

CURRENT TRANSFORMERS

Busbars

CU-cable consumption between the measurement instrument and the current transformer

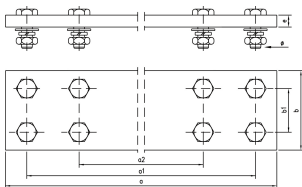
Copper bars' ampacity according to DIN 43671

For secondary primary rated current of 5 A						
conductor cross-section mm ²	P = consumption in VA (2-wired line)					
	Distance in m					
	1	2	3	4	5	6
1,5	0,58	1,15	2,31	3,46	4,62	5,77
2,5	0,36	0,71	1,43	2,14	2,86	3,57
4	0,22	0,45	0,89	1,34	1,79	2,24
6	0,15	0,30	0,60	0,89	1,19	1,49
10	0,09	0,18	0,36	0,54	0,71	0,89

For secondary rated current of 1 A						
conductor cross-section mm ²	P = consumption in VA (2-wired line)					
	Distance in m					
	10	20	40	60	80	100
1	0,36	0,71	1,43	2,14	2,85	3,57
1,5	0,23	0,46	0,92	1,39	1,85	2,31
2,5	0,14	0,29	0,57	0,86	1,14	1,43
4	0,09	0,18	0,36	0,54	0,71	0,89
6	0,06	0,12	0,24	0,36	0,48	0,60
10	0,04	0,07	0,14	0,21	0,29	0,36

$$P = \frac{I^2 \cdot 2 \cdot L}{q_{cu} \cdot 56} \text{ VA}$$

L = Distance in m
q_{cu} = Conductor cross-section in mm²



busbars

To pay attention to the selection of current transformers:

1. the primary and secondary ratio of the current transformer;
2. the burden in VA. The burden is calculated of all connected meters and the wires as well.
3. the class accuracy according to VDE 0414 and IEC-determinations. For calculated measurement class 0.5. For internal measuring or protection relays class 1 and 3.

Ampacity according to DIN 43671								
Width x thickness mm	Cross section mm ²	Weight 1) kg/m	Continuous current in A / alternating current up to 60 Hz					
			coated			blank		
			numbers of bars			numbers of bars		
			1 I	2 II	3 III	1 I	2 II	3 III
12 x 2	23,5	0,209	123	202	228	108	182	216
15 x 2	29,5	0,262	148	240	261	128	212	247
15 x 3	44,5	0,396	187	316	381	162	282	361
20 x 2	39,5	0,351	189	302	313	162	264	298
20 x 3	59,5	0,529	237	394	454	204	348	431
20 x 5	99,1	0,882	319	560	728	274	500	690
20 x 10	199	1,77	497	924	1320	427	825	1180
25 x 3	74,5	0,663	287	470	525	245	412	498
25 x 5	124	1,11	384	662	839	327	586	795
30 x 3	89,5	0,796	337	544	593	285	476	564
30 x 5	149	1,33	447	760	944	379	672	896
30 x 10	299	2,66	676	1200	1670	573	1060	1480
40 x 3	119	1,06	435	692	725	366	600	690
40 x 5	199	1,77	573	952	1140	482	836	1090
40 x 10	399	3,55	850	1470	2000	715	1290	1770
50 x 5	249	2,22	697	1140	1330	583	994	1360
50 x 10	499	4,44	1020	1720	2320	852	1510	2040
60 x 5	299	2,66	826	1330	1510	688	1150	1440
60 x 10	599	5,33	1180	1960	2610	985	1720	2300
80 x 5	399	3,55	1070	1680	1830	885	1450	1750
80 x 10	799	7,11	1500	2410	3170	1240	2110	2790
100 x 5	499	4,44	1300	2010	2150	1080	1730	2050
100 x 10	999	8,89	1810	2850	3720	1490	2480	3260
120 x 10	1200	10,7	2110	3280	4270	1740	2860	3740
160 x 10	1600	14,2	2700	4130	5360	2220	3590	4680
200 x 10	2000	17,8	3290	4970	6430	2690	4310	5610

1) Calculated with density of 8,9 kg/dm³

Material: E-Cu or other materials according to DIN 40 500 Part 3

Preferable used material: Flat bar with rounded edge according to DIN 46 433 Part 3
Continuously currents for bus bars of E-Cu with rectangle cross-section for indoor use at 35 °C air temperatur and 65 °C bus bar temperatur, vertical position of the bus bar width; Bus bar packets with distances between bus bars of one time bus bar width. For AC current and bus bar packets the distances between bus bars should be > 0,8 x centre to centre distance of the main primary conductors.

Integrated short bus bars in current transformers to be connected to main bus bars can be higher loaded than mentioned in the table if the rest of the bus bar system is higher designed than mentioned in the table (DIN 43671).

Primary bars			Design: brass-copper bar (electro-Cu) nickel-plated		
With steel screws M12 x 35 (40) DIN 933 zinc plated and chromated incl. washer, spring lock washer and hex nut					
Width x height x length (mm)			Width x height x length (mm)		
30x	6x	140 ○	50x	10x	180 ○
30x	8x	160 ○	50x	10x	220 ○
30x	10x	140 ○	60x	10x	180 ○
30x	10x	160 ○	60x	10x	240 ○
40x	5x	140 ○	80x	10x	240 ○
40x	5x	160 ○	100x	10x	240 ○
40x	10x	140 ○			Copper tube Ø 22.5; length 34 mm Ø 22.5; length 36 mm
40x	10x	160 ○			
50x	10x	140 ○			

○ Delivery period on request