

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Monitoring Relay

with type designation(s)
3UG4

Issued to

Siemens AG GWA
Amberg, Germany

is found to comply with
Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norske Veritas' Offshore Standards

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

This Certificate is valid until **2018-01-31**.

Issued at **Høvik** on **2015-09-21**

DNV GL local station: **Essen**

Approval Engineer: **Marta Alonso Pontes**

for **DNV GL**

Marit Laumann
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

Product description

Monitoring Relays type 3UG4 with the following applications: Phase sequence, phase failure, phase dissymmetry, undervoltage, overvoltage, current, power factor, conductive liquids, fault current and speed monitoring.

Ratings are as listed below.

Rated line voltage*:	Ue = 0.1 - 600 V ac/dc, single phase Ue = 90 - 600 V ac, single phase (IT-net) Ue = 160 - 600 V ac, three phase (IT-net)
Rated supply voltage:	Ue = 24 - 240 V ac/dc or supplied by the measuring voltage
Rated insulation voltage*:	Ui = 600 V for devices rated 240 V up to 600 V (IT-net) Ui = 300 V for devices rated up to 240V
Rated Output:	Ith = 5 A, Ie (AC-15) = 3 A at 400 V AC, Ie (DC-13) = 1 A at 24 V DC Ie (DC-13) = 0,22A at 125V DC Ie (DC-13) = 0,1A at 250V DC
Rated Output 3UG4501 and 3UG4651 only:	Ith = 5 A, Ie (AC-15) = 3 A at 250 V AC, Ie (DC-13) = 1 A at 24 V DC Ie (DC-13) = 0,22A at 125V DC Ie (DC-13) = 0,1A at 250V DC

Accessories include Push-In lugs for screw mounting (3RP19..)

* See Application/ limitation regarding voltages.

Application/Limitation

For installation inside switchboards/ enclosures onboard ships and offshore units.

With Uimp = 6 kV the max. rated voltage is 600 V when used in a IT (ship) net. It can be used in applications with directly earthed systems with rated voltage of 400/690 V. With Uimp = 4 kV for 3UG4501 and 3UG4651 the max. rated voltage is 250 V.

Type Approval documentation

Siemens booklet "Reg No. 10wi0008 Prologation 2010"
Brochure SIRIUS relays, page 8 to 11. "Nomenclature Breakdown 3UG4, issued 2005-07-27 revised 2005-11-25.

Test Reports:

Equipment under Test SIRIUS 3UG4, issued September 2005, revised March 2006.
Report nos. 05023TEs, issued April 2006, 05004TEI & 05004TEI01 issued 2006-03-17,
A&D ATS 05-M0601845-A1, issued March 2005, A&D ATS 6/05-M0602242-A1, issued Febr. 2006,
A&D ATS 6/05-M0602320-B1, issued Jan. 2006.

Witness testing at Siemens.

Documentation referred to in approval letter with ref. MCANO381/PONT/262.1-011117-J-50 dated 15/07/2015

Job Id: **262.1-011117-2**
Certificate No: **TAE0000065**

Tests carried out

Type tests in accordance with IEC/EN60947, dry heat, damp heat, salt mist, vibration, high voltage, EMC, inclination, flame retardancy.

Marking of product

Manufacturer's label containing data and manufacturer's type number.

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the Type approval are complied with and that no alterations are made to the product design or choice of materials.

The main elements of the assessment are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Routines (RT) checked (if not available tests according to RT to be carried out)
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer's product type marking and Type Approval Certificate.

Assessment to be performed at least every second year.

END OF CERTIFICATE