

ENCAPSULATED CURRENT TRANSFORMERS



Transforming Power into Quality!

GT Electronic India 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 conform 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 Compliance.



Electrical Specification

■ Highest System Voltage	0.72kV	■ Short- time Thermal Current (I _{th})	60xI_n
■ Nominal Frequency	50/60Hz	■ Dynamic Current (I _{dyn})	2.5 x I_{th}
■ Temperature / Insulation Class	E	■ Accuracy Class	1(or) 0.5
■ Rated Secondary Current	5A or 1A	■ Ambient Temperature	≤ 40° C
■ Applicable standard	IEC 61869-2 / IS - 2705	■ Instrument Security Factor	FS 5

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 mounting 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".

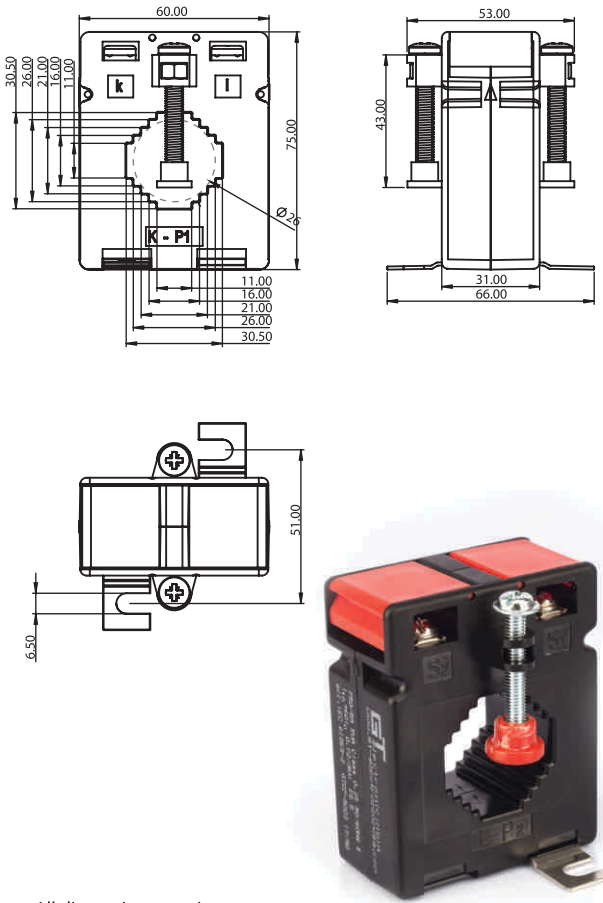
Tested and Certified by



Guidelines for Instrument burden and limits of Permissible Error

Instrument Burden		Limit of ratio error & phase displacement as per IEC 61869-2											
Accuracy Class	VA	Accuracy Class	± Percentage current (Ratio) Error at % of rated current shown below					±Phase displacement - minutes at % of rated current shown below					
			1%	5%	20%	50%	100%	120%	1%	5%	20%	100%	120%
Moving Iron Ammeter	1												
Bimetal Instruments	3	0.2		0.75	0.35		0.2	0.2		30	15	10	10
Wattmeter	5.5	0.5		1.5	0.75		0.5	0.5		90	45	30	30
Power Factor Meter	4	1		3.0	1.5		1.0	1.0		180	90	60	60
Current Transducer	0.5	0.2S	0.75	0.35	0.2		0.2	0.2	30	15	10	10	10
Power Transducer	0.5	0.5S	1.5	0.75	0.5		0.5	0.5	90	45	30	30	30
kWh-Meter	2.5	3				3.0		3.0					
Trivector meter	5	5				5.0		5.0					

GT 01 Series



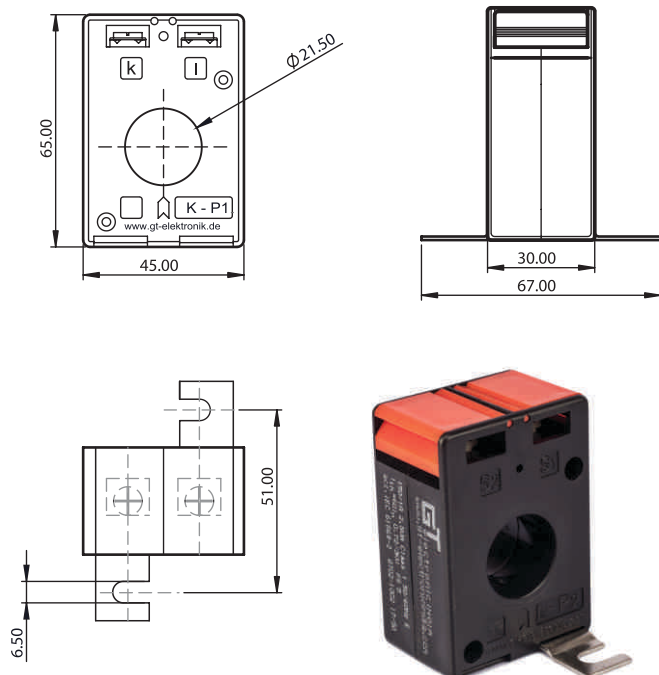
Secondary Current		5A			1A		
Accuracy Class		Class 1	Class 0.5	Class 0.2s	Class 1	Class 0.5	Class 0.2s
Primary Current in (A)	Burden in (VA)	Ordering Part Number					
50	1	GT01-5000			GT01-6000		
75	1	GT01-5001			GT01-6001		
100	2.5	GT01-5002			GT01-6002		
150	2.5	GT01-5003			GT01-6003		
200	2.5	GT01-5004	GT01-500401		GT01-6004	GT01-600401	
250	2.5	GT01-5005	GT01-500501		GT01-6005	GT01-600501	
300	2.5	GT01-5006	GT01-500601		GT01-6006	GT01-600601	
400	2.5	GT01-5007	GT01-500701	GT01-500702	GT01-6007	GT01-600701	GT01-600702
400	5	GT01-5008			GT01-6008		
500	2.5	GT01-5009	GT01-500901	GT01-500902	GT01-6009	GT01-600901	GT01-600902
500	5	GT01-5010			GT01-6010		

Primary Conductor (Max recommended size)
 Busbar conductor 30 x 10 mm max
 Round conductor \varnothing 26 mm max

IP (A) Rated 150A and above Certified by CPRI
IP (A) Rated 75A and 100A are Certified by ERDA

All dimensions are in mm

GT 02 Series



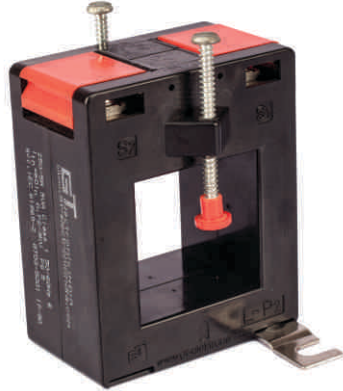
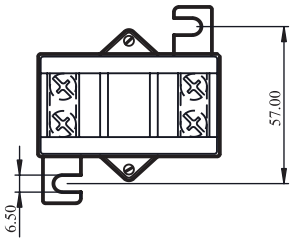
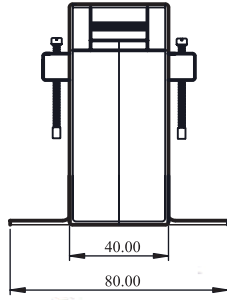
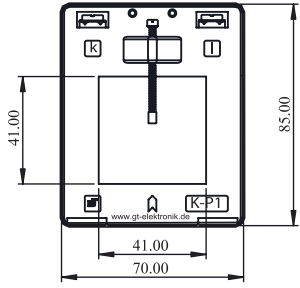
Secondary Current		5A	1A
Accuracy Class		Class 1	
Primary Current in (A)	Burden in (VA)	Ordering Part Number	
* 50	1	GT02-5000	GT02-6000
* 75	1	GT02-5001	GT02-6001
100	2.5	GT02-5002	GT02-6002
150	2.5	GT02-5003	GT02-6003
200	2.5	GT02-5004	GT02-6004
200	5	GT02-5005	GT02-6005
250	2.5	GT02-5006	GT02-6006
250	5	GT02-5007	GT02-6007

Primary Conductor (Max recommended size)
 Round conductor \varnothing 21 mm max

***Primary 2 turns**
All the above rated IP (A) are Certified by ERDA

All dimensions are in mm

GT 03 Series

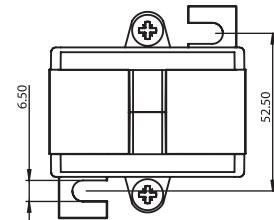
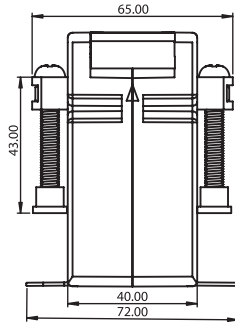
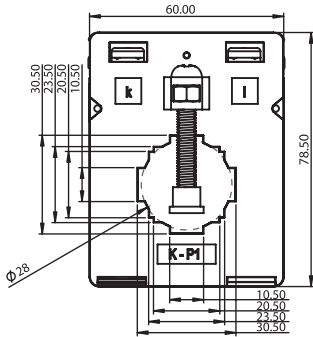


Secondary Current		5A
Accuracy Class		Class 1
Primary Current in (A)	Burden in (VA)	Ordering Part Number
200	5	GT03-5000
250	5	GT03-5001
300	5	GT03-5002
400	5	GT03-5003
500	5	GT03-5004
600	5	GT03-5005
700	5	GT03-5006
750	5	GT03-5007
750	10	GT03-5008
800	5	GT03-5009
800	10	GT03-5010

Primary Conductor (Max recommended size)
 Busbar conductor 40 x 40 mm max
 Round conductor \varnothing 38 mm max

All dimensions are in mm

GT 04 Series



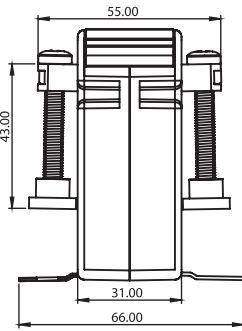
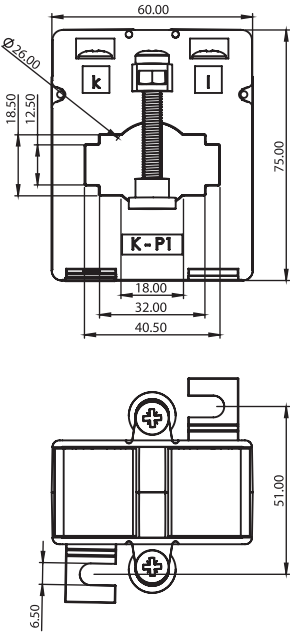
Secondary Current		5A			1A		
Accuracy Class		Class 1	Class 0.5	Class 0.2s	Class 1	Class 0.5	Class 0.2s
Primary Current in (A)	Burden in (VA)	Ordering Part Number					
50	1	GT04-5000			GT04-6000		
60	1	GT04-5001			GT04-6001		
75	2.5	GT04-5002			GT04-6002		
80	2.5	GT04-5003			GT04-6003		
100	2.5	GT04-5004	GT04-500401		GT04-6004	GT04-600401	
100	3.75	GT04-5005			GT04-6005		
125	2.5	GT04-5006	GT04-500601		GT04-6006	GT04-600601	
125	5	GT04-5007			GT04-6007		
150	2.5	GT04-5008	GT04-500801		GT04-6008	GT04-600801	
150	5	GT04-5009			GT04-6009		
200	2.5	GT04-5010	GT04-501001		GT04-6010	GT04-601001	
200	5	GT04-5011	GT04-501101		GT04-6011	GT04-601101	
250	2.5	GT04-5012	GT04-501201		GT04-6012	GT04-601201	
250	5	GT04-5013	GT04-501301		GT04-6013	GT04-601301	
300	5	GT04-5014	GT04-501401	GT04-501402	GT04-6014	GT04-601401	GT04-601402
300	2.5	GT04-5015	GT04-501501		GT04-6015	GT04-601501	
400	5	GT04-5016	GT04-501601	GT04-501602	GT04-6016	GT04-601601	GT04-601602
400	5	GT04-5017			GT04-6017		
500	10	GT04-5018	GT04-501801	GT04-501802	GT04-6018	GT04-601801	GT04-601802
500	10	GT04-5019			GT04-6019		
600	5	GT04-5020	GT04-502001	GT04-502002	GT04-6020	GT04-602001	GT04-602002
600	10	GT04-5021	GT04-502101		GT04-6021	GT04-602101	
750	5	GT04-5022	GT04-502201	GT04-502202	GT04-6022	GT04-602201	GT04-602202
750	10	GT04-5023	GT04-502301		GT04-6023	GT04-602301	

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

All the above rated IP (A) are Certified by ERDA

All dimensions are in mm

GT 05 Series



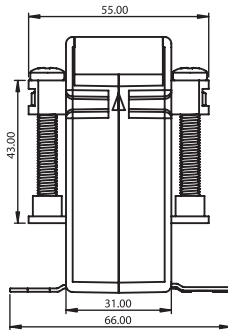
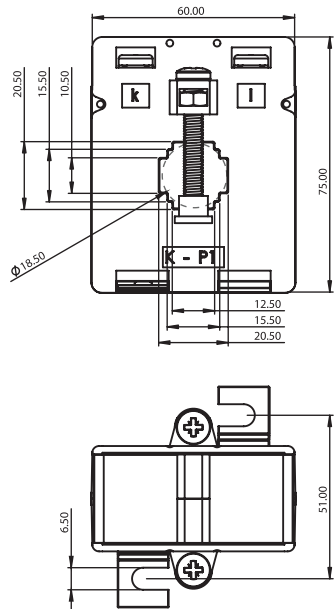
Secondary Current		5A	1A
Accuracy Class		Class 1	
Primary Current in (A)	Burden in (VA)	Ordering Part Number	
100	1	GT05-5000	GT05-6000
150	2.5	GT05-5001	GT05-6001
200	2.5	GT05-5002	GT05-6002
250	2.5	GT05-5003	GT05-6003
300	5	GT05-5004	GT05-6004
400	5	GT05-5005	
500	5	GT05-5006	
600	10	GT05-5007	
750	10	GT05-5008	
800	10	GT05-5009	

Primary Conductor (Max recommended size)

- Busbar conductor 40 x 12 mm max
32 x 18 mm max
- Round conductor \varnothing 26 mm max

All dimensions are in mm

GT 06 Series



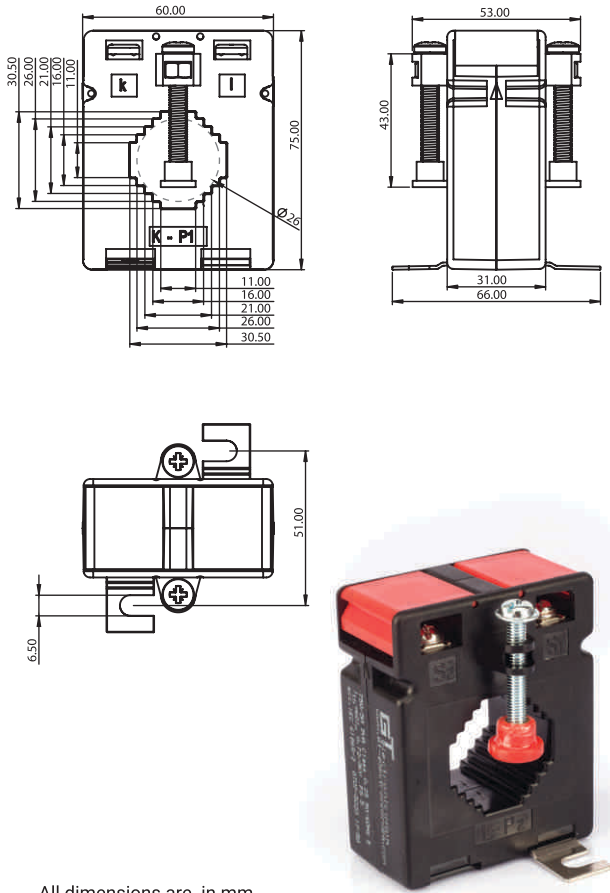
Secondary Current		5A			1A		
Accuracy Class		Class 1	Class 0.5	Class 0.2s	Class 1	Class 0.5	Class 0.2s
Primary Current in (A)	Burden in (VA)	Ordering Part Number					
40	1	GT06-5000			GT06-6000		
50	1.25	GT06-5001			GT06-6001		
60	1.25	GT06-5002			GT06-6002		
75	2.5	GT06-5003			GT06-6003		
80	2.5	GT06-5004			GT06-6004		
100	1	GT06-5005	GT06-500501		GT06-6005	GT06-600501	
100	3.75	GT06-5006			GT06-6006		
150	1.25	GT06-5007	GT06-500701		GT06-6007	GT06-600701	
150	5	GT06-5008			GT06-6008		
200	2.5	GT06-5009	GT06-500901		GT06-6009	GT06-600901	
200	5	GT06-5010	GT06-501001		GT06-6010	GT06-601001	
200	10	GT06-5011			GT06-6011		
250	2.5	GT06-5012	GT06-501201	GT06-501202	GT06-6012	GT06-601201	GT06-601202
250	5	GT06-5013	GT06-501301		GT06-6013	GT06-601301	
250	15	GT06-5014			GT06-6014		
300	2.5	GT06-5015	GT06-501501	GT06-501502	GT06-6015	GT06-601501	GT06-601502
300	5	GT06-5016	GT06-501601		GT06-6016	GT06-601601	
300	15	GT06-5017			GT06-6017		
400	5	GT06-5018	GT06-501801	GT06-501802	GT06-6018	GT06-601801	GT06-601802
400	10	GT06-5019	GT06-501901		GT06-6019	GT06-601901	
400	15	GT06-5020			GT06-6020		
500	5	GT06-5021	GT06-502101	GT06-502102	GT06-6021	GT06-602101	GT06-602102
500	10	GT06-5022	GT06-502201		GT06-6022	GT06-602201	
500	15	GT06-5023			GT06-6023		
600	10	GT06-5024	GT06-502401		GT06-6024	GT06-602401	
600	15	GT06-5025			GT06-6025		

Primary Conductor (Max recommended size)

- Busbar conductor 20 x 10 mm max
- Round conductor \varnothing 19.2 mm max

All dimensions are in mm

GT 07 Series



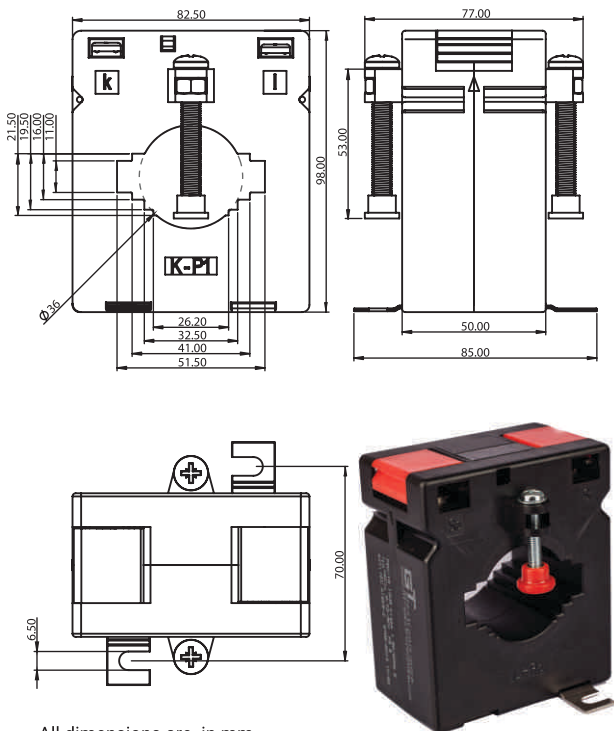
Secondary Current		5A			1A		
Accuracy Class		Class 1	Class 0.5	Class 0.2s	Class 1	Class 0.5	Class 0.2s
Primary Current in (A)	Burden in (VA)	Ordering Part Number					
50	1	GT07-5000			GT07-6000		
60	1	GT07-5001			GT07-6001		
75	1.25	GT07-5002			GT07-6002		
100	1	GT07-5003	GT07-500301		GT07-6003	GT07-600301	
100	2.5	GT07-5004			GT07-6004		
150	1.25	GT07-5005	GT07-500501		GT07-6005	GT07-600501	
150	2.5	GT07-5006			GT07-6006		
200	1.25	GT07-5007	GT07-500701	GT07-500702	GT07-6007	GT07-600701	GT07-600702
200	2.5	GT07-5008	GT07-500801		GT07-6008	GT07-600801	
200	5	GT07-5009			GT07-6009		
250	1.25	GT07-5010	GT07-501001	GT07-501002	GT07-6010	GT07-601001	GT07-601002
250	3.75	GT07-5011	GT07-501101		GT07-6011	GT07-601101	
25	10	GT07-5012			GT07-6012		
300	2.5	GT07-5013	GT07-501301	GT07-501302	GT07-6013	GT07-601301	GT07-601302
300	3.75	GT07-5014	GT07-501401		GT07-6014	GT07-601401	
300	10	GT07-5015			GT07-6015		
400	2.5	GT07-5016	GT07-501601	GT07-501602	GT07-6016	GT07-601601	GT07-601602
400	5	GT07-5017	GT07-501701		GT07-6017	GT07-601701	
400	10	GT07-5018			GT07-6018		
500	5	GT07-5019	GT07-501901	GT07-501902	GT07-6019	GT07-601901	GT07-601902
500	10	GT07-5020			GT07-6020		
600	5	GT07-5021	GT07-502101	GT07-502102	GT07-6021	GT07-602101	GT07-602102
600	10	GT07-5022			GT07-6022		
750	5	GT07-5023	GT07-502301	GT07-502302	GT07-6023	GT07-602301	GT07-602302
750	10	GT07-5024			GT07-6024		

Primary Conductor (Max recommended size)

- Busbar conductor 30 x 10 mm max
2 x (20 x 10) mm max
- Round conductor \varnothing 26 mm max

All dimensions are in mm

GT 08 Series



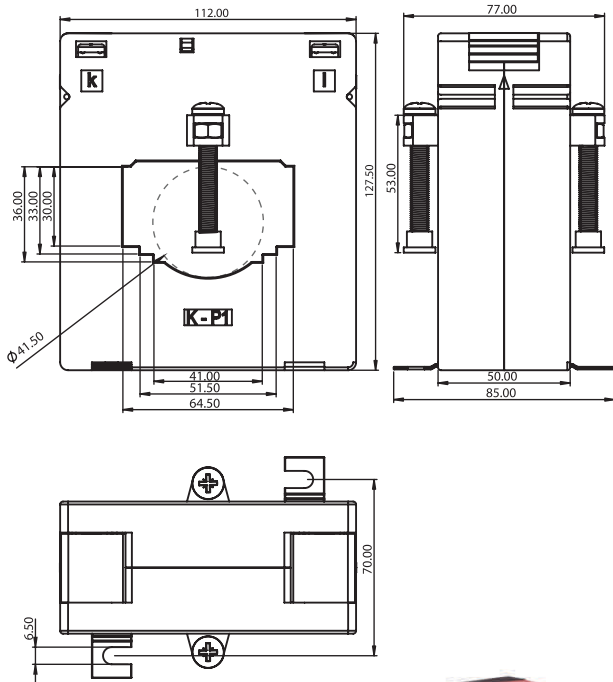
Secondary Current		5A			1A		
Accuracy Class		Class 1	Class 0.5	Class 0.2s	Class 1	Class 0.5	Class 0.2s
Primary Current in (A)	Burden in (VA)	Ordering Part Number					
250	2.5	GT08-5000	GT08-500001		GT08-6000	GT08-600001	
250	5	GT08-5001			GT08-6001		
300	2.5	GT08-5002	GT08-500201		GT08-6002	GT08-600201	
300	5	GT08-5003	GT08-500301		GT08-6003	GT08-600301	
400	2.5	GT08-5004	GT08-500401	GT08-500402	GT08-6004	GT08-600401	GT08-600402
400	5	GT08-5005	GT08-500501		GT08-6005	GT08-600501	
500	2.5	GT08-5006	GT08-500601	GT08-500602	GT08-6006	GT08-600601	GT08-600602
500	5	GT08-5007	GT08-500701	GT08-500702	GT08-6007	GT08-600701	GT08-600702
500	10	GT08-5008	GT08-500801		GT08-6008	GT08-600801	
600	2.5	GT08-5009	GT08-500901	GT08-500902	GT08-6009	GT08-600901	GT08-600902
600	5	GT08-5010	GT08-501001	GT08-501002	GT08-6010	GT08-601001	GT08-601002
600	10	GT08-5011			GT08-6011		
750	5	GT08-5012	GT08-501201	GT08-501202	GT08-6012	GT08-601201	GT08-601202
750	10	GT08-5013	GT08-501301		GT08-6013	GT08-601301	
800	5	GT08-5014	GT08-501401	GT08-501402	GT08-6014	GT08-601401	GT08-601402
800	10	GT08-5015	GT08-501501		GT08-6015	GT08-601501	
1000	5	GT08-5016	GT08-501601	GT08-501602	GT08-6016	GT08-601601	GT08-601602
1000	10	GT08-5017	GT08-501701		GT08-6017	GT08-601701	

Primary Conductor (Max recommended size)

- Busbar conductor 50 x 20 mm max
- Round conductor \varnothing 36 mm max

All dimensions are in mm

GT 09 Series



Secondary Current		5A			1A		
Accuracy Class		Class 1	Class 0.5	Class 0.2s	Class 1	Class 0.5	Class 0.2s
Primary Current in (A)	Burden in (VA)	Ordering Part Number					
750	5	GT09-5000	GT09-500001	GT09-500002	GT09-6000	GT09-600001	GT09-600002
750	10	GT09-5001	GT09-500101		GT09-6001	GT09-600101	
750	15	GT09-5002			GT09-6002		
800	5	GT09-5003	GT09-500301	GT09-500302	GT09-6003	GT09-600301	GT09-600302
800	10	GT09-5004	GT09-500401		GT09-6004	GT09-600401	
800	15	GT09-5005			GT09-6005		
1000	10	GT09-5006	GT09-500601	GT09-500602	GT09-6006	GT09-600601	GT09-600602
1000	15	GT09-5007	GT09-500701		GT09-6007	GT09-600701	
1200	10	GT09-5008	GT09-500801	GT09-500802	GT09-6008	GT09-600801	GT09-600802
1200	15	GT09-5009	GT09-500901		GT09-6009	GT09-600901	
1250	10	GT09-5010	GT09-501001	GT09-501002	GT09-6010	GT09-601001	GT09-601002
1250	15	GT09-5011	GT09-501101		GT09-6011	GT09-601101	
1500	10	GT09-5012	GT09-501201	GT09-501202	GT09-6012	GT09-601201	GT09-601202
1500	15	GT09-5013	GT09-501301		GT09-6013	GT09-601301	
1600	10	GT09-5014	GT09-501401	GT09-501402	GT09-6014	GT09-601401	GT09-601402
1600	15	GT09-5015	GT09-501501		GT09-6015	GT09-601501	
2000	15	GT09-5016	GT09-501601	GT09-501602	GT09-6016	GT09-601601	GT09-601602
2000	20	GT09-5017	GT09-501701		GT09-6017	GT09-601701	
2500	15	GT09-5018	GT09-501801	GT09-501802	GT09-6018	GT09-601801	GT09-601802
2500	20	GT09-5019	GT09-501901		GT09-6019	GT09-601901	

Primary Conductor (Max recommended size)

- Busbar conductor 64 x 36 mm max
- Round conductor Ø 41mm max

All dimensions are in mm

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 the flow continuously in the primary winding, the secondary winding being connected to the rated burden, without the temperature rise exceeding the values specified.

Rated 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.

$$Re = ((Is Kn - Ip) / Ip) \times 100\%$$

Where **Re** - Current error in %, **Is** - Secondary Current in Amps, **Ip** - Primary Current in Amps, **Kn** - 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 mm^2 , I = secondary nominal current

Chart for values referring to 5A										
Nominal cross section	Power Consumption of Copper wire in VA(Connecting wire lead length)									
	1m	2m	3m	4m	5m	6m	7m	8m	9m	10m
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 1A										
Nominal cross section	Power Consumption of Copper wire in VA(Connecting wire lead length)									
	10m	20m	30m	40m	50m	60m	70m	80m	90m	100m
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



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