DNV·GL

Certificate No:
TAA0000160

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Position Switch

with type designation(s)
Inductive proximity switches, type N x x xx - xxx x x xx - xx - xx - xx-xx

Issued to
Pepperl+Fuchs GmbH
Mannheim, Germany

is found to comply with
DNV GL rules for classification – Ships

Application :

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

Temperature	**D**
Humidity	**B**
Vibration	**B**
EMC	**B**
Enclosure	**D**

Issued at **Hamburg** on **2017-04-21**
This Certificate is valid until **2018-11-20**.
DNV GL local station: **Augsburg**

Approval Engineer: **Klaus-Peter Schröder**

for **DNV GL**

Joannis Papanuskas
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.

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Job Id: **262.1-024175-1**
Certificate No: **TAA0000160**

Product description

[1]	[2]	[3]	[4]		[5]	[6]	[7]	[8]		[9]		[10]		[11]
N	x	x	xx	-	xxx	x	x	xx	-	xx	-	xx	-	xx-xx

[1]	N = inductive	
[2]	B = base line J = initiator	
[3]	B = flush N = non-flush	
[4]	Operating range:	0,6mm ... 100mm
[5]	Cylindrical type, diameter: Surface mount type:	12, 18 or 30mm F33 L2 = Varikont L U = Varikont U1_ = plastic terminal block base, M20 and metal rotary socket U1K = plastic terminal block base, M20 and plastic rotary socket U1L= plastic terminal block base, M20 and metal rotary socket, large sensor head U2_ = plastic terminal block base, 1/2 NPT and metal rotary socket U2K = plastic terminal block base, 1/2 NPT and metal rotary socket U2L = plastic terminal block base, 1/2 NPT and metal rotary socket, large sensor head U3_ = metal terminal block base, M20 and metal rotary socket U4_ = metal terminal block base, 1/2 NPT and metal rotary socket U4K = metal terminal block base, 1/2 NPT and plastic rotary socket U4L= metal terminal block base, 1/2 NPT and metal rotary socket, large sensor head
[6]	G = threading	
[7]	M = metal K = plastic	
[8]	Cylindrical type:	usable threaded length in mm
[9]	Electrical output:	A, A0 = 4-wire, DC, NPN, NO and NC A2 = 4-wire, DC, PNP, NO and NC E, E0 = 3-wire, DC, NPN, NO E1 = 3-wire, DC, NPN, NC E2 = 3-wire, DC, PNP, NO E3 = 3-wire, DC, PNP, NC
[10]	Connection elements	V1 = M12x1 device connector for DC proximity switches _ (blank)
[11]	Special properties:	ATEX-category: 3G-3D _ (blank)

Application/Limitation

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 RU SHIP Pt.4 Ch.9 Sec. 1.

The operating voltage of the sensors must be well protected against surge caused by lightning, for example by operating at SELV/PELV power supplies.

Ex-certification is not covered by this certificate. Application in hazardous area to be approved in each case according to the Rules and Ex-Certification/ Special Condition for Safe Use listed in valid Ex-Certificates issued by a notified/recognized Certification Body.

Type Approval documentation

Tests carried out

Applicable tests according to Class Guideline DNVGL-CG-0339, Edition November 2015.
Vibration test 2 … 100Hz with a displacement +/-2.5mm, turnover frequency 19.9Hz, and acceleration 4g.

Marking of product

The products to be marked with:
- manufacturer name or manufacturer logo
- Product name and part no.

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