



SIRIUS safety relay Output expansion 4RO with relay enabling circuits 4 NO contacts plus Relay signaling circuit 1 NC contact $U_s = 110-240\text{ V AC/DC}$ screw terminal

| | |
|---|---|
| product brand name | SIRIUS |
| product category | Safety relays |
| product designation | Output expansion |
| design of the product | Relay enabling circuits |
| product type designation | 3SK1 |
| Product Function | |
| suitability for use | |
| • safety-related circuits | Yes |
| General technical data | |
| certificate of suitability UL approval | Yes |
| power loss [W] maximum | 2 W |
| insulation voltage rated value | 300 V |
| degree of pollution | 3 |
| overvoltage category | 3 |
| surge voltage resistance rated value | 4 000 V |
| protection class IP of the enclosure | IP20 |
| shock resistance | 10g / 11 ms |
| vibration resistance according to IEC 60068-2-6 | 5 ... 500 Hz: 0.75 mm |
| operating frequency maximum | 360 1/h |
| reference code according to IEC 81346-2 | F |
| Substance Prohibitance (Date) | 11/05/2012 |
| SVHC substance name | Lead CAS-No. 7439-92-1 Lead monoxide (lead oxide) CAS-No. 1317-36-8 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol CAS-No. 79-94-7 6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol CAS-No. 119-47-1 4,4'-isopropylidenediphenol (Bisphenol A, BPA) CAS-No. 80-05-7 |
| Net Weight | 0.247 kg |
| Ambient conditions | |
| installation altitude at height above sea level maximum | 4 000 m |
| • note | Derating, see Product Notification 109792701 |
| ambient temperature | |
| • during operation | -25 ... +60 °C |
| • during storage | -40 ... +80 °C |
| relative humidity during operation | 10 ... 95 % |
| air pressure according to SN 31205 | 900 ... 1 060 hPa |
| 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 60947-5-1, Class A |

| Safety related data | |
|---|---|
| product function suitable for safety function | Yes |
| safe state | Safety outputs switched off |
| test wear-related service life necessary | Yes |
| function test interval maximum | 1 a |
| stop category according to IEC 60204-1 | 0 |
| proportion of dangerous failures with low demand rate according to SN 31920 | 15 % |
| failure rate [FIT] with low demand rate according to SN 31920 | 130 FIT |
| 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 | 0 1/h |
| ISO 13849 | |
| category according to EN ISO 13849-1 | 4 |
| performance level (PL) | |
| • according to ISO 13849-1 | PL e |
| category | |
| • according to ISO 13849-1 | 4 |
| device type according to ISO 13849-1 | 1 |
| overdimensioning according to ISO 13849-2 necessary | No |
| IEC 61508 | |
| Safety Integrity Level (SIL) | |
| • according to IEC 61508 | 3 |
| safety device type according to IEC 61508-2 | Type A |
| PFHD with high demand rate according to IEC 61508 | 0 1/h |
| Average probability of failure on demand (PFDavg) with low demand rate acc. to IEC 61508 | 1E-6 1/y |
| PFDavg with low demand rate according to IEC 61508 | 1E-6 |
| Safe failure fraction (SFF) | 99 % |
| hardware fault tolerance | |
| • according to IEC 61508 | 1 |
| T1 value | |
| • of service life according to IEC 61508 | 20 a |
| • for proof test interval or service life according to IEC 61508 | 20 a |
| Electrical Safety | |
| touch protection against electrical shock | finger-safe |
| Short-circuit protection | |
| design of the fuse link for short-circuit protection of the NO contacts of the relay outputs required | gL/gG: 6A or circuit breaker type A: 3A or circuit breaker type B: 2A or circuit breaker type C: 1A |
| Inputs | |
| design of input | |
| • feedback input | No |
| Outputs | |
| number of outputs as contact-affected switching element | |
| • as NC contact | |
| — 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 |
| — safety-related instantaneous contact | 4 |
| — safety-related delayed switching | 0 |
| mechanical service life (operating cycles) typical | 10 000 000 |
| thermal current of the switching element with contacts maximum | 5 A |

| | |
|---|--------------------------------|
| number of outputs as contact-less semiconductor switching element <ul style="list-style-type: none"> for signaling function <ul style="list-style-type: none"> — delayed switching | 0 |
| switching capacity current of the NO contacts of the relay outputs at DC-13 <ul style="list-style-type: none"> at 24 V at 115 V at 230 V | 5 A 0.2 A 0.1 A |
| switching capacity current of the NO contacts of the relay outputs at AC-15 <ul style="list-style-type: none"> at 24 V at 115 V at 230 V | 5 A 5 A 5 A |
| total current maximum | 12 A |
| operational current at 17 V minimum | 5 mA |
| Times | |
| make time with automatic start <ul style="list-style-type: none"> typical at AC maximum | 35 ms 35 ms |
| make time with automatic start after power failure <ul style="list-style-type: none"> typical maximum | 35 ms 35 ms |
| backslide delay time in the event of power failure <ul style="list-style-type: none"> typical maximum | 200 ms 300 ms |
| recovery time after power failure typical | 0.32 s |
| Control circuit/ Control | |
| type of voltage of the control supply voltage | AC/DC |
| control supply voltage at AC <ul style="list-style-type: none"> at 50 Hz rated value at 60 Hz rated value | 110 ... 240 V 110 ... 240 V |
| control supply voltage frequency <ul style="list-style-type: none"> 1 rated value 2 rated value | 50 Hz 60 Hz |
| control supply voltage at DC rated value | 110 ... 240 V |
| operating range factor control supply voltage rated value of magnet coil at DC <ul style="list-style-type: none"> initial value full-scale value | 0.85 1.1 |
| operating range factor control supply voltage rated value of magnet coil at AC <ul style="list-style-type: none"> at 50 Hz at 60 Hz | 0.85 ... 1.1 0.85 ... 1.1 |
| ON-delay time <ul style="list-style-type: none"> at AC maximum at DC maximum | 35 ms 35 ms |
| OFF-delay time maximum | 300 ms |
| Installation/ mounting/ dimensions | |
| mounting position | any |
| fastening method | screw and snap-on mounting |
| height | 100 mm |
| width | 22.5 mm |
| depth | 121.6 mm |
| required spacing <ul style="list-style-type: none"> with side-by-side mounting at the side for grounded parts at the side | 0 mm 5 mm |
| Connections/ Terminals | |
| type of electrical connection | screw terminal |
| type of connectable conductor cross-sections | |

- solid
- finely stranded with core end processing
- for AWG cables solid

1x (0.5 ... 2.5 mm²), 2x (1.0 ... 1.5 mm²)

1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.0 mm²)

1x (20 ... 14), 2x (18 ... 16)

type of electrical connection plug-in socket

No

Approvals Certificates

General Product Approval

EMV



EMV

Functional Safety

Test Certificates

Maritime application



[Type Examination Certificate](#)

[Type Test Certificates/Test Report](#)



Maritime application

other

Railway



[Confirmation](#)

[Confirmation](#)

Further information

Information on the packaging

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

Information for data generation and storage

<https://support.industry.siemens.com/cs/ww/en/view/109995012>

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=3SK1211-1BW20>

Cax online generator

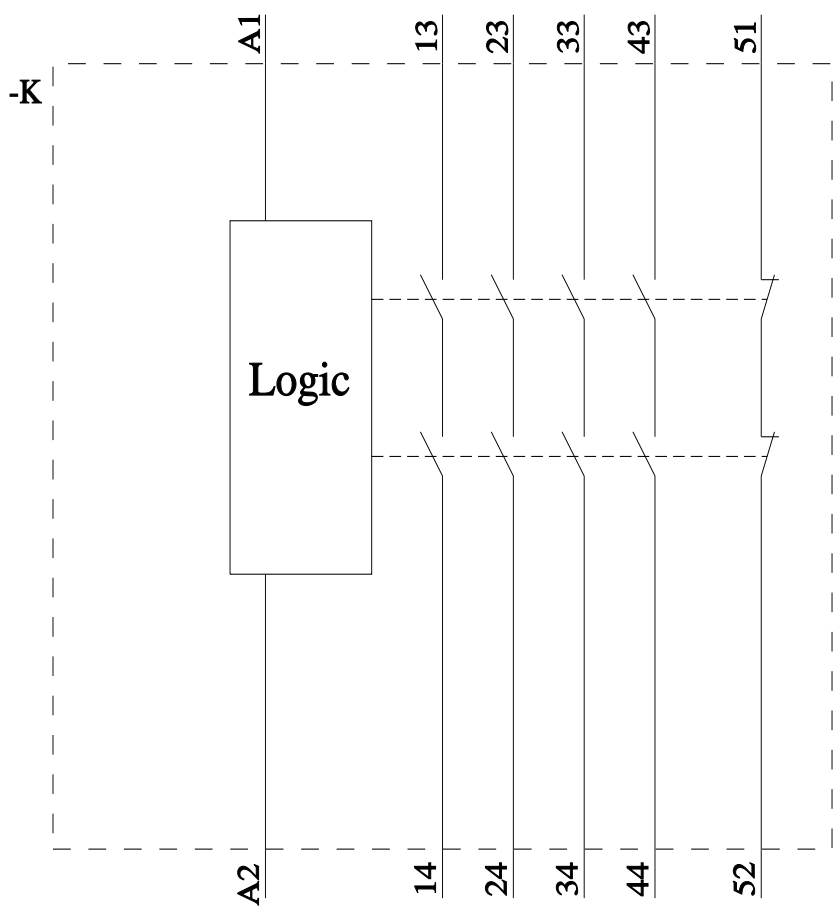
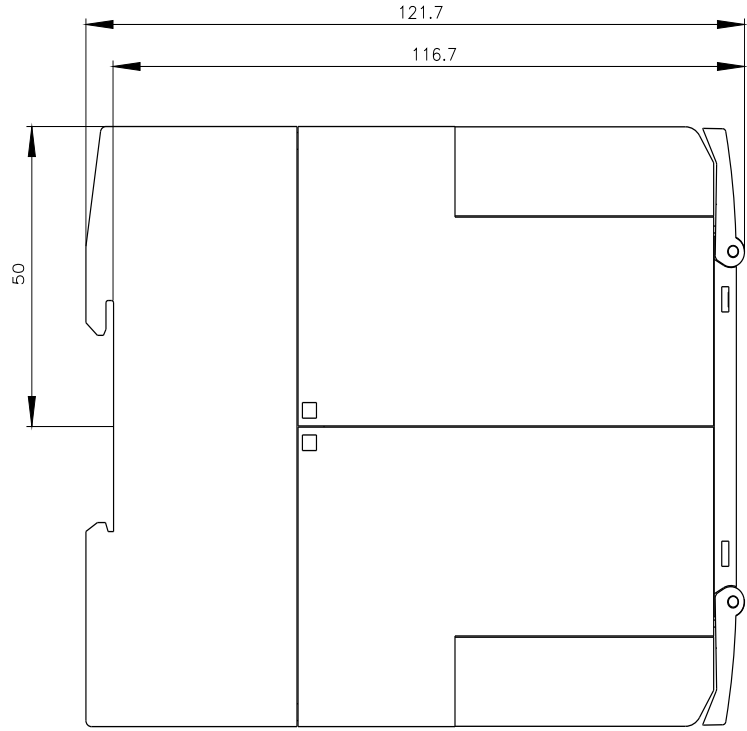
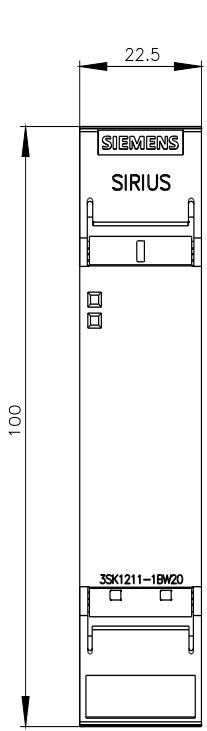
<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3SK1211-1BW20>

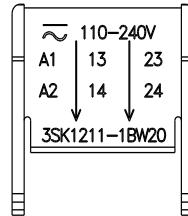
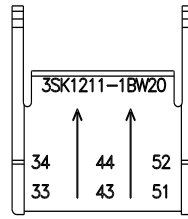
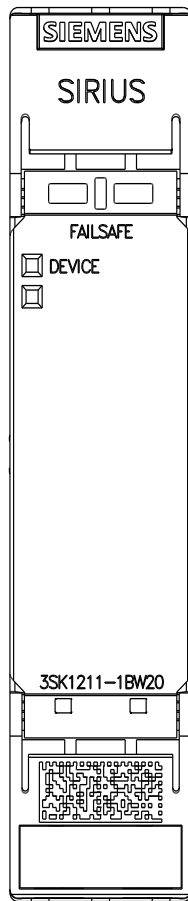
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3SK1211-1BW20>

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

https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3SK1211-1BW20&lang=en





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