DNV·GL

Certificate No:
TAE00003D2

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Electric Power Cable

with type designation(s)
BOSTRIG-125 Type P, ...PBS,
BOSTRIG-125 Type P, SPBS2kV and SPBS2kV (HD),
BOSTRIG P - VFD 2kV w/reduced grds

Issued to
Prysmian Cables and Systems USA, LLC
Highland Heights, KY, USA

is found to comply with
DNV GL rules for classification – Ships, offshore units, and high speed and light craft

Application :

Power, Lighting and Control including VFD variants.

Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.

Type	Rated voltage (kV)	Temp. class (°C)
BOSTRIG-125 Type P, ...PBS	**0,6/1**	**95**
BOSTRIG-125 Type P, SPBS2kV and SPBS2kV (HD)	**2**	**95**
BOSTRIG P - VFD 2kV w/reduced grds	**2**	**95**

Issued at **Høvik** on **2020-11-17**
This Certificate is valid until **2024-12-31**.
DNV GL local station: **New York**

for **DNV GL**

Approval Engineer: **Ivar Bull**

Marta Alonso Pontes
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: **262.1-007168-5**
Certificate No: **TAE00003D2**

Name and place of manufacturer:

Prysmian Power Cables and Systems, Taunton, MA 02780, United States.

Product description

Construction:

Conductor:	Tinned stranded copper
Insulation:	XLPO (Type P)
Filler:	Flame Retardant, non hygroscopic (as needed)
Inner sheath:	SP1 (Type N)
Metal covering:	Bronze or Aluminum wire braid
Outer sheath:	SP1 (Type N)

Number of cores x conductor cross-section		Type designation
mm²	AWG/MCM	
1 x 7,57	8	SPNBS-8
1 x 12,5	6	SPNBS-6
1 x 18,6	5	SPNBS-5
1 x 21,5	4	SPNBS-4
1 x 25,6	3	SPNBS-3
1 x 30,7	2	SPNBS-2
1 x 46,0	1	SPNBS-1
1 x 56,3	1/0	SPNBS-1/0
1 x 66,5	2/0	SPNBS-2/0
1 x 92,1	3/0	SPNBS-3/0
1 x 7,57	8	SPNBS2KV-8
1 x 12,5	6	SPNBS2KV-6
1 x 18,6	5	SPNBS2KV-5
1 x 21,5	4	SPNBS2KV-4
1 x 25,6	3	SPNBS2KV-3
1 x 30,7	2	SPNBS2KV-2
1 x 46,0	1	SPNBS2KV-1
1 x 56,3	1/0	SPNBS2KV-1/0
1 x 66,5	2/0	SPNBS2KV-2/0
1 x 92,1	3/0	SPNBS2KV-3/0
1 x 112,6	4/0	SPNBS2KV(HD)-4/0
1 x 133,0	262	SPNBS2KV(HD)-262
1 x 158,6	313	SPNBS2KV(HD)-313
1 x 189,3	373	SPNBS2KV(HD)-373
1 x 225,1	444	SPNBS2KV(HD)-444
1 x 271,2	535	SPNBS2KV(HD)-535
1 x 327,5	646	SPNBS2KV(HD)-646
1 x 393,8	777	SPNBS2KV(HD)-777
1 x 562,8	1111	SPNBS2KV(HD)-1111
2 x 7,57	8	DPNBS-8
2 x 12,5	6	DPNBS-6
2 x 18,6	5	DPNBS-5
2 x 21,5	4	DPNBS-4
2 x 25,6	3	DPNBS-3
2 x 30,7	2	DPNBS-2
2 x 46,0	1	DPNBS-1
2 x 56,3	1/0	DPNBS-1/0
2 x 66,5	2/0	DPNBS-2/0

Number of cores x conductor cross-section		Type designation
mm²	AWG/MCM	
2 x 92,1	3/0	DPNBS-3/0
2 x 112,6	4/0	DPNBS-4/0
2 x 133,0	262	DPNBS-262
2 x 158,6	313	DPNBS-313
2 x 189,3	373	DPNBS-373
2 x 225,1	444	DPNBS-444
2 x 271,2	535	DPNBS-535
2 x 327,5	646	DPNBS-646
2 x 393,8	777	DPNBS-777
3 x 7,57	8	TPNBS-8
3 x 12,5	6	TPNBS-6
3 x 18,6	5	TPNBS-5
3 x 21,5	4	TPNBS-4
3 x 25,6	3	TPNBS-3
3 x 30,7	2	TPNBS-2
3 x 46,0	1	TPNBS-1
3 x 56,3	1/0	TPNBS-1/0
3 x 66,5	2/0	TPNBS-2/0
3 x 92,1	3/0	TPNBS-3/0
3 x 112,6	4/0	TPNBS-4/0
3 x 133,0	262	TPNBS-262
3 x 158,6	313	TPNBS-313
3 x 189,3	373	TPNBS-373
3 x 225,1	444	TPNBS-444
3 x 271,2	535	TPNBS-535
3 x 327,5	646	TPNBS-646
3 x 393,8	777	TPNBS-777
4 x 7,57	8	FPNBS-8
4 x 12,5	6	FPNBS-6
4 x 18,6	5	FPNBS-5
4 x 21,5	4	FPNBS-4
4 x 25,6	3	FPNBS-3
4 x 30,7	2	FPNBS-2
4 x 46,0	1	FPNBS-1
4 x 56,3	1/0	FPNBS-1/0
4 x 66,5	2/0	FPNBS-2/0
4 x 92,1	3/0	FPNBS-3/0
4 x 112,6	4/0	FPNBS-4/0

Number of cores x conductor cross-section		Type designation
mm²	AWG/MCM	
4 x 133,0	262	FPNBS-262
4 x 158,6	313	FPNBS-313
4 x 189,3	373	FPNBS-373
4 x 225,1	444	FPNBS-444
4 x 271,2	535	FPNBS-535
4 x 327,5	646	FPNBS-646
4 x 393,8	777	FPNBS-777
5 x 7,57	8	QPNBS-8
5 x 12,5	6	QPNBS-6
5 x 18,6	5	QPNBS-5
5 x 21,5	4	QPNBS-4
5 x 25,6	3	QPNBS-3
5 x 30,7	2	QPNBS-2
5 x 46,0	1	QPNBS-1
5 x 56,3	1/0	QPNBS-1/0
5 x 66,5	2/0	QPNBS-2/0
5 x 92,1	3/0	QPNBS-3/0
5 x 112,6	4/0	QPNBS-4/0
7 x 7,57	8	7PNBS-8
4 x 3,08	12	[FP-12/C(OS)14P-4]NBS-8
4 x 1,94	14	
4 x 7,57	8	[FP-8/C(OS)14P-4]NBS-8
4 x 1,94	14	
4 x 21,5	4	[FP-4/C(OS)14P-4]NBS-8
4 x 1,94	14	
4 x 30,7	2	[FP-2/C(OS)14P-4]NBS-8
4 x 1,94	14	
4 x 46,0	1	[FP-1/C(OS)14P-4]NBS-8
4 x 1,94	14	
2 x 18,6	5	[DP-2/FP-8/C14P-26/
4 x 7,57	8	TP(I/S)14P-3]NBS-38
26 x 1,94	14	
3x 2x 1,94	14	
7 x 6,0	9	[C9P-7/C13P-7/
7 x 2,5	13	C15P-12]NBS-26
12 x 1,5	15	
2 x 0,96	18	C18PNBS-2
3 x 0,96	18	C18PNBS-3
4 x 0,96	18	C18PNBS-4
5 x 0,96	18	C18PNBS-5
6 x 0,96	18	C18PNBS-6
7 x 0,96	18	C18PNBS-7
8 x 0,96	18	C18PNBS-8

Number of cores x conductor cross-section		Type designation
mm²	AWG/MCM	
10 x 0,96	18	C18PNBS-10
12 x 0,96	18	C18PNBS-12
16 x 0,96	18	C18PNBS-16
20 x 0,96	18	C18PNBS-20
24 x 0,96	18	C18PNBS-24
30 x 0,96	18	C18PNBS-30
37 x 0,96	18	C18PNBS-37
44 x 0,96	18	C18PNBS-44
45 x 0,96	18	C18PNBS-45
60 x 0,96	18	C18PNBS-60
91 x 0,96	18	C18PNBS-91
2 x 1,23	16	C16PNBS-2
3 x 1,23	16	C16PNBS-3
4 x 1,23	16	C16PNBS-4
5 x 1,23	16	C16PNBS-5
6 x 1,23	16	C16PNBS-6
7 x 1,23	16	C16PNBS-7
8 x 1,23	16	C16PNBS-8
10 x 1,23	16	C16PNBS-10
12 x 1,23	16	C16PNBS-12
16 x 1,23	16	C16PNBS-16
18 x 1,23	16	C16PNBS-18
20 x 1,23	16	C16PNBS-20
22 x 1,23	16	C16PNBS-22
24 x 1,23	16	C16PNBS-24
30 x 1,23	16	C16PNBS-30
37 x 1,23	16	C16PNBS-37
44 x 1,23	16	C16PNBS-44
60 x 1,23	16	C16PNBS-60
91 x 1,23	16	C16PNBS-91
2 x 1,94	14	C14PNBS-2 or DPNBS-14
3 x 1,94	14	C14PNBS-3 or TPNBS-14
4 x 1,94	14	C14PNBS-4 or FPNBS-14
5 x 1,94	14	C14PNBS-5 or QPNBS-14
6 x 1,94	14	C14PNBS-6
7 x 1,94	14	C14PNBS-7
8 x 1,94	14	C14PNBS-8
10 x 1,94	14	C14PNBS-10
12 x 1,94	14	C14PNBS-12
14 x 1,94	14	C14PNBS-14
16 x 1,94	14	C14PNBS-16
19 x 1,94	14	C14PNBS-19
20 x 1,94	14	C14PNBS-20
24 x 1,94	14	C14PNBS-24
30 x 1,94	14	C14PNBS-30
37 x 1,94	14	C14PNBS-37
44 x 1,94	14	C14PNBS-44
60 x 1,94	14	C14PNBS-60
91 x 1,94	14	C14PNBS-91

Number of cores x conductor cross-section		Type designation
mm²	AWG/MCM	
2 x 3,08	12	C12PNBS-2 or DPNBS-12
3 x 3,08	12	C12PNBS-3 or TPNBS-12
4 x 3,08	12	C12PNBS-4 or FPNBS-12
5 x 3,08	12	C12PNBS-5 or QPNBS-12
6 x 3,08	12	C12PNBS-6
7 x 3,08	12	C12PNBS-7
8 x 3,08	12	C12PNBS-8
10 x 3,08	12	C12PNBS-10
12 x 3,08	12	C12PNBS-12
16 x 3,08	12	C12PNBS-16
20 x 3,08	12	C12PNBS-20
24 x 3,08	12	C12PNBS-24
30 x 3,08	12	C12PNBS-30
37 x 3,08	12	C12PNBS-37

Number of cores x conductor cross-section		Type designation
mm²	AWG/MCM	
44 x 3,08	12	C12PNBS-44
60 x 3,08	12	C12PNBS-60
91 x 3,08	12	C12PNBS-91
2 x 5,53	10	C10PNBS-2 or DPNBS-10
3 x 5,53	10	C10PNBS-3 or TPNBS-10
4 x 5,53	10	C10PNBS-4 or FPNBS-10
5 x 5,53	10	C10PNBS-5 or QPNBS-10
6 x 5,53	10	C10PNBS-6
7 x 5,53	10	C10PNBS-7
8 x 5,53	10	C10PNBS-8
9 x 5,53	10	C10PNBS-9
10 x 5,53	10	C10PNBS-10

VFD Cables:

Construction:	
Conductor:	Tinned stranded copper
Insulation:	XLPO (Type P)
Ground conductors:	Three symmetrically distributed ground conductors ion interstices
Filler:	Flame Retardant, non hygroscopic (as needed)
Shield:	Tinned copper braid with 95% coverage
Inner sheath:	SP1 (Type N)
Metal covering:	Bronze or Aluminum wire braid
Outer sheath:	SP1 (Type N)

Number of cores x conductor cross-section:		Type designation
mm²	AWG/MCM	
3x 7.6 +3x 3.3	3x 8 AWG +3x 12 AWG	TP(OBS)NBS-8 w/grds
3x 12.5 +3x 3.3	3x 6 AWG +3x 12 AWG	TP(OBS)NBS-6 w/grds
3x 18.5 +3x 5.2	3x 5 AWG +3x 10 AWG	TP(OBS)NBS-5 w/grds
3x 21.1 +3x 5.2	3x 4 AWG +3x 10 AWG	TP(OBS)NBS-4 w/grds
3x 27.2 +3x 5.2	3x 3 AWG +3x 10 AWG	TP(OBS)NBS-3 w/grds
3x 34.0 +3x 5.2	3x 2 AWG +3x 10 AWG	TP(OBS)NBS-2 w/grds
3x 43.0 +3x 5.2	3x 1 AWG +3x10 AWG	TP(OBS)NBS-1 w/grds
3x 54.0 +3x 5.2	3x 1/0 AWG+3x 10 AWG	TP(OBS)NBS-1/0 w/grds
3x 70.0 +3x 7.6	3x 2/0 AWG +3x8 AWG	TP(OBS)NBS-2/0 w/grds
3x 86.0 +3x 7.6	3x 3/0 AWG +3x8 AWG	TP(OBS)NBS-3/0 w/grds
3x 109.0 +3x 12.5	3x 4/0 AWG +3x6 AWG	TP(OBS)NBS-4/0 w/grds
3x 132.0 +3x 12.5	3x 262 KCMIL +3x6 AWG	TP(OBS)NBS-262 w/grds
3x 159.0 +3x 12.5	3x 313 KCMIL +3x 6 AWG	TP(OBS)NBS-313 w/grds
3x 189.0 +3x 12.5	3x 373 KCMIL +3x 6 AWG	TP(OBS)NBS-373 w/grds
3x 227.0 +3x 18.6	3x 444 KCMIL +3x 5 AWG	TP(OBS)NBS-444 w/grds
3x 273.0 +3x18.6	3x 535 KCMIL +3x 5 AWG	TP(OBS)NBS-535 w/grds
3x 326.0 +3x18.6	3x 646 KCMIL +3x 5 AWG	TP(OBS)NBS-646 w/grds
3x 394.0 +3x18.6	3x 777 KCMIL +3x 5 AWG	TP(OBS)NBS-777 w/grds
3x 562.0 +3x 21.1	3x 1111 KCMIL +3x 4 AWG	TP(OBS)NBS-1111 w/grds

Application/Limitation

The requirements of SOLAS Amendments 1981 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
Test according to IEEE 45 (2002), IEEE 1580 (2010) and IEC 60332-3 cat. A.

Marking of product
Draka 32 BOSTRIG P – Type designation - Number and size of conductors – Voltage or
Draka 32 BOSTRIG P – VFD - Type designation - Number and size of conductors - Voltage.

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

The main elements of the assessment are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Routine tests (RT) and selected type tests (ref. to applicable class programs) checked (if not available these tests shall 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 is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE