



Panorama

# Motor protection and control

## Manual motor starters, contactors and overload relays

# Extensive range of contactors

## High performance contactors for your applications from 9 to 5000 A



**Mini contactors for compact equipments, up to 5.5 kW (400 V AC) / 3 hp (480 V AC)**

**Contactors for all industrial applications, up to 2050 A and motor starting, up to 560 kW (400 V AC) / 900 hp (480 V AC)**  
**Contactors for heavy duty applications, up to 5000 A, 1000 V AC / 1500 V DC**

- Complete and harmonized 3 and 4-pole ranges.
- High performance and high quality materials.
- Compact dimensions easy to integrate in all designs.
- AF contactors with electronic coil interface:
  - wide voltage range AC / DC, sag and dips immunity,
  - built-in surge suppressor.
- Complying with the latest international standards.

**The right choice for many applications**

- Pumps
- HVAC
- Compressors
- Power supply solutions
- Packing machines
- Cranes
- Elevators and escalators
- Moulding machines
- Wood machines
- Robot
- Windmill
- Solar system
- Water heating
- Fuel cells
- Traction





#### Motor starting solutions

- Perfect match in starter assembly with a large range of accessories.
- Short-circuit protection, type 1 and 2 coordination.
- Large offer of accessories for direct-on-line, reversing and star-delta starters which allows:
  - time / cost saving,
  - secure connection,
  - aesthetic starters,
  - easy assembly and wiring.



# Mini contactors 3-pole contactors, for all industrial applications and motor starting

## 3-pole or 4-pole



IEC	AC-3 Rated operational power	$\theta \leq 55^\circ\text{C}^*$ , 400 V	kW	4	5.5
UL/CSA	3-phase motor rating	480 V	hp	3	5
AC Control supply		Type		B6	B7
DC Control supply		Type		BC6	BC7
AC / DC Control supply		Type		—	—
IEC	AC-3 Rated operational current	$\theta \leq 55^\circ\text{C}^*$ , 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			—	—

\*  $\theta \leq 60^\circ\text{C}$  for AS(L)09 ... AS(L)16 and AF09 ... AF38 contactors

## Main accessories

Auxiliary contact blocks	Front mounting Side mounting	CAF6 CA6
Timers	Pneumatic (Front mounting) Electronic	
Interlocking units (1)	Mechanical Mechanical / Electrical	
Connection sets	For reversing contactors	BSM6-30
Surge suppressors	Varistor (AC/DC) RC type (AC) Transil diode (DC)	RV-BC6 RD7

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

## Overload relays

Thermal relays	Class 10 (10A or 20 for TA42DU to TA80DU)	T16 (0.10...16 A)
Accessories for thermal overload relays	Remote tripping coil Remote reset coil Wall/separate mounting kit	DB16
Electronic relays	Class 10E, 20E, 30E	E16DU (0.10...18.9 A)
Accessories for electronic overload relays	Wall/separate mounting kit	DB16E

## Manual motor starters

	Thermal / magnetic protection	Class 10	MS116 for class 10A (0.10...32 A) lcs up to 50 kA MS132 (0.10...32 A) lcs up to 100 kA
		Class 20	
	Magnetic only types		MO132 (0.16...32 A)
Accessories	For contactor mounting Auxiliary trip units, auxiliary contacts, busbars		BEA7/132 HKF1, HK1, UA1, AA1, PS1, S1, SK1, CK1 (MS132, MO132 only)

New

New

New



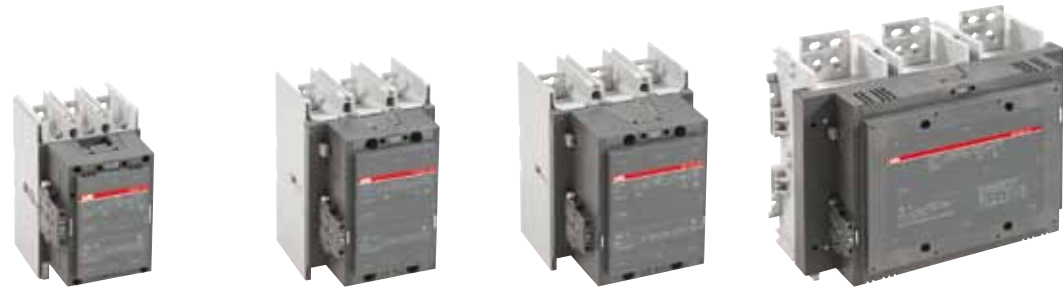
4	5.5	7.5	4	5.5	7.5	11	15	18.5	18.5	22	30	37	45	55	75	90
5	7.5	10	5	7.5	10	15	20	20	30	40	60	60	60	75	100	125
AS09	AS12	AS16	AF09	AF12	AF16	AF26	AF30	AF38	A40	A50	A63	A75	A95	A110	A145	A185
ASL09	ASL12	ASL16	AF09	AF12	AF16	AF26	AF30	AF38	AL40	AE50	AE63	AE75	AF95	AF110	AF145	AF185
—	—	—	AF09	AF12	AF16	AF26	AF30	AF38	—	AF50	AF63	AF75	AF95	AF110	AF145	AF185
9	12	15.5	9	12	18	26	32	38	37	50	65	75	96	110	145	185
22	24	24	25	28	30	45	50	50	60	100	115	125	145	160	250	275
20	20	20	25	28	30	45	50	50	60	80	90	105	125	140	230	250
00	00	0	00	0	—	1	—	—	—	2	—	3	—	—	4	—

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.)	CA5-10 (1 x N.O.), CA5-01 (1 x N.C.) CAL5-11 (1 x N.O. + 1 x N.C.)	CAL18-11 (1 x N.O. + 1 x N.C.)
TEF3-ON, TEF3-OFF	VM3	VM4 VEM4	VM5-1 VM300H / VM300V
BER16C-3	BER16-4	BER38-4	VM5-1 VE5-1
RV5 (24...440 V)			VE5-2
RC5-1 (24...440 V)			BEM75-30
RT5 (12...264 V)			BEM110-30
			BEM185-30
			RC5-3 (250...440V)

T16 (0.10...16 A)	TF42 (0.10...38 A)	TA42DU (18...42 A)	TA75DU (18...80 A)	TA80DU (29...80 A) TA110DU (65...110 A)	TA200DU (66...200 A)
DB16	DB42	DB80	DB80, DB200	DB200	
	EF19 (0.10...18.9 A)	EF19 (0.10...18.9 A), EF45 (9...45 A)	E45DU (9...45 A)	E80DU (27...80 A)	E140DU (50...140 A) E200DU (60...200 A)
	DB16E (to use with E16DU), DB45 (to use with E45DU)	DB45E, DB80E		DB140E	

MS116 for class 10A (0.10...32 A) lcs up to 50 kA	MS132 (0.10...32 A) lcs up to 100 kA	MS450 (28...50 A) lcs up to 50 kA	MS495 (45...100 A) lcs up to 50 kA	Tmax Circuit breaker and accessories
		MS497 (22...100 A) lcs up to 100 kA	MS451 (11...50 A) lcs up to 50 kA	
			MS496 (28...100 A) lcs up to 100 kA	
MO132 (0.16...32 A)		MO450 (40...50 A) lcs up to 50 kA	MO495 (63...100 A) lcs up to 50 kA	
		MO496 (16...100 A) lcs up to 100 kA		
BEA16-3	BEA16-4	BEA38-4	BEA40/450	BEA50/450, BEA75/495
HKF1, HK1, UA1, AA1, PS1, S1, SK1, CK1 (MS132, MO132 only)				HK4, HKS4, UA4, AA4, PS4, S4, SK4





110	140	160	200	250	315	400	—	475	560	—
150	200	250	350	400	500	600	—	800	900	—
A210	A260	A300	AF400	AF460	AF580	AF750	AF1250	AF1350	AF1650	AF2050
AF210	AF260	AF300	AF400	AF460	AF580	AF750	AF1250	AF1350	AF1650	AF2050
AF210	AF260	AF300	AF400	AF460	AF580	AF750	AF1250	AF1350	AF1650	AF2050
210	260	305	400	460	580	750	—	860	1050	—
350	400	500	600	700	800	1050	1260	1350	1650	2050
300	350	400	550	650	750	900	1210	1350	1650	2100
—	5	—	—	6	—	7	—	—	8	—

## 4-pole contactors

New New



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

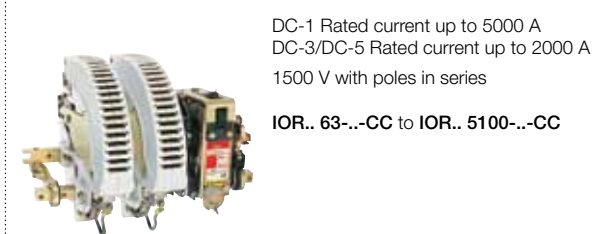


3	3				
A 600, Q 300	A 600, Q 600				
NS22E	NS31E	NS40E	NF22E	NF31E	NF40E
NSL22E	NSL31E	NSL40E	NF22E	NF31E	NF40E
—	—	—	NF22E	NF31E	NF40E

TA450DU/SU (130...310 A) class 30 for SU			
DS25-A			
DR25-A			
DT450/A			
E320DU (100...320 A)	E500DU (150...500 A)	E800DU (250...800 A)	E1250DU (375...1250 A)
	VM750H / VM750V		VM1650H
BEM300-30	BEM460-30	BEM750-30	

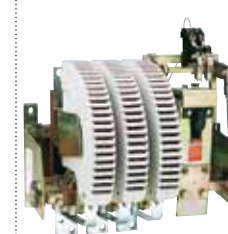
## R contactors

### DC Circuit switching



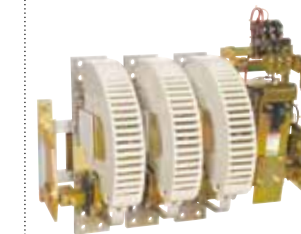
DC-1 Rated current up to 5000 A  
DC-3/DC-5 Rated current up to 2000 A  
1500 V with poles in series  
IOR.. 63...-CC to IOR.. 5100...-CC

### 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

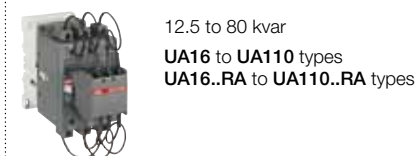
### Special versions



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

## Specific contactors

### Capacitor switching



12.5 to 80 kvar  
UA16 to UA110 types  
UA16..RA to UA110..RA types

### DC Circuit switching

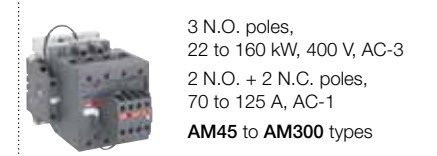


100 A, 440 V, DC-1  
GA75, GAE75 types



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

### Magnetical latching



3 N.O. poles,  
22 to 160 kW, 400 V, AC-3  
2 N.O. + 2 N.C. poles,  
70 to 125 A, AC-1  
AM45 to AM300 types

# Contact us

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<http://www.abb.com/contacts> -> Low Voltage products

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