



TYPE APPROVAL CERTIFICATE

Certificate no.:
TAE000036J
Revision No:
1

This is to certify:

that the **Data transmission cables and systems**

with type designation(s)

SIENOPYR FR PROFIBUS M-02Y(ST)CHX, SIENOPYR PROFIBUS M-02Y(ST)CHX MUD

issued to

Prysmian Kabel und Systeme GmbH
Neustadt b. Coburg, Bayern, Germany

is found to comply with

DNV 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 **Høvik** on **2024-02-23**

for **DNV**

This Certificate is valid until **2029-02-22**.

DNV local unit: **Augsburg**

Approval Engineer: **Carsten Hunsalz**

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.



Product description

Type: M-02Y(ST)CHX 1 x 2 x 0,35 100 V or
 M-02Y(ST)CHX 1 x 2 x 0,35 100 V MUD

Conductors: Plain stranded copper
 Core insulation: Foamed PE
 Screen: Tinned copper wires
 Outer sheath: SHF2 or SHF2 with extra sheath SHF MUD added by Draka Norway

Number of cores x conductor cross-section mm ²	Overall dimensions mm
1 x 2 x 0,35 SHF2	10,3±0,5
1 x 2 x 0,35 SHF MUD	12,5 ± 1,0

Table 107- Fieldbus cable specifications (IEC 61158-2 ed.1)

Cable parameter	Type A	Type B	M-02Y(ST)CHX
Impedance	135 to 165 Ω (f = 3 to 20MHz)	100 to 130 Ω (f > 100kHz)	150 +/- 15 Ω (f = 3 to 20MHz)
Capacity	< 30 pF/m	< 60 pF/m	max. 30pF/m (at 800 Hz)
Resistance	< 110 Ω/km	Not specified	max. 110 Ω/km
Conductor cross-sectional area	≥ 0,34 mm ²	≥ 0,22 mm ²	0,35 mm ²
Color of sheath non-IS	Violet	Not specified	Black
Color of inner cable conductor A (Rx/D/TxD-N)	Green	Not specified	Red
Color inner cable conductor B (Rx/D/TxD-P)	Red	Not specified	Green

Application/Limitation

SIENOPYR PROFIBUS

Voltage (kV): 0,1
 Temp. class (°C): 80

By the termination of the cables the total strings of the cable to be kept through into the termination point as for coax cables.

Type Approval documentation

Specification Nr. 50 PS 116 dated 2000-04-20, 2013-12-09 and Rev. 4 2017-08-07.
 Termination instruction 6GK1500-0EA02 dated 1999
 Test reports: PF5-13/96 (96-506-E, VA 2148) dated 1997-08-12 and 5BG6951 dated 2000-04-20.
 Prysman dated 2018-05-30.
 Technical data sheet: SIENOPYR FR PROFIBUS M-02Y(ST) CHX dated 2018-03-16

Tests carried out

Standard	Issued	General description	Limitation
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 2: Determination of acidity (by pH measurement) and conductivity	Halogen free: pH > 4,3 Conductivity < 10µS/mm
IEC 61034-1/2	2019-11	Measurement of smoke density of cables burning under defined conditions – Test apparatus, procedure and requirements	Low smoke Light transmittance >60%

Standard	Issued	General description	Limitation
IEC 60332-1	2015-07	Tests on electric and optical fibre cables under fire conditions – Part 1-1:Test for vertical flame propagation for a single insulated wire or cable – Apparatus	Flame retardant small scale
NEK 606 Ed. 4	2009-05	Cables for offshore installations. Halogen-free and/or mud resistant. Technical specification.	Mud resistance test: IRM903 100°C 7d. Calcium Bromide 70°C 56d. Carbo Sea 70°C 56d or EDC 95/11 70°C 56d

Marking of product

Prysmian Kabel und Systeme GmbH - SIENOPYR FR PROFIBUS M-02Y(ST)CHX 1x2x0,35 mm² 150 OHM – IEC 60332-1 or

"meter" "year" DRAKA NORSK KABEL SIENOPYR-PROFIBUS 150 ohm M-02Y(ST)CHX 1x2x0.35mm² MUD-RESISTANT

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