PRODUCT-DETAILS

MS116-1.6

MS116-1.6 Manual Motor Starter



General Information

Extended Product Type	MS116-1.6
Product ID	1SAM250000R1006
EAN	4013614320293
Catalog Description	MS116-1.6 Manual Motor Starter
Long Description	The MS116-1.6 manual motor starter (also known as motor protection circuit breaker or manual motor protector) is a compact 45 mm width device with a rated operational current of Ie = 1.6 A. This device is used to manually switch on and off motors and to protect them reliably and without the need for a fuse from short-circuits, overload and phase failures. The manual motor starter offers a rated service short-circuit breaking capacity Ics = 50 kA at 400 VAC and trip class 10A. 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, signaling contacts, undervoltage releases, shunt trips, 3-phase bus bars, power in-feed blocks and locking devices for protection against unauthorized changes are available as accessory.

Ordering

Minimum Order Quantity	1 piece
Customs Tariff Number	85362010

Popular Downloads

Data Sheet, Technical Information	2CDC131025D0201
Instructions and	2CDC131011M6802

Manuals	
Instructions and Manuals (Part 2)	2CDC131060M0202
Time-Current Characteristic Curve	1SAM200505F0106
I^2t Characteristic	1SAM200507F0001 1SAM200507F0002 1SAM200507F0003
Cut-off Current Characteristic	1SAM200508F0001 1SAM200508F0002 1SAM200508F0003
Dimension Diagram	1SAM200422F0001

Dimensions

Product Net Width	45 mm
Product Net Height	90 mm
Product Net Depth / Length	85.6 mm
Product Net Weight	0.265 kg

Technical

Rated Service Short-Circuit Breaking Capacity (I_{cs})	(230 V AC) 50 kA (400 V AC) 50 kA (440 V AC) 50 kA (500 V AC) 30 kA (690 V AC) 30 kA
Rated Ultimate Short-Circuit Breaking Capacity (I_{cu})	(230 V AC) 100 kA (400 V AC) 100 kA (440 V AC) 100 kA (500 V AC) 100 kA (690 V AC) 100 kA
Rated Instantaneous Short-Circuit Current Setting (I_i)	20 A
Setting Range	1.0 ... 1.6 A
Rated Operational Power AC-3 (P_e)	(400 V) Three Phase 0.55 kW
Rated Operational Power AC-3e (P_e)	(400 V) Three Phase 0.55 kW
Rated Operational Voltage	Main Circuit 690 V AC
Rated Operational Current (I_e)	1.6 A
Rated Operational Current AC-3 (I_e)	1.6 A
Rated Operational Current AC-3e (I_e)	1.6 A
Rated Frequency (f)	Main Circuit 50 Hz Main Circuit 60 Hz
Rated Impulse Withstand Voltage (U_{imp})	Main Circuit 6 kV
Rated Insulation Voltage (U_i)	690 V
Power Loss	at Rated Operating Conditions per Pole 0.6 W
Number of Poles	3
Conventional Free-air Thermal Current (I_{th})	Main Circuit 1.6 A
Degree of Protection	Housing IP20 Main Circuit Terminals IP10
Pollution Degree	3

Electrical Durability	100000 cycle
Mechanical Durability	100000 cycle
Terminal Type	Screw Terminals
Connecting Capacity Main Circuit	Flexible with Ferrule 1/2x 0.75 ... 2.5 mm² Flexible with Insulated Ferrule 1/2x 0.75 ... 2.5 mm² Flexible 1/2x 0.75 ... 2.5 mm² Rigid 1/2x 1 ... 4 mm²
Tightening Torque	Main Circuit 0.8 ... 1.2 N·m
Wire Stripping Length	Main Circuit 9 mm
Recommended Screw Driver	Pozidriv 2
Mounting Position	Position 1 to 6
Mounting on DIN Rail	TH35-15 (35 x 15 mm Mounting Rail) acc. to IEC 60715 TH35-7.5 (35 x 7.5 mm Mounting Rail) acc. to IEC 60715
Minimum Mounting Distance	Electrical Conductive Board, Horizontal - Up to 400 V 0 mm Electrical Conductive Board, Horizontal - Up to 690 V 1.5 mm Electrical Conductive Board, Vertical 75 mm Other Device Same Type, Horizontal 0 mm Other Device Same Type, Vertical 150 mm
Actuator Type	Rotary Handle
Contact Position Indication	ON / OFF
Standards	IEC/EN 60947-1 IEC/EN 60947-2 IEC/EN 60947-4-1 UL 60947-1 UL 60947-4-1

Technical UL/CSA

Short-Circuit Current Rating (SCCR)	Any UL Listed Fuses or Circuit-Breakers, Group Installations (480 V AC) 30 kA Any UL Listed Fuses or Circuit-Breakers, Group Installations (600 V AC) 5 kA Any UL Listed Fuses or Circuit-Breakers, Motor Disconnect (480 V AC) 30 kA Any UL Listed Fuses or Circuit-Breakers, Motor Disconnect (600 V AC) 5 kA
Maximum Operating Voltage UL/CSA	Main Circuit 600 V AC
Ampere Rating UL/CSA	1.6 A
Horsepower Rating UL/CSA	(440 ... 480 V AC) Three Phase 0.75 Hp (550 ... 600 V AC) Three Phase 0.75 Hp
Full Load Amps Motor Use	(200 V AC) Three Phase 1.6 A (208 V AC) Three Phase 1.6 A (220 ... 240 V AC) Three Phase 1.6 A (440 ... 480 V AC) Three Phase 1.6 A (550 ... 600 V AC) Three Phase 1.6 A
Locked Rotor Amps	(200 V AC) Three Phase 9.6 A (208 V AC) Three Phase 9.6 A (220 ... 240 V AC) Three Phase 9.6 A (440 ... 480 V AC) Three Phase 9.6 A (550 ... 600 V AC) Three Phase 9.6 A
General Use Rating UL/CSA	(600 V AC) 1.6 A
Connecting Capacity Main Circuit UL/CSA	Flexible 1/2x 16-12 AWG Stranded 1/2x 16-12 AWG
Tightening Torque UL/CSA	Main Circuit 10 in·lb

Environmental

Ambient Air Temperature	Around the Enclosure 0 ... +40 °C Operation -25 ... +70 °C Operation Compensated -25 ... +55 °C Storage -50 ... +80 °C

Ambient Air Temperature Compensation	Yes
Maximum Operating Altitude Permissible	2000 m
Resistance to Shock acc. to IEC 60068-2-27	11 ms Pulse 25g
Resistance to Vibrations acc. to IEC 60068-2-6	5g / 3 ... 150 Hz
RoHS Status	Following EU Directive 2011/65/EU

Certificates and Declarations (Document Number)

ABS Certificate	1SAA963000-0104
BV Certificate	1SAA963000-0204
CB Certificate	1SAA963000-2003
CQC Certificate	CQC2011010307506570 CQC2014010307744794
cUL Certificate	cUL_E137861
Cut-off Current Characteristic	1SAM200508F0001 1SAM200508F0002 1SAM200508F0003
Declaration of Conformity - CCC	2020980307003705 2020980307003043
Declaration of Conformity - CE	1SAD938522-0060
Declaration of Conformity - UKCA	1SAD938500-1060
DNV Certificate	1SAA963000-0304
DNV GL Certificate	1SAA963000-0304
EAC Certificate	1SAA963000-2701
Environmental Information	1SAC200050H0009
GL Certificate	1SAA963000-0402
GOST Certificate	1SAA963001-2702
I^2t Characteristic	1SAM200507F0001 1SAM200507F0002 1SAM200507F0003
Instructions and Manuals	2CDC131011M6802
Instructions and Manuals (Part 2)	2CDC131060M0202
KC Certificate	1SAA963000-1501
LR Certificate	1SAA963000-0505
RMRS Certificate	1SAA918000-0704
RoHS Information	1SAD938517-0060
Time-Current Characteristic Curve	1SAM200505F0106
UL Certificate	UL_E137861

Container Information

Package Level 1 Units	box 1 piece
Package Level 1 Width	92 mm
Package Level 1 Depth / Length	95 mm
Package Level 1 Height	50 mm
Package Level 1 Gross Weight	0.28 kg
Package Level 1 EAN	4013614320293
Package Level 2 Units	carton 40 piece

Package Level 2 Width	280 mm
Package Level 2 Depth / Length	395 mm
Package Level 2 Height	210 mm
Package Level 2 Gross Weight	11.586 kg
Package Level 2 EAN	4013614408663

Classifications

Object Classification Code	F
ETIM 4	EC000074 - Motor protective circuit-breaker
ETIM 5	EC000074 - Motor protective circuit-breaker
ETIM 6	EC000074 - Motor protection circuit-breaker
ETIM 7	EC000074 - Motor protection circuit-breaker
eClass	V11.0 : 27370401
UNSPSC	39121521
IDEA Granular Category Code (IGCC)	4845 >> 3 Pole Motor Circuit Protector Circuit Breakers
E-Number (Finland)	3706006
E-Number (Sweden)	3111940

Accessories

Identifier	Description	Type	Quantity	Unit Of Measure
1SAM201901R1001	HKF1-11 Auxiliary Contact	HKF1-11	1	piece
1SAM201901R1201	HKF1-11K Auxiliary Contact	HKF1-11K	1	piece
1SAM201901R1002	HKF1-20 Auxiliary Contact	HKF1-20	1	piece
1SAM201901R1202	HKF1-20K Auxiliary Contact	HKF1-20K	1	piece
1SAM201901R1004	HKF1-01 Auxiliary Contact	HKF1-01	1	piece
1SAM201901R1003	HKF1-10 Auxiliary Contact	HKF1-10	1	piece
1SAM201902R1002	HK1-20 Auxiliary Contact	HK1-20	1	piece
1SAM201902R1202	HK1-20K Auxiliary Contact	HK1-20K	1	piece
1SAM201902R1001	HK1-11 Auxiliary Contact	HK1-11	1	piece
1SAM201902R1201	HK1-11K Auxiliary Contact	HK1-11K	1	piece
1SAM201902R1003	HK1-02 Auxiliary Contact	HK1-02	1	piece
1SAM201902R1203	HK1-02K Auxiliary Contact	HK1-02K	1	piece
1SAM201902R1004	HK1-20L Auxiliary Contact	HK1-20L	1	piece
1SAM201902R1204	HK1-20LK Auxiliary Contact	HK1-20LK	1	piece
1SAM201903R1002	SK1-20 Signaling Contact	SK1-20	1	piece
1SAM201903R1202	SK1-20K Signaling Contact	SK1-20K	1	piece
1SAM201903R1001	SK1-11 Signaling Contact	SK1-11	1	piece
1SAM201903R1201	SK1-11K Signaling Contact	SK1-11K	1	piece
1SAM201903R1003	SK1-02 Signaling Contact	SK1-02	1	piece
1SAM201903R1203	SK1-02K Signaling Contact	SK1-02K	1	piece
1SAM201910R1001	AA1-24 Shunt Trip	AA1-24	1	piece
1SAM201910R1002	AA1-110 Shunt Trip	AA1-110	1	piece
1SAM201910R1003	AA1-230 Shunt Trip	AA1-230	1	piece
1SAM201910R1004	AA1-400 Shunt Trip	AA1-400	1	piece
1SAM201904R1010	UA1-20 Undervoltage Release	UA1-20	1	piece
1SAM201904R1001	UA1-24 Undervoltage Release	UA1-24	1	piece
1SAM201904R1002	UA1-48 Undervoltage Release	UA1-48	1	piece
1SAM201904R1003	UA1-60 Undervoltage Release	UA1-60	1	piece
1SAM201904R1004	UA1-110 Undervoltage Release	UA1-110	1	piece
1SAM201904R1008	UA1-208 Undervoltage Release	UA1-208	1	piece

1SAM201904R1005	UA1-230 Undervoltage Release	UA1-230	1	piece
1SAM201904R1006	UA1-400 Undervoltage Release	UA1-400	1	piece
1SAM201904R1007	UA1-415 Undervoltage Release	UA1-415	1	piece
1SAM201904R1009	UA1-575 Undervoltage Release	UA1-575	1	piece
1SAM201906R1102	PS1-2-0-65 Busbar	PS1-2-0-65	1	piece
1SAM201906R1112	PS1-2-1-65 Busbar	PS1-2-1-65	1	piece
1SAM201906R1122	PS1-2-2-65 Busbar	PS1-2-2-65	1	piece
1SAM201916R1103	PS1-3-0-100 Busbar	PS1-3-0-100	1	piece
1SAM201906R1103	PS1-3-0-65 Busbar	PS1-3-0-65	1	piece
1SAM201916R1113	PS1-3-1-100 Busbar	PS1-3-1-100	1	piece
1SAM201906R1113	PS1-3-1-65 Busbar	PS1-3-1-65	1	piece
1SAM201916R1123	PS1-3-2-100 Busbar	PS1-3-2-100	1	piece
1SAM201906R1123	PS1-3-2-65 Busbar	PS1-3-2-65	1	piece
1SAM201916R1104	PS1-4-0-100 Busbar	PS1-4-0-100	1	piece
1SAM201906R1104	PS1-4-0-65 Busbar	PS1-4-0-65	1	piece
1SAM201916R1114	PS1-4-1-100 Busbar	PS1-4-1-100	1	piece
1SAM201906R1114	PS1-4-1-65 Busbar	PS1-4-1-65	1	piece
1SAM201906R1124	PS1-4-2-65 Busbar	PS1-4-2-65	1	piece
1SAM201916R1105	PS1-5-0-100 Busbar	PS1-5-0-100	1	piece
1SAM201906R1105	PS1-5-0-65 Busbar	PS1-5-0-65	1	piece
1SAM201916R1115	PS1-5-1-100 Busbar	PS1-5-1-100	1	piece
1SAM201906R1115	PS1-5-1-65 Busbar	PS1-5-1-65	1	piece
1SAM201906R1125	PS1-5-2-65 Busbar	PS1-5-2-65	1	piece
1SAM201907R1101	S1-M1-25 Power Infeed Block	S1-M1-25	1	piece
1SAM201907R1102	S1-M2-25 Power Infeed Block	S1-M2-25	1	piece
1SAM201907R1103	S1-M3-25 Power Infeed Block	S1-M3-25	1	piece
1SAM201913R1103	S1-M3-35 Power Infeed Block	S1-M3-35	1	piece
1SAM201914R1002	S1-PB1-25 Power Infeed Block	S1-PB1-25	1	piece
1SAM201914R1001	PB1-1-32 Connecting Link	PB1-1-32	1	piece
1SAM201908R1001	BS1-3 Protection Cover	BS1-3	1	piece
1SAM201909R1001	FS116 Screw Fixing Kit	FS116	1	piece
GJF1101903R0001	SA1 - Terminals and Installation Material	SA1	1	piece
GJF1101903R0002	SA2 - Terminals and Installation Material	SA2	1	piece
GJF1101903R0003	SA3 - Terminals and Installation Material	SA3	1	piece
1SAM201911R1012	IB132-F Enclosure	IB132-F	1	piece
1SAM201911R1010	IB132-G Enclosure	IB132-G	1	piece
1SAM201911R1011	IB132-Y Enclosure	IB132-Y	1	piece
1SAM201912R1010	DMS132-G Door Mounting Kit	DMS132-G	1	piece
1SAM201912R1011	DMS132-Y Door Mounting Kit	DMS132-Y	1	piece
1SAM201909R1021	MSAH1 Shaft Supporter	MSAH1	1	piece
1SAM201920R1001	MSHD-LB Handles	MSHD-LB	1	piece
1SAM201920R1002	MSHD-LY Handles	MSHD-LY	1	piece
1SAM201920R1000	MSH-AR Shaft Alignment Ring	MSH-AR	1	piece
1SAM101923R0002	MSMN Driver	MSMN	1	piece
1SAM101923R0012	MSMNO Driver	MSMNO	1	piece
1SCA101647R1001	OXS6X85 SHAFT	OXS6X85	1	piece
1SCA108043R1001	OXS6X105 SHAFT	OXS6X105	1	piece
1SCA101655R1001	OXS6X130 SHAFT	OXS6X130	1	piece
1SCA101659R1001	OXS6X180 SHAFT	OXS6X180	1	piece

Categories

Low Voltage Products and Systems → Circuit Breakers → Manual Motor Starters

Low Voltage Products and Systems → Control Products → Manual Motor Starters → Manual Motor Starters

Drives → Medium voltage AC drives → Industrial drives → ACS1000

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