



Figure similar

Temperature monitoring relay with display and IO-Link for resistance temperature sensors and thermocouples, 24 V DC, Width 22.5 mm, 2 change-over contacts, screw terminal

<b>product brand name</b>	SIRIUS
<b>product designation</b>	Temperature monitoring relay
<b>design of the product</b>	Digital device for IO-Link, 1 sensor, 2 threshold values
<b>product type designation</b>	3RS2
<b>General technical data</b>	
<b>product function</b>	temperature monitoring
<b>display version LED</b>	No
insulation voltage for overvoltage category III according to IEC 60664 with degree of pollution 3 rated value	300 V
<b>test voltage for isolation test</b>	6 kV
<b>degree of pollution</b>	3
<b>maximum permissible voltage for safe isolation</b>	
• between control and auxiliary circuit	300 V
<b>protection class IP</b>	20
shock resistance acc. to IEC 60068-2-27	11g / 15 ms
vibration resistance acc. to IEC 60068-2-6	10 ... 55 Hz: 0.35 mm
<b>switching behavior</b>	monostable
mechanical service life (switching cycles) typical	10 000 000
electrical endurance (switching cycles) at AC-15 at 230 V typical	100 000
<b>thermal current of the switching element with contacts maximum</b>	5 A
certificate of suitability relating to ATEX	Yes, with sensor extension module 3RS29
<b>reference code acc. to IEC 81346-2</b>	K
<b>measurable temperature</b>	
• initial value	-99 °C
• full-scale value	1 800 °C
<b>measurable Fahrenheit temperature</b>	
• initial value	-146 °F
• full-scale value	3 276 °F
<b>Substance Prohibitive (Date)</b>	01.05.2012 00:00:00
<b>product function</b>	
• error memory	Yes
• external reset	Yes
<b>design of the sensor connectable</b>	Resistance sensors: Pt100, Pt1000, KTY83-110, KTY84, NTC Thermocouples: Type J, K, T, E, N, S, R, B
measurable temperature with KTY-sensor maximum	300 °C
<b>sensor current with KTY-sensor</b>	0.33 mA
<b>Control circuit/ Control</b>	

<b>type of voltage of the control supply voltage</b>	DC
control supply voltage at DC rated value	24 ... 24 V
<b>control supply voltage 1</b>	
• at DC rated value	24 V
• at DC	24 ... 24 V
<b>operating range factor control supply voltage rated value at DC</b>	
• initial value	0.7
• full-scale value	1.25
supply voltage frequency for auxiliary and control circuit	50 ... 60 Hz
<b>number of measuring circuits</b>	1
<b>buffering time in the event of power failure minimum</b>	20 ms
<b>Precision</b>	
<b>relative metering precision</b>	1 %
<b>Short-circuit protection</b>	
<b>design of the fuse link</b>	
• for short-circuit protection of the NO contacts of the relay outputs required	gL/gG: 6 A or MCB type C: 1 A
• for short circuit protection of the NC contacts of the relay outputs required	gL/gG: 6 A or MCB type C: 1 A
<b>design of the fuse link</b>	
• for short-circuit protection of the NO contacts of the relay outputs safety-related required	gL/gG: 2 A or MCB type C: 1 A
• for short circuit protection of the NC contacts of the relay outputs safety-related required	gL/gG: 2 A or MCB type C: 1 A
<b>Communication/ Protocol</b>	
protocol is supported IO-Link protocol	Yes
<b>IO-Link transfer rate</b>	COM2 (38,4 kBaud)
<b>point-to-point cycle time between master and IO-Link device minimum</b>	5 ms
<b>type of voltage supply via input/output link master</b>	Yes
<b>data volume</b>	
• of the address range of the inputs with cyclical transfer total	4 byte
• of the address range of the outputs with cyclical transfer total	2 byte
<b>Auxiliary circuit</b>	
<b>material of switching contacts</b>	AgSnO <sub>2</sub>
<b>number of NC contacts for auxiliary contacts</b>	0
<b>number of NO contacts for auxiliary contacts</b>	0
number of CO contacts for auxiliary contacts	2
<b>operational current of auxiliary contacts at DC-13</b>	
• at 24 V	1 A
• at 125 V	0.2 A
• at 250 V	0.1 A
<b>contact reliability of auxiliary contacts</b>	one incorrect switching operation of 100 million switching operations (17 V, 5 mA)
<b>contact rating of auxiliary contacts according to UL</b>	R300 / B300
<b>influence of the surrounding temperature</b>	0.05% per K deviation from T20
<b>operating frequency rated value</b>	50 ... 60 Hz
ampacity of the output relay at AC-15 at 250 V at 50/60 Hz	3 A
<b>ampacity of the output relay at DC-13</b>	
• at 24 V	1 A
• at 125 V	0.2 A
<b>continuous current of the DIAZED fuse link of the output relay</b>	6 A
<b>continuous current of DIAZED fuse link of the output relay safety-related</b>	2 A
<b>Electromagnetic compatibility</b>	
EMC emitted interference acc. to IEC 60947-1	class A
<b>conducted interference</b>	
• due to burst acc. to IEC 61000-4-4	2 kV (power ports), 1 kV (signal ports)

<ul style="list-style-type: none"> <li>• due to conductor-earth surge acc. to IEC 61000-4-5</li> <li>• due to conductor-conductor surge acc. to IEC 61000-4-5</li> </ul>	2 kV (line to ground) 1 kV (line to line)
<b>field-based interference acc. to IEC 61000-4-3</b>	10 V/m
<b>electrostatic discharge acc. to IEC 61000-4-2</b>	6 kV contact discharge / 8 kV air discharge
<b>Galvanic isolation</b>	
<b>design of the electrical isolation</b>	Protective separation
<b>galvanic isolation</b>	
<ul style="list-style-type: none"> <li>• between input and output</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• between the outputs</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• between the voltage supply and other circuits</li> </ul>	Yes
<b>Safety related data</b>	
<b>Safety Integrity Level (SIL) acc. to IEC 61508</b>	1
SIL Claim Limit (subsystem) acc. to EN 62061	1
<b>performance level (PL) acc. to EN ISO 13849-1</b>	c
category acc. to EN ISO 13849-1	1
<b>Safe failure fraction (SFF)</b>	66 %
PFHD with high demand rate acc. to EN 62061	0.00000039 1/h
<b>hardware fault tolerance acc. to IEC 61508</b>	0
<b>T1 value for proof test interval or service life acc. to IEC 61508</b>	20 y
<b>Connections/ Terminals</b>	
<b>product component removable terminal for auxiliary and control circuit</b>	Yes
<b>type of electrical connection</b>	screw-type terminals
<ul style="list-style-type: none"> <li>• for auxiliary and control circuit</li> </ul>	screw-type terminals
<b>type of connectable conductor cross-sections</b>	
<ul style="list-style-type: none"> <li>• solid</li> </ul>	1x (0.5 ... 4.0 mm <sup>2</sup> ), 2x (0.5 ... 2.5 mm <sup>2</sup> )
<ul style="list-style-type: none"> <li>• finely stranded with core end processing</li> </ul>	1x (0.5 ... 4 mm <sup>2</sup> ), 2x (0.5 ... 2.5 mm <sup>2</sup> )
<ul style="list-style-type: none"> <li>• at AWG cables solid</li> </ul>	1x (20 ... 12), 2x (20 ... 14)
<b>connectable conductor cross-section</b>	
<ul style="list-style-type: none"> <li>• solid</li> </ul>	0.5 ... 4 mm <sup>2</sup>
<ul style="list-style-type: none"> <li>• finely stranded with core end processing</li> </ul>	0.5 ... 4 mm <sup>2</sup>
<b>AWG number as coded connectable conductor cross section</b>	
<ul style="list-style-type: none"> <li>• solid</li> </ul>	20 ... 12
<ul style="list-style-type: none"> <li>• stranded</li> </ul>	20 ... 12
tightening torque with screw-type terminals	0.6 ... 0.8 N·m
<b>Installation/ mounting/ dimensions</b>	
<b>mounting position</b>	any
<b>fastening method</b>	screw and snap-on mounting onto 35 mm standard mounting rail
<b>height</b>	100 mm
<b>width</b>	22.5 mm
<b>depth</b>	90 mm
<b>required spacing</b>	
<ul style="list-style-type: none"> <li>• with side-by-side mounting               <ul style="list-style-type: none"> <li>— forwards</li> <li>— backwards</li> <li>— upwards</li> <li>— downwards</li> <li>— at the side</li> </ul> </li> </ul>	0 mm 0 mm 0 mm 0 mm 0 mm
<ul style="list-style-type: none"> <li>• for grounded parts               <ul style="list-style-type: none"> <li>— forwards</li> <li>— backwards</li> <li>— upwards</li> <li>— at the side</li> <li>— downwards</li> </ul> </li> </ul>	0 mm 0 mm 0 mm 0 mm 0 mm
<ul style="list-style-type: none"> <li>• for live parts               <ul style="list-style-type: none"> <li>— forwards</li> <li>— backwards</li> </ul> </li> </ul>	0 mm 0 mm

— upwards	0 mm
— downwards	0 mm
— at the side	0 mm

#### Ambient conditions

installation altitude at height above sea level maximum	2 000 m
<b>ambient temperature</b>	
• during operation	-25 ... +60 °C
• during storage	-40 ... +85 °C
• during transport	-40 ... +85 °C
relative humidity during operation	70 %
<b>explosion protection category for dust</b>	Ex II (2) D [b1] [Ex h] [pyb] [tb] [mb] [kb] [sb] III C Db
<b>explosion protection category for gas</b>	Ex II (2) G [b1] [Ex h] [db] [eb] [pyb] [mb] [ob] [q] [kb] [sb] II C Gb

#### Certificates/ approvals

General Product Approval	EMC	For use in hazardous locations
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Functional Safety/Safety of Machinery	Declaration of Conformity	Test Certificates	Marine / Shipping	other
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[Type Examination Certificate](#)

[Miscellaneous](#)



EG-Konf.

[Special Test Certificate](#)



[Confirmation](#)

#### Railway

[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=3RS2800-1BA40>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RS2800-1BA40>

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

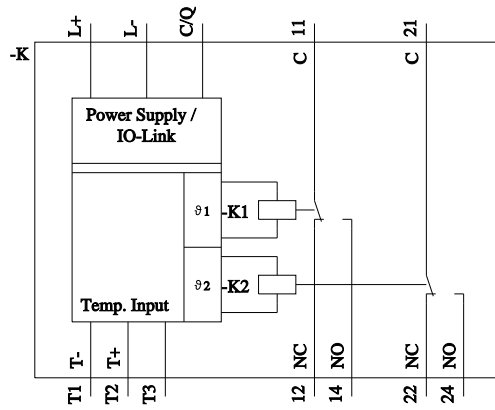
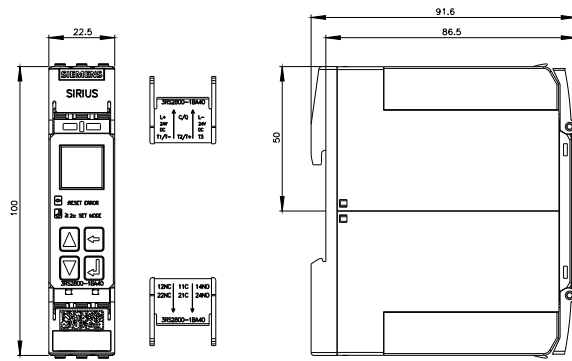
<https://support.industry.siemens.com/cs/ww/en/ps/3RS2800-1BA40>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RS2800-1BA40&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RS2800-1BA40&lang=en)

Characteristic: Derating

<https://support.industry.siemens.com/cs/ww/en/ps/3RS2800-1BA40/manual>



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