

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Limiting Switches

with type designation(s)
LS Titan

Issued to

Eaton Industries GmbH
Bonn, Nordrhein-Westfalen, 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	A
EMC	Not applicable
Enclosure	C

This Certificate is valid until **2021-12-31**.

Issued at **Hamburg** on **2017-02-24**

DNV GL local station: **Essen**

for **DNV GL**

Approval Engineer: **Jens Dietrich**

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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.

Product description

Limiting switches with operating heads, plastic or metal housing.

Basic units:

LS(M)-11

LS(M)-20

LS(M)-02

LS(M)-11D

LS(M)-11S

Operating Heads:

LS(M)-XP Roller Plunger

LS(M)-XL Roller Lever

LS(M)-XLA Angled Roller Lever

LS(M)-XS Spring Rod

LS(M)-XRR Actuating Rod, plastic

LS(M)-XRRM Actuating Rod, metal

LS(M)-XRLA Adjustable Roller Lever D=18mm

LS-XRLA30 Adjustable Roller Lever D=30mm

LS-XRLA40 Adjustable Roller Lever D=40mm

LS-XRLA40R Adjustable Roller Lever D=40mm rubber

LS(M)-XRL Rotary Lever

M22-LS Fixing Adaptor for RMQ-titan front elements

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 to applied hardware as listed above, as well as reference to this certificate is to be made through the instrument and equipment list covering the application system in question.

Reference is made to DNV GL Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems.

Tests carried out

Applicable tests according to DNV GL CG-0339, Nov. 2016.

Marking of product

Maker, type designation, 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