Wound current transformers

Based on the physical operating principle of current transformers, the required core volume transferring an amount of power, increases rapidly with a decreasing nominal current. As there are limits on increasing the transformer size, wound current transformers are being used.

Interim current transformers also belong to the group of wound current transformers. This construction is mainly used for primary currents of up to 10 A, and achieves a transformation at a higher or lower secondary current values. In addition to their application in adapting a measuring circuit on existing measuring units, interim current transformers are being used also for lowering the power loss by the transmission of analogically measured values over great distances. This is made possible by means of a squared dependence of the power loss from the flowing current.

$$P_V = I^2 \times Z \text{ [VA]}$$

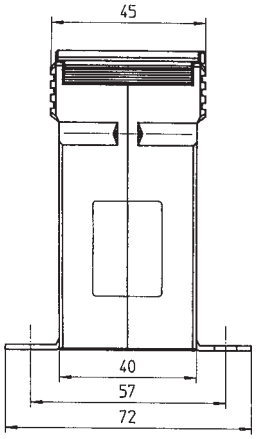
apparent power [VA]

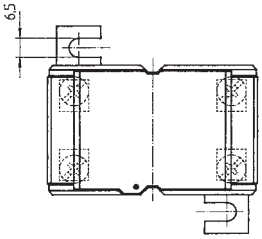
This means when the original nominal current is halved, the conductor loss drops down to 25 % of its original value.

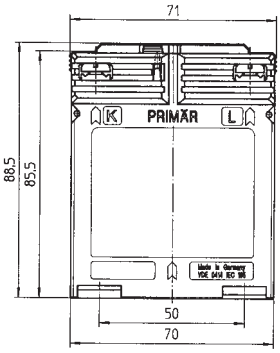
Indication: The selection of the nominal power of the initially activated main transformer is achieved through the application of the following measurement comparisions.

$$P_{GH} = P_Z \times \left(\frac{I_2}{I_1}\right)^2 + P_E + P_{HZ}$$

P_{GH} apparent power of the main transformer
P_Z secondary performance of the interim transformer (nominal performance inclusive of conductor losses)
P_E consumption of the interim transformer by nominal current
P_{HZ} conductor losses between main- and interim transformer by nominal current
I_1 primary nominal current of the interim transformer
I_2 secondary nominal current of the interim transformer



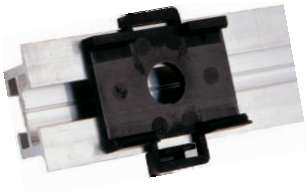




WSK 40

Wound current transformer

Secondary current		5A		1A	
Primary current	Burden	Accuracy class		Accuracy class	
		1	0.5	1	0.5
A	VA	Art.-no.	Art.-no.	Art.-no.	Art.-no.
1	2.5	31044	31011	31244	31211
	5	31045	31012	31245	31212
	10	31046	31013	31246	31213
	15	31047	31014	31247	31214
2.5	2.5	31048	31015	31248	31215
	5	31049	31016	31249	31216
	10	31050	31017	31250	31217
	15	31051	31018	31251	31218
5	2.5	31052	31019	31252	31219
	5	31053	31020	31253	31220
	10	31054	31021	31254	31221
	15	31055	31022	31255	31222
10	2.5	31056	31023	31256	31223
	5	31057	31024	31257	31224
	10	31058	31025	31258	31225
	15	31059	31026	31259	31226
15	2.5	31060	31027	31260	31227
	5	31061	31028	31261	31228
	10	31062	31029	31262	31229
	15	31063	31030	31263	31230
20	2.5	31064	31031	31264	31231
	5	31065	31032	31265	31232
	10	31066	31033	31266	31233
	15	31067	31034	31267	31234
25	2.5	31068	31035	31268	31235
	5	31069	31036	31269	31236
	10	31070	31037	31270	31237
	15	31071	31038	31271	31238
30	2.5	31072	31039	31272	31239
	5	31073	31040	31273	31240
	10	31074	31041	31274	31241



Snap-on mounting

Primary conductor	—
Round conductor	—
Transformer width	71 mm
Snap-on mounting	**Art.-no. 55012** see page 206
Sealed shutter	**Art.-no. 59041** see page 207