

WE MAKE YOUR VALUES VISIBLE.



LOW VOLTAGE CURRENT TRANSFORMER ASK 105.3 AND ASK 127.3

Perfect measurement results
that you can rely on.

Plug-in current transformer ASK 105.3

Plug-in current transformer ASK 127.3





SAFETY APPLIANCE TESTERS



LOW- AND MEDIUM- VOLTAGE CURRENT TRANSFORMERS



ENERGY MANAGEMENT



ANALOGUE PANEL METERS



DIGITAL PANEL METERS



MEASURING TRANSDUCERS



THERMAL PRINTERS



SHUNTS



SWITCHBOARD COMPONENTS



VOLTAGE DIVIDER



LOW VOLTAGE SWITCHGEAR

Table of contents

Technical information **starting on page 4**

General technical information	starting on page 4
Error limit values of class 0.2 ... 3	starting on page 5
Error limit values of the current transformer for protection purposes	starting on page 5
Permissible current of bus bar dimensions and current values	starting on page 5
Markings of the current transformer's connection terminals	starting on page 6
Error curves of low voltage current transformers	starting on page 6
Power requirements of measuring units and relays	starting on page 7
Own Power consumption requirement of typical measuring units	starting on page 7
Self-consumption of cooper lines	starting on page 7

ASK 105.3 **starting on page 8**

Tabele Primary current / Secondary current	starting on page 8
--	--------------------

ASK 127.3 **starting on page 12**

Tabele Primary current / Secondary current	starting on page 12
--	---------------------

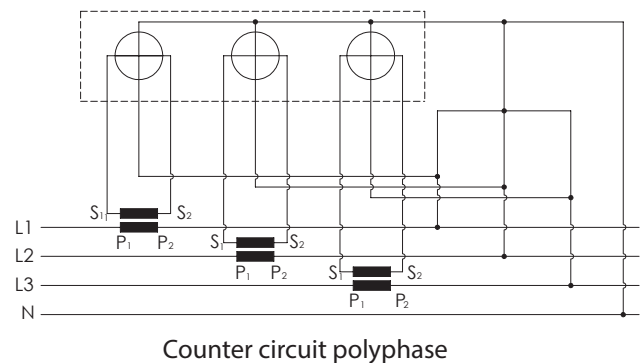
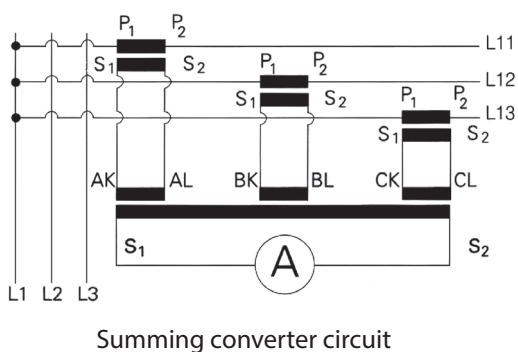
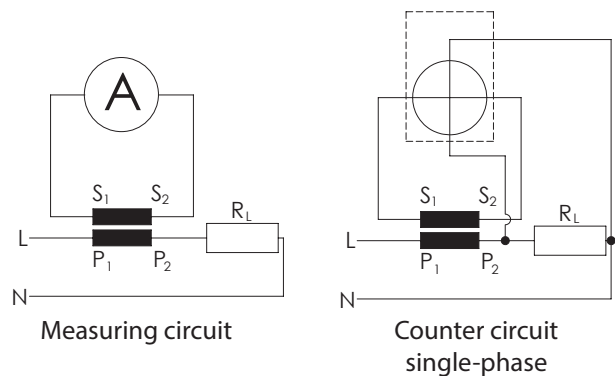
General technical information:

Rated frequency	50 (60) Hz (16 2/3 bis 400 Hz upon request)
Maximum voltage for electrical equipment	$U_m \leq 0,72 \text{ kV}$ $U_m \leq 1,2 \text{ kV}$ (type CTB)
Isolation class	E, F
Isolation testing voltage	3 kV, 1 min., $U_{\text{effr}} 50 \text{ Hz}$ ($U_m \leq 0,72 \text{ kV}$) 6 kV, 1 min., $U_{\text{effr}} 50 \text{ Hz}$ ($U_m \leq 1,2 \text{ kV}$)
Thermal nominal continuous rated current	$I_{\text{CTH}} = 1,0 \times I_{\text{pr}}$ (higher values upon request) $I_{\text{CTH}} = 1,2 \times I_{\text{pr}}$ (types EASK, CTB, ASK 105.3 and ASK 127.3)
Thermal rated short time current	$I_{\text{th}} = 60 \times I_{\text{pr}}$ 1 sec (max. 100 kA) (types ASK, ASR, EASK, EASR, KBR, KBU, CTB) $I_{\text{th}} = 40 \times I_{\text{pr}}$ 1 sec (max. 100 kA) (types WSK, KSU, SUSK)
Ratio surge current	$I_{\text{dyn}} = 2,5 \times I_{\text{th}}$
Over current-/limit factor	FS 5 to 10 (exact specification, on the name plate)
Working temperature range	$-5^\circ\text{C} \leq \vartheta \leq +50^\circ\text{C}$
Storage temperature range	$-25^\circ\text{C} \leq \vartheta \leq +70^\circ\text{C}$
Applied norms	DIN EN 61869/1+2 DIN 42600-1 edition 08/1973 DIN 42600-2 edition 05/1983

The installation of current transformers and the locked measuring appliance is only allowed if the unit is without voltage! The wiring of the current transformers follows under using the following junction diagrams.

While using the current transformer with opened secondary circuit there may be dangerous voltages for man at the secondary connections.

An opened using of the secondary circuit of current transformers is therefore not allowed! Before an exchange of measure appliance in the secondary circuit of the current transformer there must be a short-circuit on his secondary connections.



Error limit values of class 0.2...3 according to DIN IEC 61869/2 edition 09/12

Accuracy class	Current error $\pm \Delta_f$ at					Phase displacement error $\pm \Delta_f$ at				
	$1,2 I_{pr}$	$0,2 I_{pr}$	$0,1 I_{pr}$	$0,05 I_{pr}$	$0,01 I_{pr}$	$1,2 I_{pr}$	$0,2 I_{pr}$	$0,1 I_{pr}$	$0,05 I_{pr}$	$0,01 I_{pr}$
	$1,0 I_n$					$1,0 I_n$				
	%	%	%	%	%	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*									

*at $0,5 I_{pr}$ and thermal nominal continuous current

Error limit values of the current transformer for protection purposes

Accuracy class	Current error $\pm F_i$ at		Phase displacement error $\pm F_i$ at	
	$1,0 I_n$ and thermal nominal continuous current		$1,0 I_n$ and thermal nominal continuous current	
	%		minutes	
5 P...	1		60	
10 P...	3			

Total error F_g at nominal rated error limit current and nominal burden class 5P... $\leq 5\%$
class 10P... $\leq 10\%$

Permissible current of bus bar dimensions and current values according to DIN 43671

Bus bar cross section	1 bus bar	2 bus bars	3 bus bars
20 x 10	427 A	825 A	1180 A
30 x 05	379 A	672 A	896 A
30 x 10	573 A	1060 A	1480 A
40 x 05	482 A	836 A	1090 A
40 x 10	715 A	1290 A	1770 A
50 x 10	852 A	1510 A	2040 A
60 x 10	985 A	1720 A	2300 A
80 x 10	1240	2110 A	2790 A
100 x 10	1490 A	2480 A	3260 A
Bus bar surface		Clear	

Above mentioned values are applicable for continuous current load at approximately 30°C ambient temperature.

Markings of the current transformers' connection terminals

The connections of all primary windings are marked with capital letters „P1“ and „P2“, the connections of all secondary windings are marked with the corresponding lower case letters „s1“ and „s2“.

By current transformers with a multiple secondary windings the winding end is marked „l“ followed by the prefix „l1“, the windings with a decreasing number of windings are sequentially numbered to „2“; „3“ etc.

By summation current transformers with a multiple of independent primary windings, the terminals of the individual windings are distinguishable from the terminal details „K“ or „L“ set before the capital letters „A“, „B“, „C“...

By summation current transformers which are for the connection of different main transformers, the connection of the main transformer with the highest ratio transmission is made to the lowest terminal pair („AK“ - „AL“). The correct order of connection can also be seen from the name plate which bears an information of the individual nominal currents.

Example:

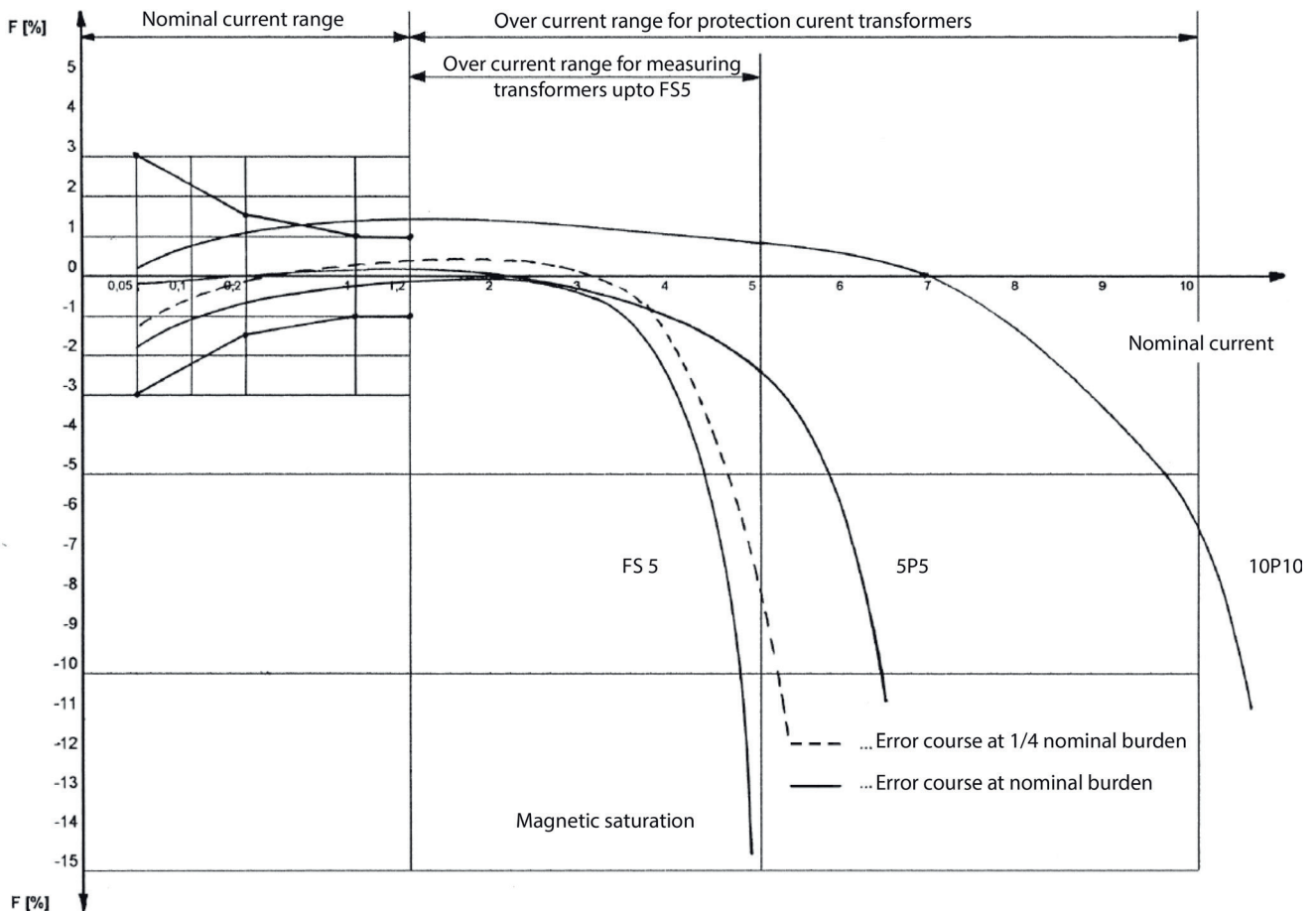
Main current transformer 1: 300/5A

Main current transformer 2: 150/5A

Main current transformer 3: 100/5A

-> Information on the name plate: $6_A : 3_B : 2_C$

Error curves of low voltage current transformers



Power requirements of measuring units and relays

By application of current transformers, two main demands will be requested from the user:

- high degree of measuring precision in the nominal current range
- protection function in the over current range

For the realization of the demands it is necessary that the assumed nominal power of the current transformer is largely adapted to the actual power requirements of the measuring set up. For the appraisal of the actual power requirements, apart of the own power consumption requirements of the connected measuring units, also the conductor losses must be considered which are connected to the secondary circuit of the transformer measuring conductors.

Own Power consumption requirement of typical measuring units

Current meter soft iron up to 100 mm Ø	0.700	-	1.5	VA
Rectifier current meter	0.001	-	0.25	VA
Multi range current meter	0.005	-	5.0	VA
Current recorder	0.300	-	9.0	VA
Bimetal-current meter	2.500	-	3.0	VA
Power factor meter	0.200	-	5.0	VA
Power factor recorder	3.000	-	12.0	VA
Power factor meter	2.000	-	6.0	VA
Power factor recorder	9.000	-	16.0	VA
Meter	0.400	-	1.0	VA
Relay N-Relay			14.0	VA
Over current-Relay	0.200	-	6.0	VA
Over current time-Relay	3.000	-	6.0	VA
Richtungsrelais			10.0	VA
Bimetal-Relay	7.000	-	11.0	VA
Distance-Relay	1.000	-	30.0	VA
Differential-Relay	0.200	-	2.0	VA
	1.000	-	15.0	VA
Current transformer trip switch	5.000	-	150.0	VA
Controler	5.000	-	180.0	VA

Self-consumption of copper lines

$$P_v = \frac{I_s^2 \times 2 \times l}{A_{cu} \times 56} \text{ VA}$$

I_s = Secondary rated current intensity [A]
 l = single wire length in meter
 A_{cu} = wire cross section in mm²
 P_v = power loss of the connection leads

Comment: By joint AC return the half values of P_v are applicable.

Chat for values referring to 5 A

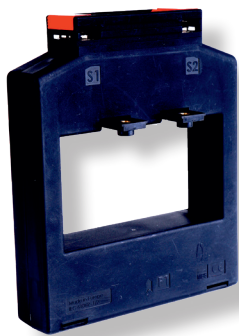
Nominal cross section	1 m	2 m	3 m	4 m	5 m	6 m	7 m	8 m	9 m	10 m
2.5 mm ²	0.36	0.71	1.07	1.43	1.78	2.14	2.50	2.86	3.21	3.57
4.0 mm ²	0.22	0.45	0.67	0.89	1.12	1.34	1.56	1.79	2.01	2.24
6.0 mm ²	0.15	0.30	0.45	0.60	0.74	0.89	1.04	1.19	1.34	1.49
10.0 mm ²	0.09	0.18	0.27	0.36	0.44	0.54	0.63	0.71	0.80	0.89

Chat for values referring to 1 A

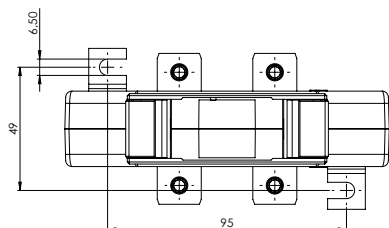
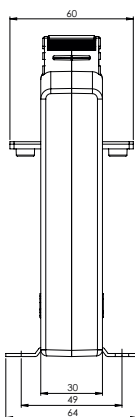
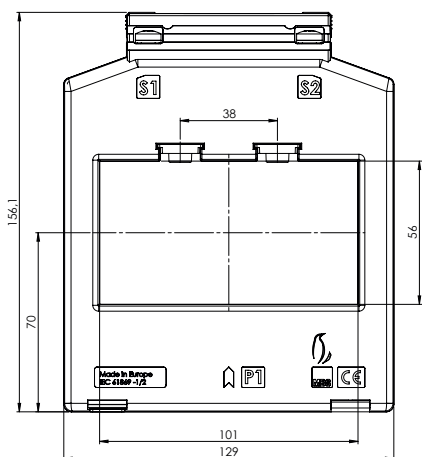
Nominal cross section	10 m	20 m	30 m	40 m	50 m	60 m	70 m	80 m	90 m	100 m
1.0 mm ²	0.36	0.71	1.07	1.43	1.78	2.14	2.50	2.86	3.21	3.57
2.5 mm ²	0.14	0.29	0.43	0.57	0.72	0.86	1.00	1.14	1.29	1.43
4.0 mm ²	0.09	0.18	0.27	0.36	0.45	0.54	0.63	0.71	0.80	0.89
6.0 mm ²	0.06	0.12	0.18	0.24	0.30	0.36	0.42	0.48	0.54	0.60
10.0 mm ²	0.04	0.07	0.11	0.14	0.18	0.21	0.25	0.29	0.32	0.36

ASK 105.3

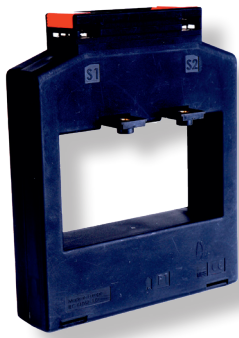
Plug-in current transformer



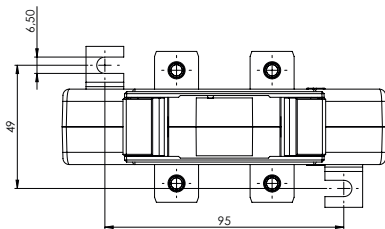
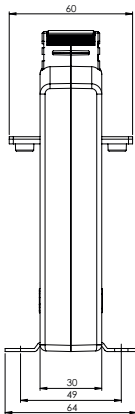
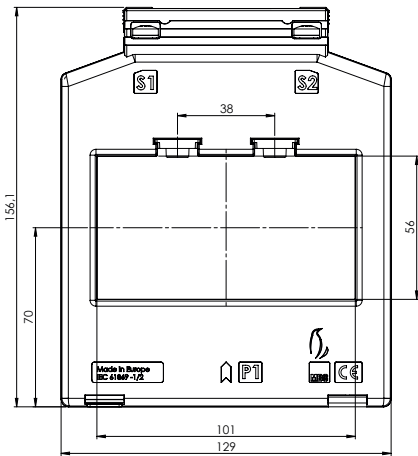
Bus bar 1: 100 x 56 mm
 Transformer width: 129 mm
 Height: 156 mm
 Depth: 30 mm



ASK 105.3		Secondary current [A] / Class				
Primary current [A]	Burden [VA]	5A Cl. 1 Art.-no.	5A Cl. 0.5 Art.-no.	5A Cl. 0.5s Art.-no.	5A Cl. 0.2 Art.-no.	5A Cl. 0.2s Art.-no.
400	2.5	1001053-10000				
	3,75	1001053-10001				
	5	1001053-10002				
500	2.5	1001053-10003	1001053-10500			
	3.75	1001053-10004	1001053-10501			
	5	1001053-10005	1001053-10502			
600	2.5	1001053-10006	1001053-10503			
	3.75	1001053-10007	1001053-10504			
	5	1001053-10008	1001053-10505			
	7.5	1001053-10009				
750	10	1001053-10010				
	2.5	1001053-10011	1001053-10506	1001053-10600		
	3.75	1001053-10012	1001053-10507			
	5	1001053-10013	1001053-10508			
	7.5	1001053-10014				
800	10	1001053-10015				
	2.5	1001053-10016	1001053-10509	1001053-10601		
	5	1001053-10017	1001053-10510			
	7,5	1001053-10018	1001053-10511			
1000	10	1001053-10019				
	2.5	1001053-10020	1001053-10512	1001053-10602		
	5	1001053-10021	1001053-10513	1001053-10603		
	7.5	1001053-10022	1001053-10514	1001053-10604		
1250	10	1001053-10023	1001053-10515	1001053-10605		
	2,5	1001053-10024	1001053-10516	1001053-10606		
	5	1001053-10025	1001053-10517	1001053-10607		
	10	1001053-10026	1001053-10518	1001053-10608		
1500	15	1001053-10027				
	2.5	1001053-10028	1001053-10520	1001053-10609	1001053-10905	
	5	1001053-10029	1001053-10521	1001053-10610	1001053-10906	
	10	1001053-10030	1001053-10522	1001053-10611	1001053-10907	
1600	15	1001053-10031	1001053-10523	1001053-10612		
	2.5	1001053-10032	1001053-10524	1001053-10613	1001053-10908	
	5	1001053-10033	1001053-10525	1001053-10614	1001053-10909	
	10	1001053-10034	1001053-10526	1001053-10615	1001053-10910	
	15	1001053-10035	1001053-10527	1001053-10616		
2000	2,5	1001053-10036	1001053-10528	1001053-10617	1001053-10911	1001053-10400
	5	1001053-10037	1001053-10529	1001053-10618	1001053-10912	1001053-10401
	7.5	1001053-10038	1001053-10530	1001053-10619	1001053-10913	
	10	1001053-10039	1001053-10531	1001053-10620	1001053-10914	
	15	1001053-10040	1001053-10532	1001053-10621	1001053-10915	

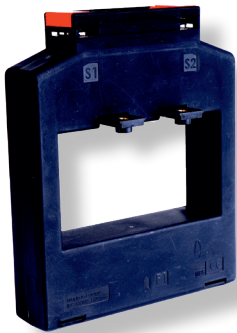


Bus bar 1: 100 x 56 mm
 Transformer width: 129 mm
 Height: 156 mm
 Depth: 30 mm

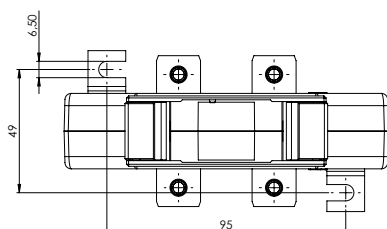
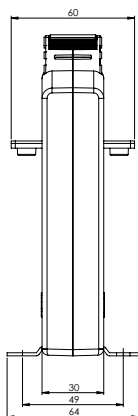
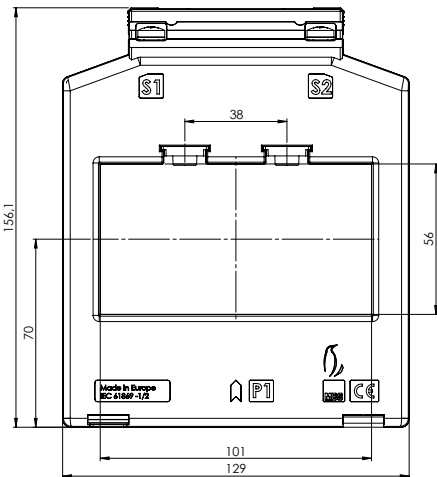


ASK 105.3		Secondary current [A] / Class				
Primary current [A]	Burden [VA]	5A Cl. 1 Art.-no.	5A Cl. 0.5 Art.-no.	5A Cl. 0.5s Art.-no.	5A Cl. 0.2 Art.-no.	5A Cl. 0.2s Art.-no.
2500	2.5			1001053-10622	1001053-10916	1001053-10402
	5	1001053-10041	1001053-10533	1001053-10623	1001053-10917	1001053-10403
	7.5	1001053-10042	1001053-10534	1001053-10624	1001053-10918	1001053-10404
	10	1001053-10043	1001053-10535	1001053-10625	1001053-10919	1001053-10405
	15	1001053-10044	1001053-10536	1001053-10626	1001053-10920	
3000	5	1001053-10045	1001053-10537	1001053-10627	1001053-10921	1001053-10406
	10	1001053-10046	1001053-10538	1001053-10628	1001053-10922	1001053-10407
	15	1001053-10047	1001053-10539	1001053-10629	1001053-10923	1001053-10408
4000	2.5	1001053-10048				
	5	1001053-10049	1001053-10540	1001053-10630	1001053-10924	1001053-10409
	10	1001053-10050	1001053-10541	1001053-10631	1001053-10925	1001053-10410
	15	1001053-10051	1001053-10542	1001053-10632	1001053-10926	1001053-10411

ASK 105.3		Secondary current [A] / Class				
Primary current [A]	Burden [VA]	1A Cl. 1 Art.-no.	1A Cl. 0.5 Art.-no.	1A Cl. 0.5s Art.-no.	1A Cl. 0.2 Art.-no.	1A Cl. 0.2s Art.-no.
400	2.5	1001053-10200				
	3.75	1001053-10201				
	5	1001053-10202				
500	2.5	1001053-10203	1001053-10700			
	3.75	1001053-10204	1001053-10701			
	5	1001053-10205	1001053-10702			
600	2.5	1001053-10206	1001053-10703			
	3.75	1001053-10207	1001053-10704			
	5	1001053-10208	1001053-10705			
	7.5	1001053-10209				
	10	1001053-10210				
750	2.5	1001053-10211	1001053-10706	1001053-10800		
	3.75	1001053-10212	1001053-10707			
	5	1001053-10213	1001053-10708			
	7.5	1001053-10214				
	10	1001053-10215				
800	2.5	1001053-10216	1001053-10709	1001053-10801		
	5	1001053-10217	1001053-10710			
	7.5	1001053-10218				
	10	1001053-10219				
1000	2.5	1001053-10220	1001053-10711	1001053-10802	1001053-10300	
	5	1001053-10221	1001053-10712	1001053-10803	1001053-10301	
	7.5	1001053-10222	1001053-10713	1001053-10804		
	10	1001053-10223	1001053-10714	1001053-10805		
1250	2.5	1001053-10224	1001053-10715	1001053-10806	1001053-10302	
	5	1001053-10225	1001053-10716	1001053-10807	1001053-10303	
	10	1001053-10226	1001053-10717	1001053-10808		
	15	1001053-10227	1001053-10718			



Bus bar 1: 100 x 56 mm
 Transformer width: 129 mm
 Height: 156 mm
 Depth: 30 mm



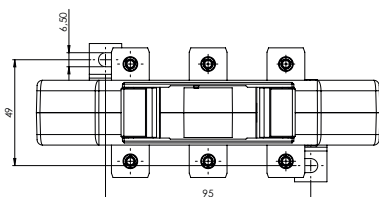
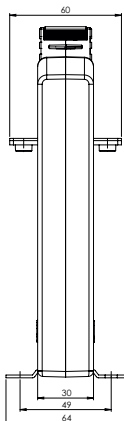
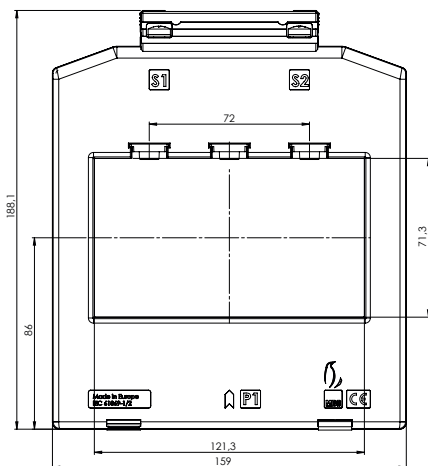
ASK 105.3		Secondary current [A] / Class				
Primary current [A]	Burden [VA]	1A Cl. 1 Art.-no.	1A Cl. 0.5 Art.-no.	1A Cl. 0.5s Art.-no.	1A Cl. 0.2 Art.-no.	1A Cl. 0.2s Art.-no.
1500	2.5	1001053-10228	1001053-10719	1001053-10809	1001053-10304	
	5	1001053-10229	1001053-10720	1001053-10810	1001053-10305	
	10	1001053-10230	1001053-10721	1001053-10811	1001053-10306	
	15	1001053-10231	1001053-10722	1001053-10812		
1600	2.5	1001053-10232	1001053-10723	1001053-10813	1001053-10307	
	5	1001053-10233	1001053-10724	1001053-10814	1001053-10308	
	10	1001053-10234	1001053-10725	1001053-10815	1001053-10309	
	15	1001053-10235	1001053-10726	1001053-10816		
2000	2.5	1001053-10236	1001053-10727	1001053-10817	1001053-10310	1001053-10100
	5	1001053-10237	1001053-10728	1001053-10818	1001053-10311	1001053-10101
	7.5	1001053-10238	1001053-10729	1001053-10819	1001053-10312	
	10	1001053-10239	1001053-10730	1001053-10820	1001053-10313	
	15	1001053-10240	1001053-10731	1001053-10821	1001053-10314	
2500	2.5	1001053-10241	1001053-10732	1001053-10822	1001053-10315	1001053-10102
	5	1001053-10242	1001053-10733	1001053-10823	1001053-10316	1001053-10103
	7.5	1001053-10243	1001053-10734	1001053-10824	1001053-10317	1001053-10104
	10	1001053-10244	1001053-10735	1001053-10825	1001053-10318	1001053-10105
	15	1001053-10245		1001053-10826	1001053-10319	
3000	5	1001053-10246	1001053-10736	1001053-10827	1001053-10320	1001053-10106
	10	1001053-10247	1001053-10737	1001053-10828	1001053-10321	1001053-10107
	15	1001053-10248	1001053-10738	1001053-10829	1001053-10322	



ASK 127.3

Plug-in current transformer

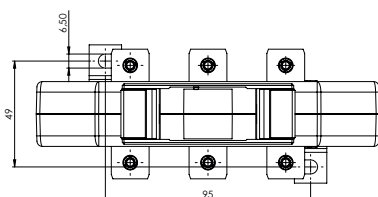
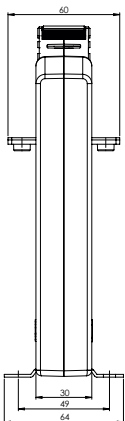
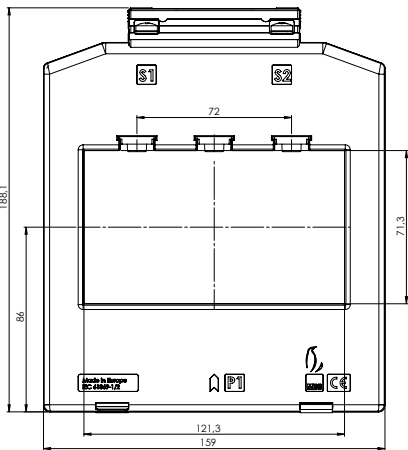
Bus bar 1: 122 x 71 mm
 Transformer width: 159 mm
 Height: 188 mm
 Depth: 30 mm



ASK 127.3		Secondary current [A] / Class				
Primary current [A]	Burden [VA]	5A Cl. 1 Art.-no.	5A Cl. 0,5 Art.-no.	5A Cl. 0,5s Art.-no.	5A Cl. 0,2 Art.-no.	5A Kl. 0,2s Art.-no.
400	2,5	1001273-10000				
	3,75	1001273-10001				
	5	1001273-10002				
	7,5					
500	10					
	2,5	1001273-10003	1001273-10500			
	3,75	1001273-10004	1001273-10501			
	5	1001273-10005				
600	10					
	2,5	1001273-10006	1001273-10502			
	3,75	1001273-10007	1001273-10503			
	5	1001273-10008	1001273-10504			
750	10	1001273-10009				
	2,5	1001273-10010	1001273-10505			
	3,75	1001273-10011	1001273-10506			
	5	1001273-10012	1001273-10507			
800	7,5	1001273-10013	1001273-10508			
	10	1001273-10014	1001273-10509			
	2,5	1001273-10015	1001273-10510			
	3,75	1001273-10016	1001273-10511			
1000	5	1001273-10017	1001273-10512			
	7,5	1001273-10018	1001273-10513			
	10	1001273-10019	1001273-10514			
	2,5	1001273-10020	1001273-10515			
1250	5	1001273-10021	1001273-10516			
	7,5	1001273-10022	1001273-10517			
	10	1001273-10023	1001273-10518			
	15	1001273-10024	1001273-10519			
1500	2,5	1001273-10025	1001273-10520			
	5	1001273-10026	1001273-10521			
	10	1001273-10027	1001273-10522			
	15	1001273-10028	1001273-10523			
1600	2,5	1001273-10029	1001273-10524			
	5	1001273-10030	1001273-10525	1001273-10600		
	10	1001273-10031	1001273-10526	1001273-10601		
	15	1001273-10032	1001273-10527			
1600	2,5	1001273-10033	1001273-10528			
	5	1001273-10034	1001273-10529	1001273-10602		
	10	1001273-10035	1001273-10530	1001273-10603		
	15	1001273-10036	1001273-10531			



Bus bar 1: 122 x 71 mm
 Transformer width: 159 mm
 Height: 188 mm
 Depth: 30 mm

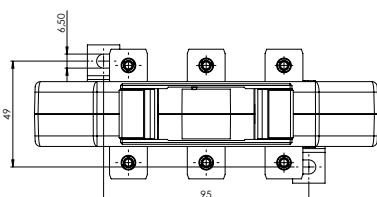
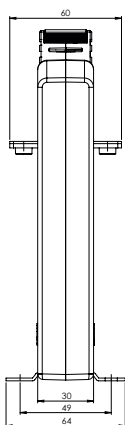
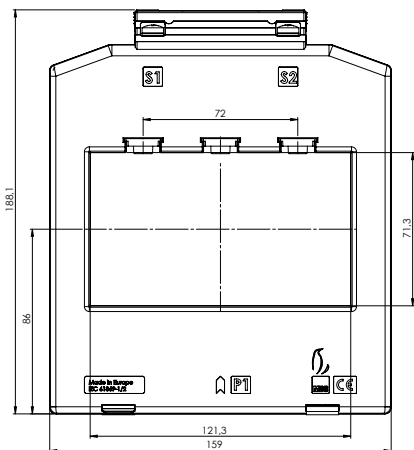


ASK 127.3		Secondary current [A] / Class				
Primary current [A]	Burden [VA]	5A Cl. 1 Art.-no.	5A Cl. 0,5 Art.-no.	5A Cl. 0,5s Art.-no.	5A Cl. 0,2 Art.-no.	5A Cl. 0,2s Art.-no.
2000	2,5	1001273-10037	1001273-10532			
	5	1001273-10038	1001273-10533	1001273-10604	1001273-10900	
	10	1001273-10039	1001273-10534	1001273-10605	1001273-10901	
	15	1001273-10040	1001273-10535	1001273-10606		
2500	2,5	1001273-10041	1001273-10536			
	5	1001273-10042	1001273-10537	1001273-10607	1001273-10902	1001273-10400
	10	1001273-10043	1001273-10538	1001273-10608	1001273-10903	
	15	1001273-10044	1001273-10539	1001273-10609		
3000	2,5	1001273-10045	1001273-10540			
	5	1001273-10046	1001273-10541	1001273-10610	1001273-10904	1001273-10401
	10	1001273-10047	1001273-10542	1001273-10611	1001273-10905	1001273-10402
	15	1001273-10048	1001273-10543	1001273-10612	1001273-10906	
4000	5	1001273-10049	1001273-10544	1001273-10613	1001273-10907	1001273-10403
	10	1001273-10050	1001273-10545	1001273-10614	1001273-10908	1001273-10404
	15	1001273-10051	1001273-10546	1001273-10615	1001273-10909	1001273-10405

ASK 127.3		Secondary current [A] / Class				
Primary current [A]	Burden [VA]	1A Cl. 1 Art.-no.	1A Cl. 0,5 Art.-no.	1A Cl. 0,5s Art.-no.	1A Cl. 0,2 Art.-no.	1A Cl. 0,2s Art.-no.
400	2,5	1001273-10200				
	3,75	1001273-10201				
	5	1001273-10202				
	7,5					
	10					
500	2,5	1001273-10203	1001273-10700			
	3,75	1001273-10204				
	5	1001273-10205				
	10	1001273-10206				
600	2,5	1001273-10207	1001273-10701			
	3,75	1001273-10208	1001273-10702			
	5	1001273-10209	1001273-10703			
	10	1001273-10210				
750	2,5	1001273-10211	1001273-10704			
	3,75	1001273-10212	1001273-10705			
	5	1001273-10213	1001273-10706			
	7,5					
800	10					
	2,5	1001273-10214	1001273-10707			
	3,75	1001273-10215	1001273-10708			
	5	1001273-10216	1001273-10709			
	7,5	1001273-10217				
	10	1001273-10218				



Bus bar 1: 122 x 71 mm
 Transformer width: 159 mm
 Height: 188 mm
 Depth: 30 mm



ASK 127.3		Secondary current [A] / Class				
Primary current [A]	Burden [VA]	1A Cl. 1 Art.-no.	1A Cl. 0,5 Art.-no.	1A Cl. 0,5s Art.-no.	1A Cl. 0,2 Art.-no.	1A Cl. 0,2s Art.-no.
1000	2,5	1001273-10219	1001273-10710			
	5	1001273-10220	1001273-10711			
	7,5	1001273-10221	1001273-10712			
	10	1001273-10222	1001273-10713			
	15	1001273-10223				
1250	2,5	1001273-10224	1001273-10714			
	5	1001273-10225	1001273-10715			
	10	1001273-10226	1001273-10716			
	15	1001273-10227	1001273-10717			
1500	2,5	1001273-10228	1001273-10718			
	5	1001273-10229	1001273-10719	1001273-10800		
	10	1001273-10230	1001273-10720	1001273-10801		
	15	1001273-10231	1001273-10721			
1600	2,5	1001273-10232	1001273-10722			
	5	1001273-10233	1001273-10723	1001273-10802		
	10	1001273-10234	1001273-10724	1001273-10803		
	15	1001273-10235	1001273-10725			
2000	2,5	1001273-10236	1001273-10726			
	5	1001273-10237	1001273-10727	1001273-10804	1001273-10300	
	10	1001273-10238	1001273-10728	1001273-10805	1001273-10301	
	15	1001273-10239	1001273-10729	1001273-10806		
2500	2,5	1001273-10240	1001273-10730			
	5	1001273-10241	1001273-10731	1001273-10807	1001273-10302	1001273-10100
	10	1001273-10242	1001273-10732	1001273-10808	1001273-10303	
	15	1001273-10243	1001273-10733	1001273-10809		
3000	2,5	1001273-10244	1001273-10734			
	5	1001273-10245	1001273-10735	1001273-10810	1001273-10304	1001273-10101
	10	1001273-10246	1001273-10736	1001273-10811	1001273-10305	1001273-10102
	15	1001273-10247	1001273-10737	1001273-10812	1001273-10306	
4000	5	1001273-10248	1001273-10738	1001273-10813	1001273-10307	1001273-10103
	10	1001273-10249	1001273-10739	1001273-10814	1001273-10308	1001273-10104
	15	1001273-10250	1001273-10740	1001273-10815	1001273-10309	1001273-10105



**If you have any questions or suggestions,
We are happy to be there for you!**

Visit our website for more information.

Gilgen, Müller & Weigert (GMW) GmbH & Co. KG

Am Farrnbach 4A
90556 Cadolzburg

Phone.: 0049 9103 7129 0
Fax: 0049 9103 7129 207
info@g-mw.de

Managing Director: Prof. Dr. h.c. Wolfgang Gilgen
VAT-No: DE 815 535 316

The data contained in the product catalog are to the best of my knowledge and belief. Changes and errors are reserved. Similar Pictures provide any terms within the meaning of § 305 | BGB. There are notes without independent regulatory content that bring only expressed that the information contained in the Catalog so far are preliminary and non-binding, as before or at the conclusion of a contract, in particular a possible restriction of the rights of the contracting Party in liability or warranty legal terms, these instructions can not be removed.

You can find more information and the new catalog on our website.

