DNV·GL

Certificate No:
TAE00003Y9

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Field bus cables

with type designation(s)
9Y11Y-FL

Issued to
Nexans Deutschland GmbH
Nürnberg, Bayern, 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.

Issued at **Hamburg** on **2020-05-04**
This Certificate is valid until **2025-05-03**.
DNV GL local station: **Augsburg**

for **DNV GL**

Approval Engineer: **Carsten Hunsalz**

Arne Schaarmann
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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") 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 300,000 USD.

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Job Id: **262.1-033145-1**
Certificate No: **TAE00003Y9**

Product description

Halogen free, indoor, ASI Energy-BUS-Cable with polyurethane-sheath

Type: 9Y11Y-FL

Description:	AS-Interface-cable acc. ASI-specification (current version 3.0, rev. 4).
Rated voltage:	32 V (yellow cable); 48 V (black cable)
Temperature during operation:	-40 to +80° C
Conductor:	1.5 mm² stranded conductor, class 6
Insulation:	Thermoplastic TPM-compound
Outer sheath:	TMPU

Number of cores:	Cross-sectional area:
1 x 2	1,5 mm²

Application/Limitation

Indoor, ASI Energy-BUS-Cable

Type Approval documentation

Test report:	Nexans No. 482 161 65, dated 22.05.2014; Nexans No. 14 092, dated 06/2014
Data Sheet:	Nexans SN 24 018-e, dated 25.05.12

Tests carried out

Standard	Release	General description	Limitation
UL-AWM-Style		10493 and 20549	
IEC 60228	2004-11	Conductors of insulated cables	
EN 50363-10-2	2005-11	Insulating, sheathing and covering materials for low voltage energy cables -- Part 10-2: Miscellaneous sheathing compounds - Thermoplastic polyurethane	
IEC 60332-1-2	2015-07	Tests on electric cables under fire conditions. Test for vertical flame propagation for a single insulated wire or cable.	
IEC 60754-1	2011-11	Test on gases evolved during combustion of materials from cables - Part 1: Determination of the halogen acid gas content	Low Halogen: <0,5% Halogen
IEC 60754-2	2011-11	Test on gases evolved during combustion of materials from cables - Part 2: Determination of acidity (by pH measurement) and conductivity	Halogen free: pH > 4,3 Conductivity < 10µS/mm
IEC 60684-2	2011-08	Flexible insulating sleeving – Part 2: Methods of test.	Fluorine content < 0,1%

Marking of product

Example:

NEXANS 9Y11Y-FL – 1x2 1,5 mm² – 48 V – CE(Symbol) Order-No.

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the Type approval are complied with and that no alterations are made to the product design or choice of materials.

The main elements of the assessment are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Routine Tests (RT) checked (if not available tests according to RT to be carried out)
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer's product type marking and 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