DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. E-8386
This Certificate consists of 4 pages

This is to certify that the

Low Voltage Cable

with type designation(s)

RFXU (c) & (i) 250 V

Holder of certificate

Draka Marine, Oil & Gas International

Houston, TX 77032, United States

is found to comply with

Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norske Veritas' Offshore Standards
IEC 60092-376 (2003-05)
IEC 60332-3-22 (2000-10)
IEC 60754-1 (1994-01)
IEC 60754-2 (1997-04)
IEC 61034-2 (2005-04)

Application

Instrumentation and communication. Fire resistant. Flame retardant. Halogen free. Low smoke.

Voltage class (V)	250
Temp. class (°C)	90

Place and date
Høvik, 2007-05-11
for DET NORSKE VERITAS AS

Frode Berntsen
Head of Section

Local Office
DNV Oslo

This Certificate is valid until
2011-06-30

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-8386
File No.: 827.20

Name and place of manufacturer:

Draka Norsk Kabel AS
Drammen, Norway

Product description

Type: RFXU (c) & (i) 250 V

Construction:
Conductors: Tinned, stranded copper
Core insulation: EPR
Screen: Copper or Aluminium backed polyester tape w/tinned copper drain wire
Bedding: Flame retardant halogen-free thermoset compound
Outer sheath: SHF2

Number of cores x conductor cross-section	Overall diameter	Overall diameter
	Collective screen	Individual screen
mm^2	mm	mm
1 x 2 x 0,75	-	9,0±0,5
1 x 4 x 0,75	10,0±0,8	-
2 x 2 x 0,75	12,5±0,8	12,5±0,8
3 x 2 x 0,75	-	13,0±0,8
4 x 2 x 0,75	14,0±0,8	14,5±0,8
7 x 2 x 0,75	16,5±0,8	16,5±0,8
8 x 2 x 0,75	18,5±0,8	18,5±0,8
12 x 2 x 0,75	21,0±1,0	21,5±1,0
16 x 2 x 0,75	23,0±1,0	24,0±1,0
19 x 2 x 0,75	24,0±1,0	25,0±1,0
24 x 2 x 0,75	27,5±1,0	29,5±1,0
1 x 2 x 1,5	-	11,0±0,8
1 x 4 x 1,5	12,0±0,8	-
2 x 2 x 1,5	15,0±0,8	15,0±0,8
3 x 2 x 1,5	-	15,5±0,8
4 x 2 x 1,5	17,0±0,8	17,5±0,8
7 x 2 x 1,5	20,0±1,0	20,5±1,0

Number of cores x conductor cross-section	Overall diameter	Overall diameter
	Collective screen	Individual screen
mm^2	mm	mm
8 x 2 x 1,5	22,5±1,0	22,5±1,0
12 x 2 x 1,5	26,0±1,0	27,0±1,0
16 x 2 x 1,5	28,0±1,0	30,0±1,5
19 x 2 x 1,5	29,5±1,0	31,0±1,5
24 x 2 x 1,5	34,5±1,5	37,0±1,5
1 x 2 x 2,5	-	11,5±0,8
1 x 4 x 2,5	13,0±0,8	-
2 x 2 x 2,5	16,5±0,8	16,5±0,8
3 x 2 x 2,5	-	17,0±0,8
4 x 2 x 2,5	18,5±0,8	19,0±0,8
7 x 2 x 2,5	22,0±1,0	22,5±1,0
8 x 2 x 2,5	24,5±1,0	25,0±1,0
12 x 2 x 2,5	29,0±1,0	30,0±1,5
16 x 2 x 2,5	31,0±1,5	34,0±1,5
19 x 2 x 2,5	33,0±1,5	35,0±1,5
24 x 2 x 2,5	38,5±1,5	41,5±2,0

Number of cores x conductor cross-section	Overall diameter	Overall diameter
	Collective screen	Individual screen
mm^2	mm	mm
1 x 3 x 0,75	-	10,0±0,8
2 x 3 x 0,75	13,5±0,8	13,5±0,8
3 x 3 x 0,75	-	14,5±0,8
4 x 3 x 0,75	15,5±0,8	15,5±0,8
7 x 3 x 0,75	18,0±0,8	18,5±0,8
8 x 3 x 0,75	20,0±1,0	20,5±1,0
12 x 3 x 0,75	23,5±1,0	24,0±1,0
16 x 3 x 0,75	25,5±1,0	27,0±1,0
19 x 3 x 0,75	26,5±1,0	28,0±1,0
24 x 3 x 0,75	31,0±1,5	33,5±1,5
1 x 3 x 1,5	-	11,5±0,8
2 x 3 x 1,5	16,5±0,8	16,5±0,8
3 x 3 x 1,5	-	17,5±0,8
4 x 3 x 1,5	18,5±0,8	19,0±0,8
7 x 3 x 1,5	22,0±1,0	22,5±1,0

Number of cores x conductor cross-section	Overall diameter	Overall diameter
	Collective screen	Individual screen
mm^2	mm	mm
8 x 3 x 1,5	24,5±1,0	25,0±1,0
12 x 3 x 1,5	28,5±1,0	30,0±1,5
16 x 3 x 1,5	31,0±1,5	34,0±1,5
19 x 3 x 1,5	33,0±1,5	35,5±1,5
24 x 3 x 1,5	38,5±1,5	41,5±2,0
1 x 3 x 2,5	-	12,0±0,8
2 x 3 x 2,5	18,0±0,8	18,0±0,8
3 x 3 x 2,5	-	19,0±0,8
4 x 3 x 2,5	20,5±1,0	21,0±1,0
7 x 3 x 2,5	24,5±1,0	25,0±1,0
8 x 3 x 2,5	27,0±1,0	27,5±1,0
12 x 3 x 2,5	32,0±1,5	34,0±1,5
16 x 3 x 2,5	35,0±1,5	38,0±1,5
19 x 3 x 2,5	37,0±1,5	39,5±1,5
24 x 3 x 2,5	43,5±2,0	47,0±2,0

Application/Limitation

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

Data sheets: Draka RFXU(c)_250V dated 2004-02-06
Draka RFXU(i)_250V dated 2003-09-29
Test reports: Draka TIOI 250 V DNV 02-04-60092-376 (2003-05) dated 2004-02-19

Tests carried out

Type tested according to:
IEC 60092-376 (2003-05), IEC 60332-3-22, IEC 60754-1/2 and IEC 61034-1/2.

Marking of product

To be marked: DRAKA NORSK KABEL or DRAKA 01 - RFOU (i) S1/S5 or (c) S2/S6 or RFCU (i) or (c) - size - 250 V

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