SIEMENS

Data sheet 3SK1211-1BW20



SIRIUS safety relay Output expansion 4RO with relay enabling circuits 4 NO contacts plus Relay signaling circuit 1 NC contact Us = 110-240 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
mechanical service life (operating cycles) typical	10 000 000
thermal current of the switching element with contacts maximum	5 A
reference code according to IEC 81346-2	F
Substance Prohibitance (Date)	11/05/2012
SVHC substance name	Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol - 79-94-7 6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol - 119-47-1 4,4'-isopropylidenediphenol (Bisphenol A, BPA) - 80-05-7
Weight	0.247 kg
Ambient conditions	
installation altitude at height above sea level maximum	4 000 m; 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	1a
stop category according to IEC 60204-1	0
proportion of dangerous failures with low demand rate according	15 %
to SN 31920	
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	1.7E-9 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	1.7E-9 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	gL/gG: 6A or circuit breaker type A: 3A or circuit breaker type B: 2A or circuit
contacts of the relay outputs required	breaker type C: 1A
Inputs design of input	
design of input	No
• feedback input	No
Outputs	
number of outputs as contact-affected switching element	
as NC contact for signaling function delayed switching	0
— for signaling function delayed switching	0
— safety-related instantaneous contact	0
safety-related delayed switching as NO contact.	0
as NO contact for signaling function instantaneous contact	0
for signaling function instantaneous contact for signaling function delayed switching	0
— for signaling function delayed switching	0
— safety-related instantaneous contact	4
— safety-related delayed switching	0
number of outputs as contact-less semiconductor switching element	
• for signaling function	
— delayed switching	0
switching capacity current of the NO contacts of the relay outputs at DC-13	

at 24 Vat 115 V	5 A 0.2 A
• at 230 V	0.1 A
switching capacity current of the NO contacts of the relay outputs at AC-15	U.TA
• at 24 V	5 A
• at 115 V	5 A
• at 230 V	5 A
total current maximum	12 A
operational current at 17 V minimum	5 mA
Times	
make time with automatic start	
• typical	35 ms
at AC maximum	35 ms
make time with automatic start after power failure	
• typical	35 ms
• maximum	35 ms
backslide delay time in the event of power failure	
• typical	200 ms
• maximum	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	
• at 50 Hz rated value	110 240 V
• at 60 Hz rated value	110 240 V
control supply voltage frequency	
• 1 rated value	50 Hz
• 2 rated value	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	
• initial value	0.85
full-scale value	1.1
operating range factor control supply voltage rated value of magnet coil at AC	
● at 50 Hz	0.85 1.1
• at 60 Hz	0.85 1.1 0.85 1.1
at 60 Hz ON-delay time	0.85 1.1
at 60 Hz ON-delay time at AC maximum	0.85 1.1 35 ms
at 60 Hz ON-delay time at AC maximum at DC maximum	0.85 1.1 35 ms 35 ms
at 60 Hz ON-delay time at AC maximum at DC maximum OFF-delay time maximum	0.85 1.1 35 ms
at 60 Hz ON-delay time at AC maximum at DC maximum OFF-delay time maximum Installation/ mounting/ dimensions	0.85 1.1 35 ms 35 ms 300 ms
at 60 Hz ON-delay time at AC maximum at DC maximum OFF-delay time maximum Installation/ mounting/ dimensions mounting position	0.85 1.1 35 ms 35 ms 300 ms
at 60 Hz ON-delay time at AC maximum at DC maximum OFF-delay time maximum Installation/ mounting/ dimensions mounting position fastening method	0.85 1.1 35 ms 35 ms 300 ms any screw and snap-on mounting
at 60 Hz ON-delay time at AC maximum at DC maximum OFF-delay time maximum Installation/ mounting/ dimensions mounting position fastening method height	0.85 1.1 35 ms 35 ms 300 ms any screw and snap-on mounting 100 mm
at 60 Hz ON-delay time at AC maximum at DC maximum OFF-delay time maximum Installation/ mounting/ dimensions mounting position fastening method height width	0.85 1.1 35 ms 35 ms 300 ms any screw and snap-on mounting 100 mm 22.5 mm
at 60 Hz ON-delay time at AC maximum at DC maximum OFF-delay time maximum Installation/ mounting/ dimensions mounting position fastening method height width depth	0.85 1.1 35 ms 35 ms 300 ms any screw and snap-on mounting 100 mm
at 60 Hz ON-delay time at AC maximum at DC maximum OFF-delay time maximum Installation/ mounting/ dimensions mounting position fastening method height width depth required spacing	0.85 1.1 35 ms 35 ms 300 ms any screw and snap-on mounting 100 mm 22.5 mm 121.6 mm
at 60 Hz ON-delay time at AC maximum at DC maximum OFF-delay time maximum Installation/ mounting/ dimensions mounting position fastening method height width depth required spacing with side-by-side mounting at the side	0.85 1.1 35 ms 35 ms 300 ms any screw and snap-on mounting 100 mm 22.5 mm 121.6 mm
at 60 Hz ON-delay time at AC maximum at DC maximum OFF-delay time maximum Installation/ mounting/ dimensions mounting position fastening method height width depth required spacing with side-by-side mounting at the side for grounded parts at the side	0.85 1.1 35 ms 35 ms 300 ms any screw and snap-on mounting 100 mm 22.5 mm 121.6 mm
at 60 Hz ON-delay time at AC maximum at DC maximum OFF-delay time maximum Installation/ mounting/ dimensions mounting position fastening method height width depth required spacing with side-by-side mounting at the side for grounded parts at the side Connections/ Terminals	0.85 1.1 35 ms 35 ms 300 ms any screw and snap-on mounting 100 mm 22.5 mm 121.6 mm 0 mm 5 mm
at 60 Hz ON-delay time at AC maximum at DC maximum OFF-delay time maximum Installation/ mounting/ dimensions mounting position fastening method height width depth required spacing with side-by-side mounting at the side for grounded parts at the side Connections/ Terminals type of electrical connection	0.85 1.1 35 ms 35 ms 300 ms any screw and snap-on mounting 100 mm 22.5 mm 121.6 mm
at 60 Hz ON-delay time at AC maximum at DC maximum OFF-delay time maximum Installation/ mounting/ dimensions mounting position fastening method height width depth required spacing with side-by-side mounting at the side for grounded parts at the side Connections/ Terminals type of electrical connection type of connectable conductor cross-sections	0.85 1.1 35 ms 35 ms 300 ms any screw and snap-on mounting 100 mm 22.5 mm 121.6 mm 0 mm 5 mm
at 60 Hz ON-delay time at AC maximum at DC maximum OFF-delay time maximum Installation/ mounting/ dimensions mounting position fastening method height width depth required spacing with side-by-side mounting at the side for grounded parts at the side Connections/ Terminals type of electrical connection type of connectable conductor cross-sections solid	0.85 1.1 35 ms 35 ms 300 ms any screw and snap-on mounting 100 mm 22.5 mm 121.6 mm 0 mm 5 mm screw terminal 1x (0.5 2.5 mm²), 2x (1.0 1.5 mm²)
at 60 Hz ON-delay time at AC maximum at DC maximum OFF-delay time maximum Installation/ mounting/ dimensions mounting position fastening method height width depth required spacing with side-by-side mounting at the side for grounded parts at the side Connections/ Terminals type of electrical connection type of connectable conductor cross-sections solid finely stranded with core end processing	0.85 1.1 35 ms 35 ms 300 ms any screw and snap-on mounting 100 mm 22.5 mm 121.6 mm 0 mm 5 mm screw terminal 1x (0.5 2.5 mm²), 2x (1.0 1.5 mm²) 1x (0.5 2.5 mm²), 2x (0.5 1.0 mm²)
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Functional Saftey

Test Certificates

Maritime application

Type Examination Certificate

Type Test Certificates/Test Report









other

Railway

Environment



Confirmation

Confirmation

Environmental Confirmations

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

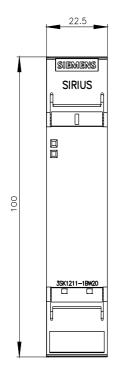
 $\underline{\text{http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en\&mlfb=3SK1211-1BW20}$

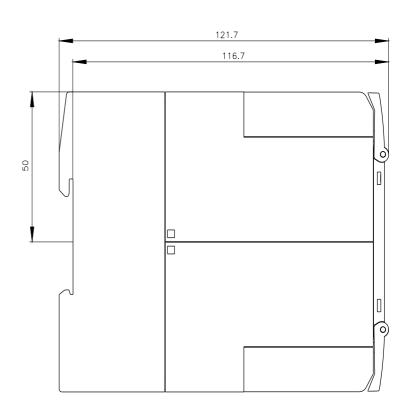
 ${\bf Service \& Support\ (Manuals,\ Certificates,\ Characteristics,\ FAQs,...)}$

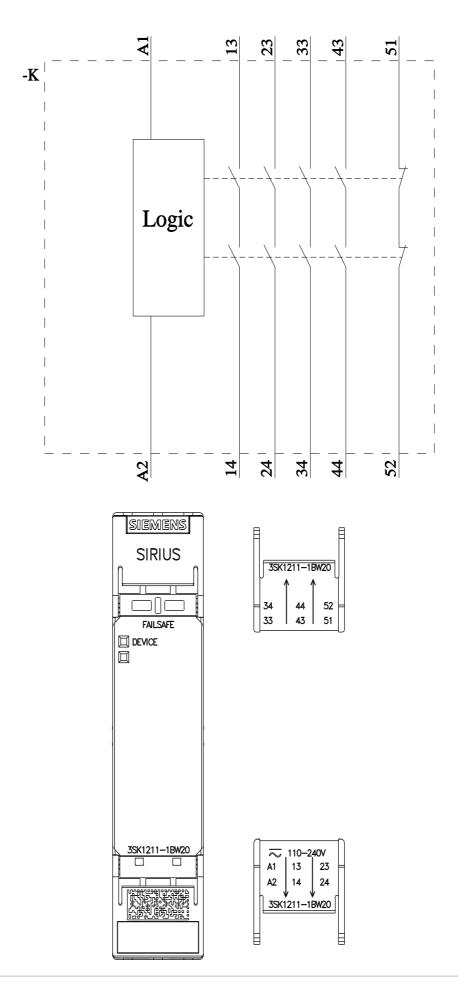
https://support.industry.siemens.com/cs/ww/en/ps/3SK1211-1BW20

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

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







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