SIEMENS

Data sheet

3UG5616-1CR20



digitally adjustable monitoring relay phase failure, phase sequence, asymmetry, frequency, over- and under-voltage monitoring 3x 90-690 V AC, 15-70 Hz 2 changeover contacts screw terminal

product brand name	SIRIUS			
product designation	Network monitoring relay with digital setting			
design of the product	monitoring of phase sequence, phase failure, phase asymmetry, N-conductor (adjustable), frequency, undervoltage and overvoltage			
product type designation	3UG5			
General technical data				
product function	line monitoring			
display version LED	No			
design of the display	LCD			
power loss [W] maximum	2 W			
power loss [V·A] maximum	5.1 VA			
insulation voltage for overvoltage category III according to IEC 60664				
 with degree of pollution 2 rated value 	690 V			
 with degree of pollution 3 rated value 	690 V			
degree of pollution	3			
type of voltage				
 for monitoring 	AC			
 of the operating voltage for actuation 	AC/DC			
 of the control supply voltage 	AC			
surge voltage resistance rated value	6 kV			
protection class IP	IP20			
shock resistance according to IEC 60068-2-27	sinusoidal half-wave 15g / 11 ms			
vibration resistance according to IEC 60068-2-6	10 55 Hz: 0.35 mm			
switching behavior	monostable			
mechanical service life (operating cycles) typical	10 000 000			
electrical endurance (operating cycles) at AC-15 at 230 V typical	100 000			
thermal current of the switching element with contacts maximum	5 A			
adjustable OFF-delay time	0.1 30 s			
reference code according to IEC 81346-2	К			
relative repeat accuracy	0.4 %			
Substance Prohibitance (Date)	06/01/2023			
SVHC substance name	Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8			
Weight	0.18 kg			
Product Function				
product function				
 undervoltage detection 	Yes			
 overvoltage detection 	Yes			
 phase sequence recognition 	Yes			

 phase failure detection 	Yes
 asymmetry detection 	Yes
 overvoltage detection 3 phase 	Yes
undervoltage detection 3 phases	Yes
voltage window recognition 3 phase	Yes
adjustable open/closed-circuit current principle	Yes
• auto-RESET	Yes
suitability for use safety-related circuits	No
Control circuit/ Control	
control supply voltage at AC	
e at 50 Hz rated value	120 600 \/
	120 090 V
operating range factor control supply voltage rated value at AC at 50 Hz	120 090 V
• initial value	0.85
• full-scale value	11
operating range factor control supply voltage rated value at AC at 60 Hz	
• initial value	0.85
• full-scale value	1.1
Supply voltage	
supply voltage frequency rated value	70 15 Hz
Measuring circuit	
measurable voltage at AC	90 760 V
adjustable operating delay time initial value	0.5
adjustable operating delay time initial value	
aujustable response delay time	0.1 20.0
• when starting	0.1
with lower of upper limit violation	0.1 50 S
	20 ms
response time maximum	
	+/-1 digit
relative temperature-related measurement deviation	1 %
Precision	
relative metering precision	3%
relative metering precision temperature drift per °C	3 % 0.001 %/°C
relative metering precision temperature drift per °C Short-circuit protection	3 % 0.001 %/°C
relative metering precision temperature drift per °C Short-circuit protection design of the fuse link • for short-circuit protection of the NO contacts of the relay outputs required	3 % 0.001 %/°C gL/gG: 6 A or MCB type C: 1 A
relative metering precision temperature drift per °C Short-circuit protection design of the fuse link • for short-circuit protection of the NO contacts of the relay outputs required • for short circuit protection of the NC contacts of the relay outputs required	3 % 0.001 %/°C gL/gG: 6 A or MCB type C: 1 A gL/gG: 6 A or MCB type C: 1 A
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relative metering precision temperature drift per °C Short-circuit protection design of the fuse link • for short-circuit protection of the NO contacts of the relay outputs required • for short circuit protection of the NC contacts of the relay outputs required • for short circuit protection of the NC contacts of the relay outputs required Communication/ Protocol protocol is supported IO-Link protocol type of voltage supply via input/output link master Auxiliary circuit material of switching contacts number of NC contacts delayed switching	3 % 0.001 %/°C gL/gG: 6 A or MCB type C: 1 A gL/gG: 6 A or MCB type C: 1 A No No AgSnO2 0
relative metering precision temperature drift per °C Short-circuit protection design of the fuse link • for short-circuit protection of the NO contacts of the relay outputs required • for short circuit protection of the NC contacts of the relay outputs required • for short circuit protection of the NC contacts of the relay outputs required Communication/ Protocol protocol is supported IO-Link protocol type of voltage supply via input/output link master Auxiliary circuit material of switching contacts number of NC contacts delayed switching number of NO contacts delayed switching	3 % 0.001 %/°C gL/gG: 6 A or MCB type C: 1 A gL/gG: 6 A or MCB type C: 1 A No No AgSnO2 0 0
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relative metering precision temperature drift per °C Short-circuit protection design of the fuse link • for short-circuit protection of the NO contacts of the relay outputs required • for short circuit protection of the NC contacts of the relay outputs required • for short circuit protection of the NC contacts of the relay outputs required Communication/ Protocol protocol is supported IO-Link protocol type of voltage supply via input/output link master Auxiliary circuit material of switching contacts number of NC contacts delayed switching number of CO contacts • for auxiliary contacts • for auxiliary contacts • delayed switching	3 % 0.001 %/°C gL/gG: 6 A or MCB type C: 1 A gL/gG: 6 A or MCB type C: 1 A No No AgSnO2 0 0 2 2 2
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relative metering precision temperature drift per °C Short-circuit protection design of the fuse link • for short-circuit protection of the NO contacts of the relay outputs required • for short circuit protection of the NC contacts of the relay outputs required • for short circuit protection of the NC contacts of the relay outputs required Communication/ Protocol protocol is supported IO-Link protocol type of voltage supply via input/output link master Auxiliary circuit material of switching contacts number of NC contacts delayed switching number of NO contacts delayed switching number of CO contacts • for auxiliary contacts • delayed switching operating frequency with 3RT2 contactor maximum contact reliability of auxiliary contacts	3 % 0.001 %/°C gL/gG: 6 A or MCB type C: 1 A gL/gG: 6 A or MCB type C: 1 A No No AgSnO2 0 0 2 2 5 000 1/h one incorrect switching operation of 100 million switching operations (17 V, 5 mA)
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relative metering precision temperature drift per °C Short-circuit protection design of the fuse link • for short-circuit protection of the NO contacts of the relay outputs required • for short circuit protection of the NC contacts of the relay outputs required • for short circuit protection of the NC contacts of the relay outputs required Communication/ Protocol protocol is supported IO-Link protocol type of voltage supply via input/output link master Auxiliary circuit material of switching contacts number of NC contacts delayed switching number of CO contacts • for auxiliary contacts • delayed switching operating frequency with 3RT2 contactor maximum contact reliability of auxiliary contacts contact reliability of auxiliary contacts contact rating of auxiliary contacts according to UL Main circuit number of poles for main current circuit ampacity of the output relay at AC-15	3 % 0.001 %/°C gL/gG: 6 A or MCB type C: 1 A gL/gG: 6 A or MCB type C: 1 A No No No AgSnO2 0 0 0 2 2 2 5 000 1/h one incorrect switching operation of 100 million switching operations (17 V, 5 mA) R300 / B300 4
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• at 125 V	0.2 A			
• at 230 V	0.1 A			
• at 250 V	0.1 A			
operational current at 17 V minimum	5 mA			
continuous current of the DIAZED fuse link of the output	64			
relay				
Electromagnetic compatibility				
EMC emitted interference according to IEC 60947-1	class A			
conducted interference				
 due to burst according to IEC 61000-4-4 	2 kV (power ports), 2 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	6 kV contact discharge / 8 kV air discharge			
Galvanic isolation				
design of the electrical isolation	galvanic isolation			
galvanic isolation				
 between input and output 	Yes			
between the outputs	Yes			
 between the voltage supply and other circuits 	Yes			
Electrical Safety				
protection class IP on the front according to IEC 60529	IP20			
Connections/ Terminals				
product component removable terminal for main circuit	Yes			
product component removable terminal for auxiliary and	Vac			
control circuit				
design of terminals with areas head acrow				
type of connectable conductor cross-sections	$4 \times (0.5 - 4.0 - 2.5) \times (0.5 - 0.5 - 2.5)$			
• solid	1x (0.5 4.0 mm2), 2x (0.5 2.5 mm2)			
tinely stranded with core end processing	1x (0.5 4 mm²), 2x (0.5 2.5 mm²)			
• for AWG cables solid	1x (20 12), 2x (20 14)			
connectable conductor cross-section				
• solid	0.5 4 mm ²			
finely stranded with core end processing	0.5 4 mm²			
AWG number as coded connectable conductor cross section				
• solid	20 12			
stranded	20 12			
tightening torque with screw-type terminals	0.6 0.8 N·m			
stripped length	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	90 mm			
required spacing				
 with side-by-side mounting 				
— forwards	0 mm			
— backwards	0 mm			
— upwards	0 mm			
— downwards	0 mm			
— at the side	0 mm			
 for grounded parts 				
— forwards	0 mm			
— backwards	0 mm			
— upwards	0 mm			
— at the side	0 mm			
— downwards	0 mm			
• for live parts				

— forwards			0 mm		
— backwards			0 mm		
— upwards			0 mm		
- downwards	;		0 mm		
— at the side			0 mm		
Ambient conditions					
installation altitude at h	eight above sea level max	kimum	2 000 m		
ambient temperature					
 during operation 			-25 +60 °C		
 during storage 			-40 +85 °C		
 during transport 			-40 +85 °C		
relative humidity during	operation maximum		70 %		
Approvals Certificates					
General Product App	roval				
<u>Confirmation</u>	UK CA	CE EG-Konf.			EHC
<u>Confirmation</u>	UK CA Test Certificates	EG-Konf.	CCC	U	EAC

Further information

Information on the packaging

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

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=3UG5616-1CR20

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3UG5616-1CR20

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

https://support.industry.siemens.com/cs/ww/en/ps/3UG5616-1CR20

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3UG5616-1CR20&lang=en

Characteristic: Derating

https://support.industry.siemens.com/cs/ww/en/ps/3UG5616-1CR20/manual







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