

# The "MID" directive



## What is the MID

- ▼ The MID (Measuring Instruments Directive) is a new European Union (EU) directive aimed at creating a single market for measuring instruments across the EU.
- ▼ The MID took effect on October 30, 2006
- ▼ Scope of this Directive is to guarantee to the users a high level of safety and reliability of the measuring instruments, protected against data corruption, ensuring in the meantime the free circulation of certified measuring instruments within the EU.
- ▼ Annexes define how the instruments can be declared as compliant to MID.
- ▼ Notified Bodies are authorized to carry out testing, and the certification issued by one of the Bodies shall be accepted within all EU within any limitations.



## What is the MID

The new Directive is related to ten categories of measuring instruments, which requirements are indicated in ten annexes:

- ▼ MI-001: WATER METERS
- ▼ MI-002: GAS METERS AND VOLUME CONVERSION DEVICES
- ▼ **MI-003: ACTIVE ELECTRICAL ENERGY METERS**
- ▼ MI-004: HEAT METERS
- ▼ MI-005: MEASURING SYSTEMS FOR THE CONTINUOUS AND DYNAMIC MEASUREMENT OF QUANTITIES OF LIQUIDS OTHER THAN WATER
- ▼ MI-006: AUTOMATIC WEIGHING INSTRUMENTS
- ▼ MI-007: TAXIMETERS
- ▼ MI-008: MATERIAL MEASURES
- ▼ MI-009: DIMENSIONAL MEASURING INSTRUMENTS
- ▼ MI-010: EXHAUST GAS ANALYSERS
- ▼ For all ten categories, the MID defines categories of climatic conditions, mechanical environments, electromagnetic environments



## What is the MID

### Climatic conditions

Four categories of possible climatic conditions are defined:

- 1) From 5°C to 30°C
- 2) From -10° to 40°C
- 3) From -25°C to 55°C**
- 4) From -40°C to 70°C

### Mechanical environments

- ▼ Depending on the installation, three classes of mechanical environments are defined:
- ▼ **M1**, this class applies to instruments used in locations with vibration and shocks of low significance, e.g. for instruments fastened to light supporting structures subject to negligible vibrations and shocks transmitted from local blasting or pile-driving activities, slamming doors, etc.
- ▼ **M2, this class applies to instruments used in locations with significant or high levels of vibration and shock, e.g. transmitted from machines and passing vehicles in the vicinity or adjacent to heavy machines, conveyor belts, etc.**
- ▼ **M3**, this class applies to instruments used in locations where the level of vibration and shock is high and very high, e.g. for instruments mounted directly on machines, conveyor belts, etc.

### Electromagnetic environments

- ▼ Depending on the installation, three classes of electromagnetic environments are defined:
- ▼ **E1**, this class applies to instruments used in locations with electromagnetic disturbances corresponding to those likely to be found in residential, commercial and light industrial buildings.
- ▼ **E2, this class applies to instruments used in locations with electromagnetic disturbances corresponding to those likely to be found in other industrial buildings.**
- ▼ **E3**, this class applies to instruments supplied by the battery of a vehicle. Such instruments shall comply with the requirements of E2 and the following additional requirements:
  - voltage reductions caused by energising the starter-motor circuits of internal combustion engines;
  - load dump transients occurring in the event of a discharged battery being disconnected while the engine is running.



## What is the MID

- ▼ The individual certification can be obtained according to one of the following options:
  - 1) Annex B (type examination) + Annex D (Declaration of conformity to type based on quality assurance of the production process): this means the type approval is carried out by one Notified Body as a quality system certification relevant to the production process of energy meters.
  - 2) Annex B (type examination) + Annex F (Declaration of conformity to type based on product verification): this means the type approval is carried out by a Notified Body and the verification of each meter (or part of a batch, depending on agreements with the Notified Body) is carried out by authorized laboratories.
  - 3) Annex H1: (Declaration of conformity based on full quality assurance plus design examination) this means the certification is based on a full quality system certification of the Energy meters production facility by a Notified Body.



# Energy Management



## The MID applied to the Carlo Gavazzi Energy Meters

- ▼ The annex is **MI-003: ACTIVE ELECTRICAL ENERGY METERS** where the accuracy requirements for active energy meters are defined in three classes: A (old class 2), B (old class 1), C (old class 0.5).
- ▼ **EM10-DIN and EM24-DIN are designed according “class B”** while EM4-DIN is designed according to “class A”.

## There are two level of certifications:

- ▼ **First level, according to “Annex B”**
- ▼ **Second level, according to “Annex B + Annex F”**

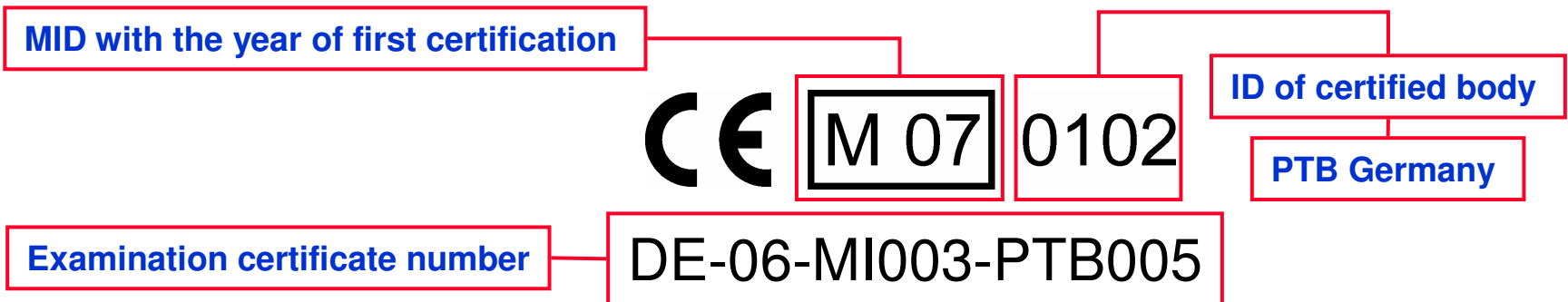


# Energy Management



## The MID applied to the Carlo Gavazzi Energy Meters

- ▼ The first level of certification also called “**EC type certificate**” which applies to EM24-DIN is available as production from August 2007 onwards with the following mark on side of the instrument



Which such certificate the Notified Body declares that the instrument EM24-DIN as reference product, has been **fully tested in compliance with the stated MID accuracy, climatic conditions, mechanical and electromagnetic environments (Annex “B”)**. Copy of the PTB declaration is either available on request as a PDF file or downloadable from our “Products On-line”.

- ▼ This certification is normally requested for sub metering in either industrial or in the service industries.



## The MID applied to the Carlo Gavazzi Energy Meters

- ▼ The second level of certification is the individual certification, it is obtained according to the following option:  
Annex B + Annex F: **the type approval is carried out by a Notified Body and the verification of each meter** (or part of a batch, depending on agreements with the Notified Body) **is carried out by authorized laboratories. A special mark (property of the Notified Body) will be stuck on side of the instrument.**  
**The delivery time of the certification has to be checked time by time and the cost is depending on the quantity.**
- ▼ This certification is normally requested for main metering in domestic, industrial and service industries.

