GOSSEN METRAWATT

Safety through Competence

ENERGYMETER MID

ENERGY CONTROL SYSTEM

Energy Management

Smart Metering by Gossen Metrawatt

Universal Utilization – Starting With Meters Right On Up To Energy Management System

The calibrated energy meter can be used to acquire and bill active energy in industrial, household, commercial and building management applications. Relevant values are transmitted to data logging, billing and optimizing systems, as well as to building automation and control technology applications, by means of a pulse output, or via LON, M-Bus or L-Bus interface. Installation itself is extremely simple because the meter detects connection errors, which are indicated immediately. Maximum convenience is assured by displaying active power, which provides immediate information regarding momentary circuit load. If more information about the electrical system is required, functionality is simply expanded.

Integrated Error Detection

Incorrect phase sequence, missing phases, current transformers with reversed polarity, measuring range overloads and missing bus connections are displayed automatically, which saves valuable time and test equipment during troubleshooting.

Multifunctional Variant

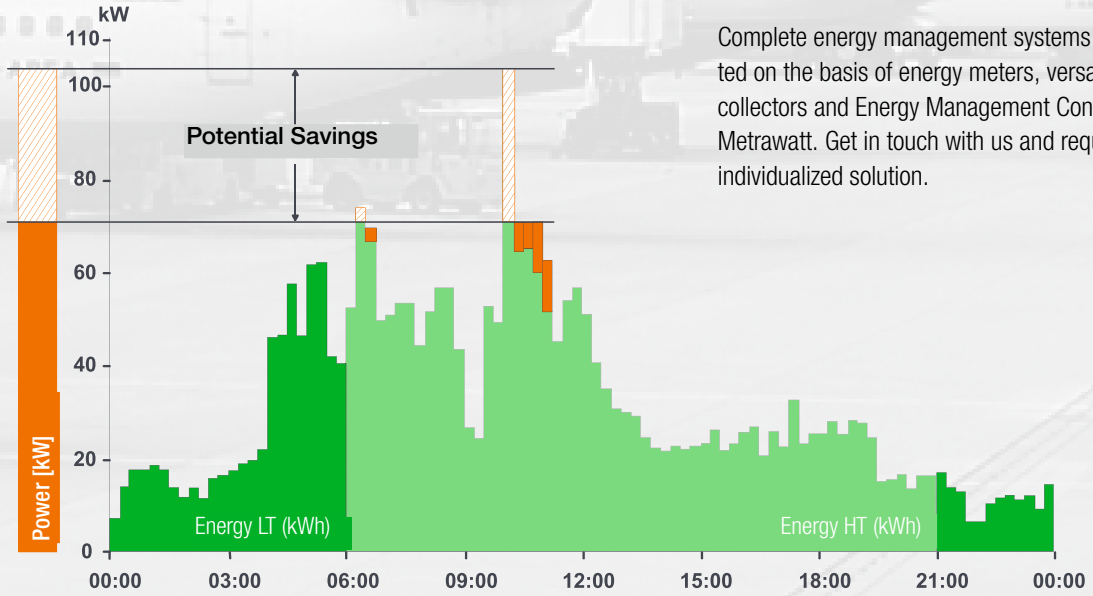
Depending on the selected type of multifunctional variant, the meter is also capable of acquiring reactive power and displaying up to 26 additional measured quantities. As a result, voltage level, utilization of individual phases, reactive power component and the functioning of compensation systems can be evaluated at any time by simply pressing a button without any additional measuring equipment. Refer to the table for details.

Measuring Function			Feature			
Measured Quantity	**Total**	**Per Phase**	**M0**	**M1**	**M2**	**M3**
Active energy (kWh)	■		■	■	■	■
Active power (kW)	■		■	■	■	■
Reactive energy (kVArh)	■				■	■
Reactive power (kVAr)	■				■	■
Voltage (V)		■		■		■
Current (A)		■		■		■
Active power (kW)	■	■		■		■
Reactive power (kVAr)	■	■		■		■
Apparent power (kVAr)	■	■		■		■
Power factor (cos phi)	■	■		■		■
Frequency (Hz)	■			■		■

ENERGYMETER MID
ENERGY CONTROL SYSTEM

Energy Management Systems per EN16001

Complete energy management systems for EN 16001 are implemented on the basis of energy meters, versatile SMARTCONTROL data collectors and Energy Management Control software from Gossen Metrawatt. Get in touch with us and request a quotation for your individualized solution.



Full Functionality Even When the Electrical Circuit is Switched Off

Normally, the energy meter is supplied with power from the 3-phase electrical system via the measurement inputs. As an option, it can also be operated with failsafe 24 V_{DC} auxiliary power which provides for full display and interface functionality.

Features

- Professional energy meter for 2, 3 and 4 wire systems with 65 A direct connection, or 1 A or 5 A transformer connection
- Accuracy class B (1%) for industrial and commercial use, as well as for household use with highly demanding requirements
- Cost savings thanks to initial calibration at the factory in accordance with MID, conformity assessment procedure modules B and D
- Calibration even with adjustable transformation ratios
- Configurable, multifunctional variants for acquiring reactive energy and mains quantities
- Installation errors display: phase sequence, phase failure, transformers with reversed polarity, overload
- Universal pulse output with adjustable pulse rate and pulse duration, as well as selectable voltage range
- Flexible communication via integrated LON, M-Bus or L-Bus interface
- Full functionality even when the electrical circuit is switched off thanks to failsafe 24 V_{DC} auxiliary voltage
- Tamper-proof cover, configuration disabling
- 3 years‘ warranty
- Quality product made in Germany

Scalable Functionality

The energy meter can be ideally matched to the measuring task – and the customer only pays for what is actually required.

Configuration Table	Direct Connection 5 (65) A		Transformer Connection 1 (6) A und 5 (6) A		
Active Energy Meter with Power Display					
2-wire system	**U1281**		**U1381**		
3-wire system				**U1387**	
4-wire system		**U1289**			**U1389**
Input Voltage					
100 ... 110 V_{L-L}				U3	U3
230 V_{L-N}	U5		U5		
400 V_{L-L}		U6		U6	U6
500 V_{L-L}				U7	
Pulse Output					
S0 standard 1000 pulses / kWh, calibrated [1]	V1	V1	V1	V1	V1
Programmable S0 [1]	V2	V2	V2	V2	V2
230 V standard 1000 pulses / kWh, calibrated [1]	V3	V3	V3	V3	V3
230 V programmable [1]	V4	V4	V4	V4	V4
Customer-specific S0, calibrated [1]	V9	V9	V9	V9	V9
Transformer Ratios					
CT=VT=1 Secondary, main display, calibrated			Q0	Q0	Q0
CT, VT programmable Secondary, auxiliary display, calibrated			Q1	Q1	Q1
CT, VT fixed Primary, main display, calibrated			Q9	Q9	Q9
Options					
Multifunctional Variant					
U, I, P, Q, S, PF, f	M1	M1	M1	M1	M1
Reactive energy	M2	M2	M2	M2	M2
Reactive energy, U, I, P, Q, S, PF, f	M3	M3	M3	M3	M3
Bus Connection					
LON	W1	W1	W1	W1	W1
M-Bus	W2	W2	W2	W2	W2
L-Bus	W3	W3	W3	W3	W3
External Auxiliary Voltage					
24 V_{DC} [2]	H1	H1	H1	H1	H1

[1] In the case of U138x transformer meters with option Q9, the pulse rate is read out with reference to the primary winding

[2] Not in combination with 230 V pulse output – V3, V4

Quality That Counts

M-Bus

Cutoff date and clock function, consumption values, time stamp, instantaneous power, status, free MBCONF configuration program, DIN EN 13757-2/3, 300 to 9600 bits/s

LonWorks

Convenient service PIN function, standard network variable types, profiles, LNS plug-in, XIF files, all relevant measured values, errors, FTT-10A transceiver, 78 kBits/s

L-Bus

Low power bus for connection to the battery operated IZAR RADIO EXTERN, L-BUS / RS 232 radio module from Hydrometer Electronic GmbH

Flexible Communication

The meter is equipped with a pulse output for energy quantities as a standard feature, whose pulse rate, pulse duration and dielectric strength can be ideally matched to the requirements of the processing system.
However, even more convenience is offered by integratable serial interfaces which transmit meter readings, additional measured quantities and error status. This assures a more complete overview with minimal wiring effort, and additionally simplifies system maintenance after interruptions or failures.

Extensive Initial Calibration at the Factory

The meters comply with the MID directive which is valid throughout Europe and in Switzerland, and are shipped with initial factory calibration. They can be used immediately for billing purposes. Lead-times and costs are reduced as a result. Conformity assessment is conducted in accordance with modules B and D, and a declaration of conformity is included in the operating instructions. Depending upon which transformation ratio option is ordered, the transformer meter can be calibrated to either primary or secondary energy. When calibrated to primary energy, transformation ratios have to be specified in the purchase order and can no longer be changed. When calibrated to secondary energy, a calibration ratio of CT=VT=1 is used, and the actual transformer ratio must subsequently be taken into consideration.

The third variant is especially advantageous: Transformation ratios can be adjusted, primary energy appears at the main display and calibrated secondary energy is indicated at the auxiliary display. This variant is highly advisable when transformation ratios are not yet known or will have to be adjusted later, although primary energy nevertheless needs to be displayed. The calibrated auxiliary display is relevant for billing in this respect.

GOSSEN METRAWATT

GMC-I Messtechnik GmbH
Südwestpark 15 ▪ 90449 Nürnberg ▪ Germany
Phone: +49 911 8602-111 ▪ Fax: +49 911 8602-777

www.gossenmetrawatt.com ▪ info@gossenmetrawatt.com

Printed in Germany . Subject to change without notice . 1/7.11. 3-337-287-03