



# DET NORSKE VERITAS

## TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. E-9692  
This Certificate consists of 3 pages

*This is to certify that the*  
**Electric Cable, Power Current**  
*with type designation(s)*  
**HUSO-FR BIOI 0,6/1 kV**

*Manufactured by*  
**Draka**  
AMSTERDAM, Netherlands

*is found to comply with*  
Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norske Veritas' Offshore Standards

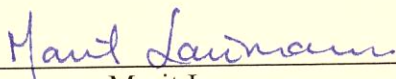
IEC 60092-353  
IEC 60331-21  
IEC 60332-3-22  
IEC 60754-1/2  
IEC 61034-1/2

*Application*

General power and lighting. Halogen free. Low Smoke.

Type	HUSO-FR BIOI 0,6/1 kV
Voltage class (kV)	0,6/1
Temp. class (°C)	90

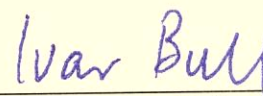
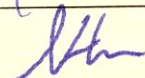
*Place and date*  
Høvik, 2009-09-30  
for DET NORSKE VERITAS AS

  
Marit Laumann  
Head of Section



*Local Office*  
DNV Rotterdam (Barendrecht)

*This Certificate is valid until*  
2012-12-31

  
Ivar Bull  
Surveyor 

Notice: 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.

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.



Cert. No.: E-9692  
 File No.: 827.10  
 Job Id.: 262.1-006680-1

## Product description

Type: HUSO-FR BIOI 0,6/1 kV

Construction:

Conductors: Plain or tinned stranded copper class 2 or class 5

Insulation: Mica tape + XLPE

Inner sheath: SHF1

Metal covering: Plain or tinned copper wire braid

Outer sheath: SHF1

Number of cores x conductor cross-section mm <sup>2</sup>	Nominal diameter mm
1 x 1,5	8,5
1 x 2,5	8,9
1 x 4	9,5
1 x 6	10,1
1 x 10	11,6
1 x 16	13,3
1 x 25	14,6
1 x 35	16,4
1 x 50	17,9
1 x 70	19,9
1 x 95	22,2
1 x 120	23,7
1 x 150	25,9
1 x 185	28,6
1 x 240	31,7
1 x 300	34,8
2 x 1,5	13,1
2 x 2,5	13,9
2 x 4	15,4
2 x 6	16,8
2 x 10	20,6

Number of cores x conductor cross-section mm <sup>2</sup>	Nominal diameter mm
2 x 16	23,5
2 x 25	26,3
2 x 35	29,2
3 x 1,5	13,7
3 x 2,5	15,0
3 x 4	16,4
3 x 6	17,9
3 x 10	22,0
3 x 16	24,9
3 x 25	28,0
3 x 35	30,9
3 x 50	35,9
3 x 70	40,0
3 x 95	46,0
3 x 120	49,7
3 x 150	54,9
3 x 185	60,2
3 x 240	67,3
4 x 1,5	14,7
4 x 2,5	16,3

Number of cores x conductor cross-section mm <sup>2</sup>	Nominal diameter mm
4 x 4	17,7
4 x 6	19,3
4 x 10	23,9
4 x 16	27,3
4 x 25	30,7
5 x 1,5	16,4
5 x 2,5	17,6
6 x 1,5	17,0
7 x 1,5	17,1
7 x 2,5	18,5
10 x 1,5	21,1
12 x 1,5	21,7
16 x 1,5	24,2
19 x 1,5	25,4



Cert. No.: E-9692  
File No.: 827.10  
Job Id.: 262.1-006680-1

### **Application/Limitation**

This type of cable is fire resistant in accordance with IEC Publication 60331-21.

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.

### **Tests carried out**

Type test according to IEC 60092-350, IEC 60331-21, IEC 60332-3-22, IEC 60754-1/2 and IEC 61034-1/2.

### **Marking of product**

Product marking: DRAKA 02 or 03 – HUSO-FR BIOI - size - 0,6/1kV

### **Certificate retention survey**

The scope of the retention/renewal survey 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 survey 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.

Survey to be performed at least every second year.

END OF CERTIFICATE