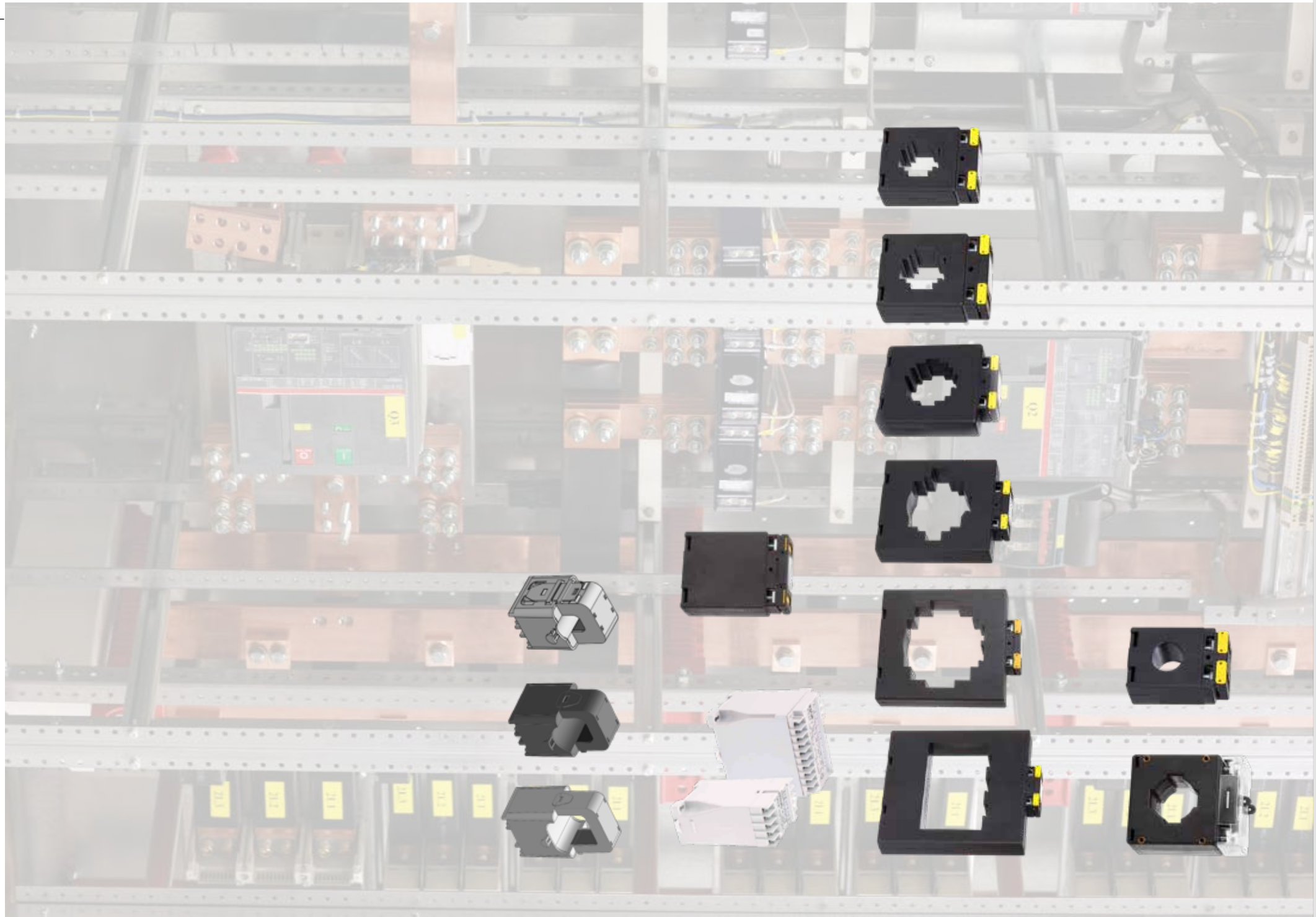
MÜLLER ZIEGLER
Elektrische Messgeräte

LOW VOLTAGE CURRENT TRANSFORMERS SW"R" - SERIES

TECHNICAL INFORMATION

www.mueller-ziegler.de Product group 8

made in germany



Current transformers for low voltage series SW"R"

Notice

General description current transformers

Application

Current transformers mainly are used where it is impossible or difficult to measure currents directly. They are special configurations of transformers which transform the primary current into a (mostly) lower secondary current and which separate (galvanically) both currents.
By means of the physical principal of saturation of the core material additional a protection of the secondary circuit from high currents produced in the event of system fault is enable.
The accuracy and safety of the connected devices is directly dependent on the quality of the current transformer used.

Special notes

Rated burden, secondary currents
In the case of current transformers, the rated burden that is made available at the secondary terminals is specified in VA. The selection of the rated burden is determined by the consumption of the connected measuring device and its feed line. In particular with secondary currents of 5 A and a long measuring line, considerable losses occur (see pages 7 and 8). In this case, current transformers with a secondary current of 1 A are preferable.
„Site-winding" current transformer
With plug-in current transformers, the smaller the CT ratio, the lower the rated burden in VA. By passing through the primary conductor several times, a smaller CT ratio can be achieved with the rated burden (VA) unchanged. Example: CT with a ratio of 50/5 A at 1.5 VA rated burden - after threading the primary conductor 5 times, a CT with a ratio of 10/5 A at 1.5 VA rated burden results. In comparison to wound primary current transformers, this measure enables cost savings to be achieved.
Grounding of secondary terminals
According to VDE 0141, paragraph 5.3.4, current and voltage transformers should be grounded starting from measuring voltages of ≥ 3.6 kV. In case of low voltages (up to a measuring voltage of ≤ 1.2 kV), no grounding is necessary unless the transformer housing has large accessible metal surfaces.
Caution: Current transformers may conduct voltages which are dangerous to touch at the „open" secondary terminals. Therefore, operating the transformers „open" should be avoided under all circumstances.

Technical terms

Primary nominal current	Value of the primary current which characterizes the CT and for which it is dimensioned.
Secondary nominal current	Value of the secondary current which characterizes the CT and for which it is dimensioned.
Rated transformation ratio	Ratio of the primary current and secondary current. The ratio of a current transformer is indicated on the label as an unabridged fraction.
Rated burden	The burden is the impedance of the exterior secondary circuit including wires. The rated burden is decisive in determining the error limits of the current transformer. Usual the burden is expressed as its volt-ampere rating.
Load	Impedance of the secondary circuit, expressed in ohms with indication of the power factor.
Nominal burden	Value of the burden on which the accuracy information of the CT is based.
Nominal rated frequency	Value of the frequency on which the rating of the CT is based.
Accuracy class	Information for a current transformer that its measurement deviations under prescribed conditions are within defined limits.
Phase displacement (δ)	Phase displacement is the angle of the phase shift between the secondary and primary current. It is specified in angle minutes and positively calculated if the secondary size goes after the primary one.
Current error	The current error is the deviation of the nominal transmission multiplied by the secondary from that of the primary current. The current error is calculated positively, in the actual value of the secondry current exceeds the nominal value.

$$F_i[\%] = \frac{(K_n \; I_s - I_p) \times 100}{I_p}$$

F_i = Current error in %
K_n = Current transformer ratio
I_s = Actual secondory current, if I_p is under measurment conditions
I_p = Actual primary current

Total measurement error	The total measurement error is the momentary value of the ratio of the r.m.s. difference from the secondary current multiplied with the transmission to the primary current, refered to the r.m.s. primary current.
Rated limit instrument primary current I_{pl}	is the primary current attached to the excess current limiting factor. In case of CTs for measuring it is defined that the total error is eqal to or greater 10% of the secondary current which should apprear according to the transmission
Instrument security factor FS	expresses the physical attribute of a CT to go into saturation
Rated continious thermal current I_{cth}	is the primary continuous current which the CT will operate with, if it is connected to the rated burden without its temperature exceeding specified values.
Rated short time thermal current I_{th}	is the r.m.s. value of the primary current which the CT can withstand for 1 second with short-circuited secondary winding without incurring damage
Rated dynamic current I_{dyn}	is the peak value of the first amplitude of the primary current whose mechanical and electromagnetic impact is resisted by the transformer with short-circuited secondary winding.

Technical data

General data	Standards	DIN EN 60044-1, DIN 42 600, IEC 185, DIN EN 61 010 part 1
	Max. operating voltage	0,72 kV, Types CSW and XCSW 1,2 kV
	Test voltage	3 kV, Types CSW and XCSW 6 kV
	Rated frequency	50 / 60 Hz, 16 2/3 and 400 Hz on request
	Instrument security factor	FS5 up to 1500 A, FS10 from 1600 A and above
	Rated cont. thermal current Icth	1,0 x IN, Types CSW and XCSW 1,2 x IN
	Rated short time thermal current Ith	60 x IN (1 s), max. 100 kA 40 x IN (1 s), max. 100 kA at wound primary and summary CTs
	Rated dynamic current Idyn	2,5 x Ith
	Operating temperature -5 °C to +50 °C	
	Storage temperature	-25 °C to +70 °C
	Insulation class	E
	Housing	Polycarbonate black or grey, acc. to UL 94 V 0, self extinguishing
	Connection	Combi-srews M5 x 10 on the secondary terminals

Marking of terminals for current transformers

The terminals for current transformers have standardized markings. These are in detail:

For the primary terminals: **K - P1** and **L - P2**, the direction of energy is always from K-P1 to L-P2!
For the secondary terminals: **k - s1** und **l - s2** (in lower case)

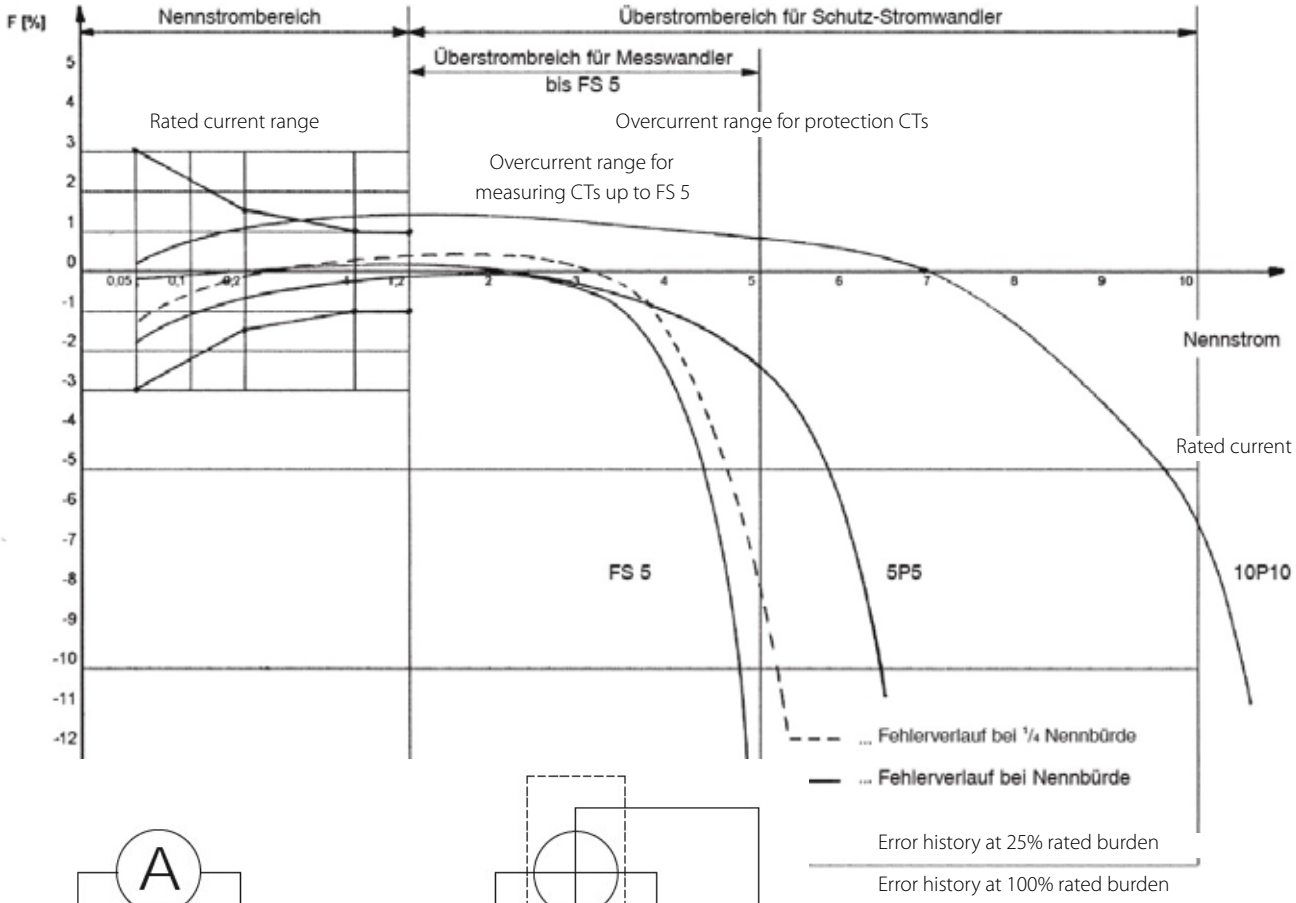
In case of summary CTs with several input circuits, the usual terminal markings „K" and „L" are preceded by the capital letters „A", „B", „C" ...
This serves to clearly differentiate the input circuits.
In case of input circuits with different main transformers, the main transformer with the highest transformation ratio is connected to the terminals „AK - AL" and then in descending order to terminal „BK - BL" etc.
The correct connection assignment can also be found on the rating plate.

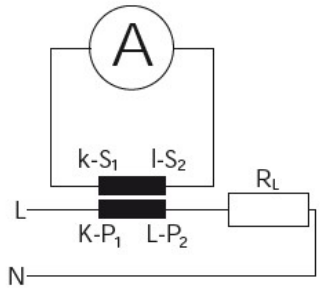
Error limits for current transformers

class 0,2 to 3, acc. to IEC 61869/2, version 09/2012

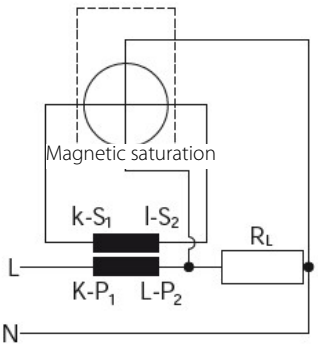
Klassengenauigkeit	Stromfehler ±Δ_I bei					Fehlwinkel ±Δ_φ bei				
	1,2 I_n 1,0 I_n	0,2 I_n	0,1 I_n	0,05 I_n	0,01 I_n	1,2 I_n 1,0 I_n	0,2 I_n	0,1 I_n	0,05 I_n	0,01 I_n
	%	%	%	%	%	min	min	min	min	min
0,2	0,2	0,35		0,75		10	15		30	
0,2s	0,2	0,2		0,35	0,75	10	10		15	30
0,5	0,5	0,75		1,5		30	45		90	
0,5s	0,5	0,5		0,75	1,5	30	30		45	90
1	1	1,5		3		60	90		180	
3	3*									

* bei 0,5 I_n und thermischem Nenn-Dauerstrom

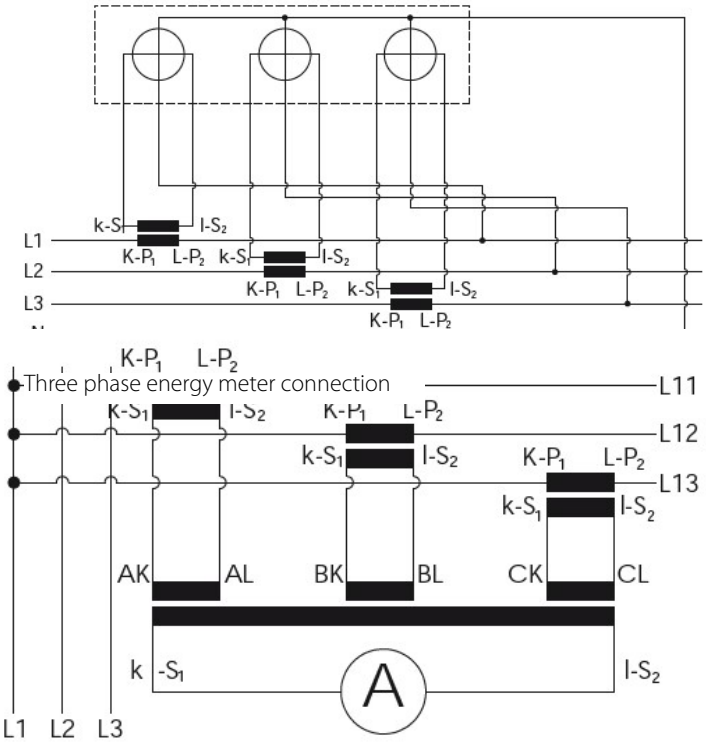




Measuring connection



Single phase energy meter connection



Summenwandler-Schaltung

relays

- high measurement accuracy in the nominal current range
- protectiv function in the overcurrent range

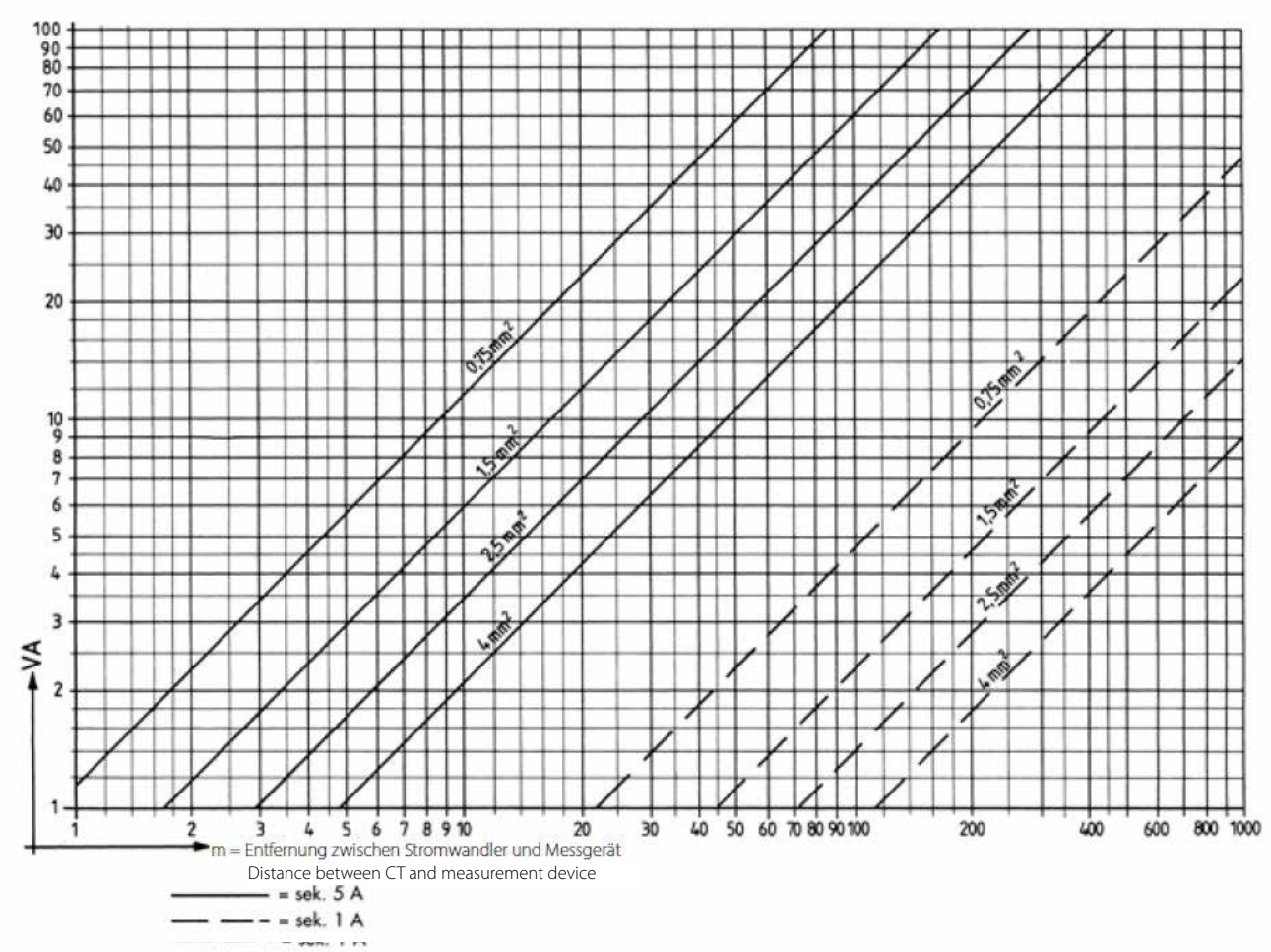
Connection of summary CTs

In order to meet these requirements, it is necessary that the range of services (the nominal apparent power) of the current transformer is adapted as close as possible to the actual power requirement of the measuring arrangement. To determine the actual power requirement, in addition to the internal power requirement of the connected measuring devices, the line losses of the measuring lines connected to the secondary circuit of the converter must also be taken into account.

Internal power requirement of typical measuring devices

Moving iron current meter 100 mm	0,700	-	1,50 VA
Moving coil current meter with rectifier	0,001	-	0,25 VA
Multiple current meter	0,005	-	5,00 VA
Current recorder	0,300	-	9,00 VA
Bimetall current meter	2,500	-	3,00 VA
Power meter	0,200	-	5,00 VA
Power recorder	3,000	-	12,00 VA
Power factor meter	2,000	-	6,00 VA
Power facotr recorder	9,000	-	16,00 VA
Energy meter	0,400	-	1,00 VA
N-Relay			14,00 VA
Overcurrent relay	0,200	-	6,00 VA
Overcurrent time relay	3,000	-	6,00 VA
Directional relay			10,00 VA
Bimetall relay	7,000	-	11,00 VA
Distance relay	1,000	-	30,00 VA
Differential relay	0,200	-	2,00 VA
Current transformer trip switch	5,000	-	150,00 VA
Regulator	5,000	-	180,00 VA

Auxiliary diagram for determining the power loss (secondary line)



Outside dimensions of cables and wires

Depending on the manufacturer, the diameters can differ from the information!

Cross section	Type NYM..	Type NYY..	Type H07V-K
1 x 1,5 mm²	5,2 mm	-	3,4 mm
1 x 2,5 mm²	6,0 mm	-	4,1 mm
1 x 4 mm²	6,7 mm	-	4,8 mm
1 x 6 mm²	7,2 mm	-	5,3 mm
1 x 10 mm²	8,6 mm	-	6,8 mm
1 x 16 mm²	9,6 mm	-	8,1 mm
1 x 25 mm²	12,5 mm	13,0 mm	10,2 mm
1 x 35 mm²	-	14,0 mm	11,7 mm
1 x 50 mm²	-	15,0 mm	13,9 mm
1 x 70 mm²	-	17,0 mm	16,0 mm
1 x 95 mm²	-	-	18,2 mm
1 x 120 mm²	-	21,0 mm	20,2 mm
1 x 150 mm²	-	-	22,5 mm
1 x 185 mm²	-	25,0 mm	24,9 mm
1 x 240 mm²	-	-	28,4 mm

Notice

Tube unit current transformer

for round conductors up to 21 / 28 mm

RSWR 21 / RSWR 28

Primary current 40 - 600 A

Dimensions Page 38

Type RSWR 21

Width	44 mm
Depth	30 mm
Busbar size	--
Round cond.	Ø 21 mm
Accessories incl.	Foot fastening brackets secondary terminal cover
Weight	approx. 200 g

also possible in class 0,2; 0,2S und 0,5S

Type RSWR 28

Width	60 mm
Depth	35 mm
Busbar size	30 x 10 mm
Round cond.	Ø 28 mm
Accessories incl.	Foot fastening brackets secondary terminal cover
Weight	approx. 300 g

Types and variants

Primary current in A	VA	class 1		class 0,5		class 1		class 0,5	
		net € sec. 5 A	net € sec. 1 A	net € sec. 5 A	net € sec. 1 A	net € sec. 5 A	net € sec. 1 A	net € sec. 5 A	net € sec. 1 A
40	1	X*	X*	-	-	-	-	-	-
50	1	X	X	-	-	-	-	-	-
60	1,25	X	X	-	-	X	X	-	-
75	1,25	X	-	-	-	X	X	-	-
	2,5	X	X	-	-	-	-	-	-
80	1,25	-	-	-	-	X	X	-	-
	2,5	X	X	-	-	-	-	-	-
100	1	-	-	X	X	-	-	-	-
	1,25	-	-	-	-	X	X	X	X
	1,5	-	-	X	-	-	-	-	-
	2,5	X	X	-	-	X	X	-	-
125	1	-	-	X	X	-	-	-	-
	1,25	-	-	-	-	-	-	X	X
	2,5	X	X	-	X	X	X	-	-
	3,75	X	X	-	-	X	X	-	-
150	2,5	X	X	X	X	X	X	X	X
	5	X	X	-	-	X	X	-	-
200	2,5	X	X	X	X	X	X	X	X
	5	X	X	X	X	X	X	X	X
	7,5	X	-	-	-	X	X	-	-
250	2,5	X	X	X	X	X	X	X	X
	5	X	X	X	X	X	X	X	X
	7,5	X	X	X	X	-	-	X	X
	10	-	-	-	-	X	X	-	-
300	2,5	X	X	X	X	X	X	X	X
	5	X	X	X	X	X	X	X	X
	10	X	-	-	-	X	X	X	X
400	2,5	X	X	X	X	X	X	X	X
	5	X	X	X	X	X	X	X	X
	7,5	X	X	X	X	-	-	-	-
	10	-	-	-	-	X	X	X	X
500	2,5	X	-	X	-	-	-	-	-
	5	X	-	X	-	X	X	X	X
	10	X	-	X	-	X	X	X	X
	15	-	-	-	-	X	X	X	X
600	5	-	-	-	-	X	X	X	X
	10	-	-	-	-	X	X	X	X
	15	-	-	-	-	X	X	X	X

* class 3 only!!!

Accessories: see page 36

Plug-in current transformers

for busbars 30 x 10 (15) mm

SWR 3010 / SWR-L 3010

Primary current 50 - 250 A

Dimensions page 38

Type SWR 3010

Width	60 mm
Depth	30 mm
Busbar size	30 x 10 (15) mm
Round cond.	Ø 28 mm
Accessories incl.	foot fastening brackets busbar fixing material secondary terminal cover
Weight	approx. 300 g

also possible in class 0,2; 0,2S und 0,5S

Type SWR-L 3010

Width	70 mm
Depth	35 mm
Busbar size	30 x 10 mm
Round cond.	Ø 23 mm
Accessories incl.	foot fastening brackets busbar fixing material secondary terminal cover
Weight	approx. 400 g

also possible in class 0,2; 0,2S und 0,5S

Types and variants

Primary current in A	VA	class 1 net € sec. 5 A	class 1 net € sec. 1 A	class 0,5 net € sec. 5 A	class 0,5 net € sec. 1 A	class 1 net € sec. 5 A	class 1 net € sec. 1 A	class 0,5 net € sec. 5 A	class 0,5 net € sec. 1 A
50	1	X*	X*	-	-	-	-	-	-
60	1	X*	X*	-	-	-	-	-	-
	1,25	-	-	-	-	X	X	-	-
75	1	X	-	-	-	-	-	-	-
	1,25	-	X	-	-	-	-	-	-
	2,5	-	-	-	-	X	X	-	-
80	1,25	X	-	-	-	-	-	-	-
	1,5	-	X	-	-	-	-	-	-
	2,5	-	-	-	-	X	X	-	-
100	1,25	-	-	-	X	-	-	X	-
	2,5	X	X	-	-	-	-	-	-
	3,75	-	-	-	-	X	X	-	-
125	1,25	-	-	-	X	-	-	-	-
	2,5	X	X	-	-	-	-	X	X
	3,75	X	X	-	-	-	-	-	-
	5	-	-	-	-	X	X	-	-
150	2,5	X	X	X	X	-	-	X	X
	3,75	X	X	-	-	-	-	X	X
	5	X	-	-	-	X	X	-	-
	10	-	-	-	-	X	X	-	-
200	2,5	X	X	X	X	-	-	-	-
	3,75	-	-	-	X	-	-	-	-
	5	X	X	-	-	-	-	X	X
	7,5	-	-	-	-	-	-	X	X
	10	-	-	-	-	X	X	-	-
	15	-	-	-	-	X	X	-	-
250	2,5	X	X	X	X	-	-	-	-
	5	X	X	X	X	-	-	X	X
	7,5	X	X	X	-	-	-	-	-
	10	-	-	-	-	X	X	X	X
	15	-	-	-	-	X	X	-	-

* class 3 only!!!

Accessories: see page 36

Plug-in current transformers

for busbars 30 x 10 (15) mm

SWR 3010 / SWR-L 3010

Primary current 300 - 750 A

Dimensions page 38

Type SWR 3010

Width	60 mm
Depth	30 mm
Busbar size	30 x 10 (15) mm
Round cond.	Ø 28 mm
Accessories incl.	foot fastening brackets busbar fixing material secondary terminal cover
Weight	approx. 300 g

also possible in class 0,2; 0,2S und 0,5S

Type SWR-L 3010

Width	70 mm
Depth	35 mm
Busbar size	30 x 10 mm
Round cond.	Ø 23 mm
Accessories incl.	foot fastening brackets busbar fixing material secondary terminal cover
Weight	approx. 400 g

also possible in class 0,2; 0,2S und 0,5S

Types and variants

Primary current in A	VA	class 1 net € sec. 5 A	class 1 net € sec. 1 A	class 0,5 net € sec. 5 A	class 0,5 net € sec. 1 A	class 1 net € sec. 5 A	class 1 net € sec. 1 A	class 0,5 net € sec. 5 A	class 0,5 net € sec. 1 A
300	2,5	X	X	X	X	-	-	-	-
	5	X	X	X	X	-	-	-	-
	7,5	X	X	X	X	-	-	-	-
	10	X	-	-	-	X	X	X	X
	15	-	-	-	-	X	X	X	X
400	5	X	X	X	X	-	-	-	-
	10	X	X	X	X	-	-	-	-
	15	X	-	-	-	X	X	X	X
500	5	X	X	X	X	-	-	-	-
	10	X	X	X	X	-	-	-	-
	15	-	-	-	-	X	X	X	X
	20	-	-	-	-	X	X	X	X
600	5	X	X	X	X	-	-	-	-
	10	X	X	X	X	-	-	-	-
	15	-	-	-	-	X	X	X	X
	20	-	-	-	-	X	X	X	X
	25	-	-	-	-	X	X	X	X
750	5	X	X	X	X	-	-	-	-
	10	X	X	X	X	-	-	-	-
	15	X	-	X	-	-	-	-	-

Accessories: see page 36

Plug-in current transformers

for busbars 30 x 10 (15) mm

SWR-S 3010

Primary current 40 - 300 A

Type SWR-S 3010

Width	70 mm
Depth	49 mm
Busbar size	30 x 10 mm
Round cond.	Ø 23 mm
Accessories incl.	foot fastening brackets busbar fixing material secondary terminal cover
Weight	approx. 650 g

also possible in class 0,2; 0,2S und 0,5S

Dimensions page 38

Types and variants

Primary current in A	VA	class 1 net € sec. 5 A	class 1 net € sec. 1 A	class 0,5 net € sec. 5 A	class 0,5 net € sec. 1 A
40	1,25	X	X	-	-
	2,5	-	-	-	-
50	1	-	-	X	X
	1,25	X	X	-	-
	2,5	X	X	-	X
60	1	-	-	X	X
	1,25	X	-	-	-
	2,5	X	X	X	X
	3,75	X	X	-	-
75	1	-	-	X	X
	2,5	X	X	X	X
	5	X	X	-	-
80	1	-	-	X	X
	2,5	X	X	X	X
	5	X	X	-	-
100	2,5	X	X	X	X
	5	X	X	X	X
	7,5	X	X	-	-
125	2,5	-	X	X	-
	5	X	X	X	X
	7,5	-	-	X	X
	10	X	X	-	-
150	2,5	-	-	X	-
	5	X	X	X	X
	10	X	X	X	X
	15	X	X	-	-
200	5	-	X	X	X
	10	X	X	X	X
	15	X	-	X	X
	20	X	X	-	-
250	5	-	X	-	X
	10	X	X	X	-
	15	X	-	X	X
	20	X	X	X	X
300	10	X	-	X	-
	15	-	-	X	-
	20	X	-	-	-
	30	X	-	-	-

Accessories: see page 36

Notice

Plug-in current transformers

for busbars 40 x 10 (12) mm

SWR 4010 / SWR-L 4010

Primary current 60 - 500 A

Dimensions page 39

Type SWR 4010

Width	60 mm
Depth	30 mm
Busbar size	40 x 12 / 30 x 30 mm
Round cond.	Ø 33 mm
Accessories incl.	foot fastening brackets busbar fixing material secondary terminal cover
Weight	approx. 200 g

Type SWR-L 4010

Width	70 mm
Depth	30 mm
Busbar size	40 x 12 / 30 x 30 mm
Round cond.	Ø 33 mm
Accessories incl.	foot fastening brackets busbar fixing material secondary terminal cover
Weight	approx. 300 g

also possible in class 0,2; 0,2S und 0,5S

Types and variants

Primary current in A	VA	class 1 net € sec. 5 A	class 1 net € sec. 1 A	class 0,5 net € sec. 5 A	class 0,5 net € sec. 1 A	class 1 net € sec. 5 A	class 1 net € sec. 1 A	class 0,5 net € sec. 5 A	class 0,5 net € sec. 1 A
60	1,25	-	-	-	-	X*	X*	-	-
75	1,25	-	-	-	-	X*	X*	-	-
80	1,25	-	-	-	-	X	X	-	-
100	2,5	-	-	-	-	X	X	-	-
125	1,25	-	-	-	-	-	-	X	X
	2,5	-	-	-	-	X	X	-	-
	3,75	-	-	-	-	X	X	-	-
150	1	-	-	-	-	-	-	-	X
	2,5	-	X	-	-	X	X	X	X
	5	-	-	-	-	X	X	-	-
200	1,25	X	-	-	X	-	-	-	-
	2,5	-	X	-	-	X	X	X	X
	3,75	-	-	-	-	-	-	-	X
	5	-	-	-	-	X	X	-	-
250	1,25	-	-	-	X	-	-	-	-
	2	X	X	X	-	-	-	-	-
	2,5	-	-	-	-	X	X	X	X
	5	-	-	-	-	X	X	X	X
	7,5	-	-	-	-	X	X	-	-
300	2,5	X	X	X	X	X	X	X	X
	5	-	-	-	-	X	X	X	X
	7,5	-	-	-	-	X	X	-	X
400	2,5	X	X	X	X	X	X	X	X
	3,75	X	X	X	X	-	-	-	-
	5	-	-	-	-	X	X	X	X
	7,5	-	-	-	-	-	X	-	X
	10	-	-	-	-	X	-	X	-
500	2,5	X	X	X	X	X	X	X	X
	5	X	X	X	X	X	X	X	X
	10	-	-	-	-	X	X	X	X

* nur in Klasse 3!!!

Accessories: see page 36

Plug-in current transformers

for busbars 40 x 10 (12) mm

SWR 4010 / SWR-L 4010

Primary current 600 - 1000 A

Dimensions page 39

Type SWR 4010

Width	60 mm
Depth	30 mm
Busbar size	40 x 12 / 30 x 30 mm
Round cond.	Ø 33 mm
Accessories incl.	foot fastening brackets busbar fixing material secondary terminal cover
Weight	approx. 200 g

Type SWR-L 4010

Width	70 mm
Depth	30 mm
Busbar size	40 x 12 / 30 x 30 mm
Round cond.	Ø 33 mm
Accessories incl.	foot fastening brackets busbar fixing material secondary terminal cover
Weight	approx. 300 g

also possible in class 0,2; 0,2S und 0,5S

Types and variants

Primary current in A	VA	class 1		class 0,5		class 1		class 0,5	
		net € sec. 5 A	net € sec. 1 A	net € sec. 5 A	net € sec. 1 A	net € sec. 5 A	net € sec. 1 A	net € sec. 5 A	net € sec. 1 A
600	1,25	X	-	X	-	-	-	-	-
	2,5	-	X	-	X	X	X	X	X
	5	-	-	-	-	X	X	X	X
	10	-	-	-	-	X	X	X	X
750	2,5	X	X	X	X	X	X	X	X
	5	-	-	-	-	X	X	X	X
	10	-	-	-	-	X	X	X	X
	15	-	-	-	-	X	X	-	-
800	2,5	X	-	X	-	X	X	X	X
	5	-	-	-	-	X	X	X	X
	10	-	-	-	-	X	X	X	X
	15	-	-	-	-	X	X	X	X
1000	5	-	-	-	-	X	X	X	X
	10	-	-	-	-	X	X	X	X
	15	-	-	-	-	-	X	-	X
	20	-	-	-	-	X	-	X	-

Accessories: see page 36

Plug-in current transformers

for busbars 40 x 10 (12) mm

SWR-K 4010 / SWR-S 4010

Primary current 60 - 400 A

Dimensions page 39

Type SWR-K 4010

Width	70 mm
Depth	35 mm
Busbar size	40 x 10 / 30 x 15 mm
Round cond.	Ø 30 mm
Accessories incl.	foot fastening brackets busbar fixing material secondary terminal cover
Weight	approx. 350 g

also possible in class 0,2; 0,2S und 0,5S

Type SWR-S 4010

Width	70 mm
Depth	49 mm
Busbar size	40 x 10 / 30 x 15 mm
Round cond.	Ø 30 mm
Accessories incl.	foot fastening brackets busbar fixing material secondary terminal cover
Weight	approx. 550 g

also possible in class 0,2; 0,2S und 0,5S

Types and variants

Primary current in A	VA	class 1 net € sec. 5 A	class 1 net € sec. 1 A	class 0,5 net € sec. 5 A	class 0,5 net € sec. 1 A	class 1 net € sec. 5 A	class 1 net € sec. 1 A	class 0,5 net € sec. 5 A	class 0,5 net € sec. 1 A
60	1,25	-	-	-	-	X	X	-	-
75	1,25	X	X	-	-	X	X	-	-
80	1,25	X	X	-	-	-	-	-	-
	2	-	-	-	-	X	X	-	-
100	1,25	X	X	-	-	-	-	-	-
	2,5	X	X	-	-	X	X	-	-
	3,75	-	-	-	-	X	X	-	-
125	1,25	-	-	X	X	-	-	-	-
	2,5	X	X	-	-	X	X	X	X
	3,75	X	X	-	-	-	-	X	X
	5	-	-	-	-	X	X	-	-
150	1,25	-	-	X	X	-	-	-	-
	2,5	X	X	X	X	X	X	X	X
	3,75	-	-	-	-	-	-	X	X
	5	X	X	-	-	X	X	-	-
200	2,5	X	X	X	X	-	-	-	-
	5	X	X	X	X	X	X	X	X
	7,5	X	X	-	-	-	-	X	X
	10	-	-	-	-	X	X	-	-
250	2,5	X	X	X	X	-	-	-	-
	5	X	X	X	-	X	X	X	X
	10	X	-	-	-	X	X	X	X
	15	-	-	-	-	X	X	-	-
300	2,5	X	X	X	X	-	-	-	-
	5	X	X	X	X	X	X	X	X
	7,5	-	X	-	-	-	-	-	-
	10	X	-	-	-	X	X	X	X
	15	-	-	-	-	X	X	X	X
400	2,5	X	X	X	X	-	-	-	-
	5	X	X	X	X	X	X	X	X
	7,5	-	X	-	X	-	-	-	-
	10	X	-	X	-	X	X	X	X
	15	-	-	-	-	X	X	X	X
	20	-	-	-	-	X	-	-	-
	30	-	-	-	-	-	X	-	-

Accessories: see page 36

Plug-in current transformers

for busbars 40 x 10 (12) mm

SWR-K 4010 / SWR-S 4010

Primary current 500 - 1000 A

Dimensions page 39

Type SWR-K 4010

Width	70 mm
Depth	35 mm
Busbar size	40 x 10 / 30 x 15 mm
Round cond.	Ø 30 mm
Accessories incl.	foot fastening brackets busbar fixing material secondary terminal cover
Weight	approx. 350 g

also possible in class 0,2; 0,2S und 0,5S

Type SWR-S 4010

Width	70 mm
Depth	49 mm
Busbar size	40 x 10 / 30 x 15 mm
Round cond.	Ø 30 mm
Accessories incl.	foot fastening brackets busbar fixing material secondary terminal cover
Weight	approx. 550 g

also possible in class 0,2; 0,2S und 0,5S

Types and variants

Primary current in A	VA	class 1 net € sec. 5 A	class 1 net € sec. 1 A	class 0,5 net € sec. 5 A	class 0,5 net € sec. 1 A	class 1 net € sec. 5 A	class 1 net € sec. 1 A	class 0,5 net € sec. 5 A	class 0,5 net € sec. 1 A
500	2,5	X	X	X	X	-	-	-	-
	5	X	X	X	X	X	X	X	X
	10	X	X	X	X	X	X	X	X
	15	-	-	-	-	X	X	X	X
	20	-	-	-	-	-	-	X	X
	30	-	-	-	-	X	X	-	-
600	2,5	X	X	X	X	X	X	X	X
	5	X	X	X	X	X	X	X	X
	10	X	X	X	X	X	X	X	X
	20	-	-	-	-	-	-	X	X
	30	-	-	-	-	X	X	-	-
750	5	X	X	X	X	X	X	X	X
	10	X	X	X	X	X	X	X	X
	15	X	X	X	X	X	X	X	X
	30	-	-	-	-	X	X	X	X
800	5	X	X	X	X	X	X	X	X
	10	X	X	X	X	X	X	X	X
	15	X	X	X	X	X	X	X	X
	30	-	-	-	-	X	X	X	X
1000	5	X	X	X	X	X	X	X	X
	10	X	X	X	X	X	X	X	X
	15	X	X	X	X	X	X	X	X
	30	-	-	-	-	X	X	X	X

Accessories: see page 36

Plug-in current transformers

for busbars 50 x 12 / 2 x 40 x 10 mm

SWR-S 5010 / SWR 5010

Primary current 150 - 600 A

Dimensions page 39

Type SWR-S 5010

Width	70 mm
Depth	30 mm
Busbar size	50x12 / 2x40x10 mm
Round cond.	Ø 42 mm
Accessories incl.	busbar fixing material secondary terminal cover
Weight	approx. 200 g

Type SWR 5010

Width	85 mm
Depth	30 mm
Busbar size	50x10 / 2x40x10 mm
Round cond.	Ø 42 mm
Accessories incl.	busbar fixing material secondary terminal cover
Weight	approx. 400 g

also possible in class 0,2; 0,2S und 0,5S

Types and variants

Primary current in A	VA	class 1 net € sec. 5 A	class 1 net € sec. 1 A	class 0,5 net € sec. 5 A	class 0,5 net € sec. 1 A	class 1 net € sec. 5 A	class 1 net € sec. 1 A	class 0,5 net € sec. 5 A	class 0,5 net € sec. 1 A
150	1	-	-	-	-	-	-	X	X
	1,25	X	X	-	-	-	-	-	-
	2,5	-	-	-	-	X	X	-	-
	3,75	-	-	-	-	X	-	-	-
200	1,25	X	X	-	X	-	-	-	-
	2,5	-	-	-	-	X	X	X	X
	5	-	-	-	-	X	X	-	-
	7,5	-	-	-	-	X	-	-	-
250	1,25	-	-	X	X	-	-	-	-
	2,5	X	X	-	-	X	X	X	X
	3,75	-	-	-	-	-	-	-	X
	5	-	-	-	-	X	X	X	-
	7,5	-	-	-	-	X	X	-	-
	10	-	-	-	-	X	-	-	-
300	1,25	-	-	X	-	-	-	-	-
	2,5	X	X	X	X	X	X	X	X
	5	-	-	-	-	X	X	X	X
	7,5	-	-	-	-	-	-	X	X
	10	-	-	-	-	X	X	-	-
400	1,25	X	X	X	X	-	-	-	-
	2,5	-	-	-	-	X	X	X	X
	5	-	-	-	-	X	X	X	X
	10	-	-	-	-	X	X	X	X
	15	-	-	-	-	X	X	X	X
500	1,25	-	-	X	-	-	-	-	-
	2,5	X	X	X	X	-	X	X	X
	5	-	-	-	-	X	X	X	X
	10	-	-	-	-	X	X	X	X
	15	-	-	-	-	X	-	X	X
	20	-	-	-	-	X	X	-	-
600	2,5	X	X	X	X	-	X	-	X
	5	-	-	-	-	X	X	X	X
	10	-	-	-	-	X	X	X	X
	15	-	-	-	-	X	-	X	-
	20	-	-	-	-	X	X	X	X

Accessories: see page 36

Plug-in current transformers

for busbars 50 x 12 / 2 x 40 x 10 mm

SWR-S 5010 / SWR 5010

Primary current 750 - 1500 A

Dimensions page 39

Type SWR 5010

Width	85 mm
Depth	30 mm
Busbar size	50x10 / 2x40x10 mm
Round cond.	Ø 42 mm
Accessories incl.	busbar fixing material secondary terminal cover
Weight	approx. 400 g

also possible in class 0,2; 0,2S und 0,5S

Type SWR 5010

Wandlerbreite	85 mm
Wandlertiefe	30 mm
Primärleiter	50x10 / 2x40x10 mm
Rundleiter	Ø 42 mm
Zubehör inkl.	Fußbefestigungswinkel Primärleiterbefestigung Sekundärklemmen-abdeckung (Schieber)
Gewicht	ca. 400 g

auch in Klasse 0,2; 0,2S und 0,5S möglich.
Geeichte Wandler auf Anfrage.

Types and variants

Primary current in A	VA	class 1 net € sec. 5 A	class 1 net € sec. 1 A	class 0,5 net € sec. 5 A	class 0,5 net € sec. 1 A	class 1 net € sec. 5 A	class 1 net € sec. 1 A	class 0,5 net € sec. 5 A	class 0,5 net € sec. 1 A
750	2,5	X	X	X	X	-	-	-	-
	3,75	X	X	X	X	-	-	-	-
	5	-	-	-	-	X	X	X	X
	10	-	-	-	-	X	X	X	X
	15	-	-	-	-	X	X	X	-
	20	-	-	-	-	X	X	X	X
800	2,5	X	X	X	X	-	-	-	-
	3,75	X	X	X	X	-	-	-	-
	5	-	-	-	-	X	X	X	X
	10	-	-	-	-	X	X	X	X
	15	-	-	-	-	X	X	-	-
	20	-	-	-	-	-	-	X	X
	30	-	-	-	-	X	X	X	X
1000	2,5	X	X	X	X	-	-	-	-
	5	X	X	X	X	X	X	X	X
	10	-	-	-	-	X	X	X	X
	15	-	-	-	-	X	X	X	X
	30	-	-	-	-	X	X	X	X
1250	5	-	-	-	-	X	X	X	X
	10	-	-	-	-	X	X	X	X
	15	-	-	-	-	X	X	X	X
	20	-	-	-	-	-	-	X	X
	30	-	-	-	-	X	X	-	-
1500	5	-	-	-	-	X	X	X	X
	10	-	-	-	-	X	X	X	X
	15	-	-	-	-	X	X	X	X
	20	-	-	-	-	-	-	X	X
	30	-	-	-	-	X	X	-	-

Accessories: see page 36

Plug-in current transformers

for busbars 60 x 15 / 2 x 50 x 10 mm

SWR-S 6010 / SWR 6010

Primary current 200 - 750 A

Dimensions page 40

Type SWR-S 6010

Width	85 mm
Depth	30 mm
Busbar size	60x15/2x50x10 mm
Round cond.	Ø 52 mm
Accessories incl.	busbar fixing material secondary terminal cover
Weight	approx. 350 g

also possible in class 0,2; 0,2S und 0,5S

Type SWR 6010

Width	95 mm
Depth	30 mm
Busbar size	60x15/2x50x10 mm
Round cond.	Ø 53 mm
Accessories incl.	busbar fixing material secondary terminal cover
Weight	approx. 500 g

also possible in class 0,2; 0,2S und 0,5S

Types and variants

Primary current in A	VA	class 1 net € sec. 5 A	class 1 net € sec. 1 A	class 0,5 net € sec. 5 A	class 0,5 net € sec. 1 A	class 1 net € sec. 5 A	class 1 net € sec. 1 A	class 0,5 net € sec. 5 A	class 0,5 net € sec. 1 A
200	2,5	X	X	-	-	X	X	X	X
	3,75	-	-	-	-	X	X	-	-
250	1	-	-	X	X	-	-	-	-
	2,5	X	X	-	-	X	X	X	X
	3,75	X	-	-	-	-	-	-	-
	5	-	-	-	-	X	X	X	-
	7,5	-	-	-	-	X	X	-	-
300	1	-	-	X	X	-	-	-	-
	2,5	X	X	X	X	X	X	X	X
	3,75	X	X	-	-	-	-	-	-
	5	X	-	-	-	X	X	X	X
	10	-	-	-	-	X	X	-	-
400	1	-	-	-	X	-	-	-	-
	2,5	X	X	X	X	X	X	X	X
	3,75	X	X	-	-	-	-	-	-
	5	X	-	X	-	X	X	X	X
	7,5	-	-	-	-	-	-	-	X
	10	-	-	-	-	X	X	X	-
	15	-	-	-	-	X	-	-	-
500	2,5	X	X	X	X	-	X	X	X
	3,75	-	-	-	X	-	-	-	-
	5	X	X	X	-	X	X	X	X
	7,5	X	-	X	-	-	-	-	-
	10	-	-	-	-	X	X	X	X
	15	-	-	-	-	X	X	X	-
	20	-	-	-	-	X	-	-	-
600	2,5	X	X	X	X	-	X	X	X
	5	X	X	X	X	X	X	X	X
	10	X	-	X	-	X	X	X	X
	15	-	-	-	-	X	-	X	-
	20	-	-	-	-	X	-	-	-
750	2,5	X	X	X	X	-	-	-	-
	5	X	X	X	X	X	X	X	X
	7,5	-	X	-	X	-	-	-	-
	10	X	-	X	-	X	X	X	X
	15	-	-	-	-	X	X	X	X
	20	-	-	-	-	X	X	X	-

Accessories: see page 36

Plug-in current transformers

for busbars 60 x 15 / 2 x 50 x 10 mm

SWR-S 6010 / SWR 6010

Primary current 800 - 2500 A

Dimensions page 40

Type SWR-S 6010

Width	85 mm
Depth	30 mm
Busbar size	60x15/2x50x10 mm
Round cond.	Ø 52 mm
Accessories incl.	busbar fixing material secondary terminal cover
Weight	approx. 350 g

also possible in class 0,2; 0,2S und 0,5S

Type SWR 6010

Width	95 mm
Depth	30 mm
Busbar size	60x15/2x50x10 mm
Round cond.	Ø 53 mm
Accessories incl.	busbar fixing material secondary terminal cover
Weight	approx. 500 g

also possible in class 0,2; 0,2S und 0,5S

Types and variants

Primary current in A	VA	class 1 net € sec. 5 A	class 1 net € sec. 1 A	class 0,5 net € sec. 5 A	class 0,5 net € sec. 1 A	class 1 net € sec. 5 A	class 1 net € sec. 1 A	class 0,5 net € sec. 5 A	class 0,5 net € sec. 1 A
800	2,5	X	X	X	X	-	-	-	-
	5	X	X	X	X	X	X	X	X
	10	X	-	X	-	X	X	X	X
	15	X	-	X	-	X	X	X	X
	20	-	-	-	-	X	X	X	-
1000	2,5	-	X	X	X	-	-	-	-
	5	X	X	X	X	X	X	X	X
	10	X	-	X	-	X	X	X	X
	15	X	-	X	-	X	X	X	X
	20	-	-	-	-	X	X	X	X
1250	2,5	-	X	-	X	-	-	-	-
	5	X	X	X	X	X	X	X	X
	7,5	-	X	-	X	-	-	-	-
	10	X	-	X	-	X	X	X	X
	15	X	-	X	-	X	X	X	X
	20	X	-	X	-	X	X	X	X
1500	5	X	-	X	-	X	X	X	X
	10	X	-	X	-	X	X	X	X
	15	X	-	X	-	X	X	X	X
	20	X	-	X	-	-	-	-	-
	30	-	-	-	-	X	-	X	-
1600	5	X	-	X	-	X	X	X	X
	10	X	-	X	-	X	X	X	X
	15	X	-	X	-	X	X	X	X
	20	X	-	X	-	-	-	-	-
	30	-	-	-	-	X	-	X	-
2000	5	-	-	-	-	X	X	X	X
	10	-	-	-	-	X	X	X	X
	15	-	-	-	-	X	X	X	X
	20	-	-	-	-	X	X	X	X
2500	5	-	-	-	-	X	-	X	-
	10	-	-	-	-	X	-	X	-
	15	-	-	-	-	X	-	X	-
	20	-	-	-	-	X	-	X	-

Accessories: see page 36

Plug-in current transformers

for busbars 60 x 40 mm

SWR 6040

Primary current 200 - 2000 A

Type SWR 6040

Width	96 mm
Depth	30 mm
Busbar size	60 x 40 / 50 x 50 mm
Round cond.	Ø 61 mm
Accessories incl.	busbar fixing material secondary terminal cover
Weight	approx. 350 g

also possible in class 0,2; 0,2S und 0,5S

Dimensions page 40

Types and variants

Primary current in A	VA	class 1 net € sec. 5 A	class 1 net € sec. 1 A	class 0,5 net € sec. 5 A	class 0,5 net € sec. 1 A
200	2,5	X	X	-	-
250	2,5	X	X	-	-
	3,75	X	-	-	-
300	2,5	X	X	X	X
	3,75	-	X	-	-
	5	X	-	-	-
400	2,5	X	X	X	X
	3,75	-	-	-	X
	5	X	X	X	-
500	2,5	X	X	X	X
	5	X	X	X	X
	7,5	X	X	-	X
600	2,5	X	X	X	X
	5	X	X	X	X
	7,5	-	-	X	X
	10	X	X	-	-
750	2,5	X	X	X	X
	5	X	X	X	X
	10	X	X	X	X
800	2,5	X	X	X	X
	5	X	X	X	X
	10	X	X	X	X
1000	2,5	X	X	X	X
	5	X	X	X	X
	10	X	X	X	X
1250	2,5	X	X	X	X
	5	X	X	X	X
	10	X	X	X	X
1500	2,5	-	X	-	X
	5	X	X	X	-
	10	X	X	-	-
	15	X	X	-	-
1600	5	X	-	-	-
	10	X	-	-	-
	15	X	-	-	-
2000	5	X	-	-	-
	10	X	-	-	-
	15	X	-	-	-

Accessories: see page 36

Plug-in current transformers

for busbars 80 x 15 / 2 x 80 x 10 mm

SWR 8010 / SWR 8030

Primary current 400 - 2500 A

Dimensions page 40

Type SWR 8010

Width	105 mm
Depth	30 mm
Busbar size	80x15/2x60x10 mm
Round cond.	Ø 61 mm
Accessories incl.	busbar fixing material secondary terminal cover
Weight	approx. 450 g

also possible in class 0,2; 0,2S und 0,5S

Type SWR 8030

Width	105 mm
Depth	30 mm
Busbar size	2x80x10 / 60x60 mm
Round cond.	Ø 70 mm
Accessories incl.	busbar fixing material secondary terminal cover
Weight	approx. 400 g

also possible in class 0,2; 0,2S und 0,5S

Types and variants

Primary current in A	VA	class 1 net € sec. 5 A	class 1 net € sec. 1 A	class 0,5 net € sec. 5 A	class 0,5 net € sec. 1 A	class 1 net € sec. 5 A	class 1 net € sec. 1 A	class 0,5 net € sec. 5 A	class 0,5 net € sec. 1 A
400	2,5	X	X	X	X	X	-	X	-
	5	X	X	-	X	X	-	X	-
	7,5	X	X	-	-	-	-	-	-
500	2,5	X	X	X	X	X	X	X	X
	5	X	X	X	X	X	-	X	-
	10	X	X	-	-	-	-	-	-
600	2,5	X	X	X	X	X	X	X	X
	5	X	X	X	X	X	X	X	X
	10	X	X	X	X	-	-	-	-
750	2,5	X	X	X	X	X	X	X	X
	5	X	X	X	X	X	X	X	X
	10	X	X	X	X	X	-	-	-
	15	X	-	X	-	-	-	-	-
800	2,5	X	X	X	X	X	X	X	X
	5	X	X	X	X	X	X	X	X
	10	X	X	X	X	X	-	X	-
	15	X	-	X	-	-	-	-	-
1000	2,5	X	X	X	X	X	X	X	X
	5	X	X	X	X	X	X	X	X
	10	X	X	X	X	X	X	X	X
1250	2,5	X	X	X	X	X	X	X	X
	5	X	X	X	X	X	X	X	X
	10	X	X	X	X	X	X	X	X
	15	X	X	X	X	-	-	-	-
1500	2,5	X	X	X	X	X	X	X	X
	5	X	X	X	X	X	X	X	X
	10	X	X	X	X	X	X	X	X
	15	X	X	X	X	-	-	-	-
1600	2,5	X	X	X	X	X	X	X	X
	5	X	X	X	X	X	X	X	X
	10	X	X	X	X	X	X	X	X
	15	X	X	X	X	-	-	-	-
2000	5	X	X	X	X	X	-	X	-
	10	X	X	X	X	X	-	X	-
	15	X	X	X	X	X	-	X	-
2500 *	10	X	-	X	-	X	-	X	-
	15	X	-	X	-	X	-	X	-
	20	X	-	X	-	-	-	-	-
	30	X	-	-	-	-	-	-	-

* I_{cth}: 1,0 x I_{pr}

Accessories: see page 36

Plug-in current transformers

for busbars 2 x 100 x 10 / 3 x 100 x 12 mm

SWR 10030 / SWR 10056

Primary current 400 - 4000 A

Dimensions page 41

Type SWR 10030

Width	129 mm
Depth	30 mm
Busbar size	2x100x10 / 80x60 mm
Round cond.	Ø 85 mm
Accessories incl.	busbar fixing material secondary terminal cover
Weight	approx. 650 g

also possible in class 0,2; 0,2S und 0,5S

Type SWR 10056

Width	129 mm
Depth	30 mm
Busbar size	3x100x12 mm
Round cond.	Ø 56 mm
Accessories incl.	busbar fixing material secondary terminal cover
Weight	approx. 600 g

also possible in class 0,2; 0,2S und 0,5S

Types and variants

Primary current in A	VA	class 1 net € sec. 5 A	class 1 net € sec. 1 A	class 0,5 net € sec. 5 A	class 0,5 net € sec. 1 A	class 1 net € sec. 5 A	class 1 net € sec. 1 A	class 0,5 net € sec. 5 A	class 0,5 net € sec. 1 A
400	2,5	X	X	X	X	X	X	-	-
	5	X	X	-	-	X	X	-	-
500	2,5	X	X	X	X	X	X	-	-
	5	X	X	X	X	X	X	-	-
600	5	X	X	X	X	X	X	X	X
	10	X	X	-	X	X	X	-	-
750	5	X	X	X	X	X	X	X	X
	10	X	X	X	X	X	X	X	X
800	5	X	X	X	X	X	X	X	X
	10	X	X	X	X	X	X	X	X
1000	5	X	X	X	X	X	X	X	X
	10	X	X	X	X	X	X	X	X
	15	X	X	X	-	X	X	X	X
1200	5	X	X	X	X	X	X	X	X
	10	X	X	X	X	X	X	X	X
	15	X	X	X	X	X	X	X	X
1250	5	X	X	X	X	X	X	X	X
	10	X	X	X	X	X	X	X	X
	15	X	X	X	X	X	X	X	X
1500	5	X	X	X	X	X	X	X	X
	10	X	X	X	X	X	X	X	X
	15	X	X	X	X	X	X	X	X
1600	5	X	X	X	X	X	X	X	X
	10	X	X	X	X	X	X	X	X
	15	X	X	X	X	X	X	X	X
2000	5	X	X	X	X	X	X	X	X
	10	X	X	X	X	X	X	X	X
	15	X	X	X	X	X	X	X	X
2500	5	X	X	X	X	X	X	X	X
	10	X	X	X	X	X	X	X	X
	15	X	X	X	X	X	X	X	X
3000*	5	X	X	X	X	X	-	X	X
	10	X	X	X	X	X	X	X	X
	15	X	X	X	X	X	X	X	X
4000*	5	X	-	X	-	X	-	X	-
	10	X	-	X	-	X	-	X	-
	15	X	-	X	-	X	-	X	-

* I_{cth}: 1,0 x I_{pr}

Accessories: see page 36

Notice

Plug-in current transformers

for busbars 2 x 120 x 10 / 4 x 120 x 10 mm

SWR 12030 / SWR 12070

Primary current 400 - 1600 A

Dimensions page 41

Type SWR 12030

Width	159 mm
Depth	30 mm
Busbar size	2x120x10 / 3x100x10 mm
Round cond.	Ø 96 mm
Accessories incl.	busbar fixing material secondary terminal cover
Weight	approx. 900 g

also possible in class 0,2; 0,2S und 0,5S

Type SWR 12070

Width	159 mm
Depth	30 mm
Busbar size	4x120x10 mm
Round cond.	Ø 72 mm
Accessories incl.	busbar fixing material secondary terminal cover
Weight	approx. 950 g

also possible in class 0,2; 0,2S und 0,5S

Types and variants

Primary current in A	VA	class 1 net € sec. 5 A	class 1 net € sec. 1 A	class 0,5 net € sec. 5 A	class 0,5 net € sec. 1 A	class 1 net € sec. 5 A	class 1 net € sec. 1 A	class 0,5 net € sec. 5 A	class 0,5 net € sec. 1 A
400	2,5	X	-	X	X	X	X	-	-
	5	X	X	-	X	X	X	-	-
	10	-	X	-	-	-	-	-	-
500	2,5	-	-	X	X	X	X	-	-
	5	X	X	X	X	X	X	-	-
	10	X	X	-	-	-	-	-	-
	15	-	X	-	-	-	-	-	-
600	2,5	-	-	X	X	-	-	X	X
	5	X	X	X	X	X	X	X	X
	10	X	X	-	X	X	X	-	-
	15	X	-	-	-	-	-	-	-
750	5	X	X	X	X	X	X	X	X
	10	X	X	X	X	X	X	-	-
	15	X	X	X	X	-	-	-	-
	20	X	X	-	-	-	-	-	-
800	5	X	X	X	X	X	X	X	X
	10	X	X	X	X	X	X	-	-
	15	X	X	X	X	-	-	-	-
	20	X	X	-	-	-	-	-	-
1000	5	X	X	X	X	X	X	X	X
	10	X	X	X	X	X	X	X	X
	15	X	X	X	X	X	X	-	-
	30	X	X	X	X	-	-	-	-
1250	5	X	X	X	X	X	X	X	X
	10	X	X	X	X	X	X	X	X
	15	X	X	X	X	X	X	-	-
	20	X	X	X	X	-	-	-	-
1500	5	-	X	X	X	X	X	X	X
	10	X	X	X	X	X	X	X	X
	15	X	X	X	X	X	X	-	-
	20	X	X	X	X	-	-	-	-
1600	5	X	X	X	X	X	X	X	X
	10	X	X	X	X	X	X	X	X
	15	X	X	X	X	X	X	-	-
	20	-	-	X	X	-	-	-	-
	30	X	X	-	-	-	-	-	-

Accessories: see page 36

Plug-in current transformers

for busbars 2 x 120 x 10 / 4 x 120 x 10 mm

SWR 12030 / SWR 12070

Primary current 2000 - 6000 A

Dimensions page 41

Type SWR 12030

Width	159 mm
Depth	30 mm
Busbar size	2x120x10 / 3x100x10 mm
Round cond.	Ø 96 mm
Accessories incl.	busbar fixing material secondary terminal cover
Weight	approx. 900 g

also possible in class 0,2; 0,2S und 0,5S

Type SWR 12070

Width	159 mm
Depth	30 mm
Busbar size	4x120x10 mm
Round cond.	Ø 72 mm
Accessories incl.	busbar fixing material secondary terminal cover
Weight	approx. 950 g

also possible in class 0,2; 0,2S und 0,5S

Types and variants

Primary current in A	VA	class 1 net € sec. 5 A	class 1 net € sec. 1 A	class 0,5 net € sec. 5 A	class 0,5 net € sec. 1 A	class 1 net € sec. 5 A	class 1 net € sec. 1 A	class 0,5 net € sec. 5 A	class 0,5 net € sec. 1 A
2000	5	X	X	X	X	X	X	X	X
	10	X	X	X	X	X	X	X	X
	15	X	X	X	X	X	X	X	X
	30	X	X	X	X	-	-	-	-
2500	10	X	X	X	X	X	X	X	X
	15	X	X	X	X	X	X	X	X
	30	X	X	X	X	X	X	-	-
3000	10	X	X	X	X	X	X	X	X
	15	X	X	X	X	X	X	X	X
	30	X	X	X	X	X	X	-	-
	45	X	X	X	X	-	-	-	-
4000	10	X	X	X	X	X	X	X	X
	15	X	X	X	X	X	X	X	X
	30	X	X	X	X	X	X	-	-
	45	X	X	X	X	-	-	-	-
5000*	10	-	-	-	-	X	-	X	-
	20	-	-	-	-	X	-	X	-
	30	-	-	-	-	X	-	X	-
6000*	10	-	-	-	-	X	-	X	-
	20	-	-	-	-	X	-	X	-
	30	-	-	-	-	X	-	X	-

* I_{cth}: 1,0 x I_{pr}

Accessories: see page 36

Plug-in current transformers

for busbars 3 x 140 x 10 mm

SWR 14050

Primary current 1000 - 7000 A

Type SWR 14050

Width	200 mm
Depth	50 mm
Busbar size	3x140x10 mm
Round cond.	Ø 56 mm
Accessories incl.	busbar fixing material secondary terminal cover
Weight	approx. 900 g

also possible in class 0,2; 0,2S und 0,5S

Dimensions page 42

Types and variants

Primary current in A	VA	class 1 net € sec. 5 A	class 1 net € sec. 1 A	class 0,5 net € sec. 5 A	class 0,5 net € sec. 1 A
1000	5	X	-	X	-
	10	X	-	X	-
2000	10	X	-	X	-
	15	-	-	X	-
	20	X	-	-	-
3000	10	X	-	X	-
	15	-	-	X	-
	20	X	-	-	-
4000	10	X	-	X	-
	15	-	-	X	-
	20	X	-	-	-
5000	10	X	-	X	-
	15	-	-	X	-
	20	X	-	-	-
7000*	10	X	-	X	-
	20	X	-	X	-
	30	X	-	X	-

* I_{cth}: 1,0 x I_{pr}

Accessories: see page 36

Wound primary CT's

for direct connection

WSR 60

Primary current 1 - 40 A

Dimensions page 42

Type WSR 60

Width	60 mm
Depth	30 mm
Busbar size	-- mm
Round cond.	-- mm
Accessories incl.	foot fastening brackets secondary terminal cover
Weight	approx. 250 g

Types and variants

Primary current in A	VA	class 1 net € sec. 5 A	class 1 net € sec. 1 A	class 0,5 net € sec. 5 A	class 0,5 net € sec. 1 A
1	2,5	X	X	X	X
	5	X	X	X	X
2	2,5	X	X	X	X
	5	X	X	X	X
2,5	2,5	X	X	X	X
	5	X	X	X	X
4	2,5	X	X	X	X
	5	X	X	X	X
5	2,5	X	X	X	X
	5	X	X	X	X
6	2,5	X	X	X	X
	5	X	X	X	X
7,5	2,5	X	X	X	X
	5	X	X	X	X
10	2,5	X	X	X	X
	5	X	X	X	X
12,5	2,5	X	X	X	X
	5	X	X	X	X
15	2,5	X	X	X	X
	5	X	X	X	X
20	2,5	X	X	X	X
	5	X	X	X	X
25	2,5	X	X	X	X
	5	X	X	X	X
30	2,5	X	X	X	X
	5	X	X	X	X
40	2,5	X	X	X	X
	5	X	X	X	X

Accessories: see page 36

General description summary current transformers

Application

Summary current transformers are suitable for the summation of several synchronized alternating currents with similar phases but with differing load phase shifts. It is also possible to have the summation of currents with varied nominal voltages of similar phase positions. These measurements cannot be used for tariff applications, as the existing voltage differences are recorded as errors.

With the counter connection of the main transformer to the summation current transformer, it is possible to receive secondary currents which are proportional to the differences of the primary input currents. The built-in technical know-how enables the summary current transformers to add secondary currents of varying nominal transmissions from the main transformer.

Connection of main transformers with similar transmission ratios
It is irrelevant for the main transformers with similar nominal transmission ratios, to which primary circuit of the summary current transformer the connection is made.

Connection of main transformers with different transmission ratios
With main transformers of different nominal transmission ratios, care must be taken to adhere to the assigned connection to the terminals of the summary current transformers. Is the current flow in the main transformer interrupted, the secondary circuit of the main transformer must neither be short-circuited nor be connected to the summary current transformer, or to the main transformer.

Summary current transformers with unallocated primary circuits must remain open for a later connection to an additional main transformer. The secondary output current of the summary current transformer is in this instance lower than the secondary nominal current of the summary current transformer by a quantity equal to the ratio of the primary nominal current of this "missing" main transformer and the sum of all the primary nominal currents of the main transformer.

A measuring device with a measuring range equal to the secondary nominal current of the total current transformer can be used to display the „total current".

The ratio of the primary current of a main transformer to the sum of the primary currents of all main current transformers the ratio must not exceed 1:8.

Caluclation and interpretation of summary current transformers

Example:

Actual situation:	3 transmission ratios	1000/5 A
		800/5 A
		600/5 A
	Overall current	2400/5 A
Burden:	1 current meter	
	1 power redorder	
Locking for:	Summary CT and the VA power of the individual main transformers	

Required active performance of the summary current transformer:

Current meter	1,5 VA
Power recorder	7,0 VA
Measurement line loss	1,5 VA
Consumption summary CT	4,0 VA
Interim result	14,00 VA

The individual transformer must provide it's VA share from this 14.0 VA corresponding to its ratio to the "total transmission". Consideration must also be given to the respective power loss between the main transformer and the summary transformer plus other possible losses.

1. Main transformer 1000/5 A	1000
	2400 x 14,0 = 5,83 VA + additional possible losses
2. Main transformer 800/5 A	800
	2400 x 14,0 = 4,67 VA + additional possible losses
3. Main transformer 600/5 A	600
	2400 x 14,0 = 3,50 VA + additional possible losses

The VA values of the main transformers are to be rounded up to the corresponding VA values in our charts.

Summary current transformers

for 2 to 9 primary circuits

SSWR 2 to SSWR 9

Type SSWR 2 bis 9

Width	45 (size 1)/100 (size 2) mm
Depth	73 mm
Primary circuits	2 to 9
Accessories incl.	integrated DIN top hat rail mounting

Maßzeichnungen Seite 42

Weight approx.. 350 - 600 g

If different main circuit inputs are use, these must be specified when ordering!

Types and variants

Primary circuits (no. of)	VA/ housing size	Primary current 5 A				Primary current 1 A			
		Class 1		Class 0,5		Class 1		Class 0,5	
		net € sec. 5 A	net € sec. 1 A	net € sec. 5 A	net € sec. 1 A	net € sec. 5 A	net € sec. 1 A	net € sec. 5 A	net € sec. 1 A
2	2,5/1	X	X	X	X	X	X	X	X
	5/1	X	X	X	X	X	X	X	X
	10/1	X	X	X	X	X	X	X	X
	15/1	X	X	X	X	X	X	X	X
	30/2	X	X	X	X	X	X	X	X
3	2,5/1	X	X	X	X	X	X	X	X
	5/1	X	X	X	X	X	X	X	X
	10/1	X	X	X	X	X	X	X	X
	15/1	X	X	X	X	X	X	X	X
	30/2	X	X	X	X	X	X	X	X
4	2,5/1	X	X	X	X	X	X	X	X
	5/1	X	X	X	X	X	X	X	X
	10/1	X	X	X	X	X	X	X	X
	15/1	X	X	X	X	X	X	X	X
	30/2	X	X	X	X	X	X	X	X
5	2,5/2	X	X	X	X	X	X	X	X
	5/2	X	X	X	X	X	X	X	X
	10/2	X	X	X	X	X	X	X	X
	15/2	X	X	X	X	X	X	X	X
	30/2	X	X	X	X	X	X	X	X
6	2,5/2	X	X	X	X	X	X	X	X
	5/2	X	X	X	X	X	X	X	X
	10/2	X	X	X	X	X	X	X	X
	15/2	X	X	X	X	X	X	X	X
	30/2	X	X	X	X	X	X	X	X
7	2,5/2 5/2 10/2 15/2 30/2	on request		on request		on request		on request	
8	2,5/2 5/2 10/2 15/2 30/2	on request		on request		on request		on request	
9	2,5/2 5/2 10/2 15/2 30/2	on request		on request		on request		on request	

Accessories: see page 36

Split-core current transformers

for round conductors up to 18,5 / 28 mm

SWUR 18 / SWUR 28

Primary current 50 - 500 A

Maßzeichnungen Seite 43

Type SWUR 18

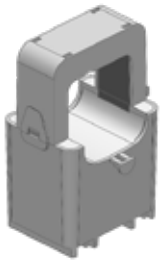
With	44,4 mm
Depth	44,6 mm
Busbar size	--
Round cond.	Ø 18,5 mm
Accessories incl.	foot fastening brackets click-off hinge connection cable length =1,5 m 2x0,75 mm² at 1 A sec. 2x2,5 mm² at 5 A sec.
Weight	approx. 150 g

Type SWUR 28

Width	43,9 mm
Depth	43,7 mm
Busbar size	--
Round cond.	Ø 28 mm
Accessories incl.	foot fastening brackets click-off hinge connection cable length =1,5 m 2x0,75 mm² at 1 A sec. 2x2,5 mm² at 5 A sec.
Weight	approx. 220 g

Types and variants

Primary current in A	VA	class 3 net € sec. 5 A	class 3 net € sec. 1 A	class 1 net € sec. 5 A	class 1 net € sec. 1 A	class 3 net € sec. 5 A	class 3 net € sec. 1 A	class 1 net € sec. 5 A	class 1 net € sec. 1 A
50	1	-	X	-	-	-	-	-	-
60	0,6	X	-	-	-	-	-	-	-
	1,25	-	X	-	-	-	-	-	-
63	0,6	X	-	-	-	-	-	-	-
	1,25	-	X	-	-	-	-	-	-
75	0,6	X	-	-	-	-	-	-	-
	1,25	-	X	-	-	-	-	-	-
80	0,6	X	-	-	-	-	-	-	-
	1,25	-	X	-	-	-	-	-	-
100	0,2	-	-	X	X	-	-	-	-
	0,6	X	-	-	-	-	-	-	-
	1,5	-	X	-	-	-	-	-	-
125	0,2	-	-	X	-	-	-	-	-
	0,4	-	-	-	X	-	-	-	-
	0,6	X	-	-	-	-	-	-	-
	1,5	-	X	-	-	-	-	-	-
150	0,4	-	-	X	-	-	-	-	-
	0,5	-	-	-	-	X	X	-	-
	0,6	X	-	-	X	-	-	-	-
	2	-	X	-	-	-	-	-	-
200	0,5	-	-	-	-	X	X	-	-
	0,6	-	-	X	-	-	-	-	-
	1,25	-	-	-	X	-	-	-	-
	1,5	X	-	-	-	-	-	-	-
	2,5	-	X	-	-	-	-	-	-
250	0,5	-	-	-	-	X	X	X	X
	0,6	-	-	X	-	-	-	-	-
	2,5	X	-	-	X	-	-	-	-
	3,75	-	X	-	-	-	-	-	-
300	0,5	-	-	-	-	-	-	X	X
	1	-	-	-	-	X	X	-	-
400	0,5	-	-	-	-	-	-	X	X
	1,5	-	-	-	-	X	X	-	-
500	1	-	-	-	-	-	-	X	X
	2	-	-	-	-	X	X	-	-



Split-core current transformers

for round conductors up to 42 mm

SWUR 42

Primary current 400 - 800 A

Dimensions page 43

Type SWUR 42

Width	60,5 mm
Depth	45,8 mm
busbar size	--
Round cond.	Ø 42 mm
Accessories incl.	foot fastening brackets click-off hinge connection cable length = 3 m, 2x0,5 mm² at 1 A sec or 1,5m, 2x2,5 mm² at 5 A sec.
Weight	approx. 150 g

Types and variants

Primary current in A	VA	class 3 net € sec. 5 A	class 3 net € sec. 1 A	class 1 net € sec. 5 A	class 1 net € sec. 1 A
400	2,5	-	-	X	-
	3,75	X	-	-	X
	5	-	X	-	-
500	2,5	-	-	X	-
	3,75	X	-	-	X
	5	-	X	-	-
600	3,75	-	-	X	-
	5	X	X	-	X
750 *	5	X	-	X	X
	7,5	-	X	-	-
800 *	5	X	-	X	X
	7,5	-	X	-	-

* I_{cth}: 1,0 x I_{pr}

Accessories for current transformers

Snap-on brackets, plastic version (rigid)

for mounting the current transformer on standard top hat rail TH 35 mm (DIN EN 60715)

€

Variants

Form	for CT type	
A (30 mm)	RSWR 21, SWR3010, SWR 4010, SWR-L 4010, SWR-S 5010, SWR 5010 SWR-S 6010, SWR 6010, SWR 6040, SWR 8010, SWR 8030	X
B (35 mm)	RSWR 28, SWR-L 3010, SWR-K 4010	X
C (49 mm)	SWR-S 3010, SWR-S 4010	X
E (SWUR)	SWUR 18, SWUR 28, SWUR 42	X

Snap-on mounting base, metal version (rotatable)

for mounting the current transformer on standard top hat rail TH 35 mm (DIN EN 60715)

€

Variants

Form	for CT type	
D1 (35 mm)	SWR-L 3010, SWR-K 4010	X
D2 (49 mm)	SWR-S 3010, SWR-S 4010	X

Isolating caps

for protection of primary busbar mounting screws

€

Variants

Form	for all types	
P	alle Typen	X

More accessories

More accessories available on request e.g.:

- Copper tubes for use with Tube-unit CT's
- Copper bubars for use with Plug-in CT's

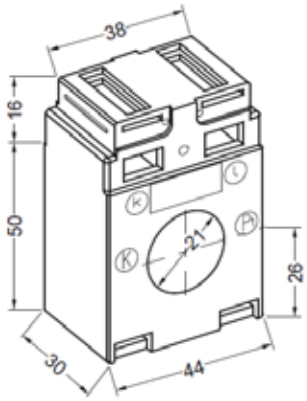
Spare parts

Spare parts on request:
- Busbar fixing brackets
- Busbar mounting screws
- Foot fastening brackets
- Secondary terminal covers
- Click-off hinges for split-core CT's

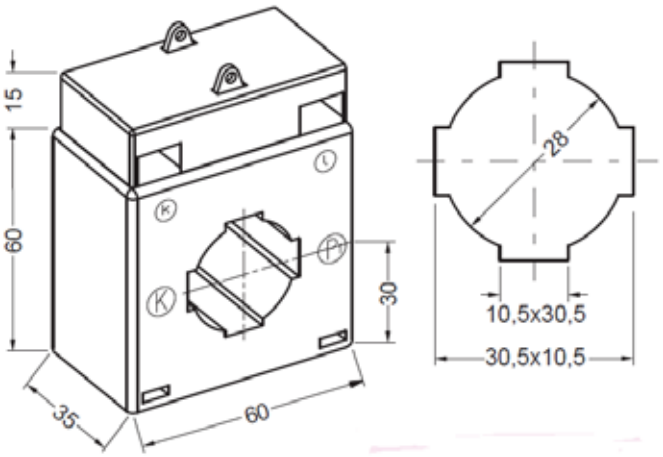
Notice

Dimensional drawings tube-unit current transformers

RSWR 21

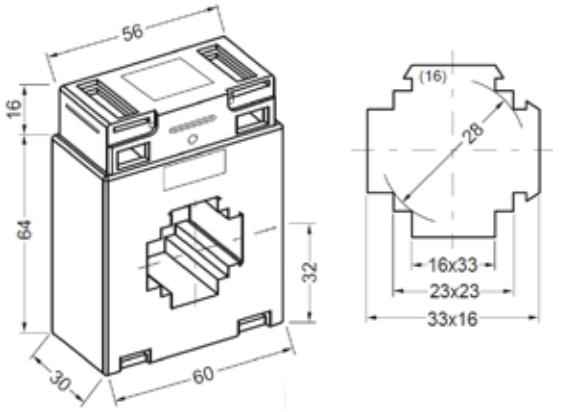


RSWR 28

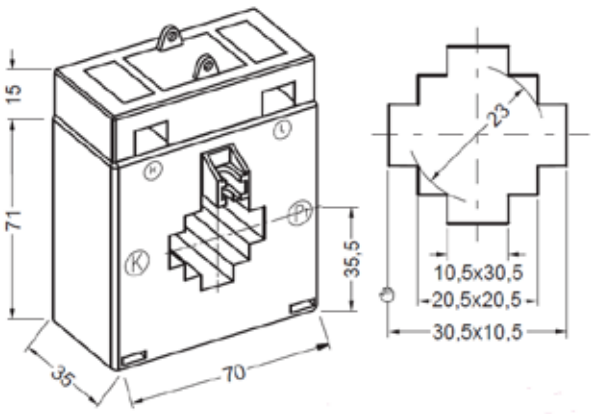


Dimensional drawings plug-in current transformers

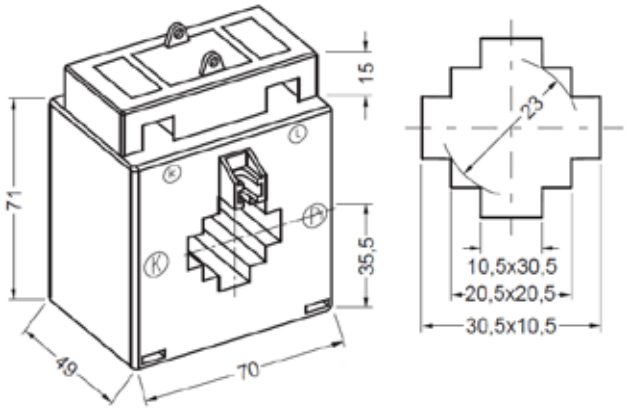
SWR 3010



SWR-L 3010

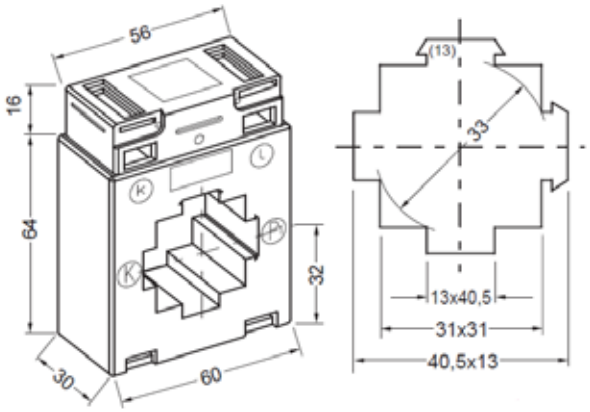


SWR-S 3010

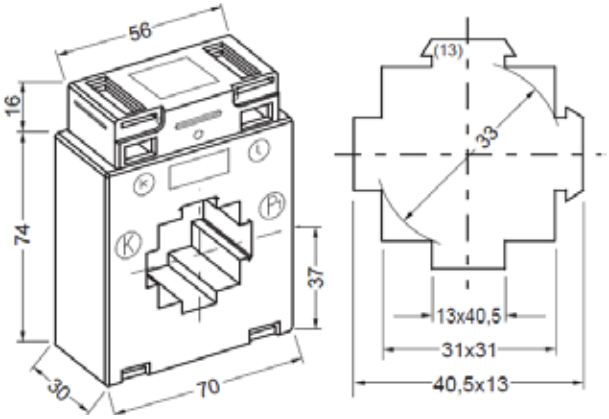


Dimensional drawings plug-in current transformers

SWR 4010



SWR-L 4010



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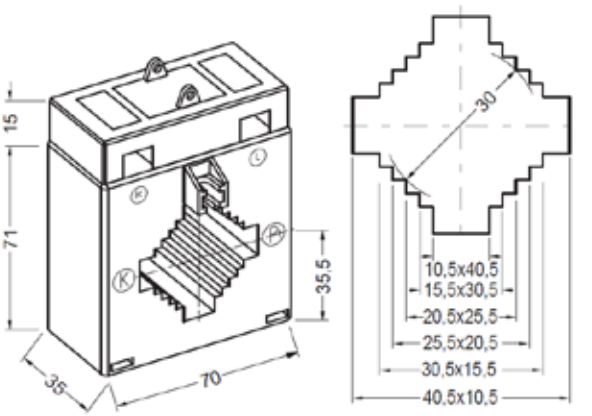

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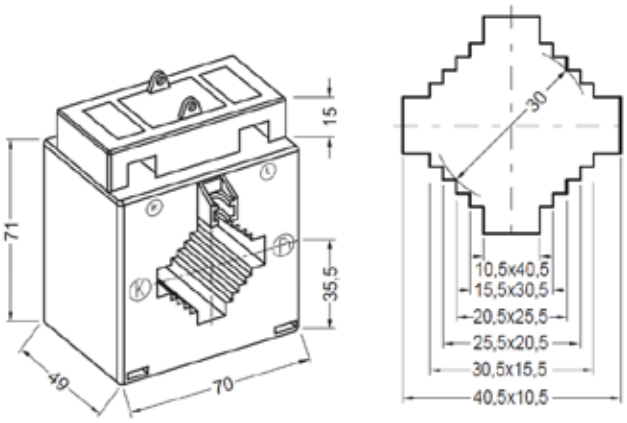

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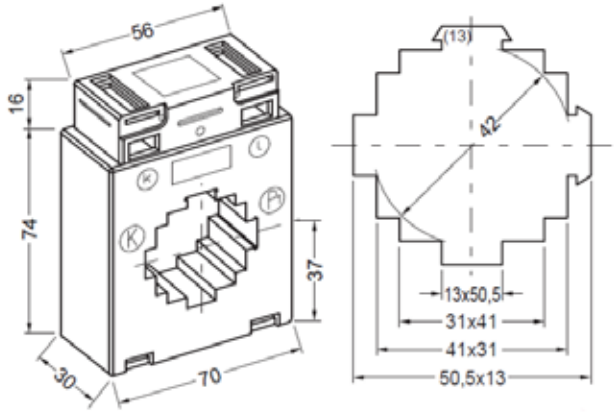
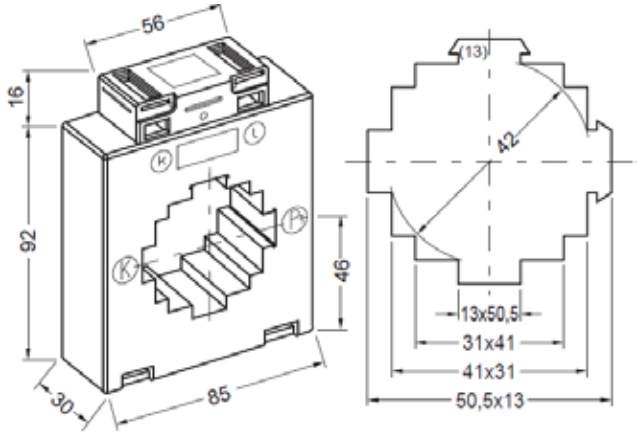
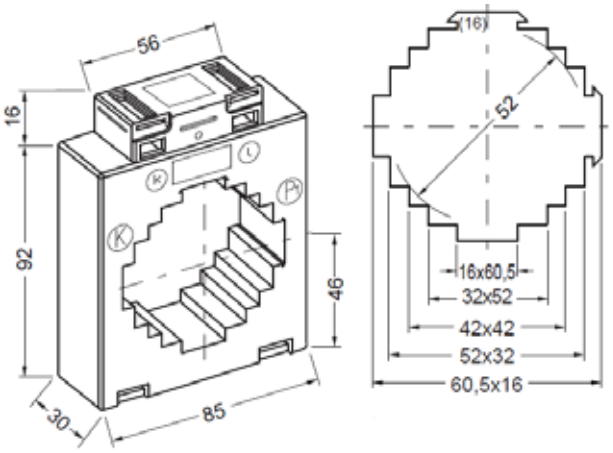


SWR 5010

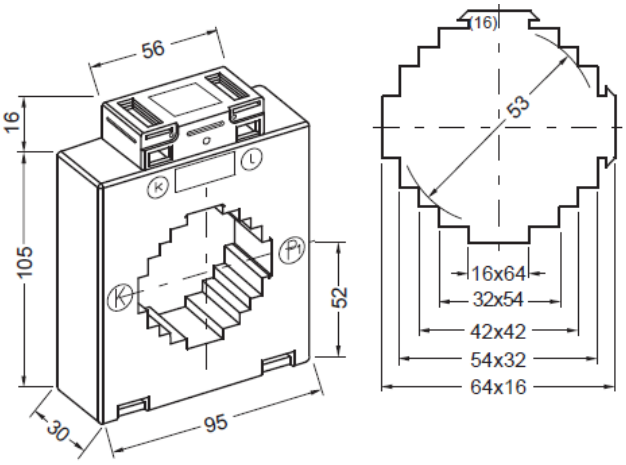


Dimensional drawings plug-in current transformers

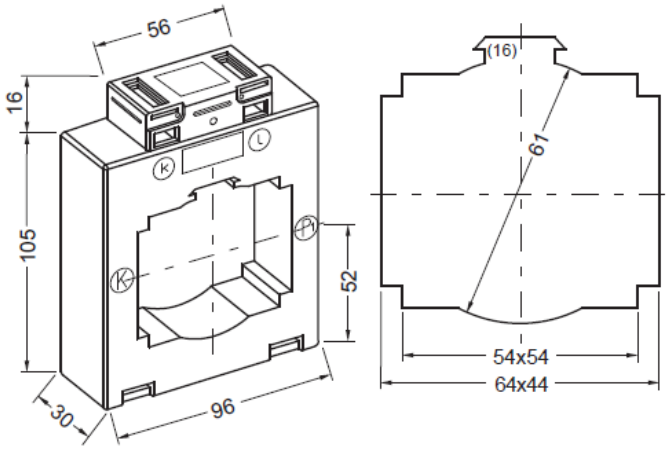
SWR-S 6010



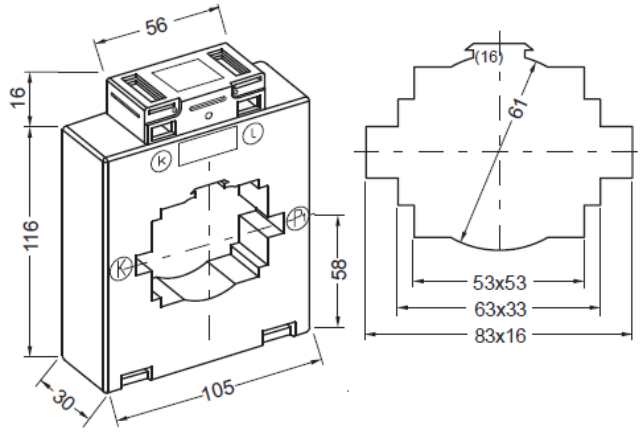
SWR 6010



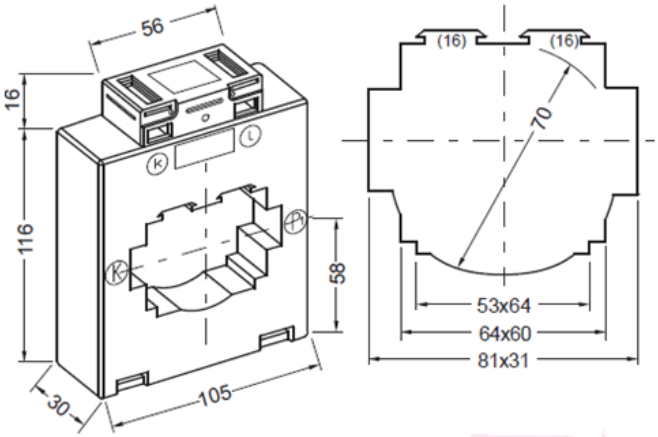
SWR 6040



SWR 8010

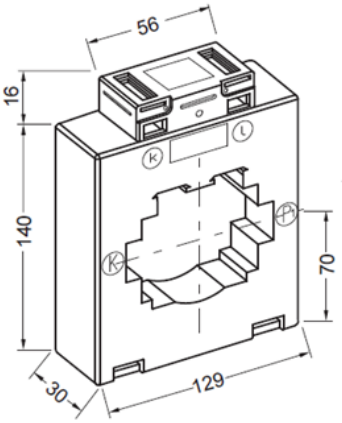


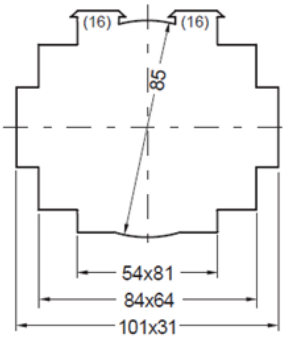
SWR 8030



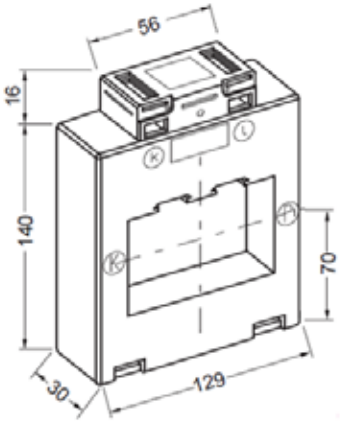
Dimensional drawings plug-in current transformers

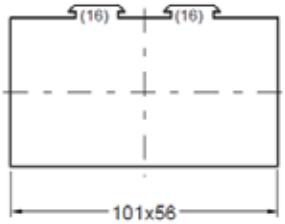
SWR 10030





SWR 10056





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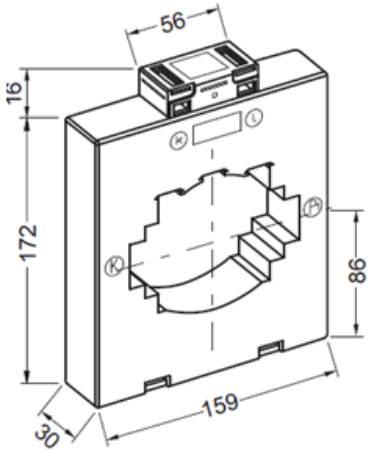
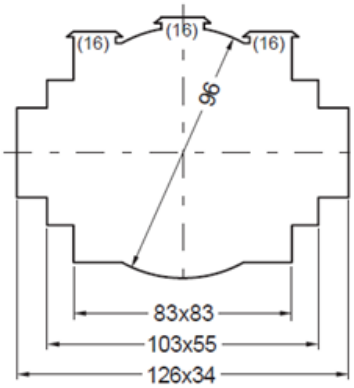
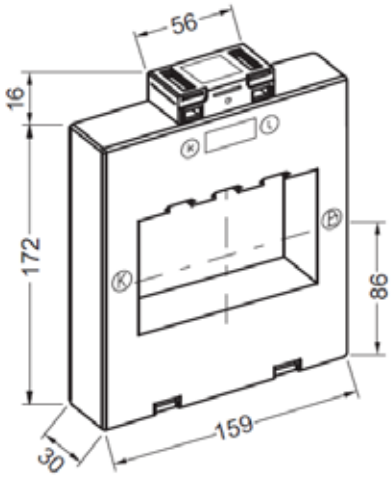
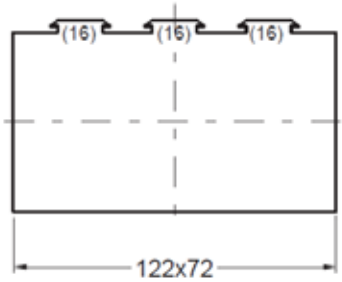




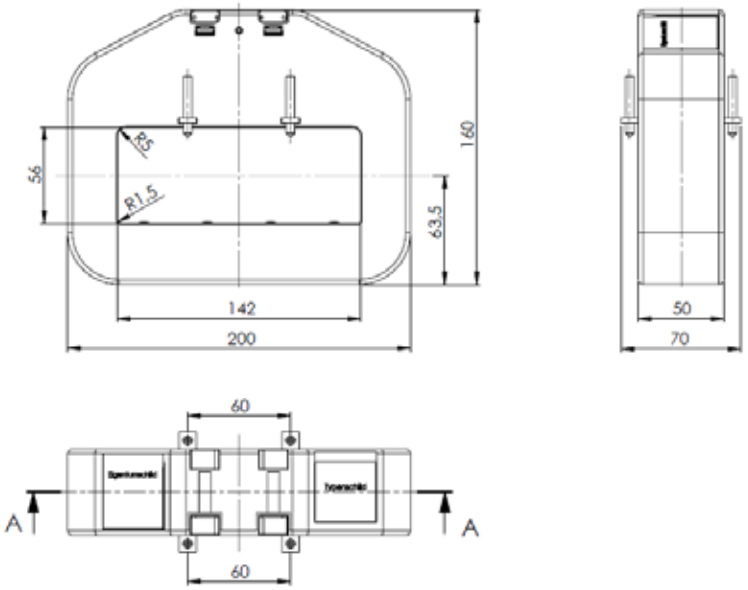
SWR 12070



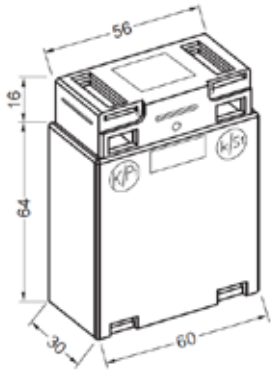


Dimensional drawings plug-in CT's, wound primary CT's, summary CT's

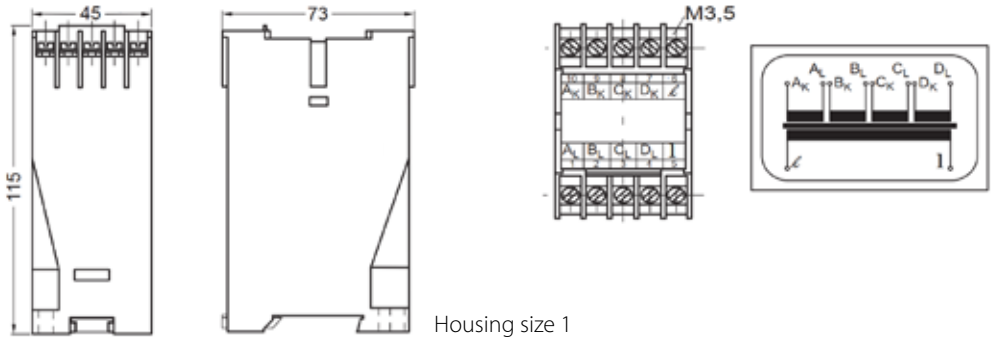
SWR 14050



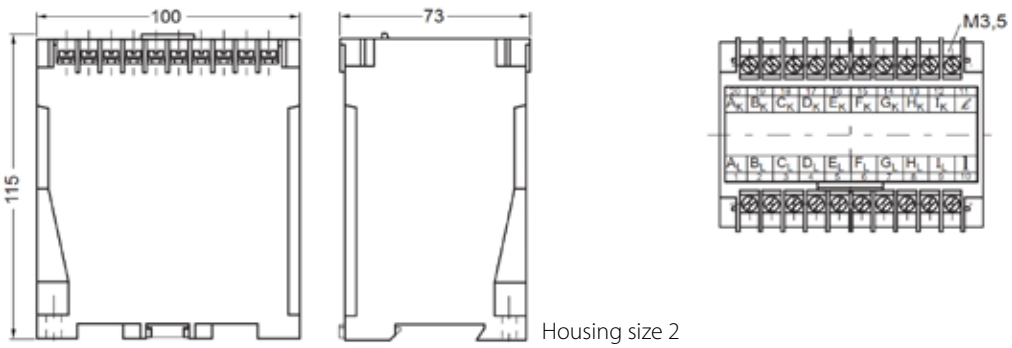
WSR 60



SSWR 2 bis 9



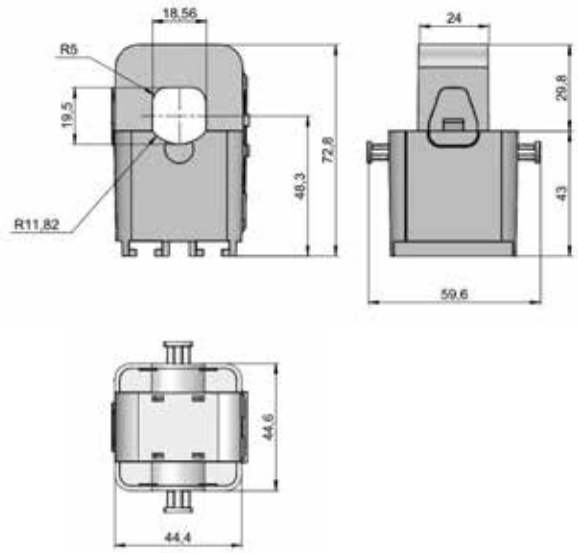
Housing size 1



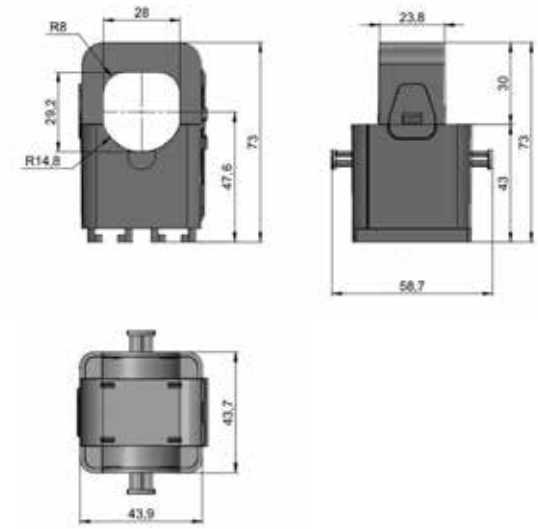
Housing size 2

Dimensional drawings split core current transformers

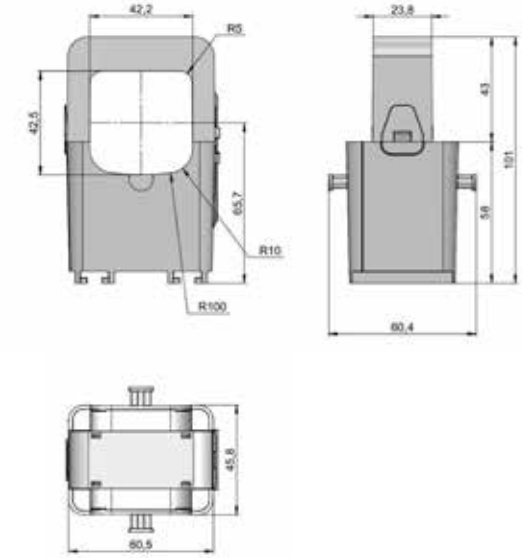
SWUR 18



SWUR 28

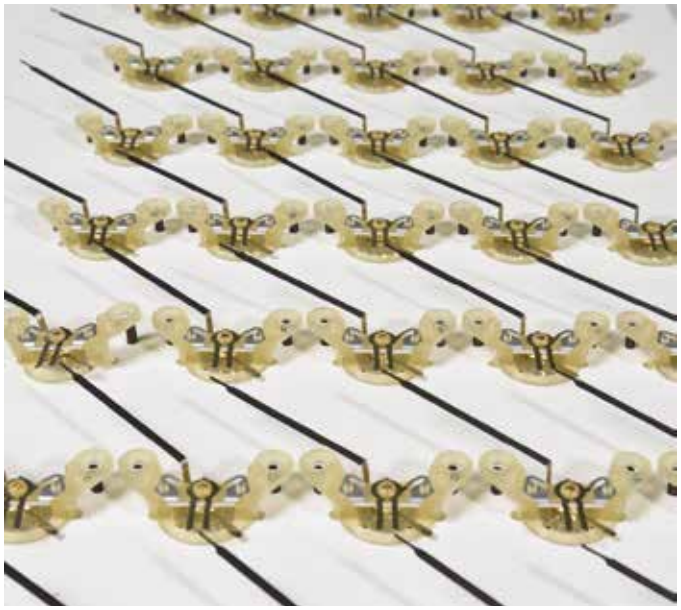


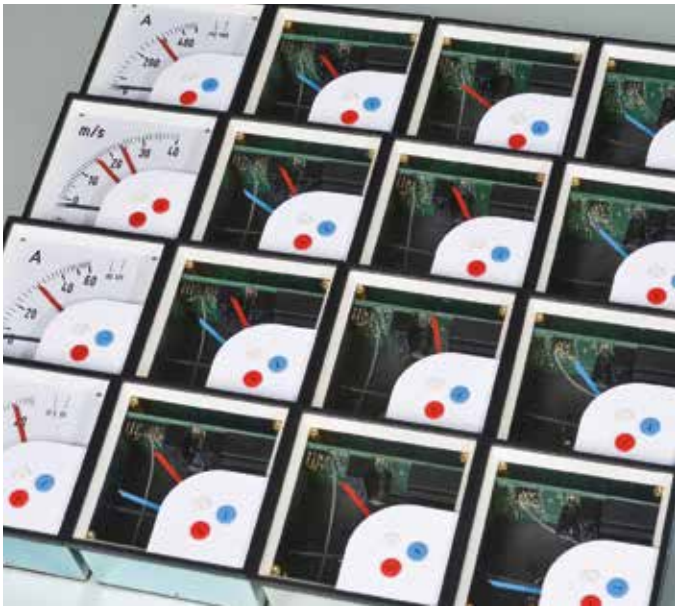
SWUR 42

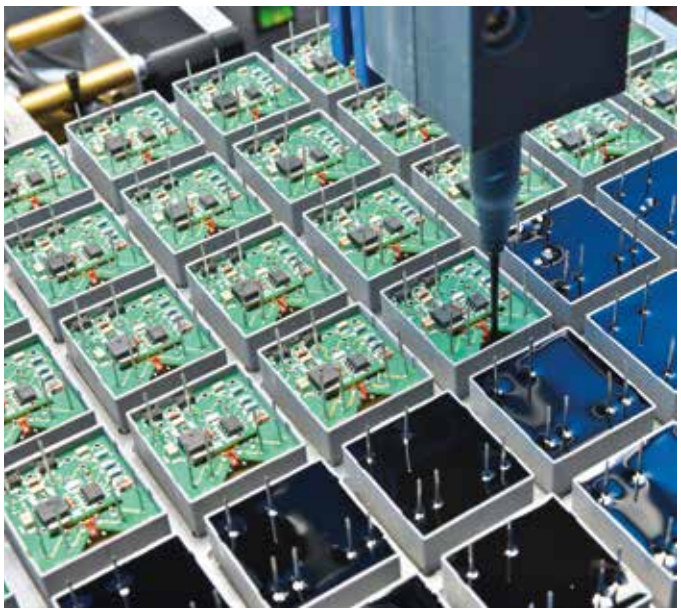


Notice

Precision and service are the measure of all things







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