SMART SEAL P3S

Smart metrological seal for diaphragm gas meters BK-G...



APPLICATIONS

Smart metrological seal for Honeywell residential, commercial, and industrial diaphragm gas meters (BK-G...)

BRIEF INFORMATION

The Smart Seal P3S provides features which go well beyond simple metrological sealing. The metrological seal is the main target for tampering of diaphragm gas meters.

With Smart Seal P3S manipulation protection and detection of the metrological seal are improved. Easy detection of tampering and easy verification of the integrity and authenticity of the seal as well as increased protection against manipulation support securing the business of our customers.

Benefits of using Smart Seal P3S are faster on-site checks of diaphragm gas meters and results in less suspected gas meters to be de-installed and examined in laboratories. The Smart Seal P3S leads to a higher share of detected tampered gas meters and more evidence of manipulation.

Because of the higher deterrent effect and increased technical and time effort to manipulate the seal, installing Honeywell diaphragm gas meters with Smart Seal P3S will reduce both the number of manipulated gas meters in the network and the share of uncounted gas (non-technical losses).

Advantage over lead seals, Smart Seal P3S helps to protect both the health of employees (for example sealing gas meters) as well as the environment, because Smart Seal P3S is free of hazardous materials.

HONEYWELL GAS METER TAMPER PROTECTION AND DETECTION

Economic challenges and increased energy costs are causing an uptick in gas theft at gas meters. To help utilities combat this growing and costly phenomenon, we've introduced new features – like the Smart Seal P3S – that complement our comprehensive tamper protection and detection solution.

MAIN FEATURES

- Mechanical metrological seal
- Applicable to Honeywell diaphragm gas meters (DGM, BK-series) from BK-G1.6 up to BK-G100
  - with mechanical index Z6/ M6 (with standard index cover, with fragile grey SAN cover, and with fragile transparent SAN cover)
  - with Chekker Index
  - with Absolute ENCODER index AE3 and AE5
  - with Electronic Indexes EI5, EI6, EI7, EI8 (NX)
  - with mechanical Z3 index only to a limited extent
- Available as spare parts for repaired and recalibrated DGM
- Available as spare parts for DGM produced with parallel approval
- Marking with metrological embossment (MID)
- Optional marking with customer specific symbol
- Design based on existing Honeywell seal P3 for diaphragm gas meter
- Patent protected
- Life time in line with diaphragm gas meter life time
- Waterproof
- MID approved (2014/32/EU)
- UV resistant acc to EN1359:2017
- ATEX compliant (2014/34/EU)
- ROHS compliant (2011/65/EU)
- Made in Germany

Honeywell

OPERATING PRINCIPLE

With Smart Seal P3S a 2-step verification of the integrity and authenticity of the seal is possible.

Step 1) P3S Smart Function: Data Matrix Code

Each Smart Seal P3S has its own, unique serial number, which is laser printed as data matrix code (acc. to ISO/ IEC 16022) on the seal.

Manufacturer:

- The unique meter serial number/ fabrication number (matrix code on the name plate of DGM) and the unique serial number of Smart Seal P3S are scanned after calibration and sealing at Honeywell production sites
- Pairs of serial numbers are provided to customers with an electronic shipment file accompanying the order

Customers:

- Import data from electronic shipment file into meter data base
- Provide data to existing mobile devices/ handheld devices of field staff (technicians)

Tamper detection:

Check P3S for manipulation (for example, on-site during installation or meter reading, before repair or recalibration):

- Scan unique meter serial number and unique serial number of P3S seal with existing mobile devices/ handheld devices
- Combination valid? Compare scanned data with data provided by the manufacturer

Illustration of the operating principle:



Step 2) P3S Smart Function: Secure Marker

Smart Seal P3S contains a Secure Marker. A detector is used to check whether Smart Seal P3S contains the Secure Marker or whether it is a fake material. The detector uses a special technology that is tailored to the Secure Marker.

There are 2 different detectors available: The optical detector and the acoustic detector.

Customers:

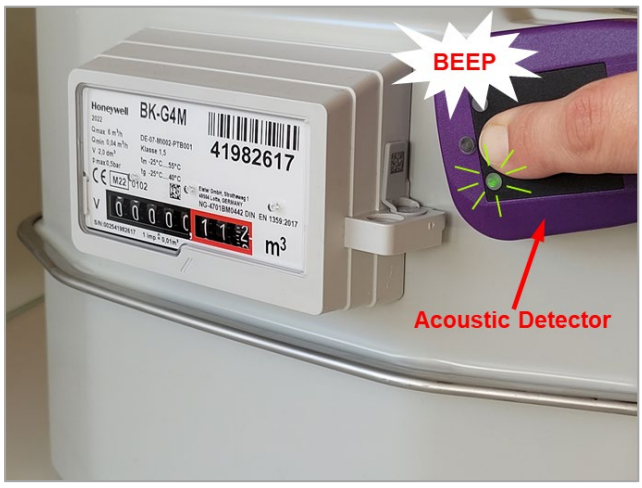
- Provide detectors to field staff (technicians), laboratory staff, calibration room staff, ...

Tamper detection:

Check P3S for manipulation (for example, on-site during installation or meter reading, before repair or recalibration):

- Check P3S for the Secure Marker with a detector
- If P3S contains the Secure Marker, the detector emits a visual and/ or acoustic signal - depending on the detector type

Illustration of the operating principle:



If further evidence is needed, this can be supported on request.

Honeywell

ADDITIONAL INFORMATION

Smart Seal P3S

- Smart Seal P3S always has both: the data matrix code with its unique serial number and the Secure Marker
- Smart Seal P3S data matrix code is compliant with ISO/ IEC 16022: “Information technology - Automatic identification and data capture techniques - Data Matrix bar code symbology specification”
- Smart Seal P3S always has a light grey color
- The serial number of Smart Seal P3S is not identical with the serial number of the diaphragm gas meter
- The serial number of Smart Seal P3S cannot be customized
- A customer’s embossment on the bottom of the seal is not possible: Honeywell provides customized P3S with a customer embossment laser printed underneath the Honeywell data matrix code. The picture shows an example:



Smart Seal P3S 2-Step Verification

Step 1) P3S Smart Function: Data Matrix Code

- Existing, standard mobile devices/ handheld devices can be used for scanning the Smart Seal P3S serial number
- Scanning and checking the Smart Seal P3S serial number (first verification step) does not require a special Honeywell software or app: A standard matrix code/ QR code/ bar code scanner (app) is sufficient
- It might be helpful to turn on the light (the flashlight) of the mobile device/ handheld device

Step 2) P3S Smart Function: Secure Marker

- The Optical Detector and the Acoustic Detector are sold by Honeywell (Elster GmbH)

Troubleshooting and general recommendation:

- Clean the Smart Seal P3S surface only with a damp cloth
- Avoid direct sunlight during verification of Smart Seal P3S (e.g., use your hand or some paper to create shadow)

Electronic Shipment File

- File format: csv
- The electronic shipment file also contains customer specific meter serial numbers and further information

Secure Marker Technology

- A proven technology, already used in other industries (e.g., fashion, cosmetics, pharma, automotive)
- Secure Markers give products and materials (e.g., plastics, coatings, or inks) their own unique fingerprint
- Secure Markers are handled through a restricted supply chain, which is strictly monitored

Optical Detector

- Provides optical signal if the Secure Marker was detected
- The optical detector is not a standard laser pen, but a special sensor using laser as a physical basis



Acoustic Detector

- Provides an optical signal and an acoustic signal if the Secure Marker was detected
- The acoustic detector is a special sensor



Honeywell

SMART SEAL P3S FOR REPAIR AND RECALIBRATION

Smart Seal P3S is available as spare part for Honeywell partners who perform e.g. repair and/ or re-calibration of Honeywell diaphragm gas meters.

After installing new Smart Seal P3S on the gas meter(s), the Honeywell partner conducts the followings steps:

- Scan a) the meter serial number from the name plate (matrix code and/ or bar code) and b) the P3S serial number from the Smart Seal P3S matrix code
- Recommendation: Store serial number pairs for traceability
- Provide the pairs of serial numbers to the customer with an electronic shipment file (e.g., a csv file). The structure of this file can be exactly like the one from Honeywell, but it can also be customized and can contain several additional information – as added value/ service for the customer

SPARE PARTS AND ACCESSORIES

Smart Seal P3S

Order No.: 72448440, “Seal P3S with marking”.

Optical Detector

Order No.: 32448569, “Smart Seal P3S Detector optical”.

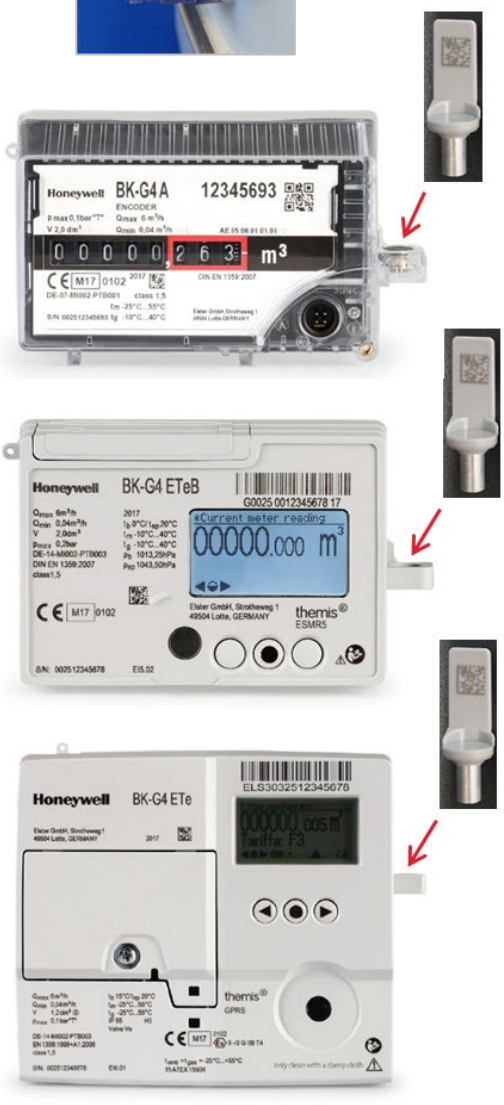
Acoustic Detector

Order No.: 32448570, “Smart Seal P3S Detector acoustic”.

Plier Tool for Metrological Seals P3/ P3S

Order No.: Available on request.





CONTACT

Honeywell | Smart Energy & Thermal Solutions (SETS)

Germany
Elster GmbH
Strotheweg 1
49504 Lotte
Tel. +49 541 1214-0
Fax +49 541 1214-370

Slovakia
Elster s.r.o.
Nám. Dr. A. Schweitzera 194
916 01 Stará Turá
Tel. +421 32 775 3250
Fax +421 32 775 2658

For more information
customerfirst@honeywell.com
www.elster-instromet.com

Subject to change without prior notice
All rights reserved

© 2022 Honeywell International Inc.

Honeywell