DNV·GL

Certificate No:
TAA00001RW

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Peripheral Equipment

with type designation(s)
Isolators/converters/repeaters type 3103, 3104, 3105, 3108, 3109, 3114, 3405, 3185, 3186, 3117, 3118, 3101, 3102, 3111, 3112, 3113, 3337, 3331, 3333

Issued to
PR electronics A/S
Rønde, Midtjylland, Denmark

is found to comply with
DNV GL rules for classification – Ships, offshore units, and high speed and light craft

Application :

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

Location classes:

Temperature	**D**
Humidity	**B**
Vibration	**B**
EMC	**B**
Enclosure	**Required protection according to relevant rules shall be provided upon installation on board**

Issued at **Høvik** on **2018-03-09**
This Certificate is valid until **2023-03-08**.
DNV GL local station: **Aalborg**

Approval Engineer: **Ståle Sneen**

for **DNV GL**

Odd Magne Nesvåg
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.

Job Id: **262.1-010635-8**
Certificate No: **TAA00001RW**

Product description

Isolators, converters and repeaters as listed below:

Type	Model	Name
FIX-SUP – Fixed input converters, supplied	3103	Isolated repeater
FIX-SUP – Fixed input converters, supplied	3104	Isolated converter
FIX-SUP – Fixed input converters, supplied	3105	Isolated converter
FIX-SUP – Fixed input converters, supplied	3108	Isolated repeater/splitter
FIX-SUP – Fixed input converters, supplied	3109	Isolated converter/splitter
UNI-SUP – Universal input converter, supplied	3114	Isolated universal converter
Flexible supply	3405	Power connector unit
PAS-ISO – Passive isolator, input loop powered	3185A1	1 channel loop-powered isolator
PAS-ISO – Passive isolator, input loop powered	3185A2	2 channel loop-powered isolator
PAS-ISO – Passive isolator, output loop powered	3186A1	1 channel transmitter isolator
PAS-ISO – Passive isolator, output loop powered	3186A2	2 channel transmitter isolator
PAS-ISO – Passive isolator, output loop powered	3186B1	1 channel current isolator
PAS-ISO – Passive isolator, output loop powered	3186B2	2 channel current isolator
BIPOL-SUP – Bipolar isolators, supplied	3117	Isolated converter
BIPOL-SUP – Bipolar isolators, supplied	3118	Isolated converter/splitter
TEMP-SUP – Temperature converters, supplied	3101	Non-isolated TC converter
TEMP-SUP – Temperature converters, supplied	3102	Non-isolated Pt100 converter
TEMP-SUP – Temperature converters, supplied	3111	Isolated TC converter
TEMP-SUP – Temperature converters, supplied	3112	Isolated Pt100 converter
HART® – Temperature converters	3113	HART® isolated temperature converter
HART® – Temperature converters	3337	2-wire HART®-LOOP isolated temp. converter
TEMP-LOOP – Temperature converter, output loop powered	3331	2-wire isolated temperature converter
TEMP-LOOP – Temperature converter, output loop powered	3333	Non-isolated 2-wire Pt100 converter

The 3xxx-**N** versions are without power rail connection.

Approval conditions

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV GL, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV GL rules for classification of ships Pt.4 Ch.9 Control and monitoring systems.

Application/Limitation

Ex installations to be approved in each case according to the Rules and Ex-Certification/Special Condition for Safe Use listed in valid Ex-certificate issued by a notified/recognized Certification Body.

Ex-certification is not covered by this certificate and the following paragraph, which is for information only, is based on information received from the manufacturer, but not verified by DNV GL.

Information on Ex-Certification received from manufacturer – Not verified by DNV GL		
Equipment	Certified	Certificate No.
Isolators and converters of system3000 Type 3…	Ⓔx II 3 G Ex nA IIC T4 Gc	KEMA 10ATEX0147 X issue No. 8
	Ex nA IIC T4 Gc	IECEx KEM 10.0068X issue No. 7

Type Approval documentation

Tests carried out
Applicable tests according to Standard for Certification No. 2.4, April 2006.

Marking of product
The products to be marked with model name, manufacturer name and serial number.

Periodical assessment
The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:
- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE