## **SIEMENS**

Data sheet 3RQ1000-1HB00

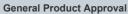


Positively driven coupling relay in industrial enclosure 2 NO contacts / 2 NC contacts 24 V DC SIL 2 / PL c screw terminal

product brand name	SIRIUS
product designation	force-guided coupling relay
design of the product	fail-safe up to SIL 2/PL c
product type designation	3RQ1
General technical data	
product feature protective coating on printed-circuit board	No
consumed active power	1.3 W
insulation voltage for overvoltage category III according to IEC 60664 with degree of pollution 3 rated value	300 V
degree of pollution	3
surge voltage resistance rated value	4 kV
shock resistance	
• according to IEC 60068-2-27	11g / 15 ms
vibration resistance	
• according to IEC 60068-2-6	10 55 Hz: 0.35 mm
operating frequency maximum	360 1/h
switching behavior	monostable
mechanical service life (operating cycles) typical	10 000 000
thermal current of the switching element with contacts maximum	5 A
reference code according to IEC 81346-2	K
Substance Prohibitance (Date)	05/31/2018
SVHC substance name	Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol - 79-94-7 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one - 71868-10-5 4,4'-isopropylidenediphenol (Bisphenol A, BPA) - 80-05-7
Weight	0.2 kg
Product Function	
suitability for operation device connector 3ZY12	Yes
Control circuit/ Control	
control supply voltage at DC rated value	24 V
operating range factor control supply voltage rated value at DC	
initial value	0.8
full-scale value	1.2
ON-delay time	
• at AC maximum	15 ms
at DC maximum	15 ms
OFF-delay time maximum	35 ms
Switching Function	
design of the switching function	NC contact and NO contact

Mechanical data	
product component plug-in socket	No
design of the relay operating mechanism	poled
Short-circuit protection	
design of the fuse link for short-circuit protection of the auxiliary switch required	fuse gL/gG: 6 A
Auxiliary circuit	
material of switching contacts	AgSnO2 + Au flash
number of NC contacts for auxiliary contacts	2
number of NO contacts for auxiliary contacts	2
number of CO contacts for auxiliary contacts	0
type of voltage	DC
Inputs/ Outputs	
output current minimum	10 mA
ampacity of the output relay at AC-15	
● at 250 V at 50/60 Hz	1.5 A
ampacity of the output relay at DC-13	
• at 24 V	1 A
• at 125 V	0.2 A
• at 250 V	0.1 A
Electromagnetic compatibility	1: A ( 1 1 1 1 1 1 1
EMC emitted interference according to IEC 60947-1	ambience A (industrial sector)
EMC immunity according to IEC 60947-1	corresponds to degree of severity 3
conducted interference	2147
due to burst according to IEC 61000-4-4      due to conductor earth surge according to IEC 61000 4.5	2 kV 2 kV (line to ground)
<ul> <li>due to conductor-earth surge according to IEC 61000-4-5</li> <li>due to conductor-conductor surge according to IEC</li> </ul>	2 kV (line to ground) 1 kV (line to line)
61000-4-5	
field-based interference according to IEC 61000-4-3	10 V/m
electrostatic discharge according to IEC 61000-4-2	4 kV contact discharging, 8 kV air discharging
Discription	
Display	Vac
product component LED	Yes
product component LED Safety related data	Yes
product component LED Safety related data product function	
product component LED  Safety related data  product function  • positively driven operation according to IEC 60947-5-1	Yes
product component LED  Safety related data  product function  • positively driven operation according to IEC 60947-5-1  suitability for use	Yes
product component LED  Safety related data  product function  • positively driven operation according to IEC 60947-5-1  suitability for use  • safety-related switching on	
product component LED  Safety related data  product function  • positively driven operation according to IEC 60947-5-1  suitability for use	Yes
product component LED  Safety related data  product function  • positively driven operation according to IEC 60947-5-1  suitability for use  • safety-related switching on  • safety-related switching OFF	Yes No Yes
product component LED  Safety related data  product function  • positively driven operation according to IEC 60947-5-1  suitability for use  • safety-related switching on  • safety-related switching OFF  safe state	Yes  No Yes safe shutdown
product component LED  Safety related data  product function  • positively driven operation according to IEC 60947-5-1  suitability for use  • safety-related switching on  • safety-related switching OFF  safe state  test wear-related service life necessary	Yes  No Yes safe shutdown Yes
product component LED  Safety related data  product function  • positively driven operation according to IEC 60947-5-1  suitability for use  • safety-related switching on  • safety-related switching OFF  safe state  test wear-related service life necessary  stop category according to IEC 60204-1	Yes  No Yes safe shutdown Yes 0
product component LED  Safety related data  product function  • positively driven operation according to IEC 60947-5-1  suitability for use  • safety-related switching on  • safety-related switching OFF  safe state  test wear-related service life necessary  stop category according to IEC 60204-1  MTTFd	Yes  No Yes safe shutdown Yes 0
product component LED  Safety related data  product function  • positively driven operation according to IEC 60947-5-1  suitability for use  • safety-related switching on  • safety-related switching OFF  safe state  test wear-related service life necessary  stop category according to IEC 60204-1  MTTFd  IEC 62061	Yes  No Yes safe shutdown Yes 0
product component LED  Safety related data  product function  • positively driven operation according to IEC 60947-5-1  suitability for use  • safety-related switching on  • safety-related switching OFF  safe state  test wear-related service life necessary  stop category according to IEC 60204-1  MTTFd  IEC 62061  Safety Integrity Level (SIL)	Yes  No Yes safe shutdown Yes 0 470 a
product component LED  Safety related data  product function  • positively driven operation according to IEC 60947-5-1  suitability for use  • safety-related switching on  • safety-related switching OFF  safe state  test wear-related service life necessary  stop category according to IEC 60204-1  MTTFd  IEC 62061  Safety Integrity Level (SIL)  • according to IEC 62061	Yes  No Yes safe shutdown Yes 0 470 a
product component LED  Safety related data  product function  • positively driven operation according to IEC 60947-5-1  suitability for use  • safety-related switching on  • safety-related switching OFF  safe state  test wear-related service life necessary  stop category according to IEC 60204-1  MTTFd  IEC 62061  Safety Integrity Level (SIL)  • according to IEC 62061  ISO 13849	Yes  No Yes safe shutdown Yes 0 470 a
product component LED  Safety related data  product function  • positively driven operation according to IEC 60947-5-1  suitability for use  • safety-related switching on  • safety-related switching OFF  safe state  test wear-related service life necessary  stop category according to IEC 60204-1  MTTFd  IEC 62061  Safety Integrity Level (SIL)  • according to IEC 62061  ISO 13849  performance level (PL) according to ISO 13849-1	Yes  No Yes safe shutdown Yes 0 470 a  SIL 2  PL c
product component LED  Safety related data  product function  • positively driven operation according to IEC 60947-5-1  suitability for use  • safety-related switching on  • safety-related switching OFF  safe state  test wear-related service life necessary  stop category according to IEC 60204-1  MTTFd  IEC 62061  Safety Integrity Level (SIL)  • according to IEC 62061  ISO 13849  performance level (PL) according to ISO 13849-1  category according to ISO 13849-1  device type according to ISO 13849-1  overdimensioning according to ISO 13849-2 necessary	Yes  No Yes safe shutdown Yes 0 470 a  SIL 2  PL c 1
product component LED  Safety related data  product function  • positively driven operation according to IEC 60947-5-1  suitability for use  • safety-related switching on  • safety-related switching OFF  safe state  test wear-related service life necessary  stop category according to IEC 60204-1  MTTFd  IEC 62061  Safety Integrity Level (SIL)  • according to IEC 62061  ISO 13849  performance level (PL) according to ISO 13849-1  category according to ISO 13849-1  device type according to ISO 13849-1  overdimensioning according to ISO 13849-2 necessary  IEC 61508	Yes  No Yes safe shutdown Yes 0 470 a  SIL 2  PL c 1 1 No
product component LED  Safety related data  product function  • positively driven operation according to IEC 60947-5-1  suitability for use  • safety-related switching on  • safety-related switching OFF  safe state  test wear-related service life necessary  stop category according to IEC 60204-1  MTTFd  IEC 62061  Safety Integrity Level (SIL)  • according to IEC 62061  ISO 13849  performance level (PL) according to ISO 13849-1  category according to ISO 13849-1  device type according to ISO 13849-1  overdimensioning according to ISO 13849-2 necessary  IEC 61508  Safety Integrity Level (SIL) according to IEC 61508	Yes  No Yes safe shutdown Yes 0 470 a  SIL 2  PL c 1 1 No
product component LED  Safety related data  product function  • positively driven operation according to IEC 60947-5-1  suitability for use  • safety-related switching on  • safety-related switching OFF  safe state  test wear-related service life necessary  stop category according to IEC 60204-1  MTTFd  IEC 62061  Safety Integrity Level (SIL)  • according to IEC 62061  ISO 13849  performance level (PL) according to ISO 13849-1  category according to ISO 13849-1  device type according to ISO 13849-1  overdimensioning according to ISO 13849-2 necessary  IEC 61508  Safety Integrity Level (SIL) according to IEC 61508-2	Yes  No Yes safe shutdown Yes 0 470 a  SIL 2  PL c 1 1 No SIL 2  Type A
product component LED  Safety related data  product function  • positively driven operation according to IEC 60947-5-1  suitability for use  • safety-related switching on  • safety-related switching OFF  safe state  test wear-related service life necessary  stop category according to IEC 60204-1  MTTFd  IEC 62061  Safety Integrity Level (SIL)  • according to IEC 62061  ISO 13849  performance level (PL) according to ISO 13849-1  category according to ISO 13849-1  device type according to ISO 13849-1  overdimensioning according to ISO 13849-2 necessary  IEC 61508  Safety Integrity Level (SIL) according to IEC 61508  safety device type according to IEC 61508-2  PFHD with high demand rate according to IEC 61508	Yes  No Yes safe shutdown Yes 0 470 a  SIL 2  PL c 1 1 No SIL 2  Type A 6E-7 1/h
product component LED  Safety related data  product function  • positively driven operation according to IEC 60947-5-1  suitability for use  • safety-related switching on  • safety-related switching OFF  safe state  test wear-related service life necessary  stop category according to IEC 60204-1  MTTFd  IEC 62061  Safety Integrity Level (SIL)  • according to IEC 62061  ISO 13849  performance level (PL) according to ISO 13849-1  category according to ISO 13849-1  device type according to ISO 13849-1  overdimensioning according to ISO 13849-2 necessary  IEC 61508  Safety Integrity Level (SIL) according to IEC 61508  safety device type according to IEC 61508-2  PFHD with high demand rate according to IEC 61508  PFDavg with low demand rate according to IEC 61508	Yes  No Yes safe shutdown Yes 0 470 a  SIL 2  PL c 1 1 No SIL 2  Type A 6E-7 1/h 0.002
product component LED  Safety related data  product function  • positively driven operation according to IEC 60947-5-1  suitability for use  • safety-related switching on  • safety-related switching OFF  safe state  test wear-related service life necessary  stop category according to IEC 60204-1  MTTFd  IEC 62061  Safety Integrity Level (SIL)  • according to IEC 62061  ISO 13849  performance level (PL) according to ISO 13849-1  category according to ISO 13849-1  device type according to ISO 13849-1  overdimensioning according to ISO 13849-2 necessary  IEC 61508  Safety Integrity Level (SIL) according to IEC 61508  safety device type according to IEC 61508-2  PFHD with high demand rate according to IEC 61508  PFDavg with low demand rate according to IEC 61508  Safe failure fraction (SFF)	Yes  No Yes safe shutdown Yes 0 470 a  SIL 2  PL c 1 1 No SIL 2  Type A 6E-7 1/h 0.002 85 %
product component LED  Safety related data  product function  • positively driven operation according to IEC 60947-5-1  suitability for use  • safety-related switching on  • safety-related switching OFF  safe state  test wear-related service life necessary  stop category according to IEC 60204-1  MTTFd  IEC 62061  Safety Integrity Level (SIL)  • according to IEC 62061  ISO 13849  performance level (PL) according to ISO 13849-1  category according to ISO 13849-1  device type according to ISO 13849-1  overdimensioning according to ISO 13849-2 necessary  IEC 61508  Safety Integrity Level (SIL) according to IEC 61508  safety device type according to IEC 61508-2  PFHD with high demand rate according to IEC 61508  PFDavg with low demand rate according to IEC 61508  Safe failure fraction (SFF)  hardware fault tolerance according to IEC 61508	Yes  No Yes safe shutdown Yes 0 470 a  SIL 2  PL c 1 1 No SIL 2  Type A 6E-7 1/h 0.002 85 % 0
product component LED  Safety related data  product function  • positively driven operation according to IEC 60947-5-1  suitability for use  • safety-related switching on  • safety-related switching OFF  safe state  test wear-related service life necessary  stop category according to IEC 60204-1  MTTFd  IEC 62061  Safety Integrity Level (SIL)  • according to IEC 62061  ISO 13849  performance level (PL) according to ISO 13849-1  category according to ISO 13849-1  device type according to ISO 13849-1  overdimensioning according to ISO 13849-2 necessary  IEC 61508  Safety Integrity Level (SIL) according to IEC 61508  safety device type according to IEC 61508-2  PFHD with high demand rate according to IEC 61508  Safe failure fraction (SFF)  hardware fault tolerance according to IEC 61508  T1 value of service life according to IEC 61508	Yes  No Yes safe shutdown Yes 0 470 a  SIL 2  PL c 1 1 No SIL 2  Type A 6E-7 1/h 0.002 85 %
product component LED  Safety related data  product function  • positively driven operation according to IEC 60947-5-1  suitability for use  • safety-related switching on  • safety-related switching OFF  safe state  test wear-related service life necessary  stop category according to IEC 60204-1  MTTFd  IEC 62061  Safety Integrity Level (SIL)  • according to IEC 62061  ISO 13849  performance level (PL) according to ISO 13849-1  category according to ISO 13849-1  device type according to ISO 13849-1  overdimensioning according to ISO 13849-2 necessary  IEC 61508  Safety Integrity Level (SIL) according to IEC 61508  safety device type according to IEC 61508-2  PFHD with high demand rate according to IEC 61508  PFDavg with low demand rate according to IEC 61508  Safe failure fraction (SFF)  hardware fault tolerance according to IEC 61508	Yes  No Yes safe shutdown Yes 0 470 a  SIL 2  PL c 1 1 No SIL 2  Type A 6E-7 1/h 0.002 85 % 0

type of electrical connection	screw terminal
wire length at DC maximum	2 000 m
type of connectable conductor cross-sections	
• solid	1x (0.5 4 mm²), 2x (0.5 2.5 mm²)
<ul> <li>finely stranded with core end processing</li> </ul>	1x (0.5 4 mm²), 2x (0.5 1.5 mm²)
<ul> <li>for AWG cables solid</li> </ul>	1x (20 12), 2x (20 14)
connectable conductor cross-section	
• solid	0.5 4 mm²
<ul> <li>finely stranded with core end processing maximum</li> </ul>	4 mm²
<ul> <li>finely stranded without core end processing minimum</li> </ul>	0.5 mm²
AWG number as coded connectable conductor cross section	
• solid	12 20
• stranded	12 20
tightening torque with screw-type terminals	0.6 0.8 N·m
stripped length of the cable for auxiliary and control contacts	10 mm
Installation/ mounting/ dimensions	
mounting position	any
fastening method	screw and snap-on mounting onto 35 mm DIN rail
height	100 mm
width	22.5 mm
depth	120 mm
Ambient conditions	
installation altitude at height above sea level maximum	2 000 m
ambient temperature	
<ul> <li>during operation</li> </ul>	-25 +60 °C
during storage	-40 +80 °C
during transport	-40 +80 °C
relative humidity during operation	10 95 %
Approvals Certificates	
Onward Decided Assumed	















EMV Maritime application other Environment







Confirmation

Environmental Confirmations

## Further information

Information on the packaging

https://support.industry.siemens.com/cs/ww/en/view/109813875

Information for data generation and storage

https://support.industry.siemens.com/cs/ww/en/view/109995012

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=3RQ1000-1HB00

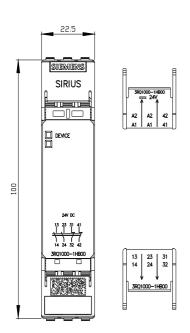
Cax online generator

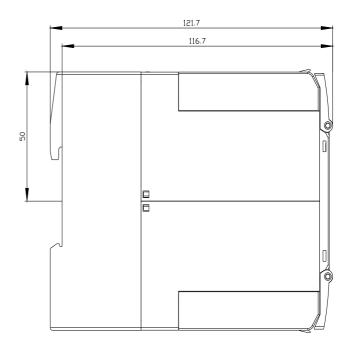
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RQ1000-1HB00

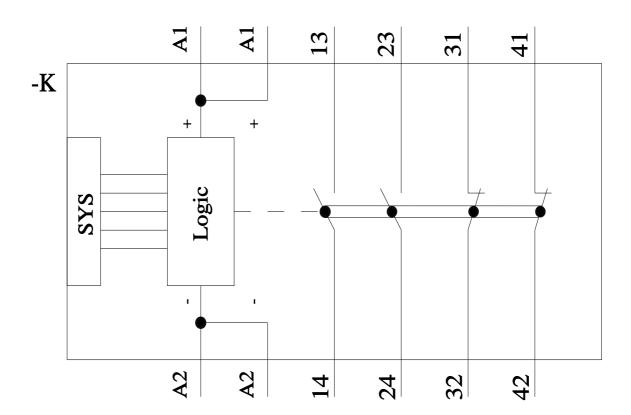
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

https://support.industry.siemens.com/cs/ww/en/ps/3RQ1000-1HB00

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) <a href="http://www.automation.siemens.com/bilddb/cax\_de.aspx?mlfb=3RQ1000-1HB00&lang=en">http://www.automation.siemens.com/bilddb/cax\_de.aspx?mlfb=3RQ1000-1HB00&lang=en</a>







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