

Panorama

Motor protection and control
Manual motor starters, contactors and overload relays

Power and productivity
for a better world™

ABB sets a new standard in motor control and power switching

Featuring AF technology as standard, the latest range of ABB's contactors establishes a new industry benchmark. The electronically controlled coil offers multiple benefits over conventional alternatives, and together with ABB's wide product offering – an optimal configuration, every time.



Access Global Support

The contactor and motor protection range from ABB is compatible with all major national and international standards and is available worldwide via a global distribution network. One contactor coil now handles 100 V – 250 V, AC / DC for use in Europe or Asia as well as North America.



Optimize logistics

With its contactor and motor protection range, ABB has managed to reduce the number of contactor coils to just four. The total number of product variants has been reduced by up to 90 %. This simplifies the customers' logistics and cuts administration costs.



Simplify design

By reducing contactor coil energy consumption by up to 80 %, panels can be built smaller and transformers more compact. All the features of the AF technology, along with access to drawings and coordination tables online, simplifies your design and assembly process.



Secure uptime

Time to prevent stoppages caused by voltage fluctuations. The AF contactor ensures distinct operation in unstable networks and signifies a major advance in motor control and power switching. Voltage sags, dips and surges pose no threat. The AF contactor secures your uptime.



MacGregor. Keeping turnarounds brief.

Until the AF range was installed, voltage sags were affecting MacGregor's deck cranes.
Conventional contactors welded shut, leading to several stoppages a week. No longer. Known for superior quality and an ability to operate in the most hostile environments, MacGregor deck cranes enjoy a global reputation for reliability. A small but vital component, the AF contactor helps maintain this reputation.

To keep things moving, you need Control. Connect to Control.

Explore all our case studies at www.abb.com/connecttocontrol

SSAB
Making certainty standard

Gamesa
Taming the wind

LKAB
Providing fresh air

Mini contactors

3-pole contactors for motor control and power switching



3-pole or 4-pole













IEC (1)	AC-3 Rated operational power	θ ≤ 60 °C (2), 400 V	kW	4	5.5	4	5.5	7.5	4	5.5	7.5	11	15	18.5	18.5	22	30	37	45	55	75	75	90	110	132	160	200	200	250	315	400	–	475	560	–	–
UL/CSA	3-phase motor rating	480 V	hp	3	5	5	7.5	10	5	7.5	10	15	20	25	30	40	50	60	60	75	100	100	125	150	200	250	300	350	400	500	600	–	800	900	–	–
AC / DC Control supply			Type	–	–	–	–	–	AF09	AF12	AF16	AF26	AF30	AF38	AF40	AF52	AF65	AF80	AF96	AF116	AF140	AF146	AF190	AF205	AF265	AF305	AF370	AF400	AF460	AF580	AF750	AF1250	AF1350	AF1650	AF2050	AF2650
AC Control supply			Type	B6	B7	AS09	AS12	AS16	AF09	AF12	AF16	AF26	AF30	AF38	AF40	AF52	AF65	AF80	AF96	AF116	AF140	AF146	AF190	AF205	AF265	AF305	AF370	AF400	AF460	AF580	AF750	AF1250	AF1350	AF1650	AF2050	AF2650
DC Control supply			Type	BC6	BC7	ASL09	ASL12	ASL16	AF09	AF12	AF16	AF26	AF30	AF38	AF40	AF52	AF65	AF80	AF96	AF116	AF140	AF146	AF190	AF205	AF265	AF305	AF370	AF400	AF460	AF580	AF750	AF1250	AF1350	AF1650	AF2050	AF2650
IEC	AC-3 Rated operational current	θ ≤ 60 °C (2), 400 V	A	8.5	11.5	9	12	15.5	9	12	18	26	32	38	40	53	65	80	96	116	140	146	190	205	265	305	370	400	460	580	750	–	860	1060	–	–
	AC-1 Rated operational current	θ ≤ 40 °C, 690 V	A	20 (400 V)	20 (400 V)	22	24	24	25	28	30	45	50	50	70	100	105	125	130	160	200	225	275	350	400	500	600	600	700	800	1050	1260	1350	1650	2050	2650
UL/CSA	General use rating	600 V	A	12 (300 V)	16	20	20	20	25	28	30	45	50	50	60	80	90	105	115	160	200	200	250	300	350	400	520	550	650	750	900	1210	1350	1650	2100	2700
NEMA	NEMA Size			–	–	00	00	0	00	0	–	1	–	–	2	–	–	3	–	–	4	–	–	–	5	–	–	–	6	–	7	–	–	8	–	–

(1) 1000 V IEC ratings available for AF80, AF96 and AF146 ... AF2650 contactors.
(2) θ ≤ 55 °C for mini contactors and AF400 ... AF2650 contactors.

Main accessories

Auxiliary contact blocks	Front mounting	**CAF6**	**CA3-10** (1 x N.O.) **CA3-01** (1 x N.C.)			**CA4-10** (1 x N.O.) **CA4-01** (1 x N.C.)																														
	Side mounting	**CA6**				**CAL4-11** (1 x N.O. + 1 x N.C.)														**CAL19-11** (1 x N.O. + 1 x N.C.)					**CAL18-11** (1 x N.O. + 1 x N.C.)											
Timers	Electronic		**TEF3-ON** **TEF3-OFF**			**TEF4-ON** **TEF4-OFF**																														
Interlocking units (3)	Mechanical		**VM3**			**VM4**				**VM96-4**										**VM19** (for same size contactors)					**VM750H** **VM750V**					**VM1650H**					
	Mechanical / Electrical					**VEM4**																														
Connection sets	For reversing contactors	**BSM6-30**	**BER16C-3**			**BER16-4**		**BER38-4**		**BER65-4**			**BER96-4**		**BER140-4**			**BER205-4**		**BER370-4**			**BEM460-30**		**BEM750-30**										
Surge suppressors	Varistor (AC / DC)	**RV-BC6**	**RV5** (24...440 V) **RC5-1** (24...440 V)			Built-in surge protection																														
	RC type (AC)																																		
	Transil diode (DC)	**RD7**	**RT5** (12...264 V)																																	

(3) See available reversing contactors VB6, VB7 and VAS09 ... VAS16.

Overload relays

Thermal relays	Class 10 (Class 10A for TF140, TA200DU)	**T16** (0.10...16 A)	**T16** (0.10...16 A)			**TF42** (0.10...38 A)				**TF65** (22...67 A)			**TF96** (40...96 A)		**TF140DU** (66...142 A) θ ≤ 55 °C			**TA200DU** (66...200 A) θ ≤ 55 °C																
Electronic relays	Class 10E, 20E, 30E	**E16DU** (0.10...18.9 A)				**EF19** (0.10...18.9 A)		**EF19** (0.10...18.9 A) **EF45** (9...45 A)		**EF65** (20...70 A)			**EF96** (36...100 A)		**EF146** (54...150 A)			**EF205** (83...210 A)		**EF370** (115...380 A)			**EF460** (150...500 A)		**EF750** (250...800 A)			**E1250DU** (375...1250 A)							

Manual motor starters



	Thermal / magnetic protection Class 10	**MS116** (0.10...32 A) Ics up to 50 kA for class 10A	**MS116** (0.10...32 A) Ics up to 50 kA for class 10A									**MS165** (10...65 A) Ics up to 100 kA (4)					**MS495** (45...100 A) Ics up to 50 kA			**MS5100** (40...100 A) Ics up to 50 kA														
		MS132 (0.10...32 A) Ics up to 100 kA	**MS132** (0.10...32 A) Ics up to 100 kA																																	
	Magnetic only types	**MO132** (0.16...32A)	**MO132** (0.16...32 A) Ics up to 100 kA									**MS497** (22...100 A) Ics up to 100 kA								**MO5100** (70...100 A) Ics up to 36 kA																
												MO165 (16...65 A) Ics up to 100 kA (4)																									
															MO496 (32...100 A) Ics up to 100 kA																			
																				MO495 (63...100 A) Ics up to 50 kA														
Accessories	For contactor mounting	**BEA7/132**	**BEA16-3**			**BEA16-4**		**BEA38-4**		**BEA65-4** (5)																											

(4) MS165/MO165 are suitable for use with AF09 ... AF30 for North american applications.
(5) BEA65-4 suitable for MS165 and MO165 only.

Short-circuit protection devices

MCCB and switch-fuses






4-pole contactors










IEC	AC-1 Rated operational current	θ ≤ 40 °C, 690 V	A	25	30	45	55	70	100	125	160	200	275	350	400	500	525	800	1000
UL/CSA	General use rating	600 V	A	25	30	45	55	60	80	105	160	175	230	250	300	350	420	540	–
AC / DC Control supply			Type	AF09	AF16	AF26	AF38	AF40	AF52	AF80	AF116	AF140	AF190	AF205	AF265	AF305	AF370	–	–
AC Control supply			Type	AF09	AF16	AF26	AF38	AF40	AF52	AF80	AF116	AF140	AF190	AF205	AF265	AF305	AF370	EK550	EK1000
DC Control supply			Type	AF09	AF16	AF26	AF38	AF40	AF52	AF80	AF116	AF140	AF190	AF205	AF265	AF305	AF370	EK550	EK1000

Mini contactor relays



4-pole

IEC	AC-15 Rated operational current	400 V	A	3		
UL/CSA	Pilot duty			A600		
				2 2	3 1	4 0
AC Control supply			Type	K6-22Z	K6-31Z	K6-40E
DC Control supply			Type	KC6-22Z	KC6-31Z	KC6-40E
AC / DC Control supply			Type	–	–	–

Contactor relays



4-pole



4-pole

				3			3		
				A600, Q300			A600, Q600		
				2 2	3 1	4 0	2 2	3 1	4 0
AC Control supply			Type	NS22E	NS31E	NS40E	NF22E	NF31E	NF40E
DC Control supply			Type	NSL22E	NSL31E	NSL40E	NF22E	NF31E	NF40E
AC / DC Control supply			Type	–	–	–	NF22E	NF31E	NF40E

R contactors

DC Circuit switching



DC-1 Rated current up to 5000 A
DC-3/DC-5 Rated current up to 2000 A
1500 V with poles in series

IOR.. 63-..-CC to **IOR.. 5100-..-CC**

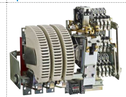
AC Circuit switching



AC-1 Rated current up to 5000 A
AC-3 Rated current up to 1500 kW
(1520 A - 440 V)

IOR.. 63-..-MT to **IOR.. 5100-..-MT**

Special versions



AC / DC Coupling: LOR.. contactors
Slip ring motor control: FOR .. contactors
Field discharge: AM(F)-CC-JORE contactors
AC / DC Switching (N.C./N.O. main poles): NOR & JOR contactors
Latching contactors for energy saving and safety requirements: AMA or AME contactors

Specific contactors

Capacitor switching



12.5 to 80 kvar

UA16 to **UA110** types
UA16..RA to **UA110..RA** types

DC Circuit switching



100 A, 440 V, DC-1

GA75, **GAE75** types



275 to 2050 A, 1000 V, DC-1

GAF185 to **GAF2050** types

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http://new.abb.com/low-voltage/products/motor-protection

http://www.abb.com/lowvoltage

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