PM10D01KNXFI01010002.DOC

Single-phase Digital Energy meters - Direct connection 63A

Product and Applications description

• This Energy-meter provides the essential measurement capabilities required to monitor a single phase electrical installation.

• 0.25-5 (63) A, Class B, 230 VAC 50 Hz, -25 °C ... +55 °C, 4 Quadrants, 2 Tariffs.
• Active Energy Class B (according to EN-50470) and Reactive Energy Class 2 (according to IEC 62053-23)
• Direct connected (up to 63 A)
• LCD display and 3 push-button keys (to read Energies, V, I, PF, F, P, Q and to configure some parameters)
• 1 push botton and 1 LED dedicated to KNX.
• Display with 8 digits.
• Self supplied (by the input voltage itself).

Device is intended to be installed on DIN rail.

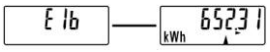
Display

88888888	Energy value
kWhkvarh	kWh / kvarh display
T12	Running tarif,called tarif
◄►	Energy export (received) Energy import (delivered)
P	Energy value “Partial”
KNX	Push botton and LED dedicatet to KNX
1000 imp/kWh	Metrological LED

Commands

V	Scroll Key: This key is used to scroll pages and to modify parameters value. Its pushing is accepted only if it is shorter than 1.5 second..
OK	OK key: This key is used alone to enable a new menu function or to confirm a parameter value during its modification. Its pushing is accepted only if shorter than 1.5 seconds
ESC	ESC key: This key is used alone to exit from a sub-menu, to cancel a parameter modification or to go back to the main page. In these cases, its pushing is accepted only <1.5 seconds
ESC	A long pushing (>1.5 seconds) of the “ESC key” is used in the Partial Energy Registers Pages to reset their values.
ESC	A long pushing (>5 seconds) is used in the Main Energy Registers Pages to reset their values

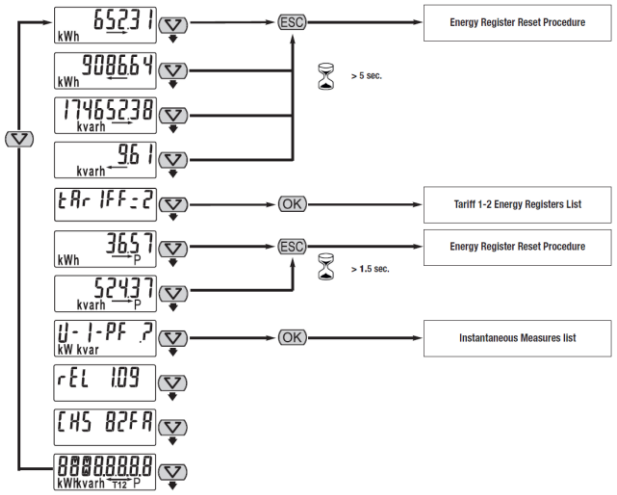
Device Switch-on and Main Page



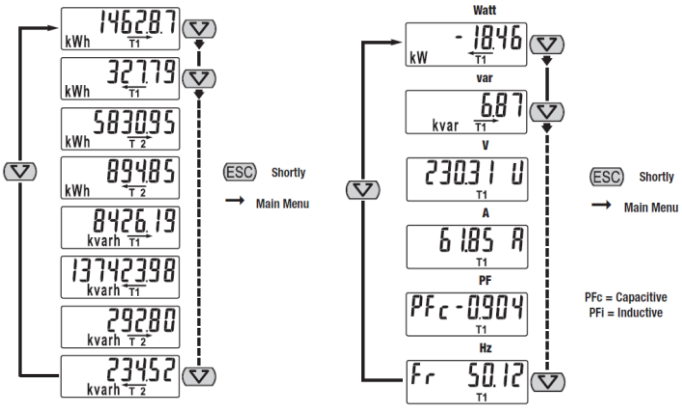
Main Page:
This page appears not only at device switch on, but also in case for 30 seconds no key is pushed. The value is the sum of 2 registers:

Imported Act. Energy Tariff T1 + Imported Act. Energy Tariff T2. (or, alternatively, the sum of the Exported ones).

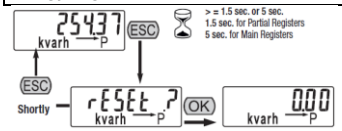
Main Menu



Tariff 1-2 Energy Register List Instantaneous Measurement List



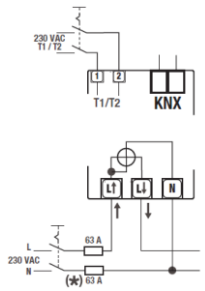
Energy Register Reset Procedure



Diagnostic Message

Error Condition
If the display shows these messages, the meters has got a malfunction and must be replaced.

Wiring Diagram



(*) This fuse is recommended if Neutral is not earthed

Service and Maintenance

It should not be necessary to recalibrate device during its lifetime as it is an electronic meter with no moving parts with electronics and voltage and current sensors that do not naturally degrade or change with time under specified environmental conditions. If a degradation in the performance is observed the device has probably been partly damaged and should be sent for repair or exchanged. If the meter is dirty and needs to be cleaned, use lightly moistened tissue with a water based mild detergent.
Make sure no liquid goes into the meter as this could damage the meter.

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Technical Specifications

Data in compliance with EN 50470-1, EN 50470-3, EN 62053-23 and EN 62053-31

General characteristics				
• Housing	DIN 43880		**DIN**	2 Module
• Mounting	EN 60715		**35 mm**	DIN rail
• Depth			**mm**	70
• Weight			**g**	175
Operating features				
• Connection	to single-phase network		**n° wires**	2
• Storage of energy values and config.	Internal flash memory		**-**	yes
• Tariff	for active and reactive energy		**n° 2**	T1 / T2
Measuring features (according to EN 50470-1, EN 50470-3)				
• Reference Voltage **Un**			**VAC**	230
• Reference Current **(Iref)**			**A**	5
• Minimum Current **(Imin)**			**A**	0.25
• Maximum Current **(Imax)**			**A**	63
• Starting Current **(Ist)**			**A**	0.015
• Reference Frequency **(fn)**			**Hz**	50
• Number of phases (number of wires)			**-**	1 (2)
• Accuracy	Active Energies (accor. to EN 50470-3) and Active Powers		**Class**	B
	Reactive Energies (accor. to EN 62053-23) and Reactive Power		**Class**	2
Supply Voltage and Power Consumption				
• Operating Supply Voltage range			**V**	92 ... 276
• Maximum Power Dissipation (Voltage circuit)			**VA (W)**	<2 (1)
• Maximum VA burden (Current circuit) **@ Imax**			**VA**	<1
• Voltage Input Waveform			**-**	AC
• Voltage impedance			**MΩ**	1
• Current impedance			**mΩ**	<20
Overload capability				
• Voltage	continuous		**VAC**	276
		Temporary (1 s)	**VAC**	300
• Current	continuous		**A**	63
		Temporary (10 ms)	**A**	1890
Measuring Features				
• Voltage range			**VAC**	92 ... 276
• Current range			**A**	0.015 ... 63
• Frequency range			**Hz**	45 ... 65
• Measured Quantities			**-**	V, A, kWh, kVARh, PF, Hz, kW, kVAR
Display features				
• Display type	LCD backlightet		**-**	6.2 +3
		Energy digits dimension	**mm**	6 x 3
• Active Energy	6 digits + 2 decimal digits		**min. max. kWh**	0.01 ... 999999.99
• Reactive Energy	6 digits + 2 decimal digits		**min. max. kvarh**	0.01 ... 999999.99
• Voltage	3 digits + 2 decimal digits		**V**	92.00 ... 276.00
• Current	2 digits + 2 decimal digits		**A**	0.00 ... 63.00
• Power factor	1 digits + 3 dec. digits + capac./induc. indic.		**-**	0.000 ... 1.000
• Frequency	2 digits + 2 decimal digits		**Hz**	45.00 ... 65.00
• Active Power	2 digits + 2 decimal digits with sign		**kW**	0.00 ... 17.40
• Reactive Power	2 digits + 2 decimal digits with sign		**kVAR**	0.00 ... 17.40
• Running Tariff	1 digit		**-**	T1 / T2
• Display refresh period			**s**	1
Optical metrological LED				
• Front mounted red LED (meter constant)	proportional to active imp/exp Energy		**p/kWh**	1000
Safety				
• Protective class			**Class**	II
• AC voltage test (EN 50470-3, 7.2)			**kV**	4
• Degree of pollution			**-**	2
• Operational voltage			**V**	300
• Impulse voltage test			**1.2/50 μs-kV**	6
• Housing material flame resistance	UL 94		**Class**	V0
Embedded communication				
• Physical interface			**-**	KNX terminal
• Isolation class			**-**	SELV circuit
Tariff				
• Tariff 1			**-**	open contact
• Tariff 2			**VAC**	230 ±20%
• Input impedance			**kΩ**	224
Connection terminals				
• Screwdriver for mains terminals	head with Z +/-		**POZIDRIV**	PZ2
• Screwdriver for tariff terminals	slotted head		**mm**	0.8 x 3.5
• Terminal capacity main current paths	solid wire min. (max)		**mm^2**	1.65 (33)
		stranded wire with sleeve min. (max)	**mm^2**	1.65 (33)
• Terminal capacity for tariff	solid wire min. (max)		**mm^2**	1 (4)
		stranded wire with sleeve min. (max)	**mm^2**	1 (2.5)
Environmental conditions (storage)				
• Temperature range			**°C**	-25 ... +70
Environmental conditions (operating)				
• Temperature range			**°C**	-25 ... +55
• Mechanical environment			**-**	M1
• Electromagnetic environment			**-**	E2
• Installation	Indoor		**-**	yes
• Altitude (max.)			**meter**	<2000
• Humidity	yearly average, not condensing		**-**	<75%
		on 30 days per year (not condensing)	**-**	<95%
• IP rating			**-**	IP51(-)/IP40

(*) The metering equipment must be installed inside a cabinet with IP rating IP51 or better.

Installation instructions

WARNING

Device must be installed keeping a minimum distance of 4mm between electrical power line (mains - 230V) and red / black bus connector or bus cable.

- Device may be used for indoor installations in dry locations.
- Device must be mounted by an authorised installer.
- Device must be installed in a location that is accessible only to qualified installers
- The applicable safety and accident prevention regulations must be observed.
- Device must not be opened. Any faulty device should be returned to manufacturer.
- For planning and construction of electric installations, the relevant guidelines, regulations and standards of the respective country are to be considered.
- KNX bus allows you to remotely send commands to the system actuators. Always make sure that the execution of remote commands do not lead to hazardous situations, and that the user always has a warning about which commands can be activated remotely.

For further information please visit www.eelectron.com

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