



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
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
• 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
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 according to IEC 60068-2-6	5 ... 500 Hz: 0.75 mm
operating frequency maximum	1 000 1/h

mechanical service life (operating cycles) typical	10 000 000
reference code according to IEC 81346-2	K
Substance Prohibitance (Date)	05/28/2009
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

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 according to SN 31205	70 ... 106 kPa

Electromagnetic compatibility

installation environment regarding EMC	This product is suitable for Class A environments only. In household environments, this device can cause unwanted radio interference. The user is required to implement appropriate measures in this case.
conducted interference	
• due to burst according to IEC 61000-4-4	2 kV (power ports) / 1 kV (signal ports)
• due to conductor-earth surge according to IEC 61000-4-5	2 kV
• due to conductor-conductor surge according to IEC 61000-4-5	1 kV
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	SIL CL 3
SIL Claim Limit (subsystem) according to EN 62061	Kat. 4 / SIL3 / Ple
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	0.000000007 1/h
hardware fault tolerance according to IEC 61508	1
touch protection against electrical shock	finger-safe
category according to EN 954-1	4

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
ingress acquisition 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	
• single channel	0
• 2-channel	1
number of outputs as contact-less semiconductor switching element	
• safety-related 2-channel	1

<ul style="list-style-type: none"> • 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
dark period of the common drivers	1 ms
switching capacity current of semiconductor outputs at DC-13 at 24 V	1.5 A

Communication/ Protocol

protocol optional is supported	
<ul style="list-style-type: none"> • PROFIBUS DP protocol 	Yes; when using the DP interface module; 64 bit cyclical data
protocol is supported AS-Interface protocol	Yes

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 	70 A
duration of inrush current peak	
<ul style="list-style-type: none"> • at 24 V 	1 ms
operating power rated value	4.5 W

Installation/ mounting/ dimensions

mounting position	vertical
fastening method	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
type of connectable conductor cross-sections	
<ul style="list-style-type: none"> • solid 	1x (0.5 ... 4.0 mm ²), 2x (0.5 ... 2.5 mm ²)
<ul style="list-style-type: none"> • 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"> • at AWG cables solid 	2x (20 ... 14)
<ul style="list-style-type: none"> • at AWG cables 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

Certificates/ approvals

General Product Approval	EMC	Functional Safety/Safety of Machinery
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[Confirmation](#)



[Type Examination Certificate](#)

Functional Safety/Safety of Machinery	Declaration of Conformity	Test Certificates	other
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[Miscellaneous](#)



[Type Test Certificates/Test Report](#)



[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?mlfb=3RK3131-1AC10>

Cax online generator

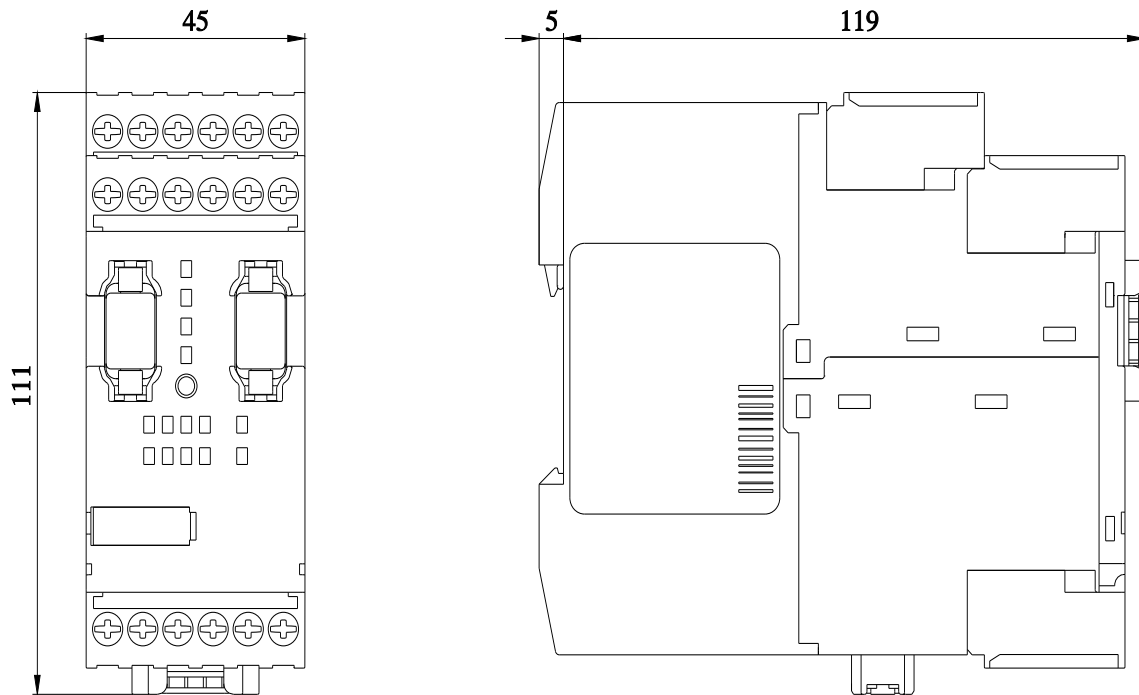
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RK3131-1AC10>

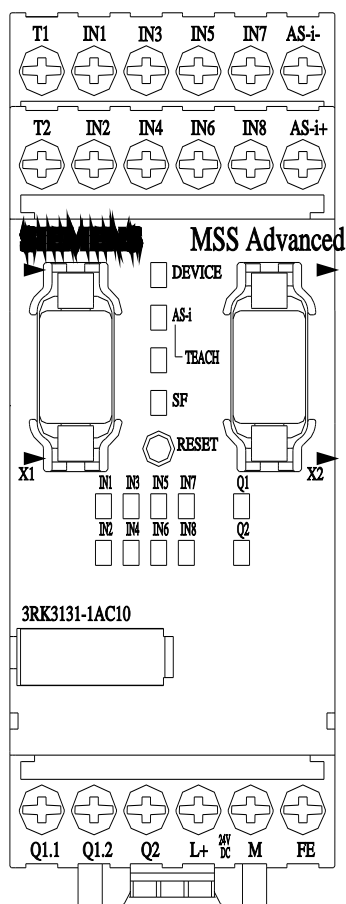
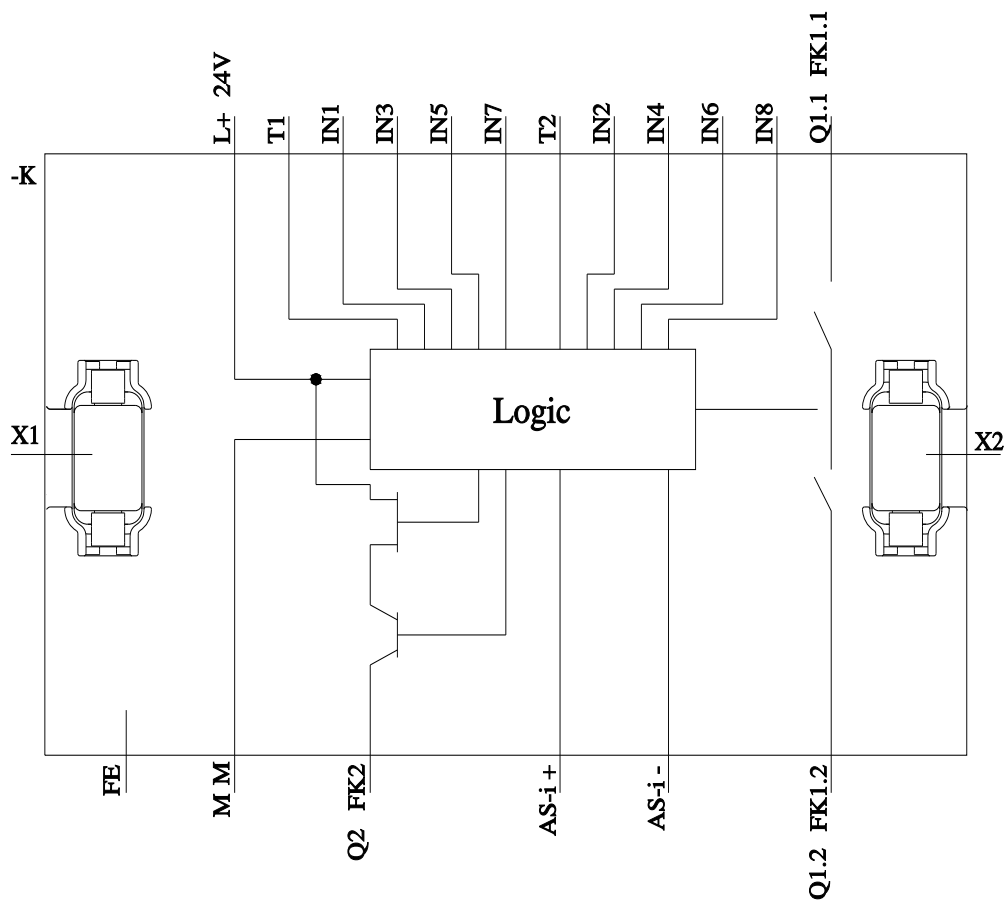
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<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





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