

## PRODUCT-DETAILS

# MS132-16-HKF1-20

## MS132-16-HKF1-20 Manual Motor Starter



### General Information

|                       |                                       |
|-----------------------|---------------------------------------|
| Extended Product Type | MS132-16-HKF1-20                      |
| Product ID            | 1SAM350006R1011                       |
| EAN                   | 4013614482212                         |
| Catalog Description   | MS132-16-HKF1-20 Manual Motor Starter |

#### Long Description

The MS132-16-HKF1-20 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  $I_e = 16.0$  A and a pre-assembled front mounted auxiliary contact HKF1-20. 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  $I_{cs} = 100$  kA at 400 VAC and trip class 10. 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. The handle is lockable to protect against unauthorized changes. Auxiliary contacts, signaling contacts, undervoltage releases, shunt trips, 3-phase bus bars, power in-feed blocks are available as accessory.

### Ordering

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

### Popular Downloads

|                                   |                 |
|-----------------------------------|-----------------|
| Data Sheet, Technical Information | 2CDC131021D0202 |
|-----------------------------------|-----------------|

|                                   |                                    |
|-----------------------------------|------------------------------------|
| Instructions and Manuals          | 2CDC131022M6802                    |
| Instructions and Manuals (Part 2) | 2CDC131060M0202                    |
| Time-Current Characteristic Curve | 1SAM300505F0011                    |
| I <sup>2</sup> t Characteristic   | 1SAM300507F0001<br>1SAM300507F0003 |
| Cut-off Current Characteristic    | 1SAM300508F0001<br>1SAM300508F0003 |
| Dimension Diagram                 | 1SAM300402F0001                    |

## Dimensions

|                            |          |
|----------------------------|----------|
| Product Net Width          | 45 mm    |
| Product Net Height         | 97.8 mm  |
| Product Net Depth / Length | 86.55 mm |
| Product Net Weight         | 0.326 kg |

## Technical

|                                                                     |                                                                                                                                         |
|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| Rated Service Short-Circuit Breaking Capacity (I <sub>cs</sub> )    | (230 V AC) 100 kA<br>(250 V DC) 3 Poles in Series 10 kA<br>(400 V AC) 100 kA<br>(440 V AC) 30 kA<br>(500 V AC) 20 kA<br>(690 V AC) 3 kA |
| Rated Ultimate Short-Circuit Breaking Capacity (I <sub>cu</sub> )   | (230 V AC) 100 kA<br>(400 V AC) 100 kA<br>(440 V AC) 30 kA<br>(500 V AC) 20 kA<br>(690 V AC) 3 kA                                       |
| Rated Instantaneous Short-Circuit Current Setting (I <sub>i</sub> ) | 240 A                                                                                                                                   |
| Setting Range                                                       | 10 ... 16 A                                                                                                                             |
| Rated Operational Power AC-3 (P <sub>e</sub> )                      | (400 V) Three Phase 7.5 kW                                                                                                              |
| Rated Operational Power AC-3e (P <sub>e</sub> )                     | (400 V) Three Phase 7.5 kW                                                                                                              |
| Rated Operational Voltage                                           | Main Circuit 690 V AC<br>Main Circuit 250 V DC                                                                                          |
| Rated Operational Current (I <sub>e</sub> )                         | 16 A                                                                                                                                    |
| Rated Operational Current AC-3 (I <sub>e</sub> )                    | 16 A                                                                                                                                    |
| Rated Operational Current AC-3e (I <sub>e</sub> )                   | 16 A                                                                                                                                    |
| Rated Operational Current DC-5 (I <sub>e</sub> )                    | 16 A                                                                                                                                    |
| Rated Frequency (f)                                                 | Main Circuit 50 Hz<br>Main Circuit 60 Hz                                                                                                |
| Rated Impulse Withstand Voltage (U <sub>imp</sub> )                 | Main Circuit 6 kV                                                                                                                       |
| Rated Insulation Voltage (U <sub>i</sub> )                          | 690 V                                                                                                                                   |
| Power Loss                                                          | at Rated Operating Conditions per Pole 1.1 W                                                                                            |
| Number of Poles                                                     | 3                                                                                                                                       |
| Mounted Auxiliary Contacts                                          | 2 NO, 0 NC                                                                                                                              |
| Conventional Free-air                                               | Main Circuit 16 A                                                                                                                       |

|                                          |                                                                                                                                                                                                                                                                                                |
|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Thermal Current (I <sub>th</sub> )       |                                                                                                                                                                                                                                                                                                |
| 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<br>Main Circuit      | Flexible with Ferrule 1/2x 0.75 ... 6 mm <sup>2</sup><br>Flexible with Insulated Ferrule 1/2x 0.75 ... 6 mm <sup>2</sup><br>Flexible 1/2x 1 ... 2.5 mm <sup>2</sup><br>Flexible 1/2x 2.5 ... 6 mm <sup>2</sup><br>Rigid 1/2x 1 ... 2.5 mm <sup>2</sup><br>Rigid 1/2x 2.5 ... 6 mm <sup>2</sup> |
| Connecting Capacity<br>Auxiliary Circuit | Flexible with Ferrule 1/2x 0.75 ... 1.5 mm <sup>2</sup><br>Flexible with Insulated Ferrule 1/2x 0.75 ... 1.5 mm <sup>2</sup><br>Flexible 1/2x 0.75 ... 1.5 mm <sup>2</sup><br>Rigid 1/2x 1 ... 1.5 mm <sup>2</sup>                                                                             |
| Tightening Torque                        | Auxiliary Circuit 0.8 ... 1.2 N·m<br>Main Circuit 2 N·m                                                                                                                                                                                                                                        |
| Wire Stripping Length                    | Auxiliary Circuit 8 mm<br>Main Circuit 10 mm                                                                                                                                                                                                                                                   |
| Recommended Screw<br>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<br>TH35-7.5 (35 x 7.5 mm Mounting Rail) acc. to IEC 60715                                                                                                                                                                                 |
| Minimum Mounting<br>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<br>Indication           | ON / OFF / TRIP                                                                                                                                                                                                                                                                                |
| Standards                                | IEC/EN 60947-1<br>IEC/EN 60947-2<br>IEC/EN 60947-4-1<br>IEC/EN 60947-5-1<br>UL 60947-1<br>UL 60947-4-1                                                                                                                                                                                         |
| Remarks                                  | UL508 Self-Protected Combination Motor Controller (Type E) in<br>combination with feeder block S1-M3-xx                                                                                                                                                                                        |

## Technical UL/CSA

|                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Short-Circuit Current<br>Rating (SCCR) | Manual Self-Protected Combination Controllers (Type E), (480Y / 277 V AC)<br>30 kA<br>Any UL Listed Fuses or Circuit-Breakers, Group Installations (480 V AC) 35<br>kA<br>Any UL Listed Fuses or Circuit-Breakers, Group Installations (600 V AC) 35<br>kA<br>Any UL Listed Fuses or Circuit-Breakers, Motor Disconnect (480 V AC) 30<br>kA<br>Any UL Listed Fuses or Circuit-Breakers, Motor Disconnect (600 V AC) 18<br>kA<br>Any UL Listed Fuses or Circuit-Breakers, Tap Conductor Protection in<br>Group Installations (480Y / 277 V AC) 30 kA<br>Any UL Listed Fuses or Circuit-Breakers, Tap Conductor Protection in<br>Group Installations (600Y / 347 V AC) 18 kA |
| Maximum Operating<br>Voltage UL/CSA    | Auxiliary Circuit 250 V AC/DC<br>Main Circuit 600 V AC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Ampere Rating UL/CSA                   | 16 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Horsepower Rating<br>UL/CSA            | (200 V AC) Three Phase 3 Hp<br>(208 V AC) Three Phase 3 Hp<br>(220 ... 240 V AC) Three Phase 5 Hp<br>(440 ... 480 V AC) Three Phase 10 Hp<br>(550 ... 600 V AC) Three Phase 10 Hp                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

|                                                 |                                                                                                                                                                                     |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Full Load Amps Motor Use                        | (200 V AC) Three Phase 11 A<br>(208 V AC) Three Phase 10.6 A<br>(220 ... 240 V AC) Three Phase 15.2 A<br>(440 ... 480 V AC) Three Phase 14 A<br>(550 ... 600 V AC) Three Phase 11 A |
| Locked Rotor Amps                               | (200 V AC) Three Phase 73.6 A<br>(208 V AC) Three Phase 71 A<br>(220 ... 240 V AC) Three Phase 92 A<br>(440 ... 480 V AC) Three Phase 81 A<br>(550 ... 600 V AC) Three Phase 64.8 A |
| General Use Rating<br>UL/CSA                    | (600 V AC) 16 A                                                                                                                                                                     |
| Connecting Capacity<br>Main Circuit UL/CSA      | Flexible 1/2x 16-8 AWG<br>Stranded 1/2x 16-8 AWG                                                                                                                                    |
| Connecting Capacity<br>Auxiliary Circuit UL/CSA | Flexible 1/2x 16-14 AWG<br>Stranded 1/2x 16-14 AWG                                                                                                                                  |
| Tightening Torque<br>UL/CSA                     | Auxiliary Circuit 7 in-lb<br>Main Circuit 18 in-lb                                                                                                                                  |
| Contact Rating UL/CSA                           | B300<br>R300                                                                                                                                                                        |

## Environmental

|                                                |                                                                                                                                 |
|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Ambient Air Temperature                        | Around the Enclosure 0 ... +40 °C<br>Operation -25 ... +70 °C<br>Operation Compensated -25 ... +60 °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 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                 | 1SAA963001-0101                    |
| ATEX Certificate                | 1SAA963000-3901                    |
| BV Certificate                  | 1SAA963001-0201                    |
| CB Certificate                  | 1SAA963002-2002                    |
| CQC Certificate                 | CQC2017010307034621                |
| cUL Certificate                 | UL_E137861<br>UL_E345003           |
| cULus Certificate               | cUL_E137861                        |
| Cut-off Current Characteristic  | 1SAM300508F0001<br>1SAM300508F0003 |
| Declaration of Conformity - CCC | 2020980307004600                   |
| Declaration of Conformity - CE  | 1SAD938516-0125                    |
| DNV Certificate                 | 1SAA963001-0303                    |
| EAC Certificate                 | 1SAA963000-2701                    |
| GL Certificate                  | 1SAA963001-0401                    |
| GOST Certificate                | 1SAA963001-2702                    |
| I <sup>2</sup> t Characteristic | 1SAM300507F0001<br>1SAM300507F0003 |
| Instructions and Manuals        | 2CDC131022M6802                    |
| Instructions and                | 2CDC131060M0202                    |

## Manuals (Part 2)

|                                      |                          |
|--------------------------------------|--------------------------|
| KC Certificate                       | 1SAA963002-1502          |
| LR Certificate                       | 1SAA963001-0502          |
| RINA Certificate                     | 1SAA963002-0802          |
| RMRS Certificate                     | 1SAA918000-0704          |
| RoHS Information                     | 1SAD938511-0125          |
| Time-Current<br>Characteristic Curve | 1SAM300505F0011          |
| UL Certificate                       | UL_E137861<br>UL_E345003 |

## Container Information

|                                   |                 |
|-----------------------------------|-----------------|
| Package Level 1 Units             | box 1 piece     |
| Package Level 1 Width             | 92 mm           |
| Package Level 1 Depth /<br>Length | 102 mm          |
| Package Level 1 Height            | 50 mm           |
| Package Level 1 Gross<br>Weight   | 0.341 kg        |
| Package Level 1 EAN               | 4013614482212   |
| Package Level 2 Units             | carton 40 piece |
| Package Level 2 Width             | 280 mm          |
| Package Level 2 Depth /<br>Length | 395 mm          |
| Package Level 2 Height            | 210 mm          |
| Package Level 2 Gross<br>Weight   | 14.026 kg       |
| Package Level 2 EAN               | 4013614483516   |

## Classifications

|                                       |                                                         |
|---------------------------------------|---------------------------------------------------------|
| Object Classification<br>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<br>Code (IGCC) | 4845 >> 3 Pole Motor Circuit Protector Circuit Breakers |

## Categories

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

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

