1SYN829571C201

Manual motor starters

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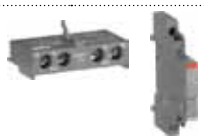
Manual motor starters

3

Thermal and electromagnetic protection	Type	MS116	MS132	
Electromagnetic protection	Type	-		MO132
Phase loss sensitivity		Yes	Yes	No
Switch position		ON/OFF	ON/OFF/TRIP	
Magnetic trip indication		-	Yes	
Lockable handle without accessories		-	Yes	
Disconnecting feature		Yes	Yes	
Width		45 mm	45 mm	
Rated operational current Ie		0.16...32 A	0.16....32 A	0.16....32 A
Setting range for thermal release		0.10...32 A	0.10....32 A	-
Rated operational voltage Ue		690 V AC	690 V AC / 250 V DC	
Rated frequency		50/60 Hz	DC, 50/60 Hz	
Trip class		10A	10	
Short-circuit breaking capacity Ics	400 V AC	Up to 50 kA	Up to 100 kA	
Ambient air temperature open compensated		-25...+55 °C	-25...+60 °C	

Main accessories

Auxiliary contacts			
Front mounting		HKF1	
Side mounting		HK1	
Signalling contacts			
Tripped alarm		SK1	
Short-circuit alarm		-	CK1
Auxiliary trip units			
Shunt trip		AA1	
Undervoltage release		UA1	
Busbar systems			
3-phase busbar		PS1	
Feeder terminals		S1	

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MS450		MS495		MS497	
	MO450		MO495		MO496
Yes	No	Yes	No	Yes	No
ON/OFF/TRIP		ON/OFF/TRIP		ON/OFF/TRIP	
-		-		-	
Yes		Yes		Yes	
Yes		Yes		Yes	
55 mm		70 mm		70 mm	
40...50 A	40...50 A	63...100 A	63...100 A	32...100 A	32...100 A
28...50 A	-	45...100 A	-	22...100 A	-
690 V AC / 440 V DC		690 V AC / 440 V DC		690 V AC / 440 V DC	
DC, 50/60 Hz		DC, 50/60 Hz		DC, 50/60 Hz	
10		10		10	
Up to 50 kA		Up to 50 kA		Up to 100 kA	
-20...+60 °C		-20...+60 °C		-20...+60 °C	

HK4	
HKS4	
SK4	
SK4	
AA4	
UA4	
PS4	-
S4	-

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MS116 manual motor starters
0.10 to 32 A – with thermal and electromagnetic protection

MS116-16

MS116-25

MS116-0.16-HKF1-11

MS116-32-HKF1-11

Description

Manual motor starters (MMS) are protection devices for the main circuit. They combine motor control and protection in a single device. MMS are used mainly to switch motors manually ON/OFF and protect them and the installation fuse less against short-circuit, overload and phase failures. Fuse less protection with a manual motor starter saves costs, space and ensures a quick reaction under short-circuit condition, by switching off the motor within milliseconds.

MS116 is a compact and economic range for motor protection up to 15.5 kW (400 V) / 32 A in width of 45 mm. Further features are the build-in disconnect function, temperature compensation, trip-free mechanism and a rotary handle with a clear switch position indication. The manual motor starter is suitable for three- and single-phase applications. Auxiliary contacts, signalling contacts, undervoltage releases, shunt trips, three-phase bus bars, power in-feed blocks and locking devices for protection against unauthorized changes are available as accessory.

Ordering details

Rated operational power 400 V AC-3	Setting range	Short-circuit breaking capacity Ics at 400 V AC	Rated instantaneous short-circuit current setting Ii	Type	Order code	Weight (1 pce)
kW	A	kA	A			kg
0.03	0.10...0.16	50	1.56	MS116-0.16	1SAM250000R1001	0.225
0.06	0.16...0.25	50	2.44	MS116-0.25	1SAM250000R1002	0.225
0.09	0.25...0.40	50	3.90	MS116-0.4	1SAM250000R1003	0.225
0.12	0.40...0.63	50	6.14	MS116-0.63	1SAM250000R1004	0.225
0.25	0.63...1.00	50	11.50	MS116-1.0	1SAM250000R1005	0.225
0.55	1.00...1.60	50	18.40	MS116-1.6	1SAM250000R1006	0.265
0.75	1.60...2.50	50	28.75	MS116-2.5	1SAM250000R1007	0.265
1.5	2.50...4.00	50	50.00	MS116-4.0	1SAM250000R1008	0.265
2.2	4.00...6.30	50	78.75	MS116-6.3	1SAM250000R1009	0.265
4.0	6.30...10.0	50	150	MS116-10	1SAM250000R1010	0.265
5.5	8.00...12.0	25	180	MS116-12	1SAM250000R1012	0.265
7.5	10.0...16.0	16	240	MS116-16	1SAM250000R1011	0.265
9.0	16.0...20.0	10	300	MS116-20	1SAM250000R1013	0.310
12.5	20.0...25.0	10	375	MS116-25	1SAM250000R1014	0.310
15.5	25.0...32.0	10	480	MS116-32	1SAM250000R1015	0.310
Auxiliary contacts mounted on the front (1 N.O. + 1 N.C.)						
0.03	0.10...0.16	50	1.56	MS116-0.16-HKF1-11	1SAM250005R1001	0.240
0.06	0.16...0.25	50	2.44	MS116-0.25-HKF1-11	1SAM250005R1002	0.240
0.09	0.25...0.40	50	3.90	MS116-0.4-HKF1-11	1SAM250005R1003	0.240
0.12	0.40...0.63	50	6.14	MS116-0.63-HKF1-11	1SAM250005R1004	0.240
0.25	0.63...1.00	50	11.50	MS116-1.0-HKF1-11	1SAM250005R1005	0.240
0.55	1.00...1.60	50	18.40	MS116-1.6-HKF1-11	1SAM250005R1006	0.280
0.75	1.60...2.50	50	28.75	MS116-2.5-HKF1-11	1SAM250005R1007	0.280
1.5	2.50...4.00	50	50.00	MS116-4.0-HKF1-11	1SAM250005R1008	0.280
2.2	4.00...6.30	50	78.75	MS116-6.3-HKF1-11	1SAM250005R1009	0.280
4.0	6.30...10.0	50	150	MS116-10.0-HKF1-11	1SAM250005R1010	0.280
5.5	8.00...12.0	25	180	MS116-12.0-HKF1-11	1SAM250005R1012	0.280
7.5	10.0...16.0	16	240	MS116-16.0-HKF1-11	1SAM250005R1011	0.280
9.0	16.0...20.0	10	300	MS116-20-HKF1-11	1SAM250005R1013	0.326
12.5	20.0...25.0	10	375	MS116-25-HKF1-11	1SAM250005R1014	0.326
15.5	25.0...32.0	10	480	MS116-32-HKF1-11	1SAM250005R1015	0.326

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MS116 manual motor starters
Technical data

Main circuit – Utilization characteristics according to IEC/EN

Type		MS116
Standards		IEC/EN 60947–2, IEC/EN 60947-4-1, IEC/EN 60947-1
Rated operational voltage U_e		690 V AC
Rated frequency		50/60 Hz
Trip class		10A
Number of poles		3
Duty time		100 %
Mechanical durability		100000 cycles
Electrical durability	up to 16 A	100000 cycles
	20 ... 32 A	50000 cycles
Rated impulse withstand voltage U_{imp}		6 kV
Rated insulation voltage U_i		690 V AC
Rated operational current I_e		See ordering details
Rated instantaneous short-circuit current setting I_i		See ordering details
Rated service short-circuit breaking capacity I_{cs}		See table "Short-circuit breaking capacity and back-up fuses"
Rated ultimate short-circuit breaking capacity I_{cu}		See table "Short-circuit breaking capacity and back-up fuses"

Short-circuit breaking capacity and back-up fuses

I_{CS} Rated service short-circuit breaking capacity

I_{CU} Rated ultimate short-circuit breaking capacity

I_{CC} Prospective short-circuit current at installation location

Note: Maximum rated current of the back-up fuses if $I_{CC} > I_{CS}$

Type	230 V AC			400 V AC			440 V AC			500 V AC			690 V AC		
	I_{cs}	I_{cu}	gG, aM	I_{cs}	I_{cu}	gG, aM	I_{cs}	I_{cu}	gG, aM	I_{cs}	I_{cu}	gG, aM	I_{cs}	I_{cu}	gG, aM
	kA	kA	A	kA	kA	A	kA	kA	A	kA	kA	A	kA	kA	A
MS116-0.16	No back-up fuse required up to I_{CC} = 50 kA									No back-up fuse required up to I_{CC} = 30 kA					
MS116-0.25															
MS116-0.4															
MS116-0.63															
MS116-1.0															
MS116-1.6															
MS116-2.5							10	10	25	10	10	25	5	5	25
MS116-4.0							6	6	25	6	6	25	2	2	25
MS116-6.3							6	6	63	6	6	63	2	2	40
MS116-10							6	6	63	6	6	63	2	2	50
MS116-12	25	25	80	25	25	80	6	6	63	6	6	63	2	2	50
MS116-16	16	16	80	16	16	80	6	6	63	4	4	63	2	2	63
MS116-20	10	15	-	10	15	-	3	6	-	3	4	-	2	2	-
MS116-25	10	15	-	10	15	-	3	6	-	3	4	-	2	2	-
MS116-32	10	10	-	10	10	-	3	6	-	3	4	-	2	2	-

MS116-10: No need for back-up fuse in networks with a prospective current of up to 50 kA at 400 V.
MS116-16: No need for back-up fuse in networks with a prospective current of up to 16 kA at 400 V.
With an approbiate 80 A type gG fuse the device can be used in a network with a prospective current of up to 100 kA.
MS116-32: No need for back-up fuse in networks with a prospective current of up to 10 kA at 400 V.

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MS116 manual motor starters
Technical data

General technical data

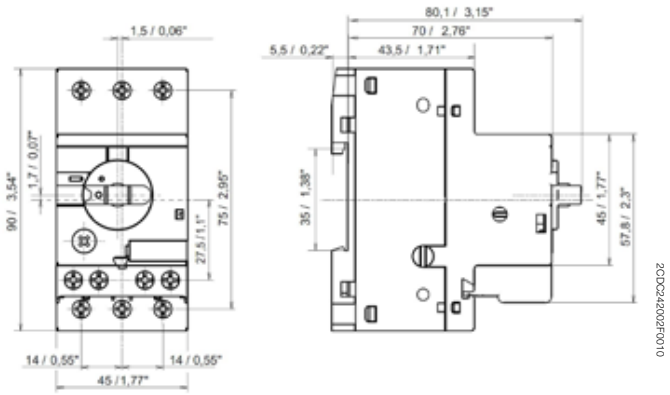
Type		MS116
Pollution degree		3
Phase loss sensitivity		Yes
Disconnect function acc. to IEC/EN 60947-2		Yes
Ambient air temperature		
Operation	Open - compensated	-25 ... +55 °C
	Open	-25 ... +70 °C
	Enclosed (IB132)	0 ... +40 °C
Storage		-50 ... +80 °C
Ambient air temperature compensation		Acc. to IEC/EN60947-4-1
Maximum operating altitude permissible		2000 m
Resistance to shock acc. to IEC 60068-2-27		25g / 11 ms
Resistance to vibrations acc. to IEC 60068-2-6		5g / 3 ... 150 Hz
Mounting position		Position 1-6 (optional for single mounting)
Mounting		DIN-rail (EN 60715)
Group mounting		On request
Minimum distance to other units same type	Horizontal	0 mm
	Vertical	150 mm
Minimum distance to electrical conductive board	Horizontal, up to 400 V	0 mm
	Horizontal, up to 690 V	> 1.5 mm
	Vertical	75 mm
Degree of protection	Housing	IP20
	Main circuit terminals	IP20

Connecting characteristics

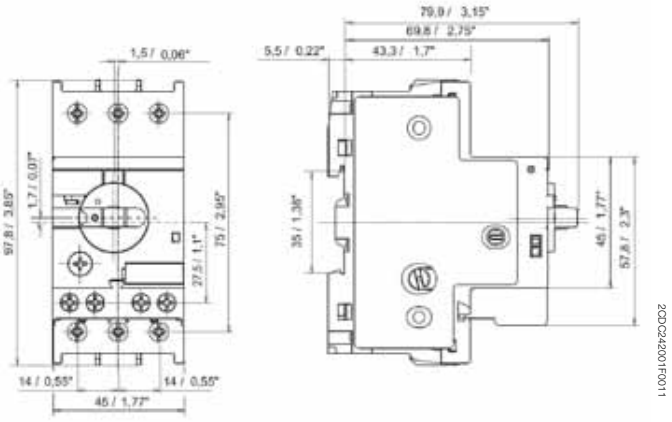
Main circuit

Type		MS116 ≤ 16 A	MS116 ≥ 20 A
Connecting capacity			
Rigid	1 or 2 x	1 ... 4 mm²	2.5 ... 6 mm²
Flexible with ferrule	1 or 2 x	0.75 ... 2.5 mm²	1 ... 6 mm²
Flexible with insulated ferrule	1 or 2 x	0.75 ... 2.5 mm²	1 ... 6 mm²
Flexible	1 or 2 x	0.75 ... 2.5 mm²	1 ... 6 mm²
Stripping length		9 mm	10 mm
Tightening torques		0.8 ... 1.2 Nm / 10 ... 12 lb.in	2.0 Nm / 18 lb.in
Connection screw		M3.5 (Pozidriv 2 / 5.5 mm)	M4 (Pozidriv 2 / 6.5 mm)

Main dimensions mm, inches



MS116 ≤ 16 A & MS116-HKF1-11 ≤ 16 A



MS116 ≥ 20 A & MS116-HKF1-11 ≥ 20 A

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MS132 manual motor starters
0.10 to 32 A – with thermal and electromagnetic protection


1SBC101232F0010

MS132-10


2CDC241001F0011

MS132-32


2CDC241014F0011

MS132-0.16-HKF1-11


2CDC241015F0011

MS132-32-HKF1-11

Description

Manual motor starters (MMS) are protection devices for the main circuit. They combine motor control and protection in a single device. MMS are used mainly to switch motors manually ON/OFF and protect them and the installation fuse less against short-circuit, overload and phase failures. Fuse less protection with a manual motor starter saves costs, space and ensures a quick reaction under short-circuit condition, by switching off the motor within milliseconds.

MS132 is a compact and powerful range for motor protection up 15.5 kW (400 V) / 32 A in width of 45 mm. Further features are the build-in disconnect function, temperature compensation, trip-free mechanism and a rotary handle with a clear switch position indication. The manual motor starter is suitable for three- and single-phase applications. The handle is lockable to protect against unauthorized changes. Auxiliary contacts, signalling contacts, undervoltage releases, shunt trips, three-phase bus bars, power in-feed blocks.

Ordering details

Rated operational power 400 V AC-3	Setting range	Short-circuit breaking capacity Ics at 400 V AC	Rated instantaneous short-circuit current setting Ii	Type	Order code	Weight (1 pce)
kW	A	kA	A			kg
0.03	0.10…0.16	100	1.56	MS132-0.16	1SAM350000R1001	0.215
0.06	0.16…0.25	100	2.44	MS132-0.25	1SAM350000R1002	0.215
0.09	0.25…0.40	100	3.90	MS132-0.4	1SAM350000R1003	0.215
0.12	0.40…0.63	100	6.14	MS132-0.63	1SAM350000R1004	0.215
0.25	0.63…1.00	100	11.50	MS132-1.0	1SAM350000R1005	0.215
0.55	1.00…1.60	100	18.40	MS132-1.6	1SAM350000R1006	0.265
0.75	1.60…2.50	100	28.75	MS132-2.5	1SAM350000R1007	0.265
1.5	2.50…4.00	100	50.00	MS132-4.0	1SAM350000R1008	0.265
2.2	4.00…6.30	100	78.75	MS132-6.3	1SAM350000R1009	0.265
4.0	6.30…10.0	100	150	MS132-10	1SAM350000R1010	0.265
5.5	8.00…12.0	100	180	MS132-12	1SAM350000R1012	0.310
7.5	10.0…16.0	100	240	MS132-16	1SAM350000R1011	0.310
9.0	16.0…20.0	100	300	MS132-20	1SAM350000R1013	0.310
12.5	20.0…25.0	50	375	MS132-25	1SAM350000R1014	0.310
15.5	25.0…32.0	25	480	MS132-32	1SAM350000R1015	0.310
Auxiliary contacts mounted on the front (1 N.O. + 1 N.C.)						
0.03	0.10...0.16	100	1.56	MS132-0.16-HKF1-11	1SAM350005R1001	0.231
0.06	0.16...0.25	100	2.44	MS132-0.25-HKF1-11	1SAM350005R1002	0.231
0.09	0.25...0.40	100	3.90	MS132-0.4-HKF1-11	1SAM350005R1003	0.231
0.12	0.40...0.63	100	6.14	MS132-0.63-HKF1-11	1SAM350005R1004	0.231
0.25	0.63...1.00	100	11.50	MS132-1.0-HKF1-11	1SAM350005R1005	0.231
0.55	1.00...1.60	100	18.40	MS132-1.6-HKF1-11	1SAM350005R1006	0.281
0.75	1.60...2.50	100	28.75	MS132-2.5-HKF1-11	1SAM350005R1007	0.281
1.5	2.50...4.00	100	50.00	MS132-4.0-HKF1-11	1SAM350005R1008	0.281
2.2	4.00...6.30	100	78.75	MS132-6.3-HKF1-11	1SAM350005R1009	0.281
4.0	6.30...10.0	100	150	MS132-10.0-HKF1-11	1SAM350005R1010	0.281
5.5	8.00...12.0	100	180	MS132-12.0-HKF1-11	1SAM350005R1012	0.326
7.5	10.0...16.0	100	240	MS132-16.0-HKF1-11	1SAM350005R1011	0.326
9.0	16.0...20.0	100	300	MS132-20-HKF1-11	1SAM350005R1013	0.326
12.5	20.0...25.0	50	375	MS132-25-HKF1-11	1SAM350005R1014	0.326
15.5	25.0...32.0	25	480	MS132-32-HKF1-11	1SAM350005R1015	0.326

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MS132 manual motor starters
Technical data

Main circuit – Utilization characteristics according to IEC/EN

Type	MS132
Standards	IEC/EN 60947–2, IEC/EN 60947-4-1, IEC/EN 60947-1
Rated operational voltage U_e	690 V AC / 250 V DC
Rated frequency	DC, 50/60 Hz
Trip class	10 (10A for 1SAM350000R1001)
Number of poles	3
Duty time	100 %
Mechanical durability	100000 cycles
Electrical durability	50000 cycles
Rated impulse withstand voltage U_{imp}	6 kV
Rated insulation voltage U_i	690 V AC
Rated operational current I_e	See ordering details
Rated oprational current DC-5 I_e 3 conducting paths in series up to 250 V	See "Rated operational current I_e"
Rated instantaneous short-circuit current setting I_i	See ordering details
Rated service short-circuit breaking capacity I_{cs}	See table "Short-circuit breaking capacity and back-up fuses"
Rated ultimate short-circuit breaking capacity I_{cu}	See table "Short-circuit breaking capacity and back-up fuses"
Rated service short-circuit breaking capacity DC I_{cs} 3 conducting paths in series up to 250 V	10 kA

Short-circuit breaking capacity and back-up fuses

I_{CS} Rated service short-circuit breaking capacity

I_{CU} Rated ultimate short-circuit breaking capacity

I_{CC} Prospective short-circuit current at installation location

Note: Maximum rated current of the back-up fuses if $I_{CC} > I_{CS}$

Type	230 V AC			400 V AC			440 V AC			500 V AC			690 V AC		
	I_{cs}	I_{cu}	gG, aM	I_{cs}	I_{cu}	gG, aM	I_{cs}	I_{cu}	gG, aM	I_{cs}	I_{cu}	gG, aM	I_{cs}	I_{cu}	gG, aM
	kA	kA	A	kA	kA	A	kA	kA	A	kA	kA	A	kA	kA	A
MS132-0.16	No back-up fuse required up to I_{CC} = 100 kA														
MS132-0.25															
MS132-0.4															
MS132-0.63															
MS132-1.0															
MS132-1.6															
MS132-2.5															
MS132-4.0							20	20	35	20	20	35	3	3	32
MS132-6.3							20	20	63	20	20	63	3	3	50
MS132-10							20	20	100	20	20	100	3	3	50
MS132-12							20	20	100	20	20	100	3	3	63
MS132-16							20	20	125	20	20	125	3	3	63
MS132-20							20	20	125	20	20	125	3	3	80
MS132-25	50	50	125	50	50	125	20	20	125	10	10	125	3	3	100
MS132-32	25	50	125	25	50	125	20	20	125	10	10	125	3	3	100

MS132-16: No need for back-up fuse in networks with a prospective current of up to 100 kA at 400 V.
MS132-32: No need for back-up fuse in networks with a prospective current of up to 50 kA at 400 V.
With an approbiate 125 A type gG fuse the device can be used in a network with a prospective current of up to 100 kA.

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MS132 manual motor starters
Technical data

General technical data

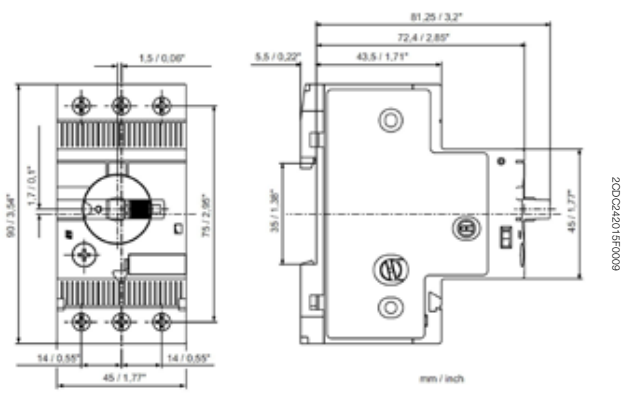
Type		MS132
Pollution degree		3
Phase loss sensitivity		Yes
Disconnect function acc. to IEC/EN 60947-2		Yes
Ambient air temperature		
Operation	Open - compensated	-25 ... +60 °C
	Open	-25 ... +70 °C
	Enclosed (IB132)	0 ... +40 °C
Storage		-50 ... +70 °C
Ambient air temperature compensation		Acc. to IEC/EN60947-4-1
Maximum operating altitude permissible		2000 m
Resistance to shock acc. to IEC 60068-2-27		25g / 11 ms
Resistance to vibrations acc. to IEC 60068-2-6		5g / 3 ... 150 Hz
Mounting position		Position 1-6 (optional for single mounting)
Mounting		DIN-rail (EN 60715)
Group mounting		On request
Minimum distance to other units same type	Horizontal	0 mm
	Vertical	150 mm
Minimum distance to electrical conductive board	Horizontal, up to 400 V	0 mm
	Horizontal, up to 690 V	> 1.5 mm
	Vertical	75 mm
Degree of protection	Housing	IP20
	Main circuit terminals	IP20

Connecting characteristics

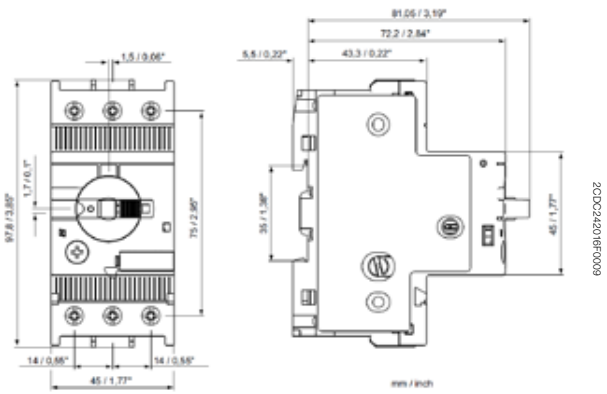
Main circuit

Type		MS132-0.16 ... MS132-10	MS132-12 ... MS132-16	MS132-20 ... MS132-32
Connecting capacity				
Rigid	1 or 2 x	1 ... 4 mm²	1 ... 4 mm²	2.5 ... 6 mm²
Flexible with ferrule	1 or 2 x	1 ... 4 mm²	1 ... 4 mm²	2.5 ... 6 mm²
Flexible with insulated ferrule	1 or 2 x	1 ... 4 mm²	1 ... 4 mm²	2.5 ... 6 mm²
Flexible	1 or 2 x	1 ... 4 mm²	1 ... 4 mm²	2.5 ... 6 mm²
Stripping length		9 mm	10 mm	10 mm
Tightening torques		0.8 ... 1.2 Nm / 10 ... 12 lb.in	1.5 Nm / 14 lb.in	2.0 Nm / 18 lb.in
Connection screw		M3.5 (Pozidriv 2)	M4 (Pozidriv 2)	M4 (Pozidriv 2)

Main dimensions mm, inches



MS132 ≤ 10 A



MS132 ≥ 12 A

1SYN829571C201

MO132 manual motor starters magnetic only
0.16 to 32 A – with electromagnetic protection

MO132-6.3

MO132-32

Description

Manual motor starters magnetic only are electromechanical protection devices for the main circuit. They are used mainly to switch motors manually ON/OFF and protect them fuse less against short-circuit.

Fuse less protection with a manual motor starter saves costs, space and ensures a quick reaction under short-circuit condition, by switching off the motor within milliseconds. Fuse less starter combinations are setup together with contactors and overload relays.

Ordering details

Rated operational power 400 V AC-3 (1)	Rated operational current	Short-circuit breaking capacity Ics at 400 V AC	Rated instantaneous short-circuit current setting Ii	Type	Order code	Weight (1 pce)
kW	A	kA	A			kg
0.03	0.16	100	1.56	MO132-0.16	1SAM360000R1001	0.215
0.06	0.25	100	2.44	MO132-0.25	1SAM360000R1002	0.215
0.09	0.40	100	3.90	MO132-0.4	1SAM360000R1003	0.215
0.12	0.63	100	6.14	MO132-0.63	1SAM360000R1004	0.215
0.25	1.0	100	11.50	MO132-1.0	1SAM360000R1005	0.215
0.55	1.6	100	18.40	MO132-1.6	1SAM360000R1006	0.265
0.75	2.5	100	28.75	MO132-2.5	1SAM360000R1007	0.265
1.5	4.0	50	50.00	MO132-4.0	1SAM360000R1008	0.265
2.2	6.3	50	78.75	MO132-6.3	1SAM360000R1009	0.265
4.0	10	50	125.00	MO132-10	1SAM360000R1010	0.265
5.5	12	50	150.00	MO132-12	1SAM360000R1012	0.310
7.5	16	50	200.00	MO132-16	1SAM360000R1011	0.310
9.0	20	50	250.00	MO132-20	1SAM360000R1013	0.310
12.5	25	50	312.50	MO132-25	1SAM360000R1014	0.310
15.5	32	25	400.00	MO132-32	1SAM360000R1015	0.310

(1) For overload protection of motors, an appropriate thermal or electronic overload relay must be used.

MO132 manual motor starters magnetic only
Technical data

Main circuit – Utilization characteristics according to IEC/EN

Type	MO132
Standards	IEC/EN 60947–2, IEC/EN 60947-4-1, IEC/EN 60947-1
Rated operational voltage U_e	690 V AC
Rated frequency	50/60 Hz
Number of poles	3
Duty time	100 %
Mechanical durability	100000 cycles
Electrical durability	50000 cycles
Rated impulse withstand voltage U_{imp}	6 kV
Rated insulation voltage U_i	690 V AC
Rated operational current I_e	See ordering details
Rated instantaneous short-circuit current setting I_i	See ordering details
Rated service short-circuit breaking capacity I_{cs}	See table "Short-circuit breaking capacity and back-up fuses"
Rated ultimate short-circuit breaking capacity I_{cu}	See table "Short-circuit breaking capacity and back-up fuses"

Short-circuit breaking capacity and back-up fuses

I_{CS} Rated service short-circuit breaking capacity

I_{CU} Rated ultimate short-circuit breaking capacity

I_{CC} Prospective short-circuit current at installation location

Note: Maximum rated current of the back-up fuses if $I_{CC} > I_{CS}$

Type	230 V AC			400 V AC			440 V AC			500 V AC			690 V AC		
	I_{CS}	I_{CU}	gG, aM	I_{CS}	I_{CU}	gG, aM	I_{CS}	I_{CU}	gG, aM	I_{CS}	I_{CU}	gG, aM	I_{CS}	I_{CU}	gG, aM
	kA	kA	A	kA	kA	A	kA	kA	A	kA	kA	A	kA	kA	A
MO132-0.16	No back-up fuse required up to I_{CC} = 100 kA														
MO132-0.25															
MO132-0.4															
MO132-0.63															
MO132-1.0															
MO132-1.6															
MO132-2.5															
MO132-4.0							20	20	35	20	20	35	3	3	32
MO132-6.3							20	20	63	20	20	63	3	3	50
MO132-10							20	20	100	20	20	100	3	3	50
MO132-12							20	20	100	20	20	100	3	3	63
MO132-16							20	20	125	20	20	125	3	3	63
MO132-20							20	20	125	20	20	125	3	3	80
MO132-25	50	50	125	50	50	125	10	10	125	10	10	125	3	3	100
MO132-32	25	50	125	25	50	125	10	10	125	10	10	125	3	3	100

MO132-20: No need for back-up fuse in networks with a prospective current of up to 100 kA at 400 V.

MO132-32: No need for back-up fuse in networks with a prospective current of up to 50 kA at 400 V.
With an approbiate 125 A type gG fuse the device can be used in a network with a prospective current of up to 100 kA.

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MO132 manual motor starters magnetic only
Technical data

General technical data

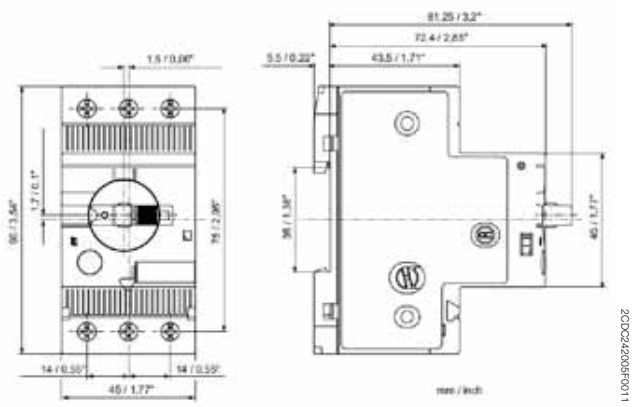
Type		MO132
Pollution degree		3
Phase loss sensitivity		No
Disconnect function acc. to IEC/EN 60947-2		Yes
Ambient air temperature		
Operation	Open	-25 ... +60 °C
	Enclosed (IB132)	0 ... +40 °C
Storage		-50 ... +80 °C
Ambient air temperature compensation		-
Maximum operating altitude permissible		2000 m
Resistance to shock acc. to IEC 60068-2-27		25g / 11 ms
Resistance to vibrations acc. to IEC 60068-2-6		5g / 3 ... 150 Hz
Mounting position		Position 1-6 (optional for single mounting)
Mounting		DIN-rail (EN 60715)
Group mounting		On request
Minimum distance to other units same type	Horizontal	0 mm
	Vertical	150 mm
Minimum distance to electrical conductive board	Horizontal, up to 400 V	0 mm
	Horizontal, up to 690 V	> 1.5 mm
	Vertical	75 mm
Degree of protection	Housing	IP20
	Main circuit terminals	IP20

Connecting characteristics

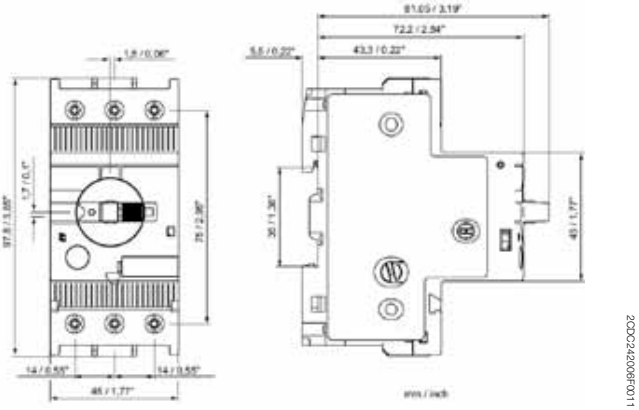
Main circuit

Type		MO132-0.16 ... MO132-10	MO132-12 ... MO132-16	MO132-20 ... MO132-32
Connecting capacity				
Rigid	1 or 2 x	1 ... 4 mm²	1 ... 4 mm²	2.5 ... 6 mm²
Flexible with ferrule	1 or 2 x	0.75 ... 2.5 mm²	0.75 ... 2.5 mm²	1 ... 6 mm²
Flexible with insulated ferrule	1 or 2 x	0.75 ... 2.5 mm²	0.75 ... 2.5 mm²	1 ... 6 mm²
Flexible	1 or 2 x	0.75 ... 2.5 mm²	0.75 ... 2.5 mm²	1 ... 6 mm²
Stripping length		9 mm	10 mm	10 mm
Tightening torques		0.8 ... 1.2 Nm / 10 ... 12 lb.in	1.5 Nm / 14 lb.in	2.0 Nm / 18 lb.in
Connection screw		M3.5 (Pozidriv 2)	M4 (Pozidriv 2)	M4 (Pozidriv 2)

Main dimensions mm, inches



MO132 ≤ 10 A

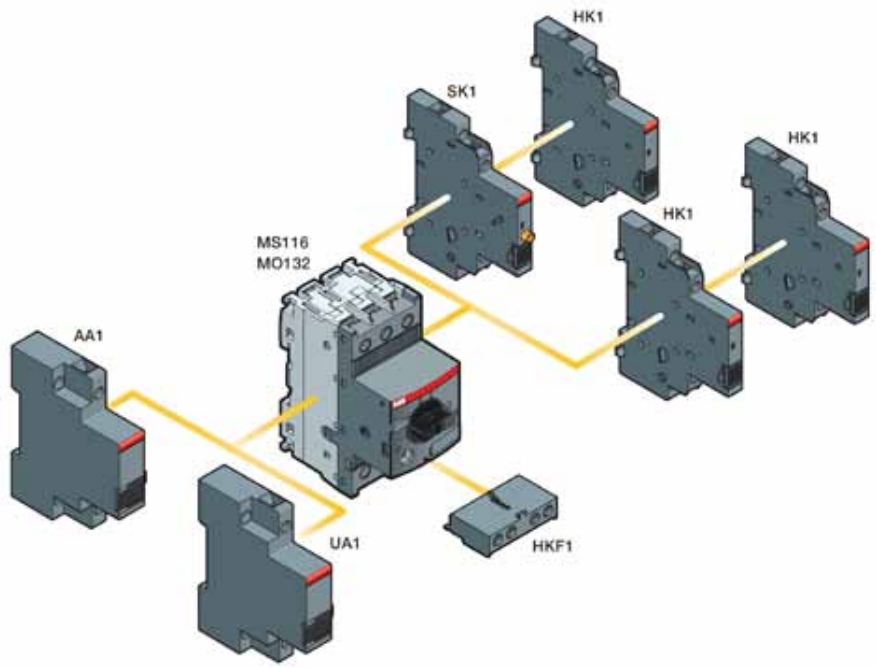


MO132 ≥ 12 A

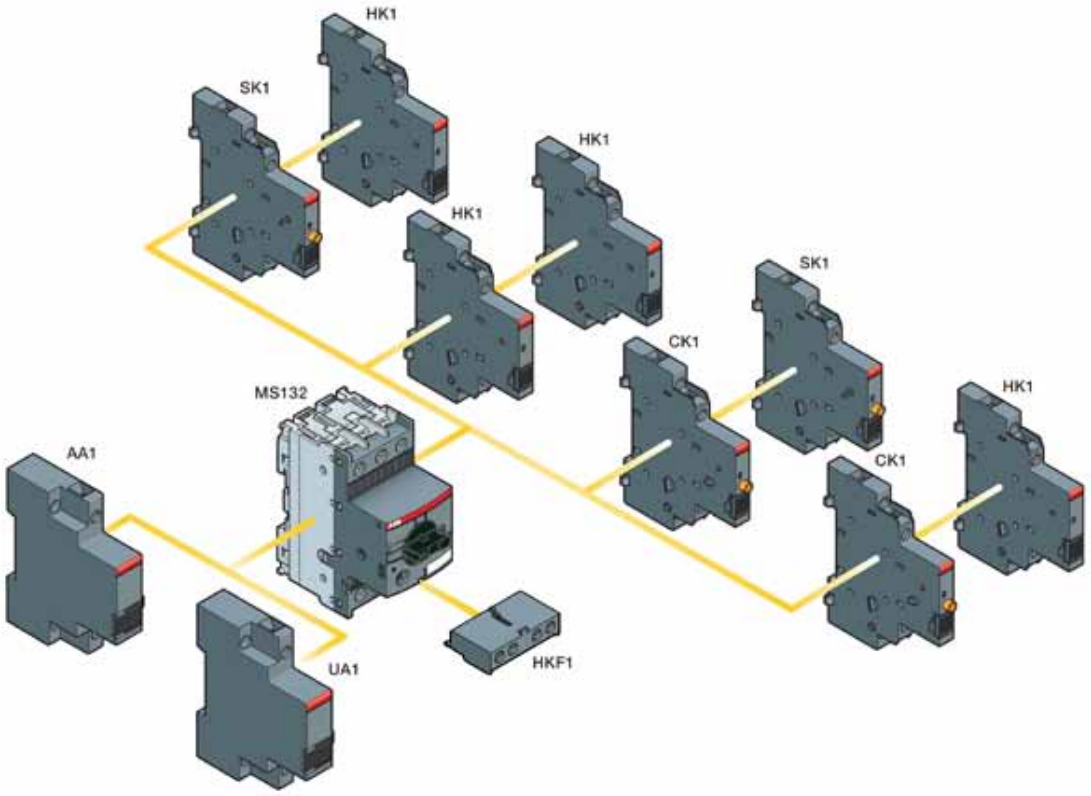
1SYN829571C201

MS116, MS132, MO132 manual motor starters
Main accessories

MS116, MO132 manual motor starters with accessories



MS132 manual motor starters with accessories



MS116, MS132, MO132 manual motor starters
Main accessories


1SBC101208F0014

HKF1-11


1SBC101209F0014

HK1-11


1SBC101210F0014

SK1-11


1SBC101286F0014

CK1-11

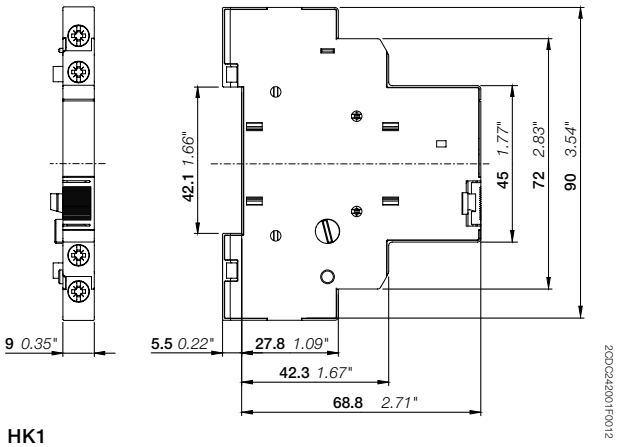
Description

Manual motor starters can be equipped with auxiliary contacts for lateral/front mounting, signalling contact for lateral mounting, undervoltage release and shunt trips. Two different signalling contacts are available. The accessories can be fitted wiring free and without tools. A variety of combinations is possible as required for the application. The auxiliary contacts change position with the main contacts. The signalling contact SK signals tripping regardless if it was caused by short-circuit or overload. The signalling contact CK signals tripping in case it was caused by short-circuit. Undervoltage release are used for remote tripping of the manual motor starter especially for emergency stop circuits. Shunt trips release the MMS used for remote tripping.

Ordering details

Suitable for	Auxiliary contacts N.O.	Auxiliary contacts N.C.	Description	Type	Order code	Pkg qty	Weight (1 pce) kg
Auxiliary contacts – mountable on the front							
MS116, MS132, MO132	1	1		HKF1-11	1SAM201901R1001	10	0.015
	2	0		HKF1-20	1SAM201901R1002	10	0.015
Auxiliary contacts – mountable on the right							
MS116, MS132, MO132	1	1	max. 2 pieces	HK1-11	1SAM201902R1001	2	0.035
	2	0	max. 2 pieces	HK1-20	1SAM201902R1002	2	0.035
	0	2	max. 2 pieces	HK1-02	1SAM201902R1003	2	0.035
	2	0	with lead contacts	HK1-20L	1SAM201902R1004	2	0.035
Signalling contacts – mountable on the right							
MS116, MS132, MO132	1	1	for tripped alarm, max. 2 pieces	SK1-11	1SAM201903R1001	2	0.035
	2	0	for tripped alarm, max. 2 pieces	SK1-20	1SAM201903R1002	2	0.035
	0	2	for tripped alarm, max. 2 pieces	SK1-02	1SAM201903R1003	2	0.035
MS132	1	1	for short-circuit alarm, max. 2 pieces	CK1-11	1SAM301901R1001	2	0.035
	2	0	for short-circuit alarm, max. 2 pieces	CK1-20	1SAM301901R1002	2	0.035
	0	2	for short-circuit alarm, max. 2 pieces	CK1-02	1SAM301901R1003	2	0.035

Main dimensions mm, inches



HK1

MS116, MS132, MO132 manual motor starters
Main accessories

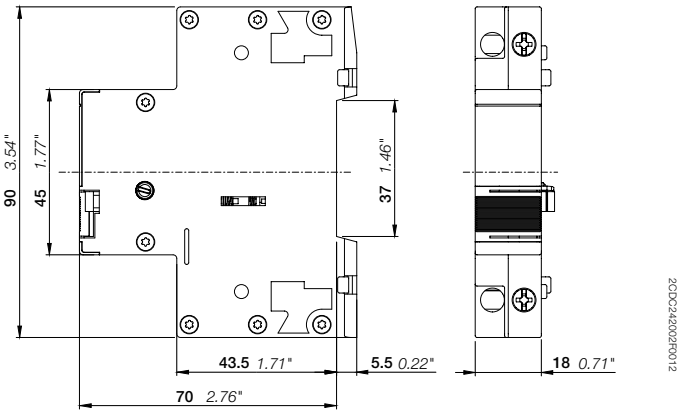
AA1-24

UA1-24

Ordering details

Suitable for	Rated control supply voltage V	Frequency Hz	Type	Order code	Pkg qty	Weight (1 pce) kg
Shunt trips – mountable on the left						
MS116, MS132, MO132	20...24	50/60	AA1-24	1SAM201910R1001	1	0.100
	110	50/60	AA1-110	1SAM201910R1002	1	0.100
	200...240	50/60	AA1-230	1SAM201910R1003	1	0.100
	350...415	50/60	AA1-400	1SAM201910R1004	1	0.100
Undervoltage releases – mountable on the left						
MS116, MS132, MO132	24	50	UA1-24	1SAM201904R1001	1	0.100
	48	50	UA1-48	1SAM201904R1002	1	0.100
	60	50	UA1-60	1SAM201904R1003	1	0.100
	110...120	50/60	UA1-110	1SAM201904R1004	1	0.100
	208	60	UA1-208	1SAM201904R1008	1	0.100
	230...240	50/60	UA1-230	1SAM201904R1005	1	0.100
	400	50	UA1-400	1SAM201904R1006	1	0.100
	415...480	50/60	UA1-415	1SAM201904R1007	1	0.100

Main dimensions mm, inches



AA1, UA1

General technical data

Type		HK1	SK1	HKF1
Standards		IEC/EN 60947-2, IEC/EN 60947-4-1, IEC/EN 60947-1		
Rated operational voltage U_e		690 V AC / 600 DC		250 V AC / 250 V DC
Conventional free-air thermal current I_{th}		6 A		5 A
Rated frequency		50/60 Hz		
Rated impulse withstand voltage U_{imp}		6 kV		
Rated insulation voltage U_i		690 V AC		250 V AC
Pollution degree		3		
Ambient air temperature	Operation	-25 ... +70 °C		
	Storage	-50 ... +80 °C		
Resistance to shock acc. to IEC 60068-2-27		25g / 11 ms		
Resistance to vibrations acc. to IEC 60068-2-6		5g / 3 ... 150 Hz		
I_e / Rated operational current AC-15 acc. to IEC/EN 60947-5-1 for utilization category				
	24 V, 120 V	6 A		3 A
	240 V	4 A		1.5 A
	400 V	3 A		-
	440 V, 690 V	1 A		-
I_e / Rated operational current DC-13 acc. to IEC/EN 60947-5-1 for utilization category				
	24 V	2 A		1 A
	125 V	0.55 A		0.27 A
	250 V	0.27 A		0.11 A
	440 V, 600 V	0.15 A		-
Minimum switching capacity		17 V / 5 mA		
Short-circuit protective device	N.C., 95-96	10 A Type gG		
	N.O., 97-98	10 A Type gG		
Duty time		100 %		
Mounting		Right side of MMS		Front of MMS
Mounting positions		1-6		
Mechanical durability		50000 cycles		-
Electrical durability		50000 cycles		-

Connecting charateristics

Auxiliary circuit

Type		HK1	SK1	HKF1
Connecting capacity				
Rigid	1 or 2 x	1 ... 1.5 mm²		1 ... 2.5 mm²
Flexible with ferrule	1 or 2 x	0.75 ... 1.5 mm²		
Flexible with insulated ferrule	1 or 2 x	0.75 ... 1.5 mm²		
Flexible	1 or 2 x	0.75 ... 1.5 mm²		
Stripping length		8 mm		
Tightening torques		0.8 ... 1.2 Nm / 7 lb.in		
Connection screw		M3 (Pozidriv 2)		

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