DNV·GL

Certificate No:
TAE000021E

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Low Voltage Cable

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

Issued to
Hien Electric Industries, Ltd.
Fukuchiyama Kyoto Pref., Japan

is found to comply with
DNV GL rules for classification – Ships, offshore units, and high speed and light craft
IEC 60092-376 (2003-05)
IEC 60331
JIS C 3410:2010

Application :

Instrumentation and communication. Fire resistant

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.
Rated voltage (V) 150/250
Temp. class (°C) 90

Issued at **Busan** on **2017-08-23**
This Certificate is valid until **2022-06-30**.
DNV GL local station: **Kobe**

Approval Engineer: **Eun Jin Lee**

for **DNV GL**

Michael Jost Auf der Stroth
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

Type : FR-MPY, FR-FA-MPY

Conductor	Tinned annealed copper wire, stranded
Insulation	EPR + Mica
Outer sheath	ST2

Number of cores x conductor cross-section mm^2
FR-MPY, FR-FA-MPY
2 x 1,0
4 x 1,0
7 x 1,0
12 x 1,0
19 x 1,0
27 x 1,0
37 x 1,0
44 x 1,0

Application/Limitation

This type of cable is fire resistant in accordance with IEC Publication 60331.

The requirement of SOLAS Chapter II-1 Part D Reg.45, 5.2 to limit Fire Propagation along Bunches of Cables or Wires are fulfilled without any additional measures for 'FA-' type only.

Type Approval documentation

Tests carried out

Standard	Issued	Limitation
JIS C 3410	2010	
IEC 60331-1	2009	O.D.>20mm @830°C with shock, 120min
IEC 60331-21	1999	O.D.≤20mm @750°C, 90min
IEC 60332-3-22	2009	'FA' type only

Marking of product

150/250V – FR-MPY – Size – IEC 60331* – Hien elec. – Year of manufacture – Length

150/250V – FR-FA-MPY – Size – IEC 60331* – Hien elec. – Year of manufacture – Length

*For cables O.D. >20mm, IEC 60331-1 applied
For cables O.D. ≤20mm, IEC 60331-21 applied

Periodical assessment

The scope of the retention/renewal survey is to verify that the conditions stipulated for the Type Approval Certificate are complied with and that no alterations are made to the design and/or the material of product.

The main elements of the survey are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Check of the results from Production Sample Tests(PST) and Routine Tests(RT) (if not available, PSTand RT are to be carried out)
- Review of type approval documentation
- Review of possible changes in design, material and performance
- Ensuring traceability between manufacturer's product type marking and Type Approval Certificate

Survey is to be performed at least every second year and at renewal of this certificate.

END OF CERTIFICATE