DNV·GL

Certificate No:
TAE00001UF

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Cable Clamps

with type designation(s)
R-Series CU, D-Series CU

Issued to
Gustav Klauke GmbH
Remscheid, Germany

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

Application :

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

Issued at **Hamburg** on **2017-03-07**
This Certificate is valid until **2022-03-06**.
DNV GL local station: **Essen**

Approval Engineer: **Maik Gagern**

for **DNV GL**

Duy Nam Le
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.

© DNV GL 2014. DNV GL and the Horizon Graphic are trademarks of DNV GL AS.

Product description

Copper Terminal Lugs:

Types : Tubular cable lugs copper 6 – 400 mm^2
Compression cable lugs copper 6 – 1000 mm^2

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.

Tubular cable lugs copper 6 – 400 mm^2 (R-series)

Nominal cross section mm2	Size of bolt	Part no.	Dimensions							
			d1	d4	a	b	d2	c1	c2	l
6	M5	1R5	3,5	6,5	9	10	5,5	6,50	7,5	21
6	M6	1R6	3,5	6,5	9	12	6,5	6,50	7,5	21
6	M8	1R8	3,5	6,5	9	15	8,5	10,00	10,0	23
6	M10	1R10	3,5	6,5	9	17	10,5	12,00	12,0	25
6	M12	1R12	3,5	6,5	9	19	13,0	13,00	13,0	28
10	M5	2R5	4,5	7,0	10	12	5,5	6,50	7,5	22
10	M6	2R6	4,5	7,0	10	12	6,5	6,50	7,5	22
10	M8	2R8	4,5	7,0	10	15	8,5	10,00	10,0	25
10	M10	2R10	4,5	7,0	10	17	10,5	12,00	12,0	27
10	M12	2R12	4,5	7,0	10	19	13,0	13,00	13,0	29
16	M5	3R5	5,5	8,5	13	12	5,5	5,50	6,5	26
16	M6	3R6	5,5	8,5	13	12	6,5	6,25	7,5	27
16	M8	3R8	5,5	8,5	13	15	8,5	8,50	9,5	29
16	M10	3R10	5,5	8,5	13	17	10,5	10,50	11,5	31
16	M12	3R12	5,5	8,5	13	19	13,0	12,00	13,0	33
25	M5	4R5	7,0	10,0	15	14	5,5	7,50	7,5	30
25	M6	4R6	7,0	10,0	15	14	6,5	7,50	7,5	30
25	M8	4R8	7,0	10,0	15	16	8,5	10,00	10,0	32
25	M10	4R10	7,0	10,0	15	18	10,5	12,00	12,0	34
25	M12	4R12	7,0	10,0	15	19	13,0	13,00	13,0	35
25	M14	4R14	7,0	10,0	15	21	15,0	14,50	14,5	38
35	M6	5R6	8,5	12,0	17	17	6,5	7,50	7,5	32
35	M8	5R8	8,5	12,0	17	17	8,5	10,00	10,0	34
35	M10	5R10	8,5	12,0	17	19	10,5	12,00	12,0	37
35	M12	5R12	8,5	12,0	17	21	13,0	13,00	13,0	38
35	M14	5R14	8,5	12,0	17	21	15,0	14,50	14,5	40
35	M16	5R16	8,5	12,0	17	26	17,0	16,00	16,0	42
50	M6	6R6	10,0	14,0	19	20	6,5	10,00	10,0	37
50	M8	6R8	10,0	14,0	19	20	8,5	10,00	10,0	37
50	M10	6R10	10,0	14,0	19	20	10,5	12,00	12,0	39
50	M12	6R12	10,0	14,0	19	23	13,0	13,00	13,0	43
50	M14	6R14	10,0	14,0	19	23	15,0	14,50	14,5	45
50	M16	6R16	10,0	14,0	19	28	17,0	16,00	16,0	46
50	M20	6R20	10,0	14,0	19	30	21,0	19,00	19,0	48
70	M6	7R6	12,0	16,5	21	23	6,5	10,00	10,0	43
70	M8	7R8	12,0	16,5	21	23	8,5	10,00	10,0	43

Nominal cross section mm2	Size of bolt	Part no.	Dimensions							
			d1	d4	a	b	d2	c1	c2	l
70	M10	7R10	12,0	16,5	21	23	10,5	12,00	12,0	44
70	M12	7R12	12,0	16,5	21	23	13,0	13,00	13,0	46
70	M14	7R14	12,0	16,5	21	23	15,0	14,50	14,5	48
70	M16	7R16	12,0	16,5	21	28	17,0	16,00	16,0	50
70	M20	7R20	12,0	16,5	21	30	21,0	19,00	19,0	53
95	M8	8R8	13,5	18,0	25	26	8,5	12,00	12,0	48
95	M10	8R10	13,5	18,0	25	26	10,5	12,00	12,0	48
95	M12	8R12	13,5	18,0	25	26	13,0	13,00	13,0	49
95	M14	8R14	13,5	18,0	25	26	15,0	14,50	14,5	51
95	M16	8R16	13,5	18,0	25	28	17,0	16,00	16,0	54
95	M20	8R20	13,5	18,0	25	36	21,0	22,00	22,0	60
120	M8	9R8	15,0	19,5	26	28	8,5	14,00	14,0	51
120	M10	9R10	15,0	19,5	26	28	10,5	14,00	14,0	51
120	M12	9R12	15,0	19,5	26	28	13,0	14,00	14,0	51
120	M14	9R14	15,0	19,5	26	28	15,0	15,00	15,0	52
120	M16	9R16	15,0	19,5	26	30	17,0	16,00	16,0	54
120	M20	9R20	15,0	19,5	26	36	21,0	22,00	22,0	63
150	M8	10R8	16,5	21,0	30	31	8,5	14,00	14,0	56
150	M10	10R10	16,5	21,0	30	31	10,5	14,00	14,0	56
150	M12	10R12	16,5	21,0	30	31	13,0	15,00	15,0	57
150	M14	10R14	16,5	21,0	30	31	15,0	15,00	15,0	57
150	M16	10R16	16,5	21,0	30	31	17,0	16,00	16,0	58
150	M20	10R20	16,5	21,0	30	36	21,0	22,00	22,0	66
185	M10	11R10	19,0	24,0	30	35	10,5	18,00	18,0	65
185	M12	11R12	19,0	24,0	30	35	13,0	18,00	18,0	65
185	M14	11R14	19,0	24,0	30	35	15,0	18,00	18,0	65
185	M16	11R16	19,0	24,0	30	35	17,0	18,00	18,0	65
185	M20	11R20	19,0	24,0	30	39	21,0	22,00	22,0	69
240	M10	12R10	21,0	26,0	35	39	10,5	21,50	19,0	72
240	M12	12R12	21,0	26,0	35	39	13,0	21,50	19,0	72
240	M14	12R14	21,0	26,0	35	39	15,0	21,50	19,0	72
240	M16	12R16	21,0	26,0	35	39	17,0	21,50	19,0	72
240	M20	12R20	21,0	26,0	35	39	21,0	21,50	19,0	72
300	M12	13R12	23,5	29,5	44	43	13,0	24,00	24,0	87
300	M14	13R14	23,5	29,5	44	43	15,0	24,00	24,0	87
300	M16	13R16	23,5	29,5	44	43	17,0	24,00	24,0	87
300	M20	13R20	23,5	29,5	44	43	21,0	24,00	24,0	87
400	M12	14R12	27,0	34,0	44	49	13,0	24,00	24,0	90
400	M14	14R14	27,0	34,0	44	49	15,0	24,00	24,0	90
400	M16	14R16	27,0	34,0	44	49	17,0	24,00	24,0	90
400	M20	14R20	27,0	34,0	44	49	21,0	24,00	24,0	90

In addition the following items are included:

Pressure terminal connectors, "R" Series:

- Straight, Cat. Nos. 91R, 92R, 93R, 94R, 95R followed by a 1-digit number, may be followed by Suffix bk.
- Straight, Cat. Nos. 1R, 2R, 3R, 4R, 5R, 6R, 7R, 8R, 9R, 10R, 11R, 12R, 13R, or 14R, followed by /1 or 2-digit number, may be followed by Suffix MS and/or by Suffix bk, Ni, Pb.

- Angled-45 degree, Cat. Nos. 41R, 42R, 43R, 44R, 45R, 46R, 47R, 48R, 49R, 50R, 51R, 52R, 53R, or 54R, followed by a /1 or /2-digit number, by Suffix -45, may be followed by Suffix MS and/or by Suffix bk, Ni, Pb.
- Angled-90 degree, Cat. Nos. 41R, 42R, 43R, 44R, 45R, 46R, 47R, 48R, 49R, 50R, 51R, 52R, 53R or 54R, followed by a /1 or /2- digit number, may be followed by Suffix MS and/or by Suffix bk, Ni, Pb.
- Narrow Palm Type, Cat. Nos. 5SG, 6SG, 7SG, 8SG, 9SG, 10SG, 11SG, 12SG, or 13SG, followed by /1 or 2-digit number, may be followed by Suffix bk, Ni.
- Fork Type, Cat. Nos. 91C, 92C, 93C, 94C, 95C, 96C, or 97C, followed by a 1-digit number, may be followed by Suffix bk.
- Butt-Type, Cat. Nos. 17R, 18R, 19R, 20R, 21R, 22R, 23R, 24R, 25R, 26R, 27R, 28R, 29R, 30R, 31R, 32R, 33R, or 34R, may be followed by Suffix bk, Ni.
- Cross-Connectors, Type KV1.5, KV2.5, KV4, KV6, KV10, KV16, KV25, KV35, KV50, KV70, KV95, KV120, KV150, KV185, or KV240, may be followed by Suffix bk, Ni, Pb.
- T-Connectors, Type TV1.5, TV2.5, TV4, TV6, TV10, TV16, TV25, TV35, TV50, TV70, TV95, TV120, TV150, TV185, or TV240, may be followed by Suffix bk, Ni, Pb.

Compression cable lugs copper 6 – 1000 mm^2 (D-series)

Nominal cross section mm2	Size of bolt	Part no.	Code	Dimensions							
				d1	d4	a	b	D2	C1	C2	l
6	M 5	101R5	5	3,8	5,5	10	8,5	5,3	6,5	7,5	24
6	M 6	101R6	5	3,8	5,5	10	8,5	6,4	7,5	8,0	24
6	M 8	*101R8	5	3,8	5,5	10	13,0	8,4	10,0	10,0	24
10	M 5	102R5	6	4,5	6,0	10	9,0	5,3	7,0	8,5	27
10	M 6	102R6	6	4,5	6,0	10	9,0	6,4	7,5	8,5	27
10	M 8	*102R8	6	4,5	6,0	10	13,0	8,4	10,0	10,0	27
16	M 6	103R6	8	5,5	8,5	20	13,0	6,4	7,5	8,0	36
16	M 8	103R8	8	5,5	8,5	20	13,0	8,4	10,0	10,0	36
16	M 10	103R10	8	5,5	8,5	20	17,0	10,5	12,0	12,0	36
16	M 12	*103R12	8	5,5	8,5	20	18,0	13,0	13,0	13,0	36
25	M 6	104R6	10	7,0	10,0	20	14,0	6,4	7,5	8,0	38
25	M 8	104R8	10	7,0	10,0	20	16,0	8,4	10,0	10,0	38
25	M 10	104R10	10	7,0	10,0	20	17,0	10,5	12,0	12,0	38
25	M 12	104R12	10	7,0	10,0	20	19,0	13,0	13,0	13,0	38
35	M 6	*105R6	12	8,2	12,5	20	17,0	6,4	7,5	8,0	42
35	M 8	105R8	12	8,2	12,5	20	17,0	8,4	10,0	10,0	42
35	M 10	105R10	12	8,2	12,5	20	19,0	10,5	12,0	12,0	42
35	M 12	105R12	12	8,2	12,5	20	21,0	13,0	13,0	13,0	42
35	M 14	*105R14	12	8,2	12,5	20	21,0	15,0	14,5	14,5	42
50	M 8	106R8	14	10,0	14,5	28	20,0	8,4	10,0	10,0	52
50	M 10	106R10	14	10,0	14,5	28	22,0	10,5	12,0	12,0	52
50	M 12	106R12	14	10,0	14,5	28	24,0	13,0	13,0	13,0	52
50	M 14	*106R14	14	10,0	14,5	28	24,0	15,0	14,5	14,5	52
50	M 16	106R16	14	10,0	14,5	28	28,0	17,0	16,0	16,0	52
70	M 8	107R8	16	11,5	16,5	28	24,0	8,4	10,0	10,0	55
70	M 10	107R10	16	11,5	16,5	28	24,0	10,5	12,0	12,0	55
70	M 12	107R12	16	11,5	16,5	28	24,0	13,0	13,0	13,0	55
70	M 14	*107R14	16	11,5	16,5	28	24,0	15,0	14,5	14,5	55
70	M 16	107R16	16	11,5	16,5	28	30,0	17,0	16,0	16,0	55
95	M 8	108R8	18	13,5	19,0	35	28,0	8,4	12,0	12,0	65
95	M 10	108R10	18	13,5	19,0	35	28,0	10,5	12,0	12,0	65
95	M 12	108R12	18	13,5	19,0	35	28,0	13,0	13,0	13,0	65
95	M 14	*108R14	18	13,5	19,0	35	28,0	15,0	14,5	14,5	65

Nominal cross section mm2	Size of bolt	Part no.	Code	Dimensions							
				d1	d4	a	b	D2	C1	C2	l
95	M 16	108R16	18	13,5	19,0	35	32,0	17,0	16,0	16,0	65
120	M 10	109R10	20	15,5	21,0	35	32,0	10,5	15,0	16,0	70
120	M 12	109R12	20	15,5	21,0	35	32,0	13,0	16,0	17,0	70
120	M 14	*109R14	20	15,5	21,0	35	32,0	15,0	18,0	19,0	70
120	M 16	109R16	20	15,5	21,0	35	32,0	17,0	19,0	20,0	70
120	M 20	109R20	20	15,5	21,0	35	38,0	21,0	21,0	22,0	70
150	M 10	110R10	22	17,0	23,5	35	34,0	10,5	15,0	16,0	78
150	M 12	110R12	22	17,0	23,5	35	34,0	13,0	16,0	17,0	78
150	M 14	*110R14	22	17,0	23,5	35	34,0	15,0	19,0	20,0	78
150	M 16	110R16	22	17,0	23,5	35	34,0	17,0	19,0	20,0	78
150	M 20	110R20	22	17,0	23,5	35	40,0	21,0	21,0	22,0	78
185	M 10	111R10	25	19,0	25,5	40	37,0	10,5	15,0	16,0	82
185	M 12	111R12	25	19,0	25,5	40	37,0	13,0	16,0	17,0	82
185	M 14	*111R14	25	19,0	25,5	40	37,0	15,0	19,0	20,0	82
185	M 16	111R16	25	19,0	25,5	40	37,0	17,0	19,0	20,0	82
185	M 20	111R20	25	19,0	25,5	40	40,0	21,0	21,0	22,0	82
240	M 12	112R12	28	21,5	29,0	40	42,0	13,0	16,0	17,0	92
240	M 14	*112R14	28	21,5	29,0	40	42,0	15,0	19,0	20,0	92
240	M 16	112R16	28	21,5	29,0	40	42,0	17,0	19,0	20,0	92
240	M 20	112R20	28	21,5	29,0	40	45,0	21,0	21,0	22,0	92
300	M 14	*113R14	32	24,5	32,0	50	46,0	15,0	19,0	22,0	100
300	M 16	113R16	32	24,5	32,0	50	46,0	17,0	19,0	22,0	100
300	M 20	113R20	32	24,5	32,0	50	46,0	21,0	22,0	22,0	100
400	M 14	*114R14	38	27,5	38,5	70	54,0	15,0	25,0	25,0	115
400	M 16	114R16	38	27,5	38,5	70	54,0	17,0	25,0	25,0	115
400	M 20	114R20	38	27,5	38,5	70	54,0	21,0	25,0	25,0	115
500	M 16	*115R16	42	31,0	42,0	70	60,0	17,0	25,0	25,0	125
500	M 20	115R20	42	31,0	42,0	70	60,0	21,0	25,0	25,0	125
625	M 16	*116R16	44	34,5	44,0	80	64,0	17,0	25,0	25,0	135
625	M 20	116R20	44	34,5	44,0	80	64,0	21,0	25,0	25,0	135
800	M 16	*117R16	52	40,0	52,0	100	75,0	17,0	30,0	30,0	165
800	M 20	117R20	52	40,0	52,0	100	75,0	21,0	30,0	30,0	165
1000	M 16	*118R16	58	44,0	58,0	100	83,0	17,0	30,0	30,0	165
1000	M 20	118R20	58	44,0	58,0	100	83,0	21,0	30,0	30,0	165

In addition the following items are included:

Compression joints acc. to DIN 46267, Cu 10-800 mm²:
Cat. Nos. 122R, 123R, 124R, 125R, 126R, 127R, 128R, 129R, 130R, 131R, 132R, 133R, 134R, 135R, 136R, 137R, may be followed by Suffix bk.

Compression joints acc. to DIN 46267, Cu 16-625 mm², with oil stop:
Cat. Nos. 523R, 524R, 525R, 526R, 527R, 528R, 529R, 530R, 531R, 532R, 533R, 534R, 535R, 536R, may be followed by Suffix bk.

Compression joints for copper medium-voltage cable acc. to DIN 46267, Cu 35-400 mm²:
Cat. Nos. 505R, 506R, 507R, 508R, 509R, 510R, 511R, 512R, 513R, 514R, may be followed by v.

Compression joints for copper medium-voltage cable acc. to DIN 46267, Cu 35-400 mm²,
with oilstop: Cat. Nos. 505R, 506R, 507R, 508R, 509R, 510R, 511R, 512R, 513R, 514R followed by LD, may be followed by v.

Full tension compression joints acc. to DIN 48085, part 1, Cu 10-70 mm²
Cat. Nos. 183R, 184R, 185R, 186R, 187R may be followed by v.

Application/Limitation

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

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

Type Approval documentation

Tests carried out

IEC 61238-1 (2003-05)

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) checked (if not available tests according to 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.

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