SIEMENS

Data sheet 3SK1211-1BB40

SIRIUS safety relay Output expansion 4RO with relay enabling circuits 4 NO contacts plus Relay signaling circuit 1 NC contact Us = 24 V 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	
product function parameterizable	undelayed/delayed (only with system connector)
suitability for use	
● safety-related circuits	Yes
General technical data	
certificate of suitability UL approval	Yes
power loss [W] maximum	2.5 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 4,4'-isopropylidenediphenol (Bisphenol A, BPA) - 80-05-7
Weight	0.229 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 B environments and can also be used in domestic environments.
EMC emitted interference	IEC 60947-5-1, IEC 61000
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	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 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
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 V	5 A

● at 115 V	0.2 A
● at 230 V	0.1 A
switching capacity current of the NO contacts of the relay outputs at AC-15	
● 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	15 ms
● at DC maximum	30 ms
make time with automatic start after power failure	
● typical	15 ms
● maximum	30 ms
backslide delay time in the event of power failure	
● typical	10 ms
● maximum	15 ms
recovery time after power failure typical	0.015 s
Control circuit/ Control	
type of voltage of the control supply voltage	DC
control supply voltage at DC rated value	24 V
operating range factor control supply voltage rated value of magnet coil at DC	
● initial value	0.8
● full-scale value	1.2
ON-delay time	
● at DC maximum	30 ms
OFF-delay time maximum	15 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	
● with side-by-side mounting at the side	0 mm
● for grounded parts at the side	5 mm
Connections/ Terminals	
type of electrical connection	screw terminal
type of connectable conductor cross-sections	
● solid	1x (0.5 ... 2.5 mm²), 2x (1.0 ... 1.5 mm²)
● finely stranded with core end processing	1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.0 mm²)
● for AWG cables solid	1x (20 ... 14), 2x (18 ... 16)
type of electrical connection plug-in socket	No

Approvals Certificates

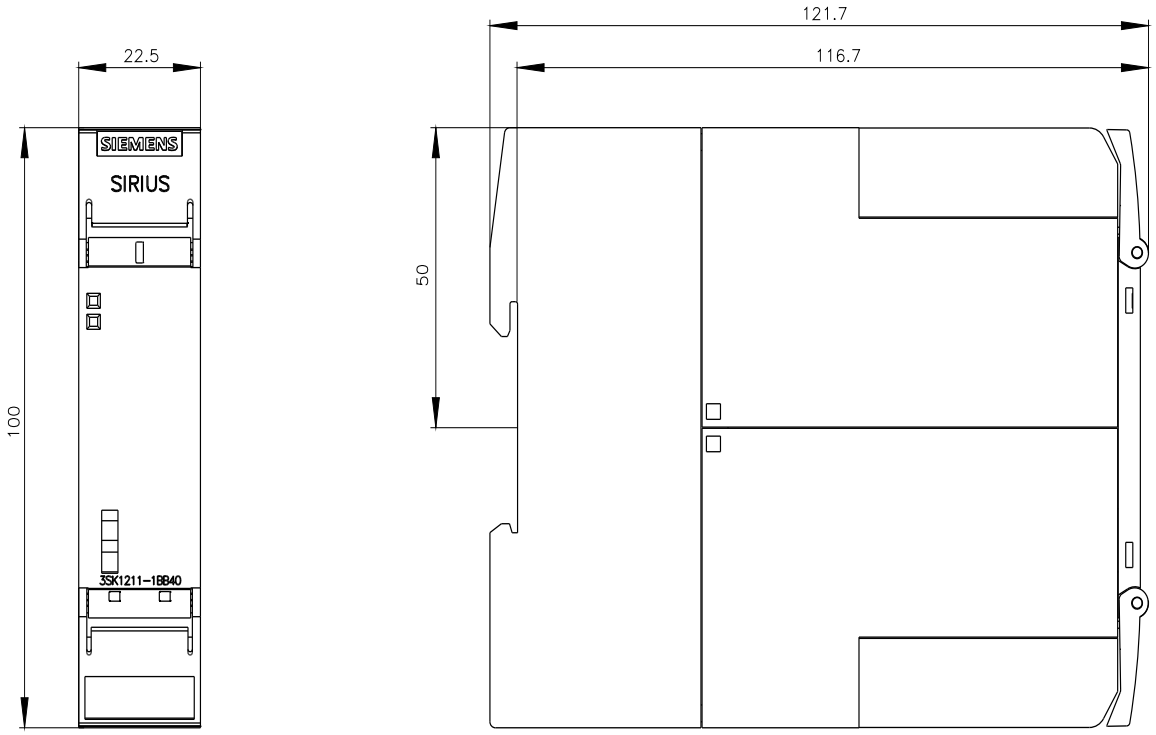
General Product Approval	EMV

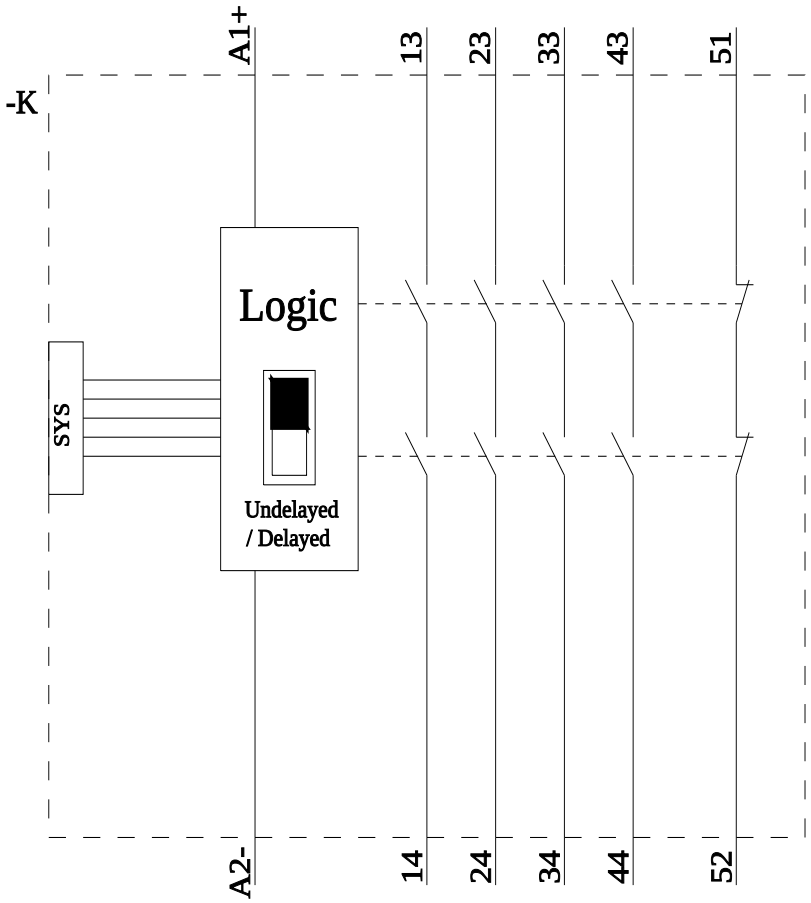
Functional Saftey	Test Certificates	Maritime application
Type Examination Certificate	Type Test Certificates/Test Report	

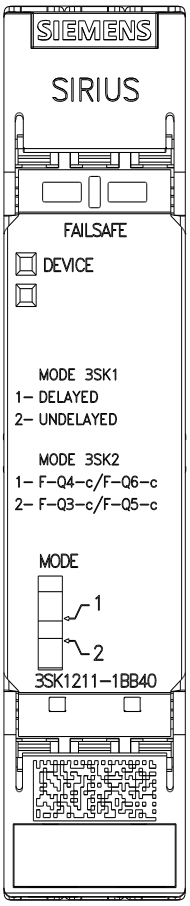
other	Railway	Environment
Confirmation	Confirmation	Environmental Confirmations

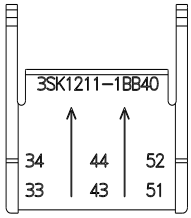
Further information

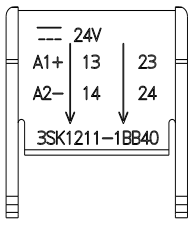
Information on the packaging
https://support.industry.siemens.com/cs/ww/en/view/109813875
Information- and Downloadcenter (Catalogs, Brochures,…)
https://www.siemens.com/ic10
Industry Mall (Online ordering system)
https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3SK1211-1BB40
Cax online generator
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3SK1211-1BB40
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3SK1211-1BB40
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3SK1211-1BB40&lang=en











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