

Translation

# Type Examination Certificate

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

Type Examination Certificate Number: **BVS 19 ATEX E 016 X**

Product: **Ex p control unit type A7-37S2-\*1\*1/\*\*\*\* SILAS pz**

Manufacturer: **BARTEC GmbH**

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

This product and any acceptable variations thereto are specified in the appendix to this certificate and the documents referred to therein.

DEKRA Testing and Certification GmbH 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 19.2071 EU.

The Essential Health and Safety Requirements are assured in consideration of:

<b>EN 60079-0:2012+A11:2013</b>	<b>General requirements</b>
<b>EN 60079-2:2014</b>	<b>Pressurized enclosure "p"</b>
<b>EN 60079-7:2015</b>	<b>Increased safety "e"</b>
<b>EN 60079-11:2012</b>	<b>Intrinsic safety "i"</b>
<b>EN 60079-18:2015</b>	<b>Encapsulation "m"</b>
<b>EN 60079-31:2014</b>	<b>Protection by enclosures "t"</b>

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.

This 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.

The marking of the product shall include the following:

 **II 3G Ex ec mc ic [ic pzc] IIC T\* Gc**      Stainless steel enclosure  
**II 3D Ex tc [ic pzc] IIIC T\* Dc**

 **II 3G Ex ec mc ic [ic pzc] IIC T\* Gc**      Polyester enclosure

\* See clause Parameters for details about the temperatures

DEKRA Testing and Certification GmbH  
Bochum, 2019-05-27

Signed: Jörg-Timm Kilisch

Managing Director



- 13 **Appendix**
- 14 **Type Examination Certificate**
- BVS 19 ATEX E 016 X**

15 **Product description**

15.1 **Subject and type**

**Ex p control unit type A7-37S2-a1<sup>b1</sup>/cd<sup>ee</sup> (SILAS)**

<u>Item</u>	<u>Description</u>
a	Enclosure material
	1 Stainless steel V2A
	2 Stainless steel V4A
	3 Polyester
b	Pressure range
	1 0 up to 25 mbar
	2 0 up to 300 mbar
c	Power supply
	1 DC (wide range)
	2 AC (wide range)
d	Variant without influence to explosion protection
ee	Variant without influence to explosion protection

15.2 **Description**

The Ex p control unit type A7-37S2-\*1\*1/\*\*\*\* (SILAS) consists either of a of a separately tested and certified empty enclosure (stainless steel) of type 07-56\*1-\*\*\*\*/\*\*\*\* with certificate IBExU 99 ATEX 1118 U or a separately certified empty enclosure (polyester) of type 07-5185-\*\*\*\*/\*\*\*\* with certificate PTB 08 ATEX 1062 U and an installed electronic block type 17-5112-\*\*\*\*0/\*\*\*\* according to BVS 19 ATEX E 032 U including pressure sensors.

Depending on the configuration the size of the separately certified enclosures varies as well as the number of built in components / equipment.

The Ex p electronic block of 17-5\*12-\*\*\*\*/\*\*\*\* with certificate BVS 19 ATEX E 032 U is responsible for the Ex p controlling function.

For the configuration and for the monitoring of the system a separately certified control panel of 17-51P5-\*111/\*\*\*\* with certificate BVS 19 ATEX E 017 X can be connected to the terminals of the Ex p electronic block.

Optional a space heater can be installed inside the enclosure for low temperature operation between  $-50\text{ °C} \geq T_{\text{amb, min}} > -20\text{ °C}$ . Two thermostats are used for control. One thermostat is responsible for the temperature range where the space heater is on, the second thermostat is responsible for the temperature range where the Ex p control unit can is on.

Depending on local requirements there are variations of the Ex p control unit possible:

Variant 1

Only the certified Ex p electronic block is installed inside the enclosure. The whole measuring and monitoring components are connected to the electronic block by use of the intrinsically safe circuits.

Variant 2

The pressure sensor PCB is integrated into the same enclosure as the Ex p electronic block. The hoses are led into the enclosure by use of sockets in the enclosure wall.

Variant 3

For equipment which require a high volume flow the Ex p control unit is designed as motor purge control or other customer adjusted variants.



The used valves are separately tested and certified and can either be installed near the Ex p equipment connected via an intrinsically safe circuit to the Ex p control unit or can be installed in an optional add-on enclosure. The add-on enclosure is the same certified enclosure which is used for the Ex p control unit but with modifications not in the scope of the related certificate. This enclosure is only used for mechanical protection of the separately certified built-in equipment and for better installation purposes.

## 15.3 Parameters

### Thermal parameters

Type	Variants	Range T <sub>amb</sub>	T <sub>class</sub>	T <sub>Surface</sub>
A7-37S2-***1/****	Standard	-25 °C up to 50 °C	T5	T95 °C
		-25 °C up to 60 °C	T4	T130 °C
	With flange protective housing mv	-25 °C up to 50 °C	T4	T130 °C
A7-37S2-***1/*M**	MPC standard	-25 °C up to 50 °C	T4	T130 °C
	MPC with space heater	-50 °C up to 50 °C	T4	T130 °C

### Electrical parameters

Power supply		
Rated voltage type A7-37S2-***1/1***	24 up to 44 ± 10 %	VDC
Maximum input voltage U <sub>m</sub> type A7-37S2-***1/1***	48.4	VDC
Rated current type A7-37S2-***1/1***	11.5	A
Rated voltage type A7-37S2-***1/2***	100 up to 230 ± 10 %	VAC
Maximum input voltage U <sub>m</sub> type A7-37S2-***1/2***	253	VAC
Rated current type A7-37S2-***1/2***	11.0	A

### Ethernet-Interface

Maximum input voltage U<sub>m</sub> = 60 V AC/DC

Switching contacts type A7-37S2-***1/****		
For all types maximum switching voltage U <sub>m</sub> = 250 VAC / 24 VDC		
Relay K1	250 VAC	5 A
	24 VDC	5 A
Relay K2	250 VAC	3 A
	24 VDC	3 A
Relay K3	250 VAC	1 A
	24 VDC	1 A
Relay K4	250 VAC	1 A
	24 VDC	1 A

Valve control circuit			
Purge valve	Signal form Voltage	I/O or PWM 24	VDC



## Intrinsically safe interfaces

### Temperature sensor outputs, intrinsically safe ic Terminal blocks X9, X14, X16

per terminal block:

Maximum output voltage	$U_o$	DC	18	V
Maximum output current	$I_o$		150	mA
linear output characteristic				
Maximum connectable capacity	$C_o$		97	nF
Maximum connectable inductance	$L_o$		1.4	mH

### HMI connection, intrinsically safe ic Terminal block X17

Maximum output voltage	$U_o$	DC	3.61	V
Maximum output current	$I_o$		1	A
Maximum stationary output current			350	mA
Maximum output power	$P_o$		1.25	W
Maximum connectable capacity	$C_o$		89	$\mu$ F
Maximum connectable inductance	$L_o$		36	$\mu$ H

## **Pneumatic parameters**

Type A7-37S2-*2*1/**** (SILAS pz)			
Measuring range (A7-37S2-*211/****)		0-25	mbar
Measuring range (A7-37S2-*221/****)		0-300	mbar

## 16 **Report Number**

BVS PP 19.2071 EU, as of 2019-05-27

## 17 **Special Conditions for Use**

Overvoltage Category II of the non-intrinsically safe circuits according to IEC 60664-1 has to be kept.

## 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 Testing and Certification GmbH  
Bochum, 2019-05-27  
BVS-AIh/Mu A 20140328

  
Managing Director