# themis®uno – GSM/GPRS

## Electronic index EI6 for diaphragm gas meters BK-G..ETe



## Applications

Smart electronic index for Honeywell residential and commercial diaphragm gas meters (BK-G..ETe, G1.6 to G25)

## Brief information

The themis®uno index provides features which go well beyond simple remote reading. The existing options (Time of Use and Block tariffs, load profiles, communications interval control, data logging, electronic temperature compensation, etc.) can be combined in such a way as to suit the needs of individual customers. A secure, over the air firmware update guarantees that the technology is future-proof and can be updated to meet new requirements if necessary.

The themis®uno is available with GSM/GPRS WAN communication. This guarantees secure data exchange between the various communication partners. The method of secure authenticity and integrity of data and authorization of users is state of the art. Diaphragm gas meters BK-G4..ETe with the themis®uno index meet the requirements of Italian specification UNI-TS 11291.
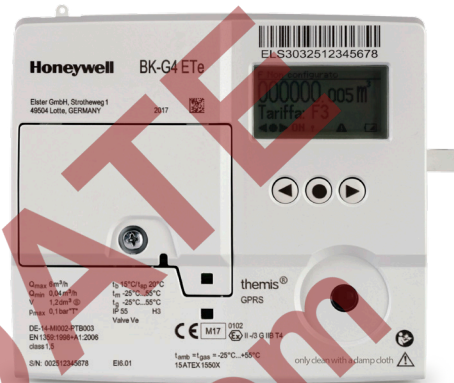
The integrated valve "Valve Ve" in the diaphragm gas meter allows the gas supply to be remotely connected and disconnected. This significantly reduces the costs and labour caused by local disconnection of the gas supply. To avoid gas being released in an unsafe installation, a smart test of the downstream installation is conducted before the valve is opened.

An integrated electronic temperature conversion system allows the volume to be converted to a base temperature even for residential supplies. The meter shows the converted volume in the display and transfers it to the appropriate data collection system.

The index is interoperable and interchangeable according to UNI-TS 11291 and can be read and controlled using the Honeywell meter data collection system OPC. If desired, Honeywell can therefore not only supply the gas meter but also the complete meter data collection system perfectly tailored to the themis®uno.

## The Honeywell smart meter solution

themis® – the new generation of electronic indexes for residential, commercial and industrial diaphragm gas meters – is part of the Honeywell smart meter solutions package. From mechanical meters and smart index technologies to complete meter data collection and meter data management systems, Honeywell can supply everything required for an efficient, coordinated all-in-one smart metering solution.

## Main features

- Integrated concept
  – Cost-efficient solution delivering a high level of reliability
- WAN communication
  – GSM/GPRS (DLMS-UNI-TS 11291)
  – External antenna optional
- With electronic temperature compensation
- Supports local and remote valve control
- Long battery life
  – Typically 15 years, dependent on GPRS requirements
  – Longer service lives thanks to reduced communication frequency
- Extended smart metering functions
  – Load profiles
  – Time of Use and Block tariffs
  – Event and alarm signalling
  – Time synchronization
- State-of-the-art data security and data protection (AES-128 symmetric keys)
- Supports secure, over the air firmware updates according to UNI-TS 11291
- Battery can be replaced in the field without loss of data
- Easy operation and installation
  – Clearly legible matrix display (LCD)
  – Menu navigation using intuitive key control
  – Simple commissioning using pre-configured indexes

# Technical data

## Display and entry
- Intuitive menu navigation using 3 keys

## Languages
- Italian, English,
  other languages available on request

## Local communication
- Optical, bidirectional IEC 62056-21 port
  (DLMS/COSEM)

## Wide area network communication
- GSM/GPRS in accordance with
  UNI-TS 11291
- Protocol: DLMS/COSEM
- Supports SIM cards with 900/1800 MHz
  (roaming)

## Temperature compensation
- Supports electronic temperature compensation

## Scope of application
- Residential and commercial gas meters
  (BK-G..ETeB, G1.6 to G25)
- Permitted gases: natural gas, town gas,
  propane, butane; gases of the first to third
  families pursuant to DIN EN 437:2003
  (DVGW Code of Practice G260)

## Degree of protection
- IP 65

## Gas/ambient conditions
- Base temperature: 0 °C, 15 °C, 20 °C
- Gas temperature: -25°C to +55°C
- Ambient temperature: -25°C to +55°C
- Storage temperature: -25°C to +60°C

## Data logging in the index

The integrated data logging function records the
supplied gas volume in conjunction with the current time and the corresponding tariff.

## Storage capacity
- Hourly consumption values: 4560 records ($\triangleq$
  190 days)
- Daily consumption values: 190 records
- Monthly consumption values: 13 records
- Metrological log: 500 records

- Event log: 100 records
- Parameter monitor log: 50 records
- Supports daily transfer of hourly values
- Other intervals can be configured

## Actuation of an integrated valve
- Safe switching of the valve (valve is not
  opened unless the installation is in a safe
  state)
- Local confirmation required by the press of a
  key/PIN
- Feedback on successful opening and closing
- Designed lifetime: 3000 cycles
- Max. operating pressure for valve operation:
  100 mbar
- Pressure loss of BK-G4 according to
  EN 1359: < 2 mbar
- Maximum leakage rate in closed state: 1 l/h
  up to 100 mbar

## Current approvals
- MID Class 1.5, EN 1359, ATEX:
  ⟨Ex⟩ II -/3 G ic c IIB T4 Gc, CE, EMC, RED

## Delivery
- Minimal installation work as the devices are
  pre-configured on delivery
- No programming unit or the like is required
  for installation depending on the pre-
  configuration settings
- Simple commissioning by "one-key"
  connection to the meter data collection
  system or alternatively via pre-configurable
  start date

## Data security and data protection
- The themis®uno provides secure state-of-the-
  art end-to-end data encryption.
- Supports symmetric encryption using
  AES-128 (GCM) to UNI-TS 11291.
- Role-based access rights based on individual
  symmetric keys.
- Future-safe using secure firmware update
  according to UNI-TS 11291.
- Notification to the data collection system if a
  tamper attempt is detected.
- Daily transmission of status reports with the
  ability to read event logs remotely.

**Honeywell**