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INTERSTATE COUNCIL FOR STANDARDIZATION, METROLOGY AND CERTIFICATION
(ISC)

IEC
61869.3
2012

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(IEC 61869-3:2011,)



2014

IEC 61869*3—2012

1.0—92 «
 1.2—2009 «
 1 «
 2 ()
 3 (3 2012 . 54-)

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 IEC 61869-3:2011 Instrument transformers - Part 3: Additional requirements for inductive voltage transformers (3.
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IEC 61869 IEC/TK 38.
 », IEC: www.iec.ch. /

IEC	/		IEC
IEC 61669*1 IEC 61869*2 IEC 61869*3 IEC 61869*4 IEC 61869*5 IEC 61869*7 IEC 61869*8 IEC 61869*9 IEC 61869*10 IEC 61869*11 IEC 61669*12 IEC 61869*13	IEC 61669*2		60044-1 60044-6
	IEC 61669*3		60044-2
	IEC 61669*4		60044-3
	IEC 61869*5		60044-5
	IEC 61869*7		60044-7
	IEC 61869*8		60044*8
	IEC 61869*9		
	IEC 61869*10	-	
	IEC 61869*11	-	60044*7
	IEC 61669*12		
	IEC 61869*13		

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1 IEC 61669-3—2012
2014 .

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IEC 61869*3—2012

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© .2014

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Instrument transformers. Part 3.
Additional requirements for inductive voltage transformers

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15 100 .

3 0 1 —

4-10 (, . 3.1.303, 5.301.2, 5.2. 5.5.301.6.13.301 , 304).

2

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IEC 60028:1925 International standard of resistance for copper (.)

IEC 60036:2009 IEC standard voltages (no IEC)

IEC 61869:2007 Instrument transformers - Part 1: General requirements (1:)

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IEC 61869-1:2007

3.1

3.1.301 (voltage transformer):

[IEC 60050-321:1986. 321-03-01)

3.1.302 (unearthed voltage transformer):

3.1.303

(earthed voltage transformer):

3.1.304

(measuring voltage transformer):

(1 60050-321:1986. 321-03-04.)

3.1.305 (protective voltage transformer):

()

IEC 61869*3—2012

[IEC60050-321:1986.321-03-05]

3.1.306 (primary winding): , ,

3.1.307 (secondary winding): , ,

3.1.308 (residual voltage winding): , ,

a) , , :

b) ().

3.2

3.2.301 (() (rated primary voltage): , ,

[1 60050-321:1986.321-01-12,]

3.2.302 (U_{1r}) (rated secondary voltage): , ,

[1 60050-321:1986.321-01-16.]

3.2.303 (F_v) (rated voltage factor): , ,

3.4

3.4.3 () (ratio error): , ,

IEC 61869-1:2007 :

() , %. (ratioerror (voltage error) :

$$= \frac{U - U_r}{U_r} \cdot 100$$

V_r - :

U_s - , V

3.5

3.5.301 (thermal limiting output): , ,

3 0 1 —

3 0 2 —

3.7

3.7 IEC 61869*1

:

IT	(Instrument transformer)
	(Current Transformer)
CVT	(Capacitive Voltage Transformer)
VT	(Voltage Transformer)
AIS	(Air-Insulated Switchgear)
GIS	(Gas-Insulated Switchgear)
	(actual transformation ratio)
	(rated transformation ratio)
	(ratio error)
<	(phase displacement)
S _r	(rated output)
	(highest voltage for system)
-	(highest voltage for equipment)
F _r	(rated voltage factor)
f _r	(Rated frequency)
F _m	(Mechanical load)
F _l	(Relative leakage rate)

5

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5 IEC 61869*1:2007

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5.2; 3 0 1 —

IEC 61869

5.301:

5.3

5.3.3.301

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3 (

5.5

5.5.301

1.0 - 2.5 - 5.0 - 10 (I)

0.6 10 - 25 - 50 - 100 (II)

3 0 1 -

5.5.302

IEC 61869*3—2012

25 - 50 - 100

5.5.303

« »

5.5.301.

5.5.304

25 - 50 - 100

« »
301 -
»,
8 3.5.301.

8 .

5.6

5.6.301

5.6.301.1

)

5.6.301.2

0.1-0.2-0.5-1.0-3.0

301 -

5.6.301.3

301.

80 % 120 %

0 100 %

1

- 25 % I. 100 %
II.

0.8

301 -

	()		
	& 1%	±	±
0.1	0.1	5	0.15
0.2	0.2	10	0.3
0.5	0.5	20	0.6
1.0	1.0	40	1.2
3.0			

), (,
1 % 100 % , 25 % 100 %

nocnefloarenbHOCTH_eejim<micjHa>flfEMeo6MonMMO)jwo^e^4HTWBbTb^~~~~~

5.6.302

5.6.302.1

8

5.6.301.1 5.6.301.2.
5.6.302.2.

5 %

(. 5.302).
(«protection»].
5.6.302.2

« » [« »

6 .

5%

2 %-
5%-

5.6.302.3

302, 5 %-

(1.2; 1.5 1.9).

- 0 100 %

1

I;
25 % 100 %

0.8

II.
2 %-

302.

IEC 61869*3—2012

302 -

	()		
		1	±
6	±%	120	3.5
	3.0 6.0	240	7.0

0 100 %
25 100 %

5.6.302.4

5.6.302.1 5.6.302.2.

301 -

5.6.301.1. 5.6.301.2, 5.6.302.1 5.6.302.2

302 -

5.301
5.301.1

IEC 60038.

1/ 3

3 0 1 -

8

(60038.

5.301.2

- a) -100 110 ;
- 200 8
- b) -120 ;
- 115 8 ;
- 230

13,

13.

3 0 1 -

5.301.3.

5.301.3

« »
303. -

100 too VI too 3	110 VI 3	200 200 VI 200 3
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5.302

{ . . }
304.

304 -

1.2		
1.2		(IEC 61869*1:2007. 3.2.7)
1.5	30	
1.2		(IEC 61869*1:2007, 3.2.7b)
1.9	30	
1.2		(IEC 81869*1:2007, 3.2.4) (IEC 61869-1:2007. 3.2.5)

IEC 61869*3—2012

304
1.9 8

301 - ,
(V3 , 1,2. . .),
302 - .

6

6.4

6.4.1

6.4.11 61869*1:2007 :

0.8
5 IEC 61869*1:2007.

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50 .

5 IEC 61869*1:2007.

6.13

6.13.301

6.13.301.1

6.13.301.2

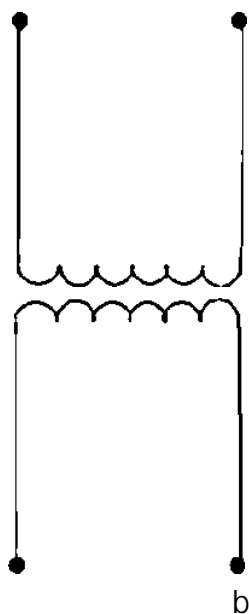
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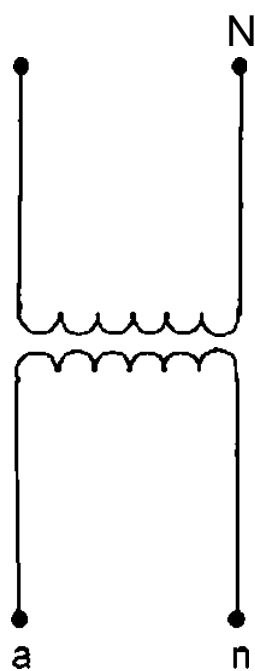
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6.13.301.3

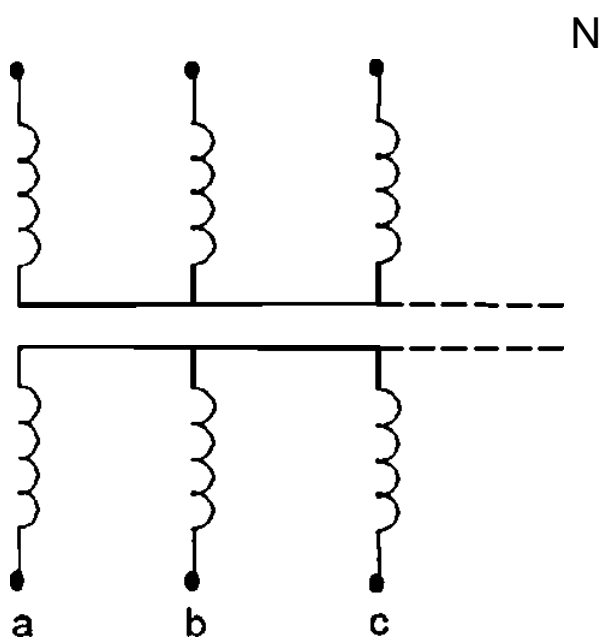
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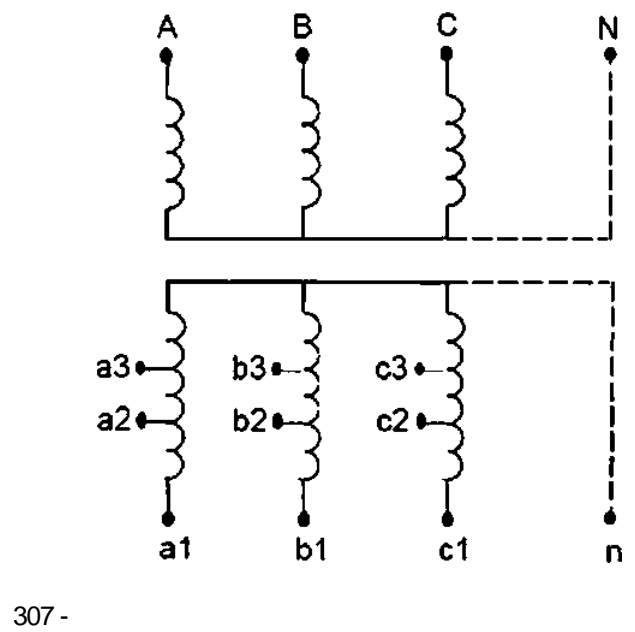
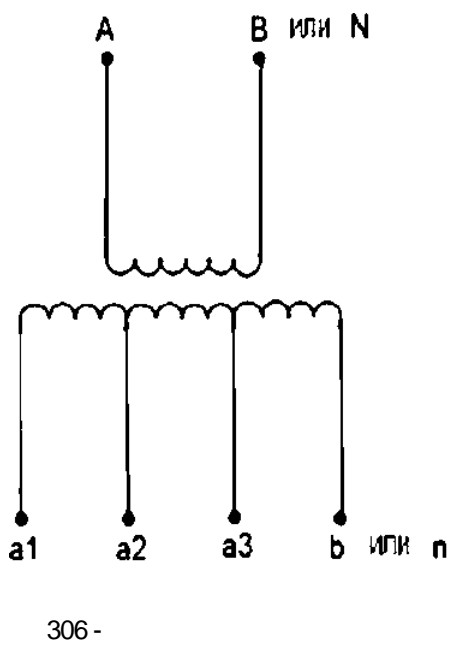
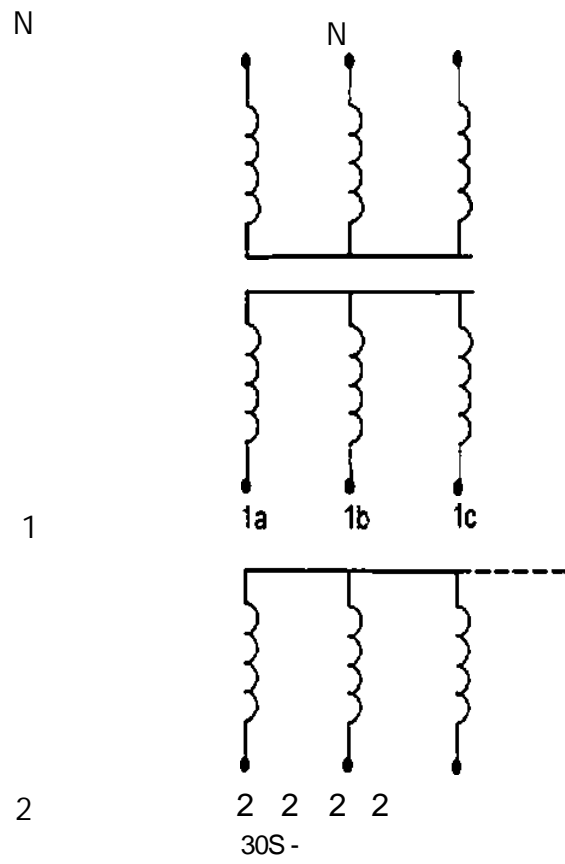
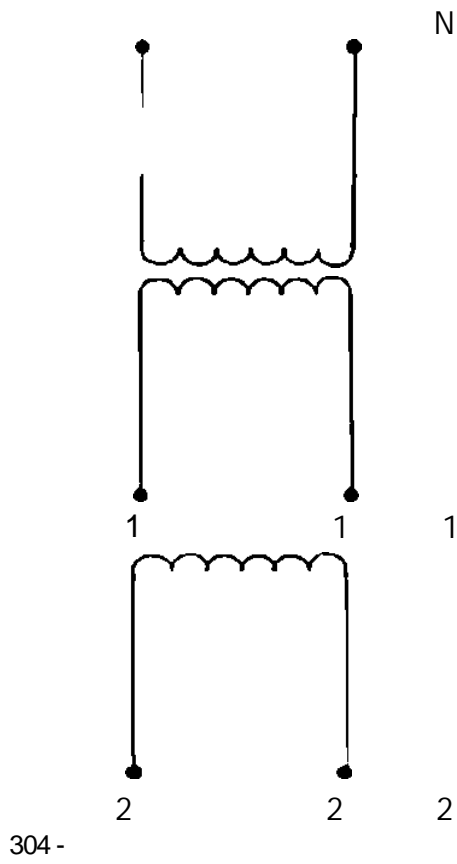


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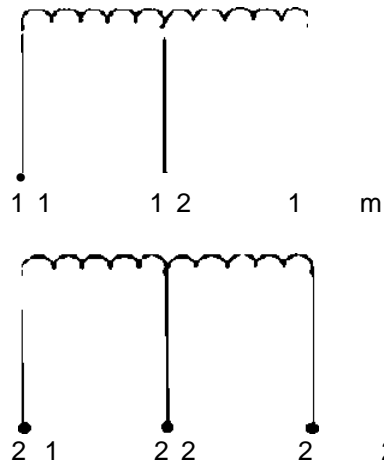


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IEC 61869*3—2012

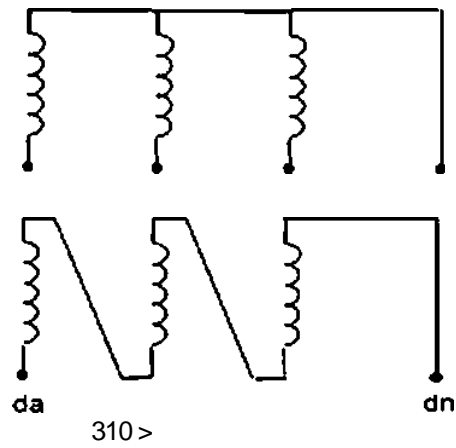
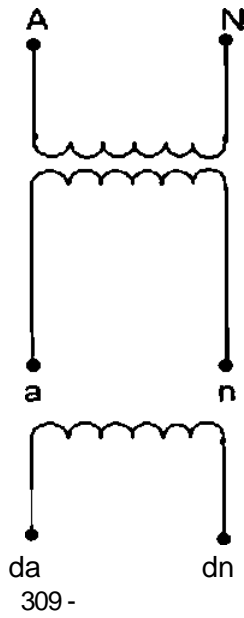


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306 -

N



6.13.301.4
8

6.13.302
6.13.302.1

IEC 61869*3—2012

6.13 IEC 61869*1:2007,

a) 66/0.11);

b) (.1-50 ; 1.0);

301 -

c)

302 -

(.0>10 ; 0.2);

303 -

311.

312

6.13.302.2

6.13.302.1.

(.1—100 ; 0.5).
6.13.302.3

6.13.302.1.

		1	
- N/3	1 -1 8	2 -2	da<Jn
	L/m	LI/SI/AC / / / /	
	___/+___®	F,,	
___	-	___	___
311 -			

2007		() 500	
A-N 220 ' 8	1 - 1n 63.5	2 - 2 —	da - dn 110
	25/50*	—	25
	0.S/3P	—	6
50	Urn	LI/S1/AC / / /	.
.		F _v 1.5 30	
	25/+40 *		
	120		
()		100	300
100	* -		-

312 -

(: 220)

6.301

1

7

7.1

7.1.2

IEC 61869*1

(IEC 61869-1:2007

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	/
	7.2
(Temperature-rise test)	7.2.2
(Impulse voltage withstand test on primary terminals)	7.2.3
(Withstand test for outdoor type transformers)	7.2.4
(Electromagnetic compatibility tests)	7.2.5
(Test for accuracy)	7.2.6
(Verification of the degree of protection by enclosures)	7.2.7
(Enclosure tightness test at ambient temperature)	7.2.8
(Pressure test for the enclosure)	7.2.9
(Short-circuit withstand capability test)	7.2.301
-	7.3
(Power-frequency voltage withstand tests on primary terminals)	7.3.1
(Partial discharge measurement)	7.3.2
(Power-frequency voltage withstand tests between sections)	7.3.3
(Power-frequency voltage withstand tests on secondary terminals) *	7.3.4
(Test for accuracy)	7.3.5
(Verification of markings)	7.3.6
(Enclosure tightness test at ambient temperature)	7.3.7
(Pressure test for the enclosure)	7.3.8
	7.4
(Chopped impulse voltage withstand test on primary terminals)	7.4.1
(Multiple chopped impulse test on primary terminals)	7.4.2
)	7.4.3
Measurement of capacitance and dielectric dissipation factor)	
(Transmitted over voltage test)	7.4.4
(Mechanical tests)	7.4.5
(Internal arc fault test)	7.4.6
(Enclosure tightness test at low and high temperatures)	7.4.7
(Gas dew point test)	7.4.8
(Corrosion test)	7.4.9
(Fire hazard test)	7.4.10
	7.5

7.2
7.2.2

7.2.2. IEC 61869-1:2007.

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6.4.1.

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a)

1.2

b)

1.5

30

1.9

30

1.2
5 IEC 61869*1:2007.

30

10

3 0 1 —

30

>

c)

1.9

8

1.9

1.2
5 IEC 61869*1:2007.

8

10

1.2

1.2

8

1.9

(. 5.5.304),

3 0 2 —

7.2.3
7.2.3.1

7.2.3 IEC 61889-1:2007

(), ()

301 -

IEC 62271*203:2003.6.2.4.

IEC 61869*3—2012

7.2.3.2

7.2.3.2.1

300
7.2.3.2.1 IEC 61869*1:2007

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7.2.3.3

7.2.3.3.1

7.2.3.3.1. IEC 61869*1:2007,

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301 -

7.2.5

7.2.5 2

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7.2.6

7.2.6.301

5.6.301.3

80%, 100% 120 %

305

1 ()

0.8

(II).

305 -

		.(% (!
1	1.0-2.5-5-10	0 100
II	10 - 25 - 50-100	25 100

7.2.6.302

5.6.302.3

2%. 5% 100 %

(1,2. 1,5 1.9)

1 (I)

0.8

(II).

305

302.

100 %

7.2.301

6.301.

10 30* .

1 .

301 -

302 -

a) ;
b) ;

c) 90 % ; 7.3.1 - 7.3.4.

d) (,).

/ * IEC 60028. d) 97 % 180 (

7.3
7.3.1
8 7.3.1 IEC 61869*1:2007
7.3.1.301

IEC 60060*1.

a) ()

b) ()

80%
7.3.1.302 ()

7.3.1.302.1 60 .

() ()
313.

7.3.1.302.2

< 300 2 IEC 61869*1:2007.

7.3.1.303

7.3.1.303 5.3.3.301. ()

7.3.1.303.1

60 . 60 ,

2 ----- 60 .

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IEC 61869*3—2012

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2 IEC 61869*1:2007. U_p 300

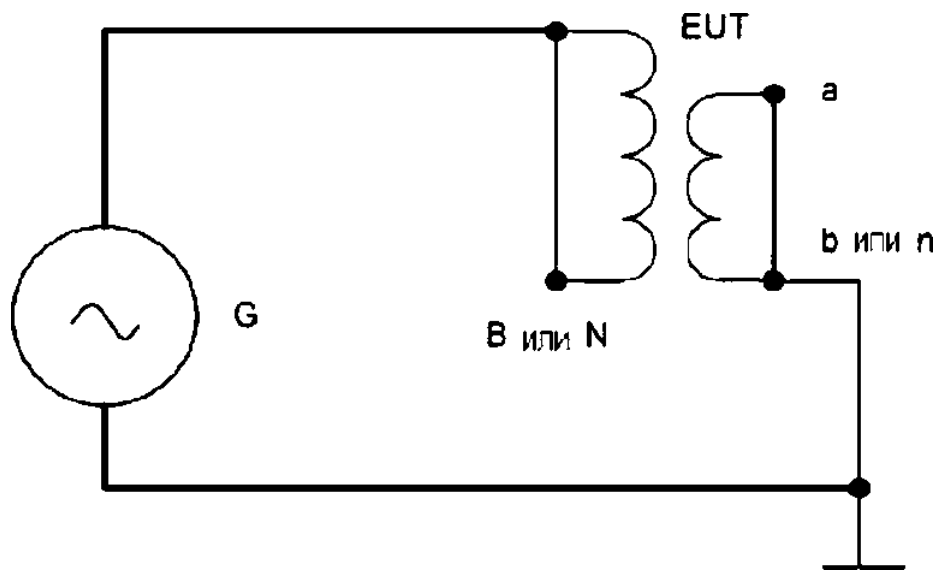
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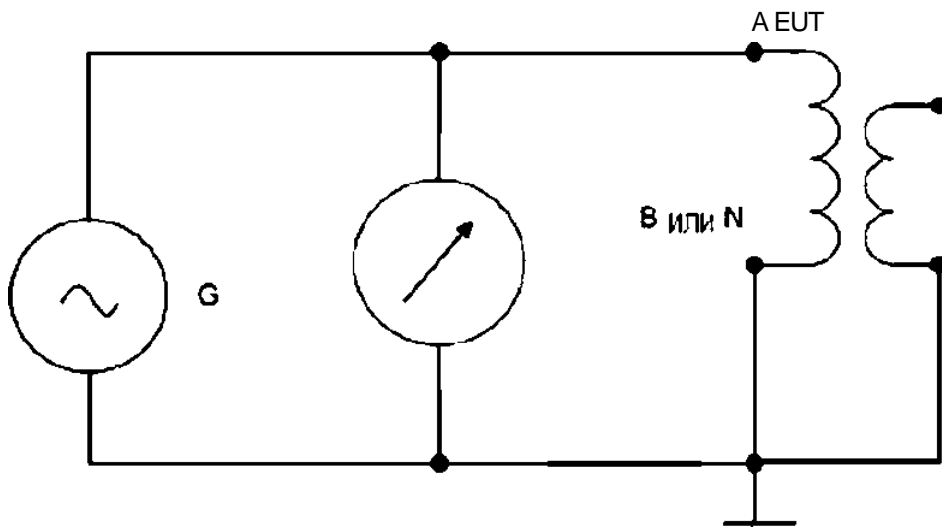
7.3.1.303.2

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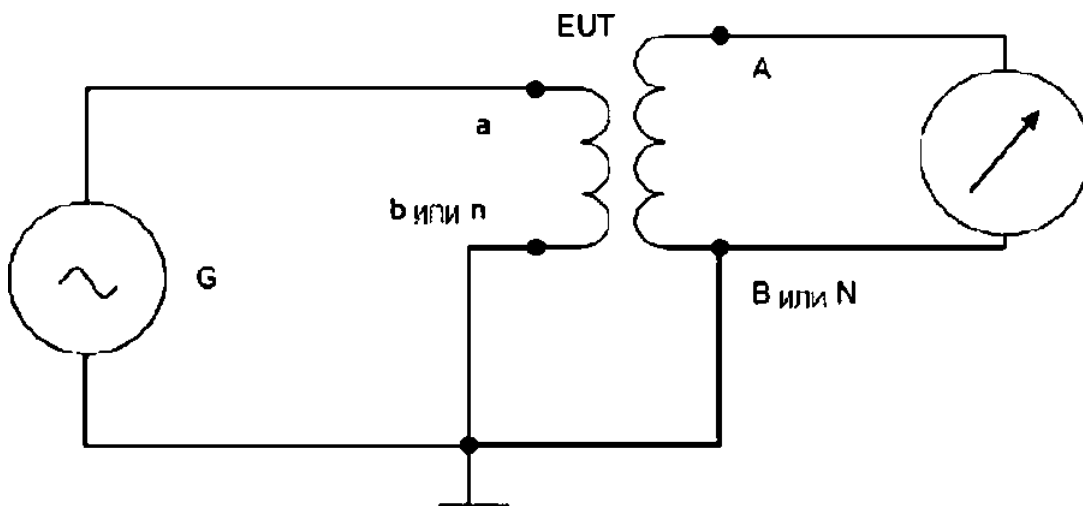
7.3.1.303.3



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EUT- 314- :G- ()



315- ()

7.3.2
7.3.2.1
7.3.2.2

7.3.2.2 IEC 61869*1:2007.

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IEC 61869*3—2012

7.3.5

7.3.5.301

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5.6.301.3.

7.2.6.301,

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7.3.5.302

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5.6.302.3.

7.2.6.302,

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7.4

7.4.3

7.4.3. IEC 61869-1:2007,

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7.4.3 IEC 61669-1:2007,

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7.4.6

7.4.6 (61869-1:2007

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IEC 60028:1925	NEQ	859-2001.
IEC 60038:2009 IE	NEQ	23366-78
IEC 61869:2007 1:	NEQ	•
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IEC 61869*3—2012

IEC 60028:1925 International standard of resistance for copper ()

IEC 60038:2009 IEC standard voltages (IEC)

IEC 61869:2007 Instrument transformers - Part 1: General requirements ()
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IEC 61869*3—2012

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05.11.2014. 60x84Vg.

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