



(Re)calibration workshop

MID and the legislation on calibration of gas meters

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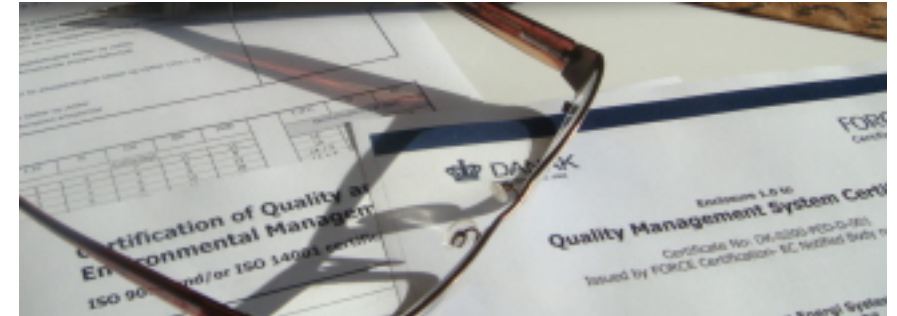


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FORCE Certification A/S

- A legal entity
- A subsidiary of FORCE Technology (100% owned)
- Budget of 2016 : 7 mio. Euro
- Employs 170 persons (part time) FORCE Certification A/S uses employees with great experience and expertise from divisions and regions within the FORCE Technology Corporation. In this way we can guarantee our customers a competent certification and verification
- FORCE Certification A/S is appointed as Notified body to 9 different legislations, among this to the measurement instruments directive (MID).



- FORCE Certification was established in 1992 as a consequence of the merger of Dantest and FORCE Technology.
- FORCE Certification (FORCE-Dantest CERT) was organized as a special independent business unit in FORCE Technology with reference to the managing Director and the Board of Directors.
- Due to the increasing focus on impartiality, FORCE Certification A/S was founded as a legal entity in July 2008



Measurement instrument directive (MID)

BACKGROUND

Policies and legislative techniques has evolved over the last 40 years, especially on the free movement of goods.

- The first harmonization directive was about elimination of barriers to trade and ensuring the free movement of goods within the internal market.
- These objectives are now being complemented by a policy to ensure that only safe products come onto the market and create a level playing field for operators.
- Create an effective protection of EU consumers.



The latest approach is the New Legislative Framework (NLF) which ensure:

- Standardization of product regulation.
- Regulation 768/2008, which is a kind of template for product harmonization legislation.
- 20 different directives, including,
- measuring instruments (MID) 2014/32/EU which has to be followed after the 20-04-2016
- All EU directives applies to EU and EFTA (Iceland, Liechtenstein and Norway) and partly Turkey (Custom union agreement)



What is MID?

The MID points out, among others :

- The actors and their obligations, (Manufactures, Authorized representative, Importer and Distributor.
- The procedure for conformity of measuring instruments.
- Conformity marking. CE 0200
- The demands for the assessments bodies. 17
- The demands for the Notified Bodies (NOBO's).

- **Essential requirements**, common requirements for all the instruments applied in this directive. (climatic environments, mechanical environments and electromagnetic environments).
- **The conformity evaluation**
- **The specific instruments demands**



Essential requirements

The Essential requirements define the results to be attained, but do not specify the technical solutions for doing so.

The conformity evaluation

- How to make conformity evaluation on a gas meter ?
- For a gas meter an EU-type examination certificate (TEC) is needed, module B in the directive.
- Together with the TEC a conformity certificate is needed, module D or F
- Or a module H1 which is a conformity based on full quality assurance plus design examination.
- Module B+D or B+F or H1

Type examination, Module B

- Notified body, like FORCE Certification (in DK we are notified by The Danish Safety Technology Authority)
- Examine the instrument and technical construction and the documentation.
 - Metrological tests, Class, MPE, effect of disturbances
 - Climatic environment
 - Mechanical environment
 - Electromagnetic environment

Conformity assessment, module D or module F

- Conformity to EU-Type based on quality assurance of the production process – Module D.
- Conformity to EU-type based on product verification – module F

Measurement instrument directive 2014/32/EU (MID)

The directive applies for several kind of measuring instruments, such as:

- MI-001 water meters
- **MI-002 Gas meters and volume conversion devices**
- MI-003 Active electrical energy meters
- MI-004 Thermal energy meters
- MI-005 Measuring systems for continuous and dynamic measurement of quantities of liquids other than water
- MI-006 Automatic weighing instruments
- MI-007 Taximeters
- MI-008 Material measures (length)
- MI-009 Dimensional measuring instruments
- MI-010 Exhaust gas analysers

- The MID may not exclude any measuring principal
- Apply to gas meters and volume conversion devices defined below, intended for **residential, commercial and light industrial use**. But there is no upper limit.

Definitions in MID:

Gas meter:

- *An instrument designed to measure, memorize and display the quantity of fuel gas (volume or mass) that has passed it.*

Conversion device:

- *A device fitted to a gas meter that automatically converts the quantity measured at metering conditions into a quantity at base conditions.*



Harmonized standards and normative documents

- If you fulfil the conditions in a harmonized standard or a normative document, it can be assumed that the demands in MID are fulfilled.
- In principal, there is no demand to make compliance to a harmonized standard or a normative document. But then the manufacture has to approve that he is fulfilling all the demands, which can be very difficult.

Harmonized standards and normative documents

Harmonized standards:

- EN 1359:1998/A1:2006 Diaphragm gas meters
- EN 12261:2002/A1:2006 Turbine gas meters
- EN 12405-1:2005+A2:2010 Conversion devices
- EN 12480:2015 Rotary displacement gas meters
- EN 14236:2006 Ultrasonic domestic gas meters

• Other standards which are not harmonized:

- ISO 17089 Ultrasonic gas meters
- ISO 5167 Pressure differential devices

Normative documents:

OIML R137:2012/A2014



National rules

When an instrument has been placed on the market, the national rules are to be followed.

National rules for reverification are different in each country inside EU.

But according to EU service directive all instruments can be reverified or recalibrated at any laboratory in EU, as long as the laboratory is approved to do reverification in the country where the laboratory is located.

Summary

- In DK FORCE Certification is the NoBo for MID MI-002 NoBo n. 0200
- The MID has been revised in 2014 according to NLF
- MID is about essential requirement
- The technical requirement is made by the harmonized standards or normative documents
- MID is only applicable before placing on the market
- When the meter has been placed on the market it is the national rules which are applicable.

