

Protection • Precision • Safety



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To protect large electrical system from overload or to monitor large current loads by means of a metering instrument **Current Transformer** plays a very important role. It provides the necessary tools to capture the actual load current and reduces its values by means of transformation ratio to a minimum of safe value. Therefore, selection of accurate and reliable current transformers are very crucial.

SES range of metering, measuring and protective current transformers are designed and manufactured to cater for wide range of applications. They are tested to **IEC61869-2 2012** and are certified to **ASTA & CE Mark Certified to UL**.

Application guide to accuracy class

Accuracy Class	Application
0.1	Precision Testing or as a standard for testing other CTs
0.2	Precision Metering
0.5	General Tariff Metering
1.0	Non Revenue measurement incl. power and energy
3.0	General industrial measurement
5.0	Approximate measurement

Table - limit of current error and phase displacement for measuring current transformer (class 0.1 to 1)

Accuracy Class	± Percentage current (ratio) error at percentage of rated current shown below				± Phase displacement at percentage of rated current shown below							
					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
1.0	3.0	1.5	1.0	1.0	180	90	60	60	5.4	2.7	1.8	1.8

Table - limit of current error and phase displacement for special application

Accuracy Class	± Percentage current (ratio) error at percentage of rated current shown below					± Phase displacement at percentage of rated current shown below									
						Minutes					Centiradians				
	1	5	20	100	120	1	5	20	100	120	1	5	20	100	120
0.2s	0.75	0.35	0.2	0.2	0.2	30	15	10	10	10	0.9	0.45	0.3	0.3	0.3
0.5s	1.5	0.75	0.5	0.5	0.5	90	45	30	30	30	2.7	1.35	0.9	0.9	0.9

Table - limit of current error and phase displacement for measuring current transformer (class 3 to 5)

Accuracy Class	± Percentage current (ratio) error at percentage of rated current shown below	
	50	120
3	3	3
5	5	5

Limits of phase displacement are not specified for class 3 and class 5.

Table - limit of current error for protection current transformer

Accuracy Class	Current error at Rated primary current %	Phase displacement at rated primary current		Composite error at rated accuracy limit primary current %
		Minutes	Centiradians	
5P	±1	±60	±1.8	5
10P	±3	–	–	10

Specifications

Standard	IEC61869-2 2012
Rated operational voltage (Un)	720V
Rated frequency	50 / 60Hz
Ambient temperature	- 5~40°C
Operating humidity	up to 95% relative humidity
Rated short time thermal current (Ith)	50kA
Rated dynamic current (Idyn)	125kA peak
Dielectric strength	3kV r.m.s for 1 minute
Thermal class of insulation	B
Tape	Non-adhesive PVC tape flame retardant
Casing	Non-flammable, polycarbonate self extinguishing ABS IPL
Accuracy class	Measuring 0.2, 0.5, 1, 3
	Protection 5P, 10P, PX
Burden	1.5 to 15VA
Rated primary current	ranging up to 6000A
Rated secondary current	5A or 1A

Burden Requirements

The Burden imposed on a Current Transformer consist mainly of the following:-

- The impedance of the relays or instruments.
- The impedance of pilot wire between current transformer and relay or instruments.
- The sum of (a) & (b) constitute the external burden required.

Enquiry / Ordering Information

1. When enquiring or ordering, please specify the following:

- Ratio : 30 / 5A to 6000 / 5A
20 / 1A to 6000 / 1A
- Class : 0.2, 0.5, 1, 3, 5.
- Burden (VA) : 2.5, 5, 10, 15, 20.
- ALF for Protective C/T : P5, P10, P15, P20.

2. For non-standard sizes, please provide additional informations such as:-

- Internal Diameter required in mm (D)
- Outer Diameter required in mm (OD)
- Height required in mm (HT)
- Rated secondary current if other than 5A

Safety Precautions!

The secondary terminals when not in used must be shorted before the primary supply is energised. Otherwise high voltage will develop across the secondary terminals causing damage to the current transformer and danger to life.

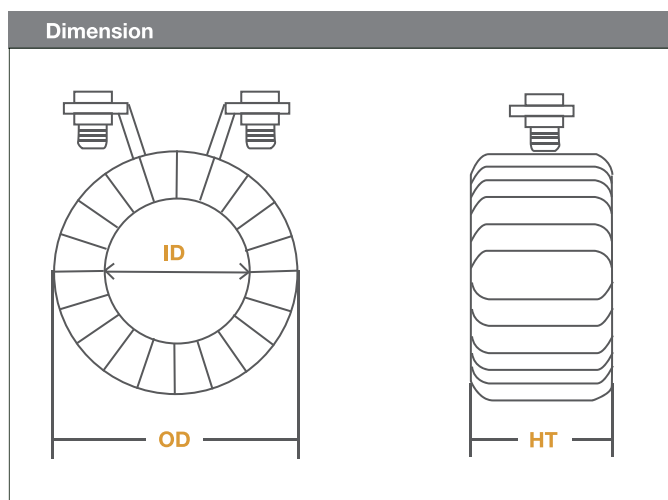
Type	Measuring Current Transformer									Protection Current Transformer								
Ratio	Class 3 5VA			Class 1 15VA			Class 0.5 15VA			Class 10P5 15VA			Class 10P10 15VA			Class 5P10 15VA		
	ID	OD	HT	ID	OD	HT	ID	OD	HT	ID	OD	HT	ID	OD	HT	ID	OD	HT
60/5	28	70	28	28	70	102	-	-	-	34	100	148	25	145	155	25	145	165
100/5	34	74	23	34	80	70	34	80	185	34	100	98	34	100	168	34	100	180
150/5	34	74	23	34	80	48	34	100	72	34	100	68	34	100	108	34	100	130
200/5	45	80	28	34	80	33	34	80	92	34	100	55	34	100	88	34	100	110
250/5	45	80	28	45	80	38	45	80	70	45	96	60	45	96	108	45	96	110
300/5	45	80	28	45	80	38	45	80	60	45	96	55	45	96	100	45	96	110
400/5	60	96	23	60	96	23	60	96	40	60	100	55	60	100	100	45	96	90
500/5	65	100	23	68	100	23	65	100	30	60	100	45	60	100	85	60	100	100
600/5	65	100	23	68	100	23	65	100	30	65	100	45	68	110	70	68	110	80
800/5	85	122	23	85	122	28	85	122	40	85	122	40	85	122	65	85	122	80
1000/5	85	122	23	85	122	28	85	122	30	-	-	-	82	123	60	82	123	70
1200/5	90	130	28	90	135	28	90	135	33	-	-	-	90	135	60	90	135	70
1600/5	90	130	28	90	135	28	90	135	33	-	-	-	90	135	55	90	135	65
2000/5	122	165	25	122	165	25	122	165	30	-	-	-	120	178	40	120	178	40
2500/5	122	165	25	122	165	25	122	165	30	-	-	-	120	178	35	120	178	35
3000/5	120	165	25	120	165	25	120	165	30	-	-	-	118	178	35	118	178	35
4000/5	140	190	28	140	190	30	140	190	30	-	-	-	140	200	35	140	200	35
5000/5	140	190	28	140	190	30	140	190	30	-	-	-	140	200	35	140	200	35

All dimension in mm

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Note: Others range of metering, measuring and protective current transformer are available upon request.

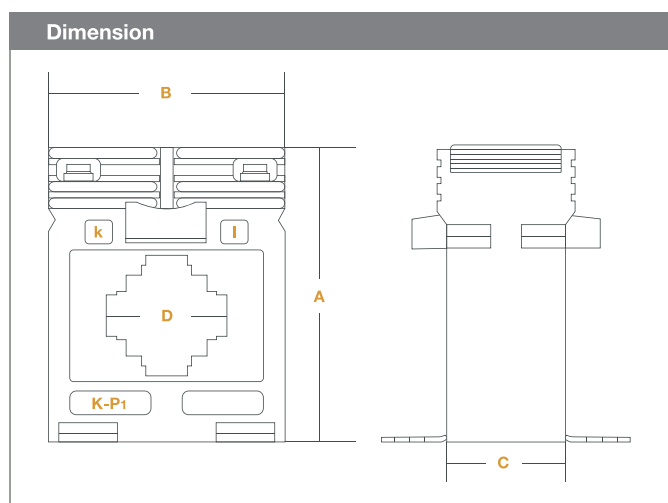


Type	MBQ 60/30		MBQ 60/40		MBQ 95/60		MBQ 95/70		MBQ 130/100	
	Burden (VA)		Burden (VA)		Burden (VA)		Burden (VA)		Burden (VA)	
Ratio	Class 1	Class 0.5	Class 1	Class 0.5	Class 1	Class 0.5	Class 1	Class 0.5	Class 1	Class 0.5
100/5	2.5	1.5	**	**	**	**	**	**	**	**
125/5	2.5	1.5	**	**	**	**	**	**	**	**
150/5	2.5	2.5	2.5	1.5	**	**	**	**	**	**
200/5	5	5	2.5	1.5	**	**	2.5	1.5	**	**
250/5	5	5	5	2.5	**	**	2.5	1.5	**	**
300/5	5	5	5	2.5	2.5	1.5	5	2.5	**	**
400/5	5	5	5	2.5	5	2.5	10	5	**	**
500/5	10	5	5	2.5	10	5	15	10	**	**
600/5	10	5	10	5	10	5	15	10	5	2.5
750/5	**	**	10	5	10	5	15	10	10	5
800/5	**	**	10	5	10	5	15	10	10	5
1000/5	**	**	**	**	15	10	15	15	15	10
1200/5	**	**	**	**	15	10	15	15	15	10
1250/5	**	**	**	**	15	10	15	15	15	10
1500/5	**	**	**	**	15	15	15	15	15	15
1600/5	**	**	**	**	15	15	15	15	15	15
2000/5	**	**	**	**	15	15	**	**	15	15
2500/5	**	**	**	**	**	**	**	**	15	15
3000/5	**	**	**	**	**	**	**	**	15	15

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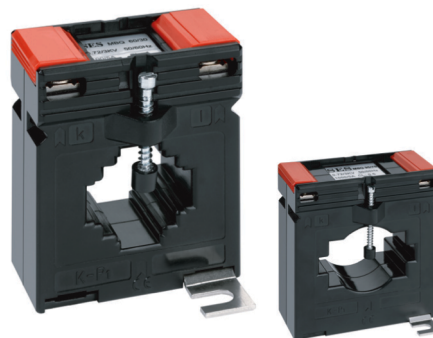
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Type	A	B	C	D
MBQ 60/30	75	60	30	30 X 10
MBQ 60/40	75	60	30	40 X 10
MBQ 95/60	105	95	40	60 X 30
MBQ 95/70	105	95	40	60 X 10
MBQ 130/100	167	129	60	100 X 55

All dimension in mm

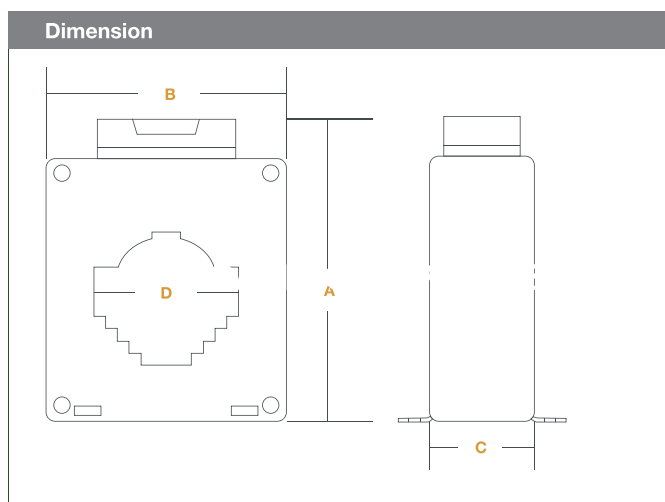


Type	MSQ 30		MSQ 40		MSQ 60		MSQ 85		MSQ 100		MSQ 125	
	Burden (VA)		Burden (VA)		Burden (VA)		Burden (VA)		Burden (VA)		Burden (VA)	
Ratio	Class 1	Class 0.5	Class 1	Class 0.5	Class 1	Class 0.5	Class 1	Class 0.5	Class 1	Class 0.5	Class 1	Class 0.5
100/5	5	2.5	1.5	1.5	**	**	**	**	**	**	**	**
125/5	5	2.5	1.5	1.5	**	**	**	**	**	**	**	**
150/5	5	5	2.5	1.5	**	**	**	**	**	**	**	**
200/5	10	5	5	2.5	**	**	**	**	**	**	**	**
250/5	10	10	5	2.5	2.5	1.5	**	**	**	**	**	**
300/5	10	10	5	2.5	5	2.5	**	**	**	**	**	**
400/5	15	15	10	5	10	5	7.5	5	**	**	**	**
500/5	15	15	10	5	10	5	7.5	5	**	**	**	**
600/5	15	15	15	10	10	5	10	5	7.5	5	**	**
750/5	**	**	15	10	10	5	10	5	7.5	5	**	**
800/5	**	**	15	10	15	10	10	5	10	5	**	**
1000/5	**	**	**	**	15	10	15	10	15	10	10	5
1200/5	**	**	**	**	15	15	15	10	15	10	15	10
1250/5	**	**	**	**	15	15	15	10	15	10	15	10
1500/5	**	**	**	**	15	15	15	15	15	15	15	15
1600/5	**	**	**	**	15	15	15	15	15	15	15	15
2000/5	**	**	**	**	**	**	15	15	15	15	15	15
2500/5	**	**	**	**	**	**	**	**	15	15	15	15
3000/5	**	**	**	**	**	**	**	**	15	15	15	15
4000/5	**	**	**	**	**	**	**	**	**	**	15	15
5000/5	**	**	**	**	**	**	**	**	**	**	15	15
6000/5	**	**	**	**	**	**	**	**	**	**	15	15

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Type	A	B	C	D
MSQ 30	98	75	43	30 X 10
MSQ 40	98	75	43	40 X 10
MSQ 60	127	101	44	60 X 20
MSQ 85	164	128	42	80 X 30
MSQ 100	156	144	44	100 X 10
MSQ 125	220	190	42	125 X 58

All dimension in mm

