SIEMENS

## Data sheet 3UG5616-2CR20

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 spring-loaded terminal

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|---|---|
| **product brand name** | SIRIUS |
| **product designation** | Network monitoring relay with digital setting |
| **design of the product** | monitoring of phase sequence, phase failure, with/without N conductor failure, asymmetry, frequency, overvoltage/undervoltage |
| **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** | K |
| **relative repeat accuracy** | 0.4 % |
| **Substance Prohibitance (Date)** | 06/01/2023 |
| **SVHC substance name** | Blei - 7439-92-1<br>Bleimonoxid (Bleioxid) - 1317-36-8 |
| **Product Function** | |
| **product function** | |
| ● undervoltage detection | Yes |
| ● overvoltage detection | Yes |
| ● phase sequence recognition | Yes |
| ● phase failure detection | Yes; available but limited, detection is problematic with high levels of |

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| | regenerative power recovery |
| ● 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** | |
| ● at 50 Hz rated value | 90 ... 690 V |
| ● at 60 Hz rated value | 90 ... 690 V |
| **operating range factor control supply voltage rated value at AC at 50 Hz** | |
| ● initial value | 0.85 |
| ● full-scale value | 1.1 |
| **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 ... 690 V |
| **adjustable operating delay time** | 0 s |
| **adjustable response delay time** | |
| ● when starting | 0.1 ... 30 s |
| ● with lower or upper limit violation | 0.1 ... 30 s |
| **buffering time in the event of power failure minimum** | 20 ms |
| **accuracy of digital display** | +/-1 digit |
| **relative temperature-related measurement deviation** | 1 % |
| **Precision** | |
| **relative metering precision** | 3 % |
| **temperature drift per °C** | 0.001 %/°C |
| **Short-circuit protection** | |
| **design of the fuse link** | |
| ● 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 |
| **Communication/ Protocol** | |
| protocol is supported IO-Link protocol | No |
| **type of voltage supply via input/output link master** | No |
| **Auxiliary circuit** | |
| **material of switching contacts** | AgSnO2 |
| number of NC contacts delayed switching | 0 |
| number of NO contacts delayed switching | 0 |
| **number of CO contacts** | |
| ● for auxiliary contacts | 2 |
| ● delayed switching | 2 |
| **operating frequency with 3RT2 contactor maximum** | 5 000 1/h |
| **contact reliability of auxiliary contacts** | one incorrect switching operation of 100 million switching operations (17 V, 5 mA) |
| **contact rating of auxiliary contacts according to UL** | R300 / B300 |
| **Main circuit** | |
| **number of poles for main current circuit** | 4 |
| **ampacity of the output relay at AC-15** | |
| ● at 250 V at 50/60 Hz | 3 A |
| **ampacity of the output relay at DC-13** | |
| ● at 24 V | 1 A |
| ● at 110 V | 0.2 A |
| ● at 125 V | 0.2 A |

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| ● 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 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-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 |
| **Connections/ Terminals** | |
| **product component removable terminal for main circuit** | Yes |
| **product component removable terminal for auxiliary and control circuit** | Yes |
| **type of electrical connection** | spring-loaded terminals |
| **type of connectable conductor cross-sections** | |
| ● solid | 0.5 ... 4 mm² |
| ● finely stranded with core end processing | 0.5 ... 2.5 mm² |
| ● finely stranded without core end processing | 0.5 ... 4 mm² |
| ● for AWG cables solid | 20 ... 12 |
| ● for AWG cables stranded | 20 ... 12 |
| **connectable conductor cross-section** | |
| ● solid | 0.5 ... 4 mm² |
| ● finely stranded with core end processing | 0.5 ... 2.5 mm² |
| ● finely stranded without core end processing | 0.25 ... 1.5 mm² |
| **AWG number as coded connectable conductor cross section** | |
| ● solid | 24 ... 12 |
| ● stranded | 20 ... 12 |
| **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 |

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| — downwards | 0 mm |
| — at the side | 0 mm |

## Ambient conditions

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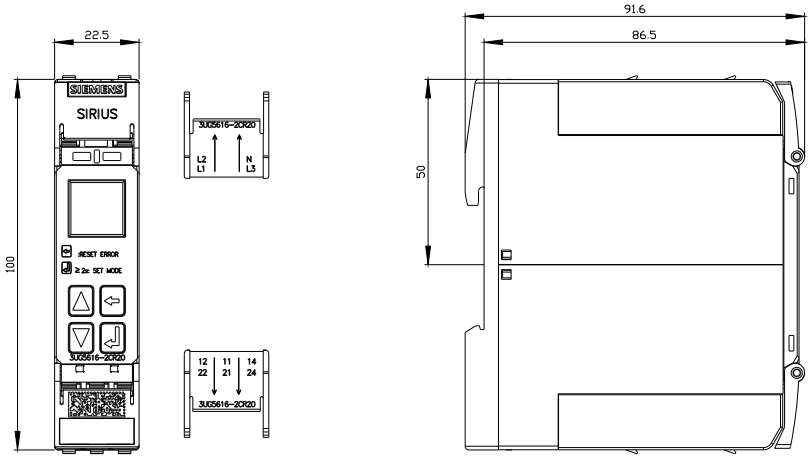
| installation altitude at height above sea level maximum | 2 000 m |
| **ambient temperature** | |
| ● during operation | -25 ... +60 °C |
| ● during storage | -40 ... +85 °C |
| ● during transport | -40 ... +85 °C |
| relative humidity during operation | 70 % |

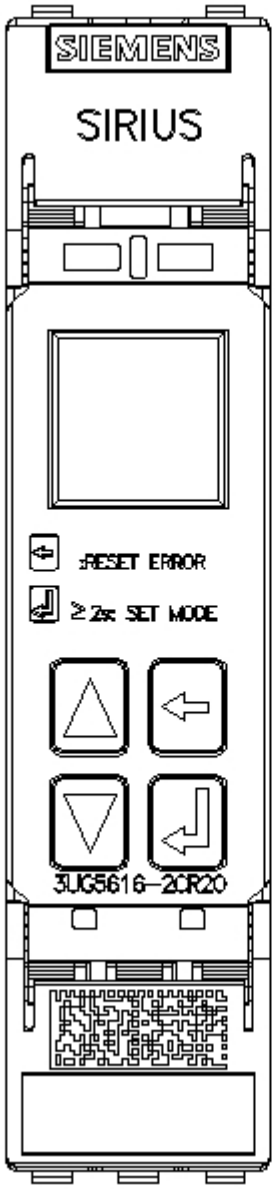
## Certificates/ approvals

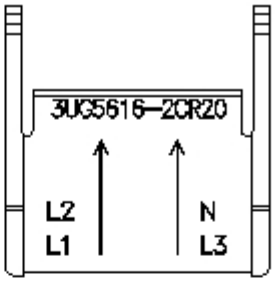
| General Product Approval | Declaration of Conformity | other |
|---|---|---|
| Confirmation | | Confirmation |

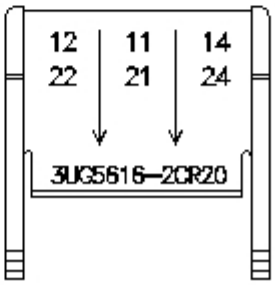
## Further information

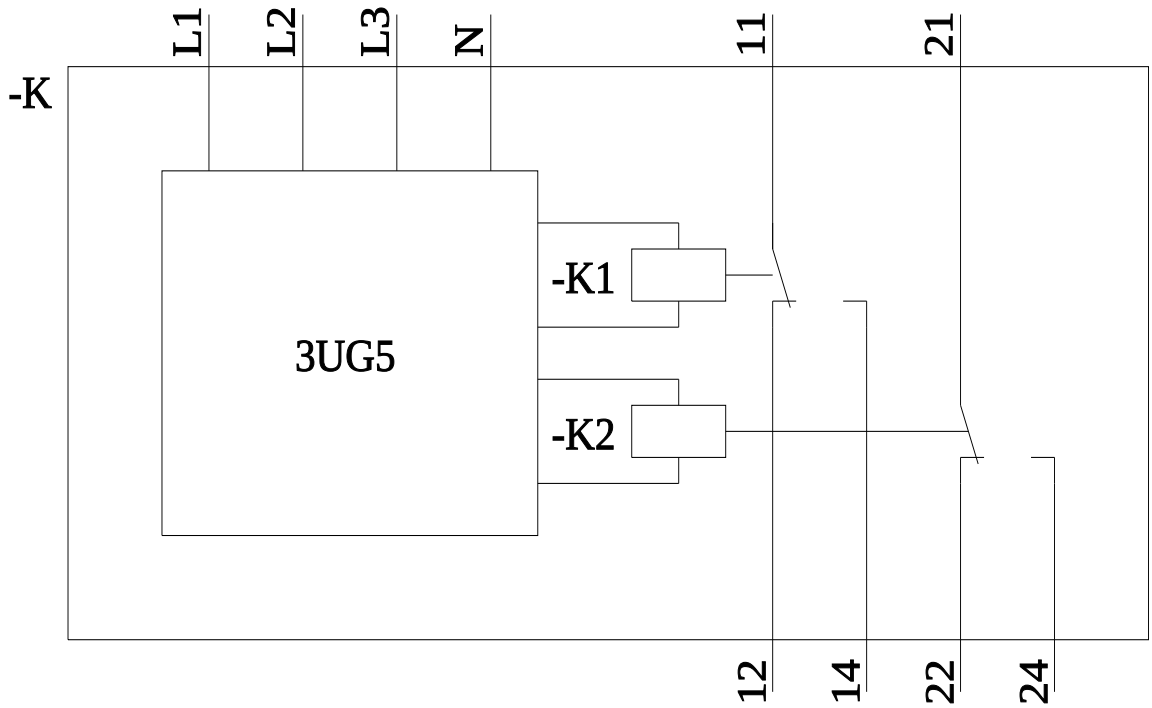
**Siemens has decided to exit the Russian market (see here).**
https://press.siemens.com/global/en/pressrelease/siemens-wind-down-russian-business
**Siemens is working on the renewal of the current EAC certificates.**
Please contact your local Siemens office on the status of validity of the EAC certification 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=3UG5616-2CR20
**Cax online generator**
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3UG5616-2CR20
**Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**
https://support.industry.siemens.com/cs/ww/en/ps/3UG5616-2CR20
**Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)**
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3UG5616-2CR20&lang=en
**Characteristic: Derating**
https://support.industry.siemens.com/cs/ww/en/ps/3UG5616-2CR20/manual





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