



[1] **EU-TYPE EXAMINATION CERTIFICATE - Translation**

[2] Equipment or protective systems intended for use in potentially explosive atmospheres, Directive 2014/34/EU

[3] EU-type examination certificate number **IBExU09ATEX1113 X** | Issue 1

[4] Product: **Visual Unit POLARIS II**
Type: 17-72V*-****/****

[5] Manufacturer: BARTEC GmbH

[6] Address: Max-Eyth-Str. 16
97980 Bad Mergentheim
GERMANY

[7] This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

[8] IBExU Institut für Sicherheitstechnik GmbH, notified body number 0637 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 test report IB-20-3-0125/1.

[9] Compliance with the essential health and safety requirements has been assured by compliance with: EN IEC 60079-0:2018, EN IEC 60079-7:2015/A1:2018, EN 60079-11:2012 and EN 60079-31:2014 except in respect of those requirements listed at item [18] of the schedule.

[10] If the sign "X" is placed after the certificate number, it indicates that the product is subject to the specific conditions of use specified in the schedule 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:

Visual Unit 17-72V*-****/****

Ex II 3(2)G Ex ec ib [ib IIC or IIB Gb] IIC T4 Gc

Ex II 3G Ex ec ib IIC T4 Gc

Ex II 2D (2G) Ex ib tb [ib IIC or IIB Gb] IIIC T120 °C Db

-25 °C ≤ T_{amb} ≤ +50 °C

accessories: Type Smart Device, B7-72VZ-A0**/****

Ex II 3 G Ex ec IIC T4 Gc

Ex II 3 D Ex tc IIIC T120 °C Dc

-25 °C ≤ T_{amb} ≤ +50 °C

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Type USB Barriere Exi, B7-72VZ-D0**/****

⊕ II 3 (2) G Ex ec [ib IIC or IIB Gb] IIC T4 Gc

⊕ II (2)G [Ex ib IIC or IIB]

⊕ II (2)D [Ex ib IIIC]

-25 °C ≤ T_{amb} ≤ +50 °C

The marking is variable and depends on type and components used.

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Certificates without signature and seal are not valid. Certificates may only be duplicated completely and unchanged. In case of dispute, the German text shall prevail.

Freiberg, 2021-02-12

[13] **Schedule**

[14] **Certificate number IBExU09ATEX1113 X | Issue 1**

[15] **Description of product**

The visual unit POLARIS II is a panel PC intended for the use of random software application in potentially explosive atmospheres of Zone 2, 21 and 22. The device may also be used as remote computer. It is provided in several sizes.

The visual unit POLARIS II consist of a housing made of stainless steel with a cemented glass, LCD display and further electronic components. Optionally, the device is equipped with a touch panel. It is operated by means of keyboard with trackball or touchpad. For the connection of accessories, the terminal provides four intrinsically safe ports. The intrinsically safe accessories of BARTEC, e.g USB-Sticks 17-A1Z0-0007, 17-71VZ-5100/***** and keyboard, mouse, Trackball, 17-71VZ-*****/****, can be connected at these ports, optionally.

Additional separately certified and suitable components may be assembled in the wall of enclosure if they meet degree of protection of at least IP6X and have a certificate for zone 21 or higher.

Technical data:

Ambient temperature range: T_{amb} -25 °C ... +50 °C

Visual unit

POLARIS II

Supply circuit

U_n +24 V DC \pm 10 %, max. 120 W (Type 17-72Vx-x2xx/xxxx)
+110 V AC...230 V AC, max. 90 W
(Type 17-72Vx-x1xx/xxxx)

Intrinsically safe USB Ex-i interface:

maximum voltage	U_m	253 V AC	
maximum output voltage	U_o	5.88 V DC	
maximum output current	$I_{o\ max}$	1786 mA	
steady output current	I	380.8 mA	
maximum output power characteristic	P_o^*	1519 mW	(* consideration for thermal ignition)
max. external capacitance	C_o	< 43 μ F (L = 0.9 μ H); applies for ib and IIC < 670 μ F (L = 0.9 μ H); applies for ic and IIC	
max. external inductance	L_o	< 20.889 μ H (C_o = 2.4 μ F); applies for ib and IIC < 31.889 μ H (C_o = 3.6 μ F); applies for ic and IIC	
max. internal inductance	L_i	0.111 μ H	
max. internal capacitance	C_i	negligible	

Intrinsically safe USB Ex-i for mouse and keyboard:

maximum voltage	U_m	253 V AC	
maximum output voltage	U_o	5.88 V DC	
maximum output current	$I_{o\ max}$	1277 mA	
steady output current	I	317.9 mA	
maximum output power characteristic	P_o^*	1341 mW	(* consideration for thermal ignition)
max. external capacitance	C_o	< 43 μ F (L = 0.9 μ H); applies for ib and IIC < 670 μ F (L = 0.9 μ H); applies for ic and IIC	
max. external inductance	L_o	< 35.889 μ H (C_o = 2.0 μ F); applies for ib and IIC < 55.889 μ H (C_o = 2.8 μ F); applies for ic and IIC	
max. internal inductance	L_i	0.111 μ H	
max. internal capacitance	C_i	negligible	

Intrinsically safe USB Ex-i for Stick:

maximum voltage	U_m	253 V AC
maximum output voltage	U_o	5.88 V DC
maximum output current	$I_{o\ max}$	2866 mA
steady output current	I	482.8 mA

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maximum output power characteristic	P_o^*	1934 mW	(* consideration for thermal ignition)
max. external capacitance	C_o	< 43 μ F (L = 0.1 μ H); applies for ib and IIC	rectangular
max. external inductance	L_o	< 670 μ F (L = 0.9 μ H); applies for ic and IIC	
max. internal inductance	L_i	< 9.789 μ H (C_o = 3.4 μ F); applies for ib and IIC	
max. internal capacitance	C_i	< 14.889 μ H (C_o = 4.9 μ F); applies for ic and IIC	
		0.111 μ H	
		negligible	

Smart Device, B7-72VZ-A0/******

Supply circuit	U_n	+5 V DC (USB standard)
	I_{max}	500 mA
	P_{max}	1.25 W
Output		Bluetooth or wireless network

Variations compared to EC-Type Examination Certificate and its amendment:

Variation 1

The device complies with the requirements of current standards. Thus the marking has been changed.

Variation 2

The type key has been changed.

Variation 3

A new board for input protection and USB limitation is used.

Variation 4

The use of new components has been assessed.

[16] **Test report**

The test results are recorded in the confidential test report IB-20-3-0125/1 of 2021-02-12. The test documents are part of the test report and they are listed there.

Summary of the test results

The visual unit mentioned under [4] further fulfils the requirements of explosion protection for electrical equipment of group II, category 3G with intrinsically safe circuits feeding in areas requiring equipment of category 2G as well as category 2D in type of protection intrinsic safety "ib" in combination with protection by enclosure "tb".

[17] **Specific conditions of use**

- High charging processes at the surface of the keyboard and the touch panel have to be excluded.
- The intrinsically safe circuits and the enclosure are galvanically connected. In the whole course of the formation of intrinsically safe circuits equipotential bonding must be guaranteed.
- The intrinsically safe parameter are mentioned in the instructions.
- The USB Barriere Exi, B7-72VZ-D0**/**** may be used as associated apparatus also in Zone 2 when it is assembled in a suitable and conformity assessed enclosure. This enclosure has to fulfil the requirements of standard EN IEC 60079-7 or another recognized type of protection.
- The Smart Device, B7-72VZ-A0**/**** may be installed separately in Zone 2 when it is assembled in a suitable and conformity assessed enclosure. This enclosure has to fulfil the requirements of standard EN IEC 60079-7 or another recognized type of protection.

[18] **Essential health and safety requirements**

In addition to the essential health and safety requirements (EHSRs) covered by the standards listed at item [9], the following are considered relevant to this product, and conformity is demonstrated in the test report:

None

[19] **Drawings and Documents**

The documents are listed in the test report.

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