

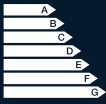
# SMALL POWERFUL INEXPENSIVE

CALIBRATED, RELIABLE,  
COST-EFFECTIVE  
ENERGY LOGGING

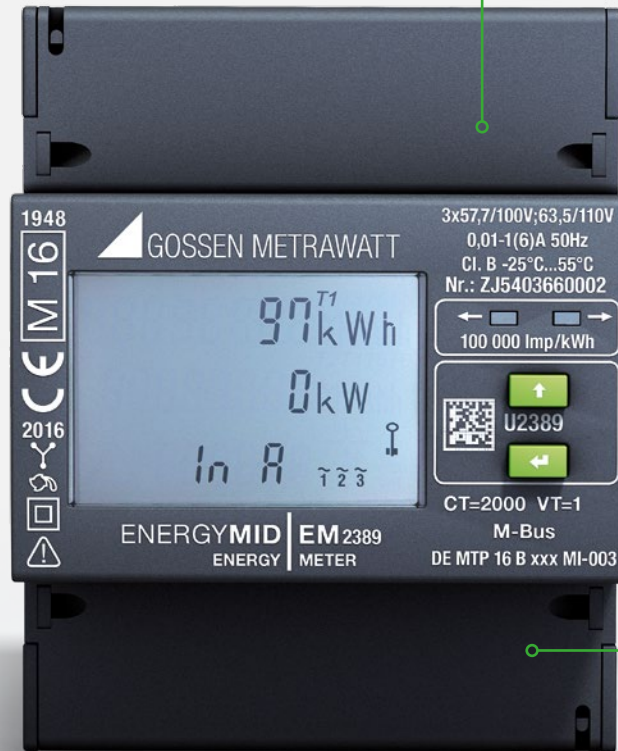


**ENERGYMID-SERIE**

EM228X • EM238X



ENERGYMID Energy Meters –  
the Professional Solution for Recording  
Your Energy Consumption



### ENERGYMID ENERGY METERS

## SMALLER, MORE POWERFUL, INEXPENSIVE

The new generation of ENERGYMID energy meters is opening up entirely new potential savings for you. The extremely compact design with integrated interface leaves you with more room in the distributor or control cabinet for other necessary functions. And thanks to our installation tools and integrated diagnosis of connection errors, installation is now even faster.

Furthermore, with ENERGYMID you only pay for the functions you actually need because in addition to standard variants, the energy meters can be expanded as required with individual functions and interfaces.

### THE SOLUTION FOR EVER STRICTER DEMANDS FOR DISTRIBUTORS AND CONTROL CABINETS

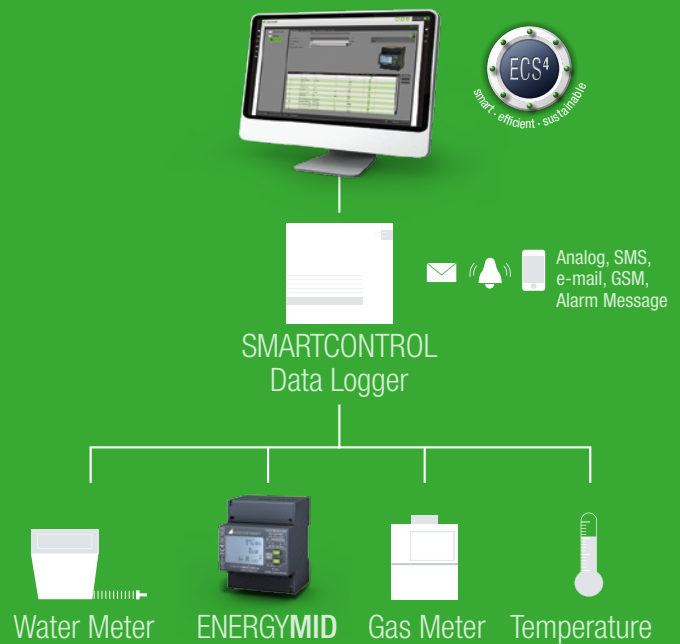
Increasing requirements for convenience, as well as control and monitoring functions, are taking up more and more space in distributors and control cabinets. At the same time, flexible communication for linking meters to billing and optimizing systems, as well as building automation, is becoming more and more important. Thanks to a broad range of interfaces and an ultra-compact housing (72 mm), calibrated ENERGYMID energy meters are the perfect solution for energy logging in industrial, household, commercial and building management applications – at a very low price.

# ECS – THE SMART WAY TO COST CONTROL

The Energy Control System (ECS) from Gossen Metrawatt is the clever solution for logging energy data. It provides the fundamentals for optimizing consumption and load, as well as for cost center billing.

## ENERGY MANAGEMENT PER EN 50001

Together with the multifunctional SMARTCONTROL data logger, ENERGYMID energy meters serve as the basis for an energy management system in accordance with ISO 50001. Evaluation is conducted simply and reliably by means of SMARTCOLLECT data management software.



## MULTIFUNCTIONAL VARIANTS

Depending on the type of multifunctional variant, the meter is also capable of acquiring reactive power and indicating up to 33 additional measured quantities directly at the display. For example, the RMS distortion value (THD) is also measured for voltage and current, which indicates possible power disturbances.

And thus you always have access to an overview of your electrical system by simply pressing a button – without switching the electrical circuit off and without any additional measuring equipment.

MEASURING FUNCTION		Accuracy (ref. cond.)	Display (feature)			
			M0	M1	M2 <sup>2</sup>	M3 <sup>2</sup>
Measured Quantity						
Active energy (kWh) <sup>1</sup>	EP1 ... EP8, EPtot	± 1%	■	■	■	■
Reactive energy (kVAh)	EQtot	± 2%	-	-	■	■
Star voltage (V)	U1 <sub>N</sub> , U2 <sub>N</sub> , U3 <sub>N</sub>	0.5% ± 1 d	-	■	-	■
Delta voltage (V)	U12, U23, U13	0.5% ± 1 d	-	■	-	■
Current per phase (A)	I1, I2, I3	0.5% ± 1 d	-	■	-	■
N conductor current (A)	I <sub>N</sub> <sup>3</sup>	1% ± 1 d, typ.	-	■	-	■
Active power (kW)	P1, P2, P3, Ptot	1% ± 1 d	-	■	-	■
Reactive power (kVA)	Q1, Q2, Q3, Qtot	1% ± 1 d	-	■	-	■
Apparent power (kVA)	S1, S2, S3, Stot	1% ± 1 d	-	■	-	■
Power factor (cos phi)	PF1, PF2, PF3, PFtot	1% ± 1 d	-	■	-	■
Frequency (Hz)	f	0.05% ± 1 d	-	■	-	■
RMS distortion value	THD U1, U2, U3		-	■	-	■
	THD I1, I2, I3		-	■	-	■

<sup>1</sup> Total active power (kW) appears at auxiliary display 2

<sup>2</sup> Not approved for billing purposes in Switzerland

<sup>3</sup> The greatest current value per phase is used as a reference value for accuracy.

# HIGHLIGHTS



## UNIVERSAL

Energy meters for 2, 3 and 4-wire systems with 5 (80) A direct connection or 1 (6) A transformer connection



## PRECISE

Accuracy class B for industrial and commercial use, as well as for household use with highly demanding requirements



## MID APPROVAL

Suitable for billing purposes thanks to initial calibration at the factory in accordance with MID (conformity assessment procedure modules B and D)



## SMALL FOOTPRINT

Just 4 standard width units (72 mm) with integrated interface



## 4 QUADRANT MEASUREMENT

Measurement of energy import as well as energy export



## MULTIFUNCTIONAL

Multifunctional variant with up to 33 additional measured quantities (e.g. reactive power, apparent power, power factor and frequency)



## POWER MONITORING

Inexpensive power monitoring by acquiring THD for current and voltage, as well as neutral conductor current  $I_N$



## INTERFACES

Flexible communication and remote read-out via integrated interface: LON, M-Bus, Modbus RTU, Modbus TCP or BACnet



## FUTURE-PROOF

Adaptable to future tariff structures thanks to as many as 8 tariff inputs

# INTEGRATED ADVANTAGES



## SMALLER FOOTPRINT

FOR EVEN MORE FUNCTIONS IN YOUR DISTRIBUTOR / CONTROL CABINET

- More room in the distributor thanks to an ultra-compact design with a space requirement of just 4 standard width units (72 mm)
- Integrated interface for hook-up to logging and optimizing systems
- Optimized housing for protection against contamination
- Integrated, illuminated display for reading parameters and settings
- Manipulation is ruled out thanks to tamper-proof cover and configuration disabling



## FASTER INSTALLATION

FOR ERROR-FREE INSTALLATIONS WHICH FUNCTION RIGHT OFF THE BAT

- Faster installation thanks to error detection with a change in color at the display
- Simple error detection based on monitoring of installation parameters such as direction of phase rotation and reversed transformer polarity
- Quick integration and programming with advanced software tools
- Fast installation on 35 mm top-hat rail in any desired mounting position with diverse options



## MORE COST EFFECTIVE

MINIMAL PROCUREMENT COSTS PLUS QUALITY MADE IN GERMANY

- Minimal procurement costs thanks to complete redesign and optimized production
- Immediately suitable for billing purposes thanks to initial calibration at the factory in accordance with MID
- Extremely long service life thanks to the use of top quality modules
- Manufactured in Germany in accordance with strictest quality criteria
- 3-year guarantee



# VISUALIZATION



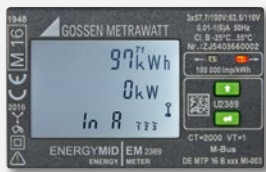
## INTEGRATED INSTALLATION HELP

Color change for installation error



## CLEAR-CUT DISPLAY

Real-time display of active power and parameters



## BACKGROUND ILLUMINATION

Excellent legibility from any angle



## IDEALLY INTEGRATABLE

### FOR HIGH-SPEED COMMUNICATION WITH A GREAT VARIETY OF SYSTEMS

- Flexible communication and remote read-out via integrated interface
- Diverse connection options via LON, M-Bus, Modbus RTU, Modbus TCP or BACnet
- Integrated web server (TCP/IP variant)
- Software tools for quick integration and parameters configuration

# SCALABLE FUNCTIONS



The ENERGYMID energy meter can be ideally matched to your measuring task – and you only pay for what you actually need.

CONFIGURATION	Transformer Connection 1 (6) A			Direct Connection 5 (80) A	
<b>Active Energy Meter with Power Display</b>					
2-wire system	U2381			U2281 <sup>2</sup>	
3-wire system		U2387			
4-wire system			U2389		U2289 <sup>2</sup>
<b>Input Voltage</b>					
100 ... 110 V		U3	U3		
230 V	U5			U5	
400 V		U6	U6		U6
500 V		U7			
<b>Pulse Output (two)</b>					
None (only with bus connection)	V0	V0	V0	V0	V0
S0, standard, 1000 pulses per kWh, calibratable <sup>1</sup>	V1	V1	V1	V1	V1
S0, programmable <sup>1</sup>	V2	V2	V2	V2	V2
230 V, standard, 1000 pulses p. kWh, calibratable <sup>1</sup>	V3	V3	V3	V3	V3
230 V, programmable <sup>1</sup>	V4	V4	V4	V4	V4
S0, 130 ms, 100 pulses per kWh, calibratable <sup>1</sup>	V7	V7	V7	V7	V7
S0, 130 ms, 1000 pulses p. kWh, calibratable <sup>1</sup>	V8	V8	V8		
S0, customer-specific, calibratable <sup>1</sup>	V9	V9	V9		
<b>Transformer Ratios</b>					
CT = VT = 1, secondary, main display, calibrated	Q0	Q0	Q0		
CT, VT, programmable (CT x VT ≤ 100,000), secondary, auxiliary display, calibrated	Q1	Q1	Q1		
CT, VT, fixed primary, main display, calibrated	Q9	Q9	Q9		
<b>OPTIONS</b>					
<b>Multifunctional Variant / Display</b>					
None	M0	M0	M0	M0	M0
With U, I, P, Q, S, PF, f, THD, I <sub>N</sub>	M1	M1	M1	M1	M1
With reactive energy	M2	M2	M2	M2	M2
With U, I, P, Q, S, PF, f, THD, I <sub>N</sub> and reactive energy	M3	M3	M3	M3	M3
<b>Bus Connection</b>					
None (only with pulse output)	W0	W0	W0	W0	W0
LON	W1	W1	W1	W1	W1
M-Bus	W2	W2	W2	W2	W2
TCP/IP (Modbus/BACnet)	W4	W4	W4	W4	W4
Modbus RTU	W7	W7	W7	W7	W7
<b>Load Profile</b>					
With load profile, not with W0 (only with W1 ... W7)	Z1	Z1	Z1	Z1	Z1

Available in 2017

<sup>1)</sup> In the case of U238x transformer meters with option Q9, the pulse rate is read out with reference to the primary winding.

**GMC INSTRUMENTS**

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 **CAMILLE BAUER**

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Scan this QR code for more information about the ENERGYMID range.