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) # BVS 04 ATEX E 257 X

(4) **Equipment:** **Pressure Transmitter type VEGABAR BR17.* * * * * * * * ***

(5) **Manufacturer:** **VEGA Grieshaber KG**

(6) **Address:** **D 77757 Schiltach**

(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 EXAM BBG Prüf- und Zertifizier 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 04.2186 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'
EN 50284:1999	Equipment Group II Category 1G
EN 50303:2000	Equipment Group I Category M1
EN 50281-1-1:1998 +A1	Dust explosion protection

(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** or **II** extended with the applicable category- and type of protection-marking; see tables in 15.1.2

EXAM BBG Prüf- und Zertifizier GmbH
Bochum, dated 05. January 2005

Signed: Dr. Jockers
Certification body

Signed: Dr. Eickhoff
Special services unit

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

(13) Appendix to

(14) # EC-Type Examination Certificate

BVS 04 ATEX E 257 X

(15) 15.1 Subject and type

Pressure Transmitter type VEGABAR BR17.* * * * * * * * *

BR17.* * * * * * * * *
BR17.a b c d e f g h i

a	Approval	A = Group II, Group I D = Group II, Group I and dust explosion protection S = Group II and approval for ship application
b	Process connection	combination of letters and or numbers from "84L" to "NDX"
c	Pressure	B = pressure gauge S = pressure absolute
d	Measuring range	LA = -0,1...0 bar BT = 0...600 bar
e	Electrical connection / degree of protection IP	A4 = connector according to DIN 43650 M4 = connector, 4-pin type, providing screwed interlock M12x1 DL = cable gland / IP67 DM = cable gland / IP68 (inside) FW = terminal box 316L, providing screwed interlock (plastics material) / IP 67 FV = terminal box 316L, providing screwed interlock (stainless steel) / IP 67 EM = permanently connected cable / IP68
f	Cable length	Z = without C = 1,5 m E = 3 m G = 5 m I = 10 m
g	Features / cleaning methods	Z = without E = free of oil- and grease A = free of oil- and grease suitable for Oxygen application G = filling fluid and materials suitable for food application
h	Temperature range	A = -30° C .. 100° C B = -40° C .. 125° C C = -10° C .. 150° C U = -20° C .. 80° C

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I Special manufacturer test reports Z = no; 1 = yes

15.1.2 Allocation of different versions of the Pressure Transmitter to temperature class, ambient temperature range and apparatus category shall be achieved from the following tables.

Pressure Transmitter type ** version with permanently connected cable	Category		additional marking	ambient and medium temperature range
	Group II	Group I		
BR17.A * * * DL * * * * BR17.S * * * DL * * * *	1/2G		EEx ia IIC T4 / T5 / T6	- 20°C ≤ T_a ≤ + 60°C (T6) - 20°C ≤ T_a ≤ + 80°C (T5) - 20°C ≤ T_a ≤ + 80°C (T4)
BR17.A * * * DL * * * *		M1	EEx ia I	- 20°C ≤ T_a ≤ + 60°C
BR17.A * * * DM * * * * BR17.D * * * DM * * * * BR17.S * * * DM * * * *	1G		EEx ia IIA T4 / T5 / T6	- 10°C ≤ T_a ≤ + 60°C (T6) - 10°C ≤ T_a ≤ + 60°C (T5) - 10°C ≤ T_a ≤ + 60°C (T4)
BR17.A * * * DM * * * * BR17.D * * * DM * * * * BR17.S * * * DM * * * *	1/2G		EEx ia IIC T4 / T5 / T6	- 10°C ≤ T_a ≤ + 60°C (T6) - 10°C ≤ T_a ≤ + 60°C (T5) - 10°C ≤ T_a ≤ + 60°C (T4)
BR17.D * * * DM * * * *	1D		IP 65 T 80°C	- 10°C ≤ T_a ≤ + 60°C
BR17.A * * * DM * * * * BR17.D * * * DM * * * *		M1	EEx ia I	- 10°C ≤ T_a ≤ + 60°C
BR17.A * * * EM * * * * BR17.S * * * EM * * * *	1/2G		EEx ia IIC T4 / T5 / T6	- 20°C ≤ T_a ≤ + 60°C (T6) - 20°C ≤ T_a ≤ + 80°C (T5) - 20°C ≤ T_a ≤ + 80°C (T4)
BR17.A * * * EM * * * *		M1	EEx ia I	- 20°C ≤ T_a ≤ + 80°C

Pressure Transmitter type ** version with connector	Category		additional marking	ambient and medium temperature range
	Group II	Group I		
BR17.A * * * A4 * * * * BR17.S * * * A4 * * * *	1/2G		EEx ia IIC T4 / T5 / T6	- 40°C ≤ T_a ≤ + 60°C (T6) - 40°C ≤ T_a ≤ + 80°C (T5) - 40°C ≤ T_a ≤ + 105°C (T4)
BR17.A * * * A4 * * * *		M1	EEx ia I	- 40°C ≤ T_a ≤ + 105°C
BR17.A * * * M4 * * * * BR17.S * * * M4 * * * *	1/2G		EEx ia IIC T4 / T5 / T6	- 25°C ≤ T_a ≤ + 60°C (T6) - 25°C ≤ T_a ≤ + 80°C (T5) - 25°C ≤ T_a ≤ + 90°C (T4)
BR17.A * * * M4 * * * *		M1	EEx ia I	- 25°C ≤ T_a ≤ + 90°C

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Pressure Transmitter type ** version with terminal box	Category		additional marking	ambient and medium temperature range
	Group II	Group I		
BR17.A * * * FW * * * * BR17.S * * * FW * * * * BR17.A * * * FV * * * * BR17.S * * * FV * * * *	1/2G		EEx ia IIC T4 / T5 / T6	- 50°C ≤ T_a ≤ + 60°C (T6) - 50°C ≤ T_a ≤ + 80°C (T5) - 50°C ≤ T_a ≤ + 105°C (T4)
BR17.A * * * FW * * * * BR17.A * * * FV * * * *		M1	EEx ia I	- 50°C ≤ T_a ≤ + 105°C

15.2 Description

The Pressure Transmitter type VEGABAR BR17.* * * * * * * * * is designed as an intrinsically safe supplied pressure gauge and serves for continuous measuring purposes of gas- or liquid-media in hazardous areas requiring category 1, 1/2 and 2 apparatus.

The Pressure Transmitter consists of a tubular stainless steel enclosure, witch contains printed circuit boards fitted with electronic components embedded in casting compound.

Due to various design, the intrinsically safe supply and signal circuit is interconnected either to plugs / connectors or terminals or led out of the casting compound and the enclosure by means of flexible wiring with open leads.

15.3 Parameters

15.3.1 Supply and signal circuit

Voltage	U_i	DC	30	V
Current	I_i		100	mA
Power	P_i		1	W
Signal current	I_n		4...20	mA
Effective internal capacitance	C_i	≤	22	nF
(versions providing permanently connected cable)	C_i	≤	22	nF + 0,2 nF/m)
Effective internal inductance	L_i	≤	0	µH
(versions providing permanently connected cable)	L_i	≤	2	µH/m)

15.3.2 Temperature class in relation to ambient temperature

See tables in 15.1.2.

(16) Test and assessment report
BVS PP 04.2186 EG as of 05.01.2005

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(17) Special conditions for safe use

17.1 The installation of the Pressure Transmitter in the wall to areas requiring category 1G equipment shall provide a degree of protection IP67 according to EN 60529.

17.2 The installation of the Pressure Transmitter in the wall to areas requiring category 1D equipment shall provide a degree of protection IP6X according to EN 60529.

17.3 Manufacturer's technical information related to use of the Pressure Transmitter in contact with aggressive / corrosive media and to avoid any risk of mechanical impact shall be observed.

17.4 In case of applications of the Pressure Transmitter in areas requiring category 1 equipment the screen of the interconnection cable shall be included in the equipotential-bonding/grounding of the vessel.

17.5 The cable inlet of the apparatus in the wall to areas requiring category 1G equipment shall provide a degree of protection IP67 according to EN 60529.

17.6 The cable inlet of the apparatus in the wall to areas requiring category 1D equipment shall provide a degree of protection IP6X according to EN 60529.

17.7 Measuring of pressure media providing temperatures exceeding the values of the medium temperature ranges listed in the tables in clause 15.1.2 is permitted, if special heat sink assembly is used. But permissible surface temperatures, applicable to this range with regard to the specified temperature class. shall not be exceeded. In addition to that, temperature of the nut of the tubular enclosure shall not exceed the maximum value referring to the temperature class specified in clause 15.1.2.

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, 05.01.2005
BVS-Scha/Mi A 20040673

EXAM BBG Prüf- und Zertifizier GmbH

Certification body

Special services unit

DEKRA

Translation

1st Supplement

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

to the EC-Type Examination Certificate
BVS 04 ATEX E 257 X

Equipment: **Pressure Transmitter type VEGABAR BR17.* * * * * * * * ***

Manufacturer: **VEGA Grieshaber KG**

Address: **77767 Schiltach, Germany**

Description

The Pressure Transmitter can be modified according to the descriptive documents as mentioned in the pertinent test and assessment report and is marked according to the following type code:

Pressure Transmitter type VEGABAR BR17.* * * * * * * * *
17.* * * * * * * * *
17.a b c d e f g h i

a	Approval	A = Group II Group I D = Group II, Group I and dust explosion protection S = Group II and approval for ship application
b	Process connection	combination of letters and or numbers from "84B" to "TBX"
c	Pressure	B = pressure gauge S = pressure absolute
d	Measuring range	LA = -0.1...0 bar ... BT = 0...600 bar
e	Electrical connection / degree of protection IP	A4 = connector according to DIN 43650 M4 = connector, 4-pin type, providing screwed interlock M12x1 / IP65 DL = cable gland / IP67 DM = cable gland / IP68 (inside) FW = terminal box 316L, providing screwed interlock (plastics material) / IP 67 FV = terminal box 316L, providing screwed interlock (stainless steel) / IP 67 EM = permanently connected cable / IP68
f	Cable length	Z = without C = 1.5 m E = 3 m G = 5 m I = 10 m

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(until 31.03.2007 EXAM BBG Prüf- und Zertifizier GmbH)

g	Features / cleaning methods	Z = without E = medium wetted parts free of oil- and grease; filled with Halocarbon oil A = free of oil- and grease suitable for Oxygen application F = silicone-free version G = filling fluid and materials suitable for food application
h	Temperature range	B = -40 °C .. 125 °C C = -20 °C .. 150 °C E = -20 °C .. 60 °C U = -20 °C .. 80 °C
I	Special manufacturer certificate	Z = no 1 = individual check report 3.1 / EN 10204

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'
EN 60079-26:2004	Equipment Group II Category 1G
EN 50303:2000	Equipment Group I Category M1
EN 61241-0:2006	General requirements
EN 61241-11:2006	Protection by IS

The marking of the equipment shall include the following:

I or **II** extended with the applicable category- and type of protection-marking; see tables below

Allocation of different versions of the Pressure Transmitter to temperature class, ambient temperature range and apparatus category shall be achieved from the following tables.

Pressure Transmitter type ** version with permanently connected cable	Category		additional marking	ambient und medium temperature range
	Group II	Group I		
BR17.A * * * DL * * * * BR17.S * * * DL * * * *	1/2G		Ex ia IIC T4 / T5 / T6	-20 °C ≤ T_a ≤ +60 °C (T6) -20 °C ≤ T_a ≤ +80 °C (T5) -20 °C ≤ T_a ≤ +80 °C (T4)
BR17.A * * * DL * * * *		M1	Ex ia I	-20 °C ≤ T_a ≤ +60 °C
BR17.A * * * DM * * * * BR17.D * * * DM * * * * BR17.S * * * DM * * * *	1/2G		Ex ia IIC T4 / T5 / T6	-10 °C ≤ T_a ≤ +60 °C (T6) -10 °C ≤ T_a ≤ +60 °C (T5) -10 °C ≤ T_a ≤ +60 °C (T4)
BR17.D * * * DM * * * *	1D		Ex iaD 20 IP 65 T 80 °C	-10 °C ≤ T_a ≤ +40 °C
			Ex iaD 20 IP 65 T 100 °C	-10 °C ≤ T_a ≤ +60 °C
BR17.A * * * DM * * * * BR17.D * * * DM * * * *		M1	Ex ia I	-10 °C ≤ T_a ≤ +60 °C
BR17.A * * * EM * * * * BR17.S * * * EM * * * *	1/2G		Ex ia IIC T4 / T5 / T6	-20 °C ≤ T_a ≤ +60 °C (T6) -20 °C ≤ T_a ≤ +80 °C (T5) -20 °C ≤ T_a ≤ +80 °C (T4)
BR17.A * * * EM * * * *		M1	Ex ia I	-20 °C ≤ T_a ≤ +80 °C

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Pressure Transmitter type ** version with connector	Category		additional marking	ambient und medium temperature range
	Group II	Group I		
BR17.A * * * A4 * * * * BR17.S * * * A4 * * * *	1/2G		Ex ia IIC T4 / T5 / T6	-40 °C ≤ T_a ≤ +60°C (T6) -40 °C ≤ T_a ≤ +80°C (T5) -40 °C ≤ T_a ≤ +105°C (T4)
BR17.A * * * A4 * * * *		M1	Ex ia I	-40 °C ≤ T_a ≤ +105°C
BR17.A * * * M4 * * * * BR17.S * * * M4 * * * *	1/2G		Ex ia IIC T4 / T5 / T6	-25 °C ≤ T_a ≤ +60 °C (T6) -25 °C ≤ T_a ≤ +80 °C (T5) -25 °C ≤ T_a ≤ +90 °C (T4)
BR17.A * * * M4 * * * *		M1	Ex ia I	-25 °C ≤ T_a ≤ +90 °C

Pressure Transmitter type ** version with terminal box	Category		additional marking	ambient and medium temperature range
	Group II	Group I		
BR17.A * * * FW * * * * BR17.S * * * FW * * * * BR17.A * * * FV * * * * BR17.S * * * FV * * * *	1/2G		Ex ia IIC T4 / T5 / T6	-50 °C ≤ T_a ≤ +60 °C (T6) -50 °C ≤ T_a ≤ +80 °C (T5) -50 °C ≤ T_a ≤ +105 °C (T4)
BR17.A* * * FW * * * * BR17.A * * * FV * * * *		M1	Ex ia I	-50 °C ≤ T_a ≤ +105 °C

Parameters

1 Supply and signal circuit

Voltage	U_i	DC	30 V
Current	I_i		100 mA
Power	P_i		1 W
Signal current	I_n		4...20 mA
Effective internal capacitance	C_i	≤	22 nF
(versions providing permanently connected cable)	C_i	≤	22 nF + 0.2 nF/m)
Effective internal inductance	L_i	≦	0 µH
(versions providing permanently connected cable)	L_i	≤	2 µH/m)

2 Temperature class in relation to ambient temperature

See tables above

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Special conditions for safe use

1.1 The installation of the Pressure Transmitter in the wall to areas requiring category 1G equipment shall provide a degree of protection IP67 according to EN 60529.

1.2 The installation of the Pressure Transmitter in the wall to areas requiring category 1D equipment shall provide a degree of protection IP6X according to EN 60529.

1.3 Manufacturer's technical information related to use the Pressure Transmitter in contact with aggressive / corrosive media and to avoid any risk of mechanical impact shall be observed.

1.4 Measuring of pressure media providing temperatures exceeding the values of the medium temperature ranges listed in the tables above is permitted, if special heat sink assembly is used. But permissible surface temperatures, applicable to this range with regard to the specified temperature class, shall not be exceeded. In addition to that, the temperature of the nut of the tubular enclosure shall not exceed the maximum value referring to the temperature class specified in the tables above.

Test and assessment report

BVS PP 04.2186 EG as of 22.06.2010

DEKRA EXAM GmbH
Bochum, dated 22 June 2010

Signed:Hans Christian Simanski
Certification body

Signed: Dr. Franz Eickhoff
Special services unit

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, 22.06.2010
BVS-Scha/Her A 20100052

DEKRA EXAM GmbH

Certification body

Special services unit

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