SIEMENS

Data sheet 3UG5512-1BR21

	monitoring relay phase failure, phase sequence and asymmetry monitoring 3x 160 690 V AC, 15-70 Hz 2 changeover contacts screw terminal SIL 1/PL c
product brand name	SIRIUS
product designation	Line monitoring relay
design of the product	monitoring of phase sequence, phase failure and asymmetry for safety applications
product type designation	3UG5
General technical data	
product function	line monitoring
display version LED	Yes
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
electrical endurance (operating cycles) at AC-15 at 230 V typical	100 000
thermal current of the switching element with contacts maximum	5 A
reference code according to IEC 81346-2	К
Substance Prohibitance (Date)	06/01/2023
Product Function	
product function	
 undervoltage detection 	No
 overvoltage detection 	No
 phase sequence recognition 	Yes
phase failure detection	Yes; available but limited, detection is problematic with high levels of regenerative power recovery
asymmetry detection	Yes
 overvoltage detection 3 phase 	No
 undervoltage detection 3 phases 	No
 voltage window recognition 3 phase 	No
 adjustable open/closed-circuit current principle 	No
auto-RESET	Yes
suitability for use safety-related circuits Control circuit/ Control	Yes
control supply voltage at AC	
at 50 Hz rated value	200 690 V
at 50 Hz rated value at 60 Hz rated value	200 690 V 200 690 V
operating range factor control supply voltage rated value at AC at 50 Hz	200 090 V
initial value	0.85
Initial value full-scale value	0.85 1.1
operating range factor control supply voltage rated value at AC at 60 Hz	1.1

* fill-ceite value * fill-ceite valu	• initial value	0.85
Supply voltage frequency rated value Resourching requency resourching Resourching requency with RT2 confactor maximum Sonor-fact rating of suciliary contacts For such rating requency with RT2 confactor maximum Sonor-fact rating of suciliary contacts Resourching requency with RT2 confactor maximum Sonor-fact rating of suciliary contacts Resourching requency with RT2 confactor maximum Sonor-fact rating of suciliary contacts Resourching requency with RT2 confactor maximum Sonor-fact rating of suciliary contacts Resourching requency with RT2 confactor maximum Sonor-fact rating of suciliary contacts Resourching requency with RT2 confactor maximum Sonor-fact rating of suciliary contacts Resourching requency with RT2 confactor maximum Sonor-fact rating of suciliary contacts Resourching requency with RT2 confactor maximum Sonor-fact rating of suciliary contacts Resourching requency with RT2 confactor maximum Sonor-fact rating of suciliary contacts Resourching requency with RT2 confactor maximum Sonor-fact rating of suciliary contacts Resourching requency with RT2 confactor maximum Sonor-factor rating of suciliary contacts Resourching requency with RT2 confactor maximum Sonor-factor rating of suciliary contacts Resourching requency with RT2 confactor maximum Sonor-factor rating of suciliary contacts Resourching requency with RT2 confactor maximum Sonor-factor rating of suciliary contacts Resourching requency with RT2 confactor rating report report rating report r	• initial value	0.85
supply voltage frequency raids value **Reasonable profession** **measurable voltage at AC **burfaring time in the event of power failure minimum **Storicarcial profession** **design of the fuse link for short-circuit protection of the NO contacts of the relay autusts required.** **Communication** Protection** **Communication** Protection** **Own voltage supply via imputivation that master **No No Voltage frequency of the Contacts **In our unitial of voltage supply via imputivation that master **No No Voltage supply via imputivation that master **No No Voltage supply via imputivation that master **In our unitial of voltage supply via imputivation that master **In our unitial of voltage supply via imputivation that master imputivation to the C 1000-4-2 **In our unitial master imputivation to the C 1000-4-2 **In our unitial master imputivation to the C 1000-4-2 **In our unitial master imputivation to the C 1		1.1
measurable voltage at AC 160		
measurable voltage at AC 150 _ 780 V buttering time in the event of power failure minimum 20 ms Sizerical protestion		/0 15 Hz
buffering time in the event of power failure minimum 20 ms Short-circuit protection Gesign of the lase ink for short-circuit protection of the NO communication of the relay object required Communication of the relation of the		
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Type of Voltage supply Val input/output link master Abbilitary circuit markerial of switching contacts AgSnO2 number of NC contacts delayed switching number of CO contacts of a volidity contacts of a volidity or contacts of a volidity or contacts obligity of the contact of the contact or maximum contact reliability of auxiliary contacts contact rating of auxiliary contacts according to UL Ration (Sano) Ration (Sano) contact rating of auxiliary contacts according to UL Ration (Sano) contact rating of auxiliary contacts according to UL Ration (Sano) contact rating of auxiliary contacts according to UL Ration (Sano) contact rating of auxiliary contacts according to UL Ration (Sano) contact rating of auxiliary contacts according to UL Ration (Sano) ampacity of the output relay at AC-15 of all 250 v 15 d 5000 ftz at 400 v 15 0000 ftz at 100 v 15 0000 ftz at 110 v of at 125 v of all 250 v of all 250 v of all 250 v operational current at 17 v minimum continuous current of the DIAZED fuse link of the output relay continuous current of the DIAZED fuse link of the output relay felic formapistic compatibility Elication (Sano) Elication (Sano) Conducted interference according to IEC 61000-4-5 of use to conductor-earth surge according to IEC 61000-4-5 of use to conductor-earth surge according to IEC 61000-4-5 of use to conductor-earth surge according to IEC 61000-4-5 of use to conductor-earth surge according to IEC 61000-4-5 of use to conductor-earth surge according to IEC 61000-4-5 of use to conductor-earth surge according to IEC 61000-4-5 of use to conductor-earth surge according to IEC 61000-4-5 of use to conductor-earth surge according to IEC 61000-4-5 of use to conductor-earth surge according to IEC 61000-4-5 of use to conductor-earth surge according to IEC 61000-4-5 of use to conductor-earth surge according to IEC 61000-4-5 of use to conductor-earth surge according to IEC 61000-4-5 of use to conductor-earth surge according to IEC 61000-4-5 of use to conductor-earth	Communication/ Protocol	
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material of switching contacts number of NC contacts delayed switching 0 number of NC contacts delayed switching 0 number of CO contacts • delayed switching 0 operating frequency with SRT2 contactor maximum 5 000 t/h contact reliability of auxiliary contacts contact reliability of auxiliary contacts contact rating of auxiliary contacts contact rating of auxiliary contacts according to UL R300 / 8300 Main circuit number of poles for main current circuit 3 ampacity of the output relay at AC-15 • at 250 V at 50/60 Hz • at 400 V at 50/60 Hz • at 410 V at 50/60 Hz • at 110 V • at 125 V • at 125 V • at 125 V • at 230 V • at 125 V • at 230 V • at 280 V • at	type of voltage supply via input/output link master	No
number of NC contacts delayed switching 0 number of NC contacts • for auxiliary contacts	Auxiliary circuit	
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e delayed switching operating frequency with 3RT2 contactor maximum contact reliability of auxillary contacts contact rating of auxillary contacts contact rating of auxillary contacts according to UL R300 / B300 R300 / B30	number of CO contacts	
operating frequency with 3RT2 contacts	• for auxiliary contacts	2
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mA) 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 • at 250 V at 50/60 Hz • at 400 V at 50/60 Hz • at 400 V at 50/60 Hz • at 24 V • at 110 V • at 110 V • at 125 V • operational current at 17 V minimum 5 mA continuous current of the DIAZED fuse link of the output relay Electromagnetic compatibility EMC emitted interference according to IEC 60947-1 conducted interference according to IEC 6000-4-4 • due to conductor-conductor surge according to IEC 61000-4-5 • due to conductor-conductor surge according to IEC 61000-4-5 • due to conductor-conductor surge according to IEC 61000-4-5 • due to conductor-conductor surge according to IEC 61000-4-5 • due to conductor-conductor surge according to IEC 61000-4-5 • due to conductor-conductor surge according to IEC 61000-4-5 • due to conductor-conductor surge according to IEC 61000-4-5 • due to conductor-conductor surge according to IEC 61000-4-5 • due to conductor-conductor surge according to IEC 61000-4-5 • due to conductor-conductor surge according to IEC 61000-4-5 • due to conductor-conductor surge according to IEC 61000-4-5 • due to conductor-conductor surge according to IEC 61000-4-2 • deven input and output	operating frequency with 3RT2 contactor maximum	5 000 1/h
Main circuit number of poles for main current circuit ampacity of the output relay at AC-15 • at 250 V at 50/60 Hz • at 400 V at 50/60 Hz • at 400 V at 50/60 Hz • at 24 V • at 110 V • at 110 V • at 125 V • at 230 V • at 230 V • at 250	contact reliability of auxiliary contacts	
mumber of poles for main current circuit ampacity of the output relay at AC-15 • at 250 V at 50/60 Hz • at 1410 V • at 1110 V • at 1125 V • at 125 V • at 1	contact rating of auxiliary contacts according to UL	R300 / B300
ampacity of the output relay at AC-15 • at 250 V at 50/60 Hz ampacity of the output relay at DC-13 • at 240 V at 50/60 Hz • at 110 V • at 110 V • at 110 V • at 125 V • at 230 V • at 125 V • at 250 V • at 250 V • operational current at 17 V minimum continuous current of the DIAZED fuse link of the output relay continuous current of the DIAZED fuse link of the output relay Electromagnotic compatibility EMC emitted interference according to IEC 60947-1 conducted interference according to IEC 61000-4-5 • due to conductor-earth surge according to IEC 61000-4-5 • due to conductor-conductor surge according to IEC 61000-4-5 • due to conductor-conductor surge according to IEC 61000-4-3 • floid-based Interference according to IEC 61000-4-3 floid-based Interference according to IEC 61000-4-2 (alvanic isolation design of the electrical isolation galvanic isolation • between input and output • between the outputs • between the outputs of IEC 61508 Safety Integrity Level (SIL) according to IEC 61508 Safety Integrity Level (SIL) according to IEC 61508 Safety Integrity Level (SIL) according to IEC 61508 performance level (PL) according to IEC 61508 performance level (PL) according to IEC 61508 performance level (PL) according to IEC 61508 safety related data Safety component removable terminal for main circuit Yes product component removable terminal for main circuit Type of electrical connection	Main circuit	
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ampacity of the output relay at DC-13 at 24 V	ampacity of the output relay at AC-15	
ampacity of the output relay at DC-13 • at 24 V • at 110 V • at 125 V • at 220 V • at 230 V • at 250 V • one at 250 V	• at 250 V at 50/60 Hz	3 A
• at 24 V • at 110 V • at 110 V • at 125 V • at 230 V • at 250 V •	● at 400 V at 50/60 Hz	3 A
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• at 230 V • at 250 V 0.1 A operational current at 17 V minimum continuous current of the DIAZED fuse link of the output relay Electromagnetic compatibility EMC emitted interference according to IEC 60947-1 conducted interference • due to burst according to IEC 61000-4-4 • due to conductor-centh surge according to IEC 61000-4-5 • due to conductor-conductor surge according to IEC 61000-4-5 • due to conductor-conductor surge according to IEC 61000-4-5 • field-based interference according to IEC 61000-4-3 • delectrostatic discharge according to IEC 61000-4-3 • delectrostatic discharge according to IEC 61000-4-2 • design of the electrical isolation design of the electrical isolation galvanic isolation • between the outputs • between the voltage supply and other circuits Yes Safety related data Safety Integrity Level (SIL) according to IEC 61508 Safety related data Safety clasted data Safety clasted data Safety clasted formals product component removable terminal for main circuit Tyes of electrical connection screw-type terminals yes type of electrical connection	• at 110 V	0.2 A
at 250 V operational current at 17 V minimum ontinuous current of the DIAZED fuse link of the output relay Electromagnetic compatibility EMC emitted interference according to IEC 60947-1 conducted interference due to burst according to IEC 61000-4-4 due to conductor-earth surge according to IEC 61000-4-5 due to conductor-conductor surge according to IEC 61000-4-5 field-based interference according to IEC 61000-4-3 electrostatic discharge according to IEC 61000-4-2 6 kV contact discharge / 8 kV air discharge Calvanic Isolation design of the electrical isolation galvanic isolation • between input and output • between the outputs • between the voltage supply and other circuits Safety related data Safety related data Safety Integrity Level (SIL) according to EN ISO 13849-1 connections/ Terminals product component removable terminal for main circuit type of electrical connection screw-type terminals type of electrical connection screw-type terminals type of electrical connection screw-type terminals	● at 125 V	0.2 A
operational current at 17 V minimum 5 mA continuous current of the DIAZED fuse link of the output relay 6 A 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-centh surge according to IEC 61000-4-5 2 kV • due to conductor-conductor surge according to IEC 61000-4-5 1 kV 61000-4-5 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 the outputs Yes • between the outputs Yes • between the voltage supply and other circuits Yes Safety related data Safety Integrity Level (SIL) according to IEC 61508 SIL1 performance level (PL) according to EN ISO 13849-1 c Connections/ Terminals product component removable terminal for main circuit Yes product component removable terminal for auxiliary and control circuit type of electrical connection screw-type terminals	• at 230 V	0.1 A
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Electromagnetic compatibility	operational current at 17 V minimum	5 mA
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 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 Safety related data Safety Integrity Level (SIL) according to IEC 61508 SIL1 performance level (PL) according to EN ISO 13849-1 c Connections/ Terminals product component removable terminal for main circuit Yes product component removable terminal for auxiliary and control circuit Screw-type terminals type of electrical connection screw-type terminals	continuous current of the DIAZED fuse link of the output	6 A
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field-based interference according to IEC 61000-4-3 electrostatic discharge according to IEC 61000-4-2 feld-based interference according to IEC 61000-4-3 feld-based interference according to IEC 61000-4-2 feld-based interf		
electrostatic discharge according to IEC 61000-4-2 Galvanic isolation design of the electrical isolation palvanic isolation between input and output between the outputs between the voltage supply and other circuits Safety related data Safety Integrity Level (SIL) according to IEC 61508 performance level (PL) according to EN ISO 13849-1 connections/ Terminals product component removable terminal for auxiliary and control circuit type of electrical connection 6 kV contact discharge / 8 kV air discharge 6 kV contact discharge / 8 kV air discharge 6 kV contact discharge / 8 kV air discharge 6 kV contact discharge / 8 kV air discharge 6 kV contact discharge / 8 kV air discharge 6 kV contact discharge / 8 kV air discharge 6 kV contact discharge / 8 kV air discharge 6 kV contact discharge / 8 kV air discharge 6 kV contact discharge / 8 kV air discharge 6 kV contact discharge / 8 kV air discharge 6 kV contact discharge / 8 kV air discharge 6 kV contact discharge / 8 kV air discharge 6 kV contact discharge / 8 kV air discharge 6 kV contact discharge / 8 kV air discharge 9		1 kV
design of the electrical isolation galvanic isolation • between input and output • between the outputs • between the voltage supply and other circuits Safety related data Safety Integrity Level (SIL) according to IEC 61508 performance level (PL) according to EN ISO 13849-1 Connections/ Terminals product component removable terminal for main circuit yes product component removable terminal for auxiliary and control circuit type of electrical connection galvanic isolation galvanic isolation galvanic isolation Yes Yes Yes SIL1 Yes Product component removable terminal for main circuit Yes product component removable terminal for auxiliary and control circuit type of electrical connection screw-type terminals	field-based interference according to IEC 61000-4-3	10 V/m
design of the electrical isolation galvanic isolation • between input and output • between the outputs • between the voltage supply and other circuits Safety related data Safety Integrity Level (SIL) according to IEC 61508 performance level (PL) according to EN ISO 13849-1 Connections/ Terminals product component removable terminal for main circuit product component removable terminal for auxiliary and control circuit type of electrical connection galvanic isolation Yes Yes Otherwise Auxiliary and control circuit Yes screw-type terminals	electrostatic discharge according to IEC 61000-4-2	6 kV contact discharge / 8 kV air discharge
galvanic isolation • between input and output • between the outputs • between the voltage supply and other circuits Safety related data Safety Integrity Level (SIL) according to IEC 61508 performance level (PL) according to EN ISO 13849-1 Connections/ Terminals product component removable terminal for main circuit product component removable terminal for auxiliary and control circuit type of electrical connection Yes screw-type terminals	Galvanic isolation	
between input and output between the outputs between the voltage supply and other circuits Safety related data Safety Integrity Level (SIL) according to IEC 61508 SIL1 performance level (PL) according to EN ISO 13849-1 Connections/ Terminals product component removable terminal for main circuit yes product component removable terminal for auxiliary and control circuit type of electrical connection SYES Yes Yes Yes Yes	design of the electrical isolation	galvanic isolation
between the outputs between the voltage supply and other circuits Safety related data Safety Integrity Level (SIL) according to IEC 61508 performance level (PL) according to EN ISO 13849-1 connections/ Terminals product component removable terminal for main circuit product component removable terminal for auxiliary and control circuit type of electrical connection Yes screw-type terminals	galvanic isolation	
between the voltage supply and other circuits Safety related data Safety Integrity Level (SIL) according to IEC 61508 SIL1 performance level (PL) according to EN ISO 13849-1 Connections/ Terminals product component removable terminal for main circuit product component removable terminal for auxiliary and control circuit type of electrical connection Yes Yes SIL1 Yes Product component removable terminal for main circuit Yes SIL1 SIL	 between input and output 	Yes
Safety related data Safety Integrity Level (SIL) according to IEC 61508 performance level (PL) according to EN ISO 13849-1 Connections/ Terminals product component removable terminal for main circuit product component removable terminal for auxiliary and control circuit type of electrical connection SIL1 Yes Yes Yes	 between the outputs 	Yes
Safety Integrity Level (SIL) according to IEC 61508 SIL1 performance level (PL) according to EN ISO 13849-1 c Connections/ Terminals product component removable terminal for main circuit Yes product component removable terminal for auxiliary and control circuit type of electrical connection screw-type terminals	 between the voltage supply and other circuits 	Yes
performance level (PL) according to EN ISO 13849-1 Connections/ Terminals product component removable terminal for main circuit Yes product component removable terminal for auxiliary and control circuit type of electrical connection c c Yes Yes screw-type terminals	Safety related data	
Product component removable terminal for main circuit product component removable terminal for auxiliary and control circuit type of electrical connection Yes Yes screw-type terminals	Safety Integrity Level (SIL) according to IEC 61508	SIL1
product component removable terminal for main circuit product component removable terminal for auxiliary and control circuit type of electrical connection Yes Yes Yes Screw-type terminals	performance level (PL) according to EN ISO 13849-1	С
product component removable terminal for auxiliary and control circuit type of electrical connection Yes screw-type terminals	Connections/ Terminals	
product component removable terminal for auxiliary and control circuit type of electrical connection Yes screw-type terminals	product component removable terminal for main circuit	Yes
	product component removable terminal for auxiliary and	Yes
	type of electrical connection	screw-type terminals

11-4	4. (0.5 4.0 2) 0. (0.5 0.5 2)
• solid	1x (0.5 4.0 mm²), 2x (0.5 2.5 mm²)
finely 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
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 height above sea level maximum	2 000 m
ambient temperature	
during operation	-25 +60 °C
during storage	-40 +85 °C
during transport	-40 +85 °C
relative humidity during operation	70 %
Certificates/ approvals	
Further information	

Siemens has decided to exit the Russian market (see here).

https://press.siemens.com/global/en/pressrelease/siemens-wind-down-russian-business

Siemens is working on the renewal of the current EAC certificates.

Please contact your local Siemens office on the status of validity of the EAC certification if you intend to import or offer to supply these products to an EAC relevant market (other than the sanctioned EAEU member states Russia or Belarus).

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=3UG5512-1BR21

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3UG5512-1BR21

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

https://support.industry.siemens.com/cs/ww/en/ps/3UG5512-1BR21

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3UG5512-1BR21&lang=en

Characteristic: Derating

https://support.industry.siemens.com/cs/ww/en/ps/3UG5512-1BR21/manual

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