



Marine & Offshore

Certificate number: 76702/A0 BV

File number: MPA2400185

Product code: 25011

*This certificate is not valid when presented without the full attached schedule composed of 7 sections*

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## TYPE APPROVAL CERTIFICATE

*This certificate is issued to*

**2M KABLO SANAYI VE TICARET A.S.**  
TEKIRDAG - Türkiye

*for the type of product*

**CABLES (LOW VOLTAGE)**

0.6/1kV

Type: M2X series

### Requirements:

Bureau Veritas Rules for the Classification of Offshore Units.

IEC 60092-350 (2020), IEC 60092-353 (2016), IEC 60092-360 (2021)

IEC 60228 (2023)

IEC 60331-1/2 (2018), IEC 60331-21 (2004)

IEC 60332-1-2 (2015), IEC 60332-3-22 (2018)

IEC 60684-2 (2011)

IEC 60754-1/2 (2019)

IEC 61034-1/2 (2013)

*This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.*

**This certificate will expire on: 15 Jul 2029**

**For Bureau Veritas Marine & Offshore,**

At BV ISTANBUL, on 15 Jul 2024,

Gurcan Yilmaz

***This certificate was created electronically and is valid without signature***



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

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BV Mod. Ad.E 530 June 2017

This certificate consists of 3 page(s)

## **THE SCHEDULE OF APPROVAL**

### **1. PRODUCT DESCRIPTION :**

#### **1.1 - Technical Specification:**

Rated Voltage:	0.6/1kV
Temperature Class:	90°C
Flame Retardant:	IEC 60332-1-2 and IEC 60332-3-22 (Cat.A)
Fire Resistant:	IEC 60331-1/2/21 (FE 180 type)
Halogen Free:	IEC 60684-2 and IEC 60754-1/2
Smoke Density:	IEC 61034-1/2

#### **1.2 - Construction:**

Conductor:	Plain or tinned stranded copper - Class 2 or 5
Fire-resisting layer:	Mica tape (FE 180 type)
Insulation:	HF90 (M2X type) XLPE (H type)
Inner covering/ sheath:	HFFR filler or SHF1 ( S type)
Overall screen:	Tinned or annealed copper wire braiding (90% coverage) (M2XCH & M2XACH types) Al-PET foil (with tinned copper drain wire) (A type) Tinned or annealed copper wire braiding (90% coverage) and copper tape with drain wire (EMC/VFD type)
Armour:	Galvanized steel wire braid (S type)
Outer sheath:	SHFI (H type)

#### **1.3 - Product Range:**

Type	Number of cores	Cross-Sect. areas (mm <sup>2</sup> )
M2X	1	1 to 300
M2XH, M2XH FE 180	1	1 to 300
M2XASH, M2XASH FE 180	2 to 5	1 to 240
M2XSH, M2XSH FE 180	7 to 37	1 to 4
M2XACH, M2XACH FE 180	1	1 to 300
M2XCH, M2XCH FE 180	2 to 5	1 to 185
M2XAH, M2XAH FE 180	7 to 37	1 to 4
M2XCH EMC/VFD	3+3E	10 to 240 + 4 to 50

### **2. DOCUMENTS AND DRAWINGS :**

Specification for M2X, N° 0340-1-22, dated 13 Jan 2022.  
 Specification for M2XAH, N° 0251-1-22, dated 13 Jan 2022.  
 Specification for M2XAH FE 180, N° 0253-2-22, dated 13 Jan 2022.  
 Specification for M2XCH and M2XSH, N° 0151-1-22, dated 13 Jan 2022.  
 Specification for M2XCH FE 180 and M2XSH FE 180, N° 0155-2-22, dated 13 Jan 2022.  
 Specification for M2XH, N° 0150-22, dated 13 Jan 2022.  
 Specification for M2XH FE 180, N° 0154-1-22, dated 13 Jan 2022.  
 Specification for M2XACH and M2XASH, N° 0252-1-22, dated 13 Jan 2022.  
 Specification for M2XACH FE 180 and M2XASH FE 180, N° 0250-3-22, dated 13 Jan 2022.  
 Specification for M2XCH EMC/VFD, N° 153-1-22, dated 13 Jan 2022

### **3. TEST REPORTS :**

#### **2M KABLO SANAYI VE TICARET A.S.:**

- Test reports dated 05 Apr 2016.
- Test reports dated 07 Sep 2023.
- Test reports N° KE-01031144-1 to KE-01031144-14, dated 21 May 2024.
- Test reports N° KE-00982540-1 to KE-00982540-14, dated 21 May 2024.
- Test reports N° KE-01031130-1 to KE-01031130-15, dated 21 May 2024.

#### **TSE:**

- Test reports N° 291775, 291782, 291785, 291794, 291795 and 291799, dated 25 Mar 2016.
- Test reports N° 293971, 293972, 293973, 293976, 293977, 293980 and 293981, dated 14 Apr 2016.

**4. APPLICATION / LIMITATION :**

BUREAU VERITAS Rules for the Classification of Offshore Units.

**5. PRODUCTION SURVEY REQUIREMENTS :**

5.1 - The above products are to be supplied by **2M KABLO SANAYI VE TICARET A.S.** in compliance with the type and the requirements described in this certificate.

5.2 - This type of product is within the category IBV of Bureau Veritas Rule Note NR320.

5.3 - BV product certificate is required.

5.4 - For information, **2M KABLO SANAYI VE TICARET A.S.** has declared to Bureau Veritas the following production site:

**2M KABLO SANAYI VE TICARET A.S.**

**GAZIOSMANPASA OSB MAH**

**4. CAD. NO: 18/A**

**CERKEZKOY**

**TEKIRDAG**

**TEKIRDAG**

**Türkiye**

**6. MARKING OF PRODUCT :**

The cable shall be marked on the surface outer sheath, in a durable legible and visible manner, with the following information through the length of cable:

- Rated voltage
- Number of cores and cross-sectional area of the conductors
- Manufacturer's name or trademark
- Code designation (optional)
- Bureau Veritas' Marks

**7. OTHERS :**

It is **2M KABLO SANAYI VE TICARET A.S.**'s responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

**\*\*\* END OF CERTIFICATE \*\*\***