TYPE APPROVAL CERTIFICATE

Certificate no.:
TAA00001A5
Revision No:
5

This is to certify:

that the Position Switch

with type designation(s)
Cylindrical sensors, rectangular sensors, slot sensors

issued to
Pepperl+Fuchs SE
Mannheim, Baden-Württemberg, Germany

is found to comply with
DNV 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.

Location classes:

Temperature	**D**
Humidity	**B**
Vibration	**B**
EMC	**B**
Enclosure	**B / C (IP 67)**

Issued at **Hamburg** on **2026-07-13**
This Certificate is valid until **2031-07-05**.
DNV local unit: **Augsburg**

for **DNV**

Approval Engineer: **Holger Jansen**

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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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to USD 300 000.

Product description

Cylindrical sensors

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

[1]	N	inductive
[2]	C J	comfort line initiator
[3]	B N	flush non-flush
[4]	Operating range	1,5mm ... 15mm
[5]	Diameter	8, 12, 18 or 30mm
[6]	G	threading
[7]	M K	metal plastic
[8]	Usable threaded length in mm	
[9]	Electrical output	N = 2-wire DC, NAMUR analog N0 = 2-wire DC, NAMUR discrete SN, S1N = 2-wire DC, Safety NAMUR analog, (SN = n.c., S1N = n.o.) Note: Only valid for sensors connected to a qualified NAMUR / Safety NAMUR interface.
[10]	Connection elements	V1 = M12x1 device connector ...M = cable length in mtr. (max. 30mtr.). There are cables, which are flame retardant in accordance with IEC 60332-1-2 to use. Measures for limitation of the propagation of fire along cable bundles are required (fire stops). Halogen free properties of the cables are not tested.

Rectangular sensors

N	x	x	xx	-	xx	-	x	-	xx
[1]	[2]	[3]	[4]		[5]		[6]		[7]

[1]	N	inductive
[2]	B C J	basis line comfort line initiator
[3]	B N	flush non-flush
[4]	Operating range	2mm ... 50mm
[5]	Rectangular housing	V3 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 U2 = plastic terminal block base, 1/2 NPT and metal rotary socket U2K = plastic terminal block base, 1/2 NPT and plastic rotary socket U3 = metal terminal block base, M20 and metal rotary socket U3K = metal terminal block base, M20 and plastic 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
[6]	Electrical output	N = 2-wire DC, NAMUR analog N0 = 2-wire DC, NAMUR discrete

[7]	Connection elements	V1 = M12x1 device connector V5= fast on connector ...M = cable length in mtr. (max. 30mtr.). There are cables, which are flame retardant in accordance with IEC 60332-1-2 to use. Measures for limitation of the propagation of fire along cable bundles are required (fire stops). Halogen free properties of the cables are not tested. Yxxxxxx = Customer variants

Slot sensors

S	x	xx	-	x	-	xx	-	xx
[1]	[2]	[3]		[4]		[5]		[6]

[1]	S	slot
[2]	C J	comfort line initiator
[3]	Slot width	2mm … 15mm
[4]	Mechanical interface	G = thread K = cable
[5]	Electrical output:	N = 2-wire DC, NAMUR analog N0 = 2-wire DC, NAMUR discrete SN, S1N = 2-wire DC, Safety NAMUR analog, (SN = n.c., S1N = n.o.) Note: Only valid for sensors connected to a qualified NAMUR / Safety NAMUR interface.
[6]	Hysteresis (colour code)	YE = Hysteresis 0 ... 0.05mm WH = Hysteresis 0.06 ... 0.1mm GN = Hysteresis 0.11 ... 0.2mm BU = Hysteresis 0.21 ... 0.4mm ...M = cable length in mtr. (max. 30mtr.). There are cables, which are flame retardant in accordance with IEC 60332-1-2 to use. Measures for limitation of the propagation of fire along cable bundles are required (fire stops). Halogen free properties of the cables are not tested.

Application/Limitation

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

Location class Enclosure:
- B: sensors with metal housing
- C: sensors with plastic housing

Salt mist test according to IEC publication 60068-2-52, Test Kb:
- Cylindrical sensors: for sensors with plastic housing (K = plastic).
- Rectangular sensors: all
- Slot sensors: for sensors without G=thread.

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 DNV-CG-0339, Edition August 2021.

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 renewal of this certificate.

END OF CERTIFICATE