

Energy Meter

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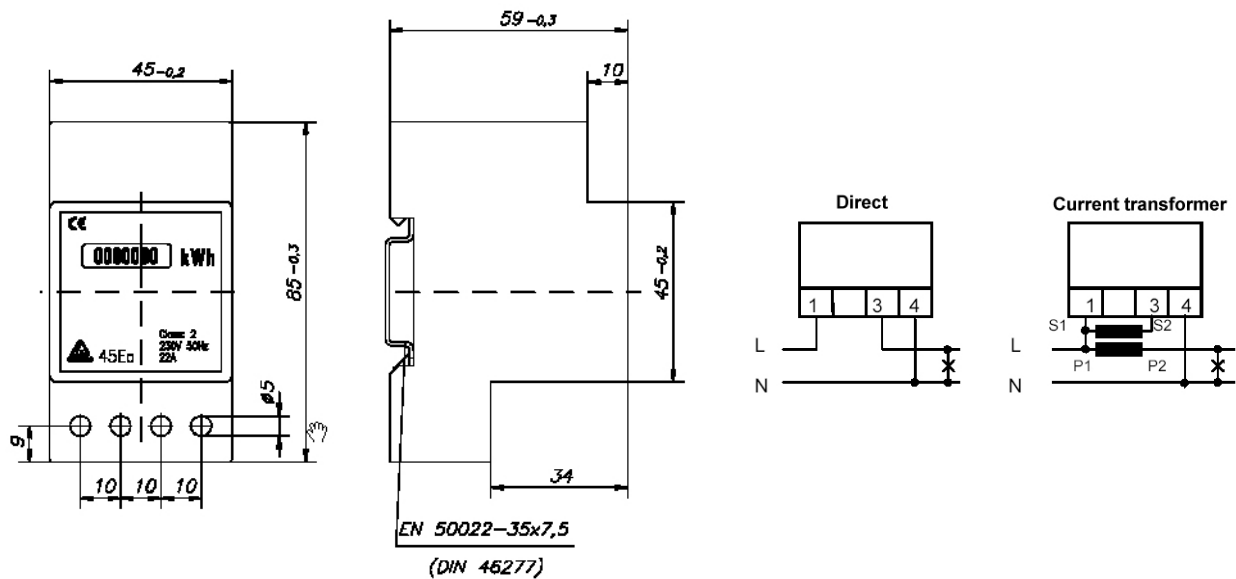
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Energy meter single phase

- For current transformer
- Direct 10 A

45-Ea	Technical Data	Features
Application	The SWHM 12.22 are active energy meters designed for single phase networks. The meters are available for current transformer and direct connection	<ul style="list-style-type: none"> • DIN Rail • Front 45x45 mm • Accuracy class 2 • SO-pulse outputs (Optocoupler) • Am- and Voltmeters available in same DIN-Case
Input VoltageSpannung	230 VAC L-N	
Input Current	5(20) A, 10(30) A, 10(40) A	
Frequency	50-60 Hz	
Energy accuracy	Class 2	
Pulse Output (option)	Optocoupler 24 V/ 40 mA DC	
Pulse duration	275 ms	
Display	Mechanical counter 7 digits (99999.99)	
Consumption	< 0.3 VA (CT), <3.5 VA (direct)	
Operating temperature	0°C ... +50°C	
Voltage range	57 ... 260 VAC	
Connection	Terminal blocks for 6 mm ²	
Case protection rating		
Case	IP 20	
Front	IP 40	
List prices €		
45-Ea	5(20) A, 10(30) A, 10(40) A	
Pulse Output	Optocoupler	





Energy meter single phase

- Direct 65 A
- PTB Approval

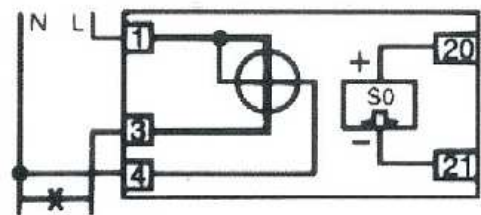
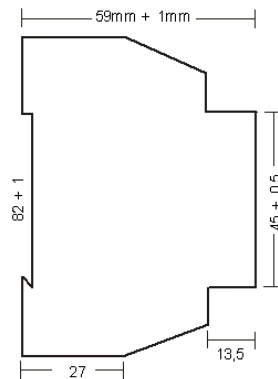
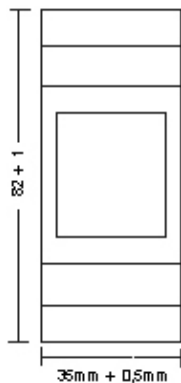
SWHM 12.22.11	Technical Data	Features
Application	The SWHM 12.22 are active energy meters designed for single phase networks. The pulse output simplifies the adaptation on PC or PLC systems. The meters are available with and without PTB approval.	<ul style="list-style-type: none"> • 2 DIN-Modules (36 mm) width • PTB-Approval • Accuracy class 2 • All meters contains SO-pulse outputs (Optocoupler) according to DIN 62053-31 (Class A+B)
Input Voltage	230 VAC L-N	The PTB-Approval for energy meters is required in Germany for invoicing electricity.
Input Current	65 A direct	
Frequency	50-60 Hz	
Energy accuracy	Class 2	
Pulse weight	1000 Imp./kWh	
Pulse duration	>/- 30ms	
Display	Mechanical counter 6 digits (99999.9)	
Consumption	< 2 VA	
Operating temperature	-25°C ... +55°C	
Voltage range	195 ... 265 VAC	
Current range	0,04 A ... 65 A	
Case protection rating		
Case	IP 20	
Front	IP 51	

Bruttopreise €

SWHM 12.22.11 - Z1BU 230 VAC/ 65 A without PTB approval

SWHM 12.22.11 - Z1BB 230 VAC/ 65 A with PTB approval

Certification (net)





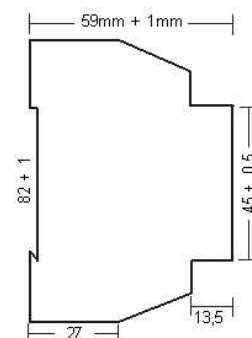
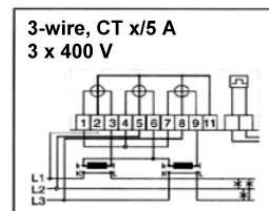
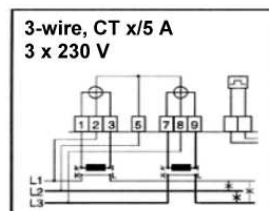
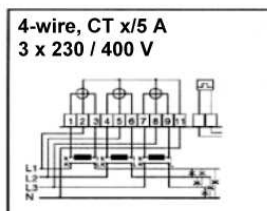
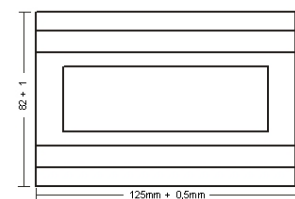
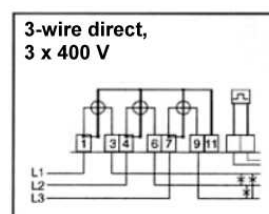
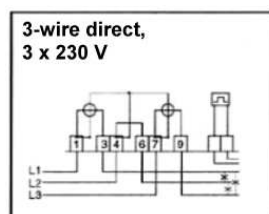
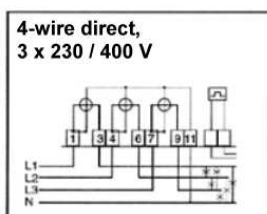
Energy Meter 3 and 4 wire,

- For current transformer
- Direct 65 A
- PTB Approval

SWHM 34.71.42	Technical Data	Features
Application	The SWHM 34.71 are active energy meters designed for three phase networks. The pulse output simplifies the adaptation on PC or PLC systems. The meters are available with and without PTB approval.	<ul style="list-style-type: none"> • 7 DIN-Modules (125 mm) width • PTB-Approval 20.15/0092 • Accuracy class 1 (x/5) • Accuracy class 2 (direct 65A) • All meters contains SO-pulse outputs (Optocoupler) according to DIN 62053-31 (Class A+B)
Input Voltage	3 x 230 VAC / 400 VAC ± 10%	The PTB-Approval for energy meters is required in Germany for invoicing electricity.
Input Current	65 A direct SWHM 34.71.42 x/5 A CT SWHM 34.71.42	
Frequency	40-60 Hz	
Energy accuracy	Class 1 (x/5 A), Class 2 (direct)	
Pulse weight	1000 Imp./kWh	
Pulse duration	> 30ms	
Display	LCD with 7 digits (999 999.9)	
Consumption	< 1 VA (Current)	
Operating temperature	-20°C ... +55°C	
Operating range	0,02 A ... 65 A	
Case protection rating		
Case	IP 20	
Front	IP 51	

List prices €

SWHM 34.71.42 - Z1NU	65 A direct	without PTB approval
SWHM 34.71.42 - Z1NB	65 A direct	with PTB approval
Certification (net)		
SWHM 34.71.42 - Z1WU	3 x 230/400 V x/5 A	without PTB approval
SWHM 34.71.42 - Z1WB	3 x 230/400 V x/5 A	with PTB approval
Certification (net)		

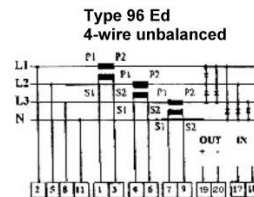
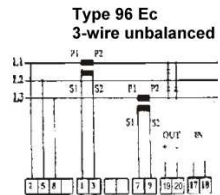
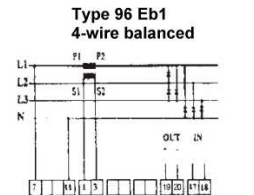
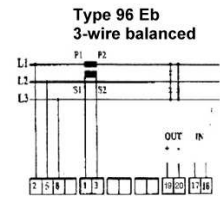
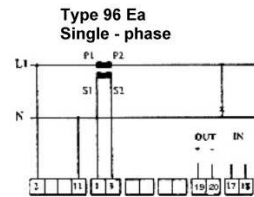




Energy Meter 96 E

- DIN case 96 x 96 mm
- For Current transformer

96E a...d	Technical Data	Features
Application	The 96 E are active energy meters designed for single and three phase networks. With an accuracy of class 1 according to IEC 1036 are the meters suitable for a wide range of industrial applications. The pulse output simplifies the adaptation on PC or PLC systems.	<ul style="list-style-type: none"> • All meters contains SO-pulse outputs (Optocoupler) • Relay output is available as option
Input Voltage U_N	57,7 ... 600 V	
Operating range	0,8 ... 1,2 x U_N	
Permanent Overload Voltage	1,2 x U_N	
Maximum Overload Voltage	2 x U_N for 1s	
Consumption	max. 3 VA per phase	
Input Current	Current transformer x/5 A or x/1 A	
Permanent Overload Current	1,2 x I_N	
Frequency	50 / 60 Hz	
Energy accuracy	Class 1 according to IEC61036	
Pulse weight	1 pulse per kWh for large CT ratios	
Pulse duration	100 ms, other values on request	
Pulse output SO+/SO-	24 V / 50 mA	
Option: Relay	100V, 1 A AC, or 30 V, 1 A DC	
Display	6 Digit – mechanical counter Green LED for Voltage supply Red LED: 0,1 kWh per flash	
Operating conditions		
Operating temperature	-10°C ... +45°C	
Storage temperature	-25°C ... +70°C	
Case protection rating	IP 40 front, IP 20 terminals	
Connections	Terminal blocks for wire up to 2.5 mm ²	
Dimensions	96 x 96 x 98	
Weight	0,4 kg	
List prices €		
96 Ea	1-phase	230 V L-N
96 Eb	3-wire balanced	400 V L-L
96 Eb1	4-wire balanced	400 V L-L
96 Ec	3-wire unbalanced	400 V L-L
96 Ed	4-wire unbalanced	400 V L-L
Options		
Relay output		
Dual-tarif		
Dual-directions		





Energy Meter three phase

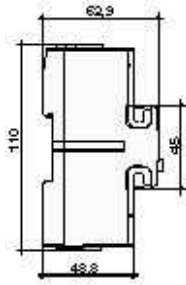
Countis ATv2/ ATiv2

Countis ATd

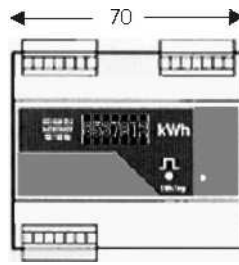
- For current transformer
- Direct 80 A

ATv2/ ATiv2/ ATd	Technical Data	Function	
Width			
ATv2 / ATiv2	4 DIN-Modules (70 mm)	The Countis AT is an active energy meter designed for two and three phase networks.	
ATd	7 DIN-Modules (126 mm)		
Case protection rating			
Case	IP 20	This product is available in 3 versions:	
Front	IP 54		
Connections			
	Terminal blocks for wire 0,5 - 10 mm ²	<ul style="list-style-type: none"> ▪ ATv2: non-insulated active energy meter which cannot be used with earthed CT. ▪ ATiv2: insulated active energy meter which can be used with earthed CT secondaries. ▪ ATd: Direct connected up to 80 A 	
Front			
	7 Digits - LCD green LED for indication of pulse output (1 pulse every 10 Wh)		
Impulse duration			
	Programmable von 60 ms ... 900 ms	Standard feature include a totalizing meter, a partial meter for direct reading in kWh and a pulse output. A partial meter (with Reset) enables totalisation of energy for specific time periods.	
Input			
Current transformer primary			
ATv2 / ATiv2	programmable: 10-20-40-50-60-75-100-125-150-250-300-400-500-600-750-800-1000-1200-1250-1500-1750-2000-2500-3000-4000 A	These three versions can be fully configured by the user via the keypad and the display (CT ratio, pulse weight and Reset). Furthermore associated with a COUNTIS Ci, a consumption centralization will be possible via a PLC or a equipped PC with the CONTROL VISION software.	
ATd (direct)	80 A		
Current transformer secondary			
	x/5 A (x/1 A on request) Consumption: < 0,4 VA		
Energy accuracy			
	Class 1 according to IEC61036		
Permanent Overload			
ATv2 / ATiv2	7 A		
ATd	80 A		
Short Overload			
ATv2 / ATiv2	10 A for 1s		
ATd	30 I _N for 10ms		
Voltage input			
	<ul style="list-style-type: none"> • 90 ... 500 VAC L-L • 51 ... 289 VAC L-N • Consumption: < 1 VA • Frequency: 50/60 Hz 		
Auxiliary power supply			
ATv2 / ATiv2	Self supplied		
ATd	Self supplied		
Pulse output			
	Reed relay (100 VDC - 0,5 A - 10 VA) Number of operations 5 x 10 ⁷ 10VDC/10 mA Impulse weight programmable: 100 Wh, 1/10/100 kWh (ATv2/ATiv2)		
Operating conditions			
Operating temperature	-10°C ... +50°C		
Storage temperature	-20°C ... +70°C		
Relative humidity			
	95 %		
Conformity to standards			
	<ul style="list-style-type: none"> ▪ IEC 61036 class 1 ▪ IEC 61000-4-2/3/4/5/6/8/11 ▪ IEC 60069-2-11 ▪ IEC 60068-2-30 ▪ IEC 61010-1 	List price € Countis ATv2 balanced Countis ATv2 unbalanced Countis ATiv2 balanced - isolated Countis ATiv2 balanced - isolated Countis ATd balanced - direct 80 A Countis ATd unbalanced - direct 80 A	

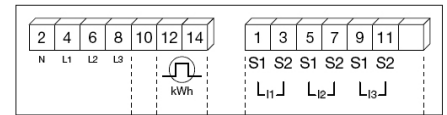
ATv2/ ATiv2



Dimensions



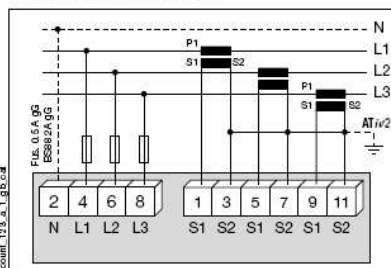
Pulse output



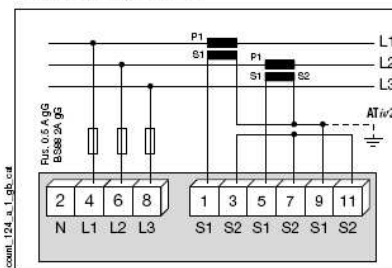
Connections

Earthing of current transformers for COUNTIS ATiv2 only.

• 3/4 wires with 3 CTs

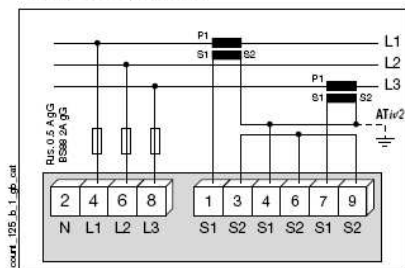


• 3 wires with 2 CTs



The use of 2 CTs reduces by 0.5% the accuracy of the phase whose current is determined by vector calculation.

• 3 wires with 2 CTs

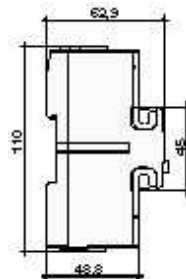


The use of 2 CTs reduces by 0.5% the accuracy of the phase whose current is determined by vector calculation.

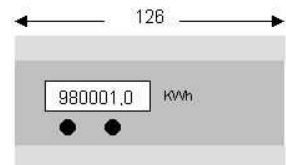
ATd



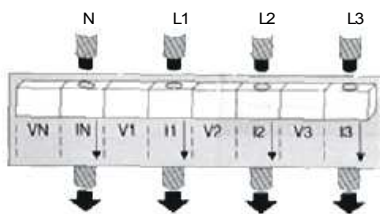
Dimensions



Width

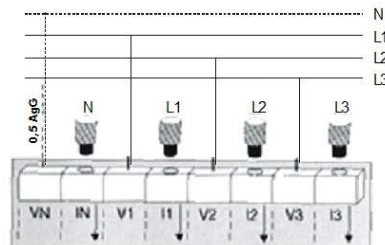


Terminal connections by passing the cables through



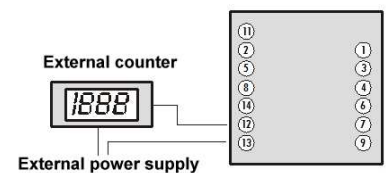
Currents: cables pass in I1, I2, I3 and I_N
 Voltages: piercing of cable insulation through I1, I2, I3 and I_N

Terminal connections by cutting the cables



Currents: connection on both sides of the casing of terminals I1, I2, I3 and I_N
 Voltages: connection of terminals V1, V2, V3 and V_N

Pulse output

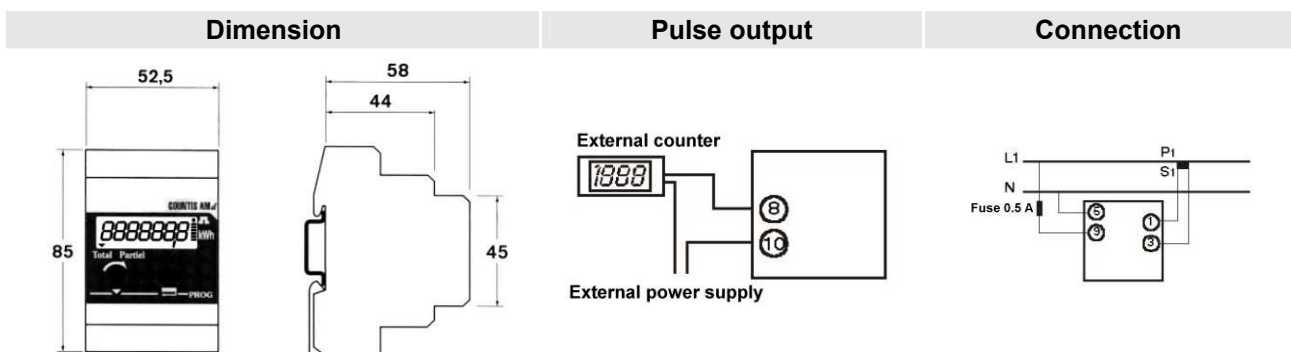




Energy Meter single phase Countis Amt

For current transformer

Countis Amt	Technical Data	Function
Width	3 DIN-Modules (52.5 mm)	<p>The Countis Amt is a modular active energy meter designed for single phase networks. It is used for connections up to 100 A via a current transformer.</p> <p>Standard feature include a totalizing meter, a partial meter for direct reading in kWh and a pulse output. A partial meter (with Reset) enables totalisation of energy for specific time periods.</p> <p>These three versions can be fully configured by the user via the keypad and the display (CT ratio, pulse weight and Reset). Furthermore associated with a COUNTIS Ci, a consumption centralization will be possible via a PLC or a equipped PC with the CONTROL VISION software.</p>
Case protection rating	IP 20 IP 54	
Connections	Terminal blocks for wire 0,5 - 10 mm ²	
Front	7 Digits - LCD green LED for indication of pulse output (1 pulse every 10 Wh)	
Input	programmable:	
Current transformer primary	25-40-50-60-75-100 A	
Current transformer secondary	5 A non isolated Consumption: < 2.5 VA	
Overload	20 x I _{Max} for 500 ms	
Voltage input	<ul style="list-style-type: none"> 184 ... 276 V Consumption: < 15 VA Frequency: 50/60 Hz 	
Energy accuracy	Class 1 according to IEC61036	
Pulse output	Reed relay (100 VDC - 0,5 A - 10 VA) Number of operations 5 x 10 ⁷ 10VDC/10 mA Impulse weight programmable: 100 Wh	
Operating conditions		
Operating temperature	-10°C ... +50°C	
Storage temperature	-20°C ... +70°C	
Relative humidity	95 %	
Conformity to standards	<ul style="list-style-type: none"> IEC 61036 class 1 IEC 61000-4-2/3/4/5/6/8/11 IEC 60069-2-11 IEC 60068-2-6/11/30 IEC 61010-1 	
List price €	Countis Amt 230 V x/5 A	





Pulse Concentrator Countis Ci

RS 485/ MODBUS

Countis Amt	Technical Data	Function
Width	4 DIN-Modules (70 mm)	The Countis Ci is a pulse concentrator communicating via an RS485 link using JBUS/Modbus protocol. Through 7 insulated on/off inputs, it counts the number of pulses from different energy meters (water, air, gas, electricity...) and transmits this information to a PC equipped with CONTROL VISION software or a PLC.
Case protection rating		
Case	IP 20	In the knowledge that electricity is not the only consumption source, the Countis can be used to centralize other units such as water, air or gas. The CONTROL VISION software, via the Countis Ci concentrator and its RS485 link using JBUS/Modbus protocol is used to centralize all these consumptions whilst guaranteeing optimal accuracy in an easy to use program (Windows environment).
Front	IP 54	
Connections	Terminal blocks for wire 0,5 - 10 mm ²	The Countis Ci provides: <ul style="list-style-type: none"> • 7 global counters to count kWh or a number of pulses. • time-dated memory for kWh consumed over one month for each input. This record is stored once a month for 12 successive months. These values are accessible by JBUS/Modbus. • 4 of these 7 inputs can reconstitute average power as required over a of 8, 10, 15, 20 or 30 minutes. Values are stored in 10-minute segments for 8 days. • Status of 7 inputs (status).
Front	- 7-Segment-LCD with 7 Digits for kWh or pulse - Indicator for Communication (COM) - Indicator for selected input - 2 pushbuttons to display consumption and status per input	
Inputs (insulated)	Number: 7 Minimum signal width: 10 ms Maximum signal width: 2 s Control voltages: 10 ... 30 VDC Minimum length between 2 impulses 18 ms Edge triggering: rising	
Auxiliary power supply	230 / 400 V +/- 15% Consumption: < 5 VA Frequency: 50/60 Hz	
Communication	RS 485, JBUS/Modbus in RTU mode, 4800 ... 38400 bauds 2 ... 3 half duplex wires	
Operating conditions		
Operating temperature	-10°C ... +50°C	
Storage temperature	-20°C ... +70°C	
Relative humidity	95 %	
Conformity to standards	<ul style="list-style-type: none"> • IEC 61000-4-2/3/4/5/6/8/11 • IEC 60068-2-6/11/30 • IEC 61010-1 	
List price €	Countis Ci 230/400 V AC Interface RS485 > USB	

For Energy-Management-Software CONTROL VISION please see page 5.7