



SIRIUS, Central unit 3RK3 Advanced for modular Safety system
3RK3 4/8 F-DI, 1F-RO, 1 F-DO, 24 V DC Monitoring of ASI slaves
Control of 12 safe outputs on AS-Interface bus parameterizable using
software Safety ES 45 mm width screw terminal Up to SIL3 (IEC
61508) Up to Performance Level E (ISO 13849-1) 9 extension
modules connectable

Product brand name	SIRIUS
Product category	Modular Safety System
Product designation	Central unit

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 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
Product function suitable for AS-i Power24V	Yes
Product function Diagnostics with CTT2 slave	Yes
Protocol is supported ASIsafe (Safety at work) protocol	Yes
Number of safe signals for remote shutdown or cross traffic by means of AS interface	12
Consumed current from profile conductors of the AS-interface	
• at 30 V maximum	45 mA
• at 24 V with AS-i Power24V maximum	45 mA
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
Operating power rated value	4.5 W

Communication/ Protocol

Protocol optional is supported PROFIBUS DP protocol	Yes; when using the DP interface module; 64 bit cyclical data
Protocol is supported AS-interface protocol	Yes
Amount of data of the cyclic user data	
• for inputs with PROFIBUS DP	64 bit
• for outputs with PROFIBUS DP	64 bit

Control circuit/ Control	
Type of voltage	DC
Type of voltage of the control supply voltage	DC
Control supply voltage rated value	24 V
Control supply voltage 1 at DC 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

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
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 2-channel	0
Pulse duration of the contactless semiconductor contact block for switching off safety-related maximum	1 ms
Recovery time of the safe outputs	420 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	111 mm
Width	45 mm
Depth	124 mm



Connections/Terminals	
Product function	
• removable terminal	Yes
• removable terminal for control circuit	Yes
• removable terminal for auxiliary and control circuit	Yes
Type of electrical connection	screw-type terminals
• for auxiliary and control current circuit	screw-type terminals
Type of connectable conductor cross-sections	
• solid	1x (0.5 ... 4.0 mm ²), 2x (0.5 ... 2.5 mm ²)
• finely stranded with core end processing	1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.5 mm ²)
• at AWG conductors solid	2x (20 ... 14)
• at AWG conductors stranded	2x (20 ... 14)
Connectable conductor cross-section finely stranded with core end processing	0.5 ... 2.5 mm ²
AWG number as coded connectable conductor cross section	
• solid	20 ... 14
• stranded	20 ... 14
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
PFHD with high demand rate acc. to EN 62061	0.0000000028 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)

<ul style="list-style-type: none"> • due to conductor-earth surge acc. to IEC 61000-4-5 	2 kV
<ul style="list-style-type: none"> • 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	
<ul style="list-style-type: none"> • during operation 	-20 ... +60 °C
<ul style="list-style-type: none"> • during storage 	-40 ... +85 °C
<ul style="list-style-type: none"> • 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	UL		C-Tick	
			Type Examination Certificate	Miscellaneous

Test Certificates	other	Railway	
Special Test Certificate		Confirmation	Confirmation
	ASi		
		Profibus	

Further information

Information- and Downloadcenter (Catalogs, Brochures,...)

<http://www.siemens.com/industrial-controls/catalogs>

Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RK3131-1AC10>

Cax online generator

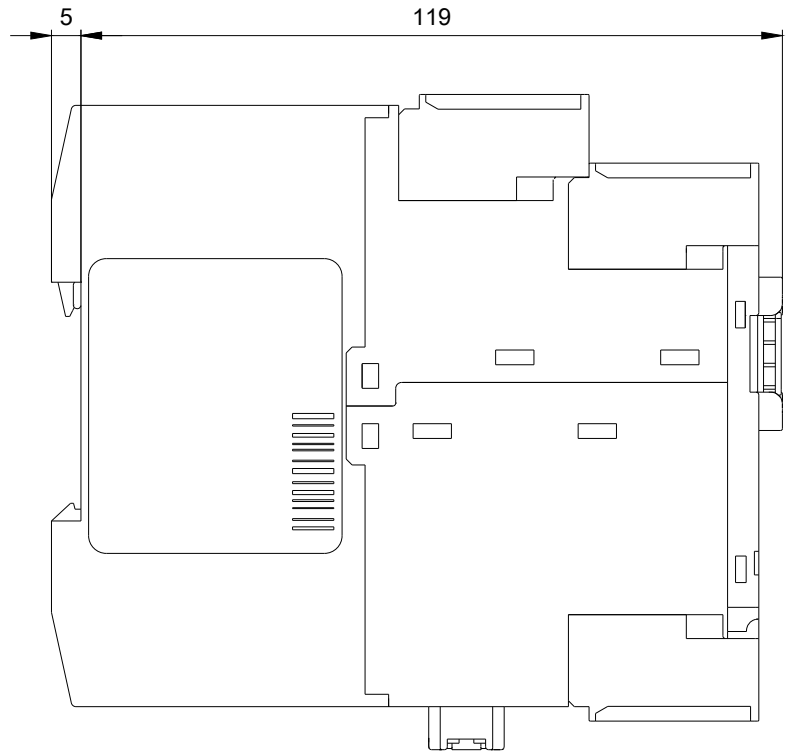
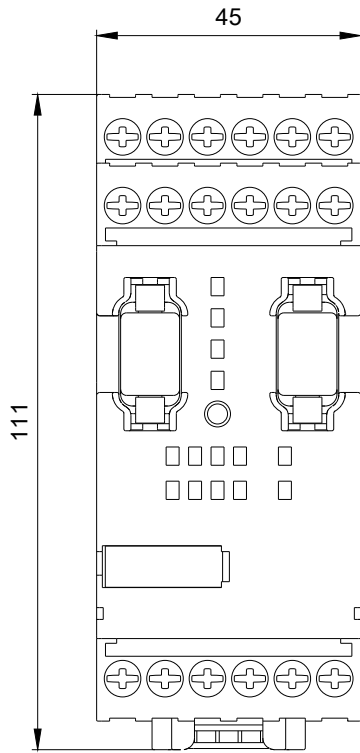
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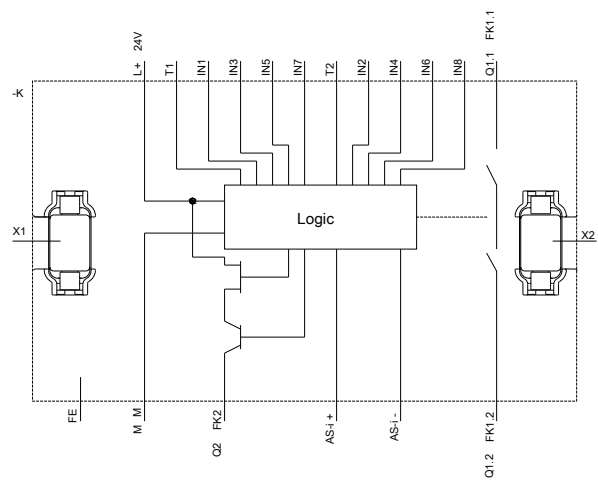
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

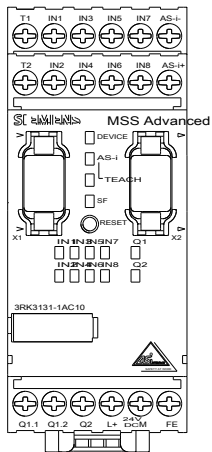
<https://support.industry.siemens.com/cs/ww/en/ps/3RK3131-1AC10>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RK3131-1AC10&lang=en







last modified:

08/29/2018