SIEMENS

## 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

| | |
|---|---|
| **product brand name** | SIRIUS |
| **product designation** | Standstill monitor |
| **design of the product** | for safe stoppage monitoring |
| **product type designation** | 3TK28 |
| **Product Function** | |
| **product function** | |
| ● automatic start | No |
| ● light barrier monitoring | No |
| ● standstill monitoring | Yes |
| ● protective door monitoring | No |
| ● magnetically operated switch monitoring NC-NO | No |
| ● magnetically operated switch monitoring NC-NC | No |
| ● rotation speed monitoring | No |
| ● laser scanner monitoring | No |
| ● light array monitoring | No |
| ● EMERGENCY OFF function | No |
| ● monitored start-up | No |
| ● pressure-sensitive mat monitoring | No |
| **product feature cross-circuit-proof** | No |
| **suitability for interaction press control** | No |
| **suitability for use** | |
| ● position switch monitoring | No |
| ● EMERGENCY-OFF circuit monitoring | No |
| ● valve monitoring | No |
| ● opto-electronic protection device monitoring | No |
| ● tactile sensor monitoring | No |
| ● magnetically operated switch monitoring | No |
| ● proximity switch monitoring | No |
| ● safety-related circuits | Yes |
| **General technical data** | |
| certificate of suitability UL approval | Yes |
| **insulation voltage rated value** | 690 V |
| **surge voltage resistance rated value** | 6 000 V |
| **protection class IP** | |
| ● of the enclosure | IP20 |
| ● of the terminal | IP20 |
| **shock resistance** | 8 g / 10 ms |
| **vibration resistance according to IEC 60068-2-6** | 10 ... 55 Hz: 0.35 mm |
| **operating frequency maximum** | 1 200 1/h |


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| electrical endurance (operating cycles) typical | 200 000 |
| **Substance Prohibitance (day/month/year)** | 05/01/2012 |
| **SVHC substance name** | Lead CAS-No. 7439-92-1<br>Diboron trioxide CAS-No. 1303-86-2 |
| **Net Weight** | 0.387 kg |
| **Ambient conditions** | |
| installation altitude at height above sea level maximum | 2 000 m |
| **ambient temperature** | |
| ● during operation | -25 ... +60 °C |
| ● during storage | -40 ... +75 °C |
| relative humidity during operation | 10 ... 95 % |
| air pressure according to SN 31205 | 90 ... 106 kPa |
| **Electromagnetic compatibility** | |
| **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. |
| **EMC emitted interference** | IEC 61000-6-2, IEC 61000-6-3 |
| **Safety related data** | |
| product function suitable for safety function | Yes |
| **stop category according to IEC 60204-1** | 0 |
| **average diagnostic coverage level (DCavg)** | 99 % |
| IEC 62061 | |
| SIL Claim Limit (subsystem) according to EN 62061 | 3 |
| **Safety Integrity Level (SIL) according to IEC 62061** | SIL 3 |
| PFHD with high demand rate according to IEC 62061 | 1.5E-9 1/h |
| ISO 13849 | |
| category according to EN ISO 13849-1 | 4 |
| **performance level (PL)** | |
| **● according to ISO 13849-1** | PL e |
| IEC 61508 | |
| **Safety Integrity Level (SIL)** | |
| ● according to IEC 61508 | 3 |
| ● for delayed release circuit according to IEC 61508 | SIL3 |
| **safety device type according to IEC 61508-2** | Type B |
| hardware fault tolerance according to IEC 61508 | 1 |
| T1 value for proof test interval or service life according to IEC 61508 | 20 a |
| Electrical Safety | |
| **touch protection against electrical shock** | finger-safe |
| **adjustable response value voltage for standstill detection** | 20 ... 400 mV |
| **adjustable downtime** | 0.2 ... 6 s |
| **Short-circuit protection** | |
| design of the fuse link for short-circuit protection of the NO contacts of the relay outputs required | quick: 5 A |
| **Inputs** | |
| **design of input** | |
| ● cascading input/functional switching | No |
| ● feedback input | Yes |
| ● start input | No |
| **number of sensor inputs** | |
| ● 1-channel or 2-channel | 1 |
| **Outputs** | |
| **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 |
| **mechanical service life (operating cycles) typical** | 50 000 000 |
| **thermal current of the switching element with contacts** | 5 A |


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| **maximum** | |
| **number of outputs as contact-less semiconductor switching element** | |
| ● for signaling function | |
| — delayed switching | 0 |
| — instantaneous contact | 2 |
| ● safety-related | |
| — delayed switching | 0 |
| — instantaneous contact | 0 |
| **switching capacity current of semiconductor outputs** | |
| ● for signaling function at DC-13 at 24 V | 0.1 A |
| **switching capacity current of the NO contacts of the relay outputs at DC-13** | |
| ● at 24 V | 2 A |
| **switching capacity current of the NO contacts of the relay outputs at AC-15** | |
| ● at 115 V | 3 A |
| ● at 230 V | 3 A |
| **switching capacity current of the NC contacts of the relay outputs at DC-13** | |
| ● at 24 V | 2 A |
| **switching capacity current of the NC contacts of the relay outputs at AC-15** | |
| ● at 115 V | 2 A |
| ● at 230 V | 2 A |
| **voltage measuring range at the measurement inputs at AC according to UL maximum** | 600 V |
| **voltage measuring range at the measurement inputs at AC maximum** | 690 V |
| **adjustable response value voltage for standstill detection** | 20 ... 400 mV |
| **input resistance at the measurement inputs** | 500 kΩ |
| **Times** | |
| **adjustable OFF-delay time after opening of the safety circuits** | 0.2 ... 6 s |
| adjustable downtime initial value | 0.2 s |
| adjustable downtime full-scale value | 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** | |
| ● initial value | 0.9 |
| ● full-scale value | 1.2 |
| **Installation/ mounting/ dimensions** | |
| **mounting position** | any |
| **fastening method** | screw and snap-on mounting |
| **height** | 138.5 mm |
| **width** | 45 mm |
| **depth** | 120 mm |
| **Connections/ Terminals** | |
| **type of electrical connection** | screw terminal |
| **type of connectable conductor cross-sections** | |
| ● solid | 1x (0.5 ... 4.0mm²), 2x (0.5 ... 2.5 mm²) |
| ● finely stranded with core end processing | 1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.5 mm²) |
| ● for AWG cables solid | 2x (20 ... 14) |
| ● for AWG cables stranded | 2x (20 ... 14) |
| **connectable conductor cross-section** | |
| ● solid | 0.5 ... 4 mm² |
| ● finely stranded with core end processing | 0.5 ... 2.5 mm² |
| **AWG number as coded connectable conductor cross section** | |
| ● solid | 20 ... 14 |


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|---|---|
| ● stranded | 20 ... 14 |
| **type of electrical connection plug-in socket** | Yes |

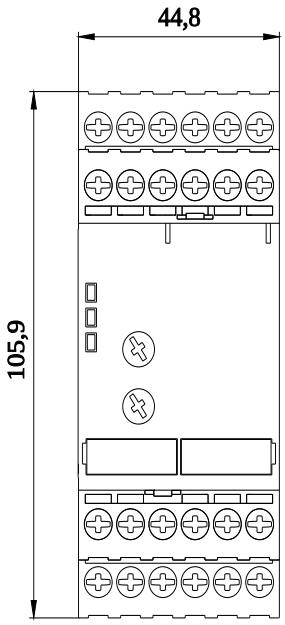
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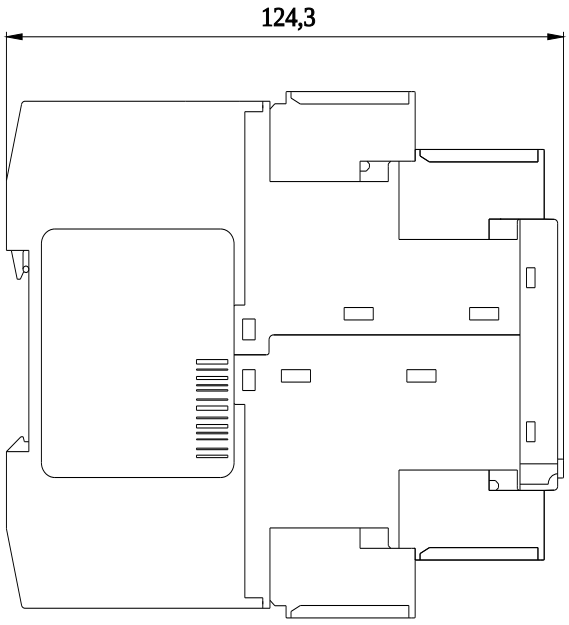
| Environment | General Product Approval | | | | |
|---|---|---|---|---|---|
| Environmental Confirmations | CCC | UL | EAC | CE EG-Konf. | UKCA |

| Functional Saftey | Test Certificates | other | | Railway |
|---|---|---|---|---|
| Type Examination Certificate | Special Test Certificate | Confirmation | 产品合格 QC PASS | Confirmation |

## Further information

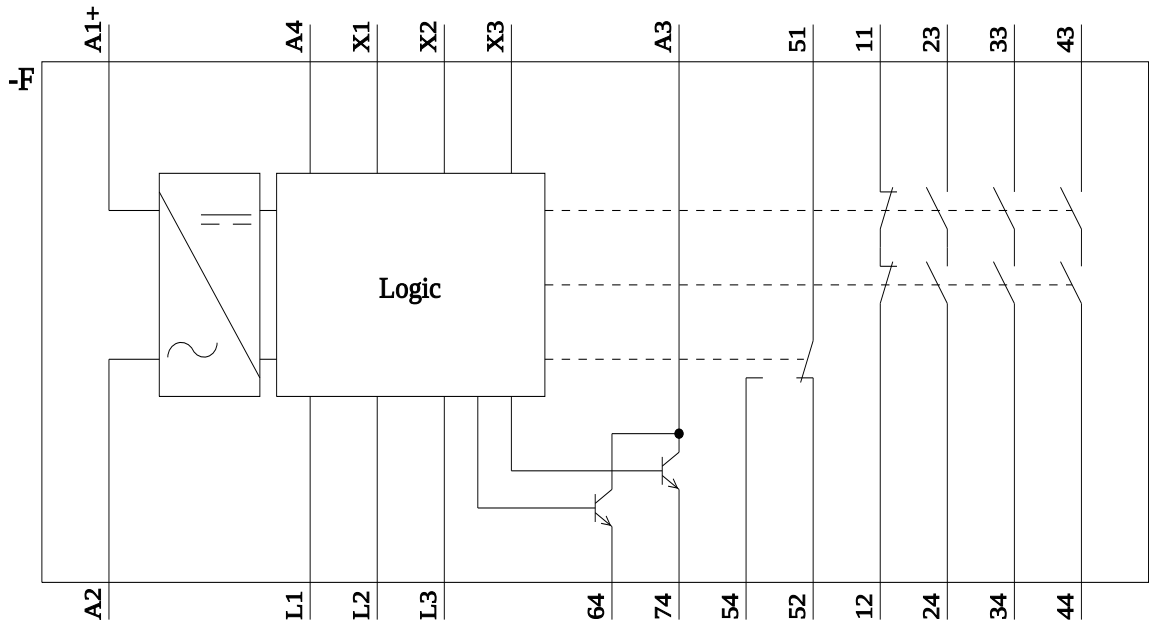
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