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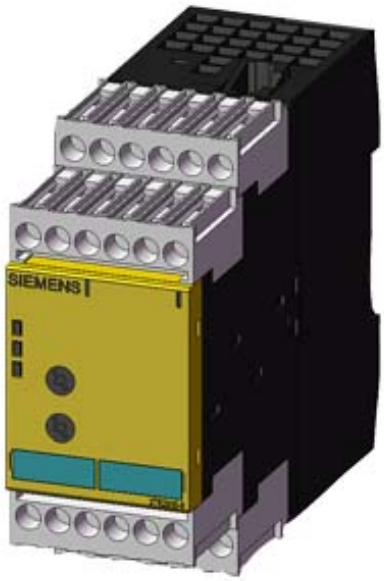
## Data sheet 3TK2810-0BA01




SIRIUS safety relay safety-oriented Standstill monitoring 24 V DC, 45 mm screw terminal EC instantaneous: 3 NO + 1 NC EC delayed: 0 SC: 3 Auto-start Basic unit max. error category EN 954-1: 4 Maximum achievable PL according to EN 13849-1: Maximum achievable SIL according to IEC 61508: 3

| General technical data | |
|---|---|
| **Product brand name** | SIRIUS |
| **Product designation** | Standstill monitor |
| **Design of the product** | for safe stoppage monitoring |
| **Protection class IP of the enclosure** | IP20 |
| **Protection class IP of the terminal** | IP20 |
| **Protection against electrical shock** | finger-safe |
| **Insulation voltage rated value** | 690 V |
| **Ambient temperature** | |
| • during storage | -40 ... +75 °C |
| • during operation | -25 ... +60 °C |
| **Air pressure acc. 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 acc. to IEC 60068-2-6** | 10 ... 55 Hz: 0.35 mm |
| **Shock resistance** | 8g / 10 ms |
| **Surge voltage resistance rated value** | 6 000 V |
| **EMC emitted interference** | IEC 61000-6-2, IEC 61000-6-3 |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| | |
|---|---|
| **Installation environment regarding EMC** | This product is suitable for Class A environments only. It can cause undesired radio-frequency interference in residential environments. If this is the case, the user must take appropriate measures. |
| **Reference code acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750** | KT |
| **Reference code acc. to DIN EN 61346-2** | F |
| **Number of sensor inputs** | |
| • 1-channel or 2-channel | 1 |
| **Design of the cascading** | none |
| **Type of the safety-related wiring of the inputs** | measuring inputs |
| **Product feature cross-circuit-proof** | No |
| **Safety Integrity Level (SIL)** | |
| • acc. to IEC 61508 | 3 |
| • for delayed release circuit acc. to IEC 61508 | SIL3 |
| **SIL Claim Limit (subsystem) acc. to EN 62061** | 3 |
| **Performance level (PL)** | |
| • acc. to EN ISO 13849-1 | e |
| **Category acc. to EN ISO 13849-1** | 4 |
| **Hardware fault tolerance acc. to IEC 61508** | 1 |
| **Safety device type acc. to IEC 61508-2** | Type B |
| **PFHD with high demand rate acc. to EN 62061** | 0.0000000015 1/h |
| **Average probability of failure on demand (PFDavg) with low demand rate acc. to IEC 61508** | 0.002 1/y |
| **T1 value for proof test interval or service life acc. to IEC 61508** | 20 y |
| **Number of outputs as contact-affected switching element** | |
| • as NC contact | |
| — for signaling function instantaneous contact | 2 |
| • as NO contact | |
| — 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 | 2 |
| **Stop category acc. to DIN EN 60204-1** | 0 |


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| General technical data | |
|---|---|
| **Design of input** | |
| • cascading input/functional switching | No |
| • feedback input | Yes |
| • Start input | No |
| **Type of electrical connection Plug-in socket** | Yes |
| **Operating frequency maximum** | 1 200 1/h |
| **Switching capacity current** | |
| **• of semiconductor outputs** | |
| — for signaling function at DC-13 at 24 V | 0.1 A |
| **• of the NO contacts of the relay outputs at DC-13** | |
| — at 24 V | 2 A |
| **• of the NO contacts of the relay outputs at AC-15** | |
| — at 115 V | 3 A |
| — at 230 V | 3 A |
| **• of the NC contacts of the relay outputs at DC-13** | |
| — at 24 V | 2 A |
| **• of the NC contacts of the relay outputs at AC-15** | |
| — at 115 V | 2 A |
| — at 230 V | 2 A |
| **Thermal current of the switching element with contacts maximum** | 5 A |
| **Electrical endurance (switching cycles) typical** | 200 000 |
| **Mechanical service life (switching cycles) typical** | 50 000 000 |
| **Design of the fuse link for short-circuit protection of the NO contacts of the relay outputs required** | quick: 5 A |
| **Adjustable OFF-delay time after opening of the safety circuits** | 0.2 ... 6 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 of magnet coil** | |
| • at DC | 0.9 ... 1.2 |

| Installation/ mounting/ dimensions | |
|---|---|
| **Mounting position** | any |
| **Mounting type** | screw and snap-on mounting |
| **Width** | 45 mm |


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| | |
|---|---|
| **Height** | 138.5 mm |
| **Depth** | 120 mm |

## Connections/ Terminals

| | |
|---|---|
| **Type of electrical connection** | screw-type terminals |
| **Type of connectable conductor cross-sections** | |
| • solid | 1x (0.5 ... 4.0 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** | |
| • solid | 2x (20 ... 14) |
| • stranded | 2x (20 ... 14) |

## Product Function

| | |
|---|---|
| **Product function** | |
| • Light barrier monitoring | No |
| • Standstill monitoring | Yes |
| • protective door monitoring | No |
| • Automatic start | No |
| • magnetically operated switch monitoring NC-NO | No |
| • rotation speed monitoring | No |
| • laser scanner monitoring | No |
| • monitored start-up | No |
| • Light array monitoring | No |
| • magnetically operated switch monitoring NC-NC | No |
| • EMERGENCY OFF function | No |
| • Pressure-sensitive mat monitoring | No |
| **Suitability for interaction press control** | No |
| **Suitability for use** | |
| • safety switch | Yes |
| • position switch monitoring | No |
| • EMERGENCY-OFF circuit monitoring | No |
| • valve monitoring | No |
| • tactile sensor monitoring | No |
| • magnetically operated switch monitoring | No |
| • safety-related circuits | Yes |

## Certificates/ approvals

| | |
|---|---|
| **Certificate of suitability** | UL, CSA, EN 60204-1, EN ISO 12100, EN 954-1, IEC 61508 |
| • TÜV (German technical inspectorate) certificate | Yes |
| • UL approval | Yes |


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| | |
|---|---|
| • BG BIA certificate | Yes |

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

| Declaration of Conformity | Test Certificates | other | Railway |
|---|---|---|---|
| Miscellaneous | Special Test Certificate | Confirmation | Confirmation |

## Further information

**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?mlfb=3TK2810-0BA01

**Cax online generator**
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3TK2810-0BA01

**Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**
https://support.industry.siemens.com/cs/ww/en/ps/3TK2810-0BA01

**Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)**
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3TK2810-0BA01&lang=en


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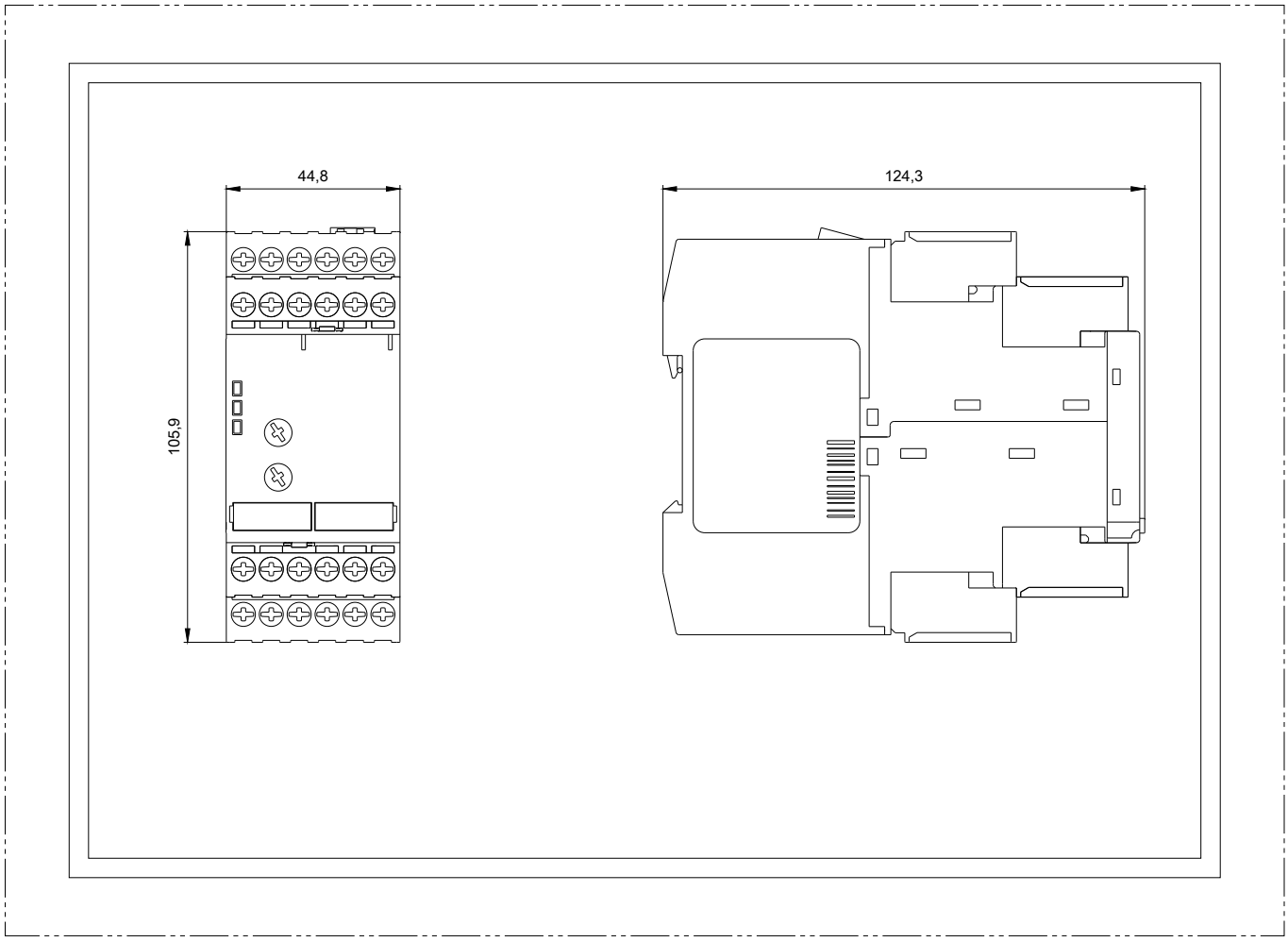


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