

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

<ul style="list-style-type: none"> • monitored start-up 	Yes
<ul style="list-style-type: none"> • 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
<ul style="list-style-type: none"> • of the enclosure 	IP20
<ul style="list-style-type: none"> • 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	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	
<ul style="list-style-type: none"> • at 30 V maximum 	45 mA
<ul style="list-style-type: none"> • at 24 V with AS-i Power24V maximum 	45 mA
<ul style="list-style-type: none"> • Suitability for use Monitoring of floating sensors 	Yes
<ul style="list-style-type: none"> • Suitability for use Monitoring of non-floating sensors 	Yes
<ul style="list-style-type: none"> • Suitability for use position switch monitoring 	Yes
<ul style="list-style-type: none"> • suitability for use EMERGENCY-OFF circuit monitoring 	Yes
<ul style="list-style-type: none"> • Suitability for use valve monitoring 	Yes
<ul style="list-style-type: none"> • Suitability for use opto-electronic protection device monitoring 	Yes
<ul style="list-style-type: none"> • Suitability for use proximity switch monitoring 	Yes
<ul style="list-style-type: none"> • Suitability for use safety-related circuits 	Yes
Suitability for use for monitoring of optoelectronic protective devices acc. to IEC 61496-1	Yes
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
- for outputs with PROFIBUS DP

64 bit

64 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	111 mm
Width	45 mm
Depth	124 mm

Connections/ Terminals	
Product function removable terminal	Yes
type of electrical connection	screw-type terminals
<ul style="list-style-type: none"> • type of connectable conductor cross-sections solid 	1x (0.5 ... 4.0 mm ²), 2x (0.5 ... 2.5 mm ²)
<ul style="list-style-type: none"> • Type of connectable conductor cross-sections finely stranded with core end processing 	1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.5 mm ²)
<ul style="list-style-type: none"> • Type of connectable conductor cross-sections at AWG conductors solid 	2x (20 ... 14)
<ul style="list-style-type: none"> • Type of connectable conductor cross-sections 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	
<ul style="list-style-type: none"> • solid 	20 ... 14
<ul style="list-style-type: none"> • 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
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





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	
<ul style="list-style-type: none"> • 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	 EAC
	 RCM	Type Examination Certificate
		Miscellaneous

Declaration of Conformity	Test Certificates	other
Miscellaneous	 EG-Konf.	 ASi
	Type Test Certificates/Test Report	 Profibus
		Confirmation

Further information

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

<https://www.siemens.com/ic10>

Industry Mall (Online ordering system)

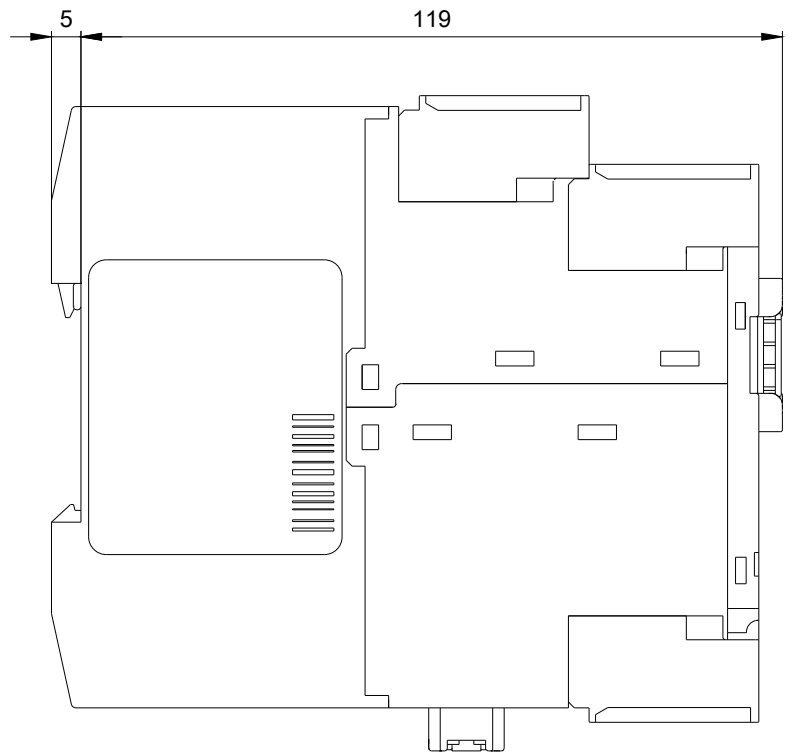
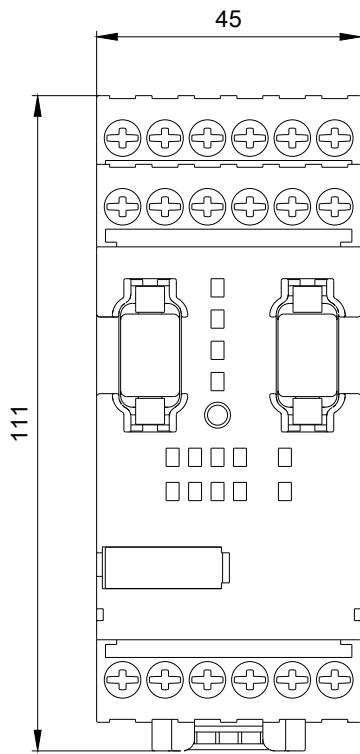
<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mfb=3RK3131-1AC10>

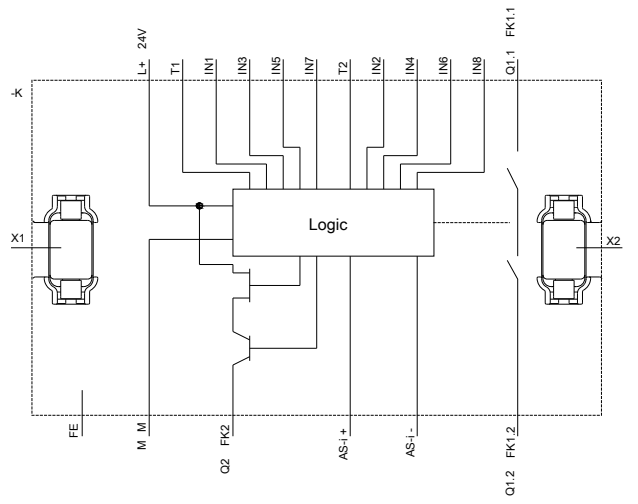
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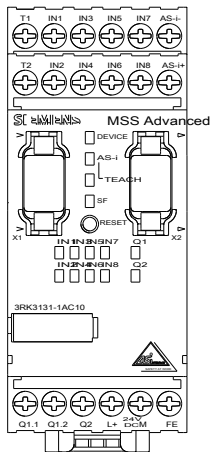
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mfb=3RK3131-1AC10>

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

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







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