SIEMENS

Data sheet 3SK1112-1BB40

SIRIUS safety relay Basic unit Standard series electronic enabling circuits 2 enabling circuits plus 1 signaling circuit Us = 24 V DC screw terminal

product brand name	SIRIUS
product category	Safety relays
product designation	safety relays
design of the product	Solid-state enabling circuits
General technical data	
protection class IP of the enclosure	IP20
touch 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 according to SN 31205	90 ... 106 kPa
relative humidity during operation	10 ... 95 %
installation altitude at height above sea level maximum	4 000 m; Derating, see Product Notification 109792701
vibration resistance according to IEC 60068-2-6	5 ... 500 Hz: 0.75 mm
shock resistance	10g / 11 ms
surge voltage resistance rated value	800 V
EMC emitted interference	IEC 60947-5-1, Class A
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.
overvoltage category	3
degree of pollution	3
reference code according to IEC 81346-2	F
power loss [W] maximum	2 W
number of sensor inputs 1-channel or 2-channel	1
design of the cascading	yes
type of the safety-related wiring of the inputs	single-channel and two-channel
product feature cross-circuit-proof	Yes
Safety Integrity Level (SIL)	
● according to IEC 62061	3
● according to IEC 61508	3
performance level (PL)	
● according to ISO 13849-1	e
category according to EN ISO 13849-1	4
Safe failure fraction (SFF)	99 %
PFHD with high demand rate according to EN 62061	1E-9 1/h
PFDavg with low demand rate according to IEC 61508	7E-6
T1 value for proof test interval or service life according to IEC 61508	20 y
hardware fault tolerance according to IEC 61508	1
safety device type according to IEC 61508-2	Type B

Inputs/ Outputs	
number of outputs as contact-affected switching element	
● as NO contact	
— safety-related instantaneous contact	0
— safety-related delayed switching	0
number of outputs as contact-less semiconductor switching element	
● safety-related	
— instantaneous contact	2
● for signaling function instantaneous contact	1
stop category according to EN 60204-1	0
design of input	
● cascading input/functional switching	Yes
● feedback input	Yes
● start input	Yes
type of electrical connection plug-in socket	No
operating frequency maximum	2 000 1/h
switching capacity current	
● of semiconductor outputs at DC-13 at 24 V	2 A
design of the fuse link for short-circuit protection of the NO contacts of the relay outputs required	not required
wire length	
● with Cu 1.5 mm² and 150 nF/km per sensor circuit maximum	4 000 m
make time with automatic start	
● at DC maximum	85 ms
make time with automatic start after power failure	
● typical	6 500 ms
● maximum	6 500 ms
make time with monitored start	
● maximum	85 ms
backslide delay time after opening of the safety circuits typical	40 ms
recovery time after opening of the safety circuits typical	30 ms
recovery time after power failure typical	6.5 s
pulse duration	
● of the sensor input minimum	60 ms
● of the ON pushbutton input minimum	0.15 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	0.8 ... 1.2
Installation/ mounting/ dimensions	
mounting position	any
required spacing for grounded parts at the side	5 mm
fastening method	screw and snap-on mounting
width	22.5 mm
height	100 mm
depth	91.6 mm
Connections/ Terminals	
type of electrical connection	screw-type terminals
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)
type of connectable conductor cross-sections at AWG cables	
● solid	1x (20 ... 14), 2x (18 ... 16)

● stranded	1x (20 ... 16), 2x (20 ... 16)

Product Function

product function parameterizable	sensor floating / sensor non-floating, monitored start-up / automatic start, 1-channel / 2-channel sensor connection, cross-circuit detection, startup testing
suitability for operation device connector 3ZY12	No
suitability for interaction press control	No
suitability for use	
● safety switch	Yes
● monitoring of floating sensors	Yes
● monitoring of non-floating sensors	Yes
● magnetically operated switch monitoring	Yes
● safety-related circuits	Yes

Certificates/ approvals

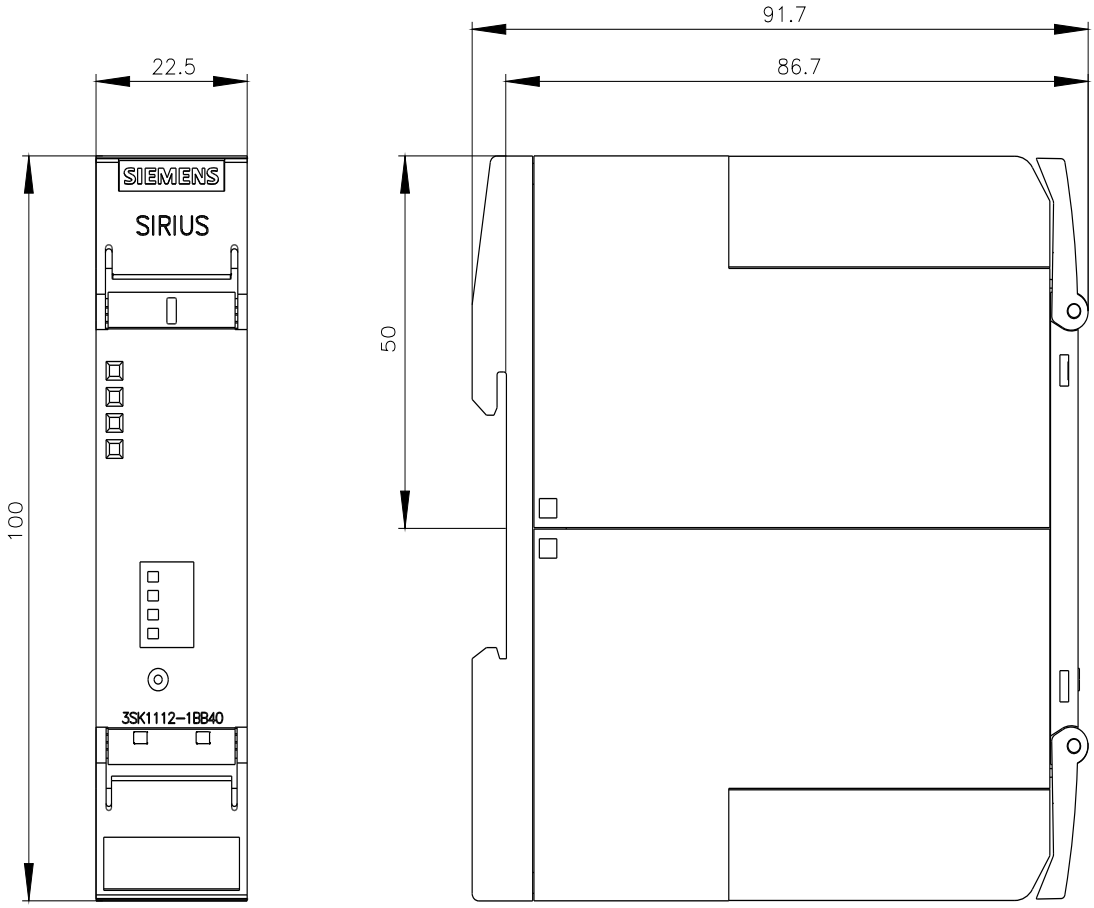
General Product Approval					EMC
CSA	CCC	Confirmation	UL	EAC	RCM

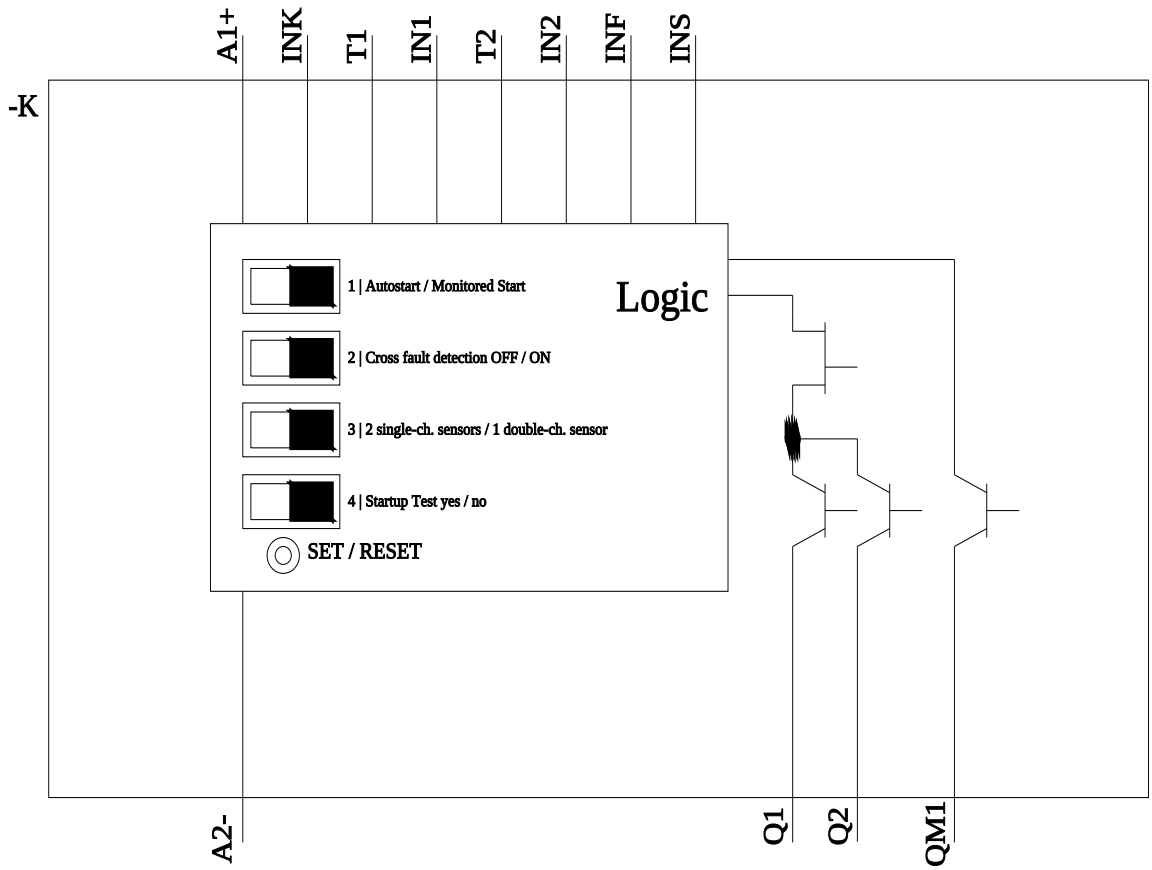
Functional Safety/Safety of Machinery	Declaration of Conformity	Test Certificates	Marine / Shipping		
Type Examination Certificate	EG-Konf.	Type Test Certificates/Test Report	DNV	LRS	RINA

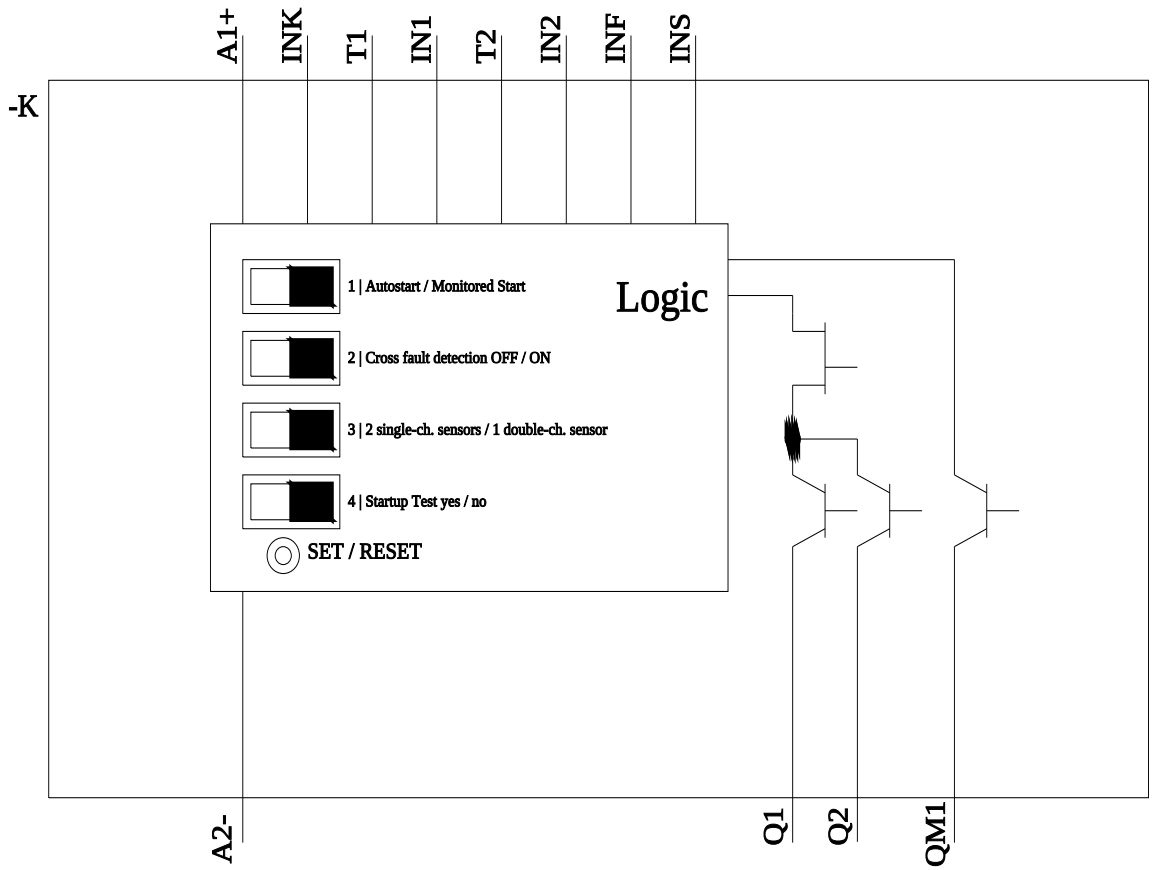
Marine / Shipping	other	Railway
RMRS	Confirmation	Confirmation

Further information

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=3SK1112-1BB40
Cax online generator
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3SK1112-1BB40
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3SK1112-1BB40
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3SK1112-1BB40&lang=en







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