

Approved measuring data

Approval	Standard	Various	Standard
Meter	IEC 61036, 2nd edition	Verification	IEC 61358
Accuracy class	Class 2	Optical reading	IEC 61107
Measuring class	Basic current 5 A Max. current 80 A		

Technical data

Measuring principle	Single phase current measurement via shunt	Relative humidity	≤ 95% not condensing
Voltage range	U_n 230 VAC ±10%	Weight	Approx. 460 g
Current range	I_b 5 A I_{max} 80 A	Materials	Cover: transparent polycarbonate Bracket: glass reinforced polycarbonate
Frequency	f_n 50 Hz ± 2%	Memory	EEPROM
Power factor	$\cos\phi$ 0.5 inductive $\cos\phi$ 0.8 capacitive	Data storage	> 10 years without power supply
Power consumption, voltage circuit	≤ 0.2 VA, 0.15 W	Display	1 + 7 + 3 digits, 7 mm kWh: 7 digits
Power consumption, current circuit at Ib	≤ 0.01 VA	Optical readout head	IEC 61107 mode A, 300 baud
Application	Indoors or in suitable outdoor cabinet	Meter constant	1000 imp/kWh
Operating temperature	-40°C - +63°C	Measuring circuit (L1 + N)	V-shaped elevating terminals 4 mm ² - 25 mm ² (Pz 2) Torque: 2.5 - 3 Nm
Storage temperature	-40°C - +70°C		
Protective class	IP51		
Protection class	II		

Connections

Supply terminal	Cable terminal forks 4 mm (Tx 10)
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Plug-in modules

The meter can be supplied or retrofitted with following inputs and outputs from the main print via plug-in modules, without re-verification.

Functions

Pulse input

Contact input	
Normal (≤ 0.5 Hz)	Pulse duration ≥ 1 s.
Quick (≤ 16 Hz)	Pulse duration ≥ 30 ms

Pulse output 2

Pulse duration, 1 imp/Wh	30 ms ±10%
Pulse duration, 1 imp/kWh	60 ms ±10%

Data output RS232, open collector
300/1200 baud

Pulse duration and frequency are configurable via optical and hardwired data communication.

Modules

Datalogger/Timeswitch	Logging of 5, 15, 30 and 60 min. values
Radio	Collection of consumption data based on radio communication
V.22 Modem	Supports Caller ID and the telemetry function
S0 Pulse module	S0 pulses according to DIN 43864
S0 Supply module	Transmits pulses and, if required, 24 V supply voltage via a two wire
Data/pulse	Pulse input, pulse output 2 and serial communication (RS232)
Telephone modem	Remote reading via analog telephone line
M-Bus	Remote reading via M-Bus system. (EN1434-3)
RCR	Ripple Control Receiver
Current Loop	Tariff control of 2 tariffs, CS and 230 V

K162 Single phase M-bus enabled electricity meter



- kWh meter 5(80)A
- Easily readable display
- Safe data logging of consumption
- Modular space for future updating
- Optical and serial reading
- Large degree of accuracy
- Configurable processor

Application

K - 162 is a single-phase direct meter for domestic customers and is approved for billing of single-phased installations.

At the same time K - 162 meets the increasing demands for larger flexibility, accuracy and improved customer information. The easy-to-read display shows the accumulated consumption. By pressing the button current power, peak power etc. are displayed.

The future-proof construction with extension facilities and low internal current consumption ensures economical and stable operation.

The meter's full-current measuring circuit measures via a shunt, obtaining a very large and accurate dynamic measurement range. The meter has a low starting current and is linear throughout the entire measuring range.

Due to high resolution, long-term stability and accuracy, together with direct current and voltage measurement through instrument transformer, verification and random sample control are quickly carried out. The measuring circuit is furnished with a separate stabilizing current supply.

The display functions and the meter's optional pulse inputs and outputs can be configured as required, without influencing the verified measurement.

The meter is developed and produced in Denmark and has a type approval according to IEC 61036, IEC 62052-11, IEC 62053-21 and is verified according to IEC 61358.

Optical Reading

On the front of the electricity meter to the left an optical infrared sender/receiver according to IEC 61107 is placed, which can be used to read data or configure e.g. display set-up and pulse figures.

The meter's display readings and pulse set-up can be configured. For this purpose a special program is needed, and a 6-digit code must be entered as a password.

It is not possible to change the meter's legal data without breaking the verification seal and modifying the PC.

The electricity meter can be retrofitted with a plug-in module without re-verification.

Switch2 Energy Solutions Limited

High Mill, Mill Street, Cullingworth
Bradford, West Yorkshire, BD13 5HA, UK

Contact us on +44 (0)870 999 6030
Fax: +44 (0)870 999 6031

Visit our websites:

www.switch2.com
www.metersdirect.co.uk

Email: sales@switch2.com



Switch2 Energy Solutions Limited

Display

The electricity meter is equipped with a liquid crystal display with 8 numeric digits as well as 3 alphanumeric characters. During normal operation the accumulated value for consumed electric energy is displayed with 7 digits and the corresponding measuring unit kWh by the 3 alphanumeric characters. The symbol "L1" at the bottom left of the display always indicates whether the phase is connected.

If consumption is registered on the electricity meter the yellow LED blinks with 1,000 pulses per kWh consumed.

Also, in the top left corner of the display a small square indicates the consumption with a higher resolution compared to the yellow LED.

When the arrow key is activated it is possible to step through several display readings and functions, if these possibilities have been selected during configuration of the meter. The display changes when the button is released.

• Accumulated energykWh

Always displayed

• Tariff1*, accumulated energykWh/T1

Displayed in two-tariff meter type

• Tariff2*, accumulated energykWh/T2

Displayed in two-tariff meter type

• Actual powerW

Exponentially average of instantaneous effect

• Hour counterHRS

Accumulated operating hours

• Trip recorder, two decimalskWh

Is reset by pressing the button for 6 sec.

• Peak powerWP

The month's highest quarterly power

• Meter numberNUM

Displays 8 digits

• Pulse inputm3/-kWh/l

Shows accumulated input pulses

• Customer data

The customer data programmed into the meter

• Display test

Activates all segments of the display

• CallCall

By pressing the button for 6 seconds a forced call of the meter's modem module is made.

Two minutes after the last activation of the push-button, the display automatically switches to accumulated electric energy in kWh.

* The measuring unit is shifting between T and kWh.

Calculation

A measuring circuit from phase sends pulses to the microprocessor, which accumulates the pulses in an energy register. When 1 Wh has been counted, a register is increased by 1. Having accumulated 1,000 pulses in register 1, the EEPROM and the display are increased by 1.

The average power during the period is calculated every 15 minutes. The highest W-peak value of the month is stored in the EEPROM. The value is reset at the end of the month.

Permanent Memory

The meter's data memory (EEPROM) is updated whenever the meter's kWh register is changed.

Also customer number, hourly W-peak, hour counter and pulse input register are stored.

In addition, after each 730 hour period the monthly values for the kWh register and the values for the last 36 months are stored.

Plug-In Modules

The modular space communicates with the electricity meter's microprocessor via an internal data bus, which provides innumerable functional possibilities, e.g. pulse output, telephone modem, S0-power supply modules, extra pulse inputs and data communication e.g. radio and DTMF-modem.

Accessories

MODULES

- Datalogger/Timeswitch S7590 033
- Radio module 68 50 015S0
- Pulse module 68 50 021S0
- Supply module 68 50 001
- Data/pulse module, relay output 68 50 003
- Tariff control module 68 50 006
- Telephone modem module 68 50 009
- M-Bus module 68 50 005
- RCR module, Ripple Control Receiver 68 50 012
- V.22 modem 68 50 010
- Tariff module, 2 tariffs, 230 V 68 50 008
- Tariff module, 2 tariffs, 230 V, current loop S7590 026

GSM modem (dual band) S7510 003

SOFTWARE

Configuration software, METERTOOL for 162/382 68 99 540

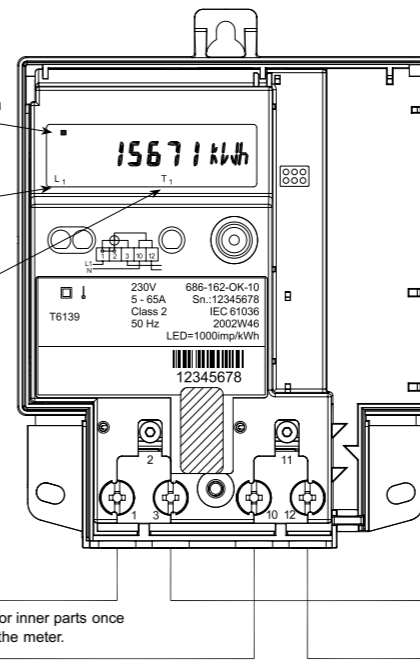
VARIOUS

- Long terminal cover 30 26 226
- Optical readout head with 9-pole D-sub plug 66 99 102
- Top fitting, metal bow 68 50 101
- Contact plugs, 50 pcs. 68 50 102
- Cable terminals, 50 pcs. 68 50 103

Installation

Only authorised personnel is permitted to install the electricity meter.

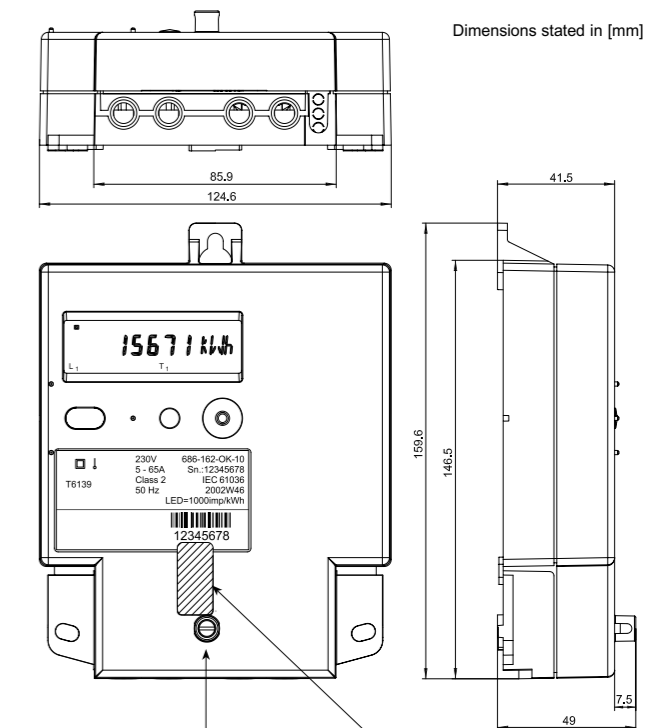
- Consumption indication**
- blinks, if power consumption is registered on the phase
- L Phase connection**
- lights up, if the meter is connected to the phase
- T Tariff indication**
- lights up if tariff is active.



Warning

Danger! Do not touch connections or inner parts once the voltage supply is connected to the meter.

Sealing



Typical accuracy charts

