

starter kit for safety relay 3SK2 content: basic unit 3SK2 22.5 mm (3SK2112-2AA10), USB cable software SIRIUS Safety ES V17 Basic for free download



product brand name	SIRIUS
product category	Safety relay
product designation	Basic starter kit
design of the product	comprises 3SK2112-2AA10 basic unit, SIRIUS Safety Basic TIA for download and 3UF7941-0AA00-0 USB PC cable
suitability for use for monitoring of optoelectronic protective devices according to IEC 61496-1	Yes
suitability for use	
• monitoring of floating sensors	Yes
• monitoring of non-floating sensors	Yes
• position switch monitoring	Yes
• EMERGENCY-OFF circuit monitoring	Yes
• valve monitoring	Yes
• opto-electronic protection device monitoring	Yes
• magnetically operated switch monitoring	Yes
• proximity switch monitoring	Yes
• safety-related circuits	Yes
General technical data	
product function	
• EMERGENCY STOP function	Yes
• protective door monitoring	Yes
• protective door monitoring with tumbler	Yes
• muting, 2 sensor-parallel	Yes
• muting, 4 sensor-parallel	Yes
• muting, 4 sensor-sequential	Yes
• monitoring parameterizable	Yes
• evaluation: electro-sensitive protective equipment	Yes
• evaluation: selector switch	Yes
• pressure-sensitive mat monitoring	Yes
• evaluation: two-hand operator panel	Yes
• evaluation: enabling switch	Yes
• monitored start-up	Yes
• two-hand control according to EN 574	Yes
configuration software required	Yes; Safety ES V1.0 and higher
number of function blocks typical	50
insulation voltage rated value	50 V
degree of pollution	3
surge voltage resistance rated value	800 V
protection class IP	IP20
• of the enclosure	IP20
• of the terminal	IP20

shock resistance	15g / 11 ms
vibration resistance according to IEC 60068-2-6	5 ... 500 Hz: 0.75 mm
operating frequency maximum	2 000 1/h
reference code according to IEC 81346-2	F
Substance Prohibitance (Date)	07/01/2006
product function suitable for AS-i Power24V	No
product function diagnostics with CTT2 slave	No
protocol is supported ASIsafe (Safety at work) protocol	No

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
• during transport	-40 ... +80 °C
relative humidity during operation	10 ... 95 %
air pressure according to SN 31205	90 ... 106 kPa

Electromagnetic compatibility

EMC emitted interference according to IEC 60947-1	class A
conducted interference	
• due to burst according to IEC 61000-4-4	2 kV (power ports) / 1 kV (signal ports)
field-based interference according to IEC 61000-4-3	10 V/m
electrostatic discharge according to IEC 61000-4-2	4 kV contact discharge / 8 kV air discharge

Safety related data

Safety Integrity Level (SIL)	
• according to IEC 62061	3
• according to IEC 61508	3
SIL Claim Limit (subsystem) according to EN 62061	3
performance level (PL) according to ISO 13849-1	e
category according to EN ISO 13849-1	4
stop category according to EN 60204-1	0 / 1
diagnostics test interval by internal test function maximum	1 000 s
PFHD with high demand rate according to EN 62061	1E-8 1/h
PFDavg with low demand rate according to IEC 61508	1.5E-5
hardware fault tolerance according to IEC 61508	1
touch protection against electrical shock	finger-safe

Inputs/ Outputs

product function	
• parameterizable inputs	Yes
• parameterizable outputs	Yes
• at the digital outputs short-circuit protection	Yes
number of inputs	
• safety-related	10
• non-safety-related	0
input delay time	0 ... 150 ms
type of digital inputs according to IEC 60947-1	Type 1
ingress acquisition time at digital input maximum	60 ms
input delay time at digital input maximum	150 ms
input voltage at digital input	
• at DC rated value	24 V
• with signal <0> at DC	-3 ... +5 V
• for signal <1> at DC	15 ... 30
input current at digital input	
• for signal <1> typical	2.6 mA
number of outputs	
• safety-related 2-channel	2
• for testing contact-based sensors	2
number of outputs as contact-affected switching element safety-related	
• 1-channel	0
• 2-channel	0
number of outputs as contact-less semiconductor	

switching element		
<ul style="list-style-type: none"> • safety-related 2-channel • non-safety-related 	2 1	
design of the contactless switching element safety-related	P potential	
recovery time of the safe outputs	0 ms	
readback time maximum	400 ms	
light test period	3 ms	
dark period of the common drivers	3 ms	
switching capacity current of semiconductor outputs at DC-13 at 24 V	4 A	
residual current		
<ul style="list-style-type: none"> • maximum • at digital output with signal <0> maximum 	0.1 mA 0.1 mA	
total current maximum	6.5 A	
wire length of the signal cable		
<ul style="list-style-type: none"> • to the inputs <ul style="list-style-type: none"> — shielded maximum — unshielded maximum • to the outputs <ul style="list-style-type: none"> — shielded maximum — unshielded maximum 	1 000 m 600 m 1 000 m 600 m	
Communication/ Protocol		
protocol optional is supported		
<ul style="list-style-type: none"> • PROFIBUS DP protocol • PROFINET IO protocol 	Yes; when using the DP interface module; 64 bit cyclical data Yes; when using the PN interface module; 64-bit cyclic data	
protocol is supported AS-Interface protocol	No	
Control circuit/ Control		
type of voltage	DC	
control supply voltage rated value	24 V	
inrush current peak		
<ul style="list-style-type: none"> • at 24 V 	10 A	
duration of inrush current peak		
<ul style="list-style-type: none"> • at 24 V 	1 ms	
operating power rated value	2.5 W	
Installation/ mounting/ dimensions		
mounting position	any	
fastening method	Snap-mounted to DIN rail or screw-mounted with additional push-in lug	
height	100 mm	
width	22.5 mm	
depth	124.5 mm	
Connections/ Terminals		
product function removable terminal	Yes	
type of electrical connection	spring-loaded terminal (push-in)	
type of connectable conductor cross-sections		
<ul style="list-style-type: none"> • solid • finely stranded with core end processing • for AWG cables solid • for AWG cables stranded 	1x (0.5 ... 1.5 mm ²), 2x (0.5 ... 1.5 mm ²) 1x (0.5 ... 1.0 mm ²), 2x (0.5 ... 1.0 mm ²) 1x (20 ... 16), 2x (20 ... 16) 1x (20 ... 16), 2x (20 ... 16)	
connectable conductor cross-section finely stranded with core end processing	0.5 ... 1 mm ²	
AWG number as coded connectable conductor cross section		
<ul style="list-style-type: none"> • solid • stranded 	20 ... 16 20 ... 16	
Certificates/ approvals		
General Product Approval	Functional Safety/Safety of Machinery	Declaration of Conformity



[Confirmation](#)



[Type Examination Certificate](#)



Declaration of Conformity

other



EG-Konf.

[Confirmation](#)

Further information

Siemens has decided to exit the Russian market (see here).

<https://press.siemens.com/global/en/pressrelease/siemens-wind-down-russian-business>

Siemens is working on the renewal of the current EAC certificates.

Please contact your local Siemens office on the status of validity of the EAC certification if you intend to import or offer to supply these products to an EAC relevant market (other than the sanctioned EAEU member states Russia or Belarus).

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=3SK2941-2AA11>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3SK2941-2AA11>

Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3SK2941-2AA11>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3SK2941-2AA11&lang=en

last modified:

8/11/2023