Current transformer type IMT

IMT current transformer is used to supply current circuits in power equipment measuring systems with rated voltage of 0.72 kV and rated frequency of 50 Hz. The transformers are built for the primary current range of 75 A–1000 A and the secondary current of 5 A. The IMT transformers are dedicated to power balance systems which use the current transformer to measure current on the low voltage side of the transformer. The dimensions of the current transformer are adjusted to the size of the low voltage bushings and the distance between them. Burden and class are given at the ends of the cables.

Operating conditions

The current transformer is adapted for operation in the outdoor conditions of the temperate climate. The rated long duration thermal current and the error limits of the current transformer correspond to the extended current range for 120% Ipn in the ambient temperatures of -35°C to +40°C. Protection class IP 44. Unlike the conventional transformers, power and class are provided at the ends of the wires. This means that there is no need to include of losses on the connecting wires.

Construction

The IMT current transformer is a single phase low power transformer, operating in conditions approximate to short-circuit conditions, transforming current in the primary circuit into current in the secondary circuit, while maintaining the requirements given in standards concerning the transformation accuracy.

The secondary winding of the current transformer is cast in HCEP* resin resistant to outside weather conditions. Each transformer has the secondary side terminals in the shape of two 4-metre-long (standard version) 2.5 mm^2 cables designated with digits 1 and 2 or multi-colored.

Fixing

The IMT current transformer may be placed on a transformer in such a way that the low voltage bushing can be located centrally in the current transformer window. When the distance between the bushings is small it is allowed to arrange the transformers one on the other in a so called pyramid. The M6 threaded hole in the cable lead part makes it possible to protect the current transformer from shifting. We suggest using an M6 bolt and a straight flat bar in order to immobilize the current transformers when they are placed next to one another (fig. 1) or a trapezoid flat bar when they are arranged in a „pyramid” (fig. 2).

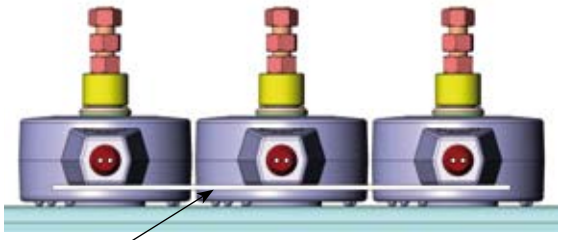


Fig. 1. Flat bar

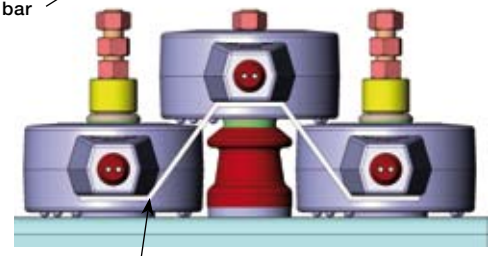


Fig. 2. Trapezoid flat bar

*Hydrophobic Cycloaliphatic Epoxy

Technical data

Packing, transport, storage

Current transformers transported at a long distance should be packed in wooden crates protecting the apparatus from damage. Transformers transported on small distances can by transported by truck without packing, but should be protected from damage by separating them from other products. During loading and unloading, crates with transformers cannot be thrown or turned over. The wooden crates must be properly marked, according to the requirements concerning transportation of goods sensitive to mechanical damage. The transformers must be stored in dry and clean rooms with temperature close to +20°C. It is inadvisable to store the transformers in wooden crates outdoors.

Spare parts

The IMT current transformer is an unreparable apparatus. No spare parts are provided.

Compliance with standards

PN-EN 60044-1,
IEC 60044-1.
Transformers have IEN certificate.

Warranty

The producer gives a 24-month warranty for the purchased current transformers; the time is counted from the day of commissioning. However, the warranty shall not be longer than 30 months from the delivery date. The producer is not responsible for faults and damages resulting from:

– incorrect transport after the receipt of the transformers by the buyer,
– incorrect storage, installation and operation of transformers,
– inappropriate selection of transformers for a specific electric system.

Proceeding with used product

Considering the raw materials used and the production technology, the transformers do not constitute a hazard to the environment. The product which is used or faulty must be dismantled, the parts must be segregated and recycled or disposed by appropriate companies.

Example of order

Low voltage current transformer type
IMT 250/5; 1 VA – 0.5; FS 5; 30 items.

Table 1. Technical data

Type	Class**	Current		Burden**	Security factor FS	Rated short-time thermal current I_{th} (1s)	Rated dynamic-current I_{dyn}	Maximum permissible voltage U_m	Rated test voltage U_p	Weight (approx.)	Dimensions			
		Primary I_{pn}	Secondary I_{sn}								Inner diameter	Outer diameter	Height	Cable length* 2 x 2.5 mm²
		[A]	[A]	[VA]		[A]	[A]	[kV]	[kV]	[kg]	[mm]	[mm]	[mm]	[m]
IMT	0.5	75	5	1	5	60 x I_{pn}	2.5 x I_{th}	0.72	3	1.4	53	106	55	4
		100		1										
		150		1										
		200		1; 2.5										
	0.5 0.5S	250		1; 2.5										
		400		1; 2.5						1.6	73	136	45	
		500		1; 2.5										
		600		1; 2.5										
		800	5	1; 2.5	5					2.0	95	160	45	
		1000		1; 2.5										

It is possible to order transformers of other parameters after prior arrangement with the manufacturer.
* 6 m cable length is possible for Ipn 75 A and 100 A with burden 1 VA and for Ipn from 150 A to 1000 A with maximum 2 VA burden. A longer cable may be cross-section 2 x 4 mm².
** Burden and class are given at the ends of the cables. Taking in to consideration losses on connecting terminal, 1VA is sufficient to feed electronic measurement devices.

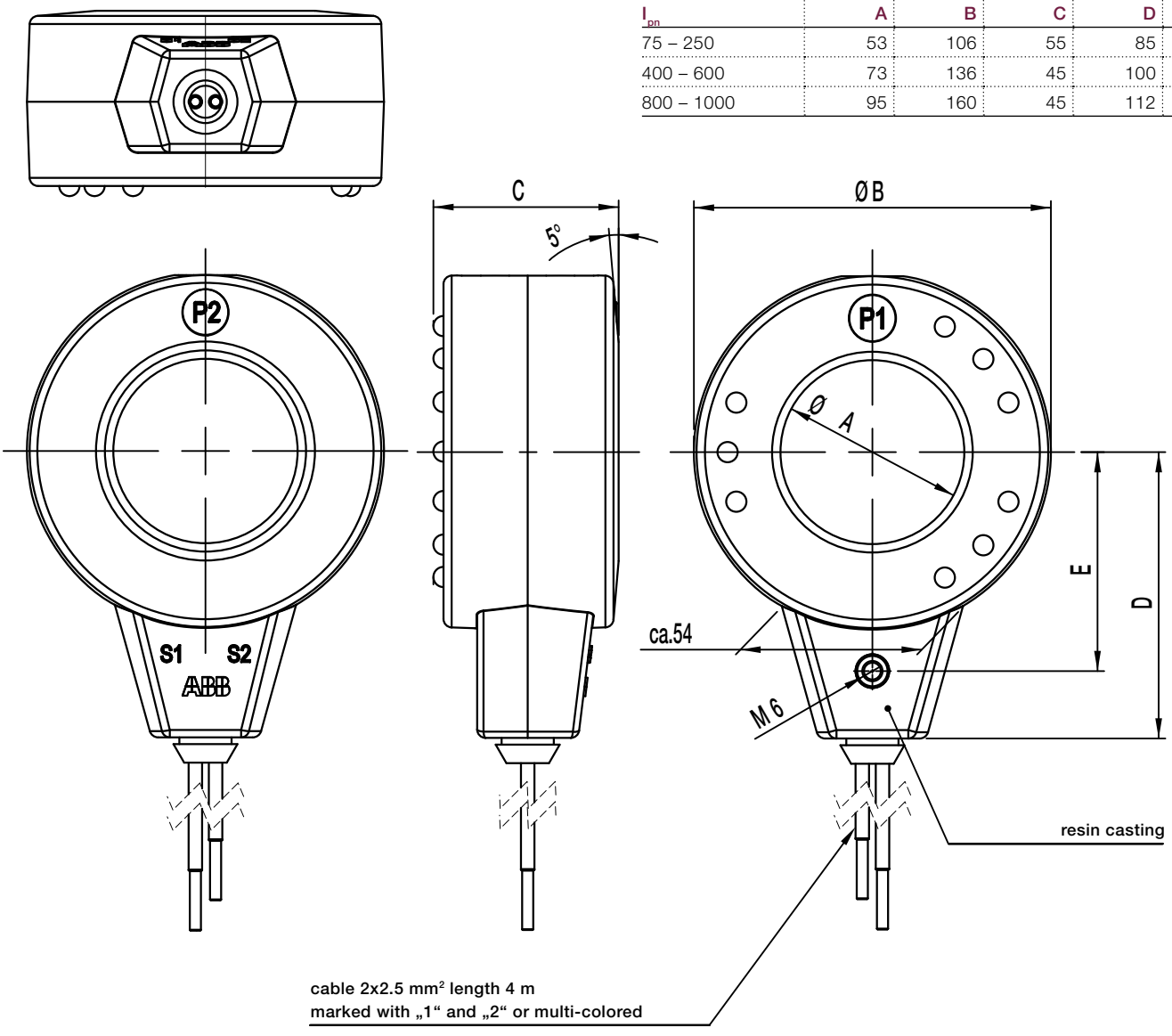
Table 2. Sizing the IMT current transformer to a transformer

Transformer			Current transformer
Power rating	DN insulator		IMT
	Type	Diameter	
[kVA]		[mm]	A/A
25	DT1/250	50	75/5
40			
63			
100			150/5
160			250/5
250	DT1/630	70	500/5
400			
630	DT1/1000	90	1000/5

The data are presented for information only.

Dimensional drawing

I_{pn}	A	B	C	D	E
75 – 250	53	106	55	85	65
400 – 600	73	136	45	100	80
800 – 1000	95	160	45	112	92



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