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Data sheet 3SK1213-1AJ20



SIRIUS safety relay Output expansion 3RO Power, with Relay enabling circuits 3 NO contacts plus Relay signaling circuit 1 NC contact Us = 115 V AC 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	4 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	5 g / 10 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	10 A
reference code according to IEC 81346-2	F
Substance Prohibitance (Date)	11/05/2012
SVHC substance name	Lead - 7439-92-1
Weight	0.855 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, Class B
Safety related data	
product function suitable for safety function	Yes
safe state	Safety outputs switched off
test wear-related service life necessary	Yes

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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	40 %
failure rate [FIT] with low demand rate according to SN 31920	100 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	1E-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	1E-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: 16 A or MCB type A: 6 A or MCB type B: 4 A or MCB type C: 4 A
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	3
— 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	6 A
● at 115 V	1.1 A
● at 230 V	0.55 A
switching capacity current of the NO contacts of the relay	

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outputs at AC-15	
● at 24 V	10 A
● at 115 V	10 A
● at 230 V	10 A
total current maximum	30 A
operational current at 17 V minimum	5 mA
Times	
make time with automatic start	
● typical	10 ms
● at AC maximum	15 ms
make time with automatic start after power failure	
● typical	10 ms
● maximum	15 ms
backslide delay time in the event of power failure	
● typical	15 ms
● maximum	15 ms
recovery time after power failure typical	0 s
Control circuit/ Control	
type of voltage of the control supply voltage	AC
control supply voltage at AC	
● at 50 Hz rated value	115 V
● at 60 Hz rated value	115 V
control supply voltage frequency	
● 1 rated value	50 Hz
● 2 rated value	60 Hz
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
ON-delay time	
● at AC maximum	15 ms
OFF-delay time maximum	15 ms
Installation/ mounting/ dimensions	
mounting position	on horizontal standard DIN rail
fastening method	screw and snap-on mounting
height	100 mm
width	90 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 ... 4.0mm²), 2x (0.5 ... 2.5 mm²)
● finely stranded with core end processing	1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.5 mm²)
● for AWG cables solid	1x (20 ... 12), 2x (20 ... 14)
type of electrical connection plug-in socket	No
Approvals Certificates	

General Product Approval					EMV
CCC	UKCA	CE EG-Konf.	cULus	EAC	RCM

Functional Saftey	Test Certificates	Maritime application

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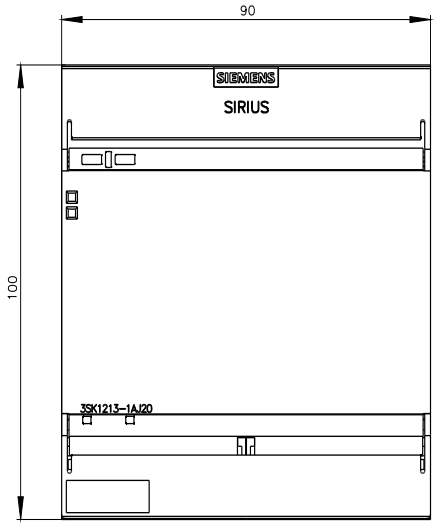
Type Examination Certificate | Type Test Certificates/Test Report

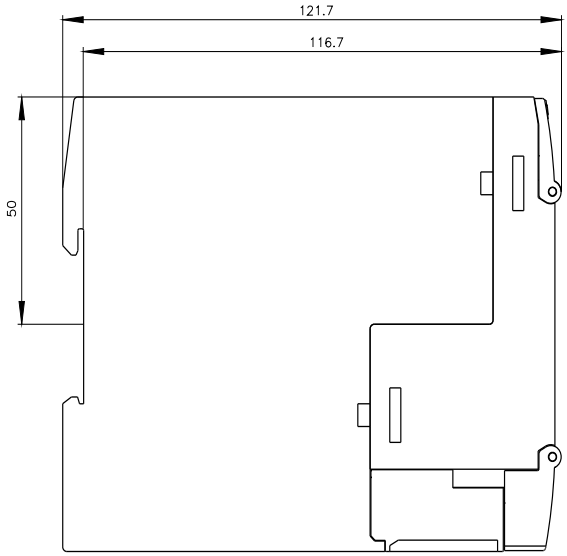
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other	Railway	Environment
产品合格 QC PASS	Confirmation	Confirmation	Environmental Confirmations

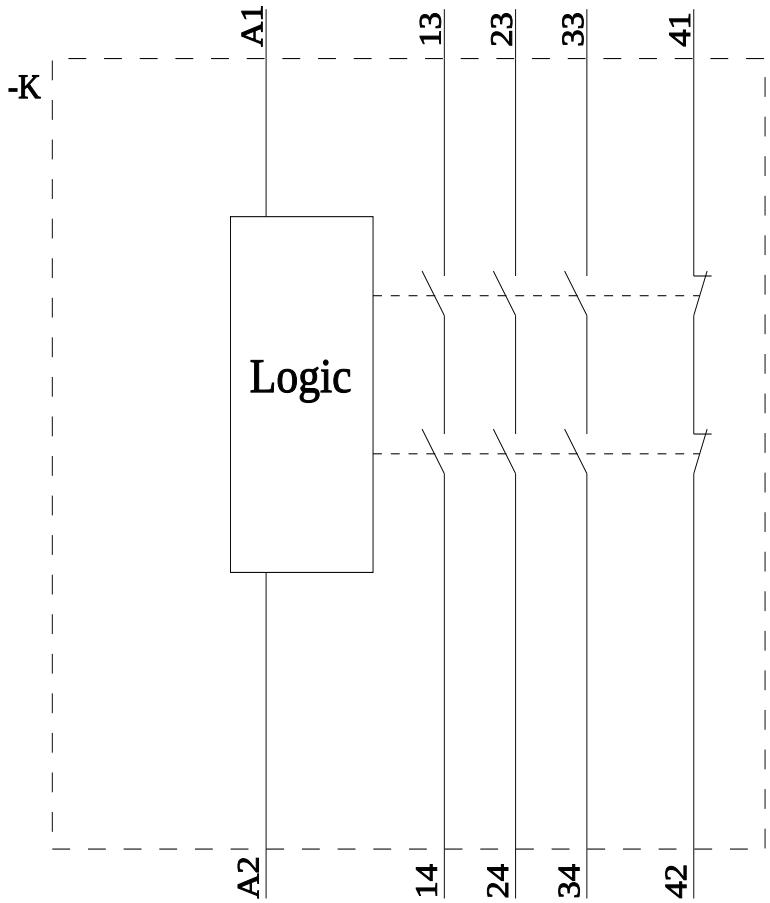
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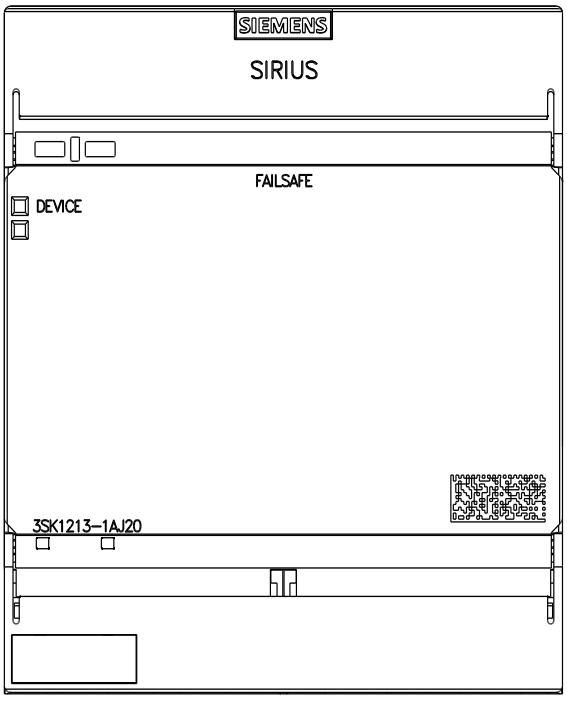
Information on the packaging
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Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
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Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
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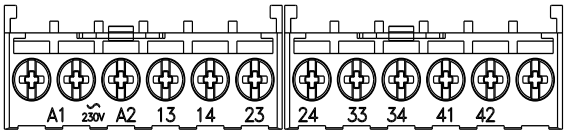




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