



US Panorama

Motor protection and control

Manual motor starters, contactors and overload relays

Power and productivity
for a better world™



Mini contactors

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.
- (3) Higher ratings are achieved through the use of LX... terminal extensions. See catalog 1SXU100109C0201 for more information.

Main accessories

Auxiliary contact blocks	Front mounting	CAF6
	Side mounting	CA6
Timers	Electronic	
Interlocking units (4)	Mechanical	
	Mechanical / Electrical	
Connection sets	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

	Thermal / magnetic protection Class 10	MS116 (0.10...32 A) SCCR up to 30 kA	MS450 (28... SCCR up to 65 kA)
	Magnetic only types	MS132 (0.10...32 A) SCCR up to 65 kA	MS132 (0.10...32 A) SCCR up to 65 kA
Accessories	For contactor mounting	MO132 (0.16...32A) SCCR up to 65 kA	BEA7/132

3-pole contactors, for motor con



4	5.5	7.5	11	15	18.5
5	7.5	10	15	20	20
AF09	AF12	AF16	AF26	AF30	AF38
AF09	AF12	AF16	AF26	AF30	AF38
AF09	AF12	AF16	AF26	AF30	AF38
9	12	18	26	32	38
25	28	30	45	50	50
25	28	30	45	50	50
00	0	—	1	—	—

CA4-10 (1 x N.O.)	CA4-01 (1 x N.C.)	CAL4-11 (1 x N.O. + 1 x N.C.)	TEF4-ON	TEF4-OFF	VM4
VEM4	BER16-4	BER38-4	Built-in surge protection		
TF42 (0.10...38 A)	EF19 (0.10...19 A)	EF19 (0.10...19 A)	EF19 (0.10...19 A)	EF45 (9...45 A)	
MS116 (0.10...32 A) SCCR up to 30 kA	MS132 (0.10...32 A) SCCR up to 65 kA	MO132 (0.16...32 A) SCCR up to 65 kA	MS116 (0.10...32 A) SCCR up to 30 kA	MS132 (0.10...32 A) SCCR up to 65 kA	MS450 (28... SCCR up to 65 kA)
BEA16-4	BEA38-4				

control and power switching



18.5	18.5	22	30	37	45	55	75	75	90	110	132	160	200
20	30	40	50	60	60	75	100	100	125	150	200	250	300
AF38	AF40	AF52	AF65	AF80	AF96	AF116	AF140	AF146	AF190	AF205	AF265	AF305	AF370
AF38	AF40	AF52	AF65	AF80	AF96	AF116	AF140	AF146	AF190	AF205	AF265	AF305	AF370
AF38	AF40	AF52	AF65	AF80	AF96	AF116	AF140	AF146	AF190	AF205	AF265	AF305	AF370
38	40	53	65	80	96	116	140	146	190	205	265	305	370
50	70	100	105	125	130	160	200	225	275	350	400	500	600
50	60	80	90	105	115	160	200	200	230 (3)	250 (3)	300 (3)	350 (3)	400 (3)
—	2	—	—	3	—	—	4	—	—	—	5	—	—

		CAL19	
VM96-4	VM19 (for same size contactors)		
BER65-4	BER96-4	BER140-4	BER205-4
			BER370-4

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

Short-circuit protection devices

MS450 (28...50 A) SCCR up to 65 kA	
	MS495 (45...100 A) SCCR up to 65 kA
MO496 (16...100 A) SCCR up to 65 kA	
MO450 (40...50 A) SCCR up to 65 kA	MO495 (63...100 A) SCCR up to 65 kA

Tmax Circuit breakers & OS Fusible disconnect switches.



4-pole contactors



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	—	—

IEC	AC-1 Rated operational current	$\theta \leq 40^\circ\text{C}$
UL/CSA	General use rating	600 V

AC Control supply



DC Control supply



AC / DC Control supply



Mini control relays

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

AC Control supply



DC Control supply



AC / DC Control supply



R contactors

DC Circuit switching

DC-1 Rated current up to 500 A
DC-3/DC-5 Rated current up to 1500 V with poles in series



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

Specific contactors

Capacitor switching



12.5 to 80 kvar

UA16 to UA110 types

UA16..RA to UA110..RA types

CAL18

VM750H
VM750V

VM1650H

BEM460-30

BEM750-30

E500DU (150...500 A)

E800DU (250...800 A)

E1250DU (375...1250 A)



4-pole contactors



rent	$\theta \leq 40\text{ }^{\circ}\text{C}$, 690 V	A	25	30	45	55
	600 V	A	25	30	45	55
	Type		AF09	AF16	AF26	AF38
	Type		AF09	AF16	AF26	AF38
	Type		AF09	AF16	AF26	AF38

Mini control relays



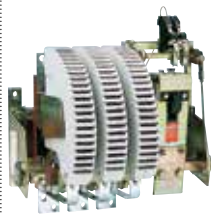
rent	400 V	A	3			3		
			A 600			A 600, Q 600		
	Type		K6-22Z	K6-31Z	K6-40E	NF22E	NF31E	NF40E
	Type		KC6-22Z	KC6-31Z	KC6-40E	NF22E	NF31E	NF40E
	Type		—	—	—	NF22E	NF31E	NF40E

R contactors

AC Circuit switching

Rated current up to 5000 A
5 Rated current up to 2000 A
4 poles in series

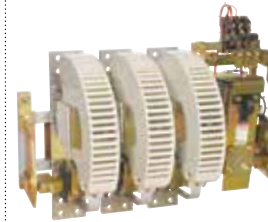
..-CC to IOR.. 5100-...-CC



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

Specific contactors

DC Circuit switching

A types



100 A, 440 V, DC-1
GA75, GAE75 types



275 to 2050 A, 1000 V, DC-1
GAF185 to GAF2050 types



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

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.

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