



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
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	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
<b>Number of function blocks typical</b>	300
<b>Degree of pollution</b>	3
<b>Surge voltage resistance rated value</b>	2 500 V
Consumed current for rated value of supply voltage	1.685 A
<b>Protection class IP</b>	IP20
• of the enclosure	IP20
• of the terminal	IP20
<b>Shock resistance</b>	15g / 11 ms
<b>Operating frequency maximum</b>	1 000 1/h
Mechanical service life (switching cycles) typical	10 000 000
<b>Reference code acc. to DIN EN 81346-2</b>	K
<b>Reference code acc. to DIN EN 61346-2</b>	K
<b>Period of darkness of the common drivers</b>	1 ms
<b>Product function suitable for AS-i Power24V</b>	Yes
<b>Product function Diagnostics with CTT2 slave</b>	Yes
Protocol is supported ASIsafe (Safety at work) protocol	Yes
<b>Number of safe signals for remote shutdown or cross traffic by means of AS interface</b>	12
<b>Consumed current from profile conductors of the AS-Interface</b>	
• at 30 V maximum	45 mA
• at 24 V with AS-i Power24V maximum	45 mA
<b>Suitability for use</b>	
• 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
<b>Suitability for use for monitoring of optoelectronic protective devices acc. to IEC 61496-1</b>	Yes
<b>Operating power rated value</b>	4.5 W
<b>Communication/ Protocol</b>	
<b>Protocol optional is supported PROFIBUS DP protocol</b>	Yes; when using the DP interface module; 64 bit cyclical data
Protocol is supported AS-Interface protocol	Yes
<b>Amount of data of the cyclic user data</b>	
• 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
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 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
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
<b>Type of connectable conductor cross-sections</b>	
• solid	1x (0.5 ... 4.0 mm <sup>2</sup> ), 2x (0.5 ... 2.5 mm <sup>2</sup> )
• finely stranded with core end processing	1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.5 mm <sup>2</sup> )
• 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 <sup>2</sup>
<b>AWG number as coded connectable conductor cross section</b>	
• solid	20 ... 14
• stranded	20 ... 14
<b>DC resistance of the cable maximum</b>	100 Ω

#### Safety related data

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
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
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#### Electromagnetic compatibility



<b>Installation environment regarding EMC</b>	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.
<b>Conducted interference</b>	
• 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
<b>Field-bound parasitic coupling acc. to IEC 61000-4-3</b>	10 V/m
<b>Electrostatic discharge acc. to IEC 61000-4-2</b>	4 kV contact discharge / 8 kV air discharge

## Ambient conditions

Installation altitude at height above sea level maximum	2 000 m
Air pressure acc. to SN 31205	70 ... 106 kPa

## Certificates/ approvals

General Product Approval		EMC	Functional Safety/Safety of Machinery	
				<a href="#">Type Examination Certificate</a> <a href="#">Miscellaneous</a>
CCC	UL		RCM	

Declaration of Conformity	Test Certificates	other		
<a href="#">Miscellaneous</a>	<a href="#">Type Test Certificates/Test Report</a>		<a href="#">Confirmation</a>	
		ASi		Profibus

## Further information

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

[www.siemens.com/sirius/catalogs](http://www.siemens.com/sirius/catalogs)

### Industry Mall (Online ordering system)

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

### Cax online generator

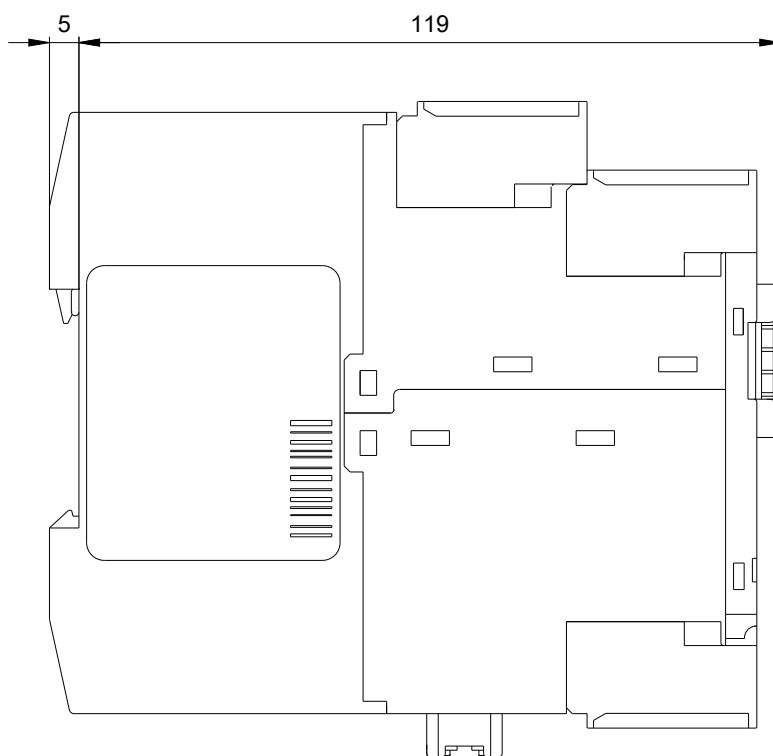
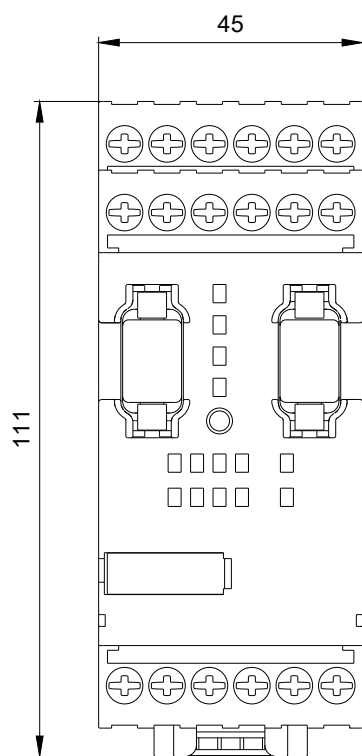
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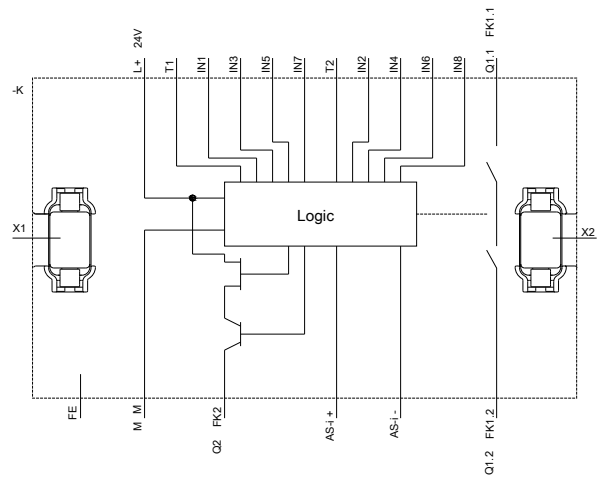
### Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

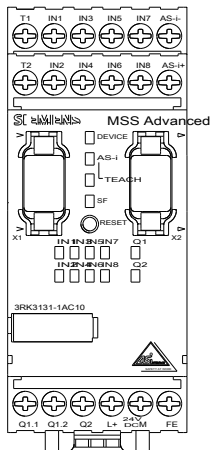
<https://support.industry.siemens.com/cs/ww/en/ps/3RK3131-1AC10>

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







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