EXAM
BBG Prüf- und Zertifizier GmbH

Translation

(1) # EC-Type Examination Certificate

(2) **- Directive 94/9/EC -**
Equipment and protective systems intended for use in potentially explosive atmospheres

(3) ## DMT 03 ATEX E 080

(4) **Equipment:** **Flow Measuring Instrument type DAK ***-***-***-* / ***

(5) **Manufacturer:** **Grünewald GmbH**

(6) **Address:** **D- 59069 Hamm** **(previous: D - 42857 Remscheid)**

(7) The design and construction of this equipment and any acceptable variation thereto are specified in the schedule to this type examination certificate.

(8) The certification body of Deutsche Montan Technologie GmbH, notified body no. 0158 in accordance with Article 9 of the Directive 94/9/EC of the European Parliament and the Council of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.
The examination and test results are recorded in the test and assessment report BVS PP 03.1032 EG.

(9) The Essential Health and Safety Requirements are assured by compliance with:

EN 50014:1997+A1-A2	General requirements
EN 50020:2002	Intrinsic safety 'i'

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to Directive 94/9/EC.
Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate

(12) The marking of the equipment shall include the following:

I M2 EEx ia I

-

Deutsche Montan Technologie GmbH
Essen, dated March 06, 2003

Signed: Dr. Jockers
Certification body

Signed: Dr. Eickhoff
Special services

Dinnendahlstrasse 9 44809 Bochum Germany Phone +49 201 172-3947 Fax +49 201 172-3948
(until 31.05.2003: Deutsche Montan Technologie GmbH Am Technologiepark 1 45307 Essen Germany)

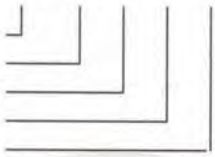
(13) Appendix to

(14) # EC-Type Examination Certificate

DMT 03 ATEX E 080

(15) 15.1 Subject and type

Flow Measuring Instrument type DAK *** - *** - *** - * / *



Nominal width
Volume
Mechanical connection
Electrical connection
Operation-mode version

Nominal width:	DN..	
Volume:	indicated in l/min or cbm/h	
Mechanical-connection code:	F	for flange
	G	for threaded connection R"
	S	for sandwich-construction
	O	for plug-in O-system
Electrical-connection code:	H	for plug-in system type Harting
	E	for cable entry and permanently connected cable up to 30 m
	S	for connector type Souriau
	P	for connector type Promos
Operation mode:	D	for light emitting diode (LED)
	DD	for diodes anti-parallel
	S	for Siemens-terminator
	P	for Promos-version
	E	for resistor array
	N	for contact only (without components)

15.2 Description

The Flow Measuring Instrument, designed for fluid media and used in intrinsically safe systems as accessory, only provides components, which do not affect type of protection intrinsic safety.

A potential-free switch (combined contact active open / active closed), assembled with or not assembled with components like diode(s), resistors or Siemens terminator, is mounted in a metallic enclosure fitted with a plexi-glass cover The switch is designated to be connected to one intrinsically safe circuit.

The Siemens-terminator is mounted in a hole of the enclosure, designed for this purpose.

The light emitting diode is mounted within the enclosure.

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15.3 Parameters

15.3.1 Version providing LED type DAK *** - *** - *** - * / D

Current	I_i	DC	30	mA
Effective internal capacitance / inductance C_i / L_i negligible				

15.3.2 Version providing diodes anti-parallel type DAK *** - *** - *** - * / DD

Current	I_i	DC	1	A
Effective internal capacitance / inductance C_i / L_i negligible				

15.3.3 Version providing Siemens-terminator type DAK *** - *** - *** - * / S

Voltage	U_i	DC	13	V
Current	I_i	DC	50	mA
Effective internal capacitance / inductance C_i / L_i negligible				

15.3.4 Version providing Promos connector type DAK *** - *** - *** - * / P

Voltage	U_i	DC	12	V
Current	I_i	DC	50	mA
or				
Voltage	U_i	DC	24	V
Current	I_i	DC	25	mA
Effective internal capacitance / inductance C_i / L_i negligible				

15.3.5 Version providing one contact only type DAK *** - *** - *** - * / N

Voltage	U_i	UC	24	V	12	V
Current	I_i	UC	1	A	2	A
Effective internal capacitance / inductance C_i / / L_i negligible						

15.3.6 Versions providing cable entry and permanently connected cable type DAK *** - *** - *** - E / *

Voltage / Current according to 15.3.1 to 15.3.5				
Capacitance per unit length	C_i	≤	100	pF/m
Inductance per unit length	L_i	≤	0,85	µH/m

15.3.7 Ambient temperature range $-20°C \leq T_a \leq +60°C$

(16) Test and assessment report
BVS PP 03.1032 EG as of 06.03.2003

(17) Special conditions for safe use
None

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BBG Prüf- und Zertifizier GmbH

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

44809 Bochum, 04. November 2004
BVS-Schä/Kw A 20000699

EXAM BBG Prüf- und Zertifizier GmbH

Certification body

Special services

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(until 31.05.2003: Deutsche Montan Technologie GmbH Am Technologiepark 1 45307 Essen Germany)

DEKRA

Translation

1st Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

to the EC-Type Examination Certificate
DMT 03 ATEX E 080

Equipment: **Flow Measuring Instrument type DAK ***-***-***-* / ***

Manufacturer: **Grünewald GmbH**

Address: **59069 Hamm, Germany**

Description
The Flow Measuring Instrument can be modified according to the descriptive documents as mentioned in the pertinent test and assessment report

The Essential Health and Safety Requirements of the modified equipment are assured by compliance with:

EN 60079-0:2006 General requirements
EN 60079-11:2007 Intrinsic safety 'i'

The marking of the equipment shall include the following:

Ex I M2 Ex ia I

Special conditions for safe use

None

Test and assessment report
BVS PP 03.1032 EG as of 10.04.2008

DEKRA EXAM GmbH
Bochum, dated 10. April 2008

Signed: Dr. Jockers
Certification body

Signed: Dr. Eickhoff
Special services unit

DEKRA EXAM GmbH Dinnendahlstrasse 9 44809 Bochum Germany Phone +49 234/3696-105 Fax +49 234/3696-110 E-mail zs-exam@dekra.com
(until 31.05.2003: Deutsche Montan Technologie GmbH Am Technologiepark 1

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

44809 Bochum, 10. April 2008
BVS-Scha/Poh A 20080118

DEKRA EXAM GmbH

Certification body

Special services unit

DEKRA EXAM GmbH Dinnendahlstrasse 9 44809 Bochum Germany Phone +49 234/3696-105 Fax +49 234/3696-110 E-mail zs-exam@dekra.com
(until 31.05.2003: Deutsche Montan Technologie GmbH Am Technologiepark 1

Translation

1 # EU-Type Examination Certificate Supplement 2

Change to Directive 2014/34/EU

2 **Equipment intended for use in potentially explosive atmospheres Directive 2014/34/EU**

3 EU-Type Examination Certificate Number: **DMT 03 ATEX E 080**

4 Product: **Flow Measuring Instrument type DAK ***-***-***-* / ***

5 Manufacturer: **Grünewald GmbH**

6 Address: **Oberallener Weg 7, 59069 Hamm, Germany**

7 This supplementary certificate extends EC-Type Examination Certificate No. DMT 03 ATEX E 080 to apply to products designed and constructed in accordance with the specification set out in the appendix of the said certificate but having any acceptable variations specified in the appendix to this certificate and the documents referred to therein.

8 DEKRA EXAM GmbH, Notified Body number 0158, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.
The examination and test results are recorded in the confidential Report No. BVS PP 03.1032 EU.

9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0:2012 + A11:2013	**General requirements**
EN 60079-11:2012	**Intrinsic Safety "i"**

10 If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Special Conditions for Use specified in the appendix to this certificate.

11 This EU-Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

12 The marking of the product shall include the following:

 **I M2 Ex ia I Mb**

DEKRA EXAM GmbH
Bochum, 2017-04-04

Signed: Dr Franz Eickhoff
Certifier

Signed: Dr Michael Wittler
Approver

DEKRA EXAM GmbH, Dinnendahlstrasse 9, 44809 Bochum, Germany,
telephone +49.234.3696-105, Fax +49.234.3696-110, zs-exam@dekra.com

13 **Appendix**

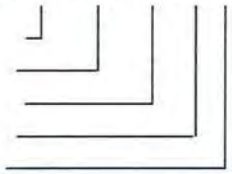
14 **EU-Type Examination Certificate**

DMT 03 ATEX E 080
Supplement 2

15 **Product description**

15.1 **Subject and type**

Flow Measuring Instrument type DAK *** - *** - *** - * / *



Nominal width
Volume
Mechanical connection
Electrical connection
Operation-mode version

Nominal width:	DN..	
Volume:	indicated in l/min or cbm/h	
Mechanical-connection code:	F	for flange
	G	for threaded connection R"
	S	for sandwich-construction
	O	for plug-in O-system
	*	for special mounting features
Electrical-connection code:	H	for plug-in system type Harting
	E	for cable entry and permanently connected cable up to 30 m
	S	for connector type Souriau
	P	for connector type Promos
	*	for further connector options
Operation mode:	D	for light emitting diode (LED)
	DD	for diodes anti-parallel
	S	for Siemens-terminator
	P	for Promos-version
	E	for resistor array
	N	for contact only (without components)
	*	for further variants not affecting electrical parameters

15.2 **Description**

With this supplement the certificate is changed to Directive 2014/34/EU.
(Annotation: In accordance with Article 41 of Directive 2014/34/EU, EC-Type Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Supplementary Certificates to such EC-Type Examination Certificates, and new issues of such certificates, may continue to bear the original certificate number issued prior to 20 April 2016.)

Reason for the supplement:
- Change to Directive 2014/34/EU
- update of applied standards to EN 60079-0 / -11 Ed. 6.

Description of Product

The Flow Measuring Instrument for fluid and gaseous media is used in intrinsically safe systems as accessory and only provides components, which do not affect type of protection intrinsic safety.

A potential-free switch (combined contact active open / active closed), assembled with or not assembled with components like diode(s), resistors or Siemens terminator, is mounted in a metallic enclosure fitted with a plexi-glass cover. The switch is designated to be connected to a single intrinsically safe circuit.

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telephone +49.234.3696-105, Fax +49.234.3696-110, zs-exam@dekra.com

The Siemens-terminator is mounted in a hole of the enclosure, designed for this purpose. The light emitting diode is mounted within the enclosure.

Listing of all components used referring to older standards: not applicable.

15.3 Parameters

15.3.1 Version providing LED type DAK *** - *** - *** - * / D

Current	I_i	DC	30	mA

Effective internal capacitance / inductance C_i / L_i negligible

15.3.2 Version providing diodes anti-parallel type DAK *** - *** - *** - * / DD

Current	I_i	DC	1	A

Effective internal capacitance / inductance C_i / L_i negligible

15.3.3 Version providing Siemens-terminator type DAK *** - *** - *** - * / S

Voltage	U_i	DC	13	V
Current	I_i	DC	50	mA

Effective internal capacitance / inductance C_i / L_i negligible

15.3.4 Version providing Promos connector type DAK *** - *** - *** - * / P

Voltage	U_i	DC	12	V
Current	I_i	DC	50	mA
or				
Voltage	U_i	DC	24	V
Current	I_i	DC	25	mA

Effective internal capacitance / inductance C_i / L_i negligible

15.3.5 Version providing one contact only type DAK *** - *** - *** - * / N

Voltage	U_i	AC/DC	24	V	12	V
Current	I_i	AC/DC	1	A	2	A

Effective internal capacitance / inductance C_i / / L_i negligible

15.3.6 Versions providing cable entry and permanently connected cable type DAK *** - *** - *** - E / *

Voltage / Current according to 15.3.1 to 15.3.5

Capacitance per unit length	C_i	≤	100	pF/m
Inductance per unit length	L_i	≤	0.85	µH/m

15.3.7 Ambient temperature range – 50 °C ≤ T_a ≤ +60 °C

16 Report Number

BVS PP 03.1032 EU, as of 2017-04-04

DEKRA EXAM GmbH, Dinnendahlstrasse 9, 44809 Bochum, Germany,
telephone +49.234.3696-105, Fax +49.234.3696-110, zs-exam@dekra.com

17 **Special Conditions for Use**

None

18 **Essential Health and Safety Requirements**

The Essential Health and Safety Requirements are covered by the standards listed under item 9.

19 **Drawings and Documents**

Drawings and documents are listed in the confidential report.

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

DEKRA EXAM GmbH
Bochum, dated 2017-04-04
BVS-Scha/Nu A 20170196

Certifier

Approver

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