

OIML Member State
The Netherlands

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Project number 3538281
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Issuing authority
Person responsible: NMi Certin B.V.
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Identification of the
certified type A **measurement sensor** (Coriolis sensor)
Type: HPC015 and HPC020

Characteristics See page 2 and further

This OIML Certificate is issued under scheme A.

This Certificate attests the conformity of the above identified type (represented by the sample(s) identified in the OIML Type Evaluation Report) with the requirements of the following Recommendation of the International Organization of Legal Metrology (OIML):

R 139-1 (2018) "Compressed gaseous fuel measuring systems for vehicles"

Accuracy class 2 or 4

This Certificate relates only to the metrological and technical characteristics of the type of measuring instrument covered by the relevant OIML International Recommendation identified above. This Certificate does not bestow any form of legal international approval.

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Issuing Authority

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28 October 2022

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The conformity was established by the results of tests and examinations provided in the associated reports:

Report number	Issue date	Number of pages
Measurement sensor		
NMi-2433143-01	3 June 2021	56
NMi-2655441-01	24 September 2021	15
MVD series electronics		
CVN-201269	10 July 2002	80
CPC-307228-1	21 February 2005	35
CPC-610406-2	29 January 2008	142
CPC-710466-1	19 November 2008	64
NMi-11200214-01	17 May 2011	13
NMi-11200345-2	20 October 2011	10
NMi-1901208-1	5 July 2018	114
5700 electronics		
NMi-14200115-01	4 December 2015	68
NMi-14200115-02	4 December 2015	52
NMi-14200115-06	22 April 2016	21
NMi-15200770-01	4 February 2016	9
NMi-2571596-01	30 September 2021	38

Characteristics of the measurement sensor

In Table 1 to 2, the general characteristics of the measurement sensor are presented. The construction of the measurement sensor is recorded in the Documentation folder no. TC11942-3, and TC7057-17 for the MVD series electronics or in TC8519-4 for the 5700 electronics.

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Measurement Sensor HPC0xx
Table 1 General characteristics

Minimum – maximum flow rate	See Table 2; uni-directional
Accuracy class	2 or 4 (Depending on measuring system accuracy class)
Environmental classes	M1 / E2
Ambient temperature range	-40 – +55 °C; condensing humidity
Product temperature range	-40 – +40 °C
Intended for the measurement of	Compressed gases including Hydrogen
Power supply voltage	230 V AC; 50/60 Hz or 24 V DC

Table 2 General characteristics of the family of instruments

Sensor type	HPC015	HPC020
Minimum flow rate [kg/min]	0,1	0,2
Maximum flow rate [kg/min]	4,0	8,0
MMQ [kg]	0,2	0,5
Maximum pressure [bar(g)]	1060	983
Diameter in/outlet [mm]	15	20

MVD series electronics

Table 3 General characteristics of the MVD series electronics

Environmental classes	M2 / E2
Ambient temperature range	-40...+55 °C;
Power supply voltage	24 VDC 18... 30 VDC 18...100 VDC / 85...265 VAC, 50...60 Hz

Table 4 Software versions of the MVD series electronics

Version	Checksum	Version	Checksum	Version	Checksum
700 Core Processor					
2.0	51FF	2.7	F666	3.2	18D0
2.1	2B3F	2.8	1DEA	3.3	B0D1
2.2	9005	3.0	D00D	3.40	73A9
2.3	D75B	3.0 – ETO17153	97D6	3.42	F00C
2.4	474F	3.11 – ETO19413	14AD	3.50	11AA
2.5	14AD	3.12	1F1B	3.52	3C4A
2.6	D732	3.13 – ETO18951	8BF8		
800 Enhanced Core Processor					
3.11	891378AB	3.91 – ETO21156	65F98DD7	4.60	DDB76E3C
3.21	9893B999	3.94	47EB3E10	4.70	AEB92E3F
3.30	A73D25DA	3.96	756C1BFD	4.80	F1583A44
3.42	7FA82CE8	4.00	C582F843	4.9	6083BF9B
3.50	D9343F05	4.02	8D61C368	5.08	4D368E71
3.52	132CCB63	4.14	40860C63	5.10	82C541D9
3.6	A9CA4E81	4.20	2983A9BE	5.20	BD69FDD6
3.61 – ETO17170	9AA358FF	4.21 – ETO21931	D6349259	5.22	F4A8D922
3.7	BE73CD62	4.40	B280233F	5.23 – ETO45214	B1D70450
3.71 – ETO18982	580D32B6	4.42	D7BA0841	5.30	65828884
3.8	8CA8E7D1	4.50	6B48C624	5.33	BF3164F6
3.81 – ETO20775	7931CE3D	4.51 – ETO32353	BC1660E8	5.40	0218C30B
3.9	58CB3E0C	4.51-ETO33244	D7B81135		
800 Remote Dual Core Processor					
1.00	52FB 1CF0	1.30	AC56C460	1.50	F42A4B2C
1.10	787951AA	1.40	8B64EF94		
1.20	3B7249F6	1.41	073C45F2		

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Version	Checksum	Version	Checksum	Version	Checksum
1700 / 2700 / 2500					
3.2, 3.3, 3.4, 3.4.1, 3.5.3 ^{*)}		3.6, 3.7, 4.1, 4.2 ^{*)}		4.0, 4.1, 4.2 ^{**)}	
5.0/1.0	7A7F0B39	6.4/1.3	B77B25C9	7.1/1.3	88FB1B5C
5.1/1.0	95F0BC47	6.5/1.3	88FB1B5C	7.2/1.3	9ECE81F1
5.12/1.0	A14FBFB9	6.6/1.3	9ECE81F1	7.3/1.3	4A5365D4
5.2/1.0	746CBE79	6.7/1.3	4A5365D4	8.0/1.3	1E1467F9
6.0/1.1	BB615B55	6.8/1.3	1E1467F9	8.02/1.3	201465F9
6.1/1.2	13176BE6	6.82/1.3	201465F9		
6.11 – ETO19266	9B13F21A	7.0/1.3	B77B25C9		
3500 / 3700					
7.0/1.1	A1C34F1C	8.1/1.3	4279A001	8.41 – ETO26097	31D36D05
7.1/1.1	D5783FCF	8.14/1.3	62F125F2	8.43 – ETO31478	E35DF3C0
7.2/1.1	20609FD3	8.2/1.4	368139C5	8.50/1.5	1C146AF7
8.0/1.2	158A12BD	8.21 – ETO23686	D507F464	8.51 – ETO22243	B18A0CB3
8.02 – ETO18947	1CC007C4	8.3/1.4	8F65A9E9		
8.03 – ETO19299	2D6104C2	8.4/1.4	227B10D2		

Notes:

- ^{*)} Software versions for the 1700 / 2700 which do not have a checksum.
^{**)} Software versions for the 2500 which do not have a checksum.

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5700 electronics

Table 5 General characteristics of the 5700 electronics

Environmental classes	M2 / E2
Ambient temperature range	-25...+55 °C(if the display is the primary indication) -40...+55 °C(if an approved external display is used as primary indication)
Power supply voltage	21... 90 VDC 100...240 VAC, 50...60 Hz

Table 6 Software versions of the 5700 electronics

Version	Checksum	Version	Checksum	Version	Checksum
Transmitter Software (Weights & Measures)*)					
1.20 (1.0)	2DF0D8E9	3.0 (3.0)	06108400	4.1 (4.0)	AFE0673B
1.30 (1.1)	ADE631BB	3.1 (3.0)	2DE64BB2	4.2 (4.0)	627B3E99
1.85 (2.0) ETO28130	0EA71B41	3.2 (3.0)	8CB1FE4B	4.3 (4.0)	AC509A54
2.00 (2.0)	2F52132D	4.0 (3.0)	0E4997D5		
2.10 (2.0)	23DD3385	4.07 (4.0)	44477758		
Internal Core Processor					
4.02	8D61C368	4.60	DDB76E3C	5.20	BD69FDD6
4.14	40860C63	4.70	AEB92E3F	5.22	F4A8D922
4.20	2983A9BE	4.80	F1583A44	5.30	65828884
4.40	B280233F	4.90	6083BF9B	5.33	BF3164F6
4.42	D7BA0841	5.08	4D368E71	5.40	0218C30B
4.50	6B48C624	5.10	82C541D9		
PIC Firmware					
8.0	0000DE9C				
LCD PIC Firmware**)					
3.0	000081D5 (1.20)	3.0	00007442 (1.30 and later)		

Notes:

- *) The transmitter software and the Weights & Measures (W&M) software form a matched set. Please note that the W&M software does not have a checksum and means W&M is licensed.
- ***) The number between brackets, is the transmitter software which belongs to the stated checksum.

Certificate history:

This revision replaces the previous versions.

Revision	Date	Description of the modification
Initial	18 June 2021	Initial approval
1	5 October 2021	Additional report NMI-2655441-01
2	8 February 2022	Addition of new PCB's
3	28 October 2022	Addition of type HPC020 Addition of description MVD Series and 5700 flow transmitters.