



SIRIUS SAFETY RELAY BASIC UNIT ADVANCED SERIES WITH TIME DELAY 0.05-3S ELECTRONIC ENABLING CIRCUITS 2 INSTANTANEOUS 2 DELAYED US = 24 V DC SCREW TERMINAL

Figure similar

| General technical data:                                 |  |
|---|--|
| product brand name                                      | SIRIUS   |
| Product designation                                     | safety relays  |
| Design of the product                                   | For autonomous safety applications   |
| Protection class IP of the enclosure                    | IP20   |
| Protection against electrical shock                     | finger-safe  |
| Insulation voltage Rated value                          | 50 V   |
| Ambient temperature                                     |  |
| • during storage  | -40 ... +80 °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              | 5 ... 500 Hz: 0,75 mm  |
| Shock resistance  | 10g / 11 ms  |
| Surge voltage resistance Rated value                    | 500 V  |
| EMC emitted interference                                | IEC 60947-5-1, Class A   |
| 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. |
| Overvoltage category                                    | Installation category III  |
| Degree of pollution                                     | 3  |
| Number of sensor inputs 1-channel or 2-channel          | 1  |
| Design of the cascading                                 | yes  |

|   |                                |
|---|--------------------------------|
| <b>Type of the safety-related wiring of the inputs</b>  | single-channel and two-channel |
| <b>Product property cross-circuit-proof</b>   | Yes                            |
| <b>Safety Integrity Level (SIL)</b>   |                                |
| • acc. to IEC 61508   | SIL3                           |
| • for delayed release circuit acc. to IEC 61508   | SIL3                           |
| <b>Performance level (PL)</b>   |                                |
| • acc. to EN ISO 13849-1  | e                              |
| • for delayed release circuit acc. to EN ISO 13849-1  | e                              |
| <b>Category acc. to EN ISO 13849-1</b>  | 4                              |
| <b>Safe failure fraction (SFF)</b>  | 99 %                           |
| <b>PFHD with high demand rate acc. to EN 62061</b>  | 0.0000000015 1/h               |
| <b>Average probability of failure on demand (PFDavg) with low demand rate acc. to IEC 61508</b> | 0.000007 1/y                   |
| <b>T1 value for proof test interval or service life acc. to IEC 61508</b>                       | 20 y                           |
| <b>Hardware fault tolerance acc. to IEC 61508</b>   | 1                              |
| <b>Safety device type acc. to IEC 61508-2</b>   | Type B                         |
| <b>Number of outputs as contact-affected switching element</b>                                  |                                |
| • as NC contact   |                                |
| — for signaling function instantaneous contact  | 0                              |
| — for signaling function delayed switching  | 0                              |
| — safety-related instantaneous contact  | 0                              |
| — safety-related delayed switching  | 0                              |
| • as NO contact   |                                |
| — for signaling function instantaneous contact  | 0                              |
| — for signaling function delayed switching  | 0                              |
| <b>Number of outputs as contact-less semiconductor switching element</b>                        |                                |
| • safety-related  |                                |
| — delayed switching   | 2                              |
| — instantaneous contact   | 2                              |
| • for signaling function instantaneous contact  | 0                              |
| <b>Stop category acc. to DIN EN 60204-1</b>   | 0 / 1                          |

#### General technical data:

|   |     |
|---|-----|
| <b>Design of input</b>                              |     |
| • cascading input/functional switching              | Yes |
| • feedback input                                    | Yes |
| • Start input                                       | Yes |
| <b>Type of electrical connection Plug-in socket</b> | No  |

|  |              |
|--|--------------|
| <b>Operating frequency maximum</b>   | 2 000 1/h    |
| <b>Switching capacity current</b>  |              |
| • of semiconductor outputs at DC-13 at 24 V  | 2 A          |
| <b>Design of the fuse link for short-circuit protection of the NO contacts of the relay outputs required</b> | not required |
| <b>Cable length</b>  |              |
| • with Cu 1.5 mm <sup>2</sup> and 150 nF/km per sensor circuit maximum                                       | 4 000 m      |
| <b>Make time with automatic start</b>  |              |
| • for DC maximum   | 85 ms        |
| <b>Make time with automatic start after power failure</b>  |              |
| • typical  | 6 500 ms     |
| • maximum  | 6 500 ms     |
| <b>Make time with monitored start</b>  |              |
| • maximum  | 85 ms        |
| <b>Backslide delay time after opening of the safety circuits typical</b>                                     | 40 ms        |
| <b>Backslide delay time in the event of power failure</b>  |              |
| • typical  | 0 ms         |
| • maximum  | 0 ms         |
| <b>Adjustable OFF-delay time after opening of the safety circuits</b>  | 0.05 ... 3   |
| <b>Recovery time after opening of the safety circuits typical</b>  | 30 ms        |
| <b>Recovery time after power failure typical</b>   | 6.5 s        |
| <b>Pulse duration</b>  |              |
| • of the sensor input minimum  | 60 ms        |
| • of the ON pushbutton input minimum   | 0.15 s       |

#### Control circuit/ Control:

|   |             |
|---|-------------|
| <b>Type of voltage of the control supply voltage</b>                                | DC          |
| <b>Control supply voltage</b>   |             |
| • for DC  |             |
| — Rated value   | 24 V        |
| <b>Operating range factor control supply voltage rated value of the magnet coil</b> |             |
| • for DC  | 0.8 ... 1.2 |
| <b>Active power loss typical</b>  | 2 W         |

#### Installation/ mounting/ dimensions:

|  |                            |
|--|----------------------------|
| <b>mounting position</b>                                       | any                        |
| <b>Required spacing for grounded parts at the side</b>         | 5 mm                       |
| <b>Required spacing with side-by-side mounting at the side</b> | 0 mm                       |
| <b>Mounting type</b>   | screw and snap-on mounting |

|        |          |
|--------|----------|
| Width  | 22.5 mm  |
| Height | 100 mm   |
| Depth  | 121.6 mm |

#### Connections/ Terminals:

|  |  |
|--|--|
| Type of electrical connection  | screw-type terminals   |
| Type of connectable conductor cross-section  | 1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (1.0 ... 1.5 mm <sup>2</sup> ) |
| <ul style="list-style-type: none"> <li>• solid</li> <li>• finely stranded</li> <li>— with core end processing</li> </ul> | 1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.0 mm <sup>2</sup> ) |
| Type of connectable conductor cross-section for AWG conductors   |  |
| <ul style="list-style-type: none"> <li>• solid</li> <li>• stranded</li> </ul>  | 1x (20 ... 14), 2x (18 ... 16)<br>1x (20 ... 16), 2x (20 ... 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, time delay |
| Suitability for operation Device connector 3ZY12  | Yes  |
| Suitability for interaction press control   | Yes  |
| Suitability for use   |  |
| <ul style="list-style-type: none"> <li>• safety switch</li> <li>• Monitoring of floating sensors</li> <li>• Monitoring of non-floating sensors</li> <li>• magnetically operated switch monitoring</li> <li>• safety-related circuits</li> </ul> | Yes<br>Yes<br>Yes<br>Yes<br>Yes  |

#### Certificates/ approvals:

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



CCC



CSA



UL



C-TICK

[Type Examination](#)



EG-Konf.

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

[Type Test Certificates/Test Report](#)

[Confirmation](#)

## Further information

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

<http://www.siemens.com/industrial-controls/catalogs>

### Industry Mall (Online ordering system)

<http://www.siemens.com/industrymall>

### Cax online generator

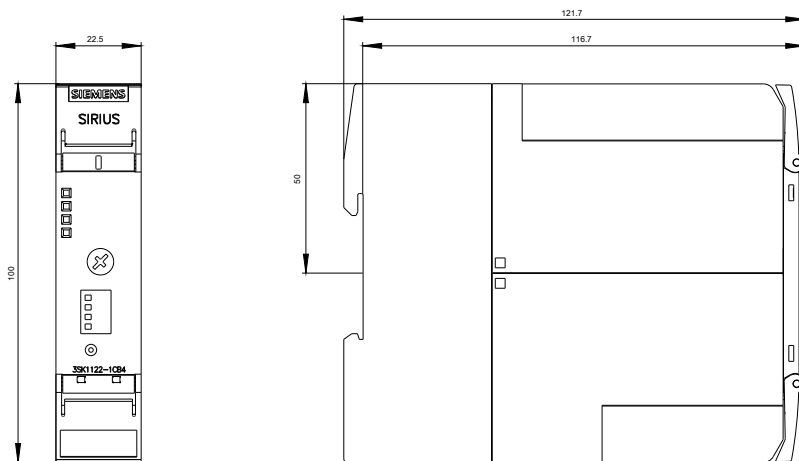
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mfb=3SK11221CB41>

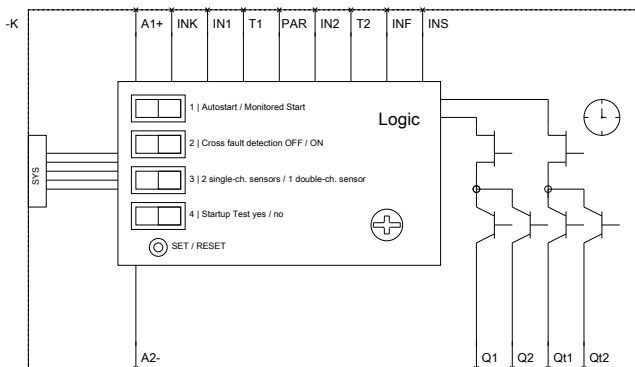
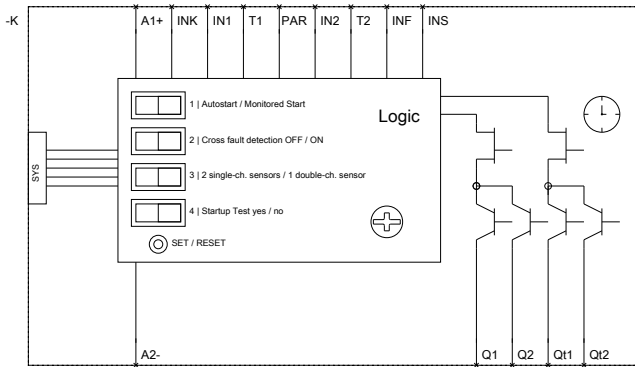
### Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3SK11221CB41>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mfb=3SK11221CB41&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mfb=3SK11221CB41&lang=en)





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