

MS116-20



MS116-20 Manual Motor Starter



General Information

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|-----------------------|---|
| Extended Product Type | MS116-20 |
| Product ID | 1SAM250000R1013 |
| EAN | 4013614405655 |
| Catalog Description | MS116-20 Manual Motor Starter |
| Long Description | <p>The MS116-20 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 $I_e = 20.0$ 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 $I_{cs} = 10$ 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.</p> |

Ordering

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|------------------------|----------|
| Minimum Order Quantity | 1 piece |
| Customs Tariff Number | 85362010 |

Popular Downloads

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| Data Sheet, Technical Information | 2CDC131025D0201 |
| Data Sheet, Technical Information (Part 3) | 1SAM200507F0001 1SAM200507F0002 1SAM200507F0003 1SAM200508F0001 1SAM200508F0002 1SAM200508F0003 |
| Instructions and Manuals | 2CDC131011M6802 |
| Instructions and Manuals (Part 2) | 2CDC131085M0201 |
| Time-Current Characteristic Curve | 1SAM200505F0013 |
| Dimension Diagram | 1SAM200420F0001 |

Dimensions

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| Product Net Width | 45 mm |
| Product Net Height | 97.8 mm |
| Product Net Depth / Length | 85.4 mm |
| Product Net Weight | 0.31 kg |

Technical

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| Rated Service Short-Circuit Breaking Capacity (I_{cs}) | (230 V AC) 10 kA (400 V AC) 10 kA (440 V AC) 3 kA (500 V AC) 3 kA (690 V AC) 2 kA |
| Rated Ultimate Short-Circuit Breaking Capacity (I_{cu}) | (230 V AC) 15 kA (400 V AC) 15 kA (440 V AC) 6 kA (500 V AC) 4 kA (690 V AC) 2 kA |
| Rated Instantaneous Short-Circuit Current Setting (I_f) | 300 A |
| Setting Range | 18 ... 25 A |
| Rated Operational Power AC-3 (P_e) | (400 V) Three Phase 7.5 kW |
| Rated Operational Voltage | Main Circuit 690 V AC |
| Rated Operational Current (I_e) | 20 A |
| Rated Operational Current AC-3 (I_e) | 20 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 1.5 ... 2.3 W |
| Number of Poles | 3 |
| Conventional Free-air Thermal Current (I_{th}) | Main Circuit 20 A |
| Degree of Protection | Housing IP20 Main Circuit Terminals IP10 |
| Pollution Degree | 3 |
| Electrical Durability | 50000 cycle |
| Mechanical Durability | 100000 cycle |
| Terminal Type | Screw Terminals |
| Connecting Capacity Main Circuit | Flexible with Ferrule 1/2x 0.75 ... 6 mm ² Flexible with Insulated Ferrule 1/2x 0.75 ... 6 mm ² Flexible 1/2x 1 ... 2.5 mm ² Flexible 1/2x 2.5 ... 6 mm ² Rigid 1/2x 1 ... 2.5 mm ² Rigid 1/2x 2.5 ... 6 mm ² |
| Connecting Capacity Auxiliary Circuit | Flexible with Ferrule 1/2x 0.75 ... 1.5 mm ² Flexible with Insulated Ferrule 1/2x 0.75 ... 1.5 mm ² Flexible 1/2x 0.75 ... 1.5 mm ² Rigid 1/2x 1 ... 1.5 mm ² |
| Tightening Torque | Main Circuit 2 N·m |
| Wire Stripping Length | Main Circuit 10 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

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| Short-Circuit Current Rating (SCCR) | Any UL Listed Fuses or Circuit-Breakers, Group Installations (480 V AC) 18 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) 18 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 | 20 A |
| Horsepower Rating UL/CSA | (200 V AC) Three Phase 5 Hp (208 V AC) Three Phase 5 Hp (220 ... 240 V AC) Three Phase 5 Hp (440 ... 480 V AC) Three Phase 10 Hp (550 ... 600 V AC) Three Phase 15 Hp |
| Full Load Amps Motor Use | (200 V AC) Three Phase 17.5 A (208 V AC) Three Phase 16.7 A (220 ... 240 V AC) Three Phase 15.2 A (440 ... 480 V AC) Three Phase 10 A (550 ... 600 V AC) Three Phase 15 A |
| Locked Rotor Amps | (200 V AC) Three Phase 105.8 A (208 V AC) Three Phase 102 A (220 ... 240 V AC) Three Phase 92 A (440 ... 480 V AC) Three Phase 81 A (550 ... 600 V AC) Three Phase 93 A |
| General Use Rating UL/CSA | (600 V AC) 20 A |
| Connecting Capacity Main Circuit UL/CSA | Flexible 1/2x 16-8 AWG Stranded 1/2x 16-8 AWG |
| Connecting Capacity Auxiliary Circuit UL/CSA | Flexible 1/2x 16-14 AWG Stranded 1/2x 16-14 AWG |
| Tightening Torque UL/CSA | Main Circuit 18 in-lb |
| Contact Rating UL/CSA | B300 R300 |

Environmental

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| 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 | 2g / 5 ... 150 Hz |
| RoHS Status | Following EU Directive 2011/65/EU |

Certificates and Declarations (Document Number)

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|--------------------------------|-----------------|
| ABS Certificate | 1SAA963000-0104 |
| BV Certificate | 1SAA963000-0204 |
| CB Certificate | 1SAA963000-2003 |
| CCC Certificate | 1SAA963000-3804 |
| cUL Certificate | cUL_E137861 |
| Declaration of Conformity - CE | 1SAD938517-0060 |

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|-----------------------------------|-----------------|
| DNV Certificate | 1SAA963000-0303 |
| DNV GL Certificate | 1SAA963000-0303 |
| EAC Certificate | 1SAA963000-2701 |
| Environmental Information | 1SAA963001-2401 |
| GL Certificate | 1SAA963000-0402 |
| GOST Certificate | 1SAA963001-2702 |
| Instructions and Manuals | 2CDC131011M6802 |
| LR Certificate | 1SAA963000-0505 |
| RMRS Certificate | 1SAA918000-0704 |
| RoHS Information | 1SAD938517-0060 |
| Time-Current Characteristic Curve | 1SAM200505F0013 |
| UL Certificate | UL_E137861 |

Container Information

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|--------------------------------|-----------------|
| Package Level 1 Units | box 1 piece |
| Package Level 1 Width | 92 mm |
| Package Level 1 Depth / Length | 102 mm |
| Package Level 1 Height | 50 mm |
| Package Level 1 Gross Weight | 0.325 kg |
| Package Level 1 EAN | 4013614405655 |
| 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 | 13.386 kg |
| Package Level 2 EAN | 4013614408731 |

Classifications

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|----------------------------|---|
| 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 | 7.0 27370401 |
| UNSPSC | 39121521 |

Accessories

| Identifier | Description | Type | Quantity | Unit Of Measure |
|-----------------|-----------------------|---------|----------|-----------------|
| 1SAM101923R0002 | MSMN Antrieb | MSMN | 1 | piece |
| 1SAM101923R0012 | MSMNO Antrieb | MSMNO | 1 | piece |
| 1SAM101924R0003 | MSEX-32 Antriebswelle | MSEX-32 | 1 | piece |
| 1SAM101924R0013 | MSEX-30 Antriebswelle | MSEX-30 | 1 | piece |
| 1SAM201901R1001 | HKF1-11 Hilfskontakt | HKF1-11 | 1 | piece |
| 1SAM201901R1002 | HKF1-20 Hilfskontakt | HKF1-20 | 1 | piece |
| 1SAM201901R1003 | HKF1-10 Hilfskontakt | HKF1-10 | 1 | piece |

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|-----------------|-----------------------------------|------------|---|-------|
| 1SAM201901R1004 | HKF1-01 Hilfskontakt | HKF1-01 | 1 | piece |
| 1SAM201902R1001 | HK1-11 Hilfskontakt | HK1-11 | 1 | piece |
| 1SAM201902R1002 | HK1-20 Hilfskontakt | HK1-20 | 1 | piece |
| 1SAM201902R1003 | HK1-02 Hilfskontakt | HK1-02 | 1 | piece |
| 1SAM201902R1004 | HK1-20L Hilfskontakt | HK1-20L | 1 | piece |
| 1SAM201903R1001 | SK1-11 Signalkontakt | SK1-11 | 1 | piece |
| 1SAM201903R1002 | SK1-20 Signalkontakt | SK1-20 | 1 | piece |
| 1SAM201903R1003 | SK1-02 Signalkontakt | SK1-02 | 1 | piece |
| 1SAM201904R1001 | UA1-24 Unterspannungsauslöser | UA1-24 | 1 | piece |
| 1SAM201904R1002 | UA1-48 Unterspannungsauslöser | UA1-48 | 1 | piece |
| 1SAM201904R1003 | UA1-60 Unterspannungsauslöser | UA1-60 | 1 | piece |
| 1SAM201904R1004 | UA1-110 Unterspannungsauslöser | UA1-110 | 1 | piece |
| 1SAM201904R1005 | UA1-230 Unterspannungsauslöser | UA1-230 | 1 | piece |
| 1SAM201904R1006 | UA1-400 Unterspannungsauslöser | UA1-400 | 1 | piece |
| 1SAM201904R1007 | UA1-415 Unterspannungsauslöser | UA1-415 | 1 | piece |
| 1SAM201904R1008 | UA1-208 Unterspannungsauslöser | UA1-208 | 1 | piece |
| 1SAM201904R1010 | UA1-20 Unterspannungsauslöser | UA1-20 | 1 | piece |
| 1SAM201906R1102 | PS1-2-0-65 3-Phasen Sammelschiene | PS1-2-0-65 | 1 | piece |
| 1SAM201906R1103 | PS1-3-0-65 3-Phasen Sammelschiene | PS1-3-0-65 | 1 | piece |
| 1SAM201906R1104 | PS1-4-0-65 3-Phasen Sammelschiene | PS1-4-0-65 | 1 | piece |
| 1SAM201906R1105 | PS1-5-0-65 3-Phasen Sammelschiene | PS1-5-0-65 | 1 | piece |
| 1SAM201906R1112 | PS1-2-1-65 3-Phasen Sammelschiene | PS1-2-1-65 | 1 | piece |
| 1SAM201906R1113 | PS1-3-1-65 3-Phasen Sammelschiene | PS1-3-1-65 | 1 | piece |
| 1SAM201906R1114 | PS1-4-1-65 3-Phasen Sammelschiene | PS1-4-1-65 | 1 | piece |
| 1SAM201906R1115 | PS1-5-1-65 3-Phasen Sammelschiene | PS1-5-1-65 | 1 | piece |
| 1SAM201906R1122 | PS1-2-2-65 3-Phasen Sammelschiene | PS1-2-2-65 | 1 | piece |
| 1SAM201906R1123 | PS1-3-2-65 3-Phasen Sammelschiene | PS1-3-2-65 | 1 | piece |
| 1SAM201906R1124 | PS1-4-2-65 3-Phasen Sammelschiene | PS1-4-2-65 | 1 | piece |
| 1SAM201906R1125 | PS1-5-2-65 3-Phasen Sammelschiene | PS1-5-2-65 | 1 | piece |
| 1SAM201907R1101 | S1-M1-25 3-Phasen Einspeiseblock | S1-M1-25 | 1 | piece |
| 1SAM201907R1102 | S1-M2-25 3-Phasen Einspeiseblock | S1-M2-25 | 1 | piece |
| 1SAM201907R1103 | S1-M3-25 3-Phasen Einspeiseblock | S1-M3-25 | 1 | piece |
| 1SAM201908R1001 | BS1-3 Schutzabdeckung | BS1-3 | 1 | piece |
| 1SAM201909R1001 | FS116 Schraubenbefestigungs-Kit | FS116 | 1 | piece |
| 1SAM201909R1021 | MSAH1 Wellenhalter | MSAH1 | 1 | piece |
| 1SAM201910R1001 | AA1-24 Arbeitsstromauslöser | AA1-24 | 1 | piece |
| 1SAM201910R1002 | AA1-110 Arbeitsstromauslöser | AA1-110 | 1 | piece |
| 1SAM201910R1003 | AA1-230 Arbeitsstromauslöser | AA1-230 | 1 | piece |
| 1SAM201910R1004 | AA1-400 Arbeitsstromauslöser | AA1-400 | 1 | piece |
| 1SAM201911R1010 | IB132-G Gehäuse | IB132-G | 1 | piece |
| 1SAM201911R1011 | IB132-Y Gehäuse | IB132-Y | 1 | piece |

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|-----------------|------------------------------------|-------------|---|-------|
| 1SAM201911R1012 | IB132-F Gehäuse | IB132-F | 1 | piece |
| 1SAM201912R1010 | DMS132-G Türbefestigungs-Kit | DMS132-G | 1 | piece |
| 1SAM201912R1011 | DMS132-Y Türbefestigungs-Kit | DMS132-Y | 1 | piece |
| 1SAM201914R1001 | PB1-1-32 Phasenverbinder | PB1-1-32 | 1 | piece |
| 1SAM201914R1002 | S1-PB1-25 3-Phasen Einspeiseklemme | S1-PB1-25 | 1 | piece |
| 1SAM201916R1103 | PS1-3-0-100 3-Phasen Sammelschiene | PS1-3-0-100 | 1 | piece |
| 1SAM201916R1104 | PS1-4-0-100 3-Phasen Sammelschiene | PS1-4-0-100 | 1 | piece |
| 1SAM201916R1105 | PS1-5-0-100 3-Phasen Sammelschiene | PS1-5-0-100 | 1 | piece |
| 1SAM201916R1113 | PS1-3-1-100 3-Phasen Sammelschiene | PS1-3-1-100 | 1 | piece |
| 1SAM201916R1114 | PS1-4-1-100 3-Phasen Sammelschiene | PS1-4-1-100 | 1 | piece |
| 1SAM201916R1115 | PS1-5-1-100 3-Phasen Sammelschiene | PS1-5-1-100 | 1 | piece |
| 1SAM201916R1123 | PS1-3-2-100 3-Phasen Sammelschiene | PS1-3-2-100 | 1 | piece |
| 1SAM201920R1000 | MSH-AR Ausrichtungsring Welle | MSH-AR | 1 | piece |
| 1SAM201920R1001 | MSHD-LB Griff | MSHD-LB | 1 | piece |
| 1SAM201920R1002 | MSHD-LY Griff | MSHD-LY | 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

