

Issued by NMI Certin B.V.,  
designated and notified by the Netherlands to perform tasks with respect to  
conformity modules mentioned in article 17 of Directive 2014/32/EU, after  
having established that the Measuring instrument meets the applicable  
requirements of Directive 2014/32/EU, to:

Manufacturer Elster GmbH  
D-55252 Mainz-Kastel  
Steinernstr. 19-21  
Germany

Measuring instrument **A Rotary Displacement Gas Meter**

Type	: IRM-3 DUO
Manufacturer's mark or name	: Elster
Destined for the measurement of	: Gas volume
Accuracy class	: Class 1,0 or 1,5
Environment classes	: M1/ E2
Temperature range	: -25 °C / +70 °C

Further properties are described in the annexes:  
– Description T11553 revision 0;  
– Documentation folder T11553-1.

Valid until 29 July 2029

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C. Oosterman  
Head Certification Board

## 1 General information about the gas meter

All properties of the gas meter, whether mentioned or not, shall not be in conflict with the legislation. A photograph of the meter is given in document no. 11553/0-01 and the operating principle and description is described in document no. 11553/0-02

### 1.1 Essential parts

Measuring part

The dimensions of the rotors are presented in the table below, while also the appertaining volumes are indicated:

rotor height [mm]	rotor thickness [mm]	rotor length [mm]	volume (V) [dm <sup>3</sup> ]
170	78	110 (2x)	5,530
170	78	176 (2x)	8,849
170	78	282 (2x)	14,18

See documentation 11553/0-09 and 11553/0-10.

Bearings of the rotors

The bearings of the rotors are presented in documentation number 11553/0-11.

## 1.2 Essential characteristics

1.2.1 The meter has the following characteristics:

Meter Size	Q <sub>max</sub> [m <sup>3</sup> /h]	Minimum Q <sub>min</sub> [m <sup>3</sup> /h]	Q <sub>t</sub> [m <sup>3</sup> /h]	p <sub>max</sub> [bar]	volume V [dm <sup>3</sup> ]	diameter [mm]	accuracy class	Basic transfer relationship	
								number of revolution	per volume [m <sup>3</sup> ]
G400	650	6	65	20	5,53	100 or 150	1,0	181	1,0
G400	650	6	65	20	8,849	100 or 150	1,0	113	1,0
G650	1000	6	100	20	8,849	100 or 150	1,0 / 1,5	113	1,0
G650	1000	10	100	20	14,18	150 or 200	1,0	710	1,0
G1000	1600	10	160	20	14,18	150 or 200	1,0 / 1,5	710	10,0
G1000	1600	10	160	20	14,18	see drawing 11553/0-09	1,0 / 1,5	710	10,0

1.2.2 Flowrate range

Class	Q <sub>max</sub> /Q <sub>min</sub>
1,5	≥ 150
1,0	≥ 20

## 1.3 Essential shapes

- 1.3.1 The nameplate is bearing at least, good legible, the following information:
- CE marking including the supplementary metrological marking (M + last 2 digits of the year in which the instrument has been put into use);
  - Notified Body identification number, following the supplementary metrological marking;
  - EU-type examination certificate no. T11553;
  - manufacturer's name, registered trade name or registered trade mark;
  - manufacturer's postal address;
  - serial number of the meter and year of manufacture;
  - $Q_{max}$ ,  $Q_t$  and  $Q_{min}$ ;
  - maximum working pressure  $p_{max}$ ;
  - cyclic volume;
  - ambient temperature range;
  - accuracy class;
  - pulse values of HF and LF frequency outputs;
  - indication of the flow direction, e.g. an arrow.

The following information is mentioned on the nameplate or in the manual:

- mechanical environment class;
- electromagnetic environment class.

An example of the markings is shown in document no. 11553/0-15.

- 1.3.2 Sealing: see chapter 2.

## 1.4 Conditional parts

- 1.4.1 Construction
- In addition to the essential parts as mentioned at 1.1, the meter contains at least the following conditional parts:
- housing;
  - transmission;
  - register;
  - front and back cover;
  - synchronisation wheels;
  - pressure measuring points.

The meter can also be provided with low and high frequency impulse outputs respectively.

- 1.4.2 Housing
- The gas meter has a housing, which has sufficient tensile strength.

- 1.4.3 Transmission
- The transmission between the measuring part and the register is executed by means of a magnet coupling. The register is adjustable via adjustment wheels. An example of the gear transmission is presented in drawing no. 11553/0-04 and 11553/0-05

#### 1.4.4 Register

The measured volume is presented by means of a mechanical register. Examples are stated in in documentation number 11553/0-04 (universal index) and 11553/0-05 (compact index). The universal index is executed double, with one of them blinded, so that only the counter, which registers positively, is visible.

The meter also can be equipped with Encoder registers as described in the documentation no's 11553/0-06, 11553/0-07 and 11553/0-08.

On behalf of the register a so-called pick and place construction can be used optionally, which simplifies exchange of the register (see drawing no. 11553/0-13). This pick and place construction is sealed, as indicated in chapter 2.

On behalf of the register, an angle gearbox can be used optionally, to mount the register at another angle (see drawing 11553/0-12). This angle gearbox is sealed, as indicated in chapter 2.

The register is built up as follows:

size	number of drums		control-element [m <sup>3</sup> ]
	before the comma	behind the comma	
40 t/m 100	6	2	0,002
100 t/m 160 t/m 1000	7	1	0,02
1600	8	0	0,2

#### 1.4.5 Front and rear cover

The entrance to the transmission from the measuring part to the register is shielded by means of a front and a rear cover.

#### 1.4.6 Synchronization wheel

The rotors are coupled together mechanically by means of a synchronization wheel.

#### 1.4.7 Pressure tappings

The housing contains a pressure tapping to determine the inlet pressure. This pressure tapping is provided with the indication "p<sub>m</sub>". A second pressure tapping at the outlet is provided with the indication "p".

#### 1.4.8 Cryo Extension (optional)

See document no. 11553/0-14.

## 1.5 Non-essential parts

- 1.5.1 Low frequency sensors and high frequency sensors.
- 1.5.2 Oil filling plug, drain plug and sight glass for lubrication and checking oil level in the meter.
- 1.5.3 Temperature points.

## 2 Seals

The following items of the meter are sealed:

The nameplate of the meter.

- The entrance to the measuring part is sealed with one or more seals.
- The entrance to the register is sealed with one or more seals.
- the pick and place construction (if available), see example drawing 11553/0-13;
- the angle gearbox (if available), see example drawing 11553/0-11;
- the entrance to the drive shaft (if available) and appertaining markings;
- the impulse outputs (if available) as well as the appertaining marking for the impulse value.

See drawing no. 11553/0-03 for an example of the sealing of the complete meter.