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AC1100 1SXP 100 155C 0201 (09-2011)

ABB



Short Form Catalogue 2011

Contactors
Motor protection
Accessories

Power and productivity
for a better world™



Power and productivity
for a better world™



Extensive range of contactors

High performance contactors for your applications from 9 to 5000 A



Block contactors for all industrial applications and motor starting-up to 1000 HP/600 V AC
Bar mounted 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



Technical data

Motor data

Ampere ratings of 3 phase, AC induction motors

Horse power	110 - 120V			200 - 208V			220 - 240V			380 - 415V ⁽¹⁾		440 - 480V			550 - 600V		
	Single phase	Two phase	Three phase	Single phase	Two phase	Three phase	Single phase	Two phase	Three phase	Single phase	Three phase	Single phase	Two phase	Three phase	Single phase	Two phase	Three phase
1/10	3.0	—	—	1.65	—	—	1.5	—	—	1.0	—	—	—	—	—	—	—
1/8	3.8	—	—	2.1	—	—	1.9	—	—	1.2	—	—	—	—	—	—	—
1/6	4.4	—	—	2.4	—	—	2.2	—	—	1.4	—	—	—	—	—	—	—
1/4	5.8	—	—	3.2	—	—	2.9	—	—	1.8	—	—	—	—	—	—	—
1/3	7.2	—	—	4.0	—	—	3.6	—	—	2.3	—	—	—	—	—	—	—
1/2	9.8	4.0	4.4	5.4	2.2	2.4	4.9	2.0	2.2	3.2	1.3	2.5	1.0	1.1	2.0	0.8	0.9
3/4	13.8	4.8	6.4	7.6	2.6	3.5	6.9	2.4	3.2	4.5	1.8	3.5	1.2	1.6	2.8	1.0	1.3
1	16.0	6.4	8.4	8.8	3.6	4.6	8.0	3.2	4.2	5.1	2.3	4.0	1.6	2.1	3.2	1.3	1.7
1 1/2	20.0	9.0	12.0	11.0	5.0	6.6	10.0	4.5	6.0	6.4	3.3	5.0	2.3	3.0	4.0	1.8	2.4
2	24.0	11.8	13.6	13.2	6.5	7.5	12.0	5.9	6.8	7.7	4.3	6.0	3.0	3.4	4.8	2.4	2.7
3	34.0	16.6	19.2	18.7	9.2	10.6	17.0	8.3	9.6	10.9	6.1	8.5	4.2	4.8	6.8	3.3	3.9
5	56.0	26.4	30.4	30.8	14.5	16.8	28.0	13.2	15.2	17.9	9.7	14.0	6.6	7.6	11.2	5.3	6.1
7 1/2	80.0	38.0	44.0	44.0	21.0	24.2	40.0	19.0	22.0	27.0	14.0	21.0	9.0	11.0	16.0	8.0	9.0
10	100.0	48.8	56.0	55.0	26.4	30.8	50.0	24.0	28.0	33.0	18.0	26.0	12.0	14.0	20.0	10.0	11.0
15	135.0	72.0	84.0	75.0	39.6	46.2	68.0	36.0	42.0	44.0	27.0	34.0	18.0	21.0	27.0	14.0	17.0
20	—	94.0	108.0	96.8	52.0	60.0	88.0	47.0	54.0	56.0	34.0	44.0	23.0	27.0	35.0	19.0	22.0
25	—	118.0	136.0	121.0	65.0	75.0	110.0	59.0	68.0	70.0	44.0	55.0	29.0	34.0	44.0	24.0	27.0
30	—	138.0	160.0	150.0	76.0	88.0	136.0	69.0	80.0	87.0	51.0	68.0	35.0	40.0	54.0	28.0	32.0
40	—	180.0	208.0	194.0	100.0	115.0	176.0	90.0	104.0	112.0	66.0	88.0	45.0	52.0	70.0	36.0	41.0
50	—	226.0	260.0	238.0	125.0	143.0	216.0	113.0	130.0	139.0	83.0	108.0	56.0	65.0	86.0	45.0	52.0
60	—	—	—	—	147.0	160.0	—	133.0	154.0	—	103.0	—	67.0	77.0	—	53.0	62.0
75	—	—	—	—	183.0	212.0	—	166.0	192.0	—	128.0	—	83.0	96.0	—	66.0	77.0
100	—	—	—	—	240.0	273.0	—	218.0	248.0	—	165.0	—	109.0	124.0	—	87.0	99.0
125	—	—	—	—	—	344.0	—	—	312.0	—	208.0	—	135.0	156.0	—	108.0	125.0
150	—	—	—	—	—	396.0	—	—	360.0	—	240.0	—	156.0	180.0	—	125.0	144.0
200	—	—	—	—	—	528.0	—	—	480.0	—	320.0	—	208.0	240.0	—	167.0	192.0
250	—	—	—	—	—	663.0	—	—	602.0	—	403.0	—	—	302.0	—	—	242.0
300	—	—	—	—	—	—	—	—	—	—	482.0	—	—	361.0	—	—	289.0
350	—	—	—	—	—	—	—	—	—	—	560.0	—	—	414.0	—	—	336.0
400	—	—	—	—	—	—	—	—	—	—	636.0	—	—	477.0	—	—	382.0
500	—	—	—	—	—	—	—	—	—	—	786.0	—	—	590.0	—	—	472.0



Motor starting solutions

- Perfect match in starter assembly with a large range of accessories
- Short-circuit protection, type 1 and 2 coordination
- Large offering of accessories for accross-the-line, reversing and wye-delta starters that allows:
 - time / cost saving
 - secure connection
 - aesthetic starters
 - easy assembly and wiring



3-pole Block Contactors

for all industrial applications
and motor starting



AC / DC Control Supply			Type	AF09	AF12	AF16	AF26	AF30	AF50	AF63	AF75	AF95	AF110
UL/CSA	NEMA Size			00	0	—	1	—	2	—	3	—	—
General Use Rating	600 V	A		25	28	30	45	50	80	90	105	125	140
1-phase	120 V	HP		0.75	1	1.5	2	2	3	5	7.5	7.5	10
	240 V	HP		1.5	2	3	3	5	10	10	15	20	25
3-phase	200/208 V	HP		2	3	5	7.5	10	15	20	25	30	30
	220/240 V	HP		2	3	5	7.5	10	20	25	30	30	40
	440/480 V	HP		5	7.5	10	15	20	40	50	60	60	75
	550/600 V	HP		7.5	10	15	20	25	50	60	75	75	100

Main Accessories

Auxiliary Contact Blocks	Front mounting	CA4-10 (1 x N.O.), CA4-01 (1 x N.C.)	CA5-10 (1 x N.O.)	CA5-01 (1 x N.C.)
	Side mounting	CAL4-11 (1 x N.O. + 1 x N.C.)	CAL5-11 (1 x N.O. + 1 x N.C.)	CAL18-11 (1 x N.O. + 1 x N.C.)
Timers	Pneumatic (Front mounting)		TP40DA, TP180DA Direct timing	TP40DA, TP180DA Inverse timing
	Electronic		TE5S-... Direct timing - Separate mounting	TE5S-...
Interlocking Units	Mechanical	VM4		
	Mechanical / Electrical	VEM4	VE5-2	
Connection Sets	For reversing contactors	BER16-4	BER38-4	BEM75-30
				BEM110-30

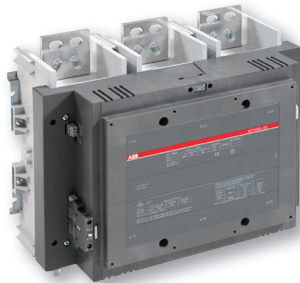
Overload Relays

Thermal Relays	Class 10 (10A or 20 for TA42DU to TA80DU)	TF42	TF42	TA75DU (18...80 A)	TA80DU (29...80 A) TA110DU (65...110 A)
Electronic Relays	Class 10, 20, 30	EF19 (0.10 ... 18.9 A)	EF19 (0.10 ... 18.9 A) EF19 (9...45 A)	E80DU (27...80 A)	E140DU (50...140 A)
Accessories for Thermal Overload Relays	Wall/separate mounting kit	DB19E	DB19E	DB45E	DB80E
					DB80, DB200, D140E

Manual Motor Starters

Manual Motor Starters	Thermal / magnetic protection	Class 10	MS116 for class 10A (0.10...16 A I _{cc} up to 30 kA)	MS450 (11...50 A) I _{cc} up to 65 kA
			MS132 (0.10...32 A) I _{cc} up to 30 kA	MS495 (28...100 A) I _{cc} up to 65 kA
		Class 20		MS497 (11...100 A) I _{cc} up to 65 kA
				MS451 (11...50 A) I _{cc} up to 65 kA
	Magnetic only types			MS496 (28...100 A) I _{cc} up to 65 kA
				MS450 (16...50 A) I _{cc} up to 65 kA
				MS495 (40...100 A) I _{cc} up to 65 kA
Accessories	For contactor mounting	BEA16-4	BEA38-4	BEA50/BEA450, BEA75/BEA495
	Aux. trip units, aux. contacts, busbars	HKF1, HK1, UA1, AA1, PS1, Si, SK1 (MS132 only)		HK4, HKS4, UA4, AA4, PS4, S4, SK4

3-pole Block Contactors

												
AF145	AF185	AF210	AF260	AF300	AF400	AF460	AF580	AF750	AF1250	AF1350	AF1650	AF2050

4	—	—	5	—	—	6	—	7	—	—	8	—
230	250	300	350	400	550	650	750	900	1210	1350	1650	2100
10	15	—	—	—	—	—	—	—	—	—	—	—
25	30	40	50	—	—	—	—	—	—	—	—	—
40	50	60	75	100	125	150	200	250	—	—	—	—
50	60	75	100	100	150	200	250	300	—	400	450	—
100	125	150	200	250	350	400	500	600	—	800	900	—
125	150	200	250	300	400	500	600	700	—	900	1000	—

Main Accessories

TE5S-..	Direct timing Separate mounting	TE5S-... Direct timing - Separate Mounting										
VM300H / VM300V		VM750H / VM750V					VM1650H					
BEM185-30		BEM300-30			BEM460-30			BEM750-30				

Overload Relays

TA200DU (66...200 A)	TA450DU/SU (130...310 A) class 30 for SU			
E200DU (60...200 A)	E320DU (100...320 A)	E500DU (150...500 A)	E800DU (250...800 A)	E1250DU (375...1250 A)
DB200	DT450/A			

Circuit Breakers

Tmax Circuit Breaker and accessories												

Motor Protection and Control up to 25 HP / 600 VAC

Overview 1/2

Contactors and Overload Relays 1/9

4-pole Contactors 1/43

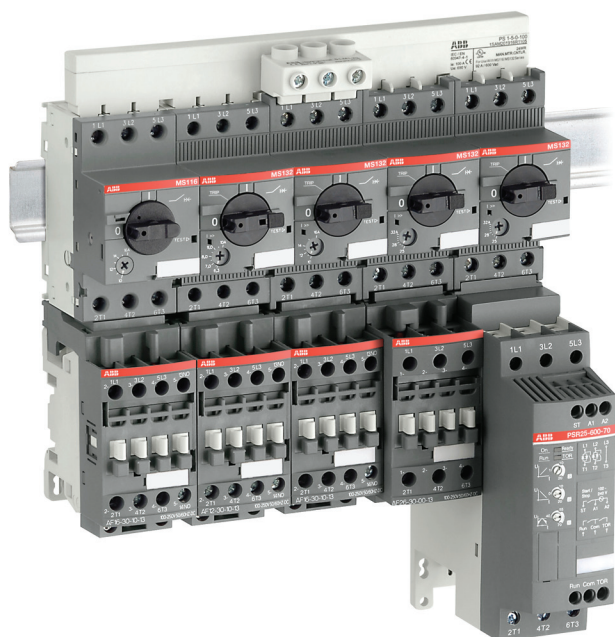
Control Relays 1/63

Manual Motor Starters 1/78

Motor Starting Solutions - Open Type Version, in Kit Form 1/90



Large choice of starting solutions in kit form



Short-circuit and overload protection

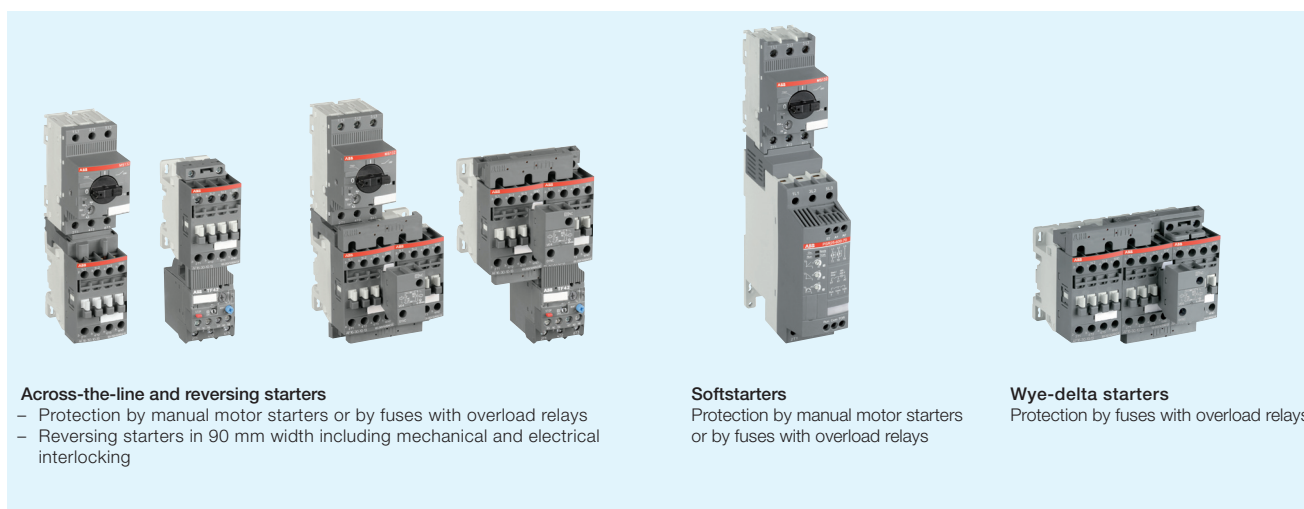
- Type 1 or type 2 coordination available with manual motor starters
- Choice of thermal or electronic overload relays

Simple construction

- All starters in 45 mm width frame

Time/cost saving

- Same frame size for AC or DC control supply
- Easy, fast and secure assembly, fitting and wiring of components



Across-the-line and reversing starters

- Protection by manual motor starters or by fuses with overload relays
- Reversing starters in 90 mm width including mechanical and electrical interlocking

Softstarters

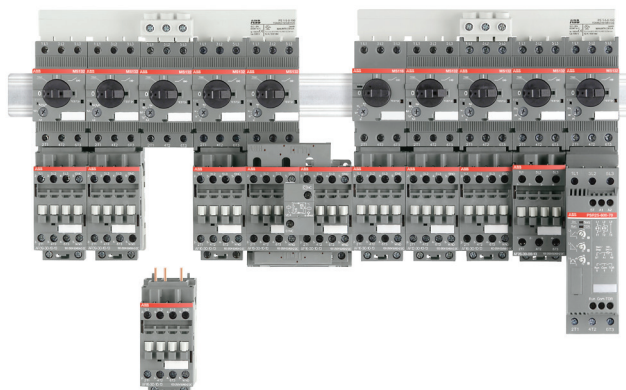
- Protection by manual motor starters or by fuses with overload relays

Wye-delta starters

- Protection by fuses with overload relays

Standardized busbars and optimized interconnection accessories

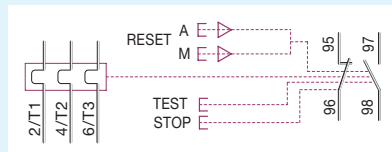
- Same 3-phase busbar and feeder range up to 92 A for manual motor starters
- Direct 35 mm rail mounting: no additional mounting plate required
- Complete range of connection links with manual motor starters and connection sets to build reversing and star-delta starters
- Easy installation and dismantling of contactors: no unwiring of manual motor starters





Protect your motors with thermal or electronic overload relays

- One range of TF42 thermal overload relays, trip class 10
- One range of EF19 and EF45 electronic overload relays up to 45 A, 7 setting ranges, trip class 10, 20, 30
- Adjustable current setting ranges
- Overload protection with phase loss sensitivity
- Temperature compensation:
 - up to +60 °C for thermal overload relays
 - up to +70 °C for electronic overload relays
- Automatic or manual reset, sealable
- Stop and test function

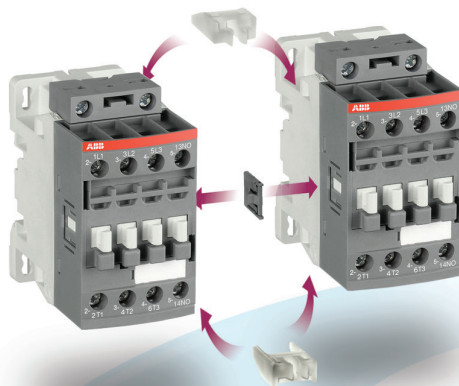


Current setting range

Reset function

Test function

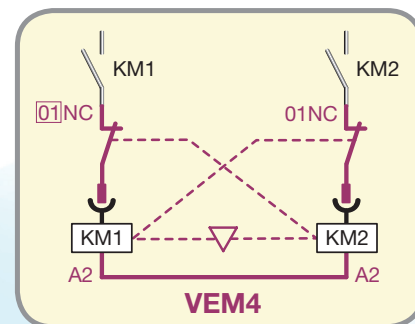
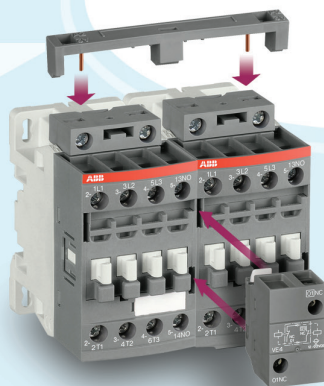
Stop function



Interlock your reversing contactors quickly in 90 mm width:

- Easy with VM4 mechanical interlock unit
- Simple with VEM4 set including mechanical interlock unit and electrical interlock block with A2-A2 connection
- 50% wiring cost savings in one click!

Fixing the electrical interlock block to the contactor front face connects the 2 built-in N.C. interlocking contacts with the two coil supplies



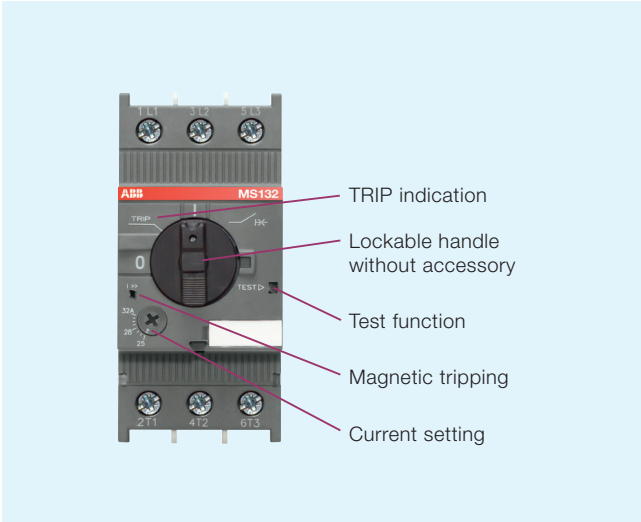
MS116 and MS132 manual motor starters

Harmonized design in 45 mm width

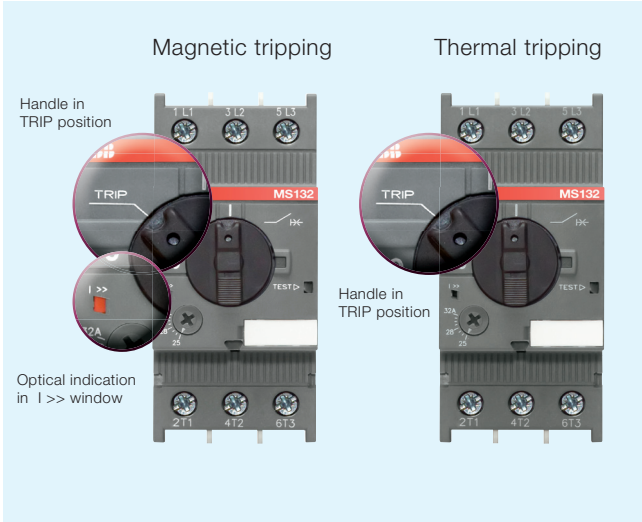


Types	MS116	MS132
Setting range	0.1 ... 16 A	0.1 ... 32 A
Switch position	ON / OFF	ON / OFF / TRIP
Magnetic trip indication	–	yes
Lockable handle without accessories	–	yes
Short circuit ratings	18 kA at 480 V 5 kA at 600 V	50 kA at 480 V 18 kA at 600 V
Trip class	10A	10

ON/OFF/TRIP switch functionality, MS132 only

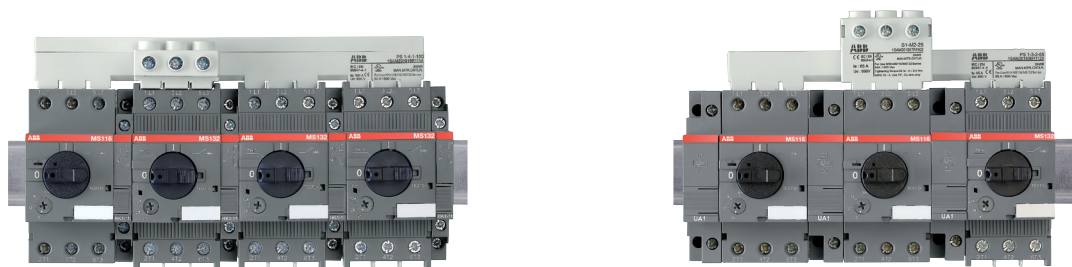


Clear tripping identification, MS132 only



One range of accessories for MS116 and MS132

- Common auxiliary contacts, signaling contacts and auxiliary trip units
- Common busbar systems



AF09 ... AF30 3-pole contactors

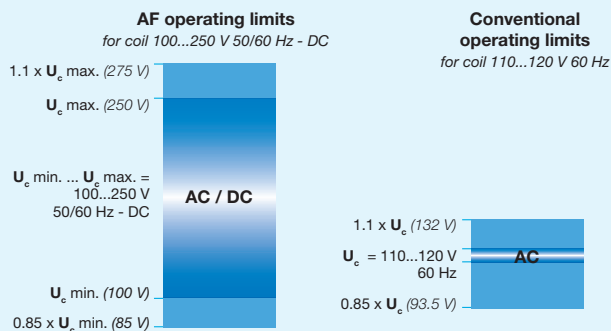
Simple design with 2 frame sizes in 45 mm width



Types	AF09	AF12	AF16	AF26	AF30
UL/CSA 1-phase HP					
120 V	0.75	1	1.5	2	2
240 V	1.5	2	3	3	5
UL/CSA 3-phase HP					
240 V	2	3	5	7.5	10
480 V	5	7.5	10	15	20
600 V	7.5	10	15	20	25
General purpose current A	25	28	30	45	50

A unique contactor for AC or DC control supply

- Manages large control voltage variations
- Includes an electronic coil interface with extended operating limits $0.85 \times U_c \text{ min.} \dots 1.1 \times U_c \text{ max.}$



Reduced panel energy consumption

- With low holding AC and DC coil consumption
- From 30% (AF coil) to 80% (AF.Z coil) reduction of AC pull-in consumption

Built-in surge protection

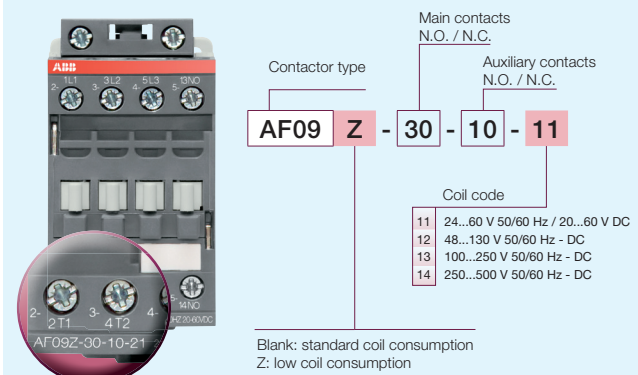
- No extra surge suppressor required

Improve your equipment reliability with AF.Z contactors

- Withstands control voltage short dips
- Withstands control voltage interruptions according to SEMI F47-0706 standards
- Additional AF.Z coils available for control voltages between 12...20 V DC and 48...250 V 50/60 Hz - DC

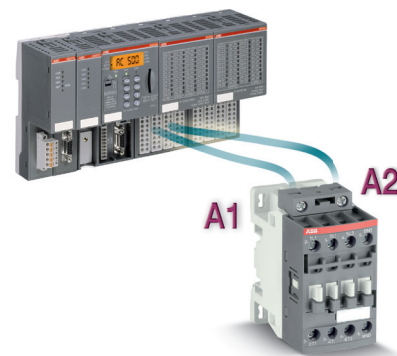
Only four coils for easier selection

Control voltages covering 24...500 V 50/60 Hz and 20...500 V DC



Direct control by PLC-output $\geq 500 \text{ mA}$, 24 V DC

No use of interface relay



Switching of auxiliary and control circuits



- Optimize your auxiliary contact block configuration
- AF09...AF16 3-pole contactors equipped with a built-in auxiliary contact N.O. or N.C.
 - Up to 6 additional auxiliary contacts:
 - front-mounted 1 or 4-pole CA4 blocks
 - side-mounted 2-pole CAL4 blocks
 - Reduced panel dimension using up to 2 side-mounted 2-pole CAL4 blocks

- Make your control circuit safe
- **Mirror contact** according to IEC 60947-4-1 Annex F 2.1
 - **Mechanically linked contacts** according to IEC 60947-5-1 Annex L 3.0

Coil termination options

Top-mounted coil terminal block

Coil terminal block transferable to bottom position

Additional LDC4 coil terminal block mounted in bottom position

Front-mounted 2-pole CAT4 auxiliary contact block for front coil connection

Protect your equipment against accidental contact

Sealable and transparent protective covers on contactors (BX4) and overload relays

Non-removable protective covers (BX4-CA) for auxiliary contact blocks

Complete choice of control relays

- Same advantages and accessories as AF contactors
- Only four coils for easier selection

Control relay type

Auxiliary contacts N.O. / N.C.

Coil code

Blank: standard coil consumption
Z: low coil consumption

11	24...60 V 50/60 Hz / 20...60 V DC
12	48...130 V 50/60 Hz - DC
13	100...250 V 50/60 Hz - DC
14	250...500 V 50/60 Hz - DC

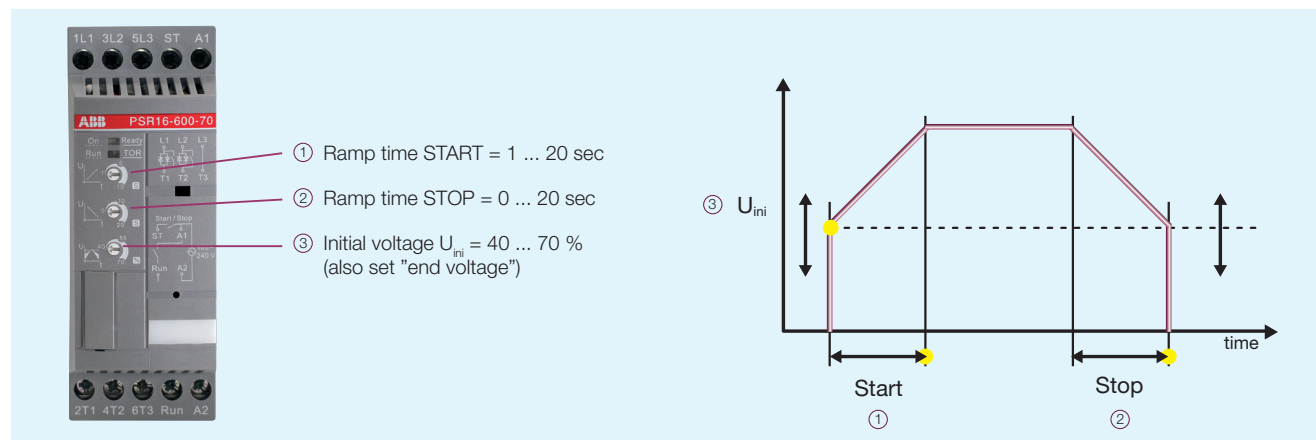
PSR softstarters

Compact design with 2 frame sizes



Types	PSR3 ... PSR16	PSR25, PSR30
UL/CSA 3-phase motor power - 230 V	0.75 ... 5	7.5 ... 10
480 V	2 ... 10	15 ... 20
600 V	2 ... 10	20 ... 25

- Built-in by-pass contacts in main circuit
- Wide main voltage range: from 208 to 600 V
 - fewer variants
 - very robust and insensitive to voltage variations
- Wide supply voltage range: 100 ... 240 V AC or 24 V DC



Easy to install and set up

- 35 mm rail or screw mounting
- All settings visible and adjustable on front face
- Run signal relay for all sizes
- Output signal for TOR (Top Of Ramp) for PSR25...PSR30
- 10 starts per hour standard, increased to 20 starts or more with addition of auxiliary cooling fan
- Remote control connection using Field Bus Plug as accessory

Compact starter solution in 45 mm width with manual motor starter up to 25 HP - 600 V

