SIEMENS

## Data sheet 3RM1302-1AA04

MOTOR STARTER SIRIUS 3RM1 REVERSING STARTER SAFETY 500 V; 0,4 - 2,0 A; 24 V DC SCREW-TYPE CONNECTION SYSTEM


Figure similar

| General technical data: | |
|---|---|
| **product brand name** | SIRIUS |
| **Product category** | Motor starter |
| **Trip class** | CLASS 10A |
| **Protection class IP** | IP20 |
| **Suitability for operation Device connector 3ZY12** | Yes |
| **Product function Intrinsic device protection** | Yes |
| **Type of the motor protection** | solid-state |
| **Product function Adjustable current limitation** | Yes |
| **Installation altitude at height above sea level maximum** | 2 000 m |
| **Ambient temperature** | |
| • during operation | -25 ... +60 °C |
| • during transport | -40 ... +70 °C |
| • during storage | -40 ... +70 °C |
| **Relative humidity during operation** | 10 ... 95 % |
| **Air pressure acc. to SN 31205** | 900 ... 1 060 hPa |
| **Shock resistance** | 6g / 11 ms |
| **Vibration resistance** | 1 ... 6 Hz, 15 mm; 20 m/s², 500 Hz |

| | |
|---|---|
| **Surge voltage resistance rated value** | 6 kV |
| **Insulation voltage rated value** | 500 V |
| **Mechanical service life (switching cycles) typical** | 30 000 000 |
| **Conducted interference** | |
| • due to conductor-conductor surge acc. to IEC 61000-4-5 | 2 kV |
| • due to conductor-earth surge acc. to IEC 61000-4-5 | 4 kV signal lines 2 kV |
| • due to burst acc. to IEC 61000-4-4 | 3 kV / 5 kHz |
| • due to high-frequency radiation acc. to IEC 61000-4-6 | 10 V |
| **Electrostatic discharge acc. to IEC 61000-4-2** | 6 kV contact discharge / 8 kV air discharge |
| **Field-bound HF-interference emission acc. to CISPR11** | Class B for the domestic, business and commercial environments |
| **Conducted HF-interference emissions acc. to CISPR11** | Class B for the domestic, business and commercial environments |
| **maximum permissible voltage for safe isolation** | |
| • between main and auxiliary circuit | 500 V |
| • between control and auxiliary circuit | 250 V |
| **Equipment marking acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750** | Q |
| **Equipment marking acc. to DIN EN 61346-2** | Q |

| Safety related data: | |
|---|---|
| **Safety Integrity Level (SIL) acc. to IEC 61508** | SIL3 |
| **Performance level (PL) acc. to EN ISO 13849-1** | e |
| **Category acc. to EN ISO 13849-1** | 4 |
| **Safety device type acc. to IEC 61508-2** | Type B |
| **Hardware fault tolerance acc. to IEC 61508** | 1 |
| **PFHD with high demand rate acc. to EN 62061** | 0.00000002 1/h |
| **PFDavg with low demand rate acc. to IEC 61508** | 0.000018 |
| **T1 value for proof test interval or service life acc. to IEC 61508** | 20 y |
| **Safe state** | Load circuit open |
| **Stop category acc. to DIN EN 60204-1** | 0 |
| **Safe failure fraction (SFF)** | 99.4 % |
| **MTTFd** | 75 y |
| **Average diagnostic coverage level (DCavg)** | 99 % |
| **Function test interval maximum** | 1 y |
| **Diagnostics test interval by internal test function maximum** | 600 s |
| **Failure rate [FIT] at rate of recognizable hazardous failures (λdd)** | 1 400 FIT |
| **Failure rate [FIT] at rate of non-recognizable hazardous failures (λdu)** | 16 FIT |

| | |
|---|---|
| Protection against electrical shock | finger-safe |
| Off-delay time with safety-related request when switched off via control inputs maximum | 65 ms |
| Off-delay time with safety-related request when switched off via supply voltage maximum | 120 ms |

| ATEX | |
|---|---|
| Hardware fault tolerance acc. to IEC 61508 relating to ATEX | 0 |
| PFDavg with low demand rate acc. to IEC 61508 relating to ATEX | 0.0005 |
| PFHD with high demand rate acc. to EN 62061 relating to ATEX | 0.00000005 1/h |
| Safety Integrity Level (SIL) acc. to IEC 61508 relating to ATEX | SIL2 |
| T1 value for proof test interval or service life acc. to IEC 61508 relating to ATEX | 3 y |

| Main circuit: | |
|---|---|
| Number of poles for main current circuit | 3 |
| Operating voltage rated value maximum | 500 V |
| Relative symmetrical tolerance of the operating voltage | 10 % |
| Operating frequency | |
| • 1 rated value | 50 Hz |
| • 2 rated value | 60 Hz |
| Relative symmetrical tolerance of the operating frequency | 10 % |
| Operating current at AC-53a at 400 V at ambient temperature 40 °C rated value | 2 A |
| Minimum load [% of IM] | 20 % |
| Power loss [W] typical | 0.3 W |
| Adjustable pick-up value current of the current-dependent overload release | 0.4 ... 2 A |
| Operating power for three-phase motors at 400 V at 50 Hz | 0.09 ... 0.75 kW |
| Operating frequency maximum | 1 1/s |

| Control circuit/ Control: | |
|---|---|
| Type of voltage of the control supply voltage | DC |
| Control supply voltage 1 | |
| • at DC rated value | 24 V |
| Operating range factor control supply voltage rated value | |
| • at DC | 0.8 ... 1.25 |
| Control current | |
| • at DC | |

| | |
|---|---|
| — in standby mode | 13 mA |
| — during operation | 57 mA |
| — when switching on | 150 mA |
| **Input voltage at digital input** | |
| • for signal <1> | |
| — at DC | 15 ... 30 V |
| • with signal <0> | |
| — at DC | 0 ... 5 V |
| **Input current at digital input** | |
| • for signal <1> | |
| — at DC | 8 mA |
| • with signal <0> | |
| — at DC | 1 mA |
| **Switch-on delay time** | 90 ... 120 ms |
| **Off-delay time** | 40 ... 55 ms |

| Auxiliary circuit: | |
|---|---|
| **Number of CO contacts for auxiliary contacts** | 1 |
| **Operating current of auxiliary contacts** | |
| • at AC-15 at 230 V maximum | 3 A |
| • at DC-13 at 24 V maximum | 1 A |

| Installation/ mounting/ dimensions: | |
|---|---|
| **Mounting position** | vertical, horizontal, standing |
| **Mounting type** | screw and snap-on mounting onto 35 mm standard mounting rail |
| **Width** | 22.5 mm |
| **Height** | 100 mm |
| **Depth** | 141.6 mm |

| Connections/ Terminals: | |
|---|---|
| **Type of electrical connection** | |
| • for main current circuit | screw-type terminals |
| • for auxiliary and control current circuit | screw-type terminals |
| **Type of connectable conductor cross-sections for main contacts** | |
| • solid | 1x (0,5 ... 4 mm²), 2x (0,5 ... 2,5 mm²) |
| • finely stranded | |
| — with core end processing | 1x (0,5 ... 2,5 mm²), 2x (0,5 ... 1,5 mm²) |
| **Type of connectable conductor cross-sections at AWG conductors for main contacts** | 1x (20 ... 12), 2x (20 ... 14) |
| **Type of connectable conductor cross-sections for auxiliary contacts** | |
| • solid | 1x (0,5 ... 2,5 mm²), 2x (1,0 ... 1,5 mm²) |
| • finely stranded | |

| | |
|---|---|
| — with core end processing | 1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1 mm²) |
| **Type of connectable conductor cross-sections at AWG conductors for auxiliary contacts** | 1x (20 ... 14), 2x (18 ... 16) |

## UL ratings:

| | |
|---|---|
| **Full-load current (FLA) for three-phase AC motor at 480 V rated value** | 2 A |
| **Yielded mechanical performance [hp]** | |
| • for single-phase AC motor | |
| — at 230 V rated value | 0.125 hp |
| • for three-phase AC motor | |
| — at 200/208 V rated value | 0.333 hp |
| — at 220/230 V rated value | 0.333 hp |
| — at 460/480 V rated value | 0.75 hp |

## Certificates/approvals

| General Product Approval | | | | For use in hazardous locations | Functional Safety/Safety of Machinery |
|---|---|---|---|---|---|
| CCC | CSA | UL | EAC | ATEX | Baumusterbescheinigung |

| Declaration of Conformity | Test Certificates | | other | |
|---|---|---|---|---|
| EG-Konf. | Typprüfbescheinigung/Werkszeugnis | spezielle Prüfbescheinigungen | Bestätigungen | Umweltbestätigung |

## Further information

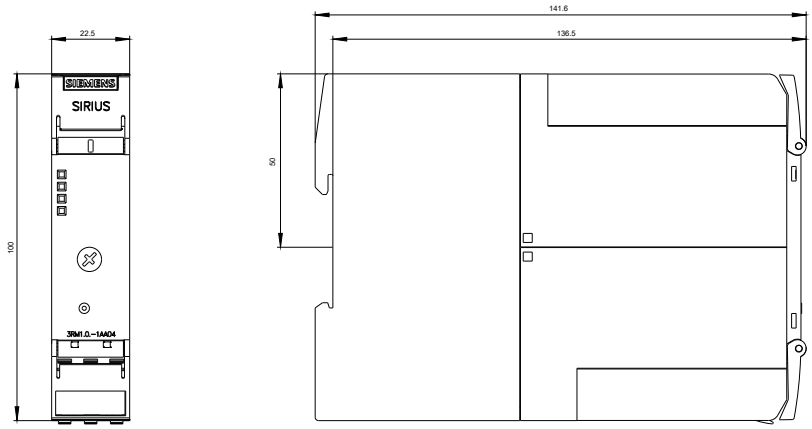
**Information- and Downloadcenter (Catalogs, Brochures,…)**
http://www.siemens.com/industrial-controls/catalogs

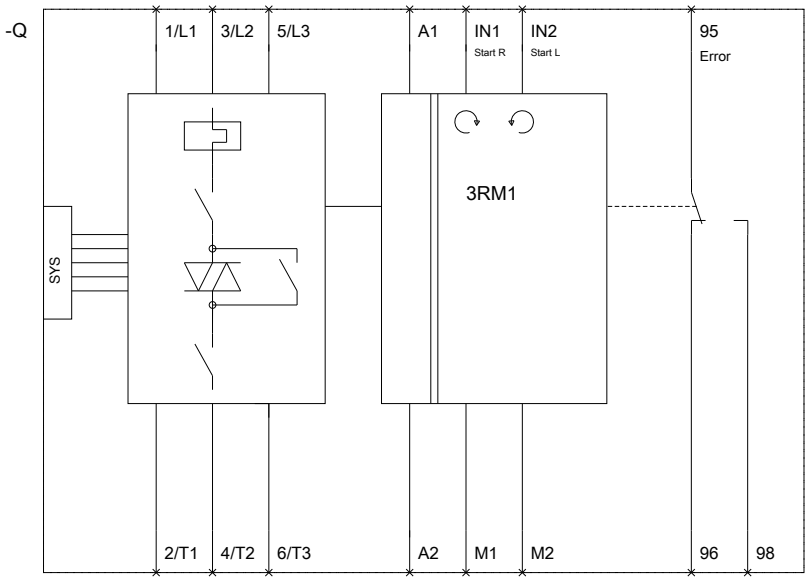
**Industry Mall (Online ordering system)**
https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RM13021AA04

**Cax online generator**
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RM13021AA04

**Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**
https://support.industry.siemens.com/cs/ww/en/ps/3RM13021AA04

**Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)**
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RM13021AA04&lang=en

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