

MEASUREMENT

Voltmeters and Ammeters

TECHNICAL DATA		
Type:	Analogue	Digital
Standards:	EN 60051-1, EN 60051-2	EN 61010-1
Rated operating voltage (Ue):	(V) -	230 a.c.
Rated frequency:	40-60	15-100
Ammeter interchangeable scales and capacity:	10-20-30-40-50-60-100-150-250 400-600-1000-1200-1500	5 ÷ 999
Voltmeter scales:	(V) 300-500 a.c.	500 a.c.
Precision class:	1.5	0.5
Ammeter overloadability:	10 In for 1s / 2 In continuous	1.1 In continuous
Voltmeter overloadability:	2 Ue for 5s / 1.2 Ue continuous	1.2 Ue continuous
Absorbed power:	(VA) 0.3 (ammeter) 1.5 (voltmeter)	2 (ammeter) 1.5 (voltmeter)
Degree of protection:	IP20	IP20
Operating temperature:	(°C) -10...+55	-5...+55
Maximum cable section:	(mm ²) 6	6

Analogue voltmeters and ammeters

Indicator instruments of the electromagnetic type made up of a movable coil element. The voltmeter is the direct activation type, with a scale of 0-300/0-500V. The ammeters of 10 - 20 - 30A capacity use direct activation, whereas the GW 96 878 ammeter allows the measurement of currents up to 1500A thanks to the use of the appropriate TA and relative scale.

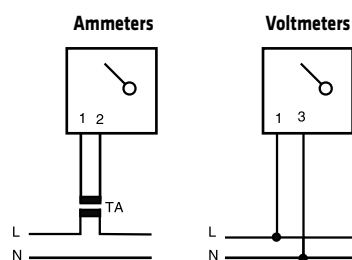
Digital voltmeters and ammeters

The digital tools with completely electronic operation ensure high precision and a long lifespan, thanks to the absence of moving mechanical parts subject to wear and tear. The measurement is displayed by means of a digital multiscale display. The ammeters are fitted for capacity selection using the front push-button.

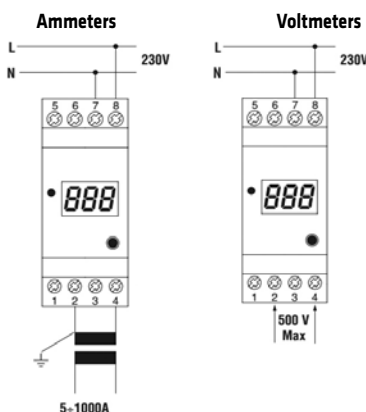
The current transformers (.../5) must have a primary current equal to the capacity pre-set on the tool.

Circuit diagrams

ANALOGUE



DIGITAL



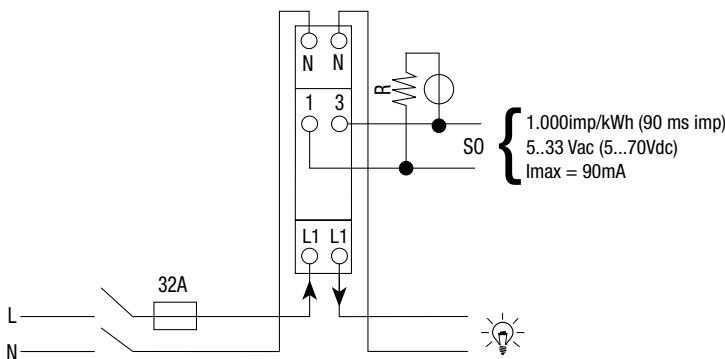
MODULAR ACCESSORIES

Single-phase digital energy meter

TECHNICAL DATA		
Code:	GW D6 801	GW D6 802
Type MID:	no	Yes
Standards:	EN 50470-1-3, EN 62053-31	
DIN modules:	1	
Reference voltage Un: (V)	230 a.c.	
Minimum operating voltage (Un min): (V)	184 a.c.	
Maximum operating voltage (Un max): (V)	276 a.c. (continuous)	
	300 a.c. (momentary 1s)	
Activation:	direct	
Measured values:	active energy (exported and imported) active power (exported and imported)	
Reference frequency: (Hz)	50	
Minimum current measured NOT in Class (Ist): (A)	0.02	
Minimum current measured in Class (Imin): (A)	0.25	
Base current (Ib): (A)	5	
Maximum current (Imax): (A)	32 (continuous)	
	960 (momentary 1s)	
Precision class:	1	
Reading resolution: (kWh)	0.1	
Absorbed power: (VA)	8	
Remote signalling contact:	1 NO	
Max. output current with pulse: (A)	0,09 (max 230V a.c./d.c.)	
Pulse output contact operating voltage: (V)	5+230 a.c.	
	5+300 d.c.	
Output pulse frequency: (imp/kWh)	1000	
Output pulse duration: (ms)	90	
Display:	LCD (N° 7 digits)	
Digits displayed:	999 999,9	
Degree of protection:	IP20	
Operating temperature: (°C)	-25...+55	
Storage temperature: (°C)	-25...+70	
Maximum cable section: (mm ²)	16 (also with terminal connector)	
Screwdriver suggested for main terminals:	PZ1	
Maximum cable section for output contact: (mm ²)	2,5 (4 with terminal connector)	
Screwdriver suggested for output contact:	PZ0	
Resetting of energy count:	yes	no
Sealing:	yes	
Suitable accessory:	with KNX GW90876 interface* with RS485 Modbus GWD6820 interface*	

* Interfaces communicate on KNX bus system or on RS485 Modbus the values of energy and power measured by energy meters. Interfaces are optically coupled with energy meter (the two devices have to be installed side-by-side). KNX interface GW90876 has to be configured with ETS software.

Circuit diagrams

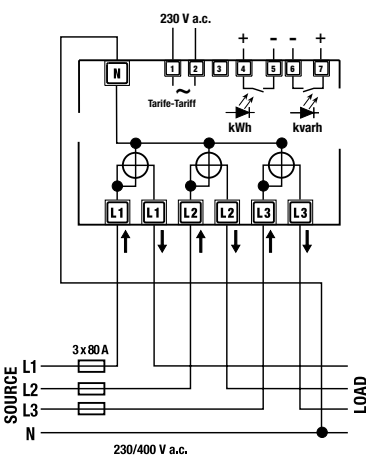


Three-phase digital energy meters

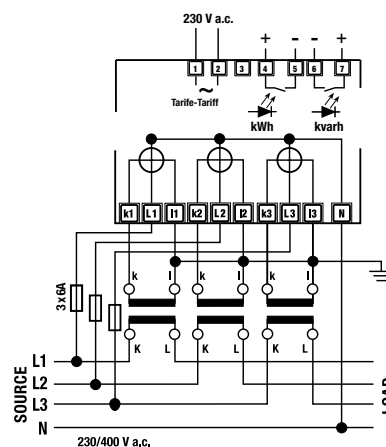
TECHNICAL DATA				
Code:	GW D6 806	GW D6 807	GW D6 808	GW D6 809
Type MID:	no	yes	no	yes
Standard:	EN 50470-1-3, EN 62053-23-31		EN 50470-1-3, EN 62053-23-31	
DIN modules:	4		4	
Reference voltage (Un):	(V)	230 a.c. Phase-Neutral	230 a.c. Phase-Neutral	
Connection:		single phase line (2 cables) single phase line (4 cables)	three-phase line (4 cables)	
Minimum operating voltage (Un min):	(V)	110 a.c. (Phase-Neutral) 190 a.c. (Phase-Phase)	110 a.c. (Phase-Neutral) 190 a.c. (Phase-Phase)	
Maximum operating voltage (Un max):	(V)	F-N: 276 AC (continuous) - 300 AC (momentary 1s) F-F: 480 AC (continuous) - 800 AC (momentary 1s)	F-N: 276 AC (continuous) - 300 AC (momentary 1s) F-F: 480 AC (continuous) - 800 AC (momentary 1s)	
Activation:		direct	indirect with C.T.	
Measured values:		active power (exported and imported) active energy (exported and imported)	active power (exported and imported) active energy (exported and imported)	
Reference frequency:	(Hz)	50	50	
Minimum current measured NOT in Class (Ist):	(A)	0,015	0,003	
Minimum current measured in Class (Imin):	(A)	0,25	0,05	
Base current (Ib):	(A)	5	5	
Maximum current (Imax):	(A)	80 (continuous) 2400 (momentary 10 ms)	6 (continuous) 120 (momentary 10 ms)	
Precision class:		1 (active energy) 2 (reactive energy)	1 (active energy) 2 (reactive energy)	
Absorbed power:	(VA)	2	2	
Remote signalling contact:		1 contact for carry active energy 1 contact for carry reactive energy	1 contact for carry active energy (1NO) 1 contact for carry reactive energy (1NO)	
Tariffs:		n° 2 tariffs for active and reactive energy	n° 2 tariffs for active and reactive energy	
Max. output current with pulse:	(A)	0,09	0,09	
Pulse output contact operating voltage:	(V)	5÷33 a.c. 5÷70 d.c.	5÷33 a.c. 5÷70 d.c.	
Output pulse frequency:	(imp/kWh) (imp/kvar)	500	100-10-1	
Output pulse duration:	(ms)	50	50	
Display:		LCD (N° 8 digits)	LCD (N° 8 digits)	
Digits displayed:		999 999.99 (active and reactive energy) 999 (active and reactive power)	999 999.99 (active and reactive energy) 999 (active and reactive power)	
Degree of protection:		IP20	IP20	
Operating temperature:	(°C)	-25...+55	-25...+55	
Storage temperature:	(°C)	-25...+70	-25...+70	
Maximum cables section:	(mm ²)	35 (also with terminal cable)	4 (also with terminal cable)	
Screwdriver suggested for main terminals:		PZ2	PZ1	
Maximum cable pulse output contact:	(mm ²)	4 (2,5 with terminal cable)	4 (also with terminal cable)	
Screwdriver suggested for output impulse contact:		shear (0,8x3,5)	PZ1	
Resetting of energy count:		yes	no	yes
Sealing:		yes		yes
Suitable accessory:		with KNX GW90876 interface* with RS485 Modbus GWD6820 interface*		

* Interfaces communicate on KNX bus system or on RS485 Modbus the values of energy and power measured by energy meters. Interfaces are optically coupled with energy meter (the two devices have to be installed side-by-side). KNX interface GW90876 has to be configured with ETS software.

Circuit diagrams



GW D6 806



GW D6 808



MODULAR ACCESSORIES

Hour counter

TECHNICAL DATA		
Standard:		EN 60335-1, EN 60335-2-26
Rated operating voltage (Ue):	(V)	230 a.c.
Rated frequency:	(Hz)	50
Displayed digits:		99,999.99
Resetting:		no
Absorbed power:	(VA)	1
Degree of protection:		IP20
Operating temperature:	(°C)	-25...+55
Maximum wire section:	(mm ²)	10

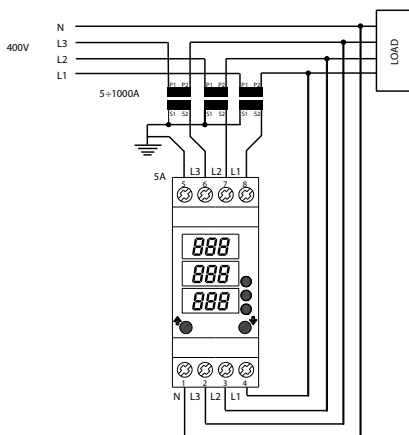


MODULAR ACCESSORIES

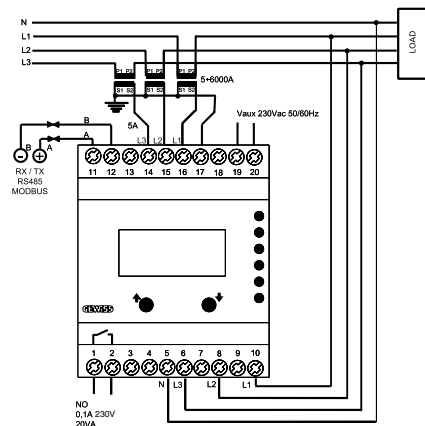
Multimeter and network analyser

TECHNICAL DATA		
Type:	Multimeter	Network analyser
Standard:	EN 61010	EN 61010
Rated operating voltage (Ue):	230 a.c. Phase-Neutral	230 a.c. Phase-Neutral
Rated frequency:	50-60	50-60
Activation:	CT of 5A	CT of 5A
Suitable for network system:	single and three-phase	single and three-phase
Measured values:	Instantaneous measures: - voltage (phase and line) - current	Instantaneous measures: - voltage (phase and line) - power (phases and neutral) - frequency - active, reactive, apparent power (total and by phase) - cos ϕ (total and per phase) Average values (based on 15min): - active, reactive, apparent power (total and by phase) Energy measurement: - active energy (partial, resettable and total) - reactive energy (partial, resettable and total)
Resetting of partial energy count:	-	active and reactive
Display:	LED	LCD
Number of digits displayed:	3	4
Remote signalling contact:	-	all measured values
RS485 output:	-	MODBUS RTU
Precision class:	0.5	2
Overloadability:	1.1 In	1.2 In
Absorbed power:	2	2
Degree of protection:	IP20	IP20
Operating temperature:	(°C) -5...+55	0...+55
Storage temperature:	(°C) -10...+70	-10...+70

Circuit diagrams - Multimeter



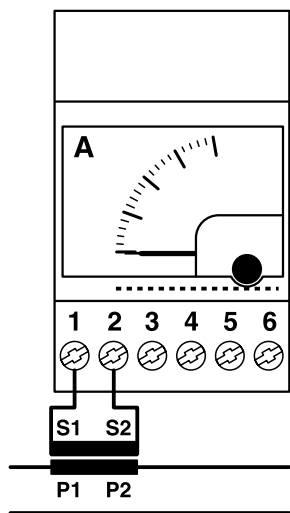
Circuit diagrams - Network analyser



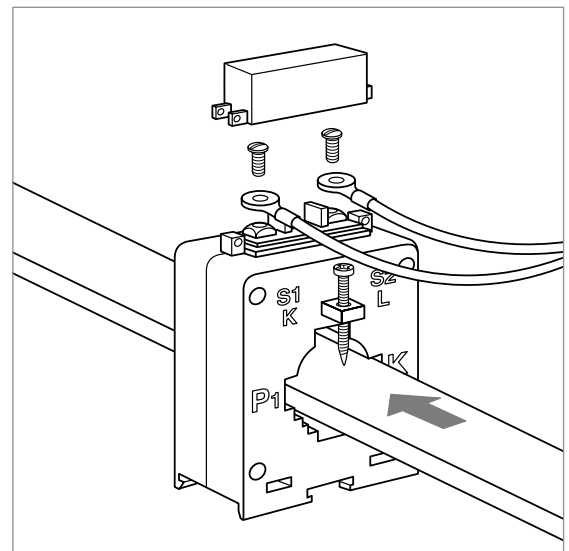
Current transformers

TECHNICAL DATA		
Standards:		EN 61869-1, EN 61869-2
Secondary current:	(A)	5
Rated frequency:	(Hz)	50-60
Test voltage:		6kV at 50Hz for 1 min.
Overload:		1.2 I _n
Dynamic shorting current:		2.5 I _{th}
Safety factor:		< 5
Degree of protection:		IP30
Operating temperature:	(°C)	-20...+50
Storage temperature:	(°C)	-40...+80
Relative humidity:		80%
Maximum cable section:	(mm ²)	10

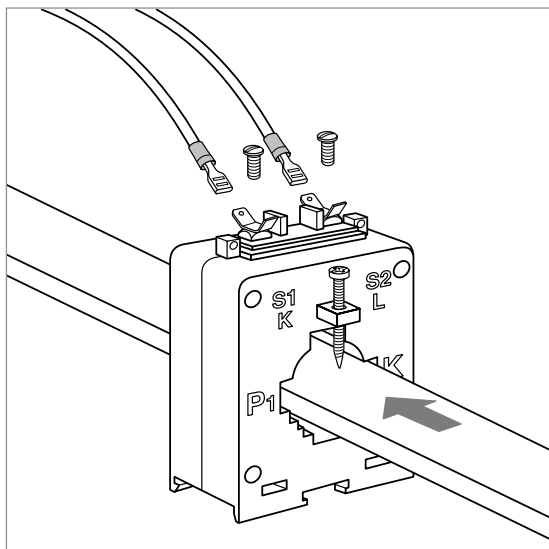
Circuit diagrams



CONNECTION WITH CABLE TERMINAL



CONNECTION WITH FAST-ON (6.3MM)



TERMINAL COVER FIXING AND SEALING

