




Measuring Instruments Directive  
(MID)  
**MID/EN1434 Heat meters**  
Short Overview



# What is the Measuring Instruments Directive (MID)?

- The Measuring instruments directive (2004/22/EC) is a directive by the European Union (EU), which intends to create a common market for measuring instruments across the 27 countries of the EU. Its most prominent objective is that all kinds of meters which receive a MID approval may be used in all countries across the EU.
- Suppliers of measuring instruments where levying of consumption takes place – required for EU States
- Scope includes water meters, gas meters, heat energy meters, electricity meters etc.
- These measuring instruments are covered by the EU directive 2004 / 22 / EC
- According to the directive all meters must comply as from 30th October 2006
- However all instruments approved before this date may continue to be sold conditionally for up to October 2016.



# MID Measuring Instruments Directive

## A European Directive for all heat meters



Enclosure 2.0 to  
**Quality Management System Certificate**

Certificate No: DK-0200-MID-D-001  
Issued by FORCE Certification A/S - EC Notified Body number 0200

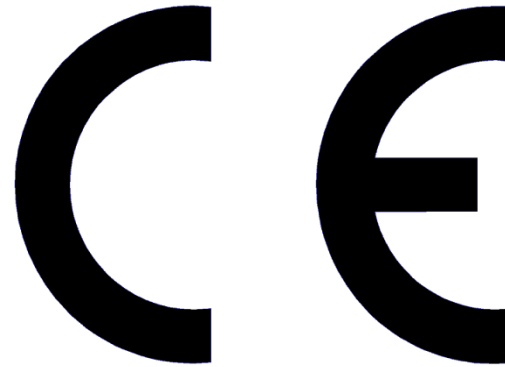
Issued to:

**Kamstrup A/S**  
Industrivej 28, Stilling  
DK-8860 Skanderborg  
Danmark

The types of measuring instruments include:

**Heat meter**

Instrument	Type	Type No.:	Classes	EC-type examination certificate reference
Calculator and flow sensor	MULTICAL® 401	66-V and 66-W	C 2/3, M1, E1	DK-0200-MI004-001 Current issue
Temperature sensor pair	PT500 DS-cable PT500 PL-cable with pockets PT500 PT500 PL with pockets (with connecting head)	-	-	DK-0200-MI004-002 Current issue
Flow sensor	ULTRAFLOW® qp 0.6 - 400 m³/h	65-S/R/T	C 2/3, M1, E1	DK-0200-MI004-003 Current issue
Flow sensor	ULTRAFLOW® qp 0.6 - 40 m³/h and qp 150 - 400 m³/h	65-S/R/T	C 2/3, M1, E1	DK-0200-MI004-003 Current issue
Calculator	MULTICAL® 601	67-A/B/C/D	M1, E1/E2	DK-0200-MI004-004 Current issue
Calculator	MULTICAL® 801	67-F/G/K/L	M1, E1/E2	DK-0200-MI004-009 Current issue
Flow sensor	ULTRAFLOW® S4 ULTRAFLOW® 34	65-5	C 2/3, M1, E1/E2	DK-0200-MI004-008 Current issue



# The following European States have adopted MID for heat meters



- Austria
- Belgium
- Bulgaria
- Cyprus
- Czech Republic
- Denmark
- Estonia
- France
- Finland
- Germany
- Greece
- Hungary
- Iceland
- Italy
- Ireland
- Latvia
- Liechtenstein
- Lithuania
- Luxembourg
- Malta
- Norway
- Poland
- Portugal
- Romania
- Slovenia
- Slovakia
- Spain
- Sweden
- United Kingdom
- The Netherlands
- Switzerland



# The MID Certification for heat meters replaces the following local rules

EU, EEC and EFTA-Countries	Rules for approval of heat meters before the MID	Interval (yrs) for periodical re-verification
Austria	Yes	5
Belgium	No	No rules
Cyprus	No	No rules
Czech Rep.	Yes	4
Denmark	Yes	Sample test every 6 yrs
Estonia	Yes	2
Finland	Yes	No rules
France	Yes	No rules
Germany	Yes	5
Greece	No	No rules
Hungary	Yes	4
Ireland	No	No rules
Italy	No	No rules
Latvia	Yes	2
Lithuania	Yes	5
Luxembourg	No	No rules
Malta	No	No rules
Netherlands	No	No rules
Poland	Yes	4 (5)
Portugal	No	No rules
Slovakia	Yes	4
Slovenia	Yes	4
Spain	No	No rules
Sweden	Yes	5-10
United Kingdom	No	No rules
Iceland	No	No rules
Norway	Yes (pr. 1/1-2005)	No rules, yet
Liechtenstein	No	No rules
Switzerland	Yes	5
Bulgaria	Yes	2
Romania	Yes	2 (5)



## MID 2004/22/EC- MI004

Applying to MID is possible by following

- EN1434 Harmonized Norm for heat meters
- OIML R75 Normative Recommendation for heat meters



# What is required of the manufacturer?



All new meters require an approval of the instrument

(Type examination certificate ) –also referred to as “B-module”

- Audit of the production plant before instrument can be sold- also referred to as “D-module”
- Must issue a conformity declaration
- Instrument must be marked in accordance with the directive



# Markings MI-004 Heat Meters (EN1434-2)

- Name or trademark of the supplier
- Type, year of manufacture and serial number
- Meter to be installed in flow or return
- Arrows to indicate direction of flow
- Limits of temperature
- Limits of temperature differences
- Limiting values of the flow rate ( $q_i$ ,  $q_p$  and  $q_s$ )
- Max. admissible working pressure in bar, PS
- Nominal pressure PN
- Accuracy Class
- Environmental Class
- Voltage level for external power supply
- Heat conveying liquid if other than water



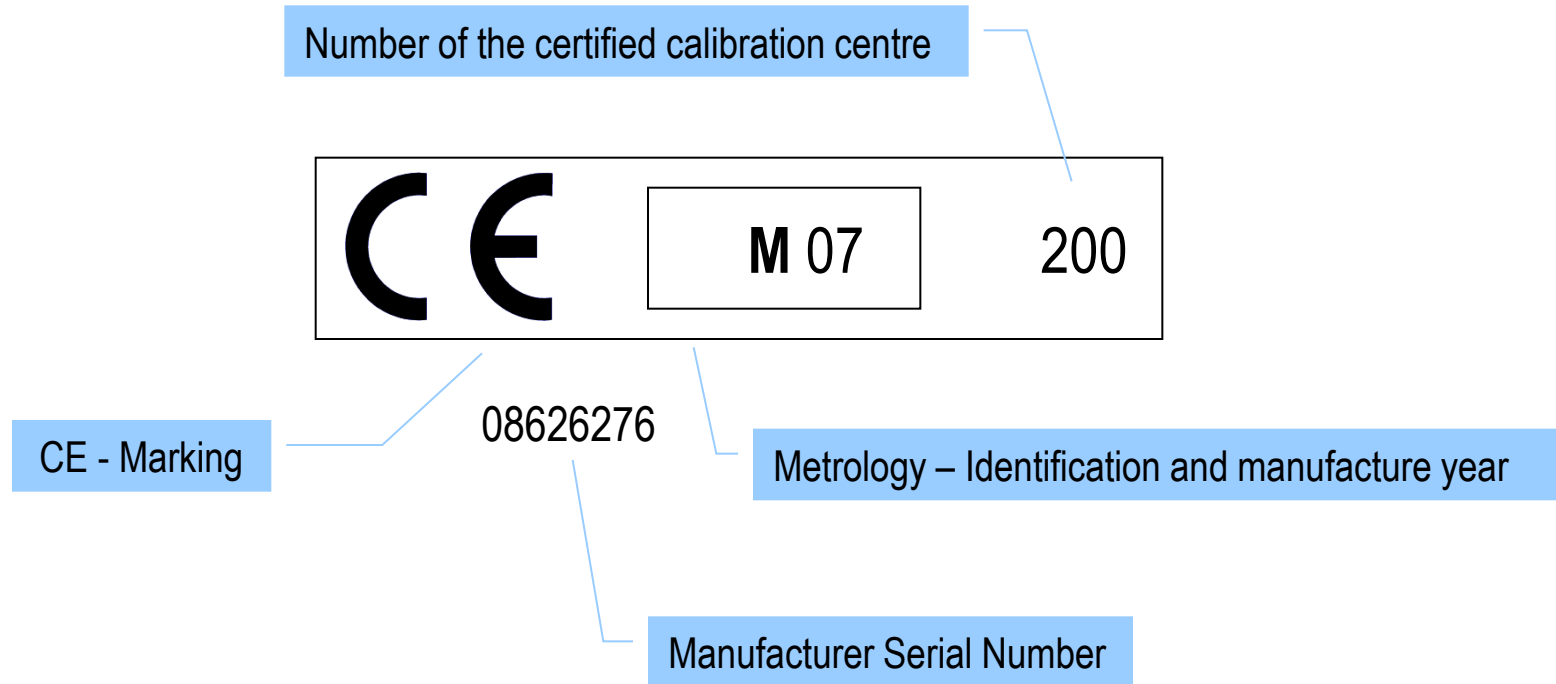


# Markings MI-004 Heat Meters (EN1434-2)





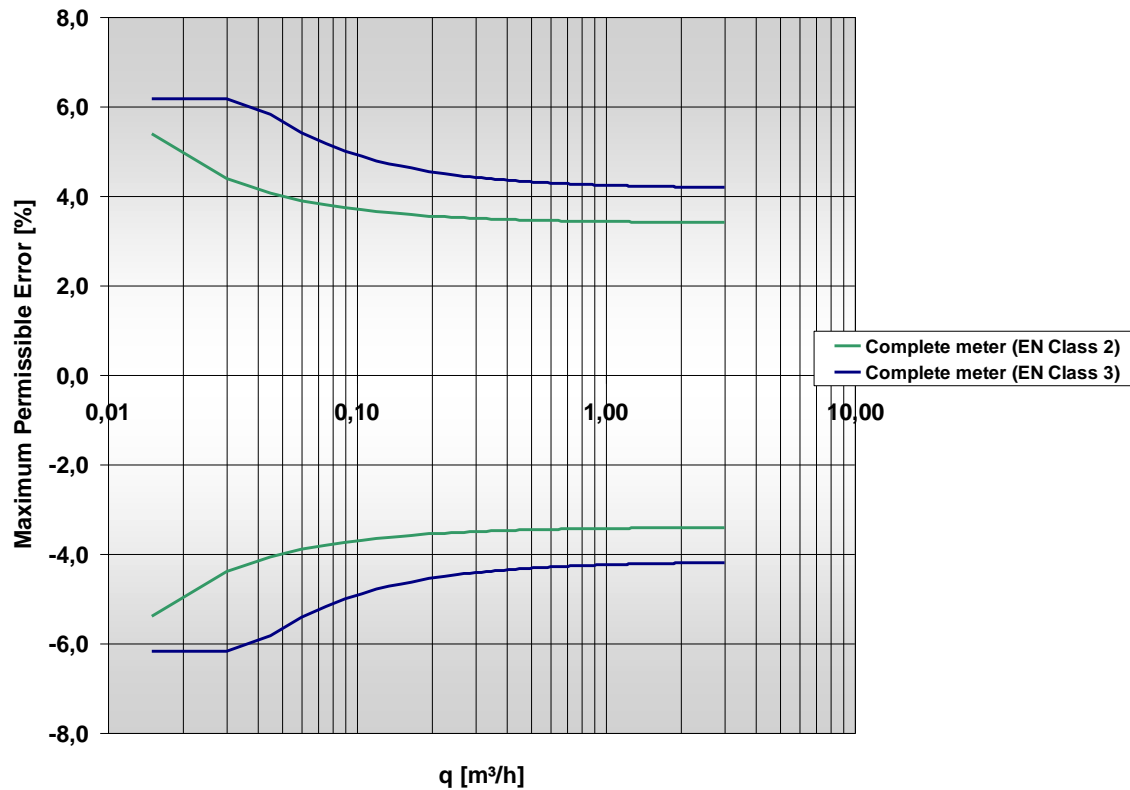
# Marking of measuring instruments according to MID





# Maximum Permissible Error (MPE)

MPE's of a typical heat meter  $q_p 1,5\text{m}^3/\text{h}$





## Dimensioning in accordance with MPE (EN1434-1)

- $q_i$   
is the lowest flow rate, above which a heat meter shall function without the MPE being exceeded
- $q_p$   
the permanent highest flow rate, at which a heat meter shall function without the MPE being exceeded
- $q_s$   
the upper highest flow rate, at which a heat meter shall function for short periods ( <1h/day; <200 h/year) without the MPE being exceeded