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Editor. Hoffmann
Tel.: +49 721 96402 45
File-No. 09/267a/4701/887
Application-No.:10-0141-G(This reports includes 8 pages and the
referred enclosures)**Supplementary R e p o r t**(9th supplement of test report file-No: 01/222/4701/887)**Testing (type Testing)
for the certification
of
diaphragm gas meters type series BK-G 1,6...25 (T)
manufactured by
Elster GmbH Lotte (Büren)**Applicant:Elster GmbH
Strotheweg 1
D-49504 Lotte (Büren)**Akkreditiertes Prüflabor:**
Reg.-Nr. ZLS-P-764/08; ZLS-P-896/09
Reg.-Nr.: DIN CERTCO PL 019
Reg.-Nr.: DVGW LV-BN7053

Supplementary R e p o r t (9th supplement of test report file-No: 01/222/4701/887)
testing (type Testing) for the certification of diaphragm gas meters type series BK-G
1,6...25 (T) manufactured by Elster GmbH, Lotte (Büren)

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I. General

This supplementary report is addressed to some modifications performed by the manufacturer to improve the series of diaphragm gas meters without changing the general design. The modifications were performed within the DVGW-homologations NG-4701BM0442/0443.

The series of diaphragm gas meters BK-G... were already tested according to test report file-No: 01/222/4701/887 from 12.10.2001 according to DIN EN1359:1999 with some supplements between 2002 and 2009 considering several modifications (see clause 5.1.2).

The aim of the test is to note modifications.

Further information:

Meter type	diaphragm gas meter
Trade mark/type:	Elster BK-G ... (T) ...
Distributor:	Elster GmbH
Manufacturer:	Strotheweg 1
Place of Prod.:	D-49504 Lotte (Büren)
PIN:	NG-4701BM0442/0443
DVGW-Prod.-CODE:	4701
Application form:	-
Application No:	10-0141-G
Test documentation:	16.02.2010
Test samples (No./Date):	2631 / 02.11.2009
Date of test:	February 2010

Supplementary Report (9th supplement of test report file-No: 01/222/4701/887) testing (type Testing) for the certification of diaphragm gas meters type series BK-G 1,6...25 (T) manufactured by Elster GmbH, Lotte (Büren)

II. Test References

The test have been performed based on the following standards (as far as applicable):

DIN EN 1359: 2007 (EN 1359:1998 + A1:2006)	Gaszähler — Balgengaszähler <i>Gas meters — Diaphragm meters</i>
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III. Description of the subject

Produktkenndaten / *Product ratings*

BK-G ...

Meter type *1)	BK-G 1,6	BK-G 2,5	BK-G 4	BK-G 6	BK-G 10	BK-G 16	BK-G 25
Measuring unit	V0,8/V1,2	V1,2/V2	V1,2/V2	V2/V3,5/V4/V6	V3,5/V6	V6	V12
Pmax	PN 0.5: all types, normal conditions, PN 0.1: all types, high temperature resistant, PN 1: only for BK-G 1,6 and BK-G 2,5 (aluminium) and BK-G 4 (aluminium)						
Temperature	T _{ambient} : -25 °C to +55 °C			T _{gas} : -25 °C to +55 °C			
Connections:	two-pipe-connection: DN 15/20/25/32/40/50 ; coaxial connection: DN 25/40/50						

BK-G ... T

Meter type *1)	BK-G 2,5T	BK-G 4T	BK-G 6T	BK-G 10T	BK-G 16T	BK-G 25T	
Measuring unit	V1,2 / V2	V1,2/V2	V2/V3,5/V6	V3,5/V6	V6	V12	
Pmax	PN 0.5: all types, normal conditions, PN 0.1: all types, high temperature resistant, PN 1: only for BK-G 1,6 and BK-G 2,5 (aluminium) and BK-G 4 (aluminium)						
Temperature	T _{ambient} : -25 °C to +55 °C			T _{gas} : -25 °C to +40 °C			
Connections:	two-pipe-connection: DN 20/25/32/40/50; coaxial connection: DN 25/40/50						

Description of the modifications of the 9th supplement

III.1 Sealing material

Alternative to the already used material Sikaflex 221 and 221 LV respectively, the new material, Sikaflex 515, ought to be used.

III.2 Pressure tap and thermowell

The meters are already approved with one thermowell (File-No. 05/349/4701/887). For the meters with the size G6 to G25 (steel housing) ought to be equipped with an additional thermowell and a pressure tap. (see also FileNo. 09/267/4701/887)

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III.3 Z4 Top reading

The meters are approved with the Z4 reading. The approval ought to be supplemented with the alternative Z4 top reading, where the register cap and frame is modified. The used materials are the same

III.4 Integrated valve

In file-no. 06/285/4701/887 the meters were tested with an integrated (bistable) valve. The valve was modified and a second alternative, "Smart Valve", was produced. The valves were safety-related reviewed (File-No. 09/052/4701/887). Both valves should be used in all meter models up to BK-G4 (V2) of both homologations.

III.5 Connection with Sikaflex 221/221LV/515 sealing

The new construction is planned with the sealing in a flute. This construction was tested and documentet with a former test sheet (File-No. 08/241/4701/887).

III.6 modification of connection bordering – shortend housing throat

The connection flanging ought to be changed. Therefore the throat must be shortend.

III.7 Modification of meter labelling

The meter labelling changes due to the supplements

III.8 New index option absolute-encoder "AE2"

Within this approval the 1st generation of the encoder "AE1" is already approved. The 2nd Generation AE2 ought to be supplemented. The new optional index allows different communication moduls using the company-owned ACM-interface.

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III.9 Further minor changes

III.9.1 production instructions

The instructions according to the measuring unit fastening and the connection bordering changed

III.9.2 Company standard

The standard of the materials (WN200d) changed. DIN EN10327 was replaced by DIN EN10346. This leads to the change of the company standard

III.9.3 Changing of drawings

Some drawings were changed due to minor changes or replacing by other drawings

IV. Testing

The analysis and the tests have been performed according to the standards mentioned under clause II of this report.

The results of this report refer only to the test samples and documents selected and presented by the manufacturer.

IV.1 Sealing material

The sealing material was tested according to the document in enclosure V.1.3.

IV.2 Pressure tap and thermowell

The test was performed in accordance with DIN EN1359:2007, clause 6.2.2, 6.5.1 and 6.5.5.

IV.3 Z4 Top reading

The index was tested by visual inspection and inspection of the drawings in the manufacturer documents (see point 4 of manufacturers documents, enclosure 3).

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IV.4 Integrated valve

The drawing of the valves were reviewed (see point 5 of manufacturers documents, enclosure 3) and assessed together with the testings file no. 06/285/4701/887 and 09/052/4701/887.

IV.5 Connection boss with Sikaflex 221/221LV/515 sealing

The connection bosses were tested in accordance with DIN EN1359:2007, clause 6.2.5.3 and the due to the new sealing, also in combination with the document mentioned in clause V.1.3.

IV.6 modification of connection bordering – shortend housing throat

See IV.5 and clause V.2.5.

IV.7 Modification of meter labelling

The manufacturer documents were reviewed.

IV.8 New index option absolute-encoder “AE2”

The manufacturer documents were reviewed. The applicability was tested in the context of the MID approval (see point 8 of manufacturers documents, enclosure 3).

IV.9 Further minor changes

Manufacturer documents

The modifications of IV.9.1, IV.9.2 and IV.9.3 have been noted by inspection of the manufacturer documents (point 9 of enclosure 3) without objections.

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Assessment

**The gas meters comply
-as far as applicable- with the relevant requirements of the standard mentioned
in clause II. Compliance with the document in clause V.1.3 show that the
sealing materials are applicable in the tested gas meter series.**

V. Enclosures

No.	Subject	Pages
1.	General	
1.1	Data sheet	1
1.2	Approval history	1
1.3	Test procedure of the DVGW- Research lab (change of sealing material)	3
2.	Testing	
2.1	Test sheet according to IV.2	6
2.2	Test sheet according to document V.1.3	3
2.3	Test sheet according to document V.1.3, clause 2.6	1
2.4	Testing of sealing material	2
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2.6	Test sheet File No. (08/241/4701/887)	7
3.	Manufacturer documents	90

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VI. Summary

The performed analysis and test of the gas gas meters type series BK-G... and BK-G ... T based on the standard DIN EN1359:2007 showed that the meters are complying to the relevant requirements of these standards. Additional tests of the sealing material according to the document in clause V.1.3, show whose applicability.


This report may only be copied and be passed with the entire text. The report is only valid together with the enclosures mentioned under clause V.

Karlsruhe, 14. June 2010

DVGW-Forschungsstelle
- Prüflaboratorium Gas -



(Dipl.-Ing. J. Stenger)
Head of laboratory



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Test engineer

Supplementary type testing of diaphragm gas meters

Product	Diaphragm gas meters	
Applicant	Elster GmbH, Strotheweg 1,49504 Lotte (Büren), Germany	
Applicable Standards	DIN EN1359: 2007	
Purpose of testing	Supplement of test report (File-No. 01/222/4701/887)	
Produkt-ID-Number	NG-4701BM0442/0443	
Applicant No.	10-0141-G	
Inspection procedure	QM-System incl. recognition and auditing of product specific requirements	
Manufacturer:	Elster GmbH, Lotte (Büren)	
Device type	Diaphragm gas meter	
Trade name:	BK-G...	
Type:	Different types → nomenclature: BK-Gx ₁ Vx ₂ x ₃ x ₄ , with x ₁ =Size, x ₂ =measuring unit identification; x ₃ =Index-Group (M=mechanical, A=Absolut Encoder, C=mechanical with CHEKKER); x ₄ =T for temperature compensation if available	
Sizes/ Connection sizes	Coaxial G1,6-G25 / DN25/40/50	Two-pipe G1,6-G25 / DN15/20/25/32/40/50
Max. working pressure	PN0,1 (HTR); PN0,5; PN1 (BK-G1,6/2,5/4 with aluminium housing)	
Gas categories	All gases according to classification EN 437	
Ambient temperature range	-25 °C – 55 °C	
Options	HTR, Absolut encoder (AE1, AE2), Temperature compensation, integrated valve, pressure tap, thermowell	

The requirements of the above mentioned standard – as far as applicable – are fulfilled.

Karlsruhe, 14.06.2010

DVGW-Forschungsstelle
- Prüflaboratorium Gas -

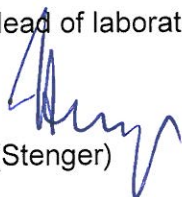
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