SIEMENS

Data sheet 3RK3131-2AC10



SIRIUS, central unit 3RK3 Advanced for modular safety system 3RK3 4/8 F-DI, 1F-RO, 1 F-DO,24 V DC monitoring of AS-i devices control of 12 safe outputs on AS-Interface bus configurable using software Safety ES 45 mm width spring-loaded terminal up to SIL 3 (IEC 61508) up to Performance Level E (ISO 13849-1) 9 expansion 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	
● of the enclosure	IP20
● of the terminal	IP20

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shock resistance	15 g / 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 (day/month/year)	05/28/2009
SVHC substance name	Lead CAS-No. 7439-92-1 Lead monoxide (lead oxide) CAS-No. 1317-36-8 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one CAS-No. 71868-10-5 Melamine CAS-No. 108-78-1 6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol CAS-No. 119-47-1 Diboron trioxide CAS-No. 1303-86-2
Net Weight	0.306 kg
product function suitable for AS-i Power24V	Yes
product function diagnostics with CTT2 device	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	
diagnostics test interval by internal test function maximum	1 000 s
stop category according to IEC 60204-1	0 / 1
category according to EN 954-1	4
IEC 62061	
SIL Claim Limit (subsystem) according to EN 62061	Kat. 4 / SIL3 / Ple
Safety Integrity Level (SIL)	
● **according to IEC 62061**	SIL 3
PFHD with high demand rate	
● according to IEC 62061	7E-9 1/h
ISO 13849	
performance level (PL) according to EN ISO 13849-1	e
category according to EN ISO 13849-1	4
performance level (PL)	
● **according to ISO 13849-1**	PL e
IEC 61508	
Safety Integrity Level (SIL)	
● according to IEC 61508	3
hardware fault tolerance	
● according to IEC 61508	1
T1 value	
● for proof test interval or service life according to IEC	20 a

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61508	
Electrical Safety	
touch protection against electrical shock	finger-safe
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
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 aquisition 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
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	
● 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
operating range factor control supply voltage rated value at DC	
● initial value	0.85
● full-scale value	1.15
inrush current peak	
● at 24 V	70 A
duration of inrush current peak	
● 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	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	

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● solid	2x (0.25 ... 1.5 mm²)
● finely stranded with core end processing	2x (0.25 ... 1 mm²)
● for AWG cables solid	2x (24 ... 16)
● for AWG cables 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

Approvals Certificates

Environment	General Product Approval				
Environmental Confirmations	CCC	cULus	EAC	CE EG-Konf.	UKCA

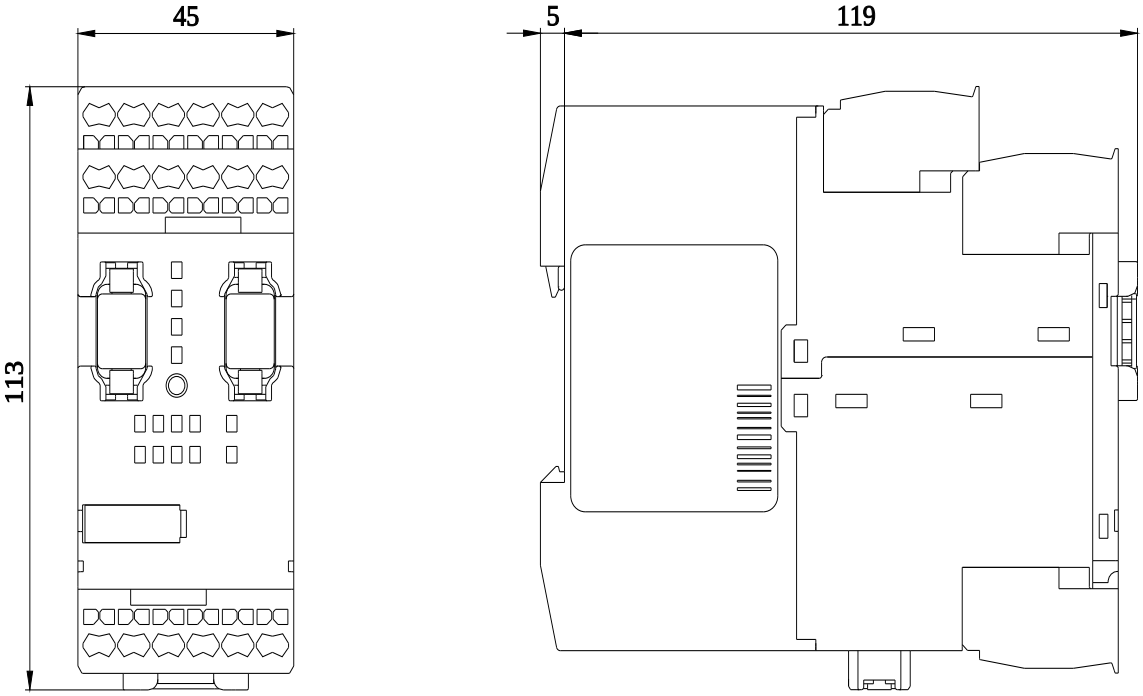
EMV	Functional Saftey		Test Certificates	other
RCM	Miscellaneous	Type Examination Certificate	Type Examination Certificate	Type Test Certificates/Test Report	Confirmation

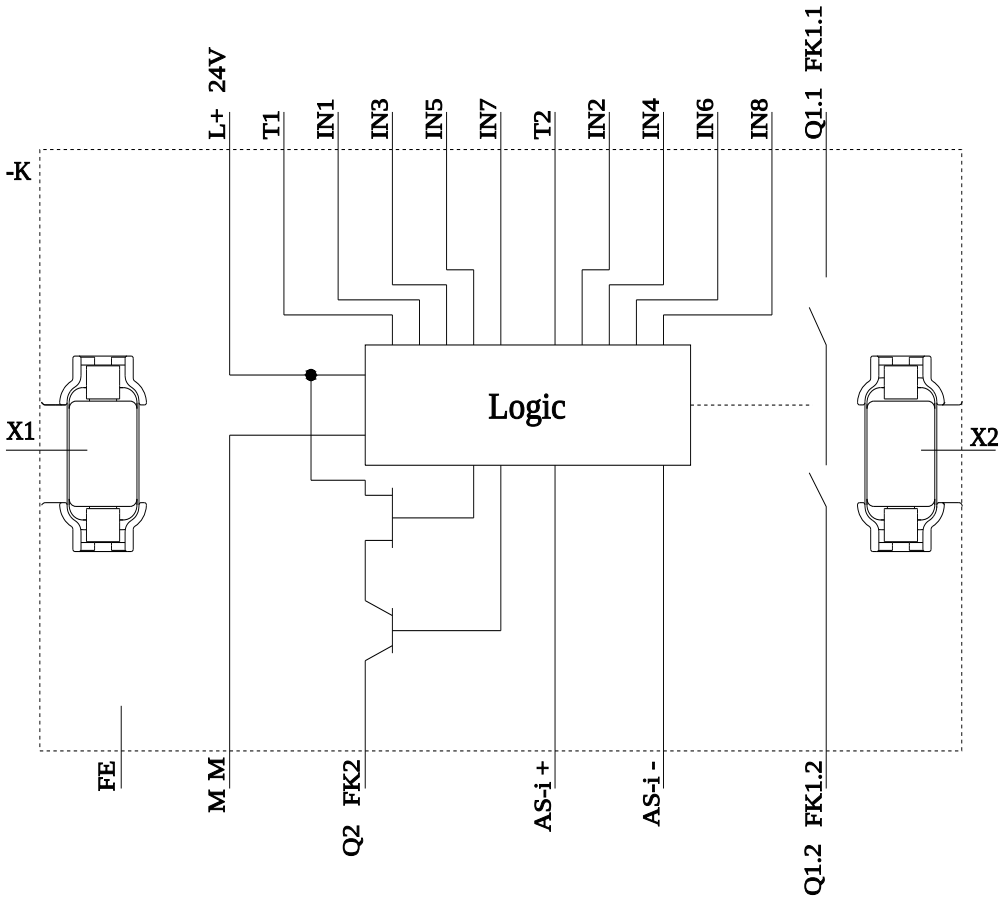
other	Industrial Communication
产品合格 QC PASS	ASi

Further information

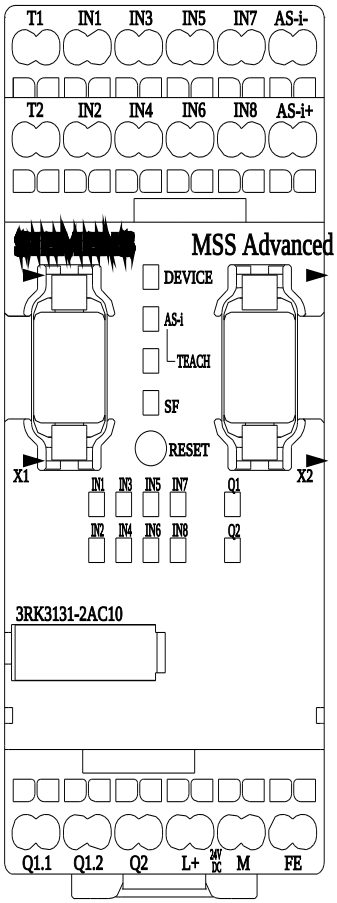
Information on the packaging
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Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3RK3131-2AC10
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
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