

Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

Manufacturer	TELDOR Cables & Systems
Address	Kibbutz Ein-Dor, 1933500, Israel
Place of Production	TELDOR Cables & Systems Kibbutz Ein-Dor, 1933500, Israel
Type	Digital communication cables
Description	4-pair / multi-pair / multi-core / multi-cable data transmission, communication & LAN, flame retardant per IEC60332-3, halogen free and low smoke emission cables, jacketed and sheathed with FR-LSZH materials including SHF1, SHF2 and MUD resistant per NEK 606, with solid or stranded conductors, armored and non-armored and fire resistance property per IEC 60331-23 (optional), meeting the relevant standards from category 3 up to category 7A and 1200MHz (category 3, 5, 5e, 6, 6A, 7, 7A, 1200MHz).
Trade Name	Teldor
Application	Digital communication cable for Marine and Offshore applications
Specified Standard	IEC 61156-1: 2009; IEC 61156-2:2010; IEC 61156-5:2020; IEC 61156-7:2012; IEC 61156-6:2020, IEC 61156-8:2013, IEC61156-9:2016, ANSI/TIA-568-C.2:2014, ANSI/TIA-568.2-D:2019, IEC 61158-2 ed.1:2010, IEC 60092 -350:2020, IEC 60092-360:2021, IEC 61784-1:2010; IEC61784-2:2010, IEC 61189-1:2007, IEC 60754-1/2:2019, IEC 61034-1/2:2019, IEC60332-1-1/2/3:2015, IEC

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60332-3-22:2018, IEC 60332-3-24:2018, IEC 60331-1:2018, IEC 60331-2:2018, IEC 60331-23:1999, NEK 606:2016; ISO/IEC 11801:2017, BS 6387:2013, CSA 22.2 No.03:2009 (Cold bend, Cold Impact), SOLAS Amendments chapter II-1, Part D, Reg. 45, 5.2.

Ratings

Details see certificate appendix

This certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register Classification Society (China) Co Ltd of any modification or changes to the equipment in order to obtain a valid Certificate.

The Design Appraisal Document LR21328343TA and its supplementary Type Approval Terms and Conditions form part of this Certificate.

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Appendix

SPECIAL PROPERTIES:

Halogen free per IEC 60754-1/2, Flame retardant per IEC 60332-3-22 (cat.A), 60332-3-24 (cat.C), IEC 60332-1-1/2/3, IEC 60332-2 Low Smoke per IEC 61034-1/2, Armor/Non-Armor, Shielded / UnShielded, Multi Pair / Multi Core / Multi Cables options, Fire resistant per IEC 60331-23 (Optional) with verified transmission performance, Various Jacket types (SHF1, SHF2, SHF2-MUD resistant per NEK606), Designed for marine and offshore application Oil resistant, Designed for harsh conditions

DETAILED DESCRIPTION:

Cable types	Design standards	Cross section	Conductor type (IEC60228)	Shielding
MGD cat 3, 5	IEC 61156-2	24 AWG(0.204mm ²)	Solid class 1	U/UTP, F/UTP, U/FTP, F/FTP, S/FTP, SF/UTP, SF/FTP
	IEC 61156-2	26 AWG(0.138mm ²) 24 AWG(0.204mm ²)	Stranded class 2	
MGD cat 5e	IEC 61156-5	24 AWG(0.204mm ²)	Solid class 1	U/UTP, F/UTP, U/FTP, F/FTP, S/FTP, SF/UTP, SF/FTP
	IEC 61156-6 (Option IEC61156-5)	26 AWG(0.138mm ²) 24 AWG(0.204mm ²)	Stranded class 2	
MGD cat 6	IEC 61156-5	23 AWG(0.246mm ²) 22 AWG(0.324mm ²)	Solid class 1	U/UTP, F/UTP, U/FTP, F/FTP, S/FTP, SF/UTP, SF/FTP
	IEC 61156-6 (Option IEC61156-5)	26 AWG(0.138mm ²) 24 AWG(0.204mm ²) 23 AWG(0.246mm ²) 22 AWG(0.324mm ²)	Stranded class 2	
MGD cat 6A, 7, 7A	IEC 61156-5	23 AWG(0.246mm ²) 22 AWG(0.324mm ²)	Solid class 1	U/FTP, F/FTP, S/FTP, SF/FTP
	IEC 61156-6 (Option IEC61156-5)	26 AWG(0.138mm ²) 24 AWG(0.204mm ²) 23 AWG(0.246mm ²) 22 AWG(0.324mm ²)	Stranded class 2	
MGD 1200MHz	IEC 61156-7	23 AWG(0.246mm ²) 22 AWG(0.324mm ²)	Solid class 1	U/FTP, F/FTP, S/FTP, SF/FTP
	IEC 61156-6 (Option IEC61156-7)	26 AWG(0.138mm ²) 24 AWG(0.204mm ²) 23 AWG(0.246mm ²) 22 AWG(0.324mm ²)	Stranded class 2	U/FTP, F/FTP, S/FTP, SF/FTP

Construction

Conductor	Bare annealed or tinned copper solid (per IEC 60228 class 1) or stranded (per IEC 60228 class 2)
Insulation	Solid or cellular Polyolefine + optional fire resistant tape
Individual screen	*/FTP cables have individual foil screen
Common screen	S/*TP cables have a common braid screen F/*TP cables have a common foil screen SF/*TP cables have a common foil screen and a braid screen
Inner sheath	SHF1 or SHF2 or MUD Resistant (NEK 606)), single or double layer
Metallic covering mor)	B: braided galvanized steel wire R: corrugated steel tape W: served steel wire P: Bronze wire braid C: Copper wire braid T: Tinned copper wire braid
Outer sheath	SHF1 or SHF2 or SHF2 MUD (NEK 606), single or double layer

Optional Constructions

Cat3 to Cat 5e cables:

Single cables: 4-25 Pair cables, Multi cables: 2-12 cores or jacketed cables cabled together, FIG-8 or Siames (2x 4 pair)

Cat 6 to 1200MHz Cables:

Single cables: 4 Pair cables, Multi cables: 2-12 cores or jacketed cables cabled together, FIG-8 or Siames (2x 4 pair)

Transmission Properties	Pair Count	AWG	Solid Cond.	Shield TYPE	Aarmor	Jacket Type	Fire resistant
3=CAT3 5=CAT5 E=CAT5e B=CAT 6 C=CAT 6A	NN Core count in	26=26AWG 24=24AWG 23=23AWG 22=22AWG	R=TC Stranded (Tinned copper) S=BC Stranded (bare copper)	1=U/UTP 2=F/UTP 3=SF/UTP 4=U/FTP 5=F/FTP	B =Galvanized Braided Steel Wire R =Corrugated Steel Tape W =Galvanized	SHF1 SHF2 MUD	F=fire resistant (optional)

D=CAT 7 F=CAT 7A G=1200MHz	multi cables		B=BC Solid (bare copper) T=TC Solid (tinned copper)	6=S/FTP 7=SF/FTP	Served Steel Wire P =Bronze wire braid C =Copper wire braid T =Tin Copper wire braid	Resistance(N EK606)	
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Teldor Fire Resistant Data Transmission Cables per IEC 60331-23

Teldor's Fire Resistant Data Cables are designed and produced to meet and exceed the requirements of IEC 60331-23: Tests for electric cables under fire conditions - Circuit integrity for durations of 30, 60 or 90 minutes (and per customer requirement up to 180 minutes).

Transmission performance under fire per IEC 60331-23 for a duration of 90 minutes +15minutes cooling time*		
Cable Category	Typical transmission application / performance	Minimum transmission performance
Cat.3	Channel Cat. 3	10BASE-T / Channel Cat. 3
Cat. 5	Channel Cat. 5	100BASE-T / Channel Cat. 5
Cat. 5e	Channel Cat. 5e	100BASE-T / Channel Cat. 5
Cat. 6	Channel Cat. 6	100BASE-T / Channel Cat. 5
Cat. 6A	Channel Cat. 6A	100BASE-T / Channel Cat. 5
Cat. 7	Channel Cat. 6A	100BASE-T / Channel Cat. 5
Cat. 7A	Channel Cat. 6A	100BASE-T / Channel Cat. 5
IEC 61156-7 (1200MHz)	Channel Cat. 6A	100BASE-T / Channel Cat. 5

*The requirements of IEC 60331-23 for no open / short circuit between the conductors are fulfilled

APPLICATION LIMITATION:

Operation temperature: -40°C to +85°C

Storage temperature: -40°C to +85°C

Installation temperature: -20°C to +50°C