DNV·GL

Certificate No:
TAE00004GF

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Data transmission cables and systems

with type designation(s)
R&M freenet S/FTP Cat.7 800MHz 4PxAWG23

Issued to
Reichle & De-Massari AG
Wetzikon ZH, ZH, Switzerland

is found to comply with
DNV rules for classification – Ships, offshore units, and high speed and light craft

Application :

Products approved by this certificate are accepted for installation on all vessels classed by DNV.

Issued at **Høvik** on **2022-05-25**
This Certificate is valid until **2027-05-24**.
DNV GL local station: **Augsburg**

Approval Engineer: **Ivar Bull**

for **DNV GL**

Trond Kleivi Sjåvåg
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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Product description

R&Mfreenet S/FTP Cat.7 800MHz 4PxAWG23

Conductors: Solid bare copper
Core insulation: Polyethylene
Individual screen: ALU/PET tape
Common screen: Tinned copper wire braid
Outer sheath: SHF1

Number of pairs: 4
Cross-section: 23 AWG (0,26 mm²)

Electric ratings and measurements
Voltage rating: Max 50V AC or 75V DC
DC Resistance at 20°C: 90 Ω/km S/FTP Cat 7 and SxTP CAT 7
Impedance characteristic at 100MHz: 100 Ω ± 5 Ω

Transmission characteristics tested up to 800 MHz: Please refer to datasheet.

Application/Limitation

Fixed installation, Max installation tension 120N
Ambient installation temperature, range 0 to 50 °C
Working (fixed installation) and storage, range -20 to 70 °C

Type Approval documentation

Tests carried out

Standard	Release	General description	Limitation
DNVGL-CP-0403	2015-12	Data communication cables - category cables	
IEC 61156-1	2015-06	Multicore and symmetrical pair/quad cables for digital communications - Part 1: Generic specification	
IEC 61156-5	2012-12	Multicore and symmetrical pair/quad cables for digital communications – Part 5: Symmetrical pair/quad cables with transmission characteristics up to 1 000 MHz – Horizontal floor wiring – Sectional specification	CAT 7 (600MHz)
ISO/IEC 11801	2017-11	Information technology - Generic cabling for customer premises - Part 1: General requirements	
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	Appliccable for outer sheath only

Standard	Release	General description	Limitation
IEC 60332-1-2:2004+AMD1:2015	2004	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 - Procedure for 1 kW pre-mixed flame	Flame retardant small scale. Distance between the lower edge of the top support and the onset of charring > 50 mm. Charring not to extend downwards > 540 mm from the lower edge of the top support.
IEC 60754-1	2019-11	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	2019-11	Test on gases evolved during combustion of materials from cables - Part 1: Determination of the halogen acid gas content	Halogen free: pH > 4,3 Conductivity < 10µS/mm
IEC 61034-1/2	2019-11	Measurement of smoke density of cables burning under defined conditions – Part 1: Test apparatus Part 2: Test procedure and requirements	Low smoke Light transmittance >60%

Marking of product

R&Mfreenet S/FTP Cat.7 800MHz 4PxAWG23 LSZH NVP=82% ISO/IEC 11801 R R885323<batch no.> <dd/mm/yy> <meter> m

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