

SIRIUS safety relay Basic unit 3SK2 series 10 F-DI, 2 F-DQ, 1 DQ, 24 V DC Can be parameterized via SIRIUS Safety ES 22.5 mm overall width Spring-type terminal (push-in) up to SILCL 3 (DIN EN 62061) Up to Performance Level E (ISO 13849-1) Output expansions 3SK1 and fail-safe motor starters 3RM1 via device connector connectable



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|-----------------------|-----------------------|
| Product brand name | SIRIUS |
| Product category | Safety relay |
| Product designation | Base-Unit |
| Design of the product | 10 F-DI, 2 F-DQ, 1 DQ |

General technical data

| Product function | |
|--|-----|
| • EMERGENCY STOP function | Yes |
| • protective door monitoring | Yes |
| • protective door monitoring with tumbler | Yes |
| • muting, 2 sensor-parallel | Yes |
| • muting, 4 sensor-parallel | Yes |
| • muting, 4 sensor-sequential | Yes |
| • Monitoring parameterizable | Yes |
| • evaluation: electro-sensitive protective equipment | Yes |
| • evaluation: selector switch | Yes |
| • Pressure-sensitive mat monitoring | Yes |
| • evaluation: two-hand operator panel | Yes |
| • evaluation: enabling switch | Yes |

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| <ul style="list-style-type: none"> • monitored start-up | Yes |
| <ul style="list-style-type: none"> • two-hand control acc. to EN 574 | Yes |
| Configuration software required | Yes; Safety ES V1.0 and higher |
| Number of function blocks typical | 50 |
| Degree of pollution | 3 |
| Surge voltage resistance rated value | 800 V |
| Protection class IP | IP20 |
| <ul style="list-style-type: none"> • of the enclosure | IP20 |
| <ul style="list-style-type: none"> • of the terminal | IP20 |
| Shock resistance | 15g / 11 ms |
| Operating frequency maximum | 2 000 1/h |
| Reference code acc. to DIN EN 81346-2 | F |
| Reference code acc. to DIN EN 61346-2 | K |
| Period of darkness of the common drivers | 3 ms |
| Product function suitable for AS-i Power24V | No |
| Product function Diagnostics with CTT2 slave | No |
| Protocol is supported ASIsafe (Safety at work) protocol | No |
| Suitability for use | |
| <ul style="list-style-type: none"> • Monitoring of floating sensors | Yes |
| <ul style="list-style-type: none"> • Monitoring of non-floating sensors | Yes |
| <ul style="list-style-type: none"> • position switch monitoring | Yes |
| <ul style="list-style-type: none"> • EMERGENCY-OFF circuit monitoring | Yes |
| <ul style="list-style-type: none"> • valve monitoring | Yes |
| <ul style="list-style-type: none"> • opto-electronic protection device monitoring | Yes |
| <ul style="list-style-type: none"> • magnetically operated switch monitoring | Yes |
| <ul style="list-style-type: none"> • proximity switch monitoring | Yes |
| <ul style="list-style-type: none"> • safety-related circuits | Yes |
| Suitability for use for monitoring of optoelectronic protective devices acc. to IEC 61496-1 | Yes |
| Operating power rated value | 2.5 W |
| Communication/ Protocol | |
| Protocol optional is supported PROFIBUS DP protocol | Yes; when using the DP interface module; 64 bit cyclical data |
| Protocol is supported AS-Interface protocol | No |
| Amount of data of the cyclic user data | |
| <ul style="list-style-type: none"> • for inputs with PROFIBUS DP | 64 bit |
| <ul style="list-style-type: none"> • for outputs with PROFIBUS DP | 64 bit |
| Control circuit/ Control | |
| Type of voltage | DC |
| Type of voltage of the control supply voltage | DC |
| Control supply voltage rated value | 24 V |

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| Control supply voltage 1 at DC rated value | 24 V |
| Inrush current peak | |
| • at 24 V | 10 A |
| Duration of inrush current peak | |
| • at 24 V | 1 ms |
| Consumed current for rated value of supply voltage without semiconductor output | 100 mA |

Inputs/ Outputs

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|---|--------------|
| Product function | |
| • Parameterizable inputs | Yes |
| • Parameterizable outputs | Yes |
| • at the digital outputs Short-circuit protection | Yes |
| Number of inputs | |
| • safety-related | 10 |
| • non-safety-related | 0 |
| Input delay time | 0 ... 150 ms |
| Type of digital inputs acc. to IEC 60947-1 | Type 1 |
| Input recording time at digital input maximum | 60 ms |
| Input delay time at digital input maximum | 150 ms |
| Input voltage at digital input | |
| • at DC rated value | 24 V |
| • with signal <0> at DC | -3 ... +5 V |
| • for signal <1> at DC | 15 ... 30 |
| Input current at digital input | |
| • for signal <1> typical | 2.6 mA |
| Number of outputs | |
| • safety-related 2-channel | 2 |
| • for testing contact-based sensors | 2 |
| Number of outputs as contact-affected switching element safety-related | |
| • 1-channel | 0 |
| • 2-channel | 0 |
| Number of outputs as contact-less semiconductor switching element non-safety-related | 1 |
| Design of the contactless switching element safety-related | P potential |
| Recovery time of the safe outputs | 0 ms |
| Readback time maximum | 400 ms |
| Light test period | 3 ms |
| Switching capacity current of semiconductor outputs at DC-13 at 24 V | 4 A |
| Residual current | |
| • maximum | 0.05 mA |

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| <ul style="list-style-type: none"> • at digital output with signal <0> maximum | 0.1 mA |
| Total current maximum | 6.5 A |
| Voltage drop maximum | 0.5 V |
| Wire length of the signal cable | |
| <ul style="list-style-type: none"> • to the inputs <ul style="list-style-type: none"> — shielded maximum — unshielded maximum • to the outputs <ul style="list-style-type: none"> — shielded maximum — unshielded maximum | 1 000 m 600 m 1 000 m 600 m |

| Installation/ mounting/ dimensions | |
|------------------------------------|---|
| Mounting position | any |
| Mounting type | Snap-mounted to DIN rail or screw-mounted with additional push-in lug |
| Height | 100 mm |
| Width | 22.5 mm |
| Depth | 124.5 mm |

| Connections/ Terminals | |
|--|--|
| Product function removable terminal | Yes |
| Type of connectable conductor cross-sections | |
| <ul style="list-style-type: none"> • solid | 1x (0.5 ... 1.5 mm ²), 2x (0.5 ... 1.5 mm ²) |
| <ul style="list-style-type: none"> • finely stranded with core end processing | 1x (0.5 ... 1.0 mm ²), 2x (0.5 ... 1.0 mm ²) |
| <ul style="list-style-type: none"> • at AWG conductors solid | 1x (20 ... 16), 2x (20 ... 16) |
| <ul style="list-style-type: none"> • at AWG conductors stranded | 1x (20 ... 16), 2x (20 ... 16) |
| Connectable conductor cross-section finely stranded with core end processing | 0.5 ... 1 mm ² |
| AWG number as coded connectable conductor cross section | |
| <ul style="list-style-type: none"> • solid | 20 ... 16 |
| <ul style="list-style-type: none"> • stranded | 20 ... 16 |





| Safety related data | |
|---|----------------|
| Stop category acc. to DIN EN 60204-1 | 0 / 1 |
| Diagnostics test interval by internal test function maximum | 1 000 s |
| PFHD with high demand rate acc. to EN 62061 | 0.00000001 1/h |
| T1 value for proof test interval or service life acc. to IEC 61508 | 20 y |
| Protection against electrical shock | finger-safe |

| Electromagnetic compatibility | |
|--|--|
| EMC emitted interference acc. to IEC 60947-1 | class A |
| Conducted interference | |
| <ul style="list-style-type: none"> • due to burst acc. to IEC 61000-4-4 | 2 kV (power ports) / 1 kV (signal ports) |

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| Field-bound parasitic coupling acc. to IEC 61000-4-3 | 10 V/m |
| Electrostatic discharge acc. to IEC 61000-4-2 | 4 kV contact discharge / 8 kV air discharge |

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| Ambient conditions | |
| Installation altitude at height above sea level maximum | 2 000 m |
| Air pressure acc. to SN 31205 | 90 ... 106 kPa |

Certificates/ approvals

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|--|---|---|
| General Product Approval | Functional Safety/Safety of Machinery | Declaration of Conformity |
|  CSA |  UL |  EAC |
| | Type Examination Certificate |  EG-Konf. |
| | | Miscellaneous |

other

[Confirmation](#)

Further information

Information- and Downloadcenter (Catalogs, Brochures,...)

www.siemens.com/ic10

Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3SK2112-2AA10>

Cax online generator

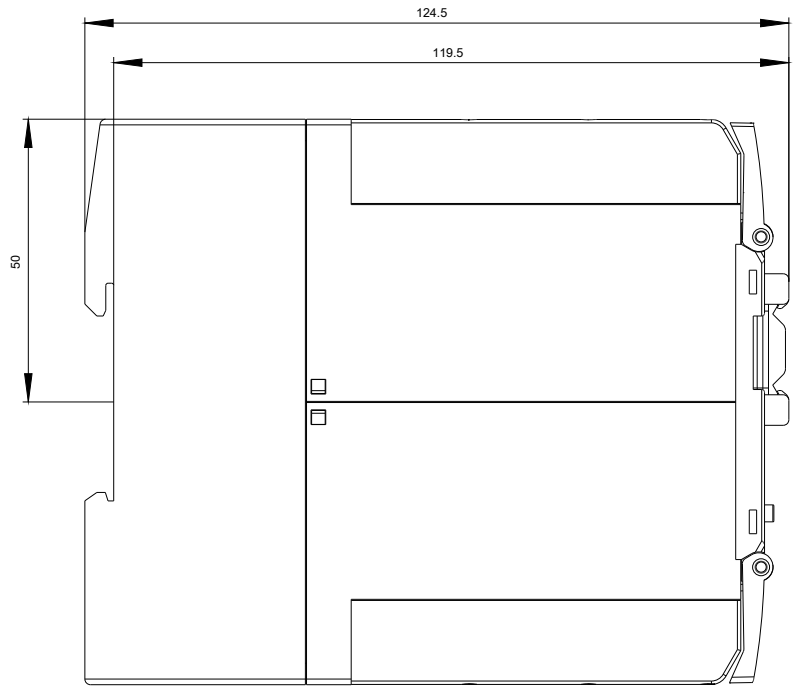
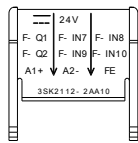
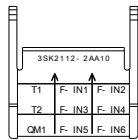
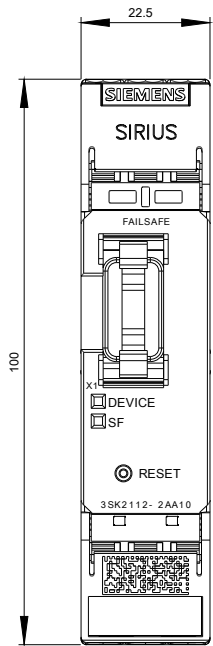
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3SK2112-2AA10>

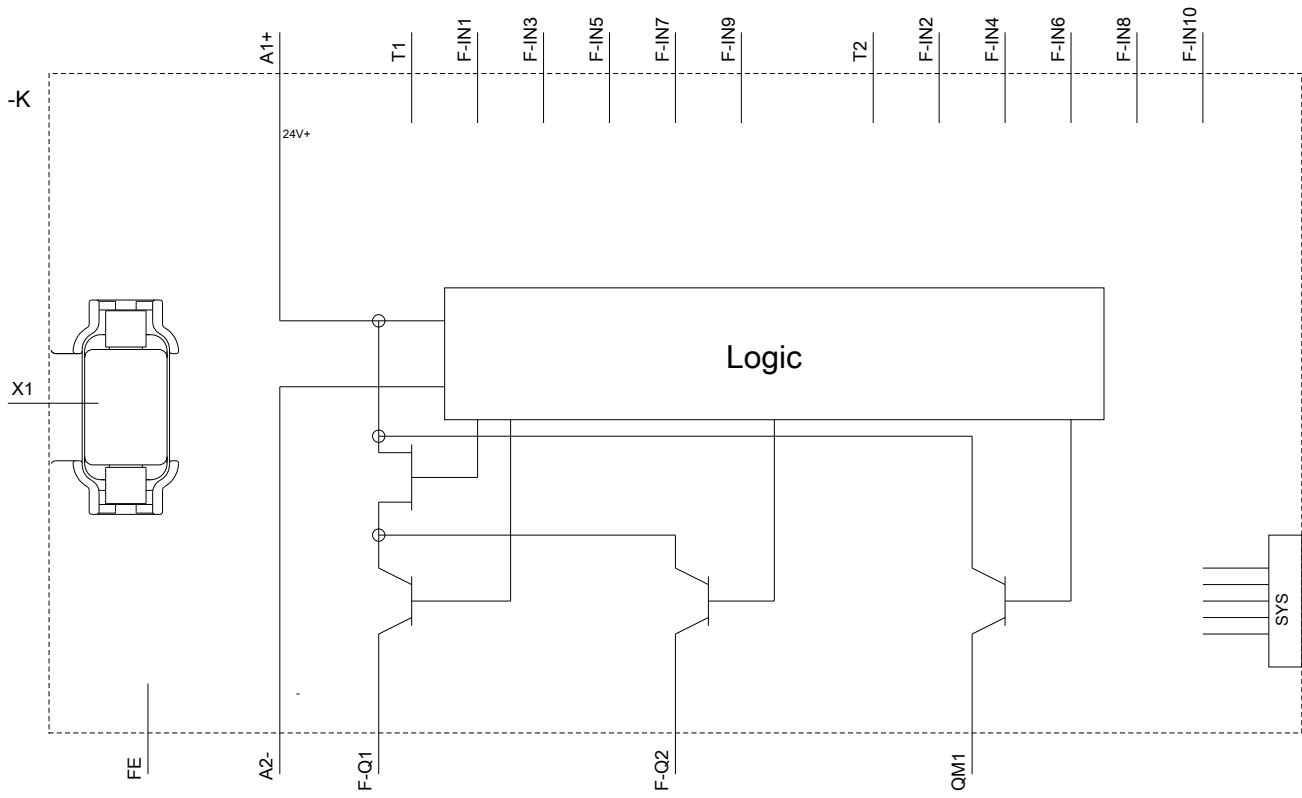
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3SK2112-2AA10>

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3SK2112-2AA10&lang=en





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