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INTERSTATE COUNCIL FOR STANDARDIZATION, METROLOGY AND CERTIFICATION  
(ISC)

**31604—  
2020  
(IEC 61545:1996)**

**(IEC 61545:1996, Connecting devices — Devices for the connection of aluminium conductors in clamping units of any material and copper conductors in aluminium bodied clamping units, MOD)**

2020

31604—2020

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 29 2020 . No 130- )

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 2020 . No 444- 31604—2020 (IEC 61545:1996)  
 1 2021 .

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 IEC 61545:1996 «

» («Connecting devices — Devices for the connection of aluminium conductors in damping units of any material and copper conductors in aluminium bodied clamping units», MOD)

1.5 ( 3.6).  
 SC 23F « »  
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 (IEC).

6 31604—2012 (IEC 61545:1996)

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F	( )	.....
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G	( )	.....
		33
	( )	AWG.....
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**31604—2020  
(IEC 61545:1996)**

**Connecting devices. Devices for the connection of aluminium conductors in clamping units of any material and copper conductors in aluminium bodied clamping units. General requirements and test methods**

— 2021—03—01

**1**

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8030 8176) ( - ) , -

( 22483) ( - ) ,

2.5 50 2 1000 AWG 1500 .

1000 1000

( - 0.5 35 2 ) ( AWG.

22483) -

a) ;

b) ;

c) ( ) 1 61210.

31195-2.3.

IEC 60998-2-4.

**2**

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15.001> -

15.301—2016 « -

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3.2

(terminal):

[ IEC 60998-2-1, 3.61

3.3

(connecting device):

[ IEC 60998-2-1, 3-41

3.4

(screw-type clamping unit):

[ IEC 60998-2-1, 3.101]

3.4.1

(pillar clamping unit):

[ IEC 60998-2-1, 3-101,11

F.3 F.4.

3.4.2

(screw clamping unit):

[ IEC 60998-2-1, 3.101.21

F.1 F.2.

3.4.3

(stud clamping unit):

[ IEC 60998-2-1, 3.101.31

F.2e).

3.4.4

(saddle clamping unit):

[ IEC 60998-2-1, 3.101.41

F.2c) F.2d).

3.4.5

(mantle clamping unit):

[ IEC 60998-2-1, 3.101.51

F.5.



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3.5	(screwless-type clamping unit):	-
( IEC 60998-2-2, 3.1011		
	F.6.	
3.5.1	(universal clamping unit):	-
[ IEC 60998-2-2, 3.101.11		
3.5.2	(-universal clamping unit):	-
[ IEC 60998-2-2, 3.101.21		
3.6	(aluminium bodied clamping unit):	-
3.7	(rated connecting capacity):	-
1 31195.1, 3.81		
	IEC 60947-7-1	noAWG.
3.8	(rated current):	-
( 31195.1, 3.10)		
3.9	(ambient temperature):	-
1 31195.1, 3.131		
3.10	(temperature rise):	-
( 31195.1, 3.141		
3.11	(unprepared conductor):	-
3.12	(prepared conductor):	-
3.13	[treated contact area of a conductor (treated conductor)]:	-
( /		
3.14	(equalizer):	-
( )		

3.15 (reference conductor):

3.16 S (stability factor S):

3.17 (palm):

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5.2 1.

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1		11.1	
2		11.4	
( )		11.5 (N1)	
		11.2 -	
		11.5 (N2)	
		11.3	
		11.6 ( )	
4 ( )		11.2	
		11.3	
		11.6 ( )	
5 ( )		11.7	
( )	- - 1!		
4 ( )	21	4	4
5 ( )	- - 11	5	5

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5.2.1



5.10

5.11

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6.1

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7.1

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		( )	
- ; *		•	7.1.1
- ;		••	7.1.2
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( )			7.7
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			7.9

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7.1.1

7.1.2

7.1.3

7.2

5.4.1.

7.3

		1		At <sup>21</sup>			
		Al		Al	*	Al	1'
-		Al s	Al s	Al s/Cu 3	Al s/Cu S	s	S
	-	Al	Al	Al r/Cu	Al r/Cu		
		—	—	Cuf	Cuf	Cuf	f
		Al	Al	Al/Cu	Al/Cu		- -
' ) . <u>31602.</u> 2> , , AJ s/Cu. — : s — - . — . f — .							

		Al		At hCu <sup>2»</sup>		Cu	
		Al	Cu +	Al	Cu +	Al	Cu'' +
-		Al s-t	Al s-t	Al s-t/Cu s	Al s-t/Cu s	Cu s	s
	-	Al -t	Al -t	Al -t/Cu	Al r-t/Cu r		
		—	—	Cuf	Cuf	Cuf	t
		Al-t	Al-t	Al-t/Cu	Al-t/Cu	Cu	- -



	AWG									
					5 %					
										%
050	0.50	0.9	V	050	V	20.0	0.85	0.97	20.0	1.02
0.75	0.75	1.0	1.2	0.75	1.3	18.0	1.07	1.23	18.0	1.28
1.00	1.00	1.2	1.4	1.00	1.5	—	—	—	—	—
150	1.50	1.5	1.7	150	1.6	16.0	1.35	1.55	16.0	1,60
250	2,50	1.9	2.2	250	2.3	14.0	1.7'	1.95	14.0	2.08
400	4.00	2.4	2.7	4,00	2.9	12.0	2.15	2.45	12.0	2.70
6.00	6,00	2.9	3.3	4.00	2.9	10.0	2,72	3.09	—	—
10.00	10.00	3.7	4.2	6.00	3.9	8.0	3.43	3.89	10.0	3.36
16.00	16.00	4.6	5.3	10.00	5.'	6.0	4.32	4.91	8.0	4.32
25.00	25.00	—	6.6	16.00	6.3	4.0	5.45	6.18	6.0	5.73
35.00	35.00	—	7.9	25.00	7.8	2.0	6.87	7.78	4.0	7.26

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11.1.

9.4 \* — \*

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10.4	,	,	-
10.5	,	,	-
10.6	),	(	-
10.7	,	:	-
10.8		11.4.2.	*
10.9		11.2—11.4.	
10.10	,		-
10.11		1.	-
		0,75 <sup>2</sup>	-
		11.2 11.3.	-
10.12	,		-
10.13		11.2—11.4.	-
10.14		11.5.	-
10.15		11.4.2.	-
	9.3.	11.1.1.	

10.16  
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10.17  
( .11.6). -

**11**

11.1

11.1.1  
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11.1.2  
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9.3.

5.9.  
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10.10 ( ) -

9.3 1. , 75 -

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		1*,	21,	.
AWG				
0.50 0.75	20 18	6.5	260	0.3 0.4
1.00 1.50	16			0.4
2.50 4.00	14 12	9.5	280	0.7 0.9
6.00 10.00	10 8			1.4 2.0
16.00 25.00	6 4	13.0	300	2.9 4.5

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		1.	2	3
2	AWG			
35.00	3 2	14.5	320	5.9 6.8
50.00	1 0	16.0	340	8.6 9.5
± 15				

( ) 5.9.

( . 5).

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(10±2)

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2	0.50	0.80	1.00	1.50	2.50	4.00	6.00	10.00	16.00	25.00	—	35.00	—	50.00
(AWG)	20	18	—	16	14	12	10	8	6	4	3	2	1	0
.	30	30	35	40	50	60	80	90	100	135	160	190	240	285

11.4  
11.4.1

11.4.2

9.3 9.4.

5.9.

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	L.
6	150
10	150
16	200
25	200
35	200
50	200

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( ) AWG	L.
10 8	150
6	200

11.5

N1

9.3:

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D.

8 ( .

J).

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( .5.9

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8 —

AWG	2	1*	
20	0.50	11.5	
		12,0	
18	0.75	14,0	
		16,0	
16	1.00	18,5	
		21,0	
14	1.50	22,0	
		26,0	
12	2.50	30,0	
		35,5	
10	4.00	40,0	35
		47,0	40
8	6.00	54,0	46
		64,0	53
6	10.00	75,0	60
		88,0	69
4	16,00	100.0	79
		115,0	88
3	25,00	130.0	99
		146.0	110
2		163.0	123
	35,00	183.0	137
1		210.0	152
0	50,00	—	171
	—	—	190

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10 —


11.7.6

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9  
( . 11.7.4).  
11.7.7  
11.7.7.1  
11.7.7.2  
( ) ( )  
( ) ( )  
( ) ( )  
( ) ( )  
( ) ( )  
( ) ( )  
11.7.7.3  
( ) ( ) ( ) ( )  
( ) ( )  
11.7 .4  
11.  
11—

cAWG		
8	10.0	200
6—3	. 16.0 25.0	300
2—0	. 35.0 50,0	460

11.7.7.5

11.7.7.6

11.7.7.7

12.

( ) ,

12 —

	2	
0—50	45	45
51—125	105	85
126—225	185	155
. 225	320	240

11.7.7.8

150

11.7.7.9

450 .1). (25 ± 5) (150 ± 10) 600

11.7.7.10

±4 °C 15—35

11.7.8

11.7.8.1

0.07 ? (

30

AWG)

11.7.8.2

11.7.8.3

11.7.8.4

11.7.8.5

( . 11.5)

600

50 \* 50

—10

11.7.9

110 \* : ± 10 °C.

11.7.9.1 11.7.9.2.

11.7.9.1

( . 11.5)

500

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11.5.

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25-

25. 50. 75. 100. 125. 175. 225. 275. 350. 425 500

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± 5 \*

11.7.9.2

S

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11.7.9.1

D

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d.

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d

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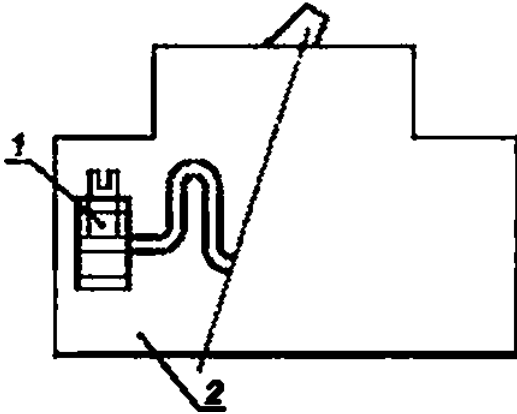
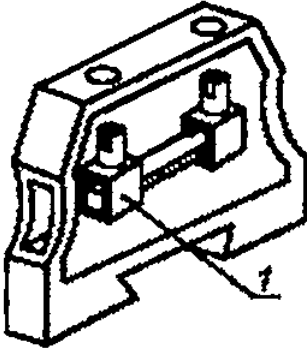
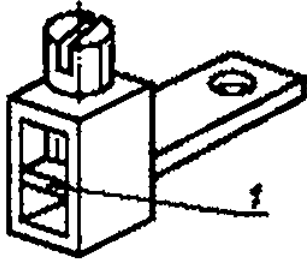
			d » -	S»d-D
25	79	78	1	0.18
50	80	77	3	2.18
75	78	78	0	-0,82
100	76	77	-1	-1.82
125	77	77	0	-0,82
175	78	77	1	0.18
225	79	76	3	2.18
275	78	76	2	1.18
350	77	78	-1	-1.82
425	77	79	— 2	-2.82
500	81	78	3	2.18

d = 9.

D

: d - 9/11 - 0,82.

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	1	II	III	IV	V
2.8 <0.11 >	0,20 (1.80)		0.4 (3.5)	0.4 (3.5)	
. 2.8 (0,11) 3.0 (0.12)	0,25 (220)	—	0.5 (4.4)	0.5 (4.4)	—
. 3.0 (0,12) 3.2 (0.13)	0.30 (2.70)	—	0.6 (5.3)	0.6 (5.3)	—
. 3.2 (0.13) 3.6(0.14)	0.40 (3.50)	—	0.8 (7.1)	0.8 (7.1)	—
. 3.6 (0.14) 4.1 (0.16)	0.70 (620)	1.2 (10,6)	12 (10.6)	1.2(10.6)	12 (10.6)
. 4.1 (0,16) 4.7 (0.18)	0.80 (7.10)	1.2 (10.6)	1.8(15.9)	1.8(15.9)	1.8 (15.9)
. 4.7 (0,18) 5.3 (0.21)	0,80 (7.10)	1.4 (12.4)	2.0(17.7)	2.0(17.7)	2.0 (17.7)
. 5.3 (0,21) 6.0 (0.24)	120(10.80)	1.8 (15.9)	2.5(22.1)	3.0 (26.6)	3.0 (26.6)
. 6.0 (0.24) 8.0 (0.31)	2,50(22.10)	2.5 (22.1)	3.5(31.0)	6.0 (53.1)	4.0 (35.4)
. 8.0 (0,31) 10.0 (0.39)	—	3.5 (31.0)	4.0(35.4)	10.0(88.5)	6.0 (53.1)
. 10.0 (0.39) 12,0 (0.47)	—	4.0 (35.4)	—	—	8.0 (70,9)
. 12,0 (0.47) 15.0 (0.59)	—	5.0 (44.2)	—	—	10,0 (88,5)

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 II , , -  
 III , , -  
 IV , , -  
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(SAE)

.1 — , 4.8 (0,189 )

		{ ( ) }	
		4.8 (0,189\$ ) 1*	
		1,2 (0,047 ) (0,250 )	1,2 (0,047 ) (0,250 )
2	AWG		
0.5—6.0	20.0—10.0	2.3 (20)	4.0 (35)
10.0	8.0	2.8 (25)	4.5 (40)
16,0—25.0	6.0—4.0	4.0 (35)	5.1 (45)
—	3.0	4.0 (35)	5.6 (50)
35.0	2.0	4.5 (40)	5.6 (50)
50.0	0	—	5.6 (50)

.2 — , 4.8 (0,189 ) ,  
6 2 ( 10 AWG)

		{ ( ) }	
		1*	
		1,2 (0,047 )	t.2 (0,047 )
4.0(0,157)		0.8 (7)	1.0(9)
4.0 (0,157)		0,8 (7)	1.4 (12)
4.8 (0,189)		0.8 (7)	1.4 (12)
5.6 (0,219)		0.8 (7)	1.4 (12)
6.4 (0,250)		1.0 (9)	1.4 (12)
7.1 (0,281)		—	1,7(15)
7.1 (0,281)		—	2.3 (20)

raeworo

		{ ( ) }	
2	AWG		
0.5—6.0	20.0—10.0	9.0 (80.0)	8.5 (75.0)
10.0	8.0	9.0 (80.0)	8.5 (75.0)
16,0—25.0	6.0—4.0	18.6 (165.0)	12.4 (110.0)

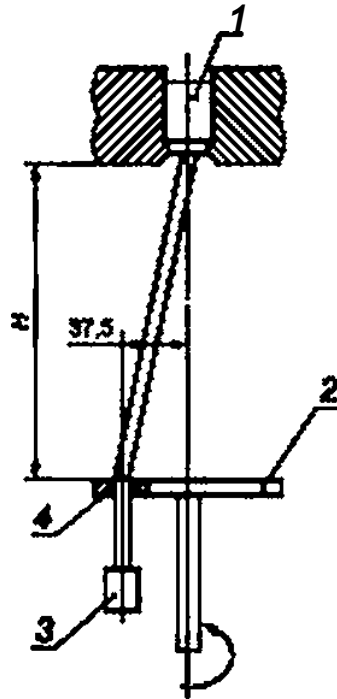
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		( )	
2	AWG		
	3.0	31.1 (275.0)	16.9(150.0)
35.0	2.0	31.1 (275.0)	16.9(150.0)
50.0	0	31.1 (275,0)	16.9(150.0)

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( )	( )
3.2 (0.125)	5.1 (45)
4.0 (0.151)	11.4(100)
4.8 (0.189)	13.8 (120)
5.6 (0.220)	17.0 (150)
6.4 (0.250)	22.6 (200)
7.9 (0.312)	31,1 (275)
9.5 (0.375)	42.4 (375)
12.7(0.500)	56,5 (500)
14,3(0,562)	67.8 (600)

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D.1 D.1A.

D.1 —

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*			2
6	15	.	2.5
.15	20	.	4.0
.20	25	.	6.0
.25	32	.	10.0
.32	50	.	16.0
.50	65	.	25.0
.65	80	.	35.0
.80	100	.	50.0

D.1A

*			AWG
15	.	.	12
.15	25	.	10
.25	40	.	8
.40	50	.	6
.50	65	.	4
.65	75	.	3
.75	90	.	2
.90	100	.	1
.100	120	.	0

D.2 D.2A.

D.2 —

( . IEC 60364-5-523 )

2.5	4
4.0	6
6.0	10
10.0	16
16.0	25
25.0	35
35.0	50

D.2A

— AWG

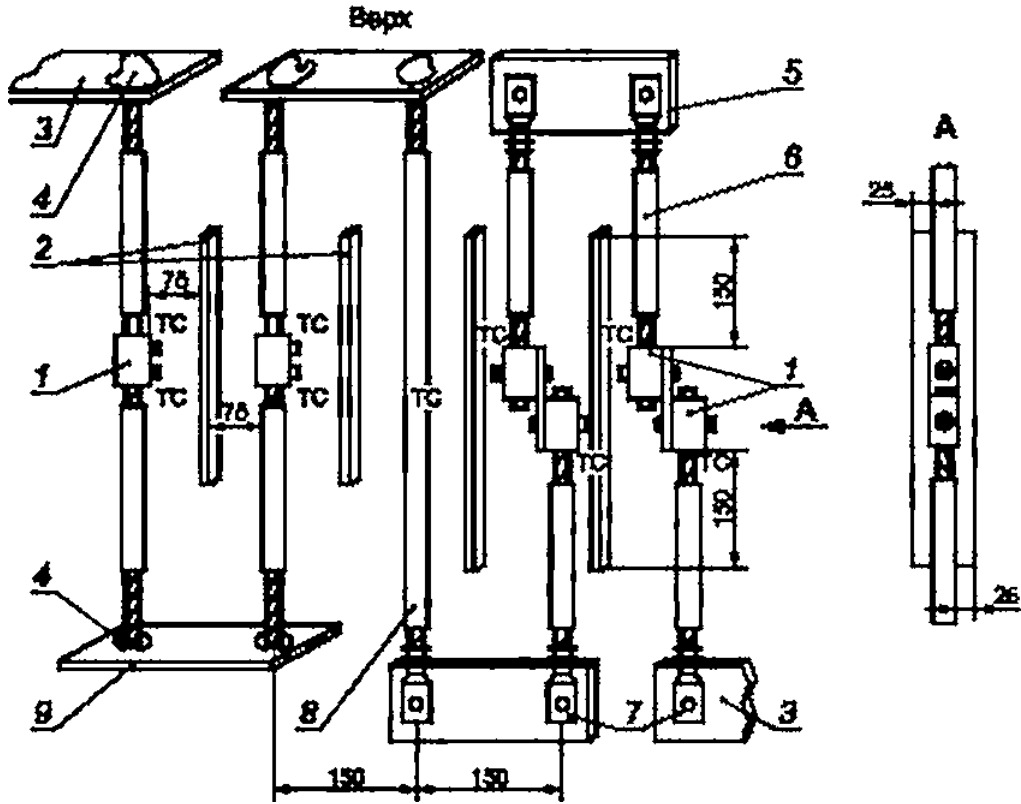
14	12
12	10
10	8
8	6
6	4
4	2
3	1
2	0



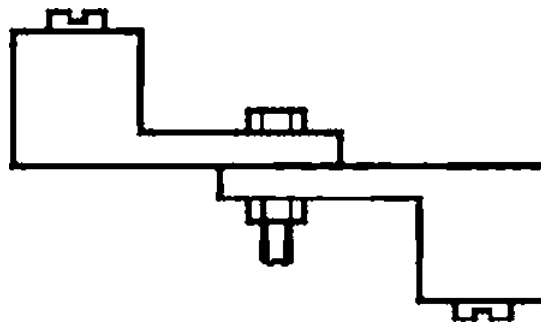
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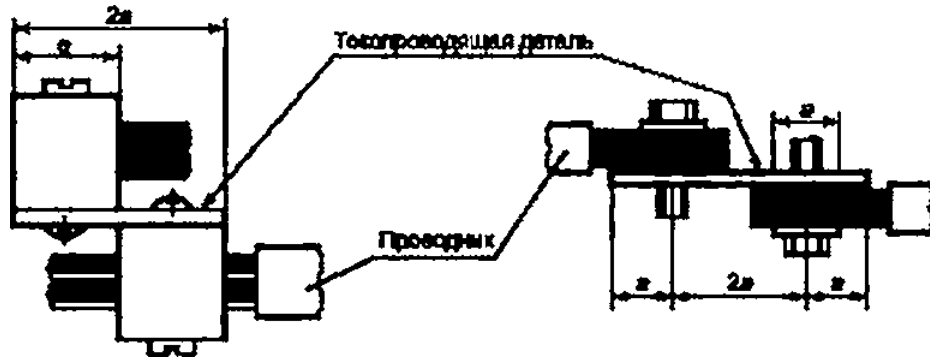
Размеры в миллиметрах



- 1 — ; 2 — ; 3 — ; 4 — ;  
 5 — ; 6 — ; 7 — ; 8 — ;  
 9 — ;



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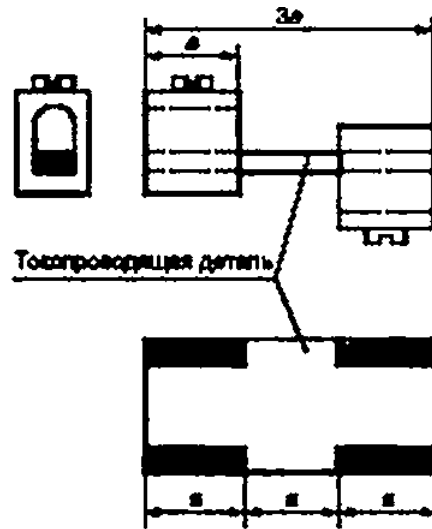


Рисунок Е.5

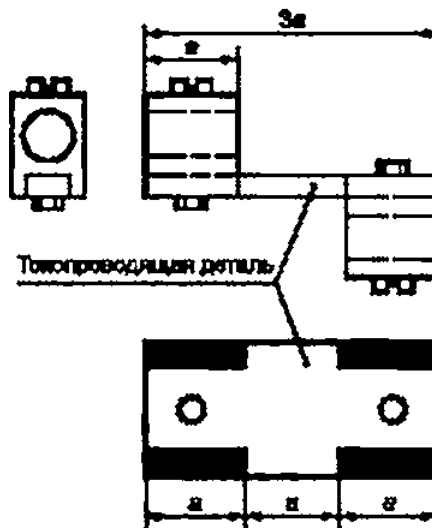


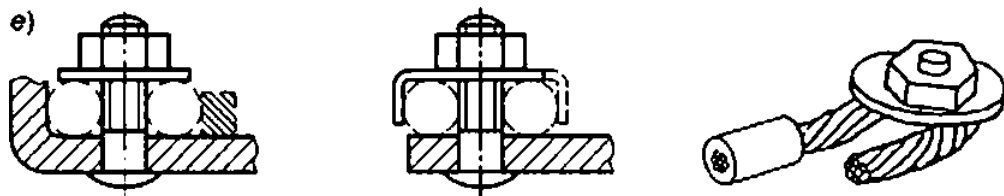
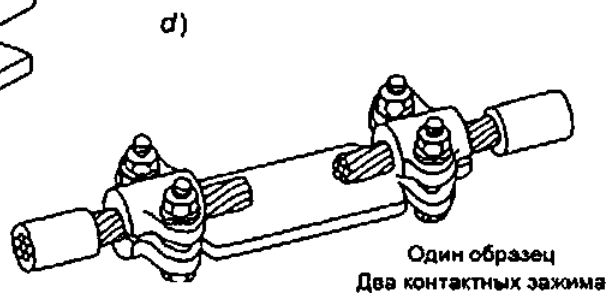
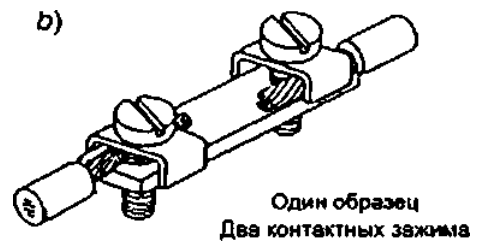
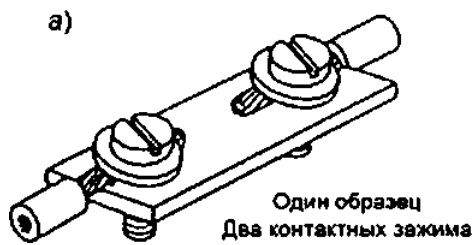
Рисунок Е.6

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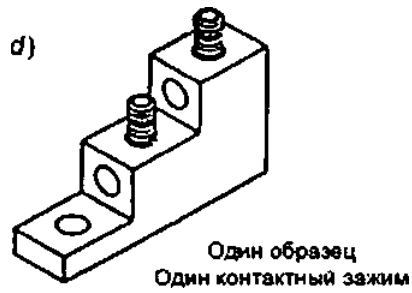
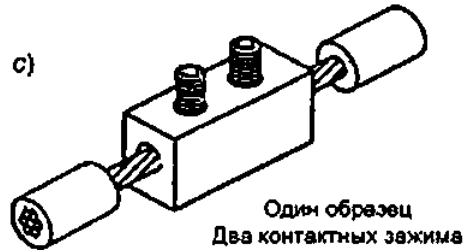
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F.1 —



F.2 —



F.3 —

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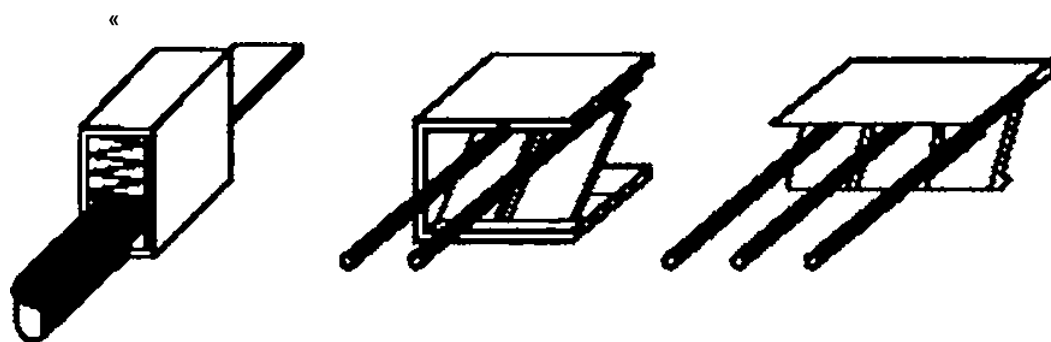


F.4 —



F.5 —

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F.6 —

( G )

- 1) , , - ' :
- 2) , ,
- 3) : — -

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AWG

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AWG

, 2	AWG	, 2
0.50	20	0.52
0.75	16	0. 2
1,00		—
1.50	16	1.30
2.50	14	2.10
4.00	12	3.30
6.00	10	5.30
10.00	8	6.40
16.00	6	13.30
25.00	4	21.20
35.00	2	33.60
50.00	0	53,50

( J !

6 J.1 —

		-		1	!
2.5—16 <sup>2</sup> ( )			a) . : (16 <sup>2</sup> ); 79 . : 100 b) 50 c) 25- d) * 10 .	a) « . 1,12 * 79 16 <sup>2</sup> . 75' . b) . c) 25- d) * 10 .	a) . 1,12 100 16 <sup>2</sup> . 75' . b) . c) 25- d) * 10 .
2.5—16 <sup>2</sup> ( )	25	a) . D.1: 25 6 <sup>2</sup> . b) . D.2: 6 <sup>2</sup> ( ) 4 <sup>2</sup> ( ) c) . 6: 4 <sup>2</sup> 40 : 6 <sup>2</sup> 46 . d) 50		. / 6 <sup>2</sup> 1.12 «46	. 4 <sup>2</sup> 1.12 *40
2.5—16 <sup>2</sup> ( )	25	. 25 — 6 <sup>2</sup> ) D (		. 1.12 *	. 1,12 *>
<p>11 «•» →</p> <p>D.</p>					

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.1				
.1.1				-
.1.2	15S43.1	15150.		-
.2			17516.1.	
.2.1	—	23216.		
.2.2				23216
15150.				
.4			9.005.	
.4.1	16504.			
.4.2		15.0014		:
.4.3				
.5				

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8724—2002 ( 261—98)	MOD	ISO 261:1998 « ISO.	
22483—2012 (IEC 60228:2004)	MOD	IEC 60228:2004 «	»
31195.1—2012 <1 60998-1:1990)	MOD	IEC 60998-1:1990 «	- .
		1.	»
31195.2.3—2012 (IEC 60998-2-3:1991)	MOD	IEC 60998-2-3:1991 «	- . - -
		2-3.	»
31602 (IEC 60999) ( )	MOO	IEC 60999 ( ) «	- .
		.	»
IEC 60227-3—2011	JDT	IEC 60227-3:1997 «	- .
		3.	»
IEC 60898-1—2020	IDT	IEC 60898-1:2019 «	- - -
		.	1. - »
IEC 60947-7-1—2016	IDT	IEC 60947-7-1:20 9 «	- - - »
		.	7-1.
IEC 60998-2-1—2013	IDT	IEC 60998-2-1:2002 «	- .
		2-1.	- »
IEC 60998-2-4—2013	IDT	IEC 60998-2-4:2004 «	- .
		2-4.	»
IEC 61210—2011	IDT	IEC 61210:1993 «	- -
		.	»
<p>— : ;</p> <p>- IDT — ;</p> <p>- MOD — .</p>			

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[1] IEC 60364-5-523 Electrical installations of buildings — Part 5: Selection and erection of electrical equipment — Section 523: Current-carrying capacities in wiring systems ( 5. . 523. )

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29.120.20

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