

MS116-4.0



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

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→ Manual Motor Starters

General Information

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| Extended Product Type: | MS116-4.0 |
| Product ID: | 1SAM250000R1008 |
| EAN: | 4013614320316 |
| Catalog Description: | MS116-4.0 Manual Motor Starter |
| Long Description: | <p>The MS116-4.0 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 $I_e = 4.0$ 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 $I_{cs} = 50$ 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.</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 2): | 1SAM200505F0108 |
| Data Sheet, Technical Information (Part 3): | 1SAM200507F0001 1SAM200507F0002 1SAM200507F0003 1SAM200508F0001 1SAM200508F0002 1SAM200508F0003 |
| Instructions and Manuals: | 2CDC131011M6802 |
| Dimension Diagram: | 1SAM200422F0001 |

Dimensions

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| 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 (230 V AC) 50 kA

Breaking Capacity (I_{cs}): (400 V AC) 50 kA
(440 V AC) 6 kA
(500 V AC) 6 kA
(690 V AC) 2 kA

Rated Ultimate Short-Circuit (230 V AC) 50 kA

Breaking Capacity (I_{cu}): (400 V AC) 50 kA
(440 V AC) 6 kA
(500 V AC) 6 kA
(690 V AC) 2 kA

Rated Instantaneous Short-Circuit 50 A

Current Setting (I_i):

Setting Range: 2.5 ... 4 A

Rated Operational Power AC-3 (400 V) Three Phase 1.5 kW
(P_e):

Rated Operational Voltage: Main Circuit 690 V AC

Rated Operational Current (I_e): 4 A

Rated Operational Current AC-3 4 A
(I_e):

Rated Frequency (f): Main Circuit 50 Hz
Main Circuit 60 Hz

Rated Impulse Withstand Voltage Main Circuit 6 kV
(U_{imp}):

Rated Insulation Voltage (U_i): 690 V

Power Loss: at Rated Operating Conditions per Pole 0.7 ... 1.8 W

Number of Poles: 3

Conventional Free-air Thermal Main Circuit 4 A
Current (I_{th}):

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

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| 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 |

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: | 5g / 3 ... 150 Hz |
| RoHS Status: | Following EU Directive 2011/65/EU |

Technical UL/CSA

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|--|---|
| Maximum Operating Voltage UL/CSA: | Main Circuit 600 V AC |
| Ampere Rating UL/CSA: | 4 A |
| Horsepower Rating UL/CSA: | (200 V AC) Three Phase 0.75 Hp (208 V AC) Three Phase 0.75 Hp (220 ... 240 V AC) Three Phase 1 Hp (440 ... 480 V AC) Three Phase 2 Hp (550 ... 600 V AC) Three Phase 3 Hp |

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| Full Load Amps Motor Use: | (200 V AC) Three Phase 4 A (208 V AC) Three Phase 4 A (220 ... 240 V AC) Three Phase 4 A (440 ... 480 V AC) Three Phase 4 A (550 ... 600 V AC) Three Phase 3.9 A |
| Locked Rotor Amps: | (200 V AC) Three Phase 24 A (208 V AC) Three Phase 24 A (220 ... 240 V AC) Three Phase 24 A (440 ... 480 V AC) Three Phase 24 A (550 ... 600 V AC) Three Phase 25.6 A |
| General Use Rating UL/CSA: | (600 V AC) 4 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 |

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 |
| 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 |
| KC Certificate: | 1SAA963000-1501 |
| LR Certificate: | 1SAA963000-0505 |
| RMRS Certificate: | 1SAA918000-0704 |
| RoHS Information: | 1SAD938517-0060 |
| UL Certificate: | UL_E137861 |

Container Information

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| Package Level 1 Units: | 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 |

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| Package Level 1 EAN: | 4013614320316 |
| Package Level 2 Units: | 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: | 4013614408687 |

Classifications

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| Object Classification Code: | F |
| E-number: | 3111944 |
| 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 | Qty | Unit Of Measure |
|-----------------|---------------------------|---------|-----|-----------------|
| 1SAM101923R0002 | MSMN Driver | MSMN | 1 | piece |
| 1SAM101923R0012 | MSMNO Driver | MSMNO | 1 | piece |
| 1SAM101924R0003 | MSOX-32 Driver Shaft | MSOX-32 | 1 | piece |
| 1SAM101924R0013 | MSOX-30 Driver Shaft | MSOX-30 | 1 | piece |
| 1SAM201901R1001 | HKF1-11 Auxiliary Contact | HKF1-11 | 1 | piece |
| 1SAM201901R1002 | HKF1-20 Auxiliary Contact | HKF1-20 | 1 | piece |
| 1SAM201901R1003 | HKF1-10 Auxiliary Contact | HKF1-10 | 1 | piece |
| 1SAM201901R1004 | HKF1-01 Auxiliary Contact | HKF1-01 | 1 | piece |
| 1SAM201902R1001 | HK1-11 Auxiliary Contact | HK1-11 | 1 | piece |
| 1SAM201902R1002 | HK1-20 Auxiliary Contact | HK1-20 | 1 | piece |
| 1SAM201902R1003 | HK1-02 Auxiliary Contact | HK1-02 | 1 | piece |
| 1SAM201902R1004 | HK1-20L Auxiliary Contact | HK1-20L | 1 | piece |
| 1SAM201903R1001 | SK1-11 Signal Contact | SK1-11 | 1 | piece |

| Identifier | Description | Type | Qty | Unit Of Measure |
|-----------------|------------------------------|------------|-----|-----------------|
| 1SAM201903R1002 | SK1-20 Signal Contact | SK1-20 | 1 | piece |
| 1SAM201903R1003 | SK1-02 Signal Contact | SK1-02 | 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 |
| 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 |
| 1SAM201904R1008 | UA1-208 Undervoltage Release | UA1-208 | 1 | piece |
| 1SAM201904R1010 | UA1-20 Undervoltage Release | UA1-20 | 1 | piece |
| 1SAM201906R1102 | PS1-2-0-65 Busbar | PS1-2-0-65 | 1 | piece |
| 1SAM201906R1103 | PS1-3-0-65 Busbar | PS1-3-0-65 | 1 | piece |
| 1SAM201906R1104 | PS1-4-0-65 Busbar | PS1-4-0-65 | 1 | piece |
| 1SAM201906R1105 | PS1-5-0-65 Busbar | PS1-5-0-65 | 1 | piece |
| 1SAM201906R1112 | PS1-2-1-65 Busbar | PS1-2-1-65 | 1 | piece |
| 1SAM201906R1113 | PS1-3-1-65 Busbar | PS1-3-1-65 | 1 | piece |
| 1SAM201906R1114 | PS1-4-1-65 Busbar | PS1-4-1-65 | 1 | piece |
| 1SAM201906R1115 | PS1-5-1-65 Busbar | PS1-5-1-65 | 1 | piece |
| 1SAM201906R1122 | PS1-2-2-65 Busbar | PS1-2-2-65 | 1 | piece |
| 1SAM201906R1123 | PS1-3-2-65 Busbar | PS1-3-2-65 | 1 | piece |
| 1SAM201906R1124 | PS1-4-2-65 Busbar | PS1-4-2-65 | 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 |

| Identifier | Description | Type | Qty | Unit Of Measure |
|-------------------|------------------------------|-------------|------------|------------------------|
| 1SAM201908R1001 | BS1-3 Protection Cover | BS1-3 | 1 | piece |
| 1SAM201909R1001 | FS116 Screw Fixing Kit | FS116 | 1 | piece |
| 1SAM201909R1021 | MSAH1 Shaft Supporter | MSAH1 | 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 |
| 1SAM201911R1010 | IB132-G Enclosure | IB132-G | 1 | piece |
| 1SAM201911R1011 | IB132-Y Enclosure | IB132-Y | 1 | piece |
| 1SAM201911R1012 | IB132-F Enclosure | IB132-F | 1 | piece |
| 1SAM201912R1010 | DMS132-G Door Mounting Kit | DMS132-G | 1 | piece |
| 1SAM201912R1011 | DMS132-Y Door Mounting Kit | DMS132-Y | 1 | piece |
| 1SAM201914R1001 | PB1-1-32 Connecting Link | PB1-1-32 | 1 | piece |
| 1SAM201914R1002 | S1-PB1-25 Power Infeed Block | S1-PB1-25 | 1 | piece |
| 1SAM201916R1103 | PS1-3-0-100 Busbar | PS1-3-0-100 | 1 | piece |
| 1SAM201916R1104 | PS1-4-0-100 Busbar | PS1-4-0-100 | 1 | piece |
| 1SAM201916R1105 | PS1-5-0-100 Busbar | PS1-5-0-100 | 1 | piece |
| 1SAM201916R1113 | PS1-3-1-100 Busbar | PS1-3-1-100 | 1 | piece |
| 1SAM201916R1114 | PS1-4-1-100 Busbar | PS1-4-1-100 | 1 | piece |
| 1SAM201916R1115 | PS1-5-1-100 Busbar | PS1-5-1-100 | 1 | piece |
| 1SAM201916R1123 | PS1-3-2-100 Busbar | PS1-3-2-100 | 1 | piece |
| 1SAM201920R1000 | MSH-AR Shaft Alignment Ring | MSH-AR | 1 | piece |
| 1SAM201920R1001 | MSHD-LB Handles | MSHD-LB | 1 | piece |
| 1SAM201920R1002 | MSHD-LY Handles | MSHD-LY | 1 | piece |

