## **SIEMENS**

product brand name

Data sheet 3UG4618-2CR20

SIRIUS



Digital monitoring relay for 3-phase voltage with N-conductor Autom. phase sequence correction Phase failure 3 x 90 to 400 V 50 to 60 Hz AC Undervoltage and overvoltage 90-400 V Hysteresis 1-20 V OFF delay 0-20 s Asymmetry 0-20% 1 CO for phase correction 1 CO for line supply faults Spring-type connection system

product type designation 3UG4  General technical data product type designation 3UG4  General technical data product function Phase monitoring relay display version LED No design of the display Insulation voltage for overvoltage category III according to IEC 60664  • with degree of pollution 3 rated value 690 V degree of pollution 4 Product of the control supply voltage 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 1 6 hz: 15 mm, 6 500 Hz: 2g mechanical service life (switching cycles) typical electrical endurance (switching cycles) at AC-15 at 230 V typical thermal current of the switching element with contacts maximum  reference code according to IEC 81346-2 K relative repeat accuracy 1 % Substance Prohibitance (Date)  Product Function  • undervoltage detection 9 hase eundervoltage detection 1 Press Plase 6 Press 9 Press	product brand name	SIRIUS		
product type designation General technical data  product function display version LED	product designation	Network monitoring relay with digital setting		
General technical data  product function display version LED design of the display LCD insulation voltage for overvoltage category III according to IEC 60664 • with degree of pollution 3 atted value • of the control supply voltage • for monitoring • of the control supply voltage  **Ore the control supply voltage **Ore the contro	design of the product	5 functions		
Phase monitoring relay   Phase monitoring relay   Residual provided provi	product type designation	3UG4		
display version LED design of the display Insulation voltage for overvoltage category III according to IEC 60084 • with degree of pollution 3 rated value degree of pollution 3 type of voltage • for monitoring • of the control supply voltage  surge voltage resistance rated value protection class IP shock resistance according to IEC 60068-2-27 vibration resistance according to IEC 60068-2-6 nechanical service life (switching cycles) typical electrical endurance (switching cycles) at AC-15 at 230 V typical electrical endurance (switching cycles) at AC-15 at 230 V typical electrical endurance (switching cycles) at AC-15 at 230 V typical electrical endurance (switching cycles) at AC-15 at 230 V typical electrical endurance (switching cycles) at AC-15 at 230 V typical electrical endurance (switching cycles) at AC-15 at 230 V typical electrical endurance (switching cycles) at AC-15 at 230 V typical electrical endurance (switching cycles) at AC-15 at 230 V typical electrical endurance (switching cycles) at AC-15 at 230 V typical electrical endurance (switching cycles) at AC-15 at 230 V typical electrical endurance (switching cycles) at AC-15 at 230 V typical electrical endurance (switching cycles) at AC-15 at 230 V typical electrical endurance (switching cycles) at AC-15 at 230 V typical electrical endurance (switching cycles) at AC-15 at 230 V typical  100 000  6 AC  6 kV  100 00	General technical data			
design of the display  insulation voltage for overvoltage category III according to IEC 60684  • with degree of pollution 3 rated value 690 V  degree of pollution  • for monitoring AC  • of the control supply voltage AC  surge voltage resistance rated value 6k V  protection class IP IP20  shock resistance according to IEC 60068-2-27 IP20  mechanical service life (switching cycles) typical 10 000 000  electrical endurance (switching cycles) at AC-15 at 230 V typical 20 000 000  thermal current of the switching element with contacts maximum  reference code according to IEC 81346-2 K  relative repeat accuracy 1%  Substance Prohibitance (Date)  Product Function  • undervoltage detection Yes  • phase sequence recognition Yes  • overvoltage detection Yes  • undervoltage detection 3 phase Yes  • undervoltage detection 3 phase Ves  • voltage window recognition 3 phase Ves  • under-RESET Yes	product function	Phase monitoring relay		
insulation voltage for overvoltage category III according to IEC 60664  • with degree of pollution  3  type of voltage • for monitoring • of the control supply voltage  • for monitoring • of the control supply voltage  Surge voltage resistance rated value  • for the control supply voltage  • for the control supply voltage  Surge voltage resistance rated value  • for kV  protection class IP  shock resistance according to IEC 60068-2-27  wibration resistance according to IEC 60068-2-27  mechanical service life (switching cycles) typical  electrical endurance (switching cycles) typical  electrical endurance (switching cycles) typical  electrical endurance (switching cycles) typical  thermal current of the switching element with contacts maximum  reference code according to IEC 81346-2  relative repeat accuracy  1 %  Substance Prohibitance (Date)  Product Function  • undervoltage detection  • undervoltage detection  • phase sequence recognition  • phase failure detection  • phase failure detection  • phase failure detection  • phase sequence recognition  • phase quience detection  • phase quience detection  • overvoltage detection 3 phase  • voltage window recognition 3 phase  • adjustable open/closed-circuit current principle  • auto-RESET	display version LED	No		
EC 60664   with degree of pollution 3 rated value   690 V	design of the display	LCD		
degree of pollution     3       type of voltage <ul> <li>for monitoring</li> <li>of the control supply voltage</li> <li>AC</li> </ul> AC <li>surge voltage resistance rated value</li> <li>6 kV</li> 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             1 6 Hz: 15 mm, 6 500 Hz: 2g               mechanical service life (switching cycles) typical             100 000 000               electrical endurance (switching 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             K               relative repeat accuracy             1 %               Substance Prohibitance (Date)             05/01/2012               Product Function               product function             Yes               • undervoltage detection             Yes               • phase sequence recognition             Yes               • phase failure detection             Yes               • undervoltage detection 3 phase				
type of voltage  • for monitoring • of the control supply voltage  AC  surge voltage resistance rated value  protection class IP  shock resistance according to IEC 60068-2-27  vibration resistance according to IEC 60068-2-6  mechanical service life (switching cycles) typical  electrical endurance (switching cycles) at AC-15 at 230 V typical  thermal current of the switching element with contacts maximum  reference code according to IEC 81346-2  relative repeat accuracy  Substance Prohibitance (Date)  product Function  • undervoltage detection • phase sequence recognition • phase squilure detection • phase failure detection • overvoltage detection 3 phase • undervoltage detection 3 phases • voltage window recognition 3 phase • adjustable open/closed-circuit current principle • auto-RESET	<ul> <li>with degree of pollution 3 rated value</li> </ul>	690 V		
• for monitoring • of the control supply voltage  surge voltage resistance rated value  protection class IP    IP20   Shock resistance according to IEC 60068-2-77   vibration resistance according to IEC 60068-2-6   1 6 Hz: 15 mm, 6 500 Hz: 2g   mechanical service life (switching cycles) typical   electrical endurance (switching cycles) typical   electrical endurance (switching cycles) at AC-15 at 230 V typical   thermal current of the switching element with contacts maximum   reference code according to IEC 81346-2   K     relative repeat accuracy   1 %   Substance Prohibitance (Date)   05/01/2012   Product Function	degree of pollution	3		
of the control supply voltage     surge voltage resistance rated value     protection class IP     shock resistance according to IEC 60068-2-27     sinusoidal half-wave 15g / 11 ms     vibration resistance according to IEC 60068-2-6     in 6 Hz: 15 mm, 6 500 Hz: 2g     mechanical service life (switching cycles) typical     electrical endurance (switching cycles) typical     electrical endurance (switching cycles) at AC-15 at 230 V     typical     thermal current of the switching element with contacts maximum     reference code according to IEC 81346-2     relative repeat accuracy     1 %  Substance Prohibitance (Date)  Product Function  product function      undervoltage detection     verovroltage detection     verovroltage detection     phase sequence recognition     verovroltage detection     yes     phase failure detection     yes     undervoltage detection 3 phase     voltage window recognition 3 phase     voltage window recognition 3 phase     adjustable open/closed-circuit current principle     auto-RESET	type of voltage			
surge voltage resistance rated value  protection class IP  shock resistance according to IEC 60068-2-27  sinusoidal half-wave 15g / 11 ms  vibration resistance according to IEC 60068-2-6  mechanical service life (switching cycles) typical  recipical endurance (switching cycles) at AC-15 at 230 V typical  thermal current of the switching element with contacts maximum  reference code according to IEC 81346-2  Relative repeat accuracy  Substance Prohibitance (Date)  product Function  undervoltage detection  oundervoltage detection  ophase sequence recognition  ophase failure detection  asymmetry detection  overvoltage detection 3 phase  oundervoltage detection 3 phase	<ul><li>for monitoring</li></ul>	AC		
protection class IP shock resistance according to IEC 60068-2-27 sinusoidal half-wave 15g / 11 ms vibration resistance according to IEC 60068-2-6 1 6 Hz: 15 mm, 6 500 Hz: 2g mechanical service life (switching cycles) typical electrical endurance (switching cycles) typical thermal current of the switching element with contacts maximum reference code according to IEC 81346-2 relative repeat accuracy 15 substance Prohibitance (Date)  product function  undervoltage detection phase sequence recognition phase sequence recognition phase failure detection seymmetry detection seymmetry detection overvoltage detection 3 phase undervoltage detection 3 phase undervoltage window recognition 3 phase voltage window recognition 3 phase adjustable open/closed-circuit current principle auto-RESET  read tive repeat accuracy 100 000 100 0	of the control supply voltage	AC		
shock resistance according to IEC 60068-2-27  vibration resistance according to IEC 60068-2-6  nechanical service life (switching cycles) typical  electrical endurance (switching cycles) at AC-15 at 230 V typical  electrical endurance (switching element with contacts maximum  reference code according to IEC 81346-2  relative repeat accuracy  product Function  product function  undervoltage detection  overvoltage detection  phase sequence recognition  asymmetry detection  overvoltage detection  overvoltage detection  symmetry detection  overvoltage detection 3 phase  undervoltage detection 3 phase  voltage window recognition 3 phase  ovoltage window recognition 3 phase  adjustable open/closed-circuit current principle  auto-RESET  sinusoidal half-wave 15g / 11 ms  1 6 Hz: 15 mm, 6 500 Hz: 2g  1 6 Hz: 15	surge voltage resistance rated value	6 kV		
vibration resistance according to IEC 60068-2-6  mechanical service life (switching cycles) typical  electrical endurance (switching cycles) at AC-15 at 230 V typical  thermal current of the switching element with contacts maximum  reference code according to IEC 81346-2  relative repeat accuracy  Substance Prohibitance (Date)  Product Function  product function  • undervoltage detection • overvoltage detection • phase sequence recognition • phase failure detection • phase failure detection • overvoltage detection • overvoltage detection • phase failure detection • overvoltage detection • overvoltage detection • overvoltage detection • overvoltage detection • phase failure detection • overvoltage detection • overvoltage detection 3 phase • overvoltage detection 3 phase • undervoltage detection 3 phase • voltage window recognition 3 phase • voltage window recognition 3 phase • adjustable open/closed-circuit current principle • auto-RESET   1 6 Hz: 15 mm, 6 500 Hz: 2g  100 000  100	protection class IP	IP20		
mechanical service life (switching cycles) typical electrical endurance (switching cycles) at AC-15 at 230 V typical  thermal current of the switching element with contacts maximum  reference code according to IEC 81346-2	shock resistance according to IEC 60068-2-27	sinusoidal half-wave 15g / 11 ms		
electrical endurance (switching cycles) at AC-15 at 230 V typical  thermal current of the switching element with contacts maximum  reference code according to IEC 81346-2  relative repeat accuracy  Substance Prohibitance (Date)  Product Function  • undervoltage detection • undervoltage detection • phase sequence recognition • phase failure detection • phase failure detection • overvoltage detection • overvoltage detection • yes • asymmetry detection • overvoltage detection 3 phase • undervoltage detection 3 phase • undervoltage detection 3 phase • undervoltage window recognition 3 phase • adjustable open/closed-circuit current principle • auto-RESET	vibration resistance according to IEC 60068-2-6	1 6 Hz: 15 mm, 6 500 Hz: 2g		
thermal current of the switching element with contacts maximum  reference code according to IEC 81346-2  Relative repeat accuracy  Substance Prohibitance (Date)  Product Function  product function  undervoltage detection phase sequence recognition phase failure detection phase failure detection asymmetry detection ves voervoltage detection 3 phase undervoltage detection 3 phases voltage window recognition 3 phase voltage window recognition 3 phase adjustable open/closed-circuit current principle auto-RESET   K  Ves  Ves  Ves  Ves  Ves  Ves  Ves	mechanical service life (switching cycles) typical	10 000 000		
reference code according to IEC 81346-2  relative repeat accuracy  Substance Prohibitance (Date)  Product Function  product function  • undervoltage detection • phase sequence recognition • phase failure detection • asymmetry detection • overvoltage detection 3 phase • undervoltage detection 3 phases • voltage window recognition 3 phase • adjustable open/closed-circuit current principle • auto-RESET		100 000		
relative repeat accuracy  Substance Prohibitance (Date)  Product Function  product function  • undervoltage detection • overvoltage detection • phase sequence recognition • phase failure detection • asymmetry detection • overvoltage detection 3 phase • overvoltage detection 3 phase • undervoltage detection 3 phase • voltage window recognition 3 phase • voltage window recognition 3 phase • adjustable open/closed-circuit current principle • auto-RESET   1 %  05/01/2012  Yes		5 A		
Substance Prohibitance (Date)  Product Function  oundervoltage detection overvoltage detection ophase sequence recognition outervoltage detection ophase failure detection outervoltage detection outervoltage detection outervoltage detection outervoltage detection outervoltage detection 3 phase oundervoltage detection 3 phases oundervoltage detection 3 phases outervoltage window recognition 3 phase outervoltage detection 3 phase	reference code according to IEC 81346-2	К		
product function  undervoltage detection overvoltage detection phase sequence recognition phase failure detection asymmetry detection overvoltage detection 3 phase undervoltage detection 3 phases voltage window recognition 3 phase adjustable open/closed-circuit current principle auto-RESET  Yes	relative repeat accuracy	1 %		
product function  undervoltage detection Yes overvoltage detection Yes phase sequence recognition Yes phase failure detection Yes asymmetry detection Yes overvoltage detection Yes overvoltage detection 3 phase Yes undervoltage detection 3 phases Yes ovoltage window recognition 3 phase Yes adjustable open/closed-circuit current principle No auto-RESET  Yes	Substance Prohibitance (Date)	05/01/2012		
<ul> <li>undervoltage detection</li> <li>overvoltage detection</li> <li>phase sequence recognition</li> <li>phase failure detection</li> <li>asymmetry detection</li> <li>overvoltage detection 3 phase</li> <li>undervoltage detection 3 phases</li> <li>voltage window recognition 3 phase</li> <li>voltage window recognition 3 phase</li> <li>adjustable open/closed-circuit current principle</li> <li>auto-RESET</li> </ul>	Product Function			
<ul> <li>overvoltage detection</li> <li>phase sequence recognition</li> <li>phase failure detection</li> <li>asymmetry detection</li> <li>overvoltage detection 3 phase</li> <li>undervoltage detection 3 phases</li> <li>voltage window recognition 3 phase</li> <li>voltage window recognition 3 phase</li> <li>adjustable open/closed-circuit current principle</li> <li>auto-RESET</li> </ul>	product function			
<ul> <li>phase sequence recognition</li> <li>phase failure detection</li> <li>asymmetry detection</li> <li>overvoltage detection 3 phase</li> <li>undervoltage detection 3 phases</li> <li>voltage window recognition 3 phase</li> <li>voltage window recognition 3 phase</li> <li>adjustable open/closed-circuit current principle</li> <li>auto-RESET</li> </ul>	<ul> <li>undervoltage detection</li> </ul>	Yes		
<ul> <li>phase failure detection</li> <li>asymmetry detection</li> <li>overvoltage detection 3 phase</li> <li>undervoltage detection 3 phases</li> <li>voltage window recognition 3 phase</li> <li>adjustable open/closed-circuit current principle</li> <li>auto-RESET</li> </ul> Yes <ul> <li>No</li> <li>yes</li> </ul>	<ul> <li>overvoltage detection</li> </ul>	Yes		
<ul> <li>asymmetry detection</li> <li>overvoltage detection 3 phase</li> <li>undervoltage detection 3 phases</li> <li>voltage window recognition 3 phase</li> <li>adjustable open/closed-circuit current principle</li> <li>auto-RESET</li> </ul> Yes <ul> <li>No</li> <li>yes</li> </ul>	<ul> <li>phase sequence recognition</li> </ul>	Yes		
<ul> <li>overvoltage detection 3 phase</li> <li>undervoltage detection 3 phases</li> <li>voltage window recognition 3 phase</li> <li>adjustable open/closed-circuit current principle</li> <li>auto-RESET</li> </ul> Yes No Yes	<ul> <li>phase failure detection</li> </ul>	Yes		
<ul> <li>undervoltage detection 3 phases</li> <li>voltage window recognition 3 phase</li> <li>adjustable open/closed-circuit current principle</li> <li>auto-RESET</li> </ul> Yes No Yes	<ul> <li>asymmetry detection</li> </ul>	Yes		
<ul> <li>voltage window recognition 3 phase</li> <li>adjustable open/closed-circuit current principle</li> <li>auto-RESET</li> </ul> Yes Yes Yes	<ul> <li>overvoltage detection 3 phase</li> </ul>	Yes		
<ul> <li>adjustable open/closed-circuit current principle</li> <li>auto-RESET</li> <li>No</li> <li>Yes</li> </ul>	<ul> <li>undervoltage detection 3 phases</li> </ul>	Yes		
• auto-RESET Yes	<ul> <li>voltage window recognition 3 phase</li> </ul>	Yes		
	<ul> <li>adjustable open/closed-circuit current principle</li> </ul>	No		
Control circuit/ Control	auto-RESET	Yes		
	Control circuit/ Control			

control supply voltage at AC	
<ul> <li>at 50 Hz rated value</li> </ul>	90 400 V
at 60 Hz rated value	90 400 V
operating range factor control supply voltage rated value at AC at 50 Hz	
initial value	1
full-scale value	1
operating range factor control supply voltage rated value at AC at 60 Hz	
• initial value	1
<ul> <li>full-scale value</li> </ul>	1
Measuring circuit	
measurable voltage at AC	400 90 V
adjustable response delay time	
<ul> <li>with lower or upper limit violation</li> </ul>	0.1 20 s
accuracy of digital display	+/-1 digit
Precision	
relative metering precision	5 %
Auxiliary circuit	
number of NC contacts delayed switching	0
number of NO contacts delayed switching	0
number of CO contacts delayed switching	2
operating frequency with 3RT2 contactor maximum	5 000 1/h
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	3 A
● at 400 V at 50/60 Hz	3 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
operational current at 17 V minimum	5 mA
continuous current of the DIAZED fuse link of the	4 A
output relay	
Electromagnetic compatibility	
conducted interference	
<ul> <li>due to burst according to IEC 61000-4-4</li> </ul>	2 kV
<ul> <li>due to conductor-earth surge according to IEC 61000-4-5</li> </ul>	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	
galvanic isolation	V
between input and output	Yes
between the outputs	Yes
between the voltage supply and other circuits	Yes
Connections/ Terminals	
product component removable terminal for auxiliary and control circuit	Yes
type of electrical connection	spring-loaded terminals
type of connectable conductor cross-sections	0 (0.05 4.5 0)
• solid	2x (0.25 1.5 mm²)
finely stranded with core end processing	2 x (0.25 1.5 mm²)
finely stranded without core end processing	2x (0.25 1.5 mm²)
at AWG cables solid	2x (24 16)
at AWG cables stranded	2x (24 16)
connectable conductor cross-section	
• solid	0.25 1.5 mm <sup>2</sup>

finely stranded with core end processing	0.25 1.5 mm²		
finely stranded with core end processing     finely stranded without core end processing	0.25 1.5 mm <sup>2</sup>		
AWG number as coded connectable conductor cross	0.20 1.3 11111		
section			
• solid	24 16		
<ul><li>stranded</li></ul>	24 16		
Installation/ mounting/ dimensions			
mounting position	any		
fastening method	snap-on mounting		
height	103 mm		
width	22.5 mm		
depth	91 mm		
required spacing			
<ul> <li>with side-by-side mounting</li> </ul>			
— forwards	0 mm		
— backwards	0 mm		
— upwards	0 mm		
— downwards	0 mm		
— at the side	0 mm		
<ul> <li>for grounded parts</li> </ul>			
— 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			
<ul><li>during operation</li></ul>	-25 +60 °C		
during storage	-40 +85 °C		
during transport	-40 +85 °C		
Certificates/ approvals			
General Product Approval		EMC	Declaration of Conformity



Confirmation









**Test Certificates** Marine / Shipping other Railway

Type Test Certificates/Test Report

**Special Test Certific-**<u>ate</u>





Confirmation

Vibration and Shock

Information- and Downloadcenter (Catalogs, Brochures,...)

https://www.siemens.com/ic10

Industry Mall (Online ordering system)
<a href="https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3UG4618-2CR20">https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3UG4618-2CR20</a>

Cax online generator

 $\underline{http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en\&mlfb=3UG4618-2CR20}$ 

Service&Support (Manuals, Certificates, Characteristics, FAQs,...) <a href="https://support.industry.siemens.com/cs/ww/en/ps/3UG4618-2CR20">https://support.industry.siemens.com/cs/ww/en/ps/3UG4618-2CR20</a>

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=3UG4618-2CR20&lang=en">http://www.automation.siemens.com/bilddb/cax\_de.aspx?mlfb=3UG4618-2CR20&lang=en</a>

**Characteristic: Derating** 

https://support.industry.siemens.com/cs/ww/en/ps/3UG4618-2CR20/manual

last modified: 12/21/2020 🖸