SIEMENS

Data sheet 3RK3111-2AA10

SIRIUS, central unit 3RK3 Basic for modular Safety system 3RK3 4/8 F-DI,1F-RO,1 F-DO,24 V DC parameterizable using software Safety ES 45 mm overall width Spring-type terminal Up to SIL3 (IEC 61508) Up to Performance Level E (ISO 13849-1)

Product brand name	SIRIUS
Product category	Modular Safety System
Product designation	Central unit
Design of the product	4/8 F-DI, 1 F-RO, 1 F-DO

General technical data

Product function	
• EMERGENCY STOP function	Yes
• protective door monitoring	Yes
• protective door monitoring with tumbler	No
• muting, 2 sensor-parallel	No
• muting, 4 sensor-parallel	No
• muting, 4 sensor-sequential	No
• Monitoring parameterizable	No
• 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 acc. to EN 574	Yes
Number of function blocks typical	300
Insulation voltage rated value	300 V
Degree of pollution	3
Surge voltage resistance rated value	2 500 V
Consumed current for rated value of supply voltage	1.685 A
Protection class IP	IP20
• of the enclosure	IP20
• of the terminal	IP20
Shock resistance	15g / 11 ms
Vibration resistance acc. to IEC 60068-2-6	5 ... 500 Hz: 0.75 mm
Operating frequency maximum	1 000 1/h
Mechanical service life (switching cycles) typical	10 000 000
Reference code acc. to DIN EN 81346-2	K
Product function suitable for AS-i Power24V	No
Product function Diagnostics with CTT2 slave	No
Protocol is supported ASIsafe (Safety at work) protocol	No
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
• proximity switch monitoring	Yes
• safety-related circuits	Yes
Suitability for use for monitoring of optoelectronic protective devices acc. to IEC 61496-1	Yes

Communication/ Protocol

Protocol is supported PROFINET IO protocol	No
Protocol optional is supported PROFIBUS DP protocol	Yes; when using the DP interface module; 32 bit cyclical data
Protocol is supported AS-Interface protocol	No
Amount of data of the cyclic user data	
• for inputs with PROFIBUS DP	32 bit
• for outputs with PROFIBUS DP	32 bit

Control circuit/ Control

Type of voltage	DC
Control supply voltage rated value	24 V
Inrush current peak	

• at 24 V	70 A
Duration of inrush current peak	
• at 24 V	1 ms
Consumed current for rated value of supply voltage without semiconductor output	185 mA
Operating power rated value	4.5 W

Inputs/ Outputs

Product function	
• Parameterizable inputs	Yes
• Parameterizable outputs	Yes
Number of inputs	
• safety-related	8
• non-safety-related	0
Input delay time	0 ... 150 ms
Input recording time at digital input maximum	60 ms
Input delay time at digital input maximum	150 ms
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	1
Number of outputs as contact-less semiconductor switching element	
• safety-related 2-channel	1
• non-safety-related	0
Design of the contactless switching element safety-related	P potential
Pulse duration of the contactless semiconductor contact block for switching off safety-related maximum	1 ms
Recovery time of the safe outputs	420 ms
Period of darkness of the common drivers	1 ms
Switching capacity current of semiconductor outputs at DC-13 at 24 V	1.5 A

Installation/ mounting/ dimensions

Mounting position	vertical
Mounting type	Snap-mounted to DIN rail or screw-mounted with additional push-in lug
Height	113 mm
Width	45 mm
Depth	124 mm

Connections/ Terminals	
Product function removable terminal	Yes
Type of electrical connection	spring-loaded terminals
Type of connectable conductor cross-sections	
• solid	2x (0.25 ... 1.5 mm²)
• finely stranded with core end processing	2x (0.25 ... 1 mm²)
• at AWG conductors solid	2x (24 ... 16)
• at AWG conductors stranded	2x (24 ... 16)
Connectable conductor cross-section finely stranded with core end processing	0.25 ... 1.5 mm²
AWG number as coded connectable conductor cross section	
• solid	24 ... 16
• stranded	24 ... 16
DC resistance of the cable maximum	100 Ω

Safety related data	
Safety Integrity Level (SIL) acc. to IEC 61508	SIL CL 3
SIL Claim Limit (subsystem) acc. to EN 62061	Kat. 4 / SIL3 / Ple
Performance level (PL) acc. to EN ISO 13849-1	e
Category acc. to EN ISO 13849-1	4
Stop category acc. to DIN EN 60204-1	0 / 1
Diagnostics test interval by internal test function maximum	1 000 s
PFHD with high demand rate acc. to EN 62061	0.000000007 1/h
Hardware fault tolerance acc. to IEC 61508	1
T1 value for proof test interval or service life acc. to IEC 61508	20 y
Protection against electrical shock	finger-safe
Category acc. to EN 954-1	4

Short-circuit protection	
Design of the fuse link for short-circuit protection of the NO contacts of the relay outputs required	NH Type 3NA, DIAZED Type 5SB, NEOZED Type 5SE

Electromagnetic compatibility	
Installation environment regarding EMC	This product is suitable for Class A environments only. It can cause undesired radio-frequency interference in residential environments. If this is the case, the user must take appropriate measures.
Conducted interference	
• due to burst acc. to IEC 61000-4-4	2 kV (power ports) / 1 kV (signal ports)
• due to conductor-earth surge acc. to IEC 61000-4-5	2 kV
• due to conductor-conductor surge acc. to IEC 61000-4-5	1 kV

Field-bound parasitic coupling acc. to IEC 61000-4-3	10 V/m
Electrostatic discharge acc. to IEC 61000-4-2	4 kV contact discharge / 8 kV air discharge

Ambient conditions

Installation altitude at height above sea level maximum	2 000 m
Ambient temperature	
• during operation	-20 ... +60 °C
• during storage	-40 ... +85 °C
• during transport	-40 ... +85 °C
Air pressure acc. to SN 31205	70 ... 106 kPa

Certificates/ approvals

General Product Approval				EMC	Functional Safety/Safety of Machinery
CCC	CSA	UL	EAC	RCM	Type Examination Certificate

Functional Safety/Safety of Machinery	Declaration of Conformity	Test Certific-ates	other
Miscellaneous	Miscellaneous	Type Test Certific-ates/Test Report	Confirmation

Profibus

Further information

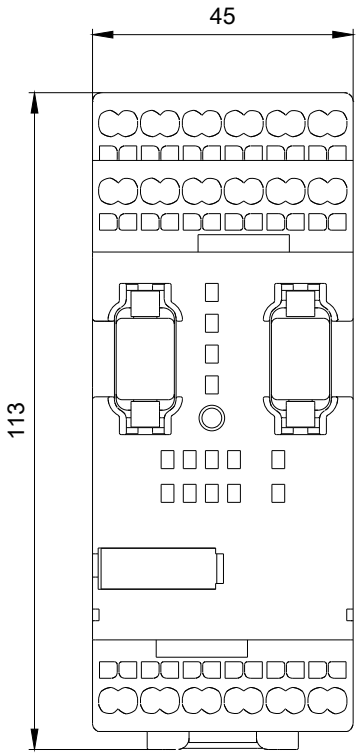
Information- and Downloadcenter (Catalogs, Brochures,…)
https://www.siemens.com/ic10

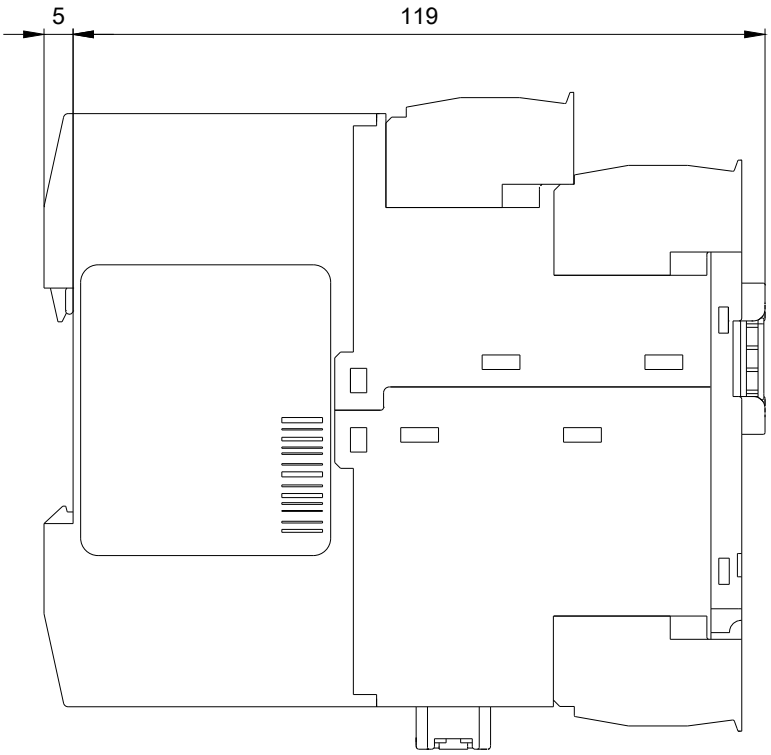
Industry Mall (Online ordering system)
https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RK3111-2AA10

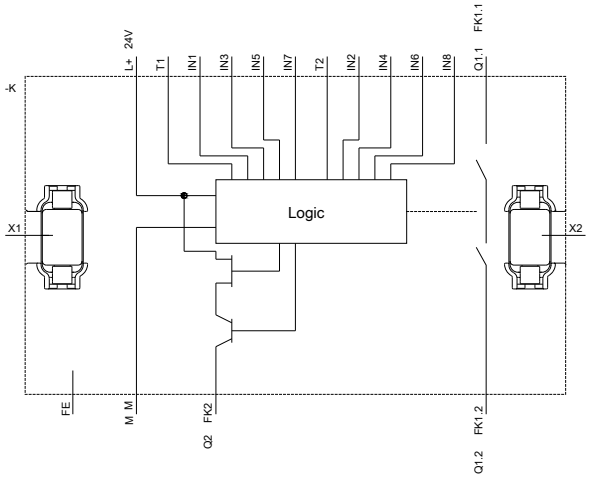
Cax online generator
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RK3111-2AA10

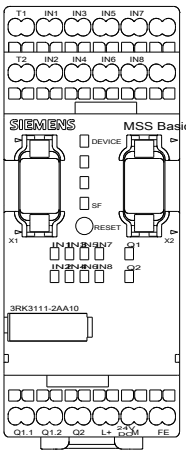
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3RK3111-2AA10

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RK3111-2AA10&lang=en









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