1st Examination Certificate:

Translation

DMT

(1) # EC-Type Examination Certificate

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

(3) ## DMT 99 ATEX E 082

(4) **Equipment:** **Control Unit APEX 2003 Typ 07-3711-.2../....**

(5) **Manufacturer:** **BARTEC Componenten u. Systeme GmbH**

(6) **Address:** **D 97980 Bad Mergentheim**

(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 confidential test and assessment report BVS PP 99.2107 EG.

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

EN 50014:1992 (VDE 0170/0101 part 1/3.94)	General requirements
EN 50016:1995 (VDE 0170/0171 part 3/5.96)	Pressurization
EN 50018:1994 (VDE 0170/0171 part 5/3.95)	Flameproof enclosure
EN 50019:1994 (VDE 0170/0171 part 6/3.96)	Increased safety
EN 50020:1994 (VDE 0170/0171 part 7/4.96)	Intrinsic safety
EN 50284:1999 (VDE 0170/0171 part 12-1/2.00)	Equipment group II Category 1G
EN 954-1:1996 Safety of machinery – Safety related parts of a control system	

(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 and construction of the specified equipment. Further requirements of Directive 94/9/EC apply to the manufacture and placing on the market of this equipment.

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

II 2 (1) G **EEx e d ib [ia p] IIC T4/T6 or**
EEx e d [ia p] IIC T6

Deutsche Montan Technologie GmbH
Essen, dated 20. December 1999

Signed: Jockers
DMT-Certification body

Signed: Dill
Head of special services unit

Am Technologiepark 1, 45307 Essen, Telefon (0201)172-1416, Telefax (0201)172-1716

DMT

(13) Appendix to

(14) # EC-Type Examination Certificate

DMT 99 ATEX E 082

(15) 15.1 Designation and type

Control Unit APEX 2003 Typ 07-3711-.2../....

Typ 07-3711-12../....:	Control unit APEX 2003.00, standard version	
	marking:	EEx e d ib [ia p] IIC T4/T6 (temperature class depends on installed sensor-module)) EEx e d [ia p] IIC T6 (with external sensor-module)
Typ 07-3711-22../....:	Control unit APEX 2003.MV, version with one solenoid valve for protective gas inlet	
	marking:	EEx e d ib [ia p] IIC T4
Typ 07-3711-32../....:	Control unit APEX 2003.SI/B, version with ewach one solenoid valve for protective gas inlet and outlet	
	marking:	EEx e d ib [ia p] IIC T4

15.2 Description

With the help of the control unit APEX 2003 type 07-3711-.2../.... an explosion protected electrical equipment in the type of protection Pressurization can be assembled. This equipment will be certified separately. The components of the unit are mounted inside an enclosure in the type of protection Increased Safety. The main components are the function unit type 17-5522-*2*1/**** inside of an enclosure in the type of protection Flameproof Enclosure, PTB 97 ATEX 1066 U, and the sensor-module type 17-51P2-..../...., DMT 99 ATEX E 108 X. The sensor-module of the control unit type 07-3711-12../.... can also be mounted outside of the common enclosure.

The safe function of the control unit APEX 2003 Type 07-3711-.2../..... was tested on the basis of EN 954-1 "Safety of machinery – Safety related parts of a control unit". The system fulfils the requirements of category 3 of the standard.

15.3 Electrical parameters

4.1	Supply (Terminals 25 and 26)				
4.1.1	with control unit type 17-5522-12*1/****				
	rated voltage		AC	230	V
	maximum voltage	Um	AC	253	V
4.1.2	with control unit type Typ 17-5522-2211/****				
	rated voltage		AC	115	V
	maximum voltage	Um	AC	127	V

4.2	Supply EEx p (terminals 34 and 35) By the means of an external fuse (e. g. fuse up to 5 A, 1500 A breaking capacity, quick-acting, according to EN 60127-2/I) welding of the contacts is prevented				
4.2.1	with control unit type 17-5522-12*1/****				
	rate voltage		AC	230	V
	current (cos φ ≥ 0,7)	up tp		4	A
	current (cos φ = 1)	up to		5	A

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4.2.2	with control unit type 17-5522-2211/****					
	rated voltage			AC	115	V
	current (cos φ ≥ 0,7)	up to			4	A
	current (cos φ = 1)	up to			5	A
4.3	Data lines EEx p (terminals 39 bis 46)					
	voltage	up to		AC	10	V
		up to		DC	10	V
	current	up to			100	mA
4.4	Inlet valve (terminals 31 und 32)					
4.4.1	with control unit type 17-5522-12*1/****					
	rated voltage			DC	230	V
	maximum voltage			DC	358	V
	rated power with type 17-5522-1211/****				7	W
	rated power with type 17-5522-1231/****				15	W
4.4.2	with control unit type 17-5522-2211/****					
	rated voltage			DC	115	V
	maximum voltage			DC	179	V
	rated power				7	W
4.5	Outlet valve (terminals 28 und 29)					
4.5.1	with control unit type 17-5522-12*1/****					
	rated voltage			AC	230	V
	current,					
	with type 17-5522-1211/**** limited by fuse with a nominal value of				80	mA
	with type 17-5522-1231/**** limited by fuse with a nominal value of				160	mA
4.5.2	with control unit type 17-5522-2211/****					
	rated voltage			AC	115	V
	current, limited by fuse with a nominal value of				160	mA
4.6	RS 485 (terminals 47 and 48)					
	voltage				± 12	V
	maximum current	Um	AC/DC		253	V
	current	up to			250	mA
4.7	Temperature sensor (terminals 15 and 16) in the type of protection EEx ia IIC					
	voltage	Uo		DC	7,5	V
	current	Io			10	mA
	power	Po			20	mW
	linear output characteristic					
	maximum external inductance	Lo			330	mH
	maximum external capacitance	Co			11	µF
4.8	External overpressure switch (terminals 13 and 14), Key switch (terminals17 and 18), On/Off-switch (terminals 19 and 20), type of protection EEx ia IIC					
	voltage	Uo		DC	7,5	V
	current	Io			50	mA
	power	Po			95	mW
	linear output characteristic					
	maximum external inductance	Lo			14	mH
	maximum external capacitance	Co			11	µF

4.9 External overpressure sensor (terminals 21 and 22) in the type of protection EEx ia IIC

voltage	Uo	DC	30	V
current	Io		100	mA
power	Po		750	mW
linear output characteristic				
maximum external inductance	Lo		3	mH
maximum external capacitance	Co		66	nF

4.10 The sensor-module type 17-51P2-..../...., DMT 99 ATEX E 108 X, will be connected to the terminals 1 to 12; a short-circuit-bridge will be connected to the terminals 23 and 24 to release the setting of parameters.

(16) Test report
No. BVS PP 99.2107 EG
27 pages

(17) Special conditions for safe use
None

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.

45307 Essen, 29.05.2000
BVS-Wit/Loh A 9900437

Deutsche Montan Technologie GmbH

DMT-Certification body

Head of special services unit

EXAM
BBG Prüf- und Zertifizier GmbH

Translation

1st Supplement

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

to the EC-Type Examination Certificate
DMT 99 ATEX E 082

Equipment: **Control Unit APEX 2003 Typ 07-3711-.2../....**

Manufacturer: **BARTEC GmbH**

Address: **D - 97980 Bad Mergentheim**

Description

A new variant is added to the Control Unit APEX 2003 Type 07-3711-.2../...., which ensures a continuous flow of protective gas into the pressurized apparatus. The type designation of this variant is:

Control Unit Type 07-3711-42../....

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

EN 50014:1997+A1-A2	General requirements
EN 50016:2002	Pressurized apparatus 'p'
EN 50018:2000 +A1	Flameproof enclosure 'd'
EN 50019:2000	Increased safety 'e'
EN 50020:2002	Intrinsic safety 'i'
EN 50284:1999	Equipment Group II Category 1G
EN 954-1:1996	Safety of machinery - Safety related parts of a control system

Parameter

15.3.11 is added to the parameters

Continuous flow depending on the minimum overpressure

minimum overpressure	continuous flow
100 Pa	0,45 l/min
200 Pa	0,8 l/min
300 Pa	1,3 l/min
400 Pa	1,7 l/min
500 Pa	2,1 l/min

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

EXAM
BBG Prüf- und Zertifizier GmbH

Test and assessment report
BVS PP 99.2107 EG as of 27.01.2004

EXAM BBG Prüf- und Zertifizier GmbH
Bochum, dated 27. January 2004

Signed: Jockers — Certification body

Signed: Schumann — 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, 27.01.2004
BVS-Wit/Mi A 20030656

EXAM BBG Prüf- und Zertifizier GmbH

Certification body

Special services unit

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

Translation

(1) 2nd Supplement to the EC-Type Examination Certificate

(2) Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC
Supplement accordant with Annex III number 6

(3) No. of EC-Type Examination Certificate: **DMT 99 ATEX E 082**

(4) Equipment: **Control unit type APEX 2003 type 07-3711-*2**/****

(5) Manufacturer: **BARTEC GmbH**

(6) Address: **97980 Bad Mergentheim, Germany**

(7) The design and construction of this equipment and any acceptable variation thereto are specified in the appendix to this supplement.

(8) The certification body of DEKRA EXAM 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 99.2107 EG.

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

EN 60079-0:2006	**General requirements**
EN 60079-1:2007	**Flameproof Enclosure 'd'**
EN 60079-2:2007	**Pressurization 'p'**
EN 60079-7:2007	**Increased Safety 'e'**
EN 60079-11:2007	**Intrinsic Safety 'i'**
EN 60079-26:2007	**Equipment Group II Category 1G**
DIN EN ISO 61511-1:2005	**Functional Safety – Safety instrumented systems for the process industry sector – part 1**
DIN EN ISO 61511-2:2005	**Functional Safety – Safety instrumented systems for the process industry sector – part 2**

(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 appendix to this certificate.

(11) This supplement to the 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:

II 2(1)G Ex de ib [ia Ga px] IIC T4/T6 or
II 2(1)G Ex de [ia Ga px] IIC T6

DEKRA EXAM GmbH
Bochum, dated 09th February 2011

Signed: Simanski — Certification body

Signed: Dr. Eickhoff — Special services unit

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(13) Appendix to

(14) **2nd Supplement to the EC-Type Examination Certificate DMT 99 ATEX E 082**

(15) 15.1 Subject and type

Control unit type APEX 2003 type 07-3711-*2**/****
In the full marking, the asterisks shall be replaced by numbers and letters marking the different variants of the equipment:

Type 07-3711-*2**/****

No impact on explosion protection

1 Control unit APEX 2003.00, standard version
Marking: Ex de ib [ia p] IIC T4/T6
(Temperature class depends on sensor module installed)
Ex de [ia p] IIC T6 (at off-set sensor module)

2 Control unit APEX 2003.MV, version with one solenoid valve at intake of protective gas
Marking: Ex de ib [ia p] IIC T4

3 Control unit APEX 2003.SI/B, with one solenoid valve each at intake and outtake of protective gas
Marking: Ex de ib [ia p] IIC T4

4 As type 07-3711-32../...., but equipped with flow-through nozzle for continuous purging
Marking: Ex de ib [ia p] IIC T4

6 Motor Purge Control System (MPC-System) control unit for purging large Ex p motors

15.2 Description

The control unit APEX 2003 type 07-3711-*2**/**** supports the build of a separately certified explosion-protected electrical equipment in the type of protection Pressurization. The following components are mounted into an enclosure of the type of protection Increased Safety: the control functional unit type 17-5522-*2*1/**** (also mounted inside an enclosure of the type of protection Flameproof Enclosure, see PTB 97 ATEX 1066 U), the sensor module type 17-51P2-****/*** (see DMT 99 ATEX E 108 X), and further components. The sensor module at type 07-3711-12**/**** can also be located off-set from the common enclosure.
The control unit APEX 2003 type 07-3711-*2**/**** was tested according to the following standards: DIN EN ISO 61511-1:2005, "Functional Safety – Safety instrumented systems for the process industry sector – part 1", and DIN EN ISO 61511-2:2005, "Functional Safety – Safety instrumented systems for the process industry sector – part 2".
The control unit – within its scope of functionality – is suitable for use in safety functions up to a safety integrity level SIL 2. This does apply to the "high demand mode of operation". The software version considered here was 2.15C58 of 08/2006.
The MPC-system consists of the control unit in conjunction with the necessary non-electrical components which are all mounted into or attached to one assembly enclosure.
This supplement is issued to certify compliance with the current versions of the standards applicable and to certify the variant Motor Purge Control System (MPC-System).

15.3 Parameters

15.3.1 Mains voltage (terminals 25 and 26)

15.3.1.1	At control functional unit type 17-5522-12*1/****				
	Nominal voltage		AC	230	V
	Max. voltage	U_m	AC	253	V
15.3.1.2	At control functional unit type 17-5522-2211/****				
	Nominal voltage		AC	115	V
	Max. voltage	U_m	AC	127	V

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15.3.2 Mains supply Ex p (terminals 34 and 35)
An external upstream fuse (e.g. safety value of up to 5 A, breaking capacity of 1500 A, Flink release property, as per EN 60127-2/l) prevents fusing of the relay contacts.

15.3.2.1 At control functional unit type 17-5522-12*1/****

Rated voltage		AC	230	V
Switching current (cos φ ≥ 0,7)	up to		4	A
Switching current (cos φ = 1)	up to		5	A

15.3.2.2 At control functional unit type 17-5522-2211/****

Rated voltage		AC	115	V
Switching current (cos φ ≥ 0,7)	up to		4	A
Switching current (cos φ = 1)	up to		5	A

15.3.3 Data cables Ex p (terminals 39 to 46)

Switching voltage	up to	AC	10	V
	up to	DC	10	V
Switching current	up to		100	mA

15.3.4 Intake valve (terminals 31 and 32)

15.3.4.1 At control functional unit type 17-5522-12*1/****

Rated voltage	DC	230	V
Max. idle voltage	DC	358	V
Rated power at type 17-5522-1211/****	7	W	
Rated power at type 17-5522-1231/****	15	W	

15.3.4.2 At control functional unit type 17-5522-2211/****

Rated voltage	DC	115	V
Max. idle voltage	DC	179	V
Rated power		7	W

15.3.5 Outtake valve (terminals 28 and 29)

15.3.5.1 At control functional unit type 17-5522-12*1/****

Rated voltage	AC	230	V
Current			
At type 17-5522-1211/**** limited by fuse with nominal value of	80	mA	
At type 17-5522-1231/**** limited by fuse with nominal value of	160	mA	

15.3.5.2 At control functional unit type 17-5522-2211/****

Rated voltage	AC	115	V
Current limited by fuse with nominal value of		160	mA

15.3.6 RS 485 (terminals 47 and 48)

Voltage			± 12	V
Max. voltage	U_m	AC/DC	253	V
Current	up to		250	mA

15.3.7 Temperature sensor (terminals 15 and 16) in der type of protection Ex ia IIC

Voltage	U_o	DC	7.5	V
Current	I_o		10	mA
Power	P_o		20	mW
Linear output curve				
Max. external inductivity	L_o		330	mH
Max. external capacity	C_o		11	µF

15.3.8 External max. pressure governor (terminals 13 and 14),
Key switch (terminals 17 and 18),
ON/AOFF switch (terminals 19 and 20),
Enabling bridge for parameterisation (terminals 23 and 24)
in type of protection Ex ia IIC

Voltage	U_o	DC	7.5	V
Current	I_o		50	mA
Power	P_o		95	mW
Linear output curve				
Max. external inductivity	L_o		14	mH
Max. external capacity	C_o		11	µF

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15.3.9 External max. pressure sensor (terminals 21 and 22) in type of protection Ex ia IIC

Voltage	U_o	DC	30	V
Current	I_o		100	mA
Power	P_o		750	mW
Linear output curve				
Max. external inductivity	L_o		3	mH
Max. external capacity	C_o		66	nF

15.3.10 Sensor module type 17-51P2-****/****, DMT 99 ATEX E 108 X, is connected to terminals 1-12; an enabling bridge for parameterisation is connected to terminals 23 and 24.

15.3.11 Continuous flow rate depends on controlled minimum overpressure:

Minimum overpressure	Continuous flow rate
100 Pa	0.45 l/min
200 Pa	0.8 l/min
300 Pa	1.3 l/min
400 Pa	1.7 l/min
500 Pa	2.1 l/min

15.3.12 Ambient temperature range Ta

Type 07-3711-12**/****	-20 °C up to +40 °C
Type 07-3711-22**/****	-20 °C up to +40 °C
Type 07-3711-32**/****	-20 °C up to +40 °C
Type 07-3711-42**/****	-20 °C up to +40 °C
Type 07-3711-62**/****	-20 °C up to +30 °C

(16) Test and assessment report

BVS PP 99.2107 EG as of 09.02.2011

(17) Special conditions for safe use

None

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
44809 Bochum, 18.03.2011
BVS-Schu/Ar E 0427/11

Certification body

Special services unit

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Translation

(1) 3. Supplement to the EC-Type Examination Certificate

(2) Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC
Supplement accordant with Annex III number 6

(3) No. of EC-Type Examination Certificate: **DMT 99 ATEX E 082**

(4) Equipment: **Control unit APEX 2003 type 07-3711-*2**/****

(5) Manufacturer: **BARTEC GmbH**

(6) Address: **Max-Eyth-Str. 16, 97980 Bad Mergentheim, Germany**

(7) The design and construction of this equipment and any acceptable variation thereto are specified in the appendix to this supplement.

(8) The certification body of DEKRA EXAM 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 99.2107 EG.

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

EN 60079-0:2012	**General requirements**
EN 60079-1:2007	**Flameproof enclosure "d"**
EN 60079-2:2007	**Pressurized enclosure "p"**
EN 60079-7:2007	**Increased safety "e"**
EN 60079-11:2012	**Intrinsic safety "i"**
EN 60079-26:2007	**Equipment with equipment protection level (EPL) Ga**

DIN EN ISO 61511-1:2005	**Safety instrumented systems for the process industry sector**
DIN EN ISO 61511-2:2005	**Safety instrumented systems for the process industry sector**

(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 appendix to this certificate.

(11) This supplement to the 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:

II 2(1)G Ex de ib [ia Ga px] IIC T6/T4 Gb
or
II 2(1)G Ex de [ia Ga px] IIC T6 Gb

DEKRA EXAM GmbH
Bochum, dated 26th march 2013

Signed: Dr. Eickhoff
Certification body

Signed: Dr. Wittler
Special services unit

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(13) Appendix to

(14) **3. Supplement to the EC-Type Examination Certificate**
DMT 99 ATEX E 082

(15) 15.1 Subject and type

Control unit APEX 2003 type 07-3711-*2**/****

Asterisk	Description
1	Variant
	1 Control unit APEX 2003.00, standard version Marking: Ex de ib [ia px Ga] IIC T4/T6 Gb (Temperature class depends on sensor module installed) Ex de [ia px Ga] IIC T6 Gb (at off-set sensor module)
	2 Control unit APEX 2003.MV, version with one solenoid valve at intake of protective gas Marking: Ex de ib [ia px Ga] IIC T4 Gb
	3 Control unit APEX 2003.SI/B, with one solenoid valve each at intake and outtake of protective gas Marking: Ex de ib [ia px Ga] IIC T4 Gb
	4 As type 07-3711-32../...., but equipped with flow-through nozzle for continuous purging Marking: Ex de ib [ia px Ga] IIC T4 Gb
	6 Motor purge control system (MPC) Control unit for purging large Ex p motors
2	Sensor module
	0 external
	1 0 ... 25 mbar
	2 0 ... 300 mbar
	3 0 ... 1000 mbar
3	Without influence to the explosion protection
4	Rated voltage
	1 AC 230 V
	2 AC 115 V
	4 DC 24 V
5-7	Without influence to the explosion protection

15.2 Description

The control unit APEX 2003 type 07-3711-*2**/**** is designed to build up an explosion proof electrical equipment in type of protection Pressurized Enclosure, that will be certified separately.

The control electronic type 17-5522-*2*1/**** that is part of the complete control unit type 07-3711-*2**/**** is built in into a separately certified enclosure according to PTB 97 ATEX 1066 U in type of protection Flameproof Enclosure. That flameproof enclosure is built in into a separately certified enclosure in type of protection Increased Safety. Inside the surrounding enclosure in type of protection Increased Safety are also mounted separately certified sensor modules and other certified equipment. The sensor module type 17-51P2-****/**** according to DMT 99 ATEX E 108 X can optionally be mounted separately to the surrounding enclosure.

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The functional safety of the control unit APEX 2003 type 07-3711-*2**/**** is tested according to DIN EN ISO 61511-1 and DIN EN ISO 61511-2 "Safety instrumented systems for the process industry sector". The control unit – within its scope of functionality – is suitable for use in safety functions up to a safety integrity level SIL 2. This does apply to the "high demand mode of operation". The software version considered here was 2.15C58 of 08/2006.
Functional safety was investigated for ambient temperatures up to 40 °C. To ensure functional safety for the unit APEX 2003 type 07-3711-62**/**** and ambient temperatures up to 50 °C the described cooling measures are necessary not to exceed the internal housing temperature of 40 °C. The proper working of the cooling measures is indicated and is tested annually.

The motor purge control system consists of the control unit APEX 2003 with all non-electrical components which are built into or onto an enclosure.

Reason for this supplement is the update to the current standards, a new variant with rated voltage DC 24 V and the change of the ambient temperature.

15.3 Parameters

Electrical ratings

Supply voltage (terminal 25 and 26)

Control electronic type 17-5522-12*1/****	Rated voltage		AC	230	V
	Max. voltage	U_m	AC	253	V
Control electronic type 17-5522-22*1/****	Rated voltage		AC	115	V
	Max. voltage	U_m	AC	127	V
Control electronic type 17-5522-42*1/****	Rated voltage		DC	24	V
	Max. voltage	U_m	DC	26	V

Supply voltage for Ex p (terminal 34 and 35)
A welding of the relay contacts will be avoided by use of an external fuse (e.g. 5 A, 1500 A breaking capacity, fast, according to IEC 60127-2)

Control electronic type 17-5522-12*1/****	Rated voltage		AC	230	V
	Switching current	($\cos\varphi \geq 0.7$)	Up to	4	A
	Switching current	($\cos\varphi = 1$)	Up to	5	A
Control electronic type 17-5522-22*1/****	Rated voltage		AC	115	V
	Switching current	($\cos\varphi \geq 0.7$)	Up to	4	A
	Switching current	($\cos\varphi = 1$)	Up to	5	A
Control electronic type 17-5522-42*1/****	Rated voltage		DC	24	V
	Switching current		Up to	5	A

Data lines Ex p (terminal 38 up to 46)

Switching voltage	Up to	AC	250	V
	Up to	DC	80	V
Switching current	Up to		500	mA

Inlet valve (terminal 31 and 32)

Control electronic type	Rated voltage [VDC]	Max. voltage [VDC]	Rated power [W]
17-5522-1211/****	230	358	7
17-5522-1221/****	230	358	9
17-5522-1231/****	230	358	15
17-5522-2211/****	115	179	7
17-5522-2221/****	115	179	9
17-5522-2231/****	115	179	15
17-5522-4211/****	24	24	7
17-5522-4221/****	24	24	9
17-5522-4231/****	24	24	15

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Outlet valve (terminal 28 and 29)

Control electronic type	Rated voltage	Nominal current of fuse [mA]
17-5522-1211/****	230 VAC	80
17-5522-1221/****	230 VAC	100
17-5522-1231/****	230 VAC	100
17-5522-2211/****	115 VAC	160
17-5522-2221/****	115 VAC	200
17-5522-2231/****	115 VAC	200
17-5522-4221/****	24 VDC	1000
17-5522-4231/****	24 VDC	1000

RS485 (terminal 47 and 48)

Voltage		±	12	V
Max. voltage	U_m	AC/DC	253	V
Current	Up to		250	mA

Temperature sensor in type of protection Ex ia IIC (terminal 15 and 16)

Voltage	U_o	DC	7.5	V
Current	I_o		10	mA
Power	P_o		20	mW
Linear output characteristics				
Max. external inductivity	L_o		330	mH
Max. external capacity	C_o		11	µF

Intrinsic safe output terminals in type of protection Ex ia IIC
External overpressure switch (terminal 13 and 14),
Key switch (terminal 17 and 18),
On / Off switch (terminal 19 and 20) and
Enabling bridge for parameterisation (terminal 23 and 24)

Voltage	U_o	DC	7.5	V
Current	I_o		50	mA
Power	P_o		95	mW
Linear output characteristics				
Max. external inductivity	L_o		14	mH
Max. external capacity	C_o		11	µF

External overpressure sensor (terminal 21 and 22)

Voltage	U_o	DC	30	V
Current	I_o		100	mA
Power	P_o		750	mW
Linear output characteristics				
Max. external inductivity	L_o		3	mH
Max. external capacity	C_o		66	nF

Terminals of sensor module type 17-51P2-****/**** according to DMT 99 ATEX E 108 X

Supply circuit 1 (terminal 7 and 8)

Voltage	U_o	DC	30	V
Current	I_o		100	mA
Power	P_o		750	mW
Max. external inductivity	L_o		3	mH
Max. external capacity	C_o		66	nF

Data circuit 1 (terminal 2 up to 6, 9, 11 and 12)

Voltage	U_o	DC	7.5	V
Current	I_o		50	mA
Power	P_o		95	mW
Linear output characteristics				
Max. external inductivity	L_o		14	mH
Max. external capacity	C_o		11	µF

Data circuit 2 (terminal 1 and 10)

Voltage	U_o	DC	-7.5	V

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Data circuit 2 (terminal 1 and 10)				
Voltage	U_0	DC	-7.5	V
Current	I_0		10	mA
Power	P_0		20	mW
Linear output characteristics				
Max. external inductivity	L_0		330	mH
Max. external capacity	C_0		11	µF

Continuous flow rate depends on controlled minimum overpressure:

Minimum overpressure	Continuous flow rate
100 Pa	0.45 l/min
200 Pa	0.8 l/min
300 Pa	1.3 l/min
400 Pa	1.7 l/min
500 Pa	2.1 l/min

Thermal ratings

Type	Temperature range
07-3711-12**/****	-20 °C ... +40 °C (T6, T4)
07-3711-12**/**** with additional cooling	-20 °C ... +50 °C (T4)
07-3711-22**/****	-20 °C ... +40 °C
07-3711-32**/****	-20 °C ... +40 °C
07-3711-42**/****	-20 °C ... +40 °C
07-3711-62**/**** standard	-20 °C ... +40 °C (T4)
07-3711-62**/**** with additional cooling	-20 °C ... +45 °C
07-3711-62**/**** with Intertec enclosure	-30 °C ... +50 °C

Inert gas or air ratings

Maximum temperature	+40 °C
Maximum pressure	3 bar

(16) Test and assessment report

BVS PP 99.2107 EG as of 26th March 2013

(17) Special conditions for safe use

None

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
44809 Bochum, 26th march 2013
BVS-Schu/Ma A 20120973

Certification body

Special services unit

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