

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Electrical Indicators**

with type designation(s)

NIR3-.. and NIQ3-.. series stepping motor analogue indicators

Issued to

**Noris Automation GmbH
NÜRNBERG, 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.****Location classes:**

Temperature	D
Humidity	B
Vibration	B
EMC	B
Enclosure	C

This Certificate is valid until **2019-08-30**.Issued at **Høvik** on **2015-08-31**DNV GL local station: **Augsburg**Approval Engineer: **Nils Jarem**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: **262.1-017970-1**
Certificate No: **TAA0000029**

Product description

The Norimeter NIQ3, NIQ31, NIR3 and NIR31 series are microprocessor-controlled stepping motor analogue indicators.

Order Code:

NI	R	3	100	-	I2	-	123	-	MED	= Indicator example
Housing type:	Q									Quadratic
	R									Round
Series:		3								Scale angle up to 300° with pointer
		31								Scale angle up to 360° with pointer disc
Housing size:		060								Housing around ø60mm
		080								Housing around ø80mm
		100								Housing around ø100mm
		130								Housing around ø130mm
		072								Housing square 72 x 72mm
		096								Housing square 96 x 96mm
		144								Housing square 144 x 144mm
Input signal:		F1								Pulsating DC voltage, 0.2Hz..140KHz
		F2								AC-Voltage, 0.2Hz..140KHz
		FD1								Pulsating DC voltage, 0.2Hz..140KHz with direction
		FD2								AC-Voltage, 0.2Hz..140KHz with direction
		H1								NTC, 40..120°C
		H2								NTC, 5..70°C
		H3								NTC, 114..200°C
		H0								NTC, special adjustment
		I1								Current, 0..20mA DC
		I2								Current, 4..20mA DC
		I4								Current, -20mA..0..+20mA DC
		I0								Current DC, special adjustment
		P1; P1L3; P1L4								PT100, 0 °C..120 °C, 2;-3;-4-conductor
		PT1; PT1L3; PT1L4								PT1000, 0 °C..120 °C, 2;-3;-4-conductor
		P2; P2L3; P2L4								PT100, 0 °C..150 °C, 2;-3;-4-conductor
		PT2; PT2L3; PT2L4								PT1000, 0 °C..150 °C, 2;-3;-4-conductor
		P3; P3L3; P3L4								PT100, 0 °C..200 °C, 2;-3;-4-conductor
		PT3; PT3L3; PT3L4								PT1000, 0 °C..200 °C, 2;-3;-4-conductor
		P4; P4L3; P4L4								PT100, 0 °C..250 °C, 2;-3;-4-conductor
		PT4; PT4L3; PT4L4								PT1000, 0 °C..250 °C, 2;-3;-4-conductor
		P5; P5L3; P5L4								PT100, 0 °C..300 °C, 2;-3;-4-conductor
		PT5; PT5L3; PT5L4								PT1000, 0 °C..300 °C, 2;-3;-4-conductor
		P6; P6L3; P6L4								PT100, 0 °C..400 °C, 2;-3;-4-conductor
		PT6; PT6L3; PT6L4								PT1000, 0 °C..400 °C, 2;-3;-4-conductor
		P7; P7L3; P7L4								PT100, 0 °C..500 °C, 2;-3;-4-conductor
		PT7; PT7L3; PT7L4								PT1000, 0 °C..500 °C, 2;-3;-4-conductor
		P8; P8L3; P8L4								PT100, 0 °C..600 °C, 2;-3;-4-conductor
		PT8; PT8L3; PT8L4								PT1000, 0 °C..600 °C, 2;-3;-4-conductor
		P11; P11L3; P11L4								PT100, -30 °C..120 °C, 2;-3;-4-conductor
		PT11; PT11L3; PT11L4								PT1000, -30 °C..120 °C, 2;-3;-4-conductor
		P12; P12L3; P12L4								PT100, 0 °C..100 °C, 2;-3;-4-conductor
		PT12; PT12L3; PT12L4								PT1000, 0 °C..100 °C, 2;-3;-4-conductor
		P0; P0L3; P0L4								PT100, special adjustment
		PT0; PT0L3; PT0L4								PT1000, special adjustment
		U1								Voltage, 0..10V DC
		U2								Voltage, 2..10V DC
		U4								Voltage, -10V..0..+10V DC
		U0								Voltage DC, special adjustment
		UG0								Voltage DC, special adjustment for GE1214
Scale design:							-123			Scale design
Custom Indicator:							V456			Custom specific device
Optional:									MED	MED approved type

Power: 24V DC.

Approval conditions

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV, 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 Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems.

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
- 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 at least every second year and at renewal of this certificate.
END OF CERTIFICATE