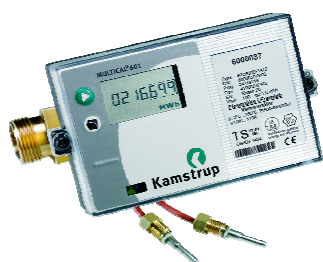


What is the Measuring Instruments Directive (MID)?



Waterworks, filling stations, gas and electricity suppliers, district heating power plants and other suppliers of products where levying by consumption takes place, often find it difficult to evaluate whether the measuring instruments under their supervision live up to the requirements of legislation.

It could be a question about water meters, gas meters, gas meters with conversion devices, electricity meters, heat energy meters, meters for oil/petrol and automatic weighing instruments.

These measuring instruments are comprised by the EU Directive No. 2004/22/EC regarding measuring instruments. According to this directive all new types of these meters must comply with the requirements of the directive as from 30 October 2006. However,

all instruments approved before this date may continue to be marketed for up to 10 years.

For new types of measuring instruments the directive requires that the manufacturer obtains an impartial conformity assessment and approval of the new type and where applicable an impartial audit of his production before he can put the instrument on the market. In connection with marketing the manufacturer must issue a conformity declaration and mark the measuring instrument in accordance with the directive.

The impartial evaluations of type and production are carried out by a notified body. FORCE-Dantest CERT has been notified to carry out such conformity assessments for a number of instruments.

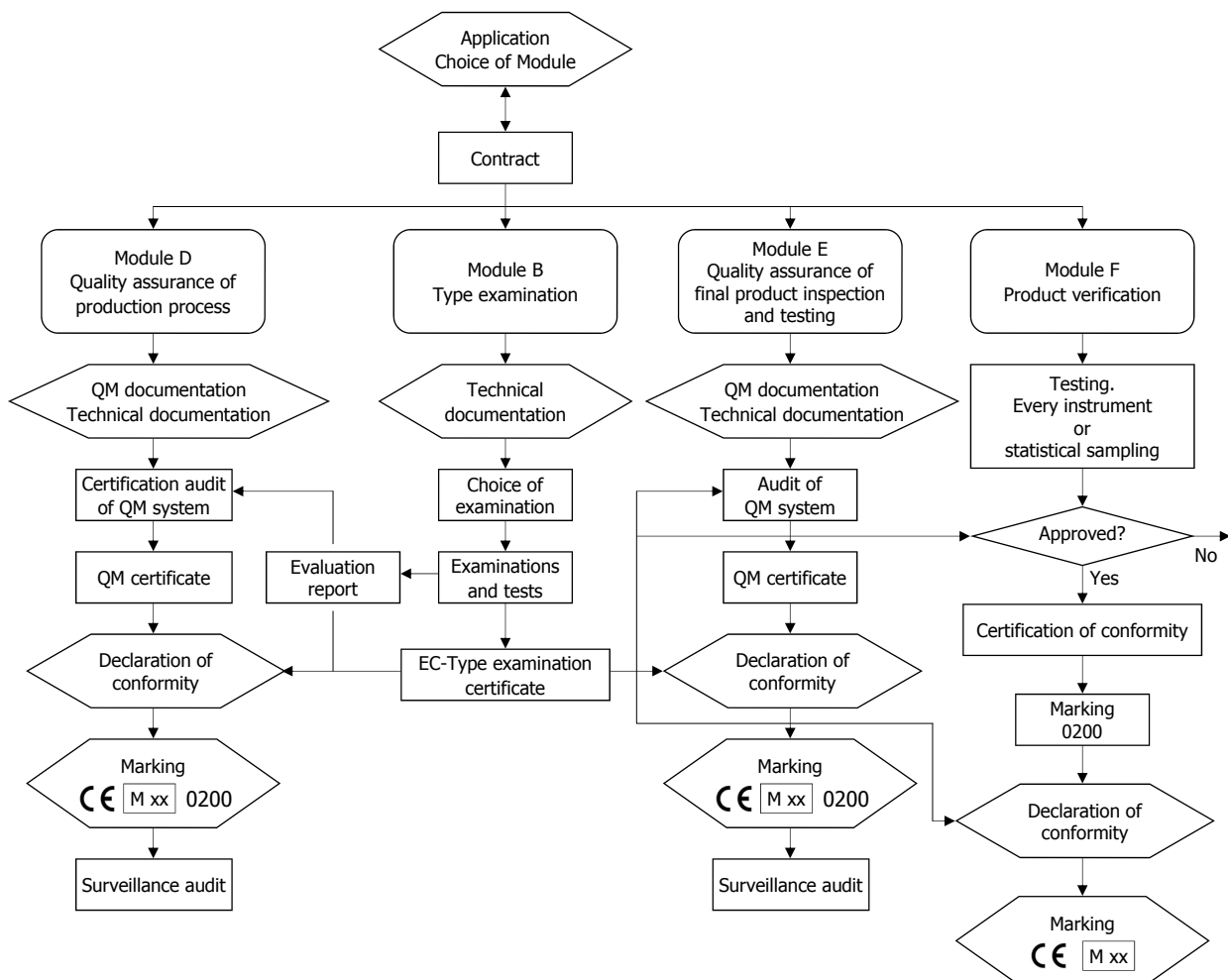
The procedure of a conformity assessment is shown on the two diagrams below. A range of modules appears (B, D, E, F, D1, F1, G, H1), which each is a specific procedure for conformity assessment. For the first 4 modules the instrument needs a type approval "MID with EC-type examination certificate". For the last 4 modules a type approval is not needed "MID without EC-type examination certificate".

The manufacturer may choose to which modules his instruments shall be assessed. The manufacturer, however, is limited in his choice depending on the type of instrument in question.

- **Water meters, gas meters and volume conversion devices, electrical energy meters, heat meters**
 - B + D, B + F, H1
- **Measuring systems for the continuous and dynamic quantitative measurement of liquids other than water (petrol, oil, milk etc.)**
 - B + D, B + F, G, H1

- **Automatic weighing instruments**
 - Mechanical systems
 - B + D, B + E, B + F, D1, F1, G, H1
 - Electromechanical systems
 - B + D, B + E, B + F, G, H1
 - Electronic systems or systems containing software
 - B + D, B + F, G, H1

In the following is a short description of the contents of each module. The descriptions should be compared with the diagrams. Module B is the basic type examination module. Modules F, F1 and G are conformity assessment based on production verification. Modules D, D1 and E are conformity assessment based on quality assurance of the production. Module H1 is conformity assessment based on quality assurance of design and production.



Legend: MID Module (rectangle) Manufacturer (hexagon) Notified Body (rectangle) QM: Quality Management

Schematic representation of conformity assessment - MID with EC type examination

Module B – Type examination

Module B is the procedure in which the notified body examines the technical design of a measuring instrument and ensures and declares that the technical design meets the appropriate requirements of the directive. The notified body will then issue an EC-type examination certificate.

Module F – Product verification

Module F is the procedure where the measuring instrument is declared to comply with the type as described in the EC-type examination certificate and a notified body then demonstrates that the instrument meets the essential requirements of the directive. Examination is carried out of each specimen of the model or of statistically chosen specimens.

Module F1 – Product verification

Module F1 is the procedure where the measuring instrument is declared to comply with the appropriate requirements of the directive. The declaration takes place based on an evaluation and verification carried out by a notified body. Examination is carried out of each specimen of the model or of statistically chosen specimens.

Module G – Unit verification

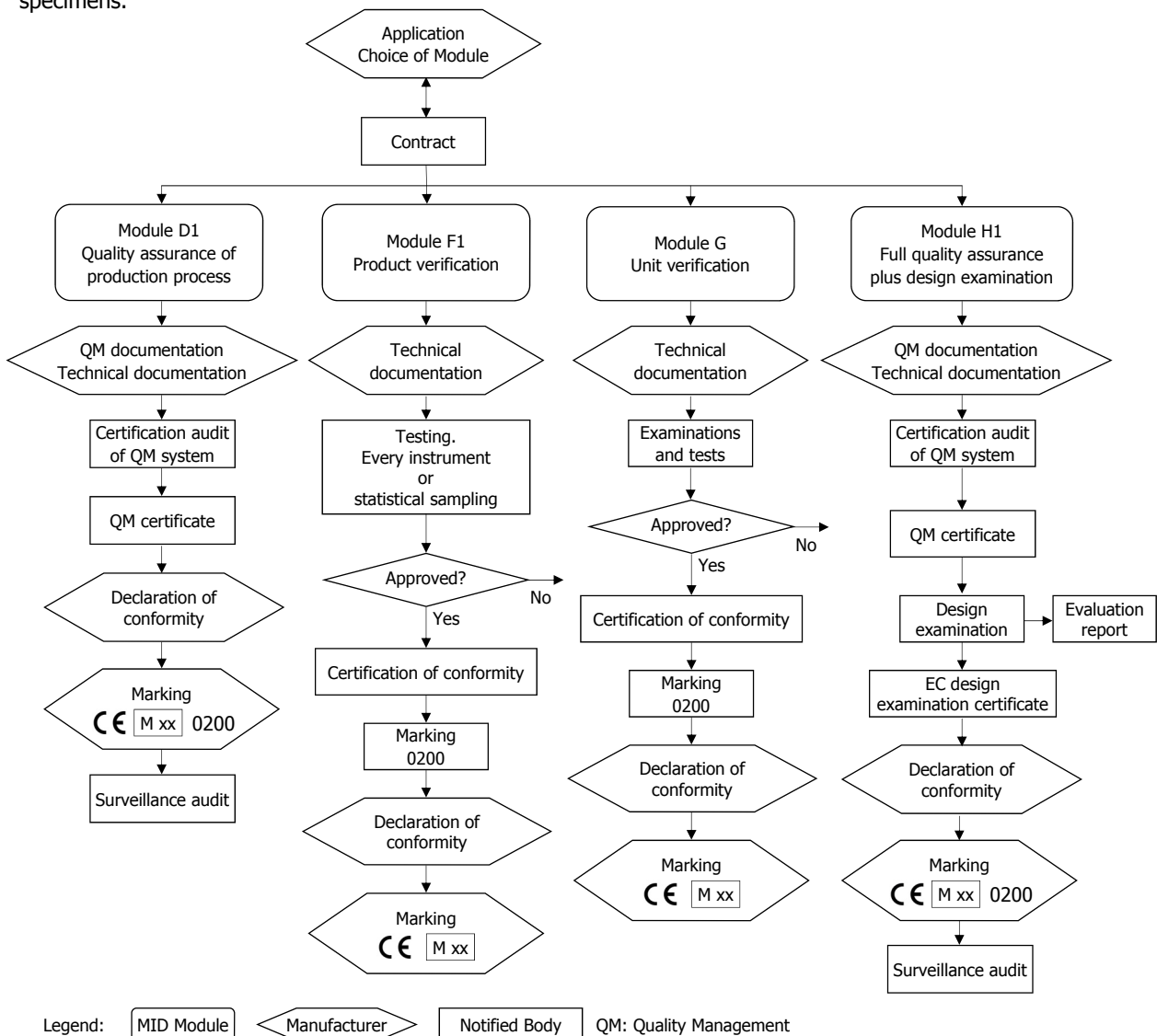
Module G is the procedure where the measuring instrument is declared to comply with the appropriate requirements of the regulation. The declaration takes place based on an evaluation and verification carried out by a notified body. Examination is carried out of each measuring instrument.

Module D – Quality Assurance of the production

Module D is the procedure where the measuring instrument is declared to comply with the type as described on the EC-type examination certificate. A notified body approves that the production ensures that the manufactured measuring instrument is in compliance with the description on the type examination certificate.

Module D1 – Quality Assurance of the production

Module D1 is the procedure where the measuring instrument is declared to comply with the appropriate requirements of the directive. A notified body approves that the production ensures compliance with the appropriate requirements of the directive.



Schematic representation of conformity assessment - MID without EC type examination



Module E – Quality Assurance of final product inspection and testing

Module E is the procedure where measuring instruments are declared to comply with the type described on the EC-type examination certificate. A notified body approves that final testing and inspection of the measuring instrument ensures compliance with the appropriate requirements of the directive.

Module H1 – Full quality assurance with design examination

Module H1 is the procedure where the measuring instrument is declared to comply with the appropriate requirements of the directive. A notified body approves that the design of the measuring instrument meets the appropriate requirements of the directive and that the production ensures compliance of the instrument with the appropriate requirements of the directive.

FORCE-Dantest CERT is FORCE Technology's independent body that offers accredited services within:

- Product certification
- System certification
- Personnel certification.

FORCE-Dantest CERT is a notified body within a number of European directives.

FORCE-Dantest CERT has been accredited by The Danish Accreditation and Metrology Foundation, DANAK in accordance with DS/EN 45011, DS/EN 45012 and DS/EN 45013.



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