SIEMENS

## Product data sheet 3SK1220-1AB40


SIRIUS SAFETY RELAY ADVANCED EXPANSION UNIT INPUT EXTENSION FOR ONE ADDITIONAL 2-CHANNEL OR TWO 1-CHANNEL SENSORS US = 24 V DC SCREW CONNECTION

| General technical details: | | |
|---|---|---|
| **product brand name** | | SIRIUS |
| **product designation** | | safety relays |
| **Design of the product** | | Expansion unit |
| **protection class IP / of the housing** | | IP20 |
| **Protection against electrical shock** | | finger-safe |
| **Insulation voltage / rated value** | V | 50 |
| **Ambient temperature** | | |
| • during storage | °C | -40 … +80 |
| • during operating | °C | -25 … +60 |
| **Air pressure** | | |
| • according to SN 31205 | kPa | 90 … 106 |
| **Relative humidity** | | |
| • during operating phase | % | 10 … 95 |
| **Installation altitude / at a height over sea level / maximum** | m | 2,000 |
| **Resistance against vibration / according to IEC 60068-2-6** | | 5 ... 500 Hz: 0,75 mm |
| **Resistance against shock** | | 10g / 11 ms |
| **Impulse voltage resistance / rated value** | V | 800 |
| **EMC emitted interference** | | IEC 60947-5-1, Class A |

| | | |
|---|---|---|
| **Installation environment relating to 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. |
| **Overvoltage class** | | Installation category III |
| **Degree of pollution** | | 3 |
| **Item designation** | | |
| • according to DIN EN 61346-2 | | F |
| **Number of sensor inputs** | | |
| • 1-channel or 2-channel | | 1 |
| **Type of the safety-related wiring / of the inputs** | | single-channel and two-channel |
| **Product feature / transverse contact-secure** | | Yes |
| **Safety Integrity Level (SIL) / according to IEC 61508** | | SIL3 |
| **Performance level (PL) / according to ISO 13849-1** | | e |
| **Category / according to ISO 13849-1** | | 4 |
| **Probability of dangerous failure per hour (PFHD) / with high demand rate / according to EN 62061** | 1/h | 0.1E-8 |
| **Average probability of failure on demand (PFDavg) / with low demand rate / according to IEC 61508** | 1/y | 0.7E-5 |
| **T1 value / for proof test interval or service life / according to IEC 61508** | a | 20 |
| **Hardware fault tolerance / according to IEC 61508** | | 1 |
| **Safety device type / according to IEC 61508-2** | | Type B |
| **Number of outputs / as contact-affected switching element** | | |
| • as NC contact / for reporting function / instantaneous switching | | 0 |
| • as NO contact / for reporting function / instantaneous switching | | 0 |
| • as NC contact / for reporting function / delayed switching | | 0 |
| • as NO contact / for reporting function / delayed switching | | 0 |
| • as NC contact / safety-related / instantaneous switching | | 0 |
| • as NO contact / safety-related / instantaneous switching | | 0 |
| • as NC contact / safety-related / delayed switching | | 0 |
| • as NO contact / safety-related / delayed switching | | 0 |
| **Stop category / according to DIN EN 60204-1** | | 0 |

## General technical details:

| | | |
|---|---|---|
| **Design of the input / start input** | | Yes |
| **Design of the electrical connection / jumper socket** | | No |
| **Cable length / between sensor and electronic evaluation device / with Cu 1.5 mm² and 150 nF/km / maximum** | m | 1,000 |
| **Make time / with automatic start** | | |
| • typical | ms | 60 |
| • for DC / maximum | ms | 60 |

| | | |
|---|---|---|
| **Make time / with automatic start / after mains power cut** | | |
| • typical | ms | 6,500 |
| • maximum | ms | 6,500 |
| **Make time / with monitored start** | | |
| • maximum | ms | 60 |
| • typical | ms | 60 |
| **Backslide delay time / after opening of the safety circuits / typical** | ms | 40 |
| **Recovery time / after opening of the safety circuits / typical** | ms | 30 |
| **Pulse duration** | | |
| • of the sensor input / minimum | ms | 60 |
| • of the ON pushbutton input / minimum | s | 0.15 |

## Control circuit:

| | | |
|---|---|---|
| **Type of voltage / of the controlled supply voltage** | | DC |
| **Control supply voltage** | | |
| • for DC / rated value | V | 24 |
| **operating range factor control supply voltage rated value / of the magnet coil** | | |
| • for DC | | 0.8 … 1.2 |
| **Active power loss / typical** | W | 1.2 |

## Installation/mounting/dimensions:

| | | |
|---|---|---|
| **mounting position** | | any |
| **Distance, to be maintained, to earthed part / sidewards** | mm | 5 |
| **Distance, to be maintained, to the ranks assembly / sidewards** | mm | 0 |
| **Type of mounting** | | screw and snap-on mounting |
| **Width** | mm | 17.5 |
| **Height** | mm | 100 |
| **Depth** | mm | 121.6 |

## Connections:

| | | |
|---|---|---|
| **Design of the electrical connection** | | screw-type terminals |
| **Type of the connectable conductor cross-section** | | |
| • solid | | 1x (0.5 ... 2.5 mm²), 2x (1.0 ... 1.5 mm²) |
| • finely stranded | | |
| • with wire end processing | | 1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.0 mm²) |
| **Type of the connectable conductor cross-section / for AWG conductors** | | |
| • solid | | 1x (20 ... 14), 2x (18 ... 16) |

## Product Function:

| | | |
|---|---|---|
| **Product function / parameterizable** | | Sensor floating / sensor non-floating, monitored start / autostart, 1-channel / 2-channel sensor connection, cross-circuit detection, startup testing, antivalent sensors, 2-hand switches |
| **Suitability for use / device connector 3ZY12** | | Yes |
| **Suitability for interaction / pressing control** | | No |
| **Suitability for use** | | |
| • safety cut-out switch | | Yes |
| • monitoring of floating sensors | | Yes |
| • monitoring of non-floating sensors | | Yes |
| • magnetically operated switches monitoring | | Yes |
| • safety-related circuits | | Yes |

## Certificates/approvals:

| | | |
|---|---|---|
| **Verification of suitability** | | |
| • TÜV (German technical inspectorate) certificate | | Yes |
| • UL-registration | | Yes |

| General Product Approval | EMC | Declaration of Conformity | Test Certificates |
|---|---|---|---|
| CSA UL | C-TICK | EG-Konf. | Type Test Certificates/Test Report |

## Further information:

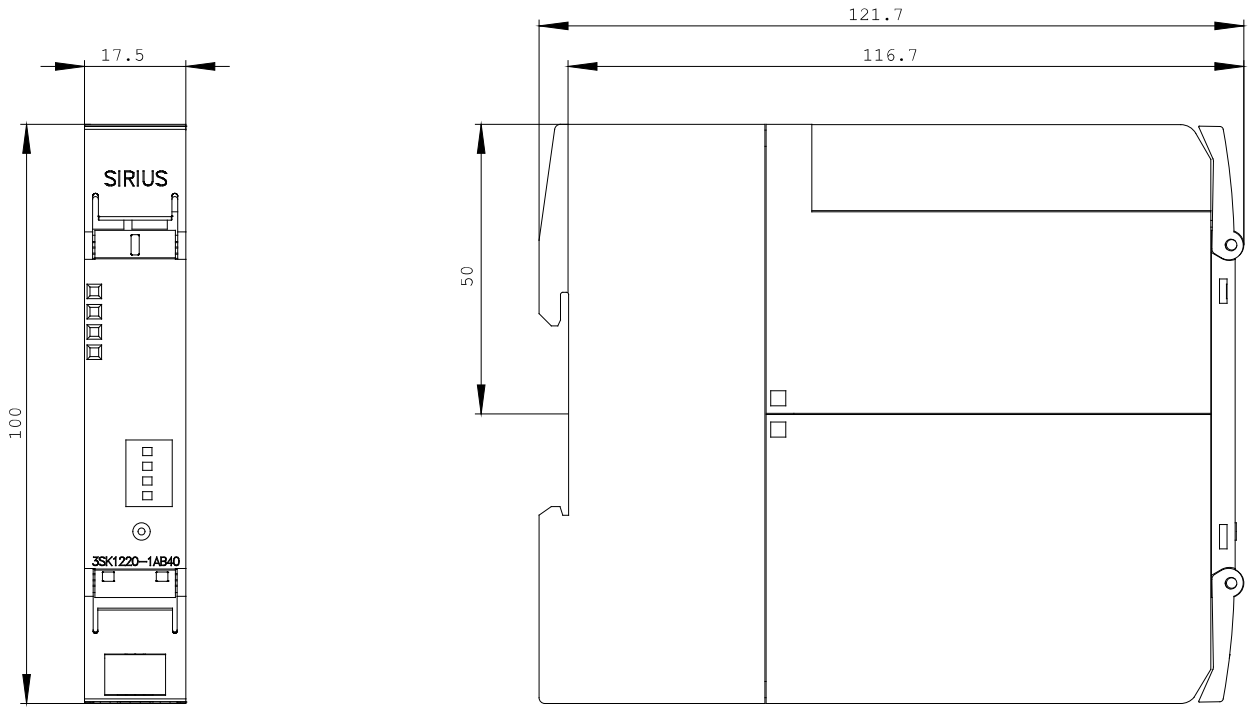
**Information- and Downloadcenter (Catalogs, Brochures,...)**
http://www.siemens.com/industrial-controls/catalogs

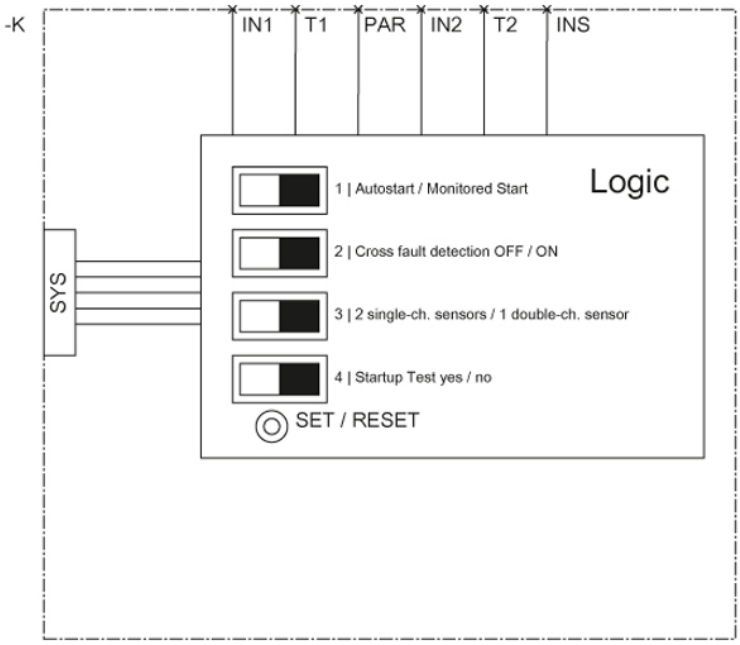
**Industry Mall (Online ordering system)**
http://www.siemens.com/industrial-controls/mall

**Cax online generator:**
http://www.siemens.com/cax

**Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**
http://support.automation.siemens.com/WW/view/en/3SK1220-1AB40/all

**Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, ...)**
http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3SK1220-1AB40

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