



Certificate No:
TAE00004A4

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Data transmission cables and systems

with type designation(s)
PROFIBUS Hybrid Cable L45467-G116-W16

Issued to
LEONI Special Cables GmbH
Friesoythe, Niedersachsen, 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.

Issued at **Hamburg** on **2021-05-25**

This Certificate is valid until **2026-05-24**.

for **DNV**

DNV local station: **Hamburg – CMC North/East**

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 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 300,000 USD.



Form code: TA 251

Revision: 2021-03

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Product description

Hybrid cable L45467-G116-W16, 2x23AWG + 4x16AWG

Construction:

Shielded data pair 2x23AWG

Rated voltage: ≤50 V

Wire: Stranded bare copper wire (23 AWG)

Insulation: Foamed Polyethylene (PE) (2 wires, RD and GN twisted to a pair)

Screen: Plastic tape + alulminate foil overlapped, stranded tinned copper 60% coverage

Electrical Data: According data sheet (use see Application/Limitation)

Wire 4x16AWG

Rated voltage: ≤50 V

Conductor: Stranded bare copper wire (16 AWG)

Insulation: Thermoplastic copolymer (FRNC)

Braiding: Plastic tape overlapped, shield braiding of tinned copper wires, coverage about 85%

Outer sheath: SHF2

Application/Limitation

Operating temperature: -25°C to +80°C

Approved for „AVX Waterjet Control System“ of company CWF Hamilton & Co. Ltd.

Type Approval documentation

Test report: LEONI test report, dated 2021-04-19

Specification: L45467-G116-W16-EN, 2020-06-25 F45052-F7500

Tests carried out

Standard	Release	General description	Limitation
IEC 60228	2004-11	Conductors of insulated cables	
UL Style		21281	
IEC 60092-376	2017-05	Cables for control and instrumentation circuits 150/250 V (300 V)	partly
IEC 60092-360	2021-01	Electrical installations in ships - Part 360: Insulating and sheathing materials for shipboard and offshore units, power, control, instrumentation and telecommunication cables.	partly
EN 50290-2-23	2013-12	Communication cables - Part 2-23: Common design rules and construction - Polyethylene insulation for multi-pair cables used in access telecommunication networks: Outdoor cables	
EN 50290-2-26	2007-06	Communication cables -- Part 2-26: Common design rules and construction - Halogen free flame retardant insulation compounds	
IEC 60332-1-2	2015-07	Tests on electric and optical fibre cables under fire conditions – Part 1-2: Test for vertical flame propagation for a single insulated wire or cable	

Marking of product

„sequential length in meters“ LEONI PROFIBUS Hybrid Cable SHF2 L45467-G116-W16 * 2x23AWG+4x16AWG
AWM21281 * "internal lot number"

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