

EC type-examination Certificate

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having established that the Measuring instrument meets the applicable
requirements of Directive 2004/22/EC, to:

Manufacturer Elster-Instromet B.V.
Munstermanstraat 6
7064 KA Silvolde
The Netherlands

Measuring instrument **A Rotary Displacement Gas Meter**
Type : IRM-3
Destined for the measurement of : Gas volume
Accuracy class : Class 1,0 or 1,5
Environment classes : M2 / E2
Temperature range : -25 °C / +55 °C

Further properties are described in the annexes
– Description T10198 revision 1
– Documentation folder T10198-2

Valid until 11 June 2019

Remark This revision replaces the earlier versions, except for its documentation
folder.

Issuing Authority

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C. Oosterman
Head Certification Board

NMI Certin B.V.
Hugo de Grootplein 1
3314 EG Dordrecht
The Netherlands
T +31 78 6332332
certin@nmi.nl
www.nmi.nl

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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.

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 ³]
110	50	76	0,795
110	50	116	1,212
110	50	138	1,443
170	78	138	3,469
170	78	176	4,424
170	78	110 (2x)	5,530
170	78	176 (2x)	8,849
170	78	282 (2x)	14,18

Remark: The versions with rotor length (2x) concern duo versions.

1.1.1 Bearings of the rotors

The bearings of the rotors are presented in documentation number RE 4449.

1.2 Essential characteristics

The meter has the following characteristics:

Q_{max} [m ³ /h]	minimum Q_{min} [m ³ /h]	Q_t [m ³ /h]	maximum p_{max} [bar]	volume V [dm ³]	diameter [mm]	accuracy class	Basic transfer relationship	
							number of revolutions	per volume [m ³]
25	0,3	2,5	16	0,795	40 or 50	1,0	126	0,1
40	0,3	4,0	16	0,795	40 or 50	1,0	126	0,1
65	0,3	6,5	16	0,795	40 or 50	1,0 / 1,5	126	0,1
100	0,3	10	16	0,795	40 or 50	1,0 / 1,5	126	0,1
65	0,3	6,5	16	1,212	40 or 50 or 80	1,0 / 1,5	83	0,1
100	0,3	10	16	1,212	40 or 50 or 80	1,0 / 1,5	83	0,1

160	0,3	16	16	1,212	40 or 50 or 80	1,0 / 1,5	825	1,0
65	0,4	6,5	16	1,443	40 or 50 or 80	1,0 / 1,5	69	0,1
100	0,4	10	16	1,443	40 or 50 or 80	1,0 / 1,5	69	0,1
160	0,4	16	16	1,443	40 or 50 or 80	1,0 / 1,5	693	1,0
250	1	25	16	1,443	50 or 80	1,0 / 1,5	693	1,0
100	1	10	16	3,469	80 or 100	1,0	288	1,0
160	1	16	16	3,469	80 or 100	1,0 / 1,5	288	1,0
250	1	25	16	3,469	80 or 100	1,0 / 1,5	288	1,0
400	1	40	16	3,469	80 or 100	1,0 / 1,5	288	1,0
160	1	16	16	4,424	80 or 100	1,0 / 1,5	226	1,0
250	1	25	16	4,424	80 or 100	1,0 / 1,5	226	1,0
400	1	40	16	4,424	80 or 100	1,0 / 1,5	226	1,0
400	4	40	16	5,530	100 or 150	1,0	181	1,0
650	4	65	16	5,530	100 or 150	1,0 / 1,5	181	1,0
650	4	65	16	8,849	100 or 150	1,0 / 1,5	113	1,0
1000	4	100	16	8,849	100 or 150	1,0 / 1,5	113	1,0
1000	10	100	16	14,18	150 or 200	1,0	710	1,0
1600	10	160	16	14,18	150 or 200	1,0 / 1,5	710	10,0
1600	10	160	16	14,18	see drawing no. RE 4448B	1,0 / 1,5	710	10,0

1.2.2 Flowrate range

The flowrate range shall fulfil the following conditions:

Class	Q_{\max}/Q_{\min}
1,5	≥ 150
1,0	≥ 20

1.3 Essential shapes

- 1.3.1 The nameplate is bearing at least, good legible, the information as mentioned in the OIML R137-1. Examples of the markings are shown in the documents RE 4555, RE 4551 and RE 4552.
- 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;
 - synchronization 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 documentation number RE 4445 and RE 4446.

- 1.4.4 Register
The measured volume is presented by means of a mechanical register. Examples are stated in in documentation number RE 4445 (universal index) and RE 4446 (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 RE 4517, RE 4518 and RE 4559.

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. RE 4452). 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 RE 4451). This angle gear box is sealed, as indicated in chapter 2.

The register is built up as follows:

size	number of drums		control-element [m ³]
	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 Synchronisation wheel
The rotors are coupled together mechanically by means of a synchronization wheel.
- 1.4.7 Pressure tapplings
The housing contains a pressure tapping to determine the inlet pressure. This pressure tapping is provided with the indication " p_m ". A second pressure tapping at the outlet is provided with the indication " p ".

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 entrance to the measuring part;
- The entrance to the register;
- the pick and place construction (if available), see example drawing RE 4452;
- the angle gearbox (if available), see example drawing RE 4451;
- 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 further Documentation no. RE 4447 for an example of the sealing of the complete meter.