

## Smart meters

# FLEXY F2-T FLEXY F2-M

Three-phase and single-phase smart meters with replaceable communication modem

**FLEXY**

**DLMS™**

**IDIS<sup>2DLM</sup>**  
Reg No: 0052

**G3-PLC** CERTIFIED  
CEN A

Solutions for smart  
energy management



FLEXY are smart electronic meters for measurement of active, reactive and apparent electrical energy, with direct or CT connection to three-phase and single-phase networks. The new platform allows the use of various communication technologies by easy replacement of communication modem. LTE NB IoT and CAT M1 communication technologies are supported, as well as G3-PLC in CENELEC A and FCC frequency range and hybrid RF-PLC solution. This allows utilities to keep pace with fast

transitions and evolutions of communication technologies within meter lifetime and to choose a smart metering concept according to their needs. FLEXY series feature high level of security, wide range of measurement data much beyond classic billing data, and various interfaces toward smart home and other external systems. FLEXY empower utilities with data necessary for successful handling of ongoing energy market transformation.

### Key features

- Measurement of electrical values (total and per phase)
- Exchangeable communication modem
- Replaceable real-time clock battery
- Flexible tariff policy with up to 8 tariffs
- Two measurement principles including Ferraris method suitable for prosumers
- Two RS485 ports
- Support for In-Home Display with easy accessible RJ12 connector
- Variety of additional input/output options available on demand (relays, pulse outputs, inputs and other)
- Integrated switching device
- DLMS/COSEM
- MID certified
- High level data security
- IDIS2 interoperability
- Fraud detection
- Load profiles
- Power limit
- Event logs
- Measurement of energy quality
- Firmware update
- M-Bus port for G, W, H meters reading (optionally Wireless M-Bus)



## Technical data

### FLEXY F2-T FLEXY F2-M

#### Measurements

- Measurement of power and energy in both directions and absolute values (A+, A-, |A|, R+, R-, R1, R2, R3, R4, S+, S- and by quadrants)
- Ferrearis measurement method suitable for prosumers (optional)
- Measurement of energies, voltages and currents per phase, network frequency and power factor

#### Maximum demand

- Programmable maximum demand integration period (typically 5, 10, 15, 30 or 60 minutes)

#### Multi-rate registration and TOU

- Programmable tariff structure (up to 8 tariffs)

#### Internal real-time clock with DST

- In accordance with IEC 62054-21
- Automatic DST switching
- Backup battery supply (replaceable battery)

#### Visual communication with meter

- Programmable selection of data and display sequence
- LED - configurable constant (1.000, 3.200, 10.000...imp/kWh/kvarh)

#### Optical port

- Physical layer in accordance with IEC 62056-21
- Communication protocol - DLMS/COSEM mode C or mode E

#### M-Bus micro master port

- Suitable for connection of gas, water or heat meters and in-home display
- Physical layer in accordance with EN 13757-2 (wired M-Bus), communication protocol EN 13757-2/3
- Optionally, Wireless M-Bus port is available

#### Inputs and outputs

- Multiple configurations of 230 V, 5 A relays, low voltage and high voltage inputs/outputs for different functions, available according to customer specification
- Exact configuration is defined with customer according to specific order prior to manufacturing process

#### Communication options

- Communication module is exchangeable without removal of metrology seals, which allows easy replacement of communication module and adjustment to new communication technologies even in years after meter installation
- Available communication options: Cellular: GPRS/3G/LTE/NB IoT/CAT M1 Power Line Communication: G3-PLC in CENELEC A or FCC band Hybrid RF+PLC communication module (optional)
- RS485 port allows connection of the meter to RS485 bus or local communication with external systems
- RJ12 connector for communication with smart home systems (optional)

#### Integrated switching module (optional)

- Bi-stable switching module placed under meter cover for remote or local connection/disconnection
- Phase current break up to 100 A, whilst neutral stays closed
- In accordance with IEC 62055-31, UC3
- Minimum 10 000 mechanical disconnections/reconnections under maximum load

#### Billing profiles

- Billing profile 1: recording billing data at the end of the programmable billing period with automatic reset of maximum demand.
- Billing profile 2: recording billing data in case of fraud detection without reset of maximum demand

#### Load profiles

- 4 load profiles for measured values
- 4 M-Bus profiles for registration of measured data from other types of measuring devices (multi-utility)
- Programmable and independent registration periods (5, 10, 15, 30, 60 minutes and 24 hours)

#### Log books

- Standard log book
- Fraud detection log book
- Disconnect control log book
- 4 M-Bus event logs which record events from other measuring devices connected to M-Bus port

#### Energy quality measurement

- In accordance with EN 50160
- Voltage variation registration
- Outage registration (short outage – Event counter, long outage – Long power interruption log)
- Under-voltage and over-voltage measurement and registration in Quality Event log book

#### Fraud detection

- Detection of meter cover opening/closing
- Detection of terminal block cover opening/closing
- Detection of wrong authorization for meter parameterization
- Detection of strong magnetic field
- Detection of strong EMF
- Detection of neutral conductor interruption
- Measurement of neutral conductor current (optional)

#### Power limiting

- Power or current limiting of electrical consumers by defining the limit value of power or current in dedicated meter registers
- Programmable Tolerance time and Penalty time

#### Code Red

- Enables synchronous power limiting of groups (large number) of users in case of irregular situation on distribution network (e.g. lack of power)

#### Data security

- High level data security including authentication and data encryption (DLMS Security Suite 0 and 1)

#### Firmware update

- Firmware is separated to Metrology and Applicative part according to Welmec 7.2, which allows safe update of applicative part of the firmware without need for additional meter verification after firmware update
- Firmware update can be done locally and remotely with no impact on accuracy, parameter configuration or billing data

#### No-power reading (optional)

- Local reading via display or via optical port in no power condition
- Integrated battery supply

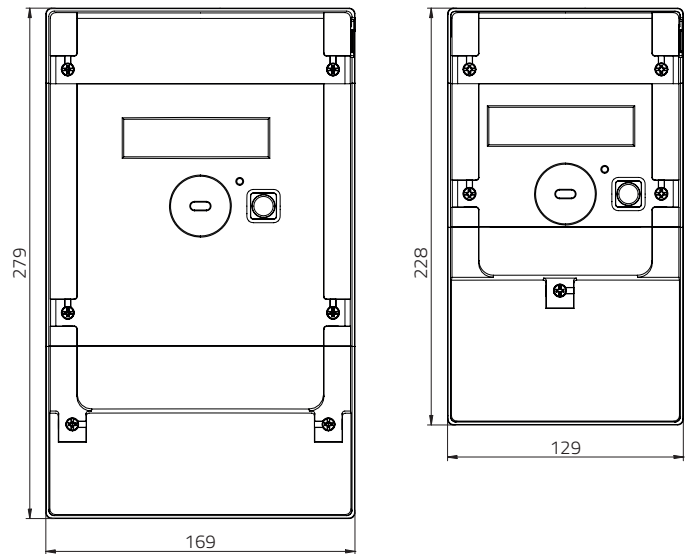
#### Current terminal block

- For current up to 100 A
- For all types of conductors up to 35 mm<sup>2</sup>

#### Compact meter case

- Dimensions and fixing points in accordance with DIN 43857
- High quality, transparent, reinforced, self-extinguishing polycarbonate case
- IP54 protection against water and dust (in accordance with IEC 60529)

Accuracy Class	
Active energy	0,5S, 1 or 2 (C, B or A)
Reactive energy	2 or 3
Nominal and maximum current	5 (80) A (single-phase) 5 (100) A (three-phase)
Nominal voltage, U <sub>n</sub>	110-230 V (single-phase) 3x(110-230)/(190-400) V (three-phase)
Voltage range	0.8 U <sub>n</sub> – 1.15 U <sub>n</sub>
Frequency	50/60 Hz
Optical port	IEC 62056-21 (physical layer) IEC 62056-46 (DLMS) communication protocol
Self-consumption	IEC 62053-21/22/23/61
Operational temperature range	-40 °C - +70 °C
Storage temperature range	-40 °C - +80 °C
Insulation AC strength	4 kV, 50 Hz, 1 min
Insulation impulse strength	8 kV; 1.2/50 μs
IP protection level	IP54, in accordance with IEC 60529
Dimensions	228 x 129 x 79 mm (single-phase) 279 x 169 x 79 mm (three-phase)
Weight	0,9 kg (single-phase) 1,5 kg (three-phase)



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Solutions for smart  
energy management

