SIEMENS

Data sheet 3SK1111-1AW20

SIRIUS safety relay Basic unit Standard series Relay enabling circuits 3 NO contacts plus Relay signaling circuit 1 NC contact Us = 110 - 240 V AC/DC 50/60 Hz screw terminal

product brand name	SIRIUS
product category	Safety relays
product designation	safety relays
design of the product	Relay enabling circuits
General technical data	
protection class IP of the enclosure	IP20
touch protection against electrical shock	finger-safe
insulation voltage rated value	300 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	4 000 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	2.5 W
number of sensor inputs 1-channel or 2-channel	1
design of the cascading	none
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	1.5E-9 1/h
PFDavg with low demand rate according to IEC 61508	1E-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 A

Inputs/ Outputs	
number of outputs as contact-affected switching element	
● as NC contact	
— for signaling function instantaneous contact	1
● as NO contact	
— safety-related instantaneous contact	3
— safety-related delayed switching	0
stop category according to EN 60204-1	0
design of input	
● cascading input/functional switching	No
● feedback input	Yes
● start input	Yes
type of electrical connection plug-in socket	No
operating frequency maximum	360 1/h
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
— at AC-15	
— at 115 V	5 A
— at 230 V	5 A
● of the NC contacts of the relay outputs	
— at DC-13	
— at 24 V	1 A
— at 115 V	0.2 A
— at 230 V	0.1 A
— at AC-15	
— at 115 V	1.5 A
— at 230 V	1.5 A
thermal current of the switching element with contacts maximum	5 A
total current maximum	12 A
operational current at 17 V minimum	5 mA
mechanical service life (operating cycles) typical	10 000 000
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
design of the fuse link for short circuit protection of the NC contacts of the relay outputs required	Diazed or Neozed fuses, operating class gL/gG: 6 A or MCB type A: 2 A or MCB type B: 2 A or MCB type C: 1 A
wire length	
● for total of all sensor circuits with Cu 1.5 mm² and 150 nF/km maximum	2 000 m
make time with automatic start	
● typical	110 ms
● at DC maximum	130 ms
● at AC maximum	130 ms
make time with automatic start after power failure	
● typical	110 ms
● maximum	130 ms
make time with monitored start	
● maximum	15 ms
● typical	15 ms
backslide delay time after opening of the safety circuits typical	10 ms
backslide delay time in the event of power failure	
● typical	200 ms
● maximum	300 ms
recovery time after opening of the safety circuits typical	10 ms
recovery time after power failure typical	0.32 s
pulse duration	
● of the sensor input minimum	150 ms
● of the ON pushbutton input minimum	0.015 s

Control circuit/ Control	
type of voltage of the control supply voltage	AC/DC
control supply voltage frequency	
● 1 rated value	50 Hz
● 2 rated value	60 Hz
control supply voltage	
● at DC	
— rated value	110 ... 240 V
● at AC	
— at 50 Hz	
— rated value	110 ... 240 V
— at 60 Hz	
— rated value	110 ... 240 V
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
● at DC	0.85 ... 1.1
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	121.6 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 / monitored start / automatic start
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	No
● magnetically operated switch monitoring	No
● 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

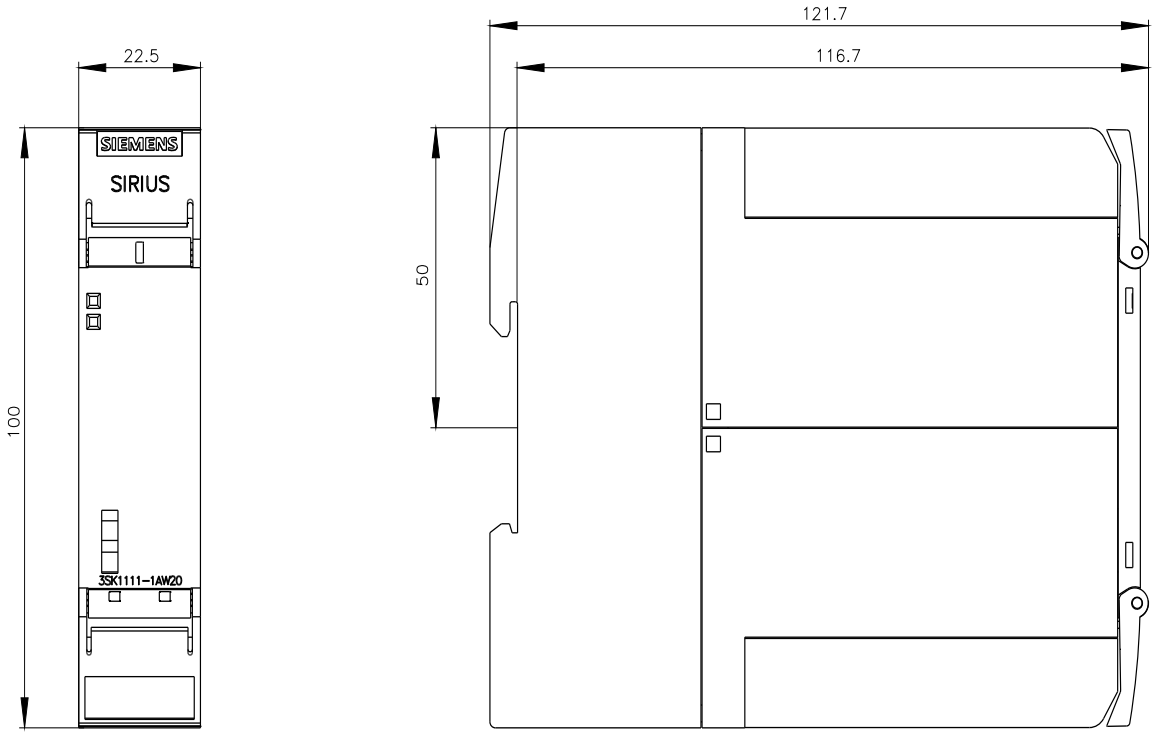
LRS

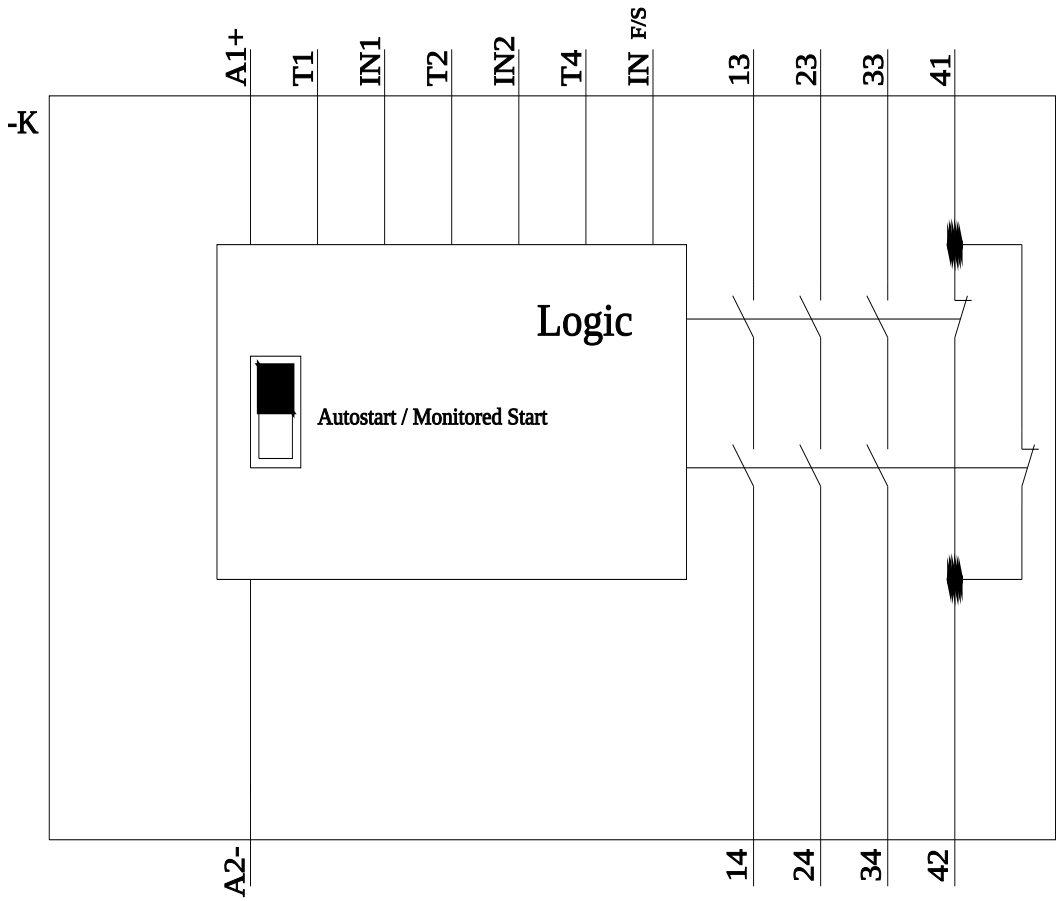
RINA

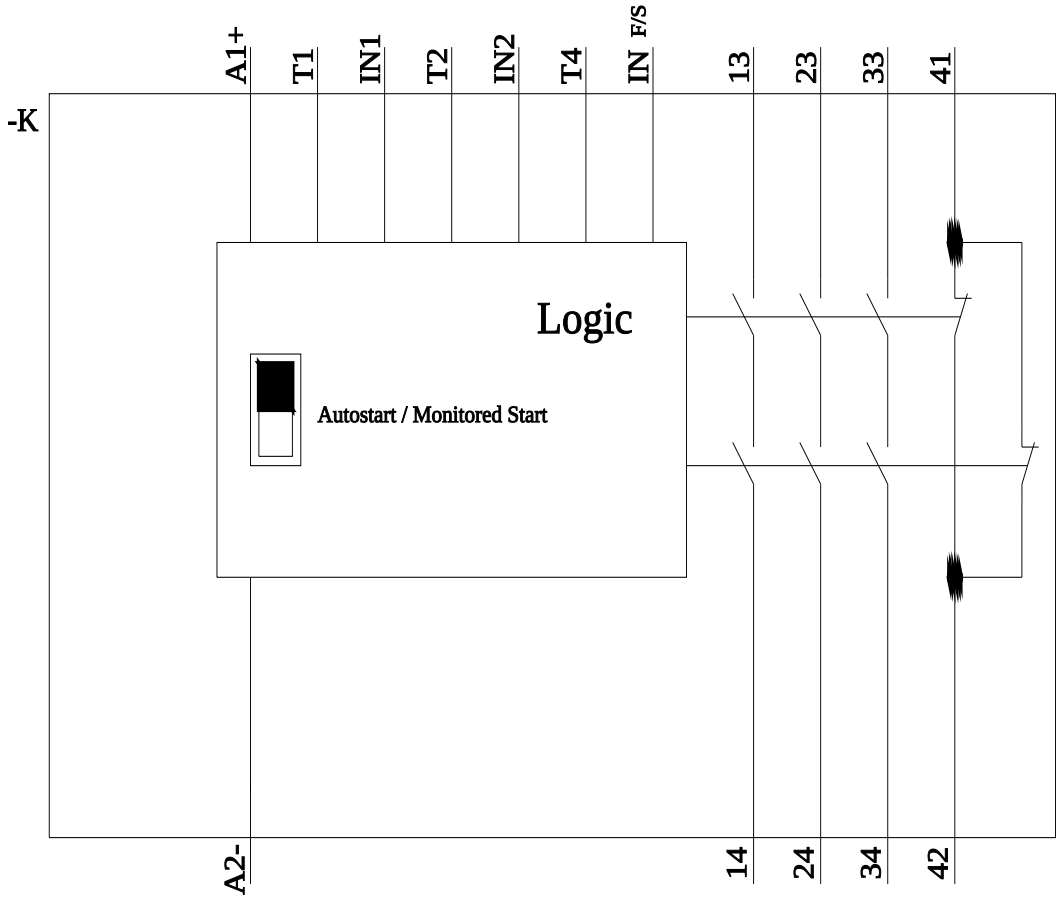
Marine / Shipping	other	Railway
RMRS	Confirmation	Confirmation

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=3SK1111-1AW20
Cax online generator
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3SK1111-1AW20
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3SK1111-1AW20
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3SK1111-1AW20&lang=en







last modified: 9/29/2022