



SIRIUS safety relay with relay enabling circuits (EC) 24 V AC/DC, 22.5 mm
 Screw terminal EC instantaneous: 4 NO EC delayed: 0 MK for retraction: 1
 Expansion unit Maximum achieved SIL / PL: as basic unit

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|--|--|
| product brand name | SIRIUS |
| product designation | safety relays |
| design of the product | extension unit |
| General technical data | |
| protection class IP of the enclosure | IP40 |
| protection class IP of the terminal | IP20 |
| touch protection against electrical shock | finger-safe |
| insulation voltage rated value | 300 V |
| ambient temperature | |
| • during storage | -40 ... +80 °C |
| • during operation | -25 ... +60 °C |
| air pressure according to SN 31205 | 90 ... 106 kPa |
| relative humidity during operation | 10 ... 95 % |
| installation altitude at height above sea level maximum | 2 000 m |
| vibration resistance according to IEC 60068-2-6 | 5 ... 500 Hz: 0,075 mm |
| shock resistance | 8g / 10 ms |
| surge voltage resistance rated value | 4 000 V |
| EMC emitted interference | EN 60947-5-1 |
| installation environment regarding EMC | This product is suitable for Class A environments only. In household environments, this device can cause unwanted radio interference. The user is required to implement appropriate measures in this case. |
| reference code according to DIN 40719 extended according to IEC 204-2 according to IEC 750 | KT |
| reference code according to EN 61346-2 | F |
| design of the cascading | none |
| product feature cross-circuit-proof | No |
| Safety Integrity Level (SIL) | |
| • according to IEC 61508 | 3 |
| SIL Claim Limit (subsystem) according to EN 62061 | 3 |
| category according to EN ISO 13849-1 | 4 |
| hardware fault tolerance according to IEC 61508 | 1 |
| safety device type according to IEC 61508-2 | Type A |
| PFHD with high demand rate according to EN 62061 | 1.2E-9 1/h |
| Average probability of failure on demand (PFDavg) with low demand rate acc. to IEC 61508 | 1E-6 1/y |
| T1 value for proof test interval or service life according to IEC 61508 | 20 a |
| number of outputs as contact-affected switching element | |
| • as NC contact | |
| — for signaling function instantaneous contact | 0 |
| • as NO contact | |

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| — safety-related instantaneous contact | 4 |
| — safety-related delayed switching | 0 |
| number of outputs as contact-less semiconductor switching element | |
| • safety-related | |
| — delayed switching | 0 |
| — instantaneous contact | 0 |
| • for signaling function | |
| — delayed switching | 0 |
| — instantaneous contact | 0 |
| stop category according to EN 60204-1 | 0 |

Inputs

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|--|-----|
| design of input | |
| • cascading input/functional switching | No |
| • feedback input | Yes |
| • start input | No |

Outputs

| | |
|--|----------------------------|
| type of electrical connection plug-in socket | Yes |
| operating frequency maximum | 1 000 1/h |
| switching capacity current | |
| • of the NO contacts of the relay outputs at DC-13 | |
| — at 24 V | 5 A |
| — at 115 V | 0.2 A |
| — at 230 V | 0.1 A |
| • of the NO contacts of the relay outputs at AC-15 | |
| — at 115 V | 5 A |
| — at 230 V | 5 A |
| • of the NC contacts of the relay outputs at DC-13 | |
| — at 24 V | 5 A |
| — at 115 V | 0.2 A |
| — at 230 V | 0.1 A |
| • of the NC contacts of the relay outputs at AC-15 | |
| — at 115 V | 5 A |
| — at 230 V | 5 A |
| thermal current of the switching element with contacts maximum | 5 A |
| electrical endurance (operating cycles) typical | 100 000 |
| mechanical service life (operating cycles) typical | 10 000 000 |
| design of the fuse link for short-circuit protection of the NO contacts of the relay outputs required | gL/gG: 6 A, or quick: 10 A |
| DC resistance of the cable maximum | 30 Ω |
| wire length between sensor and electronics evaluation device with Cu 1.5 mm² and 150 nF/km maximum | 1 000 m |

Times

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|---|-------|
| make time with automatic start | |
| • at DC maximum | 30 ms |
| • at AC maximum | 30 ms |
| make time with automatic start after power failure | |
| • maximum | 30 ms |
| backslide delay time in the event of power failure | |
| • maximum | 25 ms |
| recovery time after power failure typical | 50 ms |

Control circuit/ Control

| | |
|--|-------|
| type of voltage of the control supply voltage | AC/DC |
| control supply voltage frequency | |
| • 1 rated value | 50 Hz |
| • 2 rated value | 60 Hz |
| control supply voltage 1 | |
| • at DC rated value | 24 V |
| control supply voltage 1 at AC | |
| • at 50 Hz rated value | 24 V |
| • at 60 Hz rated value | 24 V |
| operating range factor control supply voltage rated | |

| | |
|--|---|
| value of magnet coil | |
| <ul style="list-style-type: none"> • at AC <ul style="list-style-type: none"> — at 50 Hz — at 60 Hz • at DC | <p>0.85 ... 1.1</p> <p>0.85 ... 1.1</p> <p>0.85 ... 1.2</p> |

Installation/ mounting/ dimensions

| | |
|--------------------------|----------------------------|
| mounting position | any |
| fastening method | screw and snap-on mounting |
| width | 22.5 mm |
| height | 120 mm |
| depth | 120 mm |

Connections/ Terminals

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|---|--|
| type of electrical connection | screw-type terminals |
| type of connectable conductor cross-sections | |
| <ul style="list-style-type: none"> • solid | 1x (0.5 ... 4.0 mm ²), 2x (0.5 ... 2.5 mm ²) |
| <ul style="list-style-type: none"> • finely stranded <ul style="list-style-type: none"> — with core end processing | 1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.5 mm ²) |
| type of connectable conductor cross-sections at AWG cables | |
| <ul style="list-style-type: none"> • solid | 2x (20 ... 14) |
| <ul style="list-style-type: none"> • stranded | 2x (20 ... 14) |

Product Function

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|--|---|
| product function | |
| <ul style="list-style-type: none"> • light barrier monitoring • standstill monitoring • protective door monitoring • automatic start • magnetically operated switch monitoring NC-NO • rotation speed monitoring • laser scanner monitoring • monitored start-up • light array monitoring • magnetically operated switch monitoring NC-NC • EMERGENCY OFF function • pressure-sensitive mat monitoring | <p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p> |
| suitability for interaction press control | No |
| suitability for use | |
| <ul style="list-style-type: none"> • safety switch • position switch monitoring • EMERGENCY-OFF circuit monitoring • valve monitoring • tactile sensor monitoring • magnetically operated switch monitoring • safety-related circuits | <p>Yes</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p> |

Certificates/ approvals

| | |
|---|--|
| certificate of suitability | BG, SUVA, UL, CSA, EN 60204-1, EN ISO 12100, EN 954-1, IEC 61508 |
| <ul style="list-style-type: none"> • TÜV (German technical inspectorate) certificate • UL approval • BG BIA approval | <p>Yes</p> <p>Yes</p> <p>No</p> |

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|---------------------------------|------------|--|
| General Product Approval | EMC | Functional Safety/Safety of Machinery |
|---------------------------------|------------|--|



[Type Examination Certificate](#)

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|--------------------------|--------------|
| Test Certificates | other |
|--------------------------|--------------|

Further information

Information on the packaging

<https://support.industry.siemens.com/cs/ww/en/view/109813875>

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

<https://www.siemens.com/ic10>

Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mfb=3TK2830-1CB30>

Cax online generator

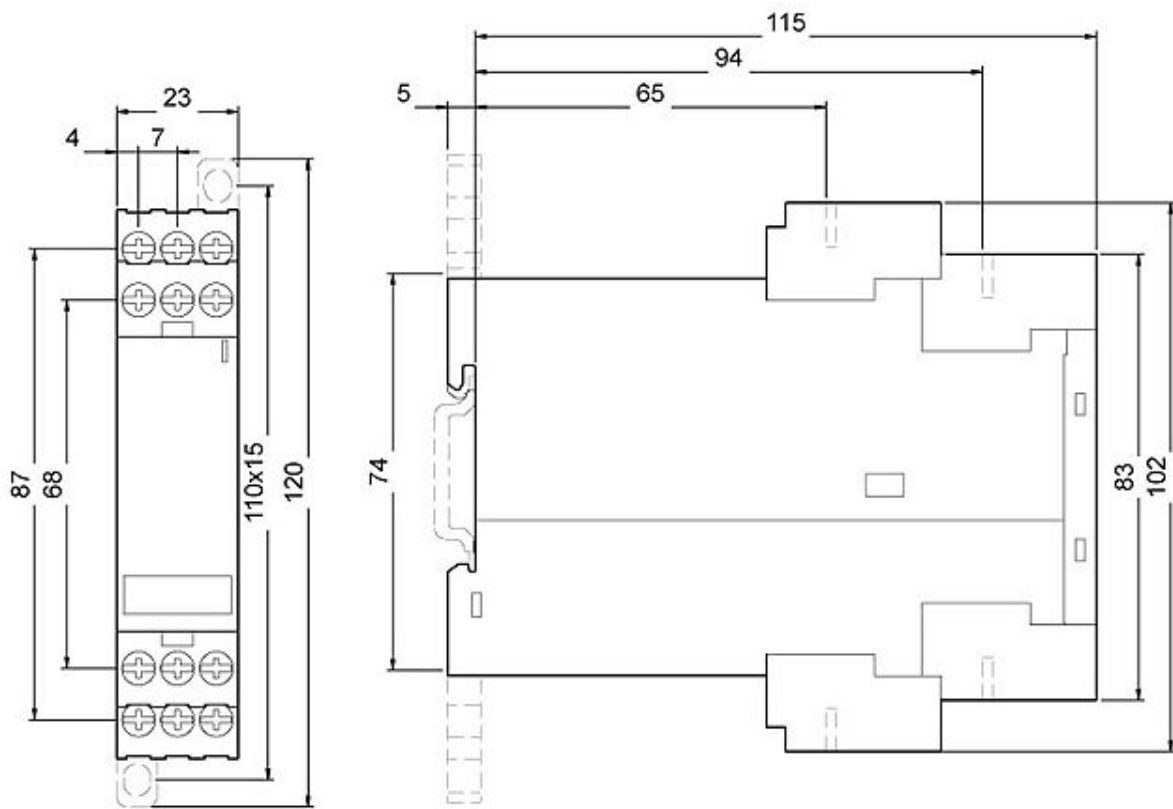
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mfb=3TK2830-1CB30>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3TK2830-1CB30>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mfb=3TK2830-1CB30&lang=en



last modified:

7/6/2022