



Electricity Meter
Landis+Gyr E650
ZMD300/400
ZFD400

The ultimate building block for your
industrial and commercial
infrastructure

E650

No one can tell what tomorrow's market requirements would be. 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:

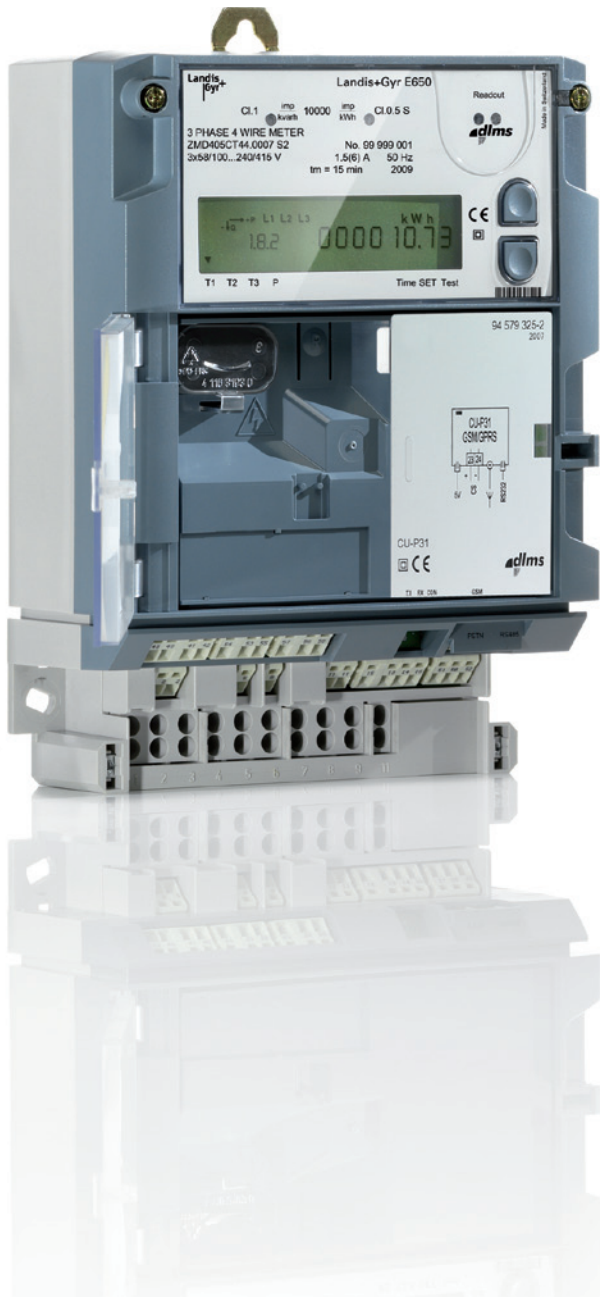
- maintenance-free and robust long-life design in electronics and mechanics
- lowest failure rate in the market
- more than 30 different hot swap communication options
- extensive range of functions to cover majority of applications
- installation support and anti-tampering features
- built-in smart grid functionality

STRENGTHS

Leading and most proven industrial & commercial meter

Over 1.4 million metering devices installed in 70 countries across 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 the display Optical button for the display Utility sealed reset button Optical interface (IEC 62056) Optical test output Three control inputs Two output contacts
Recording	8 measurement channels with total register 32 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 values Voltage monitoring Boolean I/O control functions Gregorian and Persian calendar Real-time SMS alarm
Housing	Remote control of output contacts 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 (ZMD310A)
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	■	■	■	■	■	■	■	■	■	■
Energy Type	Active energy	■	■	■	■	■	■	■	■	■	■
	Reactive energy	■	■	■	■	■	■	■	■	■	■
	Apparent energy	■	■	■	■	■	■	■	■	■	■

Additional Functionality



Tariff functions	Average demand Time-of-use (TOU) tables Programmable matrix-based mixed 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' up 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)	4 control inputs + 2 output contacts 2 control inputs + 4 output contacts 6 output contacts Additional power supply + 4 output contacts

Software Tools

MAP 120	Parameterisation
MAP 110	Installation support Meter data readout Load profile analysis Security system visualisation Communications settings

Enhanced communication capability through combined IEC1107 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 archived through the built-in communication interface or 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 products tailored to energy company needs and unique in its ability to deliver true end-to-end advanced metering solutions. Today, the Company offers the broadest portfolio of products and services in the electricity metering industry, and is paving the way for the next generation of smart grid.

Landis+Gyr, an independent growth platform of the Toshiba Corporation (TKY:6502) and 40% owned by the Innovation Network Corporation of Japan, operates in 30 countries across five continents, and employs 5,000 people with the sole mission of helping the world manage energy better.

More information is available at www.landisgyr.com.

Landis+Gyr in short

- 5000 employees worldwide
- Operations on all five continents
- Broadest portfolio of products and services in the industry
- 25 years of smart metering experience
- 1000 AMM systems delivered
- 300 million energy meters produced
- Largest relevant engineering capacity in the industry
- 65 years of direct load management experience
- 15 million load management receivers produced
- 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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