



Panorama

Motor protection and control

Manual motor starters, contactors and overload relays

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.



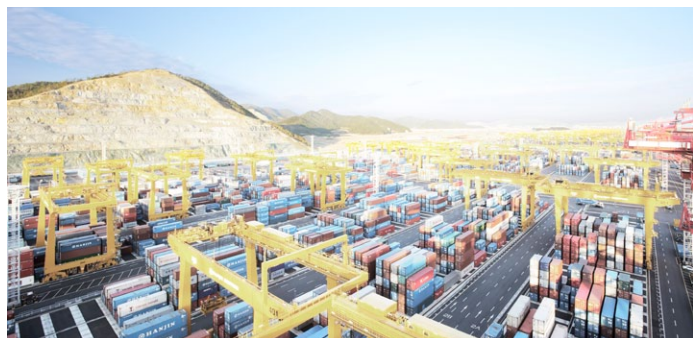
Optimize logistics

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	$\theta \leq 60^\circ\text{C}$ (2), 400 V	kW	4	5.5
UL/CSA	3-phase motor rating	480 V	hp	3	5
AC / DC Control supply		Type		—	—
AC Control supply		Type		B6	B7
DC Control supply		Type		BC6	BC7
IEC	AC-3 Rated operational current	$\theta \leq 60^\circ\text{C}$ (2), 400 V	A	9	12
	AC-1 Rated operational current	$\theta \leq 40^\circ\text{C}$, 690 V	A	16 (400 V)	20 (400 V)
UL/CSA	General use rating	600 V	A	12 (300 V)	16
NEMA	NEMA Size			—	—

(1) 1000 V IEC ratings available for AF146 ... AF2650 contactors.
 (2) $\theta \leq 55^\circ\text{C}$ for mini contactors and AF400 ... AF2650 contactors.

Main accessories

Auxiliary contact blocks	Front mounting	CAF6
	Side mounting	CA6
Timers	Electronic	
	Mechanical	
Interlocking units (4)	Mechanical	
Connection sets	Mechanical / Electrical	
	For reversing contactors	BSM6-30
Surge suppressors	Varistor (AC / DC)	RV-BC6
	RC type (AC)	
	Transil diode (DC)	RD7

(4) 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)
Electronic relays		Class 10E, 20E, 30E	E16DU (0.10...18.9 A)

Manual motor starters

Accessories		Thermal / magnetic protection Class 10	MS116 (0.10...32 A) Ics up to 50 kA for class 10A MS132 (0.10...32 A) Ics up to 100 kA
		Magnetic only types	MO132 (0.16...32A)
		For contactor mounting	BEA7/132



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
5	7.5	10	5	7.5	10	15	20	20	30	40	50	60	60	75	100	100	125	150	200	250	300
—	—	—	AF09	AF12	AF16	AF26	AF30	AF38	AF40	AF52	AF65	AF80	AF96	AF116	AF140	AF146	AF190	AF205	AF265	AF305	AF370
AS09	AS12	AS16	AF09	AF12	AF16	AF26	AF30	AF38	AF40	AF52	AF65	AF80	AF96	AF116	AF140	AF146	AF190	AF205	AF265	AF305	AF370
ASL09	ASL12	ASL16	AF09	AF12	AF16	AF26	AF30	AF38	AF40	AF52	AF65	AF80	AF96	AF116	AF140	AF146	AF190	AF205	AF265	AF305	AF370
9	12	15.5	9	12	18	26	32	38	40	53	65	80	96	116	140	146	190	205	265	305	370
22	24	24	25	28	30	45	50	50	70	100	105	125	130	160	200	225	275	350	400	500	600
20	20	20	25	28	30	45	50	50	60	80	90	105	115	160	200	200	250	300	350	400	520
00	00	0	00	0	—	1	—	—	2	—	—	3	—	—	4	—	—	—	5	—	—

CA3-10 (1 x N.O.), CA3-01 (1 x N.C.)	CA4-10 (1 x N.O.), CA4-01 (1 x N.C.)																							
	CAL4-11 (1 x N.O. + 1 x N.C.)																							CAL19
TEF3-ON TEF3-OFF	TEF4-ON TEF4-OFF																							
VM3	VM4					VM96-4																		VM19 (for same size contactors)
	VEM4																							
BER16C-3	BER16-4	BER38-4	BER65-4	BER96-4	BER140-4	BER205-4	BER370-4																	
RV5 (24...440 V)	Built-in surge protection																							
RC5-1 (24...440 V)																								
RT5 (12...264 V)																								

T16 (0.10...16 A)	TF42 (0.10...38 A)	TF65 (22...67 A)	TF96 (40...96 A)	TF140DU (66...142 A) $\theta \leq 55^\circ\text{C}$	TA200DU (66...200 A) $\theta \leq 55^\circ\text{C}$
	EF19 (0.10...19 A)	EF19 (0.10...19 A) EF45 (9...45 A)	EF65 (25...70 A)	EF96 (36...100 A)	EF146 (54...150 A)
					EF205 (63...210 A)
					EF370 (115...380 A)

MS116 (0.10...32 A) Ics up to 50 kA for class 10 A	MS450 (28...50 A) Ics up to 50 kA	
MS132 (0.10...32 A) Ics up to 100 kA		MS495 (45...100 A) Ics up to 50 kA
	MS497 (22...100 A) Ics up to 100 kA	
MO132 (0.16...32 A) Ics up to 100 kA	MO496 (16...100 A) Ics up to 100 kA	MO495 (63...100 A) Ics up to 50 kA
	MO450 (40...50 A) Ics up to 50 kA	
BEA16-3	BEA16-4	BEA38-4

Short-circuit protection devices

Tmax Circuit breaker and accessories



200	250	315	400	—	475	560	—	—
350	400	500	600	—	800	900	—	—
AF400	AF460	AF580	AF750	AF1250	AF1350	AF1650	AF2050	AF2650
AF400	AF460	AF580	AF750	AF1250	AF1350	AF1650	AF2050	AF2650
AF400	AF460	AF580	AF750	AF1250	AF1350	AF1650	AF2050	AF2650
400	460	580	750	—	860	1050	—	—
600	700	800	1050	1260	1350	1650	2050	2650
550	650	750	900	1210	1350	1650	2100	2700
—	6	—	7	—	—	8	—	—

4-pole contactors



IEC	AC-1 Rated operational current	$\theta \leq 40^\circ\text{C}$, 690 V	A	25	30	45	55	70	100	125	200	250	300	350	550	800	1000
UL/CSA	General use rating	600 V	A	25	30	45	55	80	80	105	170	200	250	300	420	540	—
AC Control supply		Type	AF09	AF16	AF26	AF38	A45	A50	A75	EK110	EK150	EK175	EK210	EK370	EK550	EK1000	
DC Control supply		Type	AF09	AF16	AF26	AF38	AE45	AE50	AE75	EK110	EK150	EK175	EK210	EK370	EK550	EK1000	
AC / DC Control supply		Type	AF09	AF16	AF26	AF38	AF45	AF50	AF75	—	—	—	—	—	—	—	

Mini contactor relays



IEC	AC-15 Rated operational current	400 V	A	3	
UL/CSA	Pilot duty			A 600	
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



3	3	3
A 600, Q 300	A 600, Q 300	A 600, Q 600
NS22E	NS31E	NS40E
NSL22E	NSL31E	NSL40E
—	—	—
NF22E	NF31E	NF40E
NF22E	NF31E	NF40E
NF22E	NF31E	NF40E

CAL18		
VM750H		VM1650H
VM750V		
BEM460-30	BEM750-30	

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 power 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

E500DU (150...500 A)	E800DU (250...800 A)	E1250DU (375...1250 A)
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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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