

CURRENT TRANSFORMER - TECHNICAL TERMS :

- Rated Primary Current (I_{pr}) : Value of the primary current on which the performance of the transformer is based.
- Rated Secondary Current (I_{sr}) : Value of secondary Current on which the performance of the transformer is based.
- Rated Short-time thermal Current (I_{th}) : Maximum value of the primary current which a transformer will withstand for a specified short time without suffering harmful effects, the secondary winding being short-circuited.
- Rated dynamic Current (I_{dyn}) : Maximum peak value of the primary current which a transformer will withstand, without being damaged electrically or mechanically by the resulting electromagnetic forces, the secondary winding being short-circuited.
- Rated Continuous thermal current (I_{cth}) : Value of the current which can be permitted to flow continuously in the primary winding, the secondary winding being connected to the rated burden, without the temperature rise exceeding the values specified.
- Ratio error / Current error : The error which a transformer introduces into the measurement of a current and which arises from the fact that the actual transformation ratio is not equal to the rated transformation ratio.

 $Re = ((I_s K_n - I_p) / I_p) \times 100\%$, Where : Re - Current error in % I_s - Secondary Current in Amps
 I_p - Primary current in Amps K_n - Rated Transformation ratio
- Phase Displacement : The difference in phase between the primary and secondary current vectors, the direction of the vectors being so chosen that the angle is zero for a perfect transformer.
- Burden : The impedance of the secondary circuit in ohms and Power factor. The burden is usually expressed as the apparent power in voltamperes absorbed at a specified power factor and at the rated secondary current.
- Rated Burden : The value of the burden on which the accuracy requirements of this specifications are based.

Power requirements of measuring units and relays

In order to fulfill these demands it is necessary for the assumed nominal power of a current transformer to fully achieve the actual power requirements of the prescribed measurements. In ascertaining the actual power requirements, consideration is to be given to power losses of the appliances to be connected, as well as to the losses of the measuring conductor.

Power consumption of copper wires

$P = (I^2 \times 2L) / (Q_{cu} \times 56)$ [VA] Where, L = distance in m, Q_{cu} = wire cross section in mm², I = secondary nominal current

Chart for values referring to 5 A										
Nominal cross section	Power Consumption of copper wire									
	1 m	2 m	3 m	4 m	5 m	6 m	7 m	8 m	9 m	10 m
2.5 mm ²	0.36	0.71	1.07	1.43	1.78	2.14	2.5	2.86	3.21	3.57
4.0 mm ²	0.22	0.45	0.67	0.89	1.12	1.34	1.56	1.79	2.01	2.24
6.0 mm ²	0.15	0.3	0.45	0.6	0.74	0.89	1.04	1.19	1.34	1.49
10.0 mm ²	0.09	0.18	0.27	0.36	0.44	0.54	0.63	0.71	0.8	0.89

Chart for values referring to 1 A										
Nominal cross section	Power Consumption of copper wire									
	10 m	20 m	30 m	40 m	50 m	60 m	70 m	80 m	90 m	100 m
1.0 mm ²	0.36	0.71	1.07	1.43	1.78	2.14	2.5	2.86	3.21	3.57
2.5 mm ²	0.14	0.29	0.43	0.57	0.72	0.86	1	1.14	1.29	1.43
4.0 mm ²	0.09	0.18	0.27	0.36	0.45	0.54	0.63	0.71	0.8	0.89
6.0 mm ²	0.06	0.12	0.18	0.24	0.3	0.36	0.42	0.48	0.54	0.6
10.0 mm ²	0.04	0.07	0.11	0.14	0.18	0.21	0.25	0.29	0.32	0.36

Limits of Current error and phase displacement for measuring Current transformers as per IEC61869-2

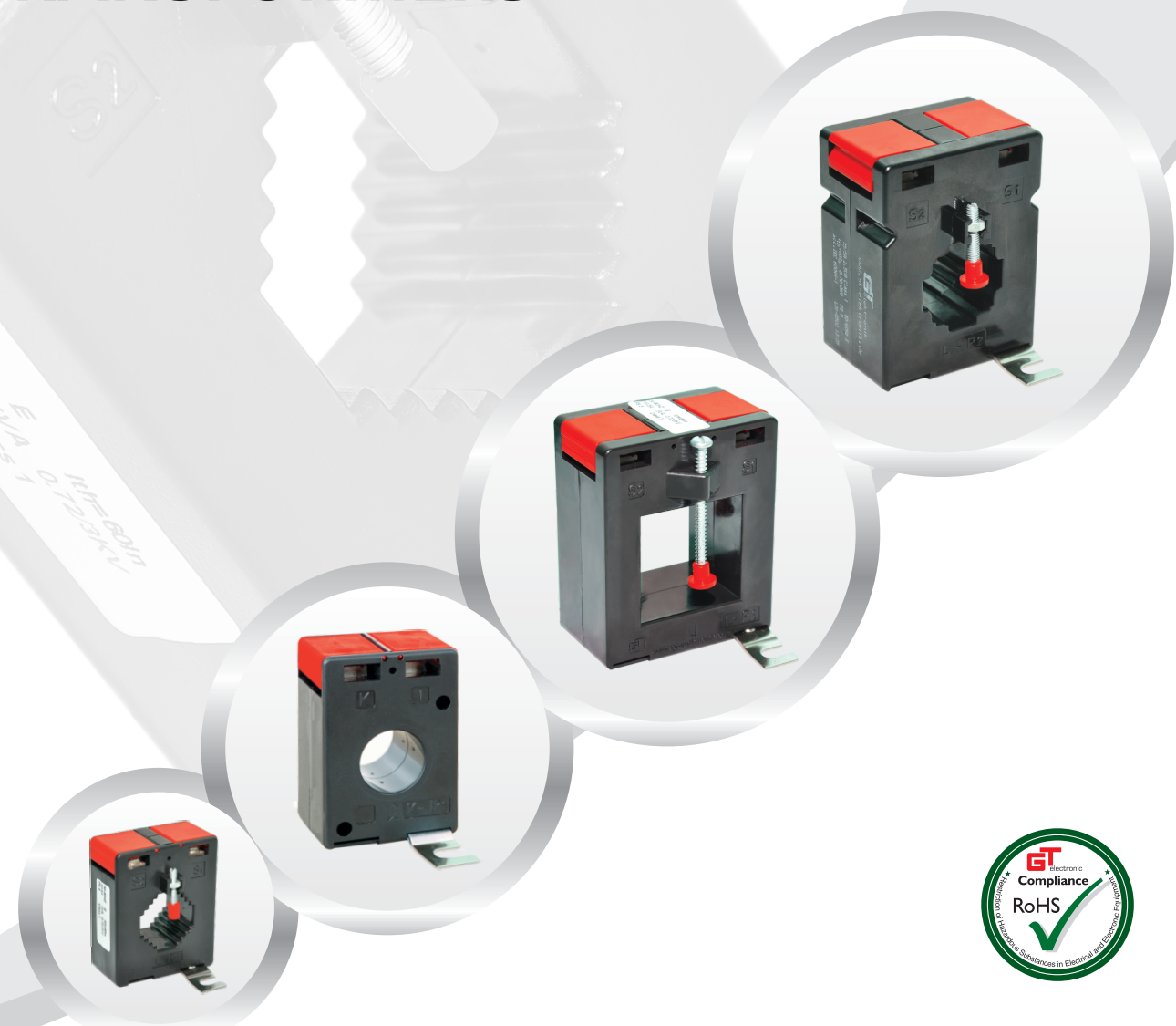
Accuracy Class	± Percentage current (Ratio) error at percentage of rated current shown				± Percentage displacements of rated current shown							
					Minutes				Centiradians			
	5%	20%	100%	120%	5%	20%	100%	120%	5%	20%	100%	120%
0.1	0.4	0.2	0.1	0.1	15	8	5	5	0.45	0.24	0.15	0.15
0.2	0.75	0.35	0.2	0.2	30	15	10	10	0.9	0.45	0.3	0.3
0.5	1.5	0.75	0.5	0.5	90	45	30	30	2.7	1.35	0.9	0.9
1	3	1.5	1	1	180	90	60	60	5.4	2.7	1.8	1.8



Contact

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ENCAPSULATED CURRENT TRANSFORMERS



GT Mechatronics Pvt. Ltd., is one of the leading manufacturer in encapsulated Low Tension Current Transformers (LTCT's) as per IS2705, IEC61869-2 (Fy.IEC60044-1) standards.

STANDARD MEASURING CURRENT TRANSFORMERS

Salient Features :

- Provided with busbar window confirm to different size of busbars.
- Rigid housing with nickel plated secondary terminal.
- Provided with mounting Clamps and Screws.
- Safety locks for Secondary terminals.
- Performs according to IS2705, IEC61869-2 (Fy.IEC60044-1) standards.
- Fully RoHS Compliant.

Electrical Specification

Maximum operating Voltage (Um)	0.72KV
Nominal frequency (f)	50/60Hz
Temperature Class	E
Secondary Nominal Current	5A (1A upon request)
Thermal nominal short circuit current (Ith)	60 x In, 0.5s
Rated surge current (Idyn)	2.5 x Ith
Over current limiting factor	FS 5
Accuracy Class	1
Ambient Temperature	≤ 40°C

Mounting arrangement :

- **Integrated Secondary locking caps :** CT's are well equipped with total insulation for terminal. The Red colour locks are provided to ensure reliable insulation standard on connecting secondary terminal.
- **Base Mounting Clamp :** The unique base clamps provide an ultimate solution for foot mounting or wall mounting application (Base clamp slots provided on, four Corner of CT & use as per need)
- **Mounting Screws with isolation protection caps (Protection proof) :** To protect against unintentional contact of bolt with primary fixing device, protective insulation caps are provided for the mounting screws.

Terminal identification on case :

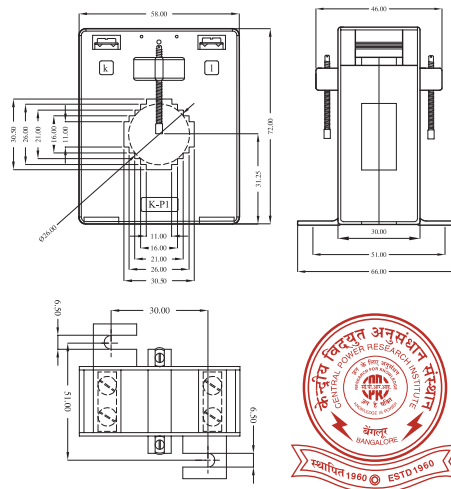
- Primary identified with capital letters "K-P1", and "L-P2".
- Secondary identified with lower case letters "k-s1" and "l-s2".

GT 01 Series



Ordering Part Number	Primary Current IP (A)*	Secondary Current Is (A)	Burden (VA)
GT01-5000	50	5	1
GT01-5001	75	5	1
GT01-5002	100	5	2.5
GT01-5003	150	5	2.5
GT01-5004	200	5	2.5
GT01-5005	250	5	2.5
GT01-5006	300	5	2.5
GT01-5007	400	5	2.5
GT01-5008	400	5	5
GT01-5009	500	5	2.5
GT01-5010	500	5	5

Primary Conductor (Max recommended size)
 Busbar conductor 30x10 mm
 Round conductor Ø26 mm



* IP (A) Rated 150A and above Certified by CPRI

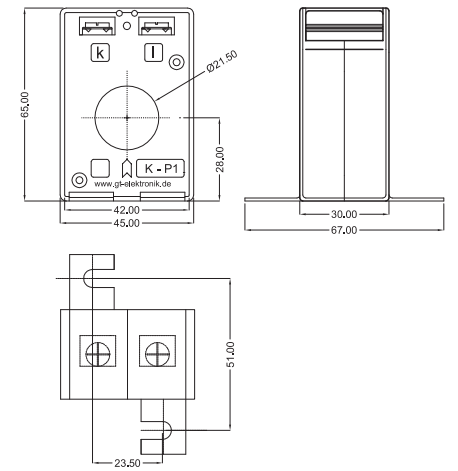
All dimensions are in mm

GT 02 Series



Ordering Part Number	Primary Current IP (A)	Secondary Current Is (A)	Burden (VA)
GT02-1000	50	1	1
GT02-5000	50	5	1
GT02-1001	100	1	2.5
GT02-5001	100	5	2.5
GT02-1002	150	1	2.5
GT02-5002	150	5	2.5
GT02-1003	200	1	5
GT02-5003	200	5	5
GT02-1004	250	1	5
GT02-5004	250	5	5

Primary Conductor (Max recommended size)
 Round conductor Ø21 mm

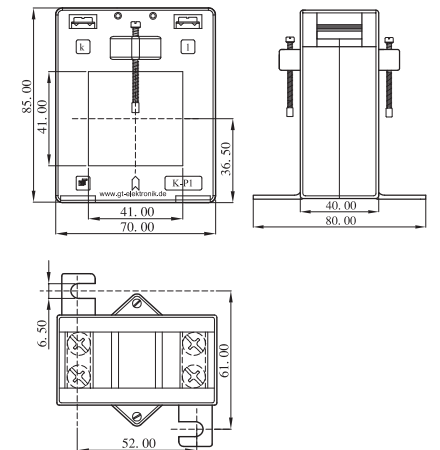


GT 03 Series

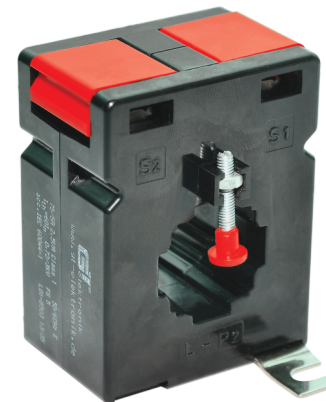


Ordering Part Number	Primary Current IP (A)	Secondary Current Is (A)	Burden (VA)
GT03-5000	200	5	5
GT03-5001	250	5	5
GT03-5002	300	5	5
GT03-5003	400	5	5
GT03-5004	500	5	5
GT03-5005	600	5	5
GT03-5006	700	5	5
GT03-5007	750	5	5
GT03-5008	750	5	10
GT03-5009	800	5	5
GT03-5010	800	5	10

Primary Conductor (Max recommended size)
 Busbar conductor 40 x 40 mm
 Round conductor Ø38 mm

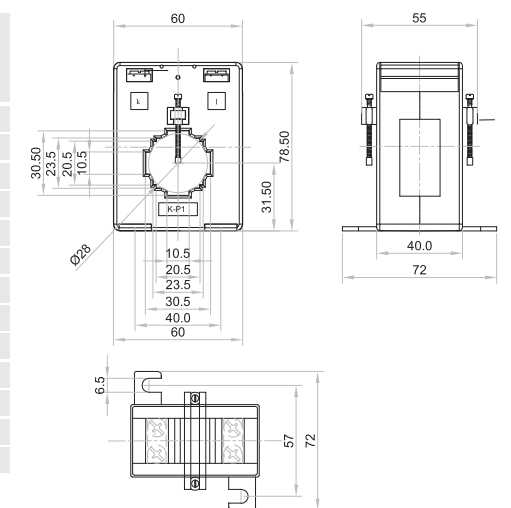


GT 04 Series



Ordering Part Number	Primary Current IP (A)	Secondary Current Is (A)	Burden (VA)
GT04-5001	50	5	1
GT04-5002	60	5	1.5
GT04-5003	75	5	2.5
GT04-5004	80	5	2.5
GT04-5005	100	5	2.5
GT04-5006	100	5	3.75
GT04-5007	125	5	5
GT04-5008	150	5	5
GT04-5009	200	5	5
GT04-5010	250	5	5
GT04-5011	250	5	10
GT04-5012	300	5	5
GT04-5013	400	5	5

Primary Conductor (Max recommended size)
 Busbar conductor 30 x 10 mm
 Round conductor 28 mm



All dimensions are in mm