PRODUCT-DETAILS

# MS116-25

## MS116-25 Manual Motor Starter 20 ... 25 A



### General Information

| | |
|---|---|
| Extended Product Type | MS116-25 |
| Product ID | 1SAM250000R1014 |
| EAN | 4013614405662 |
| Catalog Description | MS116-25 Manual Motor Starter 20 ... 25 A |
| Long Description | The MS116-25 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 = 25.0 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 Ics = 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. |

### Ordering

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

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## Popular Downloads

| | |
|---|---|
| Data Sheet, Technical Information | 2CDC131025D0201 |
| Instructions and Manuals | 2CDC131011M6802 |
| Instructions and Manuals (Part 2) | 2CDC131060M0202 |
| Time-Current Characteristic Curve | 1SAM200505F0014 |
| $I^2t$ Characteristic | 1SAM200507F0001<br>1SAM200507F0002<br>1SAM200507F0003 |
| Cut-off Current Characteristic | 1SAM200508F0001<br>1SAM200508F0002<br>1SAM200508F0003 |
| CAD Dimensional Drawing | 2CDC001079B0201 |
| 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<br>(400 V AC) 10 kA<br>(440 V AC) 3 kA<br>(500 V AC) 3 kA<br>(690 V AC) 2 kA |
| Rated Ultimate Short-Circuit Breaking Capacity ($I_{cu}$) | (230 V AC) 16 kA<br>(400 V AC) 16 kA<br>(440 V AC) 15 kA<br>(500 V AC) 10 kA<br>(690 V AC) 3 kA |
| Rated Instantaneous Short-Circuit Current Setting ($I_i$) | 375 A |
| Setting Range | 20 ... 25 A |
| Rated Operational Power AC-3 ($P_e$) | (400 V) Three Phase 11 kW |
| Rated Operational Power AC-3e ($P_e$) | (400 V) Three Phase 11 kW |
| Rated Operational Voltage | Main Circuit 690 V AC |
| Rated Operational Current ($I_e$) | 25 A |
| Rated Operational Current AC-3 ($I_e$) | 25 A |
| Rated Operational Current AC-3e ($I_e$) | 25 A |
| Rated Frequency (f) | Main Circuit 50 Hz<br>Main Circuit 60 Hz |
| Rated Impulse | Main Circuit 6 kV |

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| | |
|---|---|
| Withstand Voltage ($U_{imp}$) | |
| Rated Insulation Voltage ($U_i$) | 690 V |
| Power Loss | at Rated Operating Conditions per Pole 1.8 ... 2.8 W |
| Number of Poles | 3 |
| Conventional Free-air Thermal Current ($I_{th}$) | Main Circuit 25 A |
| Degree of Protection | Housing IP20<br>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 mm²<br>Flexible with Insulated Ferrule 1/2x 0.75 ... 6 mm²<br>Flexible 1/2x 1 ... 2.5 mm²<br>Flexible 1/2x 2.5 ... 6 mm²<br>Rigid 1/2x 1 ... 2.5 mm²<br>Rigid 1/2x 2.5 ... 6 mm² |
| Tightening Torque | Main Circuit 2 N·m |
| Wire Stripping Length | Main Circuit 10 mm |
| Recommended Screw Driver | Pozidriv 2 |
| Mounting Position | 1 ... 6 |
| Mounting on DIN Rail | TH35-15 (35 x 15 mm Mounting Rail) acc. to IEC 60715<br>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<br>Electrical Conductive Board, Horizontal - Up to 690 V 1.5 mm<br>Electrical Conductive Board, Vertical 75 mm<br>Other Device Same Type, Horizontal 0 mm<br>Other Device Same Type, Vertical 150 mm |
| Actuator Type | Rotary Handle |
| Contact Position Indication | ON / OFF |
| Standards | IEC/EN 60947-1<br>IEC/EN 60947-2<br>IEC/EN 60947-4-1<br>UL 60947-1<br>UL 60947-4-1<br>IEC 60335-2-40 A2L |

## 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<br>Any UL Listed Fuses or Circuit-Breakers, Group Installations (600 V AC) 5 kA<br>Any UL Listed Fuses or Circuit-Breakers, Motor Disconnect (480 V AC) 18 kA<br>Any UL Listed Fuses or Circuit-Breakers, Motor Disconnect (600 V AC) 5 kA |
| Maximum Operating Voltage UL/CSA | Main Circuit 600 V AC |
| Horsepower Rating UL/CSA | (200 V AC) Three Phase 5 Hp<br>(208 V AC) Three Phase 7.5 Hp<br>(220 ... 240 V AC) Three Phase 7.5 Hp<br>(440 ... 480 V AC) Three Phase 15 Hp<br>(550 ... 600 V AC) Three Phase 20 Hp |
| Full Load Amps Motor Use | (200 V AC) Three Phase 17.5 A<br>(208 V AC) Three Phase 24.2 A<br>(220 ... 240 V AC) Three Phase 22 A<br>(440 ... 480 V AC) Three Phase 21 A |

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| | |
|---|---|
| | (550 ... 600 V AC) Three Phase 22 A |
| Locked Rotor Amps | (200 V AC) Three Phase 105.8 A<br>(208 V AC) Three Phase 140 A<br>(220 ... 240 V AC) Three Phase 127 A<br>(440 ... 480 V AC) Three Phase 116 A<br>(550 ... 600 V AC) Three Phase 116 A |
| General Use Rating UL/CSA | (600 V AC) 25 A |
| Connecting Capacity Main Circuit UL/CSA | Flexible 1/2x 16-8 AWG<br>Stranded 1/2x 16-8 AWG |
| Tightening Torque UL/CSA | Main Circuit 18 in·lb |

## Environmental

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|---|---|
| Ambient Air Temperature | Around the Enclosure 0 ... +40 °C<br>Operation -25 ... +70 °C<br>Operation Compensated -25 ... +55 °C<br>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 | 5g 3 ... 150 Hz |

## Material Compliance

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|---|---|
| Conflict Minerals Reporting Template (CMRT) | 9AKK108467A5658 |
| REACH Declaration | 1SAA963005-4502 |
| RoHS Information | 1SAA963006-4502 |
| RoHS Status | Following EU Directive 2011/65/EU and Amendment 2015/863 July 22, 2019 |
| Toxic Substances Control Act - TSCA | 2CMT2023-006539 |
| WEEE B2C / B2B | Business To Business |
| WEEE Category | 5. Small Equipment (No External Dimension More Than 50 cm) |

## Circular Value

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|---|---|
| End of Life Instructions | 1SAC200331H0001 |

## Certificates and Declarations

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|---|---|
| A2L Certificate – IEC | 1SAA963000-4601 |
| ABS Certificate | 1SAA963000-0104 |
| BV Certificate | 1SAA963000-0204 |
| CB Certificate | 1SAA963005-2003<br>1SAA963006-2001 |
| CQC Certificate | CQC2011010307506570<br>CQC2014010307744794 |
| Cut-off Current Characteristic | 1SAM200508F0001<br>1SAM200508F0002<br>1SAM200508F0003 |

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|---|---|
| Declaration of Conformity - CCC | 2020980307003705<br>2020980307003043 |
| Declaration of Conformity - CE | 1SAD101100-3401 |
| Declaration of Conformity - UKCA | 1SAD201100-3401 |
| DNV Certificate | 1SAA963000-0304 |
| DNV GL Certificate | 1SAA963000-0304 |
| EAC Certificate | 1SAA963000-2701 |
| GL Certificate | 1SAA963000-0402 |
| $I^2t$ Characteristic | 1SAM200507F0001<br>1SAM200507F0002<br>1SAM200507F0003 |
| KC Certificate | 1SAA963000-1501 |
| LR Certificate | 1SAA963000-0505 |
| RMRS Certificate | 1SAA918000-0704 |
| UL Certificate | E137861-20001218 |

## 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 | 4013614405662 |
| 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 | 4013614408748 |

## 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 |
| ETIM 8 | EC000074 - Motor protection circuit-breaker |
| eClass | V11.0 : 27370401 |
| UNSPSC | 39121521 |
| IDEA Granular Category Code (IGCC) | 4731 >> Manual Starters |
| E-Number (Finland) | 3705874 |
| E-Number (Sweden) | 3111952 |

## Accessories

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| Identifier | Description | Type | Quantity | Unit Of Measure |
|---|---|---|---|---|
| 1SAM201901R1001 | HKF1-11 Aux.-contact for front mounting | HKF1-11 | 1 | piece |
| 1SAM201901R1201 | HKF1-11K Aux.-contact for frontmounting with Push-In terminals | HKF1-11K | 1 | piece |
| 1SAM201901R1002 | HKF1-20 Aux.-contact 2NO, front mounting | HKF1-20 | 1 | piece |
| 1SAM201901R1202 | HKF1-20K Aux.-contact for frontmounting with Push-In terminals | HKF1-20K | 1 | piece |
| 1SAM201901R1004 | HKF1-01 Aux.-contact for front mounting | HKF1-01 | 1 | piece |
| 1SAM201901R1003 | HKF1-10 Aux.-contact for front mounting | HKF1-10 | 1 | piece |
| 1SAM201902R1002 | HK1-20 Aux.-contact 2 NO | HK1-20 | 1 | piece |
| 1SAM201902R1202 | HK1-20K Aux.-contact 2 NO with Push-In terminals | HK1-20K | 1 | piece |
| 1SAM201902R1001 | HK1-11 Aux.-contact 1 NO + 1 NC | HK1-11 | 1 | piece |
| 1SAM201902R1201 | HK1-11K Aux.-contact 1 NO + 1 NC with Push-In terminals | HK1-11K | 1 | piece |
| 1SAM201902R1003 | HK1-02 Aux.-contact 2 NC | HK1-02 | 1 | piece |
| 1SAM201902R1203 | HK1-02K Aux.-contact 2 NC with Push-In terminals | HK1-02K | 1 | piece |
| 1SAM201902R1004 | HK1-20L Aux.-cont. w. 2 lead contacts 2 NO | HK1-20L | 1 | piece |
| 1SAM201902R1204 | HK1-20LK Aux-cont. w. 2 leading contacts 2 NO, with Push-In terminals | HK1-20LK | 1 | piece |
| 1SAM201903R1002 | SK1-20 Signaling Contact 2 NO | SK1-20 | 1 | piece |
| 1SAM201903R1202 | SK1-20K Signaling Contact 2 NO with Push-In terminals | SK1-20K | 1 | piece |
| 1SAM201903R1005 | SK1-20AR Signaling Contact, 2NO with screw terminals | SK1-20AR | 1 | piece |
| 1SAM201903R1205 | SK1-20ARK Signaling Contact, 2NO with Push-in Spring terminals | SK1-20ARK | 1 | piece |
| 1SAM201903R1001 | SK1-11 Signaling Contact 1 NO + 1 NC | SK1-11 | 1 | piece |
| 1SAM201903R1201 | SK1-11K Signaling Contact 1 NO + 1 NC with Push-In terminals | SK1-11K | 1 | piece |
| 1SAM201903R1004 | SK1-11AR Signaling Contact, 1NO+1NC with screw terminals | SK1-11AR | 1 | piece |
| 1SAM201903R1204 | SK1-11ARK Signaling Contact, 1NO+1NC with Push-in Spring terminals | SK1-11ARK | 1 | piece |
| 1SAM201903R1003 | SK1-02 Signaling Contact 2 NC | SK1-02 | 1 | piece |
| 1SAM201903R1203 | SK1-02K Signaling Contact 2 NC with Push-In terminals | SK1-02K | 1 | piece |
| 1SAM201903R1006 | SK1-02AR Signaling Contact, 2NC with screw terminals | SK1-02AR | 1 | piece |
| 1SAM201903R1206 | SK1-02ARK Signaling Contact, 2NC with Push-in Spring terminals | SK1-02ARK | 1 | piece |
| 1SAM201910R1001 | AA1-24 Shunt Trip 20-24V | AA1-24 | 1 | piece |
| 1SAM201910R1002 | AA1-110 Shunt Trip 110V | AA1-110 | 1 | piece |
| 1SAM201910R1003 | AA1-230 Shunt Trip 200-240V | AA1-230 | 1 | piece |
| 1SAM201910R1004 | AA1-400 Shunt Trip 350-415V | AA1-400 | 1 | piece |
| 1SAM201904R1010 | UA1-20 Undervoltage release 20V 50Hz / 24V 60 Hz | UA1-20 | 1 | piece |
| 1SAM201904R1001 | UA1-24 Undervoltage release 24 V | UA1-24 | 1 | piece |
| 1SAM201904R1002 | UA1-48 Undervoltage release 48V | UA1-48 | 1 | piece |
| 1SAM201904R1003 | UA1-60 Undervoltage release 60V | UA1-60 | 1 | piece |
| 1SAM201904R1004 | UA1-110 Undervoltage release 110V 110V 50Hz/120V 60Hz | UA1-110 | 1 | piece |
| 1SAM201904R1008 | UA1-208 Undervoltage release 208V 60Hz | UA1-208 | 1 | piece |
| 1SAM201904R1005 | UA1-230 Undervoltage release 230 V 50 Hz / 240 V 60 Hz | UA1-230 | 1 | piece |
| 1SAM201904R1006 | UA1-400 Undervoltage release 400V | UA1-400 | 1 | piece |

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| 1SAM201904R1007 | UA1-415 Undervoltage release 415V 415V 50Hz/480V 60Hz | UA1-415 | 1 | piece |
| 1SAM201904R1009 | UA1-575 Undervoltage release 575V 60Hz | UA1-575 | 1 | piece |
| 1SAM201906R1102 | PS1-2-0-65 3-phase busbar for 2 MS116 / MS132, Ie=65A | PS1-2-0-65 | 1 | piece |
| 1SAM201906R1112 | PS1-2-1-65 3-phase busbar for 2 MS116 / MS132 with 1 HK/SK, Ie=65A | PS1-2-1-65 | 1 | piece |
| 1SAM201906R1122 | PS1-2-2-65 3-phase busbar for 2 MS116 / MS132 with 2 HK/SK, Ie=65A | PS1-2-2-65 | 1 | piece |
| 1SAM201916R1103 | PS1-3-0-100 3-phase busbar for 3 MS116 / MS132, Ie=100A | PS1-3-0-100 | 1 | piece |
| 1SAM201906R1103 | PS1-3-0-65 3-phase busbar for 3 MS116 / MS132, Ie=65A | PS1-3-0-65 | 1 | piece |
| 1SAM201916R1113 | PS1-3-1-100 3-phase busbar for 3 MS116 /MS132 with 1 HK/SK, Ie=100A | PS1-3-1-100 | 1 | piece |
| 1SAM201906R1113 | PS1-3-1-65 3-phase busbar for 3 MS116 / MS132 with 1 HK/SK, Ie=65A | PS1-3-1-65 | 1 | piece |
| 1SAM201916R1123 | PS1-3-2-100 3-phase busbar for 3 MS116 /MS132 with 2 HK/SK, Ie=100A | PS1-3-2-100 | 1 | piece |
| 1SAM201906R1123 | PS1-3-2-65 3-phase busbar for 3 MS116 / MS132 with 2 HK/SK, Ie=65A | PS1-3-2-65 | 1 | piece |
| 1SAM201916R1104 | PS1-4-0-100 3-phase busbar for 4 MS116 / MS132, Ie=100A | PS1-4-0-100 | 1 | piece |
| 1SAM201906R1104 | PS1-4-0-65 3-phase busbar for 4 MS116 / MS132, Ie=65A | PS1-4-0-65 | 1 | piece |
| 1SAM201916R1114 | PS1-4-1-100 3-phase busbar for 4 MS116 /MS132 with 1 HK/SK, Ie=100A | PS1-4-1-100 | 1 | piece |
| 1SAM201906R1114 | PS1-4-1-65 3-phase busbar for 4 MS116 / MS132 with 1 HK/SK, Ie=65A | PS1-4-1-65 | 1 | piece |
| 1SAM201906R1124 | PS1-4-2-65 3-phase busbar for 4 MS116 / MS132 with 2 HK/SK, Ie=65A | PS1-4-2-65 | 1 | piece |
| 1SAM201916R1105 | PS1-5-0-100 3-phase busbar for 5 MS116 / MS132, Ie=100A | PS1-5-0-100 | 1 | piece |
| 1SAM201906R1105 | PS1-5-0-65 3-phase busbar for 5 MS116 / MS132, Ie=65A | PS1-5-0-65 | 1 | piece |
| 1SAM201916R1115 | PS1-5-1-100 3-phase busbar for 5 MS116 /MS132 with 1 HK/SK, Ie=100A | PS1-5-1-100 | 1 | piece |
| 1SAM201906R1115 | PS1-5-1-65 3-phase busbar for 5 MS116 / MS132 with 1 HK/SK, Ie=65A | PS1-5-1-65 | 1 | piece |
| 1SAM201906R1125 | PS1-5-2-65 3-phase busbar for 5 MS116 / MS132 with 2 HK/SK, Ie=65A | PS1-5-2-65 | 1 | piece |
| 1SAM201907R1101 | S1-M1-25 3-phase power infeed block Flat, for MS116 / MS132, 25mm2 | S1-M1-25 | 1 | piece |
| 1SAM201907R1102 | S1-M2-25 3-phase power infeed block High, for MS116 / MS132, 25mm2 | S1-M2-25 | 1 | piece |
| 1SAM201907R1103 | S1-M3-25 3-phase power infeed block Flat, for MS116 / MS132, 25mm2, Type E | S1-M3-25 | 1 | piece |
| 1SAM201913R1103 | S1-M3-35 3-phase power infeed block Flat, for MS116 / MS132, 35mm2, Type E | S1-M3-35 | 1 | piece |
| 1SAM201914R1002 | S1-PB1-25 1-phase power infeed block for MS116 / MS132 / MS132-T, 25mm2, IEC | S1-PB1-25 | 1 | piece |
| 1SAM201914R1001 | PB1-1-32 phase connecting link for MS116 / MS132 / MS132-T, Ie=32A | PB1-1-32 | 1 | piece |
| 1SAM201908R1001 | BS1-3 Protection Cover for busbars empty places | BS1-3 | 1 | piece |
| 1SAM201909R1001 | FS116 Screw fixing kit for MS116, MS/MO132 10 pieces packed | 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, GY/RD, IP65 3 times lockable | IB132-F | 1 | piece |

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| 1SAM201911R1010 | IB132-G Enclosure, GY/BK, IP65 Standard version, 3 times lockable | IB132-G | 1 | piece |
| 1SAM201911R1011 | IB132-Y Enclosure, RD/YE, IP65 Emergency-STOP, 3 times lockable | IB132-Y | 1 | piece |
| 1SAM201912R1010 | DMS132-G Door Mounting Kit, GY/BK, IP65 Standard version, 3 times lockable | DMS132-G | 1 | piece |
| 1SAM201912R1011 | DMS132-Y Door Mounting Kit, RD/YE, IP65 Emergency-STOP, 3 times lockable | DMS132-Y | 1 | piece |
| 1SAM201909R1021 | MSAH1 Shaft Supporter suitable for MS116, MS132/MO132 | MSAH1 | 1 | piece |
| 1SAM201920R1001 | MSHD-LB Handle, IP64, black, 3 times lockable, defeatable, 0-I | MSHD-LB | 1 | piece |
| 1SAM201920R1002 | MSHD-LY Handle, IP64, red/yellow, 3 times lockable, defeatable, 0-I | MSHD-LY | 1 | piece |
| 1SAM201920R1000 | MSH-AR Shaft alignment ring suitable for MSHD and MSH handles | MSH-AR | 1 | piece |
| 1SAM101923R0002 | MSMN Driver w. screw for manual motor staters, 6x6 | MSMN | 1 | piece |
| 1SCA101655R1001 | OXS6X130 SHAFT | OXS6X130 | 1 | piece |
| 1SAM101923R0012 | MSMNO Driver w/o coding w. screw for manual motor staters, 6x6 | MSMNO | 1 | piece |
| 1SCA101659R1001 | OXS6X180 SHAFT | OXS6X180 | 1 | piece |
| 1SCA101647R1001 | OXS6X85 SHAFT | OXS6X85 | 1 | piece |
| 1SCA108043R1001 | OXS6X105 SHAFT | OXS6X105 | 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



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