

Prüfbescheinigung / Test – Certificate

Erzeugnis / Product: **Überwachungsrelay / Monitoring relay**Typ: **3UG4**
Type:Tech. Daten: **I_e (AC-15) = 3 A at 400 V_{ac}**
Specification: **I_e (DC-13) = 1 A at 24 V_{dc}**
 I_e (DC-13) = 0.22 A at 125 V_{dc}
 I_e (DC-13) = 0.1 A at 250 V_{dc}Hersteller: **Siemens AG**
Manufacturer: **I IA CE**Art der Prüfung / Type of test: **Type Test**Prüfer / **R&D-VI 2 / Mr. Prechtl-Schöpf**
Tested by:Labor / **LOVAG registered and DAkkS accredited**
Laboratory: **Testing Laboratory**
Siemens AG, Amberg

Angewandte Prüfbestimmungen / Test specifications applied:

IEC 60947-5-1: 07-2009**IEC 60947-4-1, Annex H: 07-2012**

Durchgeführte Prüfungen / Tests conducted:

See Test Summary 2716e

Prüfergebnis / Test results:

All requirements of the test specification are met.

Bemerkungen / Remarks:

Issued: 2005-08-18**Index a, dated 2006-03-17:****Test report no. 05004TEI01 covering additional types added.****Index b, dated 2007-02-15:****Test report no. 05004TEI02 and 05004TEI03 covering additional types added.****Index c, dated 2010-05-18:****Cover page updated, Test summary 2716c added.****Index d, dated 2011-09-14:****Cover sheet updated, Test summary 2716d added.****Index e, dated 2013-02-15:****Cover sheet updated, Test summary 2716e added.**

Unterschrift / Signature



Gegengezeichnet / Released by:


I IA CE CP R&D-VI Mr. Schweiger
I IA CE CP R&D-EN Mr. Knauer**SIEMENS AG****Industry Sector****S. Russwurm (Head)**

Test summary

Manufacturer: **SIEMENS AG, I IA CE NST**
541 01 Trutnov, Volanovska 516
Czech Republic

Test device: **Monitoring relay**

Type: **3UG4..**

Test specification: **IEC 60947-5-1 (Ed. 3.1 2009-07)**
IEC 60947-4-1 (Ed. 3.1 2012-07 Annex H)

Test report No.: **05004TEI, 05004TEI01, 05004TEI02, 05004TEI03,**
05-M0601845-B1, 06-M0602242-B1, 06-M0602320-A1,
07-E002467-BM-C01, 51968-081584-5 (Edition 1)
11001RDI02 + 7240-373/2011 + 7240-365/2011 + 7240-370/2011 +
7240-362/2011 + 7240-374/2011 + 7240-366/2011 + 7240-375/2011 +
7240-367/2011 + 7240-368/2011 + 7240-360/2011 + 7240-369/2011 +
7240-361/2011
12070PMI01 + 7240-422/2012 + 7240-423/2012 + 7240-436/2012 +
7240-437/2012

Test report No.: 05004TEI, 05004TEI01, 05004TEI02, 05004TEI03

Specification and sub-clause	Kind of tests	Tested device
<u>IEC 60947-5-1</u> Test sequence I 8.3.3.3 8.3.3.4 8.2.4 (IEC 60947-1)	Temperature rise Dielectric properties Mechanical properties of terminals	3UG4616-1CR20 3UG4622-2AA30 3UG4641-1CS20 3UG4622-1AW30 3UG4632-1AW30 3UG4633-1AL30 3UG4651-1AW30 3UG4651-1AA30 3UG4501-1AA30 3UG4501-2AW30 3UG4624-2CS20
Test sequence II 8.3.3.5.2 8.3.3.5.5b)	Making and breaking capacities of switching elements under normal conditions Dielectric properties	3UG4511-1BP20 3UG4513-1BR20 3UG4501-1AW30
Test sequence III 8.3.3.5.3 8.3.3.5.5b)	Making and breaking capacities of switching elements under abnormal conditions Dielectric properties	3UG4511-1BP20 3UG4513-1BR20 3UG4501-1AW30

Certificate No.: 2716e

Test sequence IV 8.3.4 8.3.3.5.5b)	Performance under conditional short circuit current Dielectric properties	3UG4511-1BP20 3UG4616-1CR20 3UG4651-2AA30
Test sequence V IEC 60947-1 Annex C	Degree of protection of enclosed control circuit devices	3UG4511-1BP20 3UG4501-1AW30
IEC 60947-1 EMC-Requirements	Tested by: Siemens AG, EMV-Zentrum Erlangen and EMC test center, TÜV SÜD SENTON GmbH 05-M0601845-B1, 06-M0602242-B1, 06-M0602320-A1, 07-E002467-BM-C01, 51968-081584-5 (Edition 1) Emission and Immunity	3UG4511-1BP20 3UG4513-1BR20 3UG4616-1CR20 3UG4632-1AW30 3UG4622-2AA30 3UG4633-1AL30 3UG4641-1CS20 3UG4651-1AW30 3UG4651-1AA30 3UG4501-1AW30 3UG4501-1AA30 3UG4624-1CS20

Testreport no.: 11001RDI02

Test-sequence and sub-clause	Test	Tested device
IEC 60947-5-1 Test-sequence I 8.3.3.3 8.3.3.4	Temperature-rise Dielectric properties	3UG4815-1AA40 3UG4851-1AA40 3UG4822-2AA40 3UG4841-1AC40
Test-sequence II 8.3.3.5.2 8.3.3.5.5 b)	Making and breaking capacities of switching elements under normal conditions Dielectric properties	3UG4822-1AA40 3UG4841-2CA40

Certificate No.: 2716e

Test-sequence III 8.3.3.5.3 8.3.3.5.5 b)	Making and breaking capacities of switching elements under abnormal conditions Dielectric properties	3UG4822-1AA40 3UG4841-2CA40
Test-sequence IV 8.3.4 8.3.3.5.5 b)	Performance under conditional short circuit current Dielectric properties	3UG4815-2AA40 3UG4816-1AA40 3UG4841-1CA40 3UG4851-1AA40
Test-sequence V Annex C of IEC 60947-1	Degree of protection of enclosed control circuit devices	3UG4851-1AA40

Testreport no.: 12070PMI01

Test sequence I			
Sample No.	Test sample	Date code	Rating
12070PM001	3UG4625-1CW30	E01	I _{th} = 5A, U _s =24-240Vac/dc U _i =300V, U _{imp} =4kV
12070PM002	3UG4625-2CW30	E01	
12070PM003	3UG4825-2CA40	E01	I _{th} = 5A, U _s =24dc U _i =300V, U _{imp} =4kV
Test sequence II / III			
see test report 05004TEI02			
Test sequence IV			
12070PM020	3UG4625-1CW30	E01	1kA / 250V Fuse: 4A DIAZED gLgG
12070PM021	3UG4625-2CW30	E01	
12070PM022	3UG4825-1CA40	E01	
12070PM023	3UG4825-2CA40	E01	

Annex H Limits of operation of ground/earth fault relays (Annex T of IEC 60947-1)			
Sample No.	Test sample	Date code	Rating
12070PM010	3UG4625-2CW30 + 3UL2303-1A	E01	Iu=30mA; Io=40A
12070PM011	3UG4825-1CA40 + 3UL2305-1A	E01	

The tests were carried out on devices, representative for the whole series, fixed on page 5 up to 10.

The tests were carried out in the accredited laboratory:

Type Test Center Siemens AG Amberg
Werner-von-Siemens-Str. 48, 92220 Amberg
 Accredited-No.: **D-PL-11055-04-01**

The EMC-Tests were carried out in the accredited laboratory of

Siemens AG, EMV-Zentrum Erlangen
Günther-Scharowsky-Str. 21, 91058 Erlangen
 Accredited-No.: **TTI-P-G 149/98**

and Test report No.: 51968-081584-5 (Edition 1) from:

EMC Test center
TÜV SÜD SENTON GmbH
Äußere Frühlingstraße 45, 94315 Straubing
 Accredited-No.: **DAT-P-171/9402**

The EMC-Tests with test report no.

7240-373/2011 + 7240-365/2011 + 7240-370/2011 + 7240-362/2011+ 7240-374/2011 + 7240-366/2011+
 7240-375/2011 + 7240-367/2011 + 7240-368/2011 + 7240-360/2011 + 7240-369/2011 + 7240-361/2011,
 7240-422/2012 + 7240-423/2012 + 7240-436/2012 + 7240-437/2012

were carried out in the accredited laboratory:

Testing Laboratory No. 1103
VOP-026 Sternberk, s.p.
Odbor zkouseni techniky- zkusebni laborator
V. Nejedleho 691, 68203 Vyskov
 Accredited-No.: **406/2008**

Nomenclature Breakdown

Monitoring relay 3UG4..

3UG4 511 -1 A P 20
I II III IV V VI

I Basic Type

3UG4 - Monitoring Relays

II Function

- 511 - 3-phase sequence monitoring, powered by the line voltage
- 512 - 3-phase sequence monitoring, phase loss, powered by the line voltage
- 513 - analog setting, 3-phase sequence monitoring, phase loss, undervoltage, powered by the line voltage
- 614 - digital setting, 3-phase sequence monitoring, phase loss, undervoltage, unsymetry, powered by the line voltage
- 615 - digital setting, 3-phase sequence monitoring, phase loss, over- undervoltage, powered by the line voltage
- 616 - digital setting, 3-phase sequence monitoring, neutral-monitoring, phase loss, over- undervoltage, powered by the line voltage
- 617 - digital setting, 3-phase sequence monitoring, phase loss, over- undervoltage, unsymetry, with output for phase correction, powered by the line voltage
- 618 - digital setting, 3-phase sequence monitoring, neutral-monitoring, phase loss, over- undervoltage, unsymetry, with output for phase correction, powered by the line voltage

III Type of Terminal

- 1 - screw terminal
- 2 - spring terminal

IV Auxiliary contact assembly

- A - 1 changeover contact
- B - 2 changeover contacts
- C - 1 + 1 changeover contacts

V Supply and line voltage

- N - powered by the line voltage; 160-260V ac line voltage
- P - powered by the line voltage; 320-500V ac line voltage
- Q - powered by the line voltage; 420-690V ac line voltage
- R - powered by the line voltage; 160-690V ac line voltage

VI ac/dc

- 20 - ac

Continuation nomenclature breakdown

$\frac{3UG4}{I}$ $\frac{621}{II}$ $\frac{-1}{III}$ $\frac{A}{IV}$ $\frac{W}{V}$ $\frac{30}{VI}$

I Basic Type

3UG4 - Monitoring Relays

II Function

- 621 - digital setting, Single-phase current monitoring 3 mA – 500mA, over-, undercurrent
- 622 - digital setting, Single-phase current monitoring 0.05 A – 10 A, over-, undercurrent
- 631 - digital setting, Single-phase voltage monitoring, 0.1 V – 60V, over- undervoltage
- 632 - digital setting, Single-phase voltage monitoring, 10 V – 600V, over- undervoltage
- 633 - digital setting, Single-phase voltage monitoring, powered by the line voltage, 17-275V, over- undervoltage
- 641 - digital setting, Single-phase power factor and current monitoring

III Type of Terminal

- 1 - screw terminal
- 2 - spring terminal

IV Auxiliary contact assembly

- A - 1 changeover contact
- C - 1 + 1 changeover contacts

V Supply and line voltage

- A - 24V ac/dc supply voltage
- L - powered by the line voltage; 17-275V ac/dc line voltage
- S - powered by the line voltage; 90-690V ac line voltage
- W - 24 V – 240V ac/dc supply voltage

VI ac/dc

- 20 - ac, only for Single-phase power factor and current monitoring
- 30 - ac/dc

Continuation nomenclature breakdown

3UG4 501 -1 A W 30
I II III IV V VI

I Basic Type

3UG4 - Monitoring Relays

II Function

501 - analog setting, Monitoring relays for monitoring the levels of conductive liquids
651 - digital setting, Monitoring relays for speed monitoring

III Type of Terminal

-1 - screw terminal
-2 - spring terminal

IV Auxiliary contact assembly

A - 1 changeover contact

V Supply and line voltage

A - 24V ac/dc supply voltage
W - 24 V – 240V ac/dc supply voltage

VI ac/dc

30 - ac/dc

Continuation nomenclature breakdown

3UG4 624 -1 C S 20
I II III IV V VI

I Basic Type

3UG4 - Monitoring Relays

II Function

624 - digital setting, Monitoring Relays for fault current monitoring,
625 - digital setting, Monitoring Relays for fault current monitoring

III Type of Terminal

-1 - screw terminal
-2 - spring terminal

IV Auxiliary contact assembly

C - 1 + 1 changeover contacts

V Supply and line voltage

S - powered by the line voltage; 90-690V ac line voltage
W - 24 V – 240V ac/dc supply voltage

VI ac/dc

20 - ac
30 - ac/dc

Continuation nomenclature breakdown

Series: 3UL2

3UL22 01 - 1A
I II III

I Basic Type

summation current transformer, open type for use with series 3UG4..

II Frame Size

01 - 40 mm hole diameter
02 - 65 mm hole diameter
03 - 120 mm hole diameter

III Rated fault current

1A - 0.3 A
2A - 0.5 A
3A - 1.0 A
1B - 6.0 A
2B - 10.0 A
3B - 16.0 A
4B - 25.0 A
5B - 40.0 A

3UL23 01 - 1A
I II III

I Basic Type

summation current transformer, open type for use with series
3UG4625../3UG4825../3UF7510

II Frame Size

02 - 35 mm hole diameter
03 - 55 mm hole diameter
04 - 80 mm hole diameter
05 - 110 mm hole diameter
06 - 140 mm hole diameter
07 - 210 mm hole diameter

III Transformer Type

1A - Type A

Continuation nomenclature breakdown

Monitoring relay 3UG4.. with IO-Link

3UG4 815 - 1 A A 4 0
I II III IV V VI VII

I. Basic Type

3UG4 - Monitoring relay

II. Function

- 815 - digital setting, monitoring relay for monitoring of electrical network with IO-Link interface
- 816 - digital setting, monitoring relay for monitoring of electrical network with IO-Link interface
- 822 - digital setting, monitoring relay for current monitoring with IO-Link
- 825 - digital setting, monitoring relay for fault current monitoring with IO-Link interface
- 832 - digital setting, monitoring relay for voltage monitoring with IO-Link interface
- 841 - digital setting, monitoring relay for cos Phi monitoring with IO-Link interface
- 851 - digital setting, monitoring relay for speed monitoring with IO-Link interface

III. Type of Terminals

- 1 - Screw terminals
- 2 - Spring loaded terminals

IV. Auxiliary contact assembly

- A - one changeover contact
- C - two changeover contacts

V. Control and line voltage

- A - 24V supply voltage

VI. Control and line voltage

- 4 - dc

VII. 0 - for manufacturing identification

SIEMENS



Certificate No.: 2716e

Remarks:

Test report No.: 51968-081584-5 (Edition 1):

For updating the documentation according to the valid standard, EMC-tests were conducted from
EMC Test center
TÜV SÜD SENTON GmbH
Äußere Frühlingstraße 45, 94315 Straubing

Test report No.: 11001RDI02

Tests were conducted to verify the differences between devices with I/O Link and without I/O-Link (see test report no.: 05004TEI, 05004TEI01, 05004TEI02, 05004TEI03), representative for the whole series.

Test report No.: 12070PMI01

Test were conducted for new fault current monitoring relays 3UG4625-.CW30 and 3UG4825-.CA40 with I/O-Link.

Amberg 2013-02-14
Location, Date

Stadlbauer
(Tested by)
(Authorized representative)
Mr. Stadlbauer

Prechtl-Schöpf
(Reviewed by)
(Assistant laboratory manager)
Mr. Prechtl-Schöpf