

digital active and reactive energy-meter with measurement of active and reactive instantaneous power, set up for communication

► Direct connection 125 A

Application

The energy-meters “with a green back-lighted LCD screen for perfect reading” are used to measure three-phase systems or single-phase like in Residential, Utility and Industrial applications.

Monitoring of the energy-consumption goes via a S0 pulse output. The products can be set up to communicate with LAN, Profibus DP-V0, Modbus RTU, M-Bus, RS-485 and EIB-KNX interfaces are used to analyze the energy-consumption to reduce the running cost to a minimum for Industrial plants and buildings like Offices, Hospitals, Universities etc.

- For information on the operation of the LAN, Profibus DP-V0, Modbus RTU, M-Bus, RS-485 and EIB-KNX interfaces, see page 29-41.

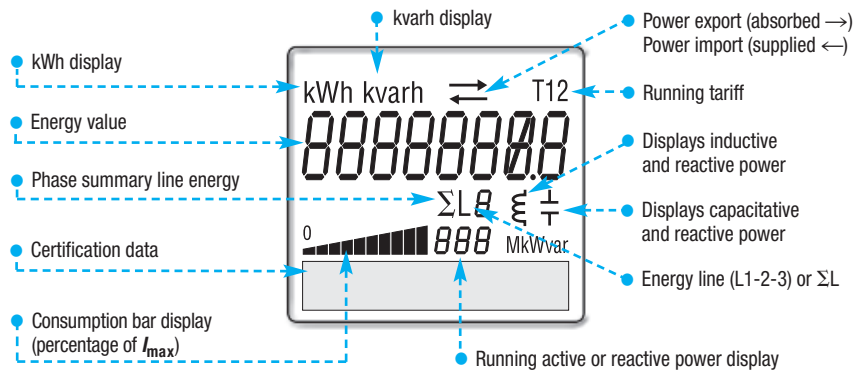
Function

Display

		Unit	ID
Active energy	Tariff 1	kWh	Energy absorbed or supplied
	Tariff 2	kWh	Energy absorbed or supplied
Reactive energy	Tariff 1	kvarh	Inductive or capacitative load
	Tariff 2	kvarh	Inductive or capacitative load
Active power		(k-M) W	Utilization and instantaneous value
Reactive power		(k-M) var	Utilization and instantaneous value
Connection errors			PHASE Err

Display

Liquid crystal display with illuminated green background



6 standard module housing, suitable for DIN rail mounting direct connection 125 A

Backlighting makes display easy to read

Optic control IR

Space for the certification data can be provided on request MiD



Precision control LED

Readout selection push button kWh and Δ W or kvarh and Δ var

Terminals S0 pulse outlet and Tariffs change command

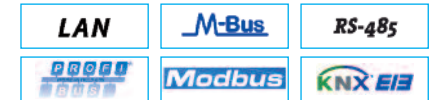
IR-optical readout in accordance with EN 62056-21 connection RS232 or USB

Supply terminals connection 125 A direct

EC3-125



Communication modules



for the technical data, see page 22-33.



Optical interfaces

- IR
- IR-optical readout in accordance with EN 62056-21 connection RS232 or USB



Sealable terminal covers



ENERGY-METERS THREE-PHASE

digital active and reactive energy-meter with measurement of active and reactive instantaneous power, set up for communication - 2 tariffs - 2 S0



EC3-125



► Direct connection 125 A

Overview

Active energy-meters for three-phase alternating current with either 1, 8 digits digital counters. These meters have 2 S0 output generating pulses for remote processing of the instantaneous energy active and reactive measurements for 2 tariff.

- Green backlighted LCD
- For direct connection 125 A
- 8 digits - 8 display for energy values indication
- Parameter also readings from front mounted IR in accordance with EN 62056-21
- Accuracy class 1 for active energy according to EN 50470-3 (B)
- Accuracy class 2 for reactive energy according to EN 62053-23
- The standard versions are designed to be combined with the communication module
- Energy register zero setting (NO MID)
- Energy register for import and export
- Instantaneous power active and reactive display
- Sealable terminal covers
- 6 DIN modules wide (108 mm)

Technical data

Data in compliance with EN 50470-1			direct connection 125 A
General characteristics			
• Housing	DIN 43880	DIN	6 modules
• Mounting	EN 60715	35 mm	DIN rail
• Depth		mm	70
• Reference standard	EN 50470-1-3, EN 62053-23-31	-	EN 50470-1-3, EN 62053-23-31
Operating features			
• Connectivity	to single/three-phase network	n° wires	2-3-4
• Storage of energy values and configuration	digital display (EEPROM)	-	yes
• Display tariffs identifier	for active and reactive energy	n° 2	T1 and T2
Supply			
• Rated control supply voltage U_n		VAC	230
• Operating range voltage		V	184 ... 276
• Rated frequency		Hz	50
• Rated power dissipation (max.) P_v		VA (W)	≤8 (0.6)
Overload capability			
• Voltage U_n	continuous; phase/phase	V	480
	1 second; phase/phase	V	800
	continuous; phase/N	V	276
	1 second; phase/N	V	460
• Current I_{max}	continuous	A	125
	momentary (10 ms)	A	4500
Display (readouts)			
• Connection errors and phase out	discernible from phase-sequence indication	-	PHASE Err
• Display type	LCD	n° digits	8
	digit dimensions	mm x mm	6.00 x 3
• Active energy: 1 display, 8 digit	tariffs 2	kWh	0000000.0 ... 9999999.9
+ display import or export (arrow)	overflow	kWh	9999999.9 ... 0000000.0
• Reactive energy: 1 display, 8 digit	tariffs 2	kvarh	0000000.0 ... 9999999.9
+ display import or export (arrow)	overflow	kvarh	9999999.9 ... 0000000.0
• Instantaneous active power: 1 display, 3 digit		W, kW or MW	000 ... 999
• Instantaneous reactive power: 1 display, 3 digit		var, kvar or Mvar	000 ... 999
• Instantaneous tariff measurement		-	1
	1 display, 1-digit	-	T1 or T2
		s	2
• Display period refresh			
Measuring accuracy			
• Active energy and power	at 23 ±1°C, referred to nominal values		
• Reactive energy and power	acc.to EN 50470-3	class 1	±1% (B)
	acc.to EN 62053-23	class 2	±2%
Measuring input			
• Type of connection			direct
• Voltage U_n	phase/phase	V	400
	phase/N	V	230
• Operating range voltage	phase/phase	V	139 ... 480
	phase/N	V	184 ... 276
• Current I_{ref}		A	10
• Current I_{min}		A	0.5
• Operating range current ($I_{st}... I_{max}$)	direct connection	A	0.10 ... 125
• Frequency		Hz	50
• Input waveform		-	sinus. symm.
• Starting current for energy measurement (I_{st})		mA	50
Pulse output S0			
• Pulse output	acc.to EN 62053-31		yes
• Terminal output	for active and reactive energy T1 and T2	-	100
• Pulse duration		imp/kWh	30 ±2 ms
• Required voltage	min. (max.)	ms	5 ... 230 ±5% (5 ... 300)
• Permissible current	pulse ON (max. 230 V AC/DC)	VAC (DC)	90
• Permissible current	Impuls OFF (leakage cur. max. 230 V AC/DC)	mA	1
		μA	
Optical interfaces			
• Front side (accuracy control)	LED	imp/kWh	500
Safety acc. to EN 50470-1			
• Indoor meter		-	yes
• Degree of pollution		-	4

digital active and reactive energy-meter with measurement of active and reactive instantaneous power,
set up for communication - 2 tariffs - 2 SO

EC3-125



Technical data

Data in compliance with EN 50470-1		direct connection 125 A
Safety acc. to EN 50470-1		
• Operational voltage		V 300
• Impulse voltage test		1.2/50 µs-kV 6
• Housing material flame resistance	UL 94	class V0
• Safety-sealing between upper and lower housing part (mod. 282651)		- yes
Adaptor for Communication		
• Plug-and-play technology		-
• LAN Server (TCP/IP)	Ethernet 802.3	-
• Modbus RTU, Ascii / RS-485	RS-485 - 2 wires	-
• Profibus DP-V0	RS-485 - 2 wires	-
• M-Bus	2 wires	-
• EIB-KNX	EIB-standard	-
Connection terminals		
• Type cage main current paths	screw head Z +/-	POZIDRIV
• Type cage pulse output	blade for slotted screw	mm 0.8 x 3.5
• Terminal capacity main current paths	solid wire min. (max.)	mm ² 1.5 (50)
	stranded wire with sleeve min. (max.)	mm ² 1.5 (50)
• Terminal capacity pulse outlet	solid wire min. (max.)	mm ² 0.14 (2.5)
	stranded wire with sleeve min. (max.)	mm ² 0.14 (1.5)
Environmental conditions		
• Mechanical environment		- M1
• Electromagnetic environment		- E2
• Operating temperature		°C -10 ... +55
• Limit temperature of transportation and storage		°C -25 ... +70
• Relative humidity (not condensation)		% ≤80
• Vibrations	50 Hz sinusoidal vibration amplitude	mm ±0.075
• Degree protection	housing when mounted in front (terminal)	- IP51(*)/IP20

(*) For the installation in a cabinet at least with IP51 protection.

Selection and ordering data

three-phase active and reactive energy-meter with measurement of active and reactive instantaneous power,
set up for communication - 6 modules DIN

Code	Code	Description
Energy register zero setting (not calibratable - MiD)	Energy with MiD calibration on board	
22.461.500.000	22.461.500.100	three-phase digital active and reactive energy-meter with direct connection 0.5-10 (125) A - 2 tariffs - 2 SO

Optional - additional communication modules - 1 or 2 modules DIN

LAN	Modbus	RS-485	for the technical data, see page 29-41.
	M-Bus	KNX EIB	