DNV·GL

Certificate No:
TAE00000VN

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Low Voltage Cable

with type designation(s)
FR-MPYC, FR-FA-MPYC

Issued to
Walsin Lihwa Corporation, Wire & Cable Business Group
New Taipei City, Taiwan

is found to comply with
DNV GL rules for classification – Ships and offshore units

Application :

Control and Instrumentation.

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Type	Voltage class (V)	Temp. class (°C)
FR-MPYC	**150/250**	**90**
FR-FA-MPYC	**150/250**	**90**

This Certificate is valid until **2021-02-16**.

Issued at **Høvik** on **2016-02-17**

for **DNV GL**

DNV GL local station: **Kaohsiung**

Approval Engineer: **Ivar Bull**

Marit Laumann
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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Job Id: **262.1-010932-4**
Certificate No: **TAE00000VN**

Product description

FR-MPYC, FR-FA-MPYC

Conductors:	Plain or tinned stranded copper class 2
Core insulation:	Mica tape + EPR
Inner covering:	Filler and Tape
Outer sheath:	ST2
Metal covering:	Galvanized steel wire braid

No of elements:	Cross sectional area [mm^2]
Single wires: 2, 4, 7, 12, 19, 27, 37, 44	1

Application/Limitation

This type of cable is fire resistant in accordance with IEC Publication 60331-1/2.

The requirements of SOLAS Amendments Chapter II-1, Part D, Reg. 45, 5.2 (provision to be taken to limit Fire Propagation along Bunches of Cables or Wires) are fulfilled without any additional measures.

Type Approval documentation
Tests carried out

Standard	Release	General description	Limitation
IEC 60092-350	2014-08	General construction and test methods of power, control and instrumentation cables for shipboard and offshore applications	
IEC 60092-360	2014-04	Electrical installations in ships - Part 360: Insulating and sheathing materials for shipboard and offshore units, power, control, instrumentation and telecommunication cables.	
IEC 60092-376	2003-05	Cables for control and instrumentation circuits 150/250 V (300 V)	
IEC 60331-1/2	2009-05	Fire resistance / Circuit integrity – Test for method for fire with shock at temperature of at least 830ºC for cables rated up to and including 0,6/1 kV	Minimum 90 min. test.
IEC 60332-3-22	2009-02	Tests on electric and optical fibre cables under fire conditions – Part 3-22: Test for vertical flame spread of vertically-mounted bunched wires or cables – Category A	FA types only: Bunch test Category A

Marking of product

Walsin Lihwa – (size mm^2) – FR-FA-MPYC 150/250 V – IEC 60092-353 – IEC 60332-3-22 – Lot No. OR
Walsin Lihwa – (size mm^2) – FR-MPYC – 150/250 V – IEC 60092-353 – Lot No.

Periodical assessment

The scope of the Periodical assessment is to verify that the conditions stipulated for the Type approval is complied with and that no alterations are made to the product design or choice of materials.

The main elements of the Periodical assessment are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Production Sample Tests (PST) and Routines (RT) checked (if not available tests according to PST and 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 to be performed at least every second year.

END OF CERTIFICATE