



Electricity Meter  
**Landis+Gyr E650**  
ZMD300/400  
ZFD400

The ultimate building block for your  
industrial and commercial metering  
infrastructure

# E650

Today, the changing market landscape demands open solutions. That is why you need a safe metering investment for the future. The E650 meter family offers you maximum flexibility through unique communication modularity, high interoperability and a comprehensive functionality set, which includes:

- maintenance-free and robust long-life design in electronics and mechanics
- lowest failure rate in the market
- more than 30 different communication options
- extensive functionality covering a broad range of applications
- installation support and anti-tampering features
- built-in smart grid functionality

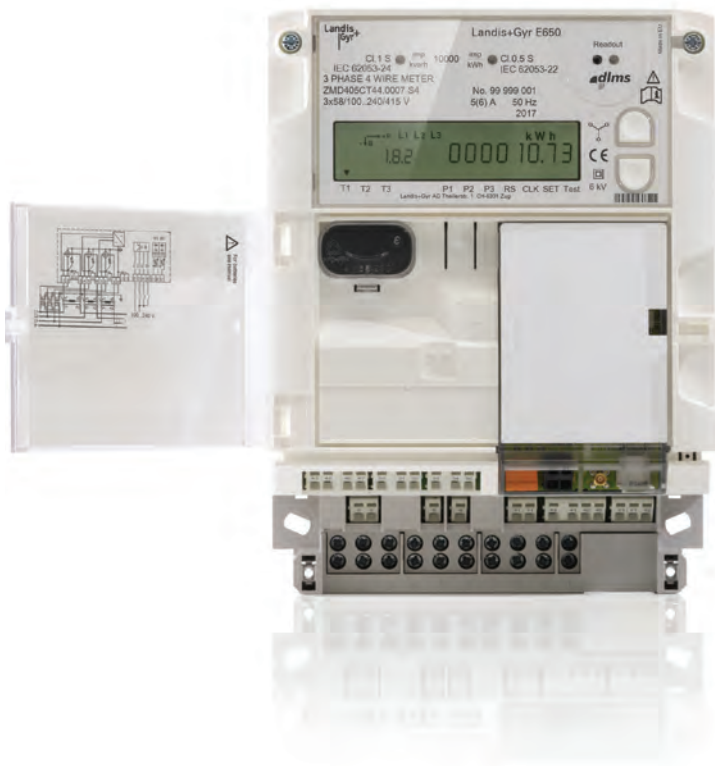
# STRENGTHS

# BENEFITS

# Leading and most proven industrial & commercial meter

Over 2 million metering devices installed in 80 countries around the world

E650 is the most proven meter, which achieves maximum performance in all industrial and commercial application areas thanks to its unique modular architecture, exceptional feature set and high interoperability.



## Basic Functionality

Quality and Safety: The extensive basic functionality already meets all major IEC standards applicable to the respective requirements.

Electronics	Wide-voltage power supply
	Large LCD display
	Up and down buttons for display
	Optical button for the display
	Utility sealed reset button
	Optical interface (IEC 62056)
	Optical test output
	3 control inputs
	2 output contacts
	Recording
	24 energy registers
	Stored values register
	9 operating time registers
	Event log
Functions	Installation support on display
	Set mode via buttons
	Real-time clock with power reserve
	Instantaneous voltage values
	Voltage monitoring
	Gregorian and Persian calendar
	Remote control of output contacts
Housing	Glass fiber reinforced, antistatic
	Crystal clear, unbreakable windows
	Wiring diagram on faceplate
	Utility sealed battery box



## Basic Configuration

Landis+Gyr E650 (ZMD300/400 and ZFD400) is the answer to your specific needs: from the reliable commercial meter to the complex measuring device with comprehensive additional functionality for advanced data acquisition and flexible tariff control of large industrial customers.

Modular communication units provide the right choice for the best data channel at all times. «Plug and Play» modules also offer you full freedom of choice for deployment of new communication technologies.

		E650 (ZFD402C)	E650 (ZFD405C)	E650 (ZFD410C)	E650 (ZMD402C)	E650 (ZMD405C)	E650 (ZMD410C)	E650 (ZMD310C)	E650 (ZFD410A)	E650 (ZMD410A)	E650 (ZMND310A)
Application	High voltage	■	■	■	■	■	■	■	■	■	■
	Medium voltage	■	■	■	■	■	■	■	■	■	■
	Low voltage	■	■	■	■	■	■	■	■	■	■
Connection Type	Transformer conn.	■	■	■	■	■	■	■	■	■	■
	Direct connection	■	■	■	■	■	■	■	■	■	■
Metering accuracy (active/reactive energy)	Class 0.2/0.5	■	■	■	■	■	■	■	■	■	■
	Class 0.5/1.0 MID C	■	■	■	■	■	■	■	■	■	■
	Class 1.0/1.0 MID B	■	■	■	■	■	■	■	■	■	■
		Combi					Active				
Energy Type	Active energy	■	■	■	■	■	■	■	■	■	■
	Reactive energy	■	■	■	■	■	■	■	■	■	■
	Apparent energy	■	■	■	■	■	■	■	■	■	■

## Additional Functionality

Tariff functions	Average demand Time-of-use (TOU) tables Programmable matrix-based mixes control
Measured Values	Power factor Instantaneous values for current, phase angle, frequency, power factor
Recording	24 demand registers 2 power factor register 2 independent load profiles (billing and power quality monitoring) with integration period from 1 to 60 minutes 26-channel profile memory
Special functions	Monitoring for power, current, power factor Backlit and LED Alert programmable display CT/VT error correction THD measurements and calculation of losses (Transformer and Line) Detection of strong magnetic fields Opening detection of terminal cover
Extension boards (only one possible)	6 outputs 2 control inputs, 4 outputs 4 control inputs, 2 outputs 4 active inputs, 2 relay outputs 8A 3 control inputs, 2 relay outputs, auxiliary power supply 4 outputs, various auxiliary power supply

## Software Tools

MAP 120	Parameterisation
MAP 110 (missing dot in the front)	Installation support Meter data readout Load profile analysis Security system visualisation Communications settings

## Enhanced communication capability through combined IEC 1107 and DLMS™ protocols

Only complete availability of reliable metering data guarantees an efficient billing process. The range of Landis+Gyr E650 (ZMD300/400 and ZFD400) meters is «bilingual»: handling the legacy IEC1107 protocol and the well established DLMS™ both of which comply with the IEC62056 standard.

An optimal data flow is achieved through the built-in communication interface or by readily interchangeable communication units.

### Exceptional functionality for demanding I&C metering

#### Billing data management:

- Large variety of registers to track and record the measured quantities you require
- High flexibility to link register values

#### Network monitoring:

- Monitor instantaneous values against threshold and record deviations in a snapshot event log
- Monitor and record disturbances for analysis and preventive network maintenance
- Protect your assets, e.g. transformers, against overload with real-time alarm information through SMS
- Detect tampering attempts and trigger real-time alarms (SMS)

#### Adaptation and installation support:

- Smart installation support tools to avoid errors, simplify installation and service processes
- A set of powerful software tools (MAP Suite) to customise meter to your application needs, e.g. time-of-use tables, billing lists, profile memory, remote parameter modification, etc.

#### Smart grid applications:

- Additional auxiliary power supply to assure data reading during power down phases
- Power quality monitoring functions with alarm and log features
- Real-time alarm system (SMS)
- Boolean I/O control functions to link and combine measured quantities

## Manage energy better

Landis+Gyr is the leading global provider of integrated energy management solutions for the utility sector. Offering one of the broadest portfolios of products and services to address complex industry challenges, the company delivers comprehensive solutions for the foundation of a smarter grid, including smart metering, distribution network sensing and automation tools, load control, analytics and energy storage.

Landis+Gyr operates in over 30 countries across five continents. With sales of approximately USD 1.7 billion, the company employs c. 6,000 people with the sole mission of helping the world manage energy better.

More information is available at [www.landisgyr.eu](http://www.landisgyr.eu)

### Landis+Gyr in short

- 6000 employees worldwide
- 120 Years of service to customers as a trusted partner to utilities
- Operations in over 30 countries across five continents
- Broadest portfolio of products and services in the industry
- more than 15 million meter points under managed services
- Serving 3,500+ utilities worldwide
- The largest installed base with 300+ million devices globally
- Largest relevant engineering capacity in the industry
- Over 60 million smart grid connected intelligent devices deployed
- ISO certified for quality and environmental processes
- World leader in integrated energy management solutions
- Committed to improved energy efficiency and environmental conservation
- Solid and established partner network

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