

Motor starter SIRIUS 3RM1 DOL starter SAFETY 500 V; 0.4 - 2.0 A;
24 V DC Push-in connection method



Figure similar

| General technical data | |
|---|--|
| Product brand name | SIRIUS |
| Product category | Motor starter |
| Product designation | Fail-safe direct starter |
| Design of the product | With electronic overload protection and safety-related disconnection |
| 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 |
| 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 |
| Reference code acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750 | Q |
| Reference code acc. to DIN EN 61346-2 | Q |

Safety related data

| | |
|---|-------------------|
| Safety Integrity Level (SIL) acc. to IEC 61508 | 3 |
| 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 (λ_{dd}) | 1 400 FIT |
| Failure rate [FIT] at rate of non-recognizable hazardous failures (λ_{du}) | 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 | 48 ... 500 V |
| Relative symmetrical tolerance of the operating voltage | 10 % |
| Operating frequency <ul style="list-style-type: none"> • 1 rated value • 2 rated value | 50 Hz 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 [%] | 20 % |
| Power loss [W] typical | 0.3 W |
| Adjustable pick-up value current of the current-dependent overload release | 0.4 ... 2 A |
| Ampacity when starting maximum | 16 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

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|--|------|
| Type of voltage of the control supply voltage | DC |
| Control supply voltage 1 <ul style="list-style-type: none"> • 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 (observe derating) |
| 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 | PUSH-IN connection (spring-loaded connection) |
| • for auxiliary and control current circuit | PUSH-IN connection (spring-loaded connection) |
| Type of connectable conductor cross-sections for main contacts | |
| • solid | 1x (0.5 ... 4 mm ²) |
| • finely stranded | |
| — with core end processing | 1x (0.5 ... 2.5 mm ²) |
| — without core end processing | 1x (0.5 ... 4 mm ²) |


| | |
|---|--|
| Type of connectable conductor cross-sections at AWG conductors for main contacts | 1x (20 ... 12) |
| Type of connectable conductor cross-sections for auxiliary contacts | |
| • solid | 1x (0.5 ... 1.5 mm ²), 2x (0.5 ... 1.5 mm ²) |
| • finely stranded | |
| — with core end processing | 1x (0.5 ... 1.0 mm ²), 2x (0.5 ... 1.0 mm ²) |
| — without core end processing | 1x (0.5 ... 1.5 mm ²), 2x (0.5 ... 1.5 mm ²) |
| Type of connectable conductor cross-sections at AWG conductors for auxiliary contacts | 1x (20 ... 16), 2x (20 ... 16) |

UL ratings

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|---|----------|
| 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 | Type Examination |

| Declaration of Conformity | Test Certificates | other |
|---|--|--|
|  EG-Konf. | Type Test Certificates/Test Report | Special Test Certificate Confirmation |

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=3RM1102-2AA04>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RM1102-2AA04>

