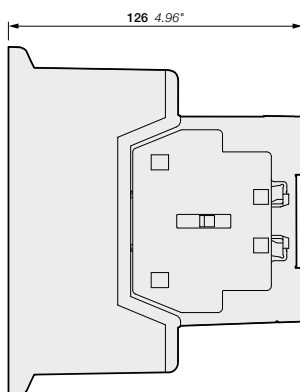
AF116, AF140, AF146-30-11
+ LX140 terminal extension



AF116, AF140, AF146-30-11(B)
+ LW140(B) terminal enlargement



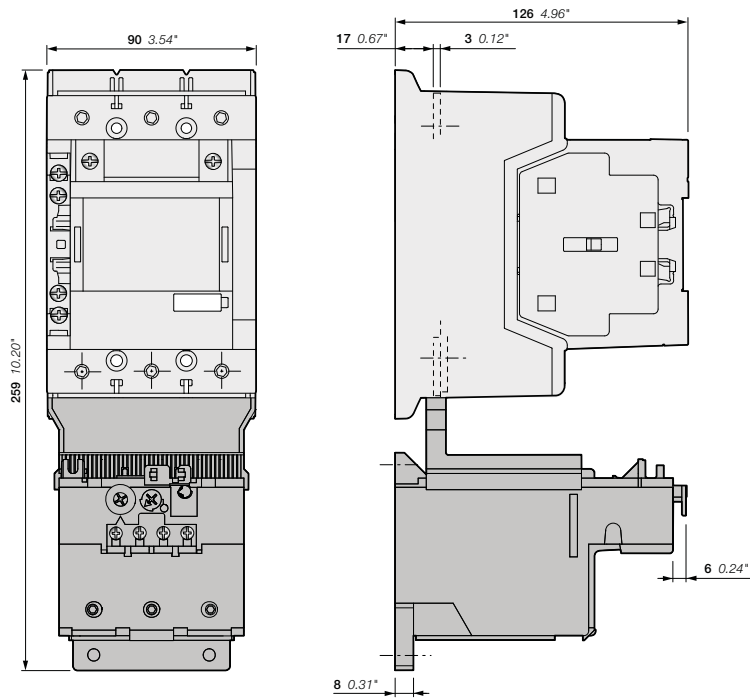
AF116, AF140, AF146-30-11(B)
+ VM19 mechanical interlocking unit



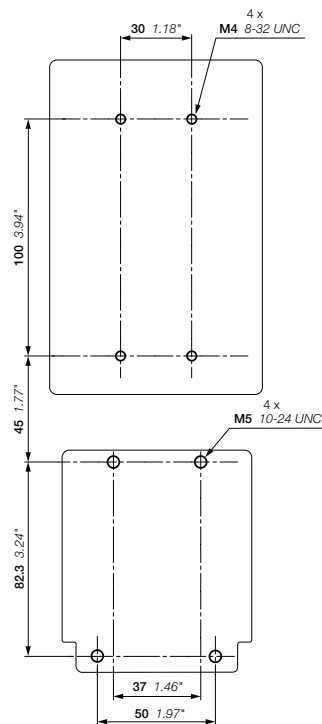
AF116, AF140, AF146-30-11(B)
+ VM19 mechanical interlocking unit

AF116, AF140, AF146 3-pole contactors

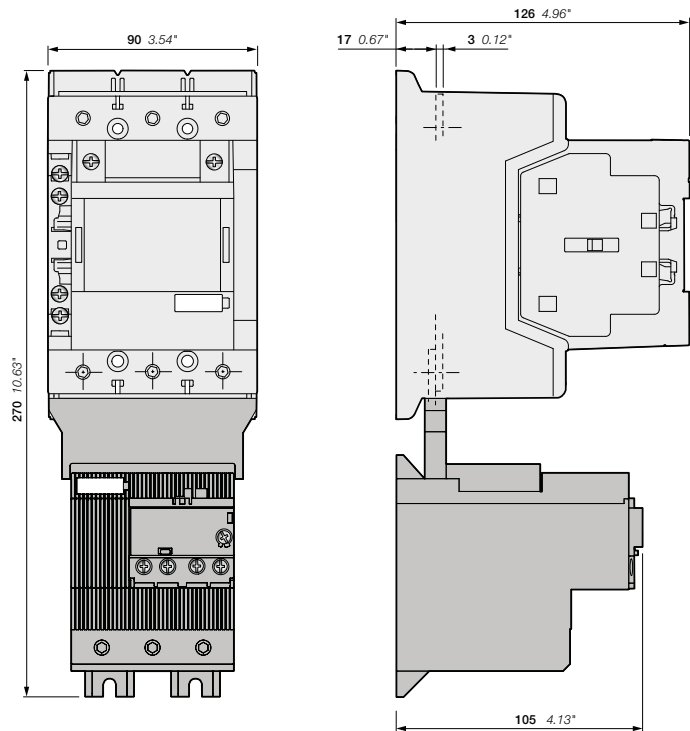
Main dimensions mm, inches



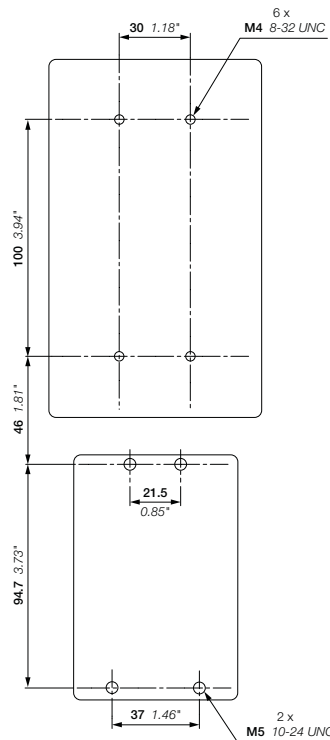
AF116, AF140-30-11(B)
+ TF140 thermal overload relay



AF116, AF140-30-11(B)
+ TF140 thermal overload relay



AF116, AF140, AF146-30-11(B)
+ EF146 electronic overload relay

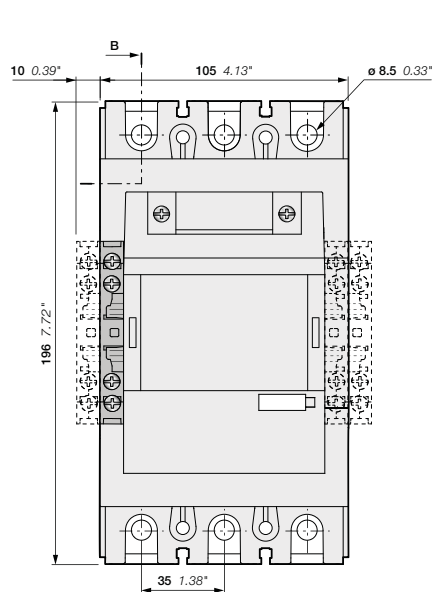


AF116, AF140, AF146-30-11(B)
+ EF146 electronic overload relay

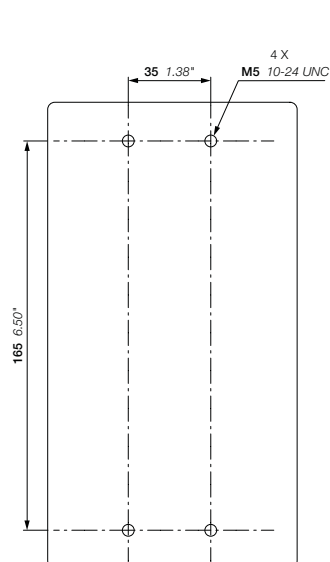
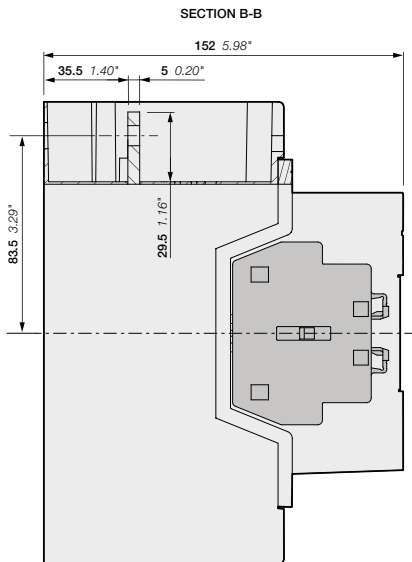
AF190, AF205 3-pole contactors

Main dimensions mm, inches

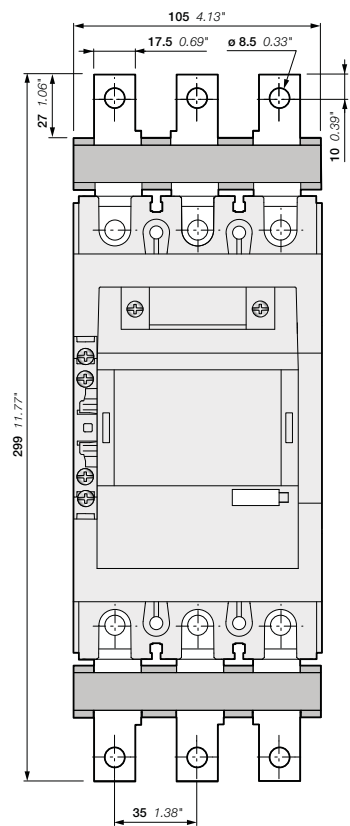
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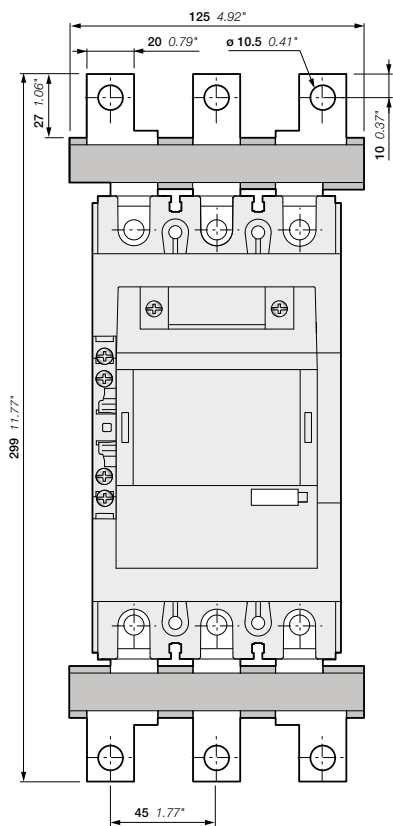
AF190, AF205-30-00 + CAL19 2-pole auxiliary contact block
AF190, AF205-30-11



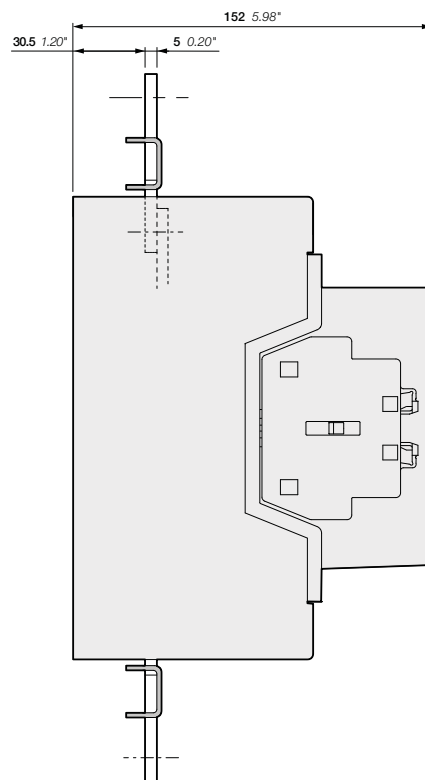
AF190, AF205



AF190, AF205-30-11
+ LX205 terminal extension

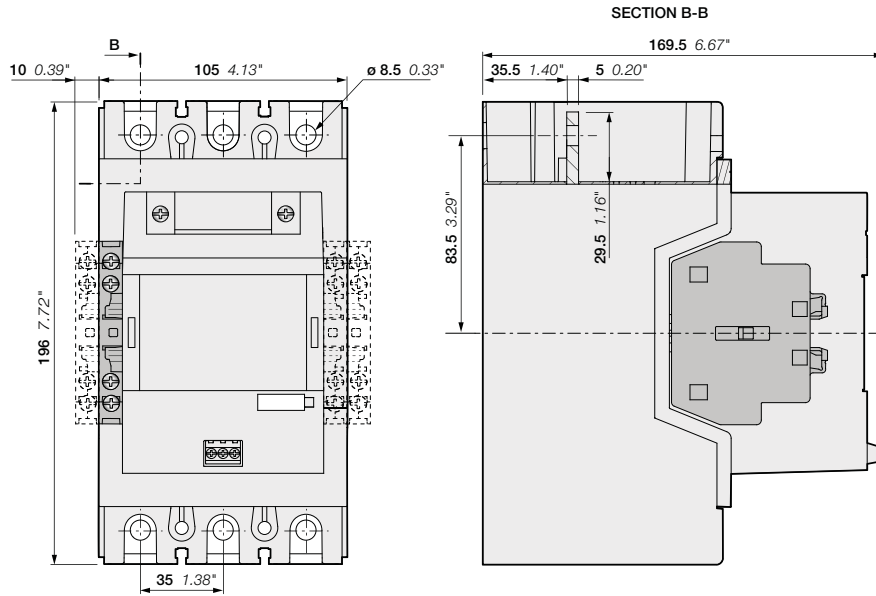


AF190, AF205-30-11
+ LW205 terminal enlargement

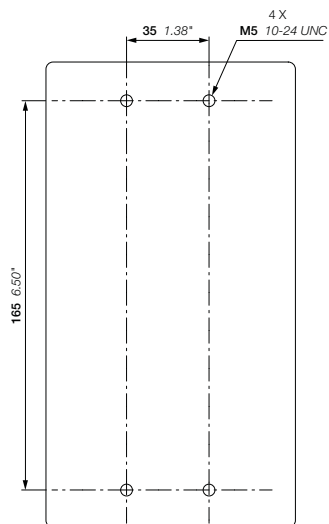


AF190, AF205 3-pole contactors With built-in PLC interface (coil code 33, 34)

Main dimensions mm, inches



AF190, AF205-30-00 + CAL19 2-pole auxiliary contact block
AF190, AF205-30-11

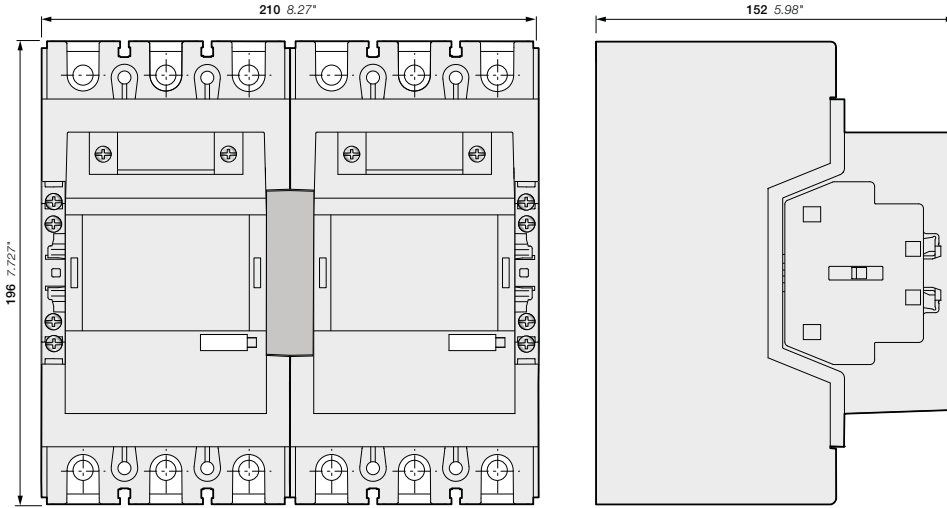


AF190, AF205

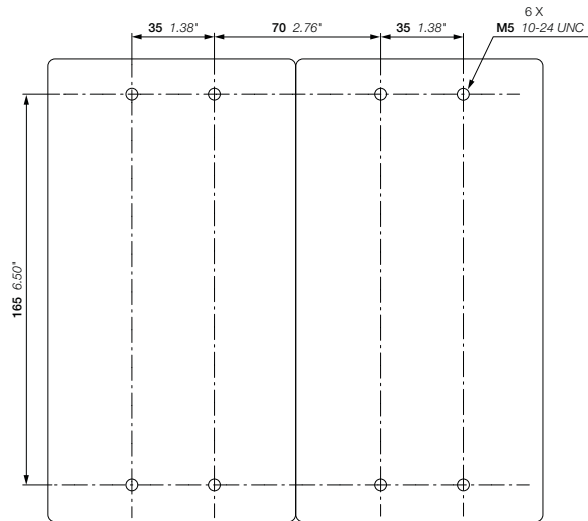
AF190, AF205 3-pole contactors

Main dimensions mm, inches

5



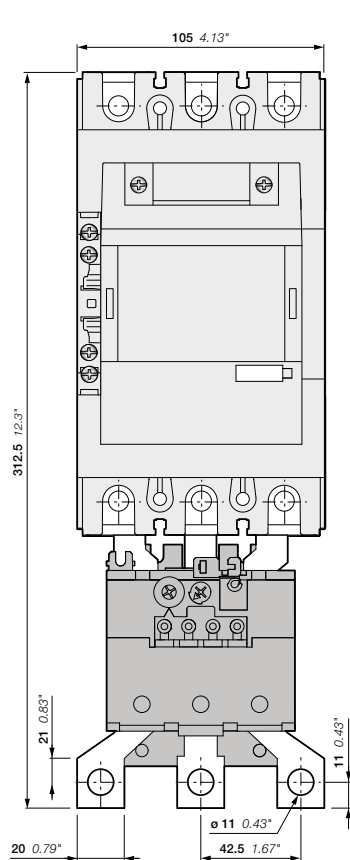
AF190, AF205-30-11
+ VM19 mechanical interlocking unit



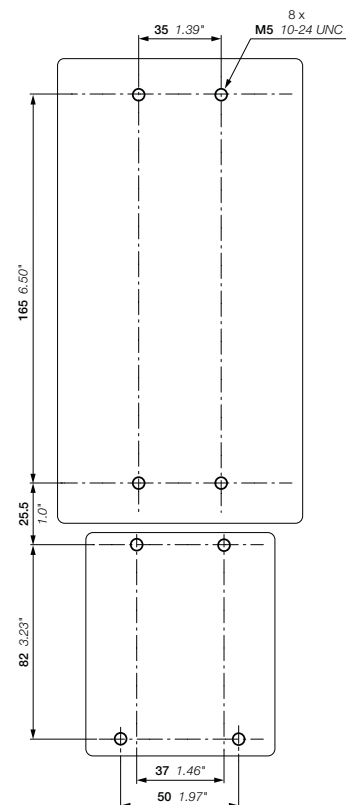
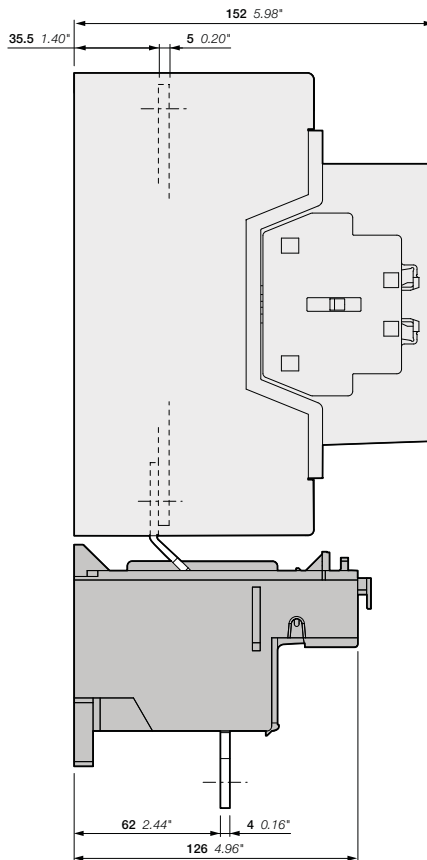
AF190, AF205
+ VM19 mechanical interlocking unit

AF190, AF205 3-pole contactors

Main dimensions mm, inches



AF190, AF205-30-11
+ TA200DU thermal overload relay

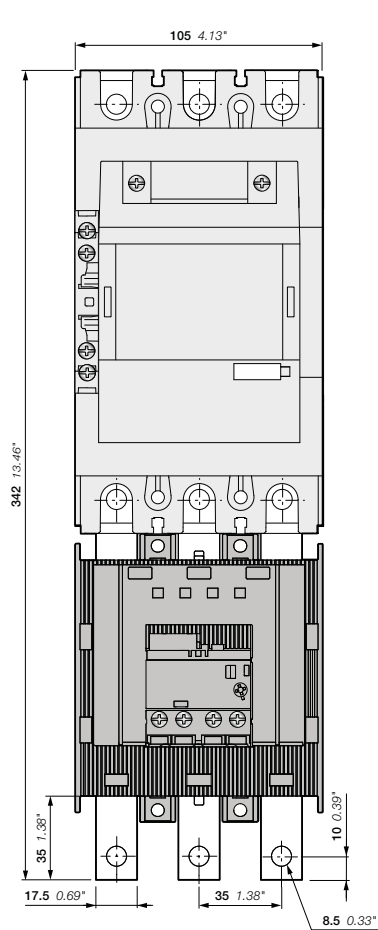


AF190, AF205
+ TA200DU thermal overload relay

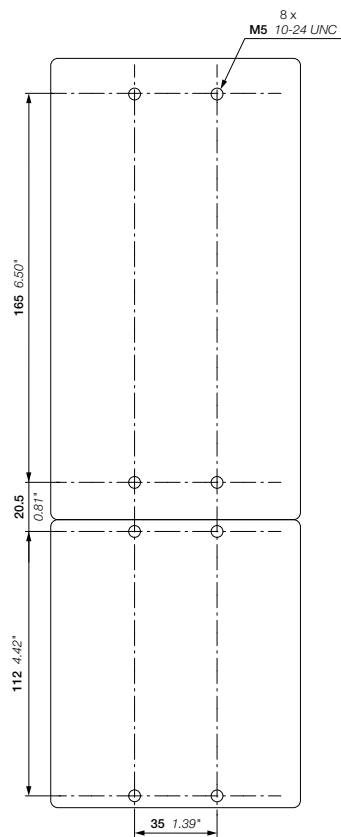
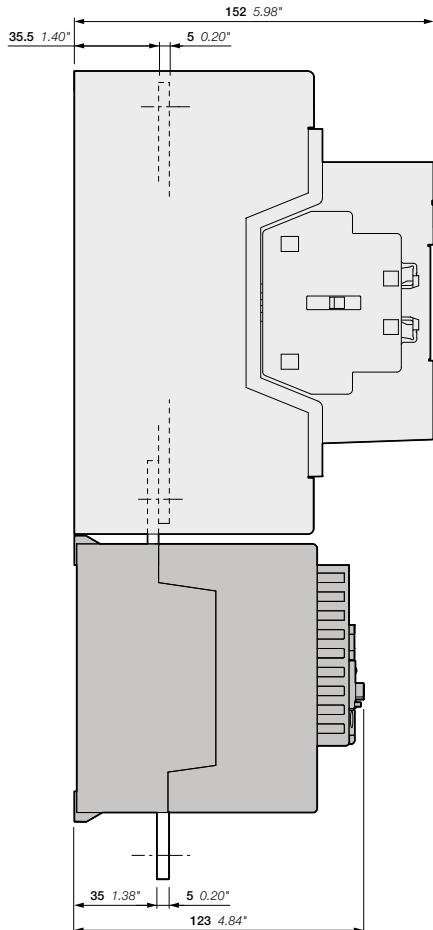
AF190, AF205 3-pole contactors

Main dimensions mm, inches

5



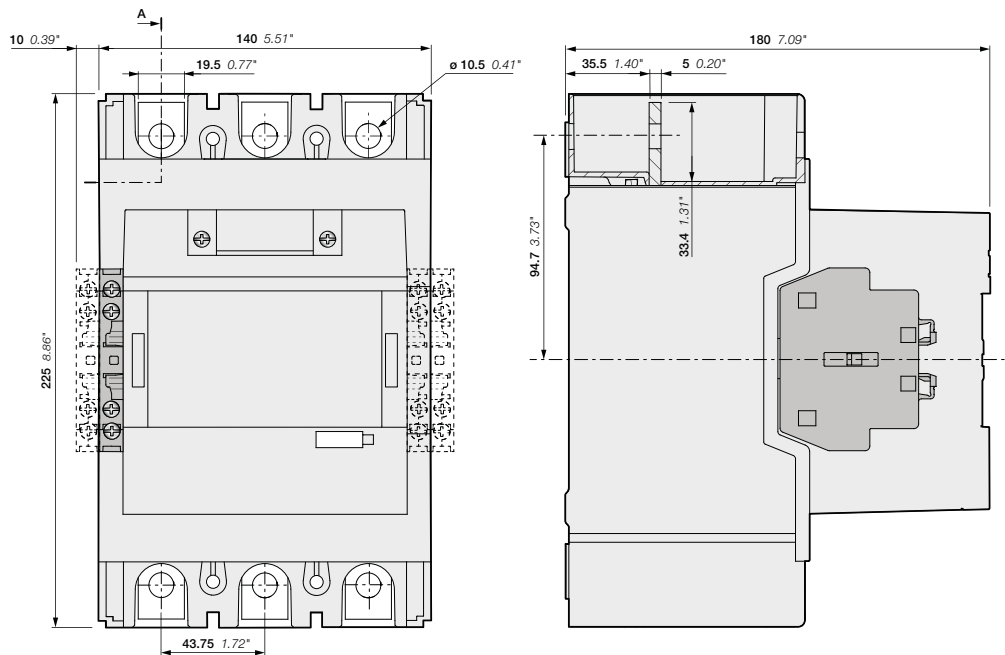
AF190, AF205-30-11
+ EF205 electronic overload relay



AF190, AF205
+ EF205 electronic overload relay

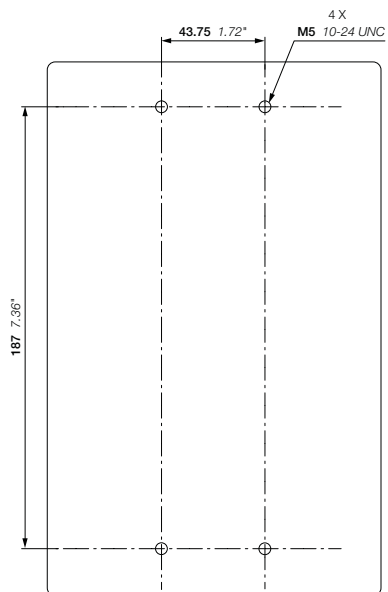
AF265, AF305, AF370 3-pole contactors

Main dimensions mm, inches



5

AF265, AF305, AF370-30-00 + CAL19 2-pole contact block
 AF265, AF305, AF370-30-11

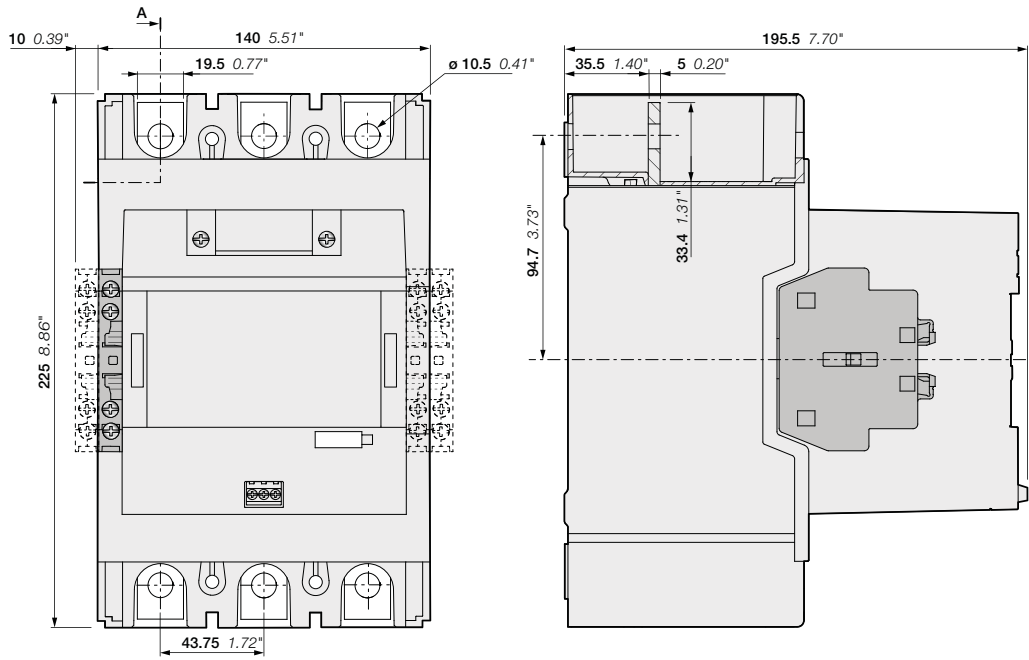


AF265, AF305, AF370

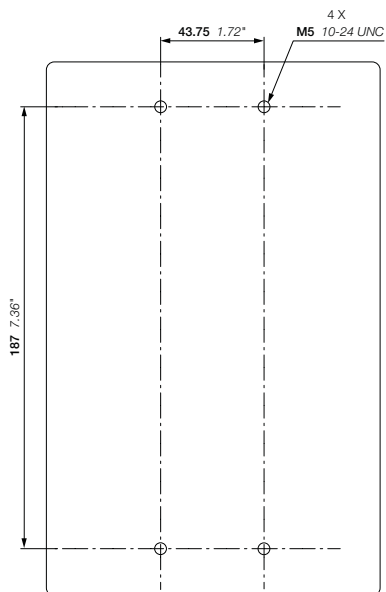
AF265, AF305, AF370 3-pole contactors With built-in PLC interface (coil code 33, 34)

Main dimensions mm, inches

5



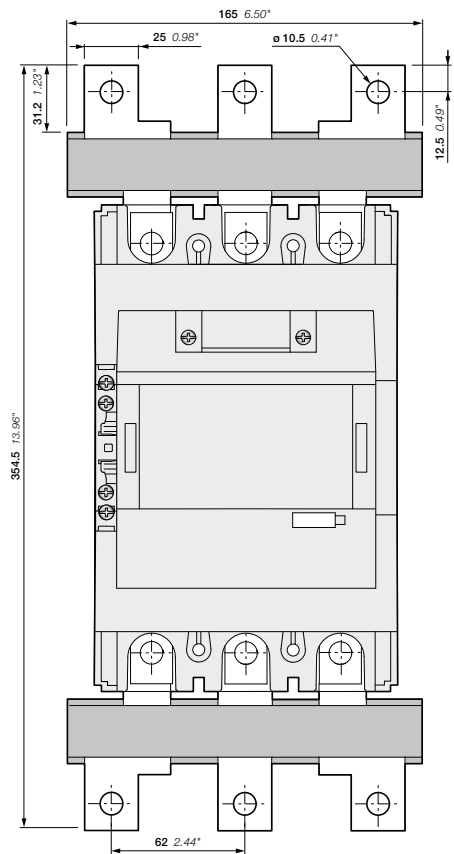
AF265, AF305, AF370-30-00 + CAL19 2-pole contact block
AF265, AF305, AF370-30-11



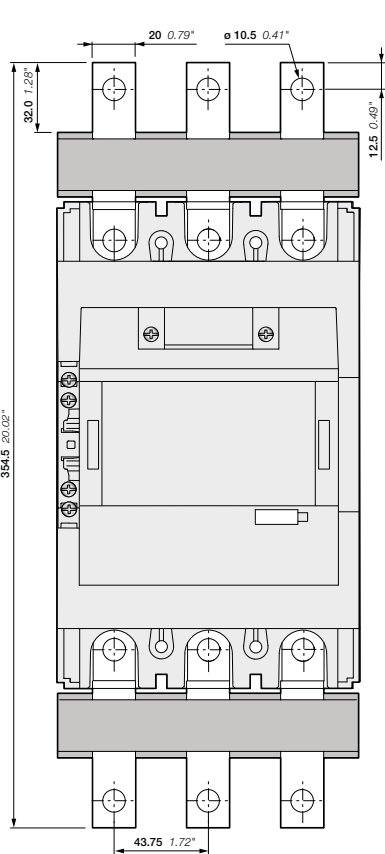
AF265, AF305, AF370

AF265, AF305, AF370 3-pole contactors

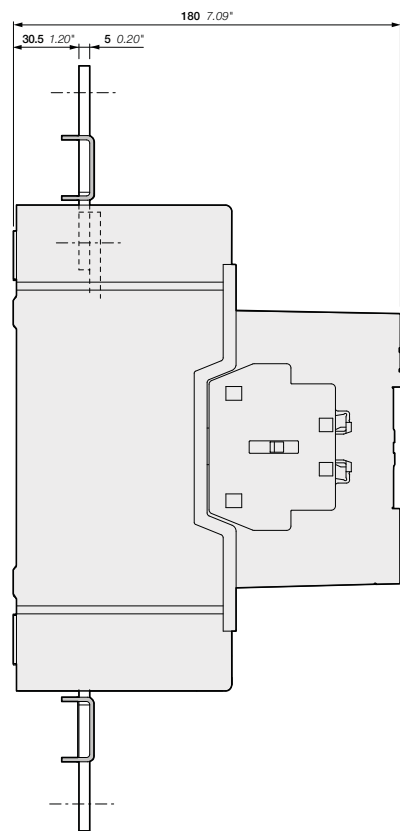
Main dimensions mm, inches



AF265, AF305, AF370-30-11
+ LX300 terminal extension



AF265, AF305, AF370-30-11
+ LW300 terminal enlargement

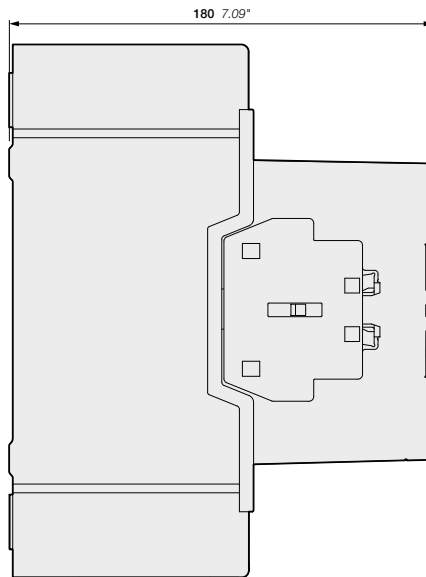
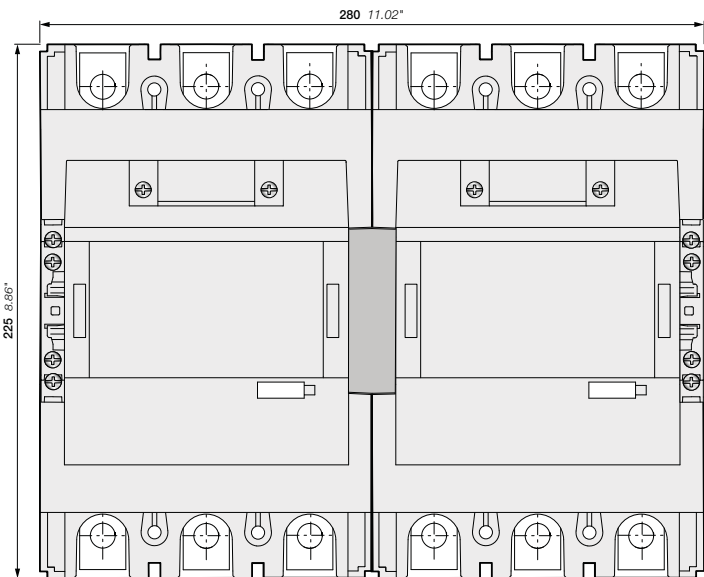


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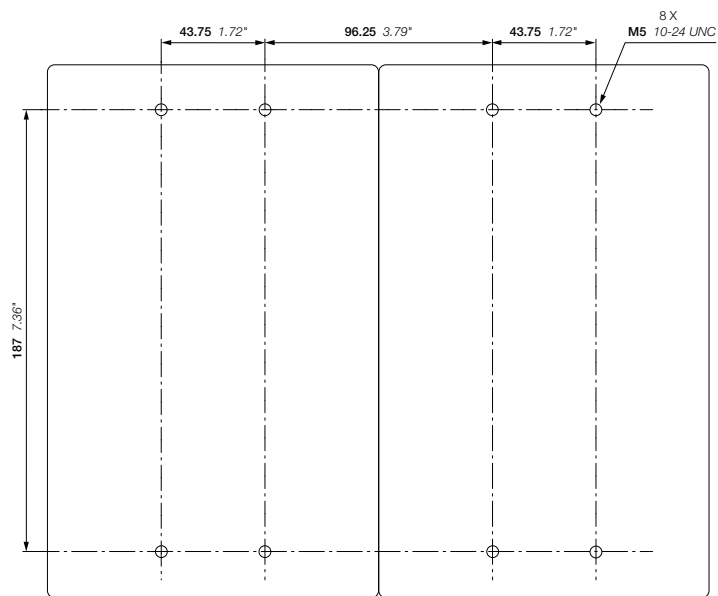
AF265, AF305, AF370 3-pole contactors

Main dimensions mm, inches

5



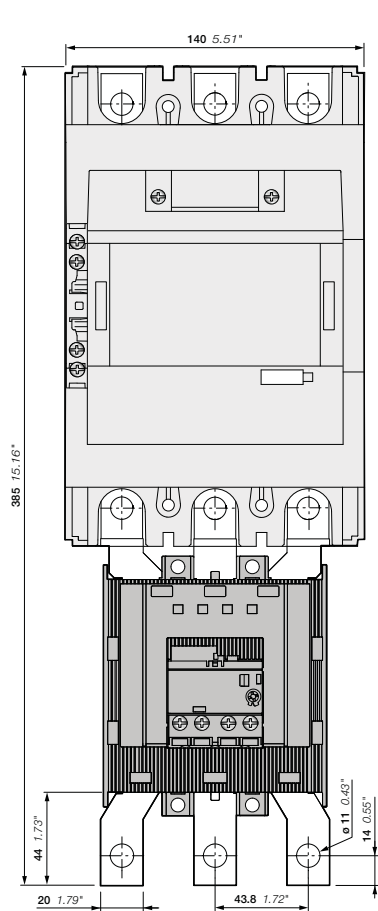
AF265, AF305, AF370-30-11
+ VM19 mechanical interlocking unit



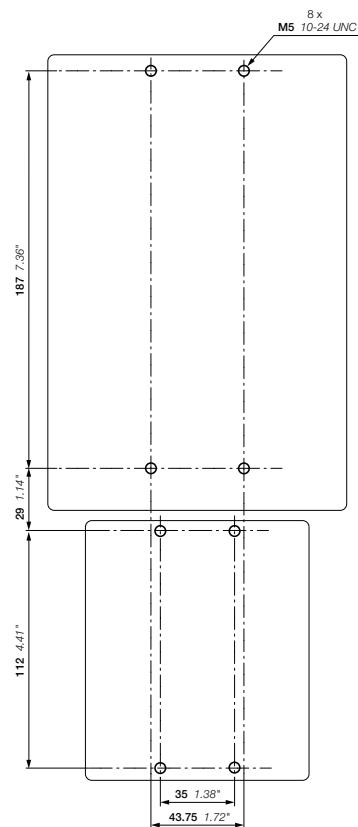
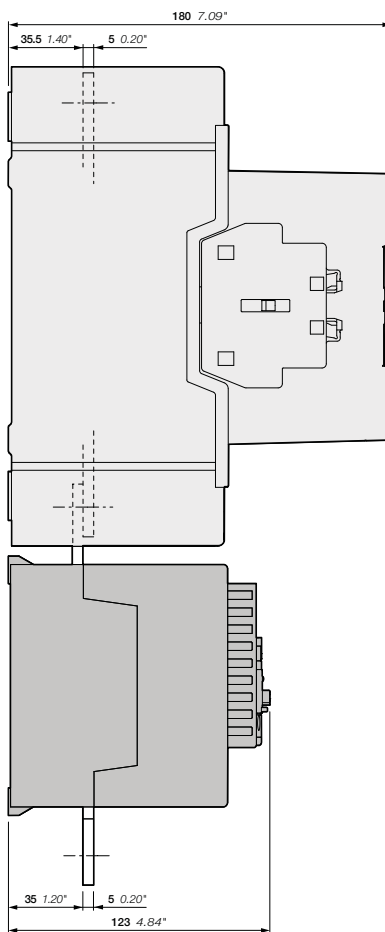
AF265, AF305, AF370
+ VM19 mechanical interlocking unit

AF265, AF305, AF370 3-pole contactors

Main dimensions mm, inches



AF265, AF305, AF370-30-11
+ EF370 electronic overload relay

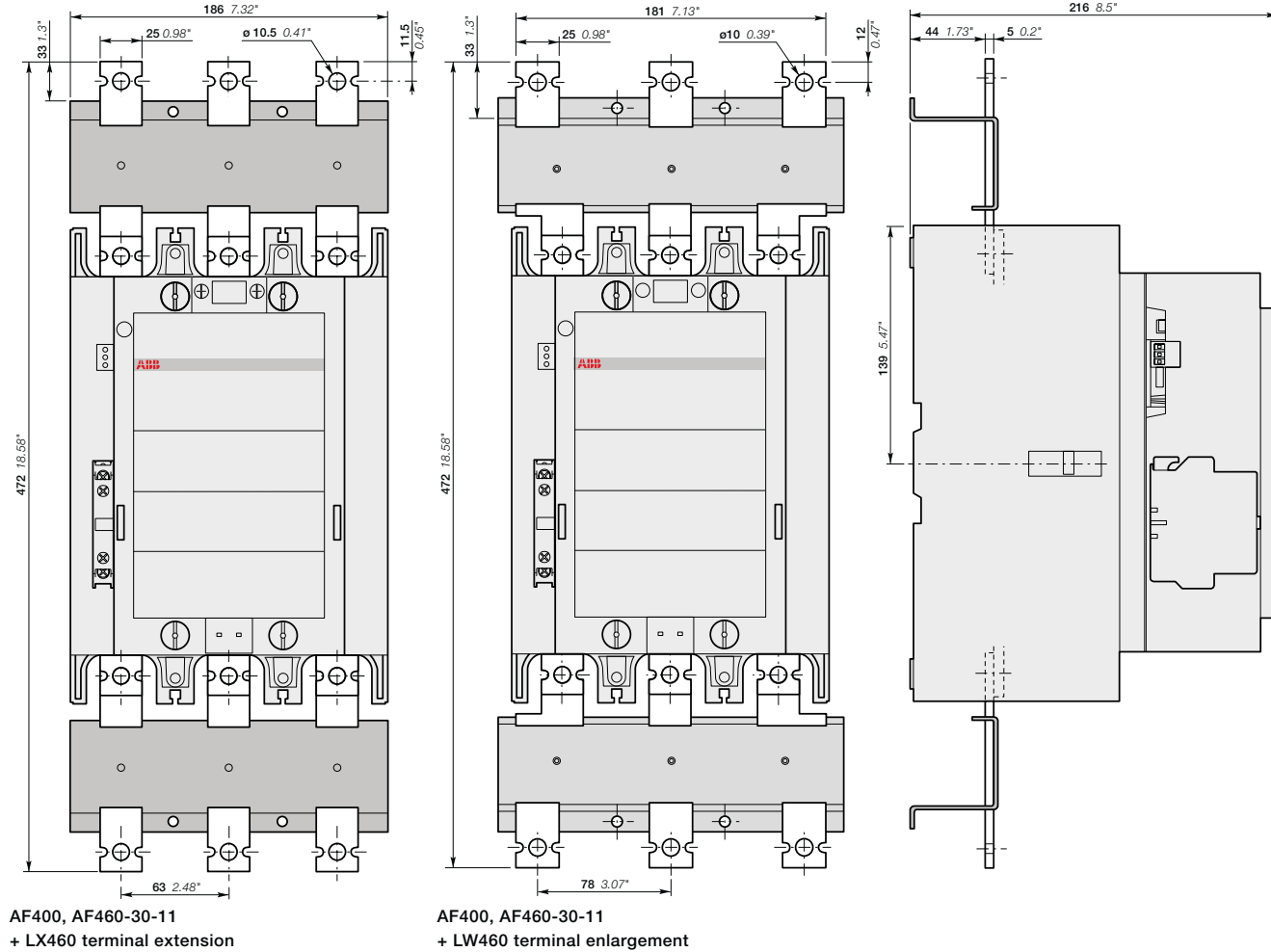
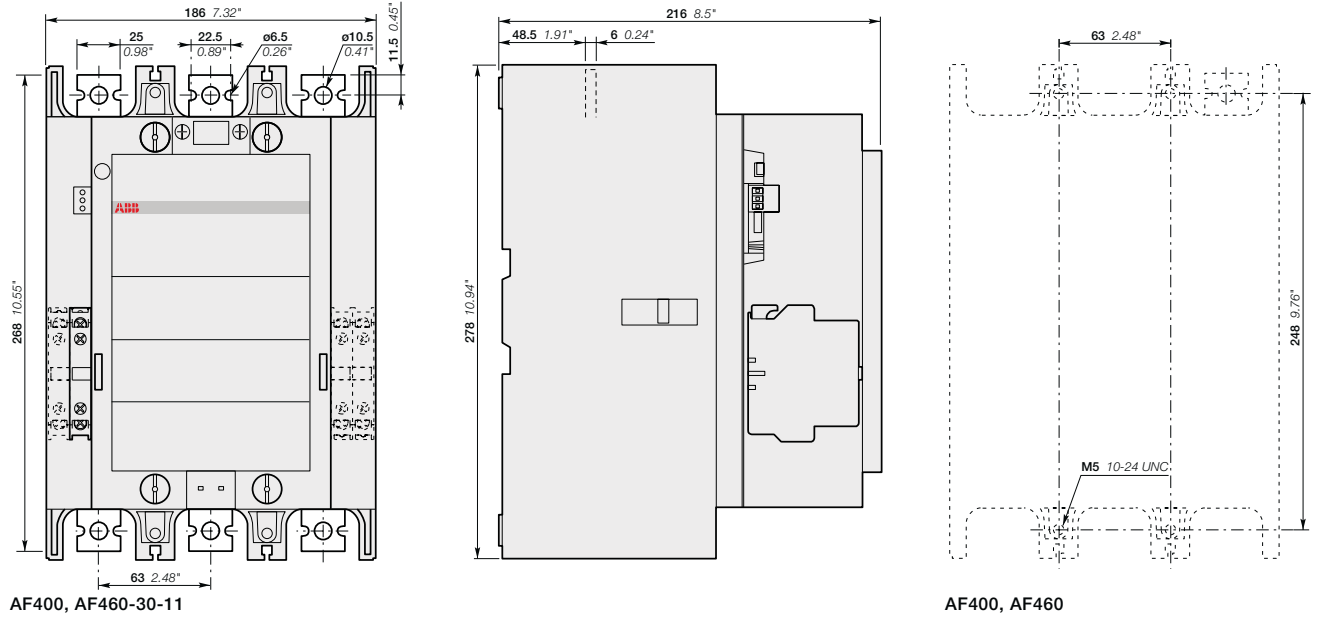


AF265, AF305, AF370
+ EF370 electronic overload relay

AF400 and AF460 3-pole contactors

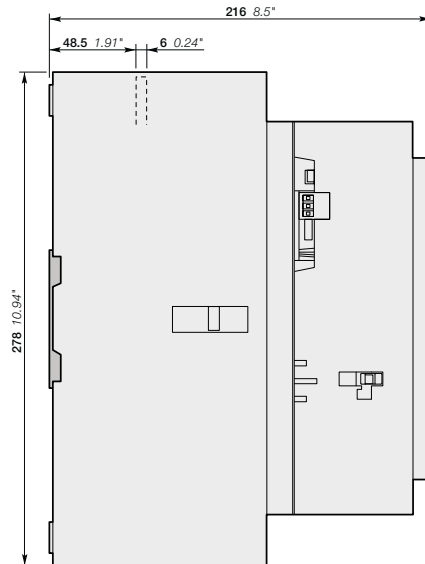
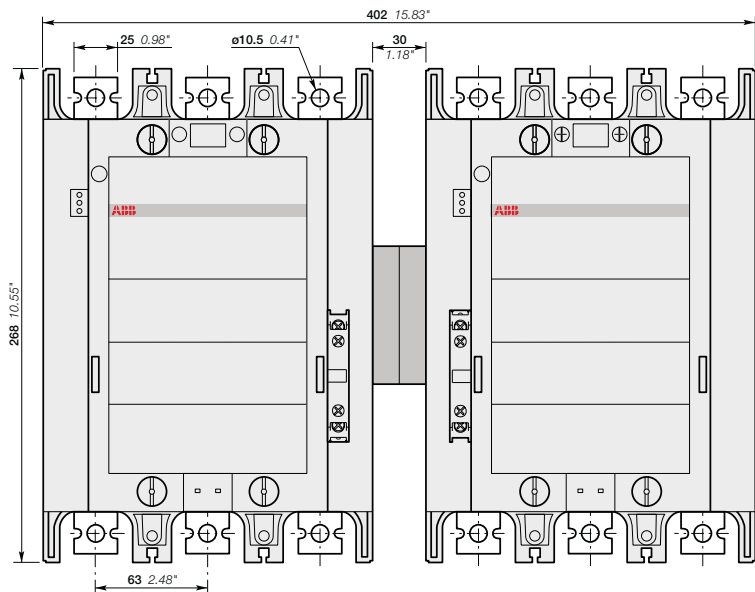
Main dimensions mm, inches

5



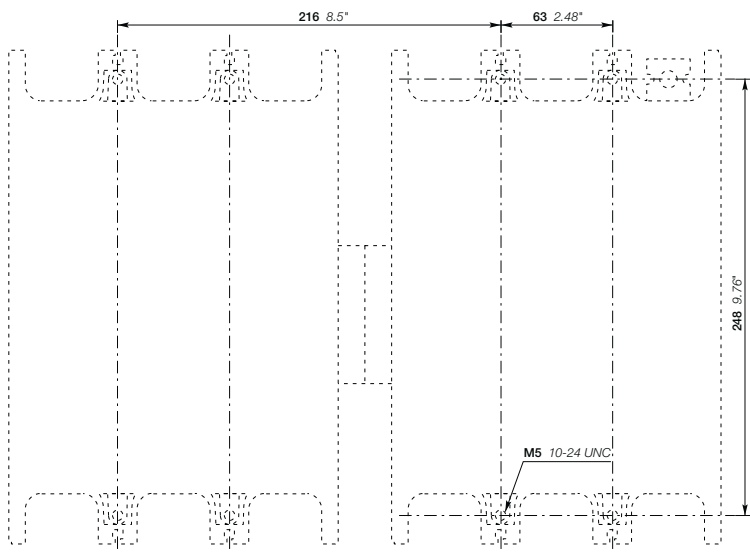
AF400 and AF460 3-pole contactors

Main dimensions mm, inches



5

AF400, AF460-30-11
+ VM750H mechanical interlock unit

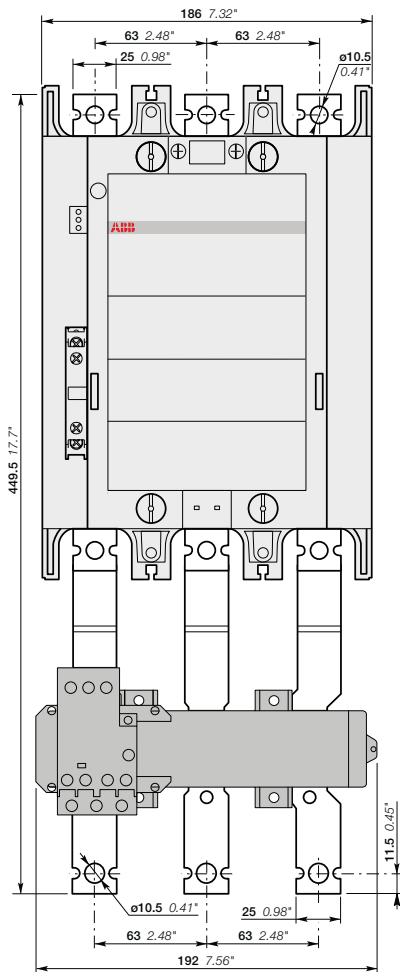


AF400, AF460
+ VM750H mechanical interlock unit

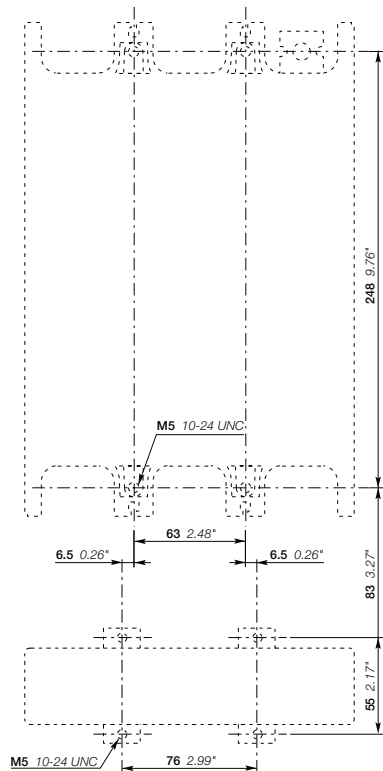
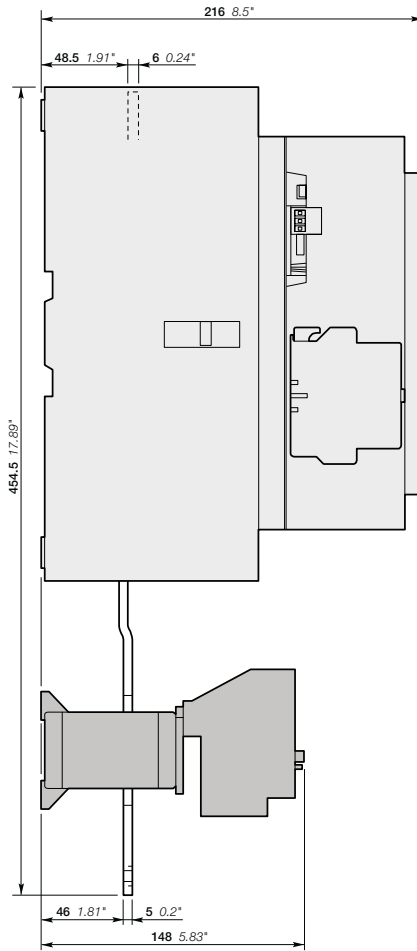
AF400 and AF460 3-pole contactors

Main dimensions mm, inches

5



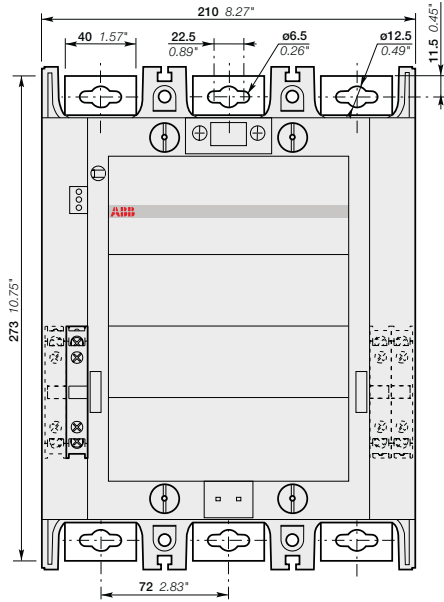
AF400, AF460-30-11
+ E500DU electronic O/L relay



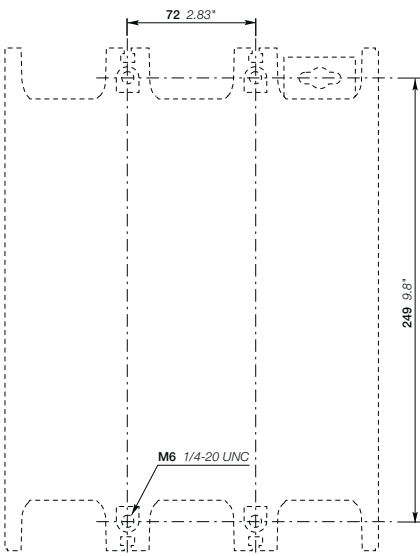
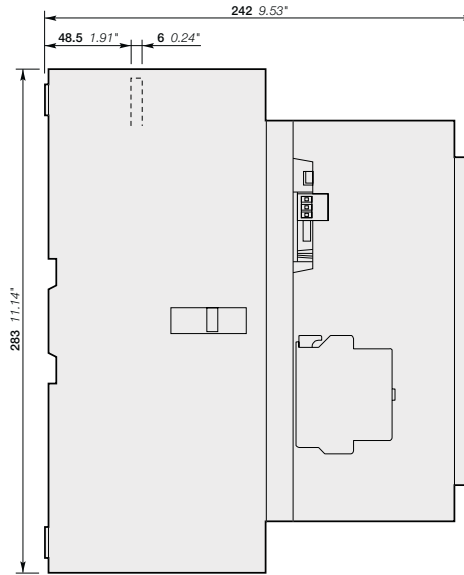
AF400, AF460
+ E500DU electronic O/L relay

AF580 and AF750 3-pole contactors

Main dimensions mm, inches



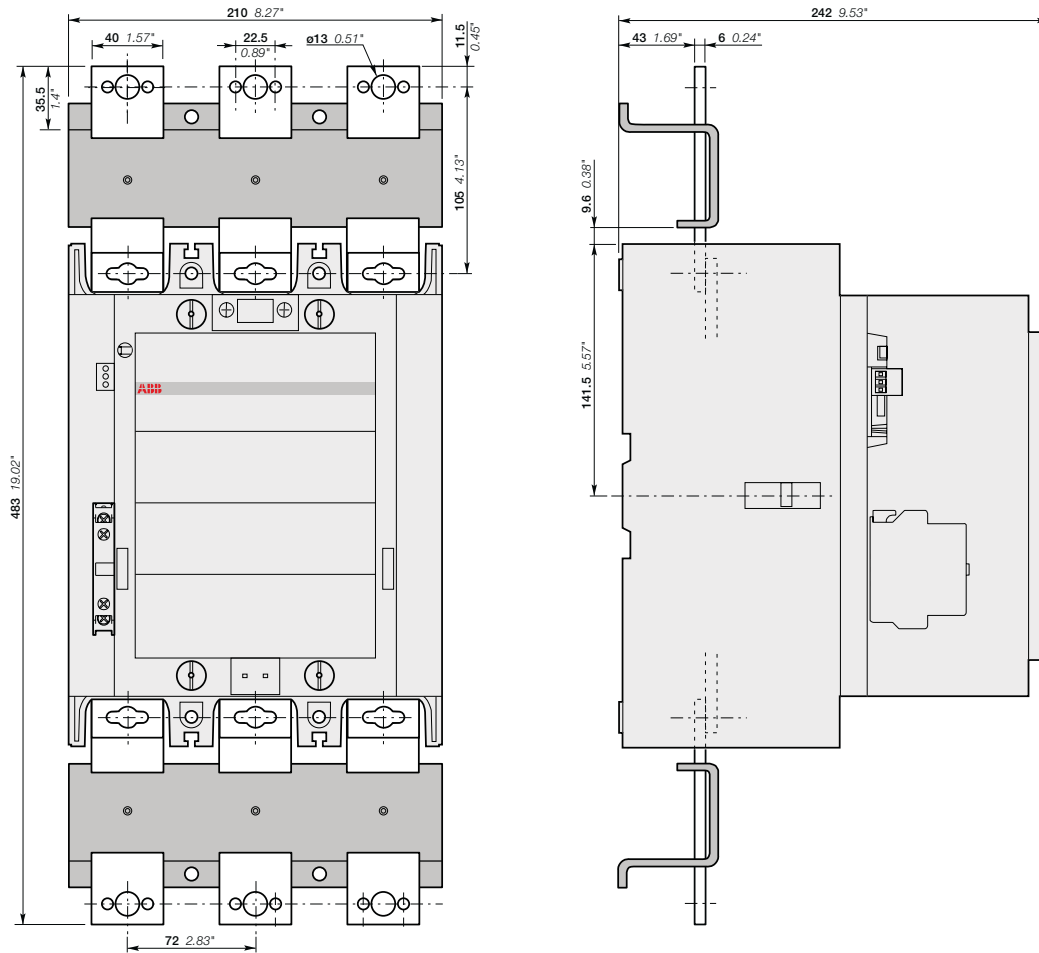
AF580 and AF750-30-11



AF580 and AF750

AF580 and AF750 3-pole contactors

Main dimensions mm, inches

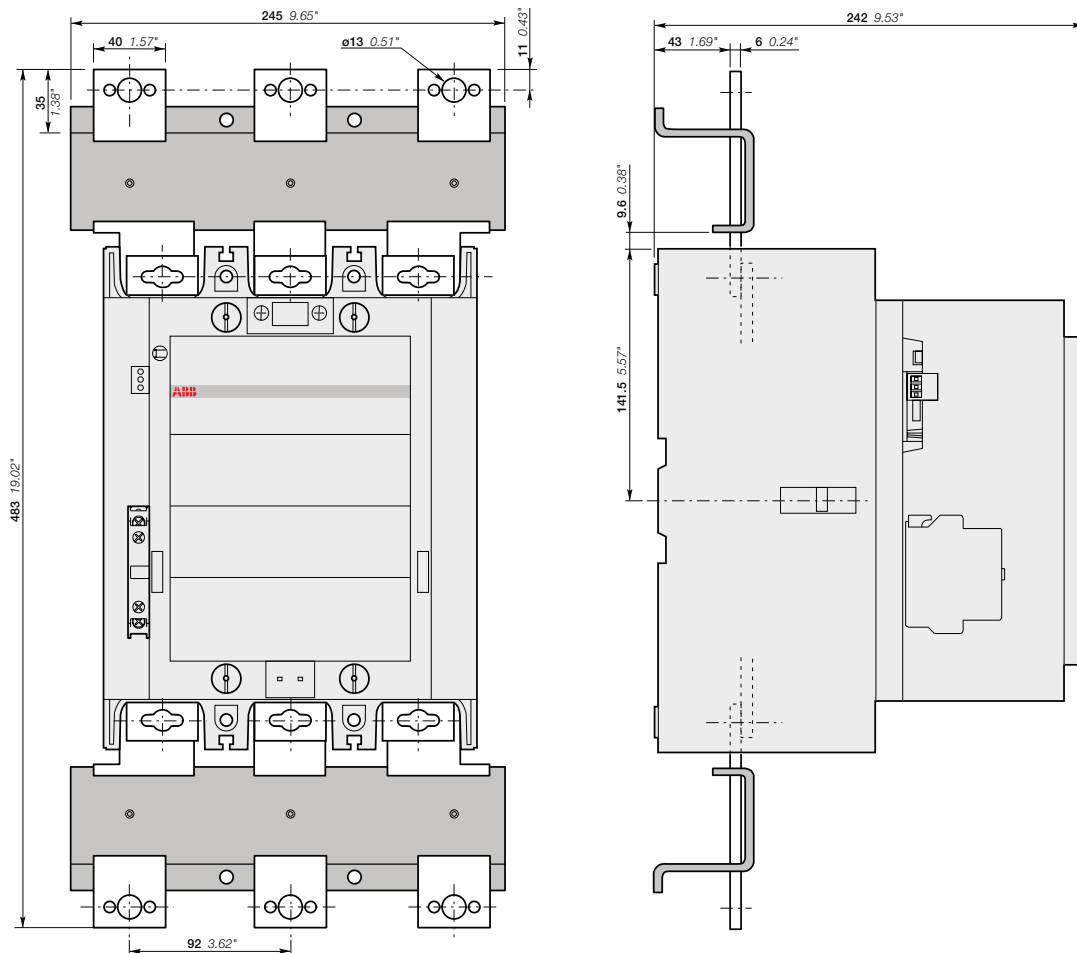


AF580 and AF750-30-11
+ LX750 terminal extension

5

AF580 and AF750 3-pole contactors

Main dimensions mm, inches

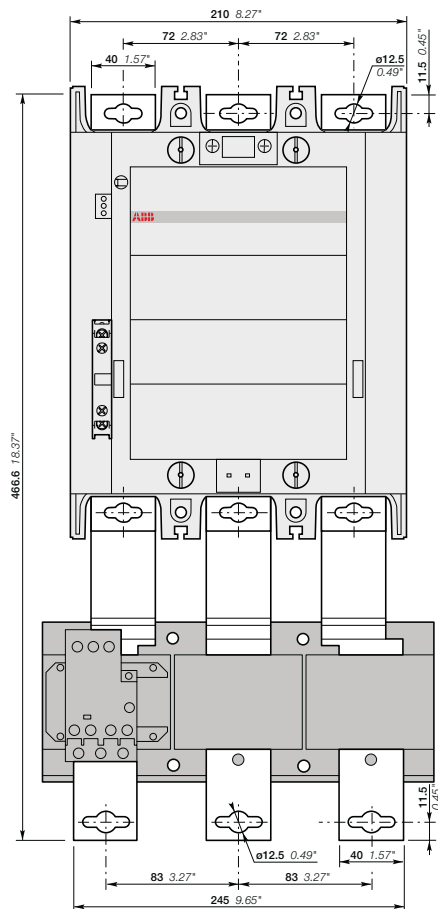


AF580 and AF750-30-11
+ LW750 terminal enlargement

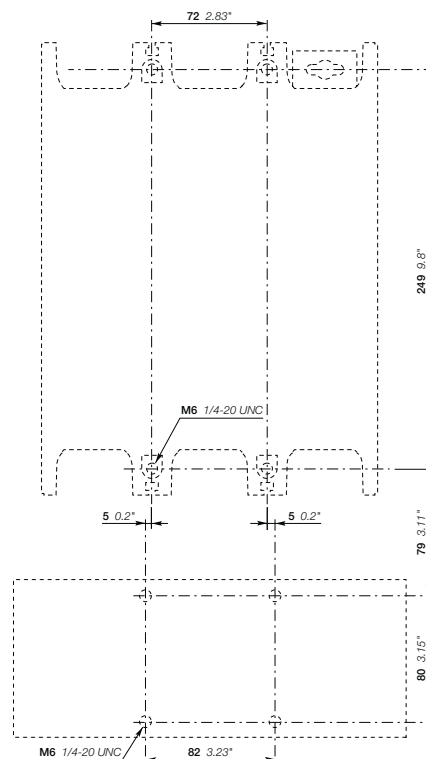
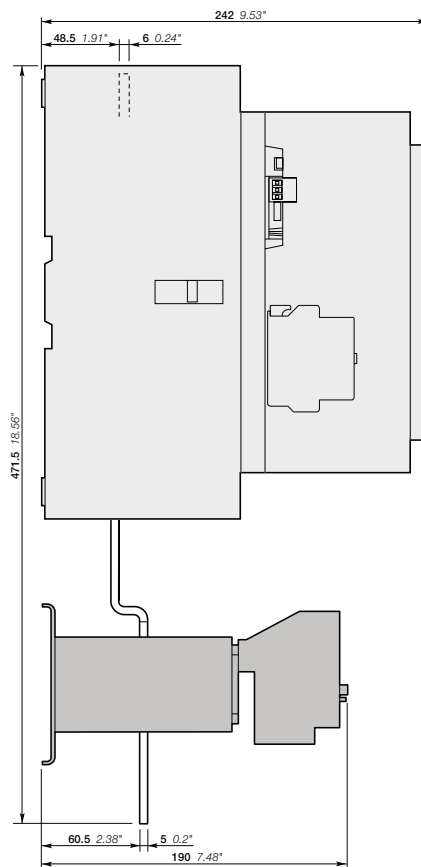
AF580 and AF750 3-pole contactors

Main dimensions mm, inches

5



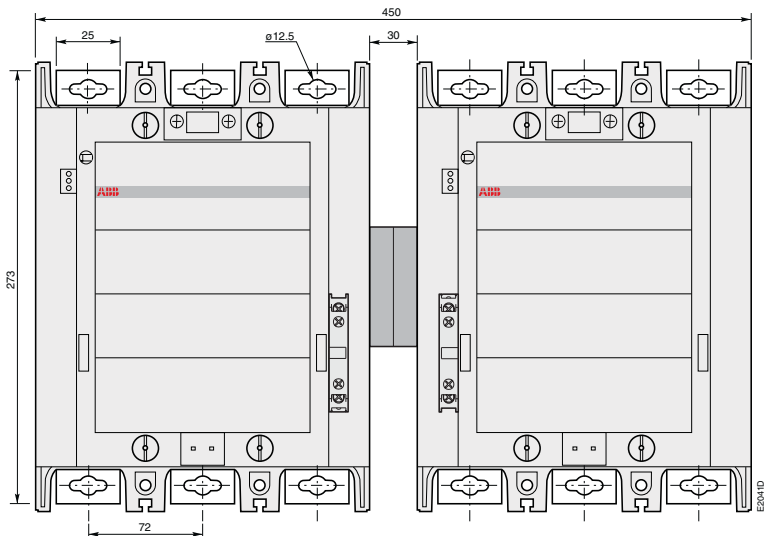
AF580 and AF750-30-11
+ E800DU electronic O/L relay



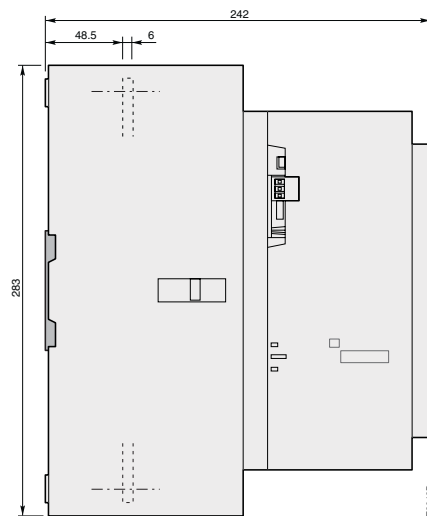
AF580 and AF750
+ E800DU electronic O/L relay

AF580 and AF750 3-pole contactors

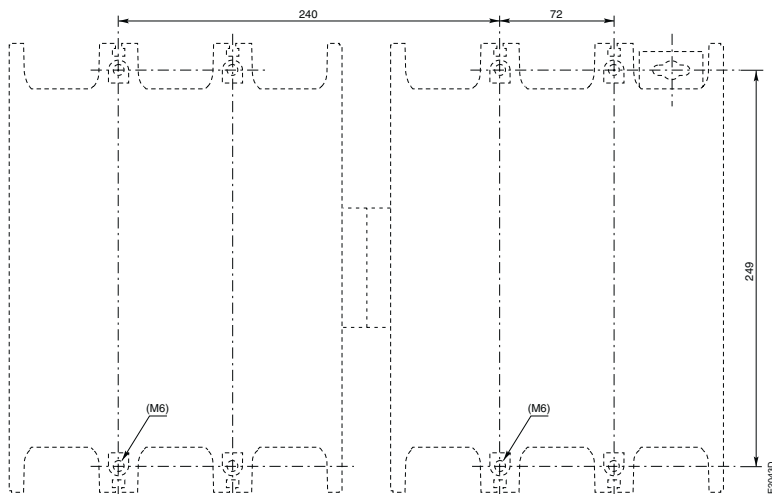
Main dimensions mm, inches



AF580 and AF750-30-11
+ VM 750H mechanical interlock unit



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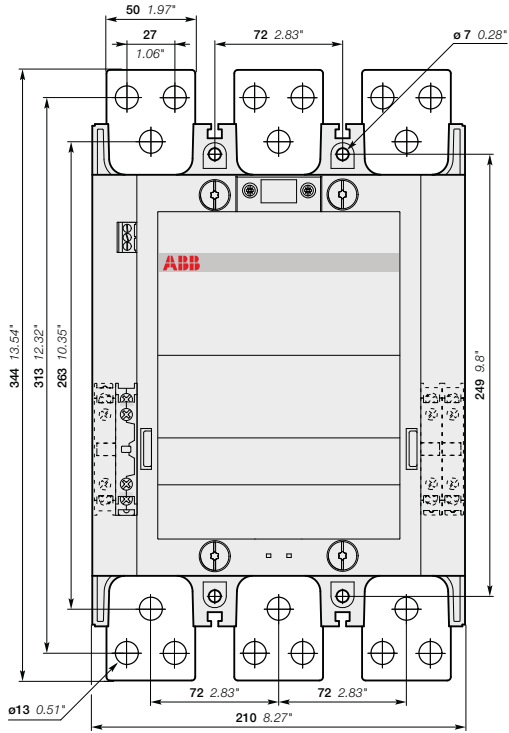


AF580 and AF750
+ VM 750H mechanical interlock unit

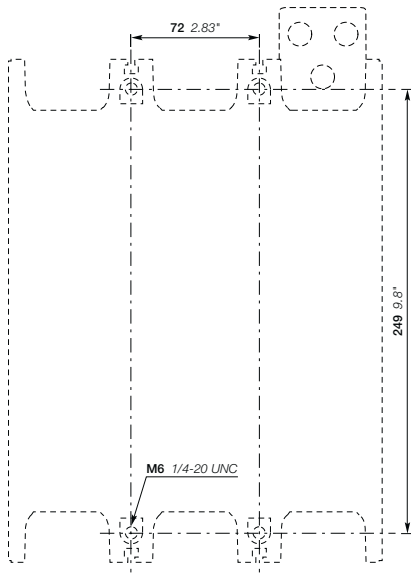
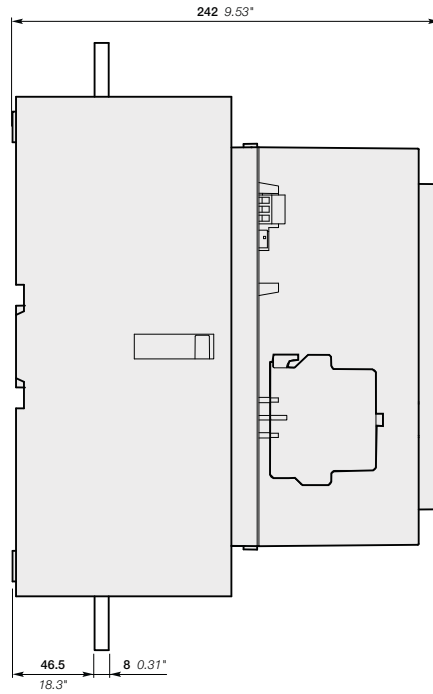
AF1250 3-pole contactors

Main dimensions mm, inches

5



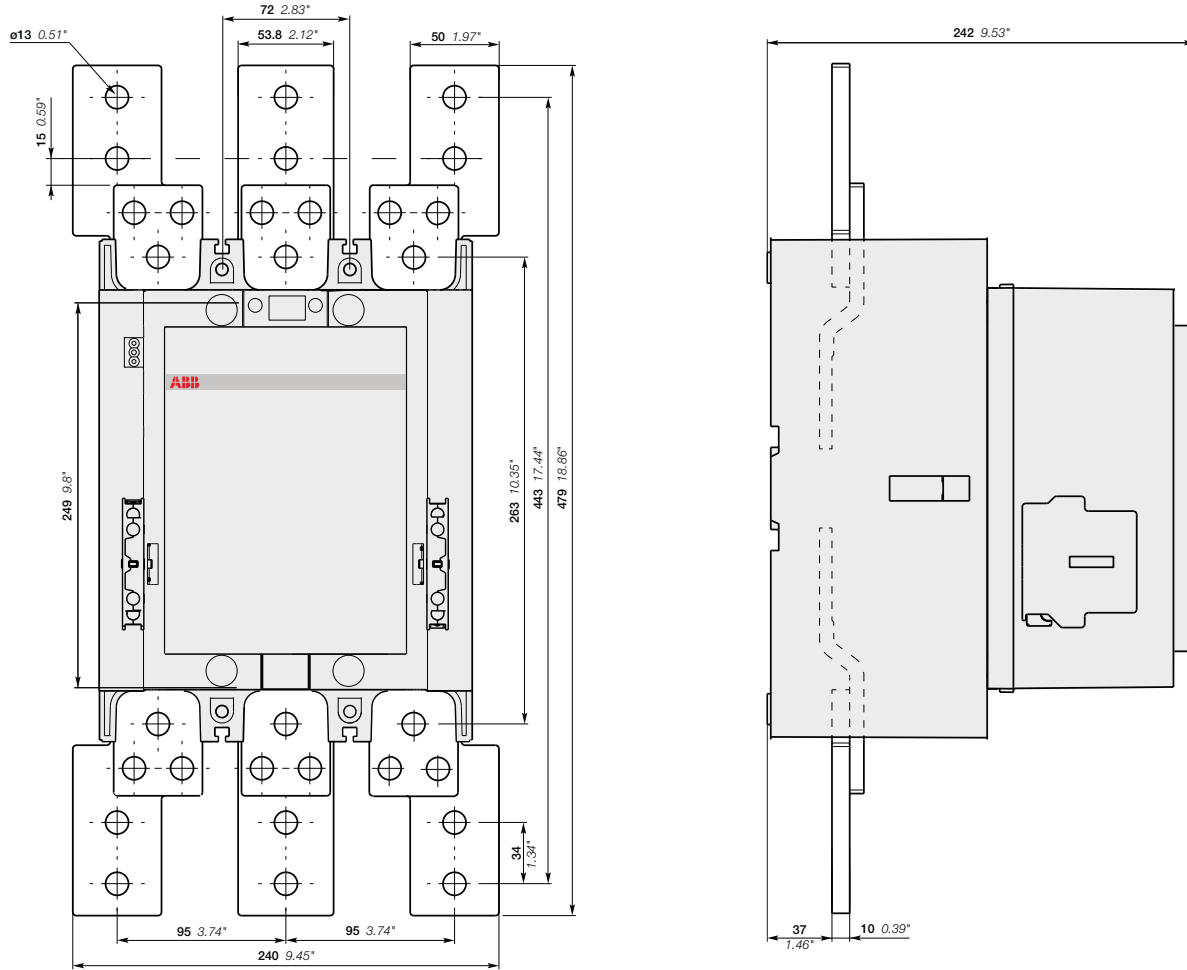
AF1250-30-11



AF1250

AF1250 3-pole contactors

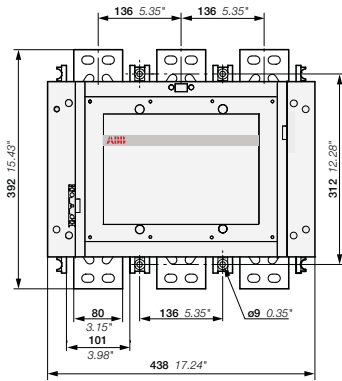
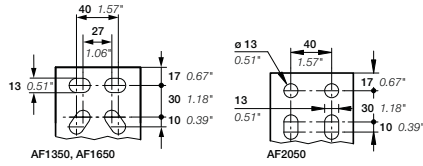
Main dimensions mm, inches



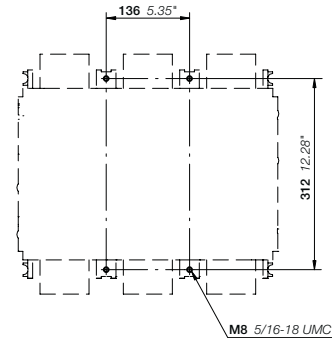
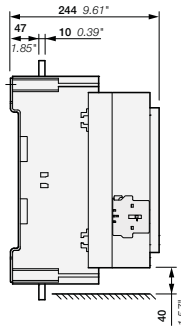
AF1250-30-11
+ LW1250 terminal enlargement

AF1350, AF1650, AF2050 and AF2650 3-pole contactors

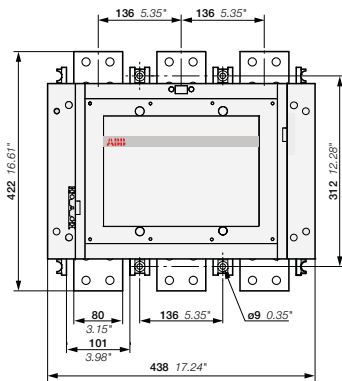
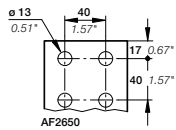
Main dimensions mm, inches



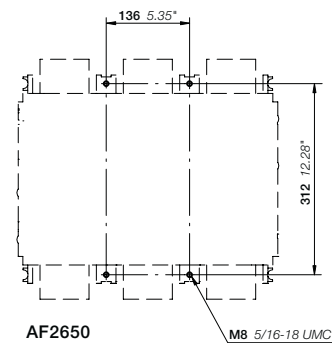
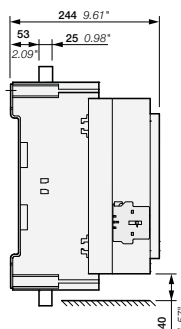
AF1350, AF1650, AF2050-30-11



AF1350, AF1650, AF2050



AF2650-30-11



AF2650

AF1350, AF1650, AF2050 and AF2650 3-pole contactors

Main dimensions mm, inches

