DNV·GL

Certificate No:
TAA0000255

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Position Switch

with type designation(s)
Control switches, Series S1

Issued to
K.A. Schmersal GmbH & Co. KG
Wuppertal, Germany

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.

Temperature	**B**
Humidity	**B**
Vibration	**A**
EMC	**NA**
Enclosure	**B**

Issued at **Hamburg** on **2019-01-16**

This Certificate is valid until **2024-01-15**.
DNV GL local station: **Essen**

Approval Engineer: **Marco Rinkel**

for **DNV GL**
Digitally Signed By:
Papanuskas, Joannis
Signing Date: Mittwoch, 16. Januar 2019

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: **262.1-029713-1**
Certificate No: **TAA0000255**

Product description

Position switches and limit switches serve as a functional component for detecting the position as well as monitoring moving parts of a whole system or machine.

Types:
T.422..yk, T.441..yk, M.441..yk, T.452..yk, T.461..yk, M.461..yk, T.470yk
T.422 Oly-1090

Casting:		Cast-iron casting		
Action		T	slow action	
		M	snap action	
Actuation	.	S	yk	Rounded plunger
		R	yk	Roller lever
		K/J	yk	One-way roller lever
	.	L/D	yk	Roller rocking lever
	.	Oly	1090	Roller rocking lever made of marine special brass
Contacts:		4	xyk	x = number of no (1 to 3)
		4	xyk	x = number of nc (1 to 3)

Rated insulation voltage	Ui	500 V (T…yk.)	250 V (M...)
Rated impuls withstand voltage	Uimp	4 kV	6kV
Utiliziation category		AC 15	AC 15
Rated operational current	Ie	4 A	4 A
Rated operational voltage	Ue	400 V	230 V AC
..4....yk y		Degree of protection: IP 65	
..4....yk k		ceramic insulation	

Application/Limitation

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNVGL, 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.

Product certificate
If specified in the Rules, ref. Pt.4 Ch.9 Sec.1, the control and monitoring system in which the above listed hardware is used shall be delivered with a product certificate. For each such delivery the certification test is to be performed at the manufacturer of the application system before the system is shipped to the yard. The test shall be done according to an approved test program. After the certification the clause for application software control will be put into force.

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 Excertificate issued by a notified/recognized Certification Body.

Type Approval documentation

LOVAG Test Report No MT441_20040715_Typ dated 2004-07-20
LOVAG Test Report No MT441_20040707_Typ dated 2004-11-18
Operating Instructions Position and limit switches 2015-11-26

Tests carried out

Applicable tests according to Class Guidelines DNVGL-CG-0339, November 2016.
Due to the nature of the product EMC testing has not been performed.

Marking of product

The products to be marked with:
- manufacturer name
- type designation
- batch 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