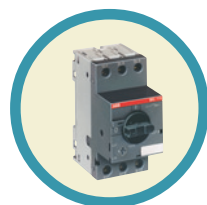


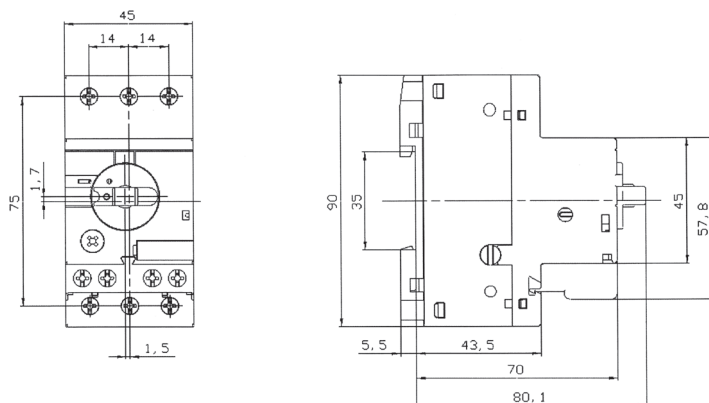
Manual Motor Starter MS 116 up to 16 A

Technical Data

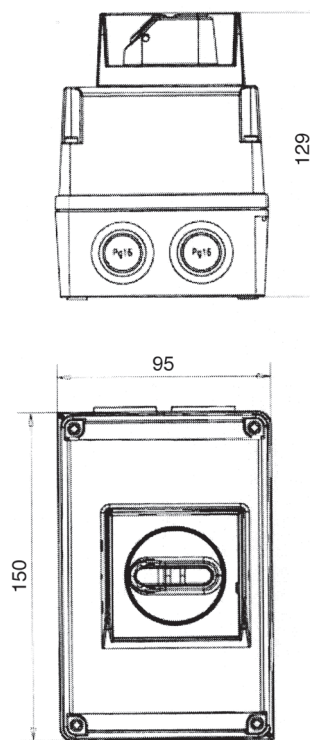


Type	MS 116	
Standards: Major International and European Standards	IEC 60 947-4-1 / IEC 60 947-2 EN 60 947-4-1 / EN 60 947-2	
Approvals, Certificates	UL, CSA	
Rated insulation voltage U_i Acc. to IEC 158-1, IEC 60 947-4-1, CSA, UL, NEMA	V	690 V AC/ 440 V DC
Impulse withstand voltage U_{imp} Acc. to IEC 60 947-4-1	kV	6
Rated operating voltage	Ue	690 V AC/ 440 V DC
Rated frequency	HZ	50/60
Short circuit capacity	kA	10/16/30/50 (see table)
Rated current range	I_n	16 A
Tripping class Tripping factor	IEC/EN 60947-4-1	10/10 A 12 x I _n
Mechanical life time in operation	switches	100.000
Permissible ambient temperature -for storage -in operation	°C °C	-40 ... + 80 -25 ... + 55 (70)
Climatic resistance acc. to	IEC 68-2-3, IEC 68-2-30	
Mounting position	Horizontal, other on request	
Disconnecting feature	IEC/EN 60947-1	yes
Phase failure sensitiveness	IEC/EN 60947-1	yes
Permissible resistance to vibrations 10 ... 100 Hz	multiple of g	5
Permissible resistance to shocks		20
Resistance to shock	Shock duration ms	20
Terminal types and connecting capacity -Screw terminals (screw size) -Connection cross section -single-core or stranded -flexible with wire and ferrule	mm² mm²	M3,5 +/- poz. 2 2x1,0x4,0 2x1,0x2,5
Protection degree to IEC/EN 60 947-1	All terminals are safe from finger-touch and touch by the back of the hand in acc. with VDE 0106, Part 100	
Switching frequency	up to 15 ops./h or 60 ops./h with 40% on load factor and the starting time not exceeding 1s	
Required fuses for short circuit protection (back up)	see Technical data II	
Loads for accessories Auxiliary contact for front mounting, HKF Auxiliary contact for front mounting, HKF Auxiliary and Signal Contact, HK + SK Auxiliary and Signal Contact, HK + SK	AC15 DC13 AC15 DC13	24 V, 3.0 A 230 V, 1.5 A 24 V, 1.0 A 48/60 V, 0.7 A 110 V, 0.27 A 24 V, 6 A 230 V, 4 A 400 V, 3.0 A 24 V, 2.0 A 110 V, 0.5 A 220 V, 0.25 A 440 V, 0.1 A
Electromagnet trips Response value set ex-works	9.6 ... 14.4 x I_n	
Undervoltage release Pick-up value Drop-out value Power consumption Pick-up Hold	% of U_C % of U_C VA VA	• 85 35 ... 75 on request on request

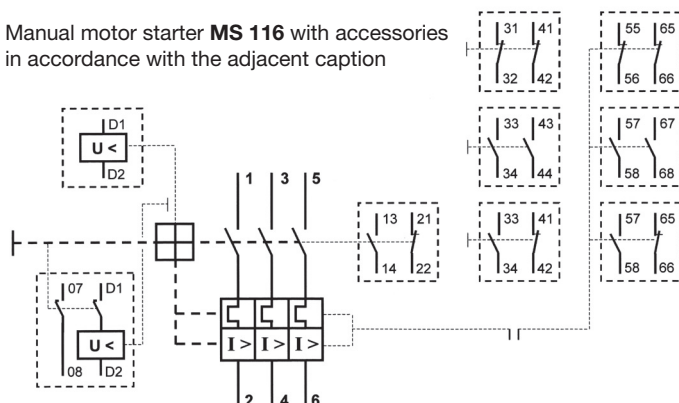
MS 116 Dimension Drawings



MS 116 with auxiliary switch HKF 1 mounted on the front

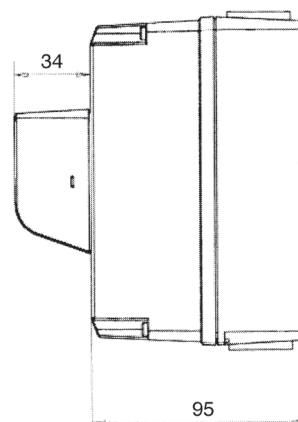
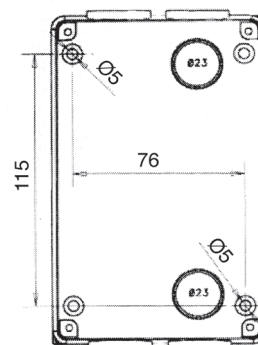


Manual motor starter **MS 116** with accessories in accordance with the adjacent caption



Caption

- 1 Open circuit shunt release
- 2 Undervoltage release
- 3 Undervoltage release with pre-mating auxiliary switches 2 SV
- 4 Remote operating mechanism
- 6 Built-in auxiliary switches 1 NO + 1 NC, on MS 116 convertible from NC to NO and from NO to NC
- 7 Short-circuit pilot switch block 1 NO + 1 NC
- 8 Tripped pilot switch block (signal contact)
- 9 Auxiliary switches pluggable on front
- 10 Pilot switch for short-circuit and general tripping



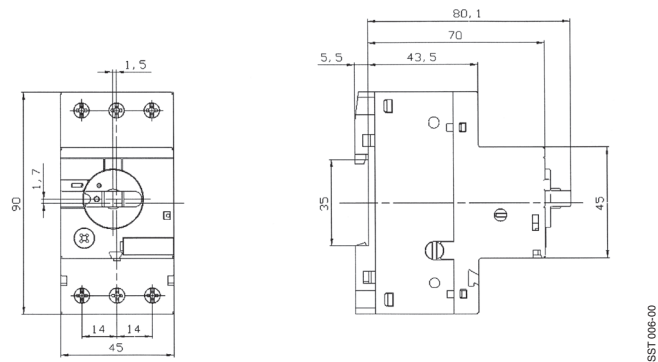
Housing IP 65 for **MS 116**

Manual Motor Starter MS 116

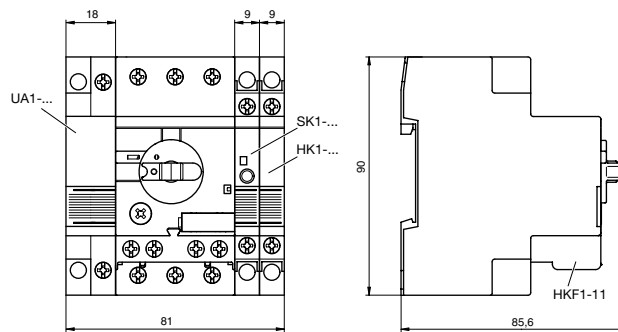
Accessories

Dimension diagrams

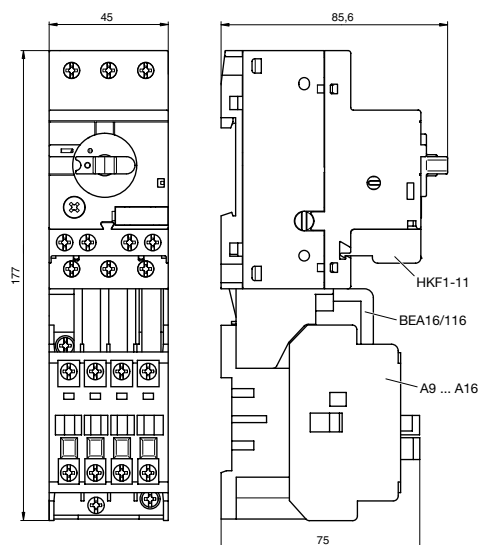
Manual motor starter **MS 116**



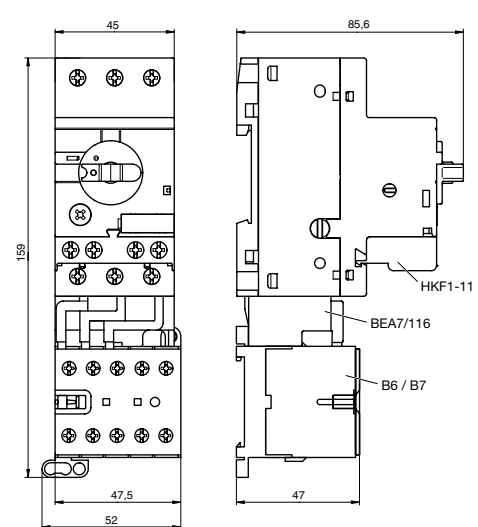
Manual motor starter **MS 116** mounted with UA1.../SK1.../HK1.../HKF1-11



Manual motor starter **MS 116** mounted with contactor **A9...A16**



Manual motor starter **MS 116** mounted with mini contactor **B6/7**



Dimensions in mm

Manual Motor Starter MS 116

Accessories

Ordering details



MS 116

SST11601



HKF 1-11



MS 116 with mini contactor B6



SST11602

MS 116 with reversing contactor



MS 116 with A-contactor

Open design, enclosure IP 20, resistant to changeable climates. Quick fastening on mounting rails DIN EN 50 022, 35 mm without auxiliary switch.

Type	Setting range	Order code	Weight/ piece kg	Packing Unit piece	Price
	A...A				
MS 116 with thermal and electromagnetic trips, short-circuit-proof up to 50 kA					
MS 116 - 0.16	0.10 ... 0.16	1SAM 250 000 R 1001	0.268	1	
MS 116 - 0.25	0.16 ... 0.25	1SAM 250 000 R 1002	0.268	1	
MS 116 - 0.4	0.25 ... 0.40	1SAM 250 000 R 1003	0.268	1	
MS 116 - 0.63	0.40 ... 0.63	1SAM 250 000 R 1004	0.268	1	
MS 116 - 1.0	0.63 ... 1.00	1SAM 250 000 R 1005	0.268	1	
MS 116 - 1.6	1.00 ... 1.60	1SAM 250 000 R 1006	0.268	1	
MS 116 - 2.5	1.60 ... 2.50	1SAM 250 000 R 1007	0.268	1	
MS 116 - 4	2.50 ... 4.00	1SAM 250 000 R 1008	0.268	1	
MS 116 - 6.3	4.00 ... 6.30	1SAM 250 000 R 1009	0.268	1	
MS 116 - 10.0	6.30 ... 10.00	1SAM 250 000 R 1010	0.268	1	
MS 116 - 16.0	10.00 ... 16.00	1SAM 250 000 R 1011	0.268	1	

Accessories

Type		Order code		Packing Unit piece	Price
Auxiliary switches, for front-panel installation)					
HKF1-11	1 NO + 1 NC	1SAM 201 901 R 1001		10	
Auxiliary switches, lateral attachment at right					
HK1-11	1 NO + 1 NC	1SAM 201 902 R 1001		10	
HK1-20	2 NO	1SAM 201 902 R 1002		10	
HK1-02	2 NC	1SAM 201 902 R 1003		10	
Signal contact for general "tripped" signal, lateral attachment at right					
SK1-11	1 NO + 1 NC	1SAM 201 903 R 1001		10	
SK1-20	2 NO	1SAM 201 903 R 1002		10	
SK1-02	2 NC	1SAM 201 903 R 1003		10	
Undervoltage release, lateral attachment at left					
UA1-24	24 V AC	1SAM 201 904 R 1001		10	
UA1-48	48 V AC	1SAM 201 904 R 1002		10	
UA1-60	60 V AC	1SAM 201 904 R 1003		10	
UA1-120	120 V AC	1SAM 201 904 R 1004		10	
UA1-230	230 V AC	1SAM 201 904 R 1005		10	
UA1-400	400 V AC	1SAM 201 904 R 1006		10	
UA1-415	415 V AC	1SAM 201 904 R 1007		10	
Undervoltage release with pre-mating auxiliary switch 2S, lateral attachment at left					
UA1-HK-24	24 V AC	1SAM 201 905 R 1001		10	
UA1-HK-48	48 V AC	1SAM 201 905 R 1002		10	
UA1-HK-60	60 V AC	1SAM 201 905 R 1003		10	
UA1-HK-120	120 V AC	1SAM 201 905 R 1004		10	
UA1-HK-230	230 V AC	1SAM 201 905 R 1005		10	
UA1-HK-400	400 V AC	1SAM 201 905 R 1006		10	
UA1-HK-415	415 V AC	1SAM 201 905 R 1007		10	
Locking device (see also MS 225 / MS 325, Page 9)					
SA1	lock adapter	GJF1 101 903 R 0001		10	
SA3	locking device assy.	GJF1 101 903 R 0003		1	
Direct adapter, for mounting of contactors					
BEA7/116	mini contactors B6/B7	1ISBN 080 906 R 1000		1	
BEA16/116	contactors A9/A12/A16	1ISBN 081 406 R 1000		1	
BEA26/116	contactors A26	1ISBN 082 406 R 1000		1	

) Not suitable for panel mounting

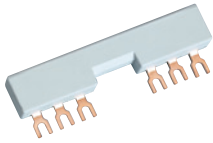
Manual Motor Starter MS 116

Accessories

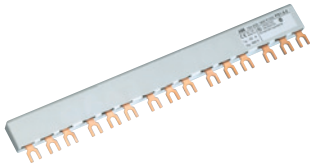
Ordering details

Accessories

Type	Order code	Packing Unit/piece	Price
Phase buses for cross wiring MS 116, 63 A, 690 V			
PS1-2-0 , for 2 devices without auxiliary switches	1SAM 201 906 R 1002	10	
PS1-3-0 , for 3 devices without auxiliary switches	1SAM 201 906 R 1003	10	
PS1-4-0 , for 4 devices without auxiliary switches	1SAM 201 906 R 1004	10	
PS1-5-0 , for 5 devices without auxiliary switches	1SAM 201 906 R 1005	10	
PS1-2-1 , for 2 devices with 1 auxiliary switch	1SAM 201 906 R 1012	10	
PS1-3-1 , for 3 devices with 1 auxiliary switch	1SAM 201 906 R 1013	10	
PS1-4-1 , for 4 devices with 1 auxiliary switch	1SAM 201 906 R 1014	10	
PS1-5-1 , for 5 devices with 1 auxiliary switch	1SAM 201 906 R 1015	10	
PS1-2-2 , for 2 devices with 2 auxiliary switches	1SAM 201 906 R 1022	10	
PS1-3-2 , for 3 devices with 2 auxiliary switches	1SAM 201 906 R 1023	10	
PS1-4-2 , for 4 devices with 2 auxiliary switches	1SAM 201 906 R 1024	10	
PS1-5-2 , for 5 devices with 2 auxiliary switches	1SAM 201 906 R 1025	10	
Power infeed blocks, 63 A, 690 V, stranded 25 mm², flexible 16 mm²			
S1-M1 , flat	1SAM 201 907 R 1001	10	
S1-M2 , high	1SAM 201 907 R 1002	10	
Cover for phase busses			
BS1-3	1SAM 201 908 R 1001	50	
Insulating enclosure light grey IP 64, with rotary handle, triple lockable in Off position, with N- und PE-terminal, for Manual Motor Starter			
OTPA 116 L2 M1 , grey/black shrouded handle	1SCA 022 615 R 3860	1	
OTPA 116 A2 M1 , yellow/red shrouded handle	1SCA 022 615 R 3510	1	
Insulating enclosure, light grey IP 55 with cover, including DIN rail for manual motor starter or line protection devices			
QES 4/3 N , for 4 modules, 72 mm	GHL 111 2304 R 0013		
QES 6/3 N , for 6 modules, 108 mm	GHL 111 2306 R 0013		
QES 10/3 N , for 10 modules, 180 mm	GHL 111 2310 R 0013		
Set of neutral and earth terminals			
SMO 4 , for QES 4/3 N	GHL 430 1910 R 0004		
SMO 6 , for QES 6/3 N	GHL 430 1910 R 0006		
SMO 10 , for QES 10/3 N	GHL 430 1910 R 0010		
Plastic enclosure, light grey, IP40 in panel design, including DIN rail			
PCD 4 N , for 4 modules, 72 mm	GHS 270 1921 R 0004		
PCD 6 N , for 6 modules, 108 mm	GHS 270 1921 R 0006		
PCD 8 N , for 8 modules, 144 mm	GHS 270 1921 R 0008		
Set of terminals			
KL-PCD 4/6 , for 4/6 module enclosure	GHS 270 1912 R 0004		
KL-PCD 8 , for 10 module enclosure	GHS 270 1912 R 0008		
Cover for empty module places, grey			
SZ-BP 2 , for 1 module, 18 mm	GHL 530 1904 R 0001		
SZ-BP 1 , for 12 modules,	GHS 270 1913 R 0002		
Switch cubicle mounting kit IP 65, with axial extension triple lockable in Off position, locked in On position			
OHB2AJM , Twist knob black	1SCA 022 384 R 6940	1	
OHY2AJM , Twist knob red/yellow	1SCA 022 384 R 7080	1	
OX55X 85 , axis 85 mm	1SCA 022 347 R 3570	1	
OX55X105 , axis 105 mm	1SCA 022 347 R 3650	1	
OX55X130 , axis 130 mm	1SCA 022 353 R 4540	1	
OX55X180 , axis 180 mm	1SCA 022 353 R 4620	1	
MSMN , driver)	1SAM 101 923 R 0001	1	
MSOX , driver spindle 32 mm (	1SAM 101 924 R 0001	1	
) For accommodating spindle and attachment to manual motor starter (Is screwed directly onto the manual motor starter			



Phase buses PS1-2-1



Phase buses PS1-4-1



Power infeed block S1-M1



Power infeed block S1-M2



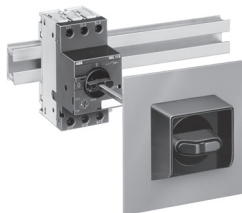
Insulating enclosure IP 55



OTPA 116 enclosure IP 64



Plastic enclosure IP 40



Switch cubicle mounting kit

Test mark

Abbreviation
Validity

Approvals



CSA
Canada



USA



PTB



GL
Germany



LRS
Great Britain



BV
France



DNV
Norway

Ships' classification societies



On your side – products and services

The MS 116 is only the smallest within a large range of manual motor starters made by ABB. ABB's full motor starter line in the low voltage range can switch and protect motors up to 100 A. Also various other components for the increased performance of your drives and applications are available through ABB world-wide. E. g. various industrial relays like the thermistor machine protection device Custorapid can usefully enhance the safety of your motor. Your local representative will be pleased to answer all your questions on how ABB's low voltage products can help you in your special case. Talk to us.

ABB

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