DNV·GL

Certificate No:
TAE00003MG

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Termination and Joint for Cable

with type designation(s)
PPIO, PPIT

Issued to
Dong-A Bestech Co., Ltd.
Bucheon-si, Gyeonggi-do, Republic of Korea

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

Application :

Cable shoes for installation inside switchboards/ enclosures onboard ships and mobile offshore units

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

Issued at **Busan** on **2019-07-22**
This Certificate is valid until **2023-12-31**.
DNV GL local station: **Seoul**

Approval Engineer: **Dong Ho Park**

for **DNV GL**

Andreas Kristoffersen
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

Copper Terminal Lugs:
Type PPIO . . . . . One-hole type
PPIT . . . . . Two-hole type

Classification of:

Class A — These are connectors intended for electricity distribution or industrial networks in which they can be subjected to short-circuits of relatively high intensity and duration. As a consequence, Class A connectors are suitable for the majority of applications.

PPIO Terminal Lugs

Wire Range (mm^2)		Part No.					Dimensions(mm)					
Rated Cross section	FLEX	Conductor Part	Barrel Form	Tongue Form	Stud size	FL EX	Width (Min)	I.D	C		L	
									S	L	S	L
0.75	0.75	0000.75	S/L	R	03	-	6.5	1.3	6	-	17	-
					04	-						
					05	-	9				19	
1.5	1.5	0001.5	S/L	R	03	-	6.5	1.8	6	-	17	-
					04	-						
					05	-	9				19	
					06	-					21	
2.5	2.5	0002.5	S/L	R	03	-	6.5	2.3	6	-	17	-
					04	-						
					05	-	9				19	
					06	-					21	
					08	-	13				25.5	
4	4	0004	S/L	R	03	-	6.5	3.0	8	-	19.5	-
					04	-						
					05	-	9.5				21.5	
					06	-					23.5	
					08	-	13				28	
6	6	0006	S/L	R	04	-	7.5	3.5	10	-	23	-
					05	-	11				26	
					06	-						
					08	-	15.5				30	
					10	-						
10	10	0010	S/L	R	05	-	9	4.5	15	25	30	40
					06	-	13.5				36	46
					08	-						
					10	-	19				41	51
					12	-						
16	16	0016	S/L	R	05	-	11	5.5	15	25	33	43
					06	-						
					08	-	15.5				39	49
					10	-						
					12	-	19				41	51
25	25	0025	S/L	R	05	-	13.5	7	20	25	43	48
					06	-						
					08	-						
					10	-	19				48	53
					12	-						

Wire Range (mm^2)		Part No.					Dimensions(mm)					
Rated Cross section	FLEX	Conductor Part	Barrel Form	Tongue Form	Stud size	FLEX	Width (Min)	I.D	C		L	
									S	L	S	L
35		0035	S/L	R	05	-	15.6	8.2	20	25	45	50
					06	-						
					08	-						
					10	-	19				48	53
					12	-						
	35	0035	S/L	R	05	F	17	9	20	25	45	50
					06	F						
					08	F						
					10	F						
					12	F	19				48	53
50		0050	S/L	R	05	-	19	9.5	23	35	53	65
					06	-						
					08	-						
					10	-						
					12	-						
	50	0050	S/L	R	05	F	21	11	23	35	53	65
					06	F						
					08	F						
					10	F						
					12	F						
70		0070	S/L	R	08	-	22	11.5	25	35	64	74
					10	-						
					12	-						
					14	-	25					
					16	-						
	70	0070	S/L	R	08	F	24	13	25	35	64	74
					10	F						
					12	F						
					14	F						
					16	F						
95		0095	S/L	R	08	-	25.5	13.5	31	45	70	84
					10	-						
					12	-						
					14	-						
					16	-						
	95	0095	S/L	R	08	F	28	15	31	45	70	84
					10	F						
					12	F						
					14	F						
					16	F						
					20	F						
120		0120	S/L	R	08	-	29	15.5	35	45	85	95
					10	-						
					12	-						
					14	-						
					16	-						
					20	-						
	120	0120	S/L	R	08	F	31.5	17	35	45	85	95
					10	F						
					12	F						
					14	F						
					16	F						
					20	F						

Wire Range (mm^2)		Part No.					Dimensions(mm)					
Rated Cross section	FLEX	Conductor Part	Barrel Form	Tongue Form	Stud size	FLEX	Width (Min)	I.D	C		L	
									S	L	S	L
150		0150	S/L	R	08	-	32.5	17	35	45	87	97
					10	-						
					12	-						
					14	-						
					16	-						
					20	-						
	150	0150	S/L	R	08	F	35.5	19	35	45	87	97
					10	F						
					12	F						
					14	F						
					16	F						
					20	F						
185		0185	S/L	R	08	-	35.5	19	40	50	93	103
					10	-						
					12	-						
					14	-						
					16	-						
					20	-						
	185	0185	S/L	R	08	F	38.5	21	40	50	93	103
					10	F						
					12	F						
					14	F						
					16	F						
					20	F						
240		0240	S/L	R	08	-	41	21.5	45	55	100	110
					10	-						
					12	-						
					14	-						
					16	-						
					20	-						
	240	0240	S/L	R	08	F	43.5	23	45	55	100	110
					10	F						
					12	F						
					14	F						
					16	F						
					20	F						
300		0300	S/L	R	08	-	46	24.5	58	68	122	132
					10	-						
					12	-						
					14	-						
					16	-						
					20	-						
					24	-						
	300	0300	S/L	R	08	F	48	26	58	68	122	132
					10	F						
					12	F						
					14	F						
					16	F						
					20	F						
					24	F						
400	-	0400	S/L	R	12	-	55	27.5	70		137	
					14	-						
					16	-						

Wire Range (mm²)		Part No.					Dimensions(mm)					
Rated Cross section	FLEX	Conductor Part	Barrel Form	Tongue Form	Stud size	FL EX	Width (Min)	I.D	C		L	
									S	L	S	L
					20	-						
					24	-						
500	-	0500	S/L	R	12	-	60	31	70		150	
					14	-						
					16	-						
					20	-						
					24	-						
630	-	0630	S/L	R	12	-	66.5	35.5	80		162	
					14	-						
					16	-						
					20	-						
					24	-						

PPIT Terminal Lugs (Distance between holes: 44.5mm)

Wire Range (mm²)		Part No.					Dimensions(mm)					
Rated Cross section	FLEX	Conductor Part	Barrel Form	Tongue Form	Stud size	FL EX	Width (Min)	I.D	C		L	
									S	L	S	L
10	10	0010	S/L	R	05	-	9	4.5	15	25	74.5	84.5
					06	-	13.5				80.5	90.5
					08	-						
						-	19				85.5	95.5
					12	-						
16	16	0016	S/L	R	05	-	11	5.5	15	25	77.5	87.5
					06	-						
					08	-	15.5				83.5	93.5
					10	-						
					12	-	19				85.5	95.5
25	25	0025	S/L	R	05	-	13.5	7	20	25	87.5	92.5
					06	-						
					08	-						
					10	-	19				92.5	97.5
					12	-						
35		0035	S/L	R	05	-	15.6	8.2	20	25	89.5	94.5
					06	-						
					08	-						
					10	-	19				92.5	97.5
					12	-						
	35	0035	S/L	R	05	F	17	9	20	25	89.5	94.5
					06	F						
					08	F						
					10	F						
					12	F	19				92.5	97.5
50		0050	S/L	R	05	-	19	9.5	23	35	97.5	109.5
					06	-						
					08	-						
					10	-						
					12	-						
	50	0050	S/L	R	05	F	21	11	23	35	97.5	109.5

Wire Range (mm^2)		Part No.					Dimensions(mm)					
Rated Cross section	FLEX	Conductor Part	Barrel Form	Tongue Form	Stud size	FL EX	Width (Min)	I.D	C		L	
									S	L	S	L
					06	F						
					08	F						
					10	F						
					12	F						
70		0070	S/L	R	08	-	22	11.5	25	35	108.5	118.5
					10	-						
					12	-						
					14	-	25					
					16	-						
					08	F						
					10	F						
	70	0070	S/L	R	12	F	24	13	25	35	108.5	118.5
					14	F						
					16	F						
					08	-						
					10	-						
95		0095	S/L	R	12	-	25.5	13.5	31	45	114.5	128.5
					14	-						
					16	-						
					08	F						
					10	F						
	95	0095	S/L	R	12	F	28	15	31	45	114.5	128.5
					14	F						
					16	F						
					20	F						
					08	-						
					10	-						
120		0120	S/L	R	12	-	29	15.5	35	45	129.5	139.5
					14	-						
					16	-						
					20	-						
					08	F						
					10	F						
	120	0120	S/L	R	12	F	31.5	17	35	45	129.5	139.5
					14	F						
					16	F						
					20	F						
					08	-						
					10	-						
150		0150	S/L	R	12	-	32.5	17	35	45	131.5	141.5
					14	-						
					16	-						
					20	-						
					08	F						
					10	F						
	150	0150	S/L	R	12	F	35.5	19	35	45	131.5	141.5
					14	F						
					16	F						
					20	F						
185		0185	S/L	R	08	-	35.5	19	40	50	137.5	147.5

Wire Range (mm^2)		Part No.					Dimensions(mm)					
Rated Cross section	FLEX	Conductor Part	Barrel Form	Tongue Form	Stud size	FL EX	Width (Min)	I.D	C		L	
									S	L	S	L
					10	-						
					12	-						
					14	-						
					16	-						
					20	-						
					08	F						
					10	F						
	185	0185	S/L	R	12	F	38.5	21	40	50	137.5	147.5
					14	F						
					16	F						
					20	F						
					08	-						
					10	-						
240		0240	S/L	R	12	-	41	21.5	45	55	144.5	154.5
					14	-						
					16	-						
					20	-						
					08	F						
					10	F						
	240	0240	S/L	R	12	F	43.5	23	45	55	144.5	154.5
					14	F						
					16	F						
					20	F						
					08	-						
					10	-						
					12	-						
300		0300	S/L	R	14	-	46	24.5	58	68	166.5	176.5
					16	-						
					20	-						
					24	-						
					08	F						
					10	F						
					12	F						
	300	0300	S/L	R	14	F	48	26	58	68	166.5	176.5
					16	F						
					20	F						
					24	F						
					12	-						
					14	-						
400		0400	S/L	R	16	-	55	27.5	70		181.5	
					20	-						
					24	-						
					12	-						
					14	-						
500		0500	S/L	R	16	-	60	31	70		194.5	
					20	-						
					24	-						
					12	-						
					14	-						
630		0630	S/L	R	16	-	66.5	35.5	80		206.5	
					20	-						
					24	-						

Application/Limitation

To be used with tools as stated in the Dong-A Bestech catalogue only.
Manufacturer instructions to be followed.

Type Approval documentation

Tests carried out
According to IEC 61238-1-1 & 1-3:2018

Marking of product
Manufacturer's Logo, Conductor size of cable, Stud hole size

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