HAEFELY

Current and voltage – our passion

4761 / 4764

Current Comparators

■ Current comparators (current transformers) are used to divide high currents to a lower, measureable level.
The errors of conventional standard current transformers inevitably depend on their burden.
A magnetic flux in the core produces the e.m.f. which sustains the secondary current in the burden.

This disadvantage has been eliminated by the development of the two new current comparators, types **4761** and **4764**.

An indicator winding measures the magnetic flux in the core, while an amplifier - by regulating the current in a compensating winding - makes sure that the flux in the core is approximately zero.

DESIGN

The housing of both comparators is made of an insulating material. All terminals and controls are mounted on the top panel.

The hole for the wire of the primary current
Is on the lateral face of the unit.

FEATURES

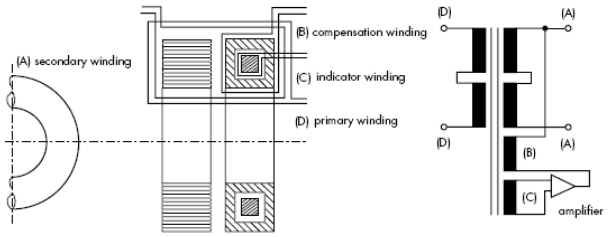
☑ Wide measuring range up to 200% of the nominal current at full accuracy.

☑ Very small current error (1 … 200% I_N)

☑ Suitable as standard current instrument transformer for CT test sets, or as measuring range extension for C/tan δ measurements of high capacitance values

☑ Suitable for shunt reactor losses measurement together with the 2840.

BASIC CIRCUIT DIAGRAM



K1: Outside (hollow) annular core
K2: Inside annular core
K3: Auxiliary core
A: Secondary winding
B: Compensation winding
C: Indicator winding
D: Primary winding

CURRENT RANGES

	Type 4761	Type 4764	Type 4766
Primary I_N	1 .. 1'000A	5 ..5'000A	10'000A
Secondary I_S	1-5A	1-5A	100A

Type 4761

Primary I_N: 1 - 2 - 5 - 10 - 20 - 50 -100 – 200 (Terminals)
500 - 1000A (1 or 2 turns through the hole)

Secondary I_S: 1 - 5 A

Type 4764

Primary I_N: 5 … 500 (Terminals)* (94 ranges)
500… 5000A (1 or 2 turns) (62 ranges)
**See all ranges in table next page*

Secondary I_S: 1 - 5 A

The range of type 4764 can be extended up to 10'000 A by means of the auxiliary transformer, type 4766 (higher values on request).

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TRANSFORMATION RATIOS 4764

SWITCH POSITIONS		PRIMARY CURRENT I_N [A]					
		TERMINAL CONNECTIONS				EXTERNAL WINDINGS	
S1	S2	K2 - L4	K2 - L3	K2 - L2	K1 - L1	2 TURNS	1 TURN
0	8	5	10				
0	9	5.625	11.25				
1	0	6.25	12.5	25	125	500	
1	1	6.875	13.75	27.5	137.5	550	
1	2	7.5	15	30	150	600	
1	3	8.125	16.25	32.5	162.5	650	
1	4	8.75	17.5	35	175	700	
1	5	9.375	18.75	37.5	187.5	750	1500
1	6	10	20	40	200	800	1600
1	7		21.25	42.5	212.5	850	1700
1	8		22.5	45	225	900	1800
1	9		23.75	47.5	237.5	950	1900
2	0			50	250	1000	2000
2	1			52.5	262.5	1050	2100
2	2			55	275	1100	2200
2	3			57.5	287.5	1150	2300
2	4			60	300	1200	2400
2	5			62.5	312.5	1250	2500
2	6			65	325	1300	2600
2	7			67.5	337.5	1350	2700
2	8			70	350	1400	2800
2	9			72.5	362.5	1450	2900
3	0			75	375	1500	3000
3	1			77.5	387.5	1550	3100
3	2			80	400	1600	3200
3	3			82.5	412.5	1650	3300
3	4			85	425	1700	3400
3	5			87.5	437.5	1750	3500
3	6			90	450		3600
3	7			92.5	462.5		3700
3	8			95	475		3800
3	9			97.5	487.5		3900
4	0			100	500		4000
4	1			102.5			4100
4	2			105			4200
4	3			107.5			4300
4	4			110			4400
4	5			112.5			4500
4	6			115			4600
4	7			117.5			4700
4	8			120			4800
4	9			122.5			4900
4	10			125			5000

Since the electrical behaviour of the comparator is equal to that of a normal current transformer i.e. it can also be used inverted it works for primary currents < 5 A.

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TECHNICAL DATA

4761

	I_N = 1A..100A		I_N = 100A..1000A (1&2 turns)	
	Is = 1A, 1%..5% I_N	Is = 1A, 5%..200% I_N Is = 5A, 1%..200% I_N	Is = 1A, 1%..5% I_N	Is = 1A, 5%..200% I_N Is = 5A, 1%..200% I_N
Ratio accuracy	±0.002%	±0.001%	±0.002%	±0.001%
Phase accuracy	±0.10 min	±0.10 min	±0.15 min	±0.10 min
Frequency	47 ... 62 Hz			
Output: max.	5 VA			
Power supply	115/230 V, 50/60Hz,20VA			
Overload protection	Built-in overload protection with ‘’Overload“ warning and fuses in the power plug.			
Standards	IEC, VDE, ANSI			
Dimensions	435 x 260 x 450mm (17.1 x 10.2 x17.7in)			
Hole diameter for cable	55 mm (2.1in)			
Weight	35 kg (approx: 42 lb)			

4764

	I_N = 5A..500A		I_N = 500A..5000A (1&2 turns)	
	Is = 1A, 1%..5% I_N	Is = 1A, 5%..200% I_N Is = 5A, 1%..200% I_N	Is = 1A, 1%..5% I_N	Is = 1A, 5%..200% I_N Is = 5A, 1%..200% I_N
Ratio accuracy	±0.002%	±0.001%	±0.002%	±0.001%
Phase accuracy	±0.10 min	±0.10 min	±0.15 min	±0.10 min
Frequency	47 ... 62 Hz			
Output: max.	5 VA			
Power supply	115/230 V, 50/60Hz,20VA			
Overload protection	Built-in overload protection with ‘’Overload“ warning and fuses in the power plug.			
Standards	IEC, VDE, ANSI			
Dimensions	715 x 515 x 790mm (28.2 x 20.3 x31.1in)			
Hole diameter for cable	130 mm (5.1in)			
Weight	117 kg (approx: 257.4 lb)			