

MH series



Current
TRANSFORMERS

for QUALITY and ACCURACY...

BS 7626:1993 BS EN60044:1999 IEC 185

MH CURRENT TRANSFORMERS

APPLICATIONS

Current transformers convert an alternating current, usually of high value into a proportional current of lower value, which is easily measurable by a standard instrument (ammeters, watt and varmeter, KWh/KVARh meter, relay, transducer etc.) By using C.T., it reduces the cost of cables and mounting time. It is recommended to use C.T. for current above 40A.

For your guidance, some basic definitions are provided below.

Short Time Thermal Current (I_{th})

The primary current r.m.s. value of a transformer will withstand for one second without damage if the secondary winding is short-circuited.

Rated Dynamic Current (I_{dyn})

The 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 .

Highest System Voltage

The highest r.m.s. line-to-line voltage can be sustained under the normal operating conditions at any time and at any point on the system. It excludes temporary voltage variations due to fault conditions and the sudden disconnection of large loads.

Test Voltage (Power Frequency)

The A.C. test voltage withstood by the transformer for one minute between primary and secondary windings.

QUALITY

- Compact in size.
- Using annealed grain-oriented silicon steel sheet for iron core.
- Manufactured according to IEC 185 and BS 7626:1993 BS EN60044:1999 and under stringent quality control.

ACCURACY CLASS

Class 0.5 is used for KWh meters.

Class 1 is used for metering and for unofficial KWh meters (internal measuring).

Class 3 is used for general industry measurements.

Class X is used for special application where the protective scheme require close balance in the secondary currents. For ordering, please indicate the knee point voltage, maximum exciting current @ knee point voltage, maximum C.T. resistance @ 75°C.

TECHNICAL DATA

Maximum Service Voltage: 720V.

Test Voltage: 3kV 50Hz 1 min.

Frequency : 50 - 60Hz.

Thermal Current: 60 In.

Dynamic Current: 150 In.

Saturation Index: $n < 5$.

Ambient Temperature: - 40°C to +70°C.

MEASURING CURRENT TRANSFORMERS

For this type of C.T., the secondary current must be directly proportional to the primary current in the working range of 10% to 120%.

LIMITS OF ERROR (Extract from IEC 185)

Accuracy Class	± Percentage Current (Ratio) Error At Percentage Of Rated Current Shown Below				± Phase Displacement At Percentage Of Rated Current Shown Below							
					Minutes				Centiradians			
	10	20	100	120	10	20	100	120	10	20	100	120
0.5	1.0	0.75	0.5	0.5	60	45	30	30	1.8	1.35	0.9	0.9
1	2.0	1.5	1.0	1.0	120	90	60	60	3.6	2.7	1.8	1.8

LIMITS OF ERROR (Extract from IEC 185)

Accuracy Class	± Percentage Current (Ratio) Error At Percentage Of Rated Current Shown Below	
	50	120
3	3	3
5	5	5

PROTECTION CURRENT TRANSFORMERS

This type of C.T. is used where surveillance in power system is required. The secondary current operates protective relays where abnormal or fault conditions occur. The C.T. must be accurate up to several times the rated current. The electrical parameters of the C.T. may be defined for example by 5P10 or 10P10, where the 5P or 10P is the accuracy class and the 10 (following the P) is the accuracy limit factor. This factor is multiple of rated primary current up to which the transformer conforms to composite error.

LIMITS OF ERROR (Extract from IEC 185)

Accuracy Class	Current Error At Rated Primary Current	Phase Error At Rated Primary Current	Composite Error At Rated ALF	Standard Accuracy Limit Factor
5P	±1%	±60min.	5%	5, 10, 15 or 20
10P	±3%	—	10%	

