



[1] **EU – TYPE EXAMINATION CERTIFICATE**

[2] Component Intended for use on/in an Equipment or Protective System Intended for use in Potentially Explosive Atmospheres
Directive 2014/34/EU.

[3] EU-Type Examination Certificate Number: **FIDI 21 ATEX 0013U** Issue: **1**

[4] Product: **FB IO**
Type: **FB7304*3**

[5] Manufacturer: **Pepperl+Fuchs SE**

[6] Address: **Lilienthalstrasse 200, 68307 Mannheim, Germany**

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

[8] FIDITAS Ltd., Notified Body number 2829 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 of the Directive.

The examination and test results are recorded in confidential Report No: **FIDI 21 CR 013**

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

EN IEC 60079-0:2018 **EN 60079-1:2014** **EN 60079-5:2015**
EN IEC 60079-7:2015 / A1:2018

except in respect of those requirements listed at item 18 of the Schedule.

[10] The sign 'U' is placed after the certificate number. It indicates that this certificate must not be mistaken for a certificate intended for an equipment or protective system. This partial certification may be used as a basis for certification of an equipment or protective system.

[11] This EU-Type Examination Certificate relates only to the design, examination and test of the specified product in accordance with Annex III. Further requirements of the Directive apply to the manufacturing process and supply of this products. These are not covered by this certificate.

[12] The marking of the product shall include the following:

 **II 2G Ex db eb q IIC Gb**

Our ref.: 20.CRT.273

Date: 29.04.2021

FIDITAS Ltd.
Certification department

Approved:



Fiditas
ZAGREB

Mafero Kelava, M.E.Eng.





[13]

SCHEDULE

[14] **EU - TYPE EXAMINATION CERTIFICATE No.:** **FIDI 21 ATEX 0013U**

[15] **Description of product**

The component FB IO, type FB7304*3, acts as interface for signals between field devices and process control systems. The device provides 2-wire ports with loop power supply, in function analog / digital input or output (selectable by SW).

The component FB IO is intended to be mounted in areas requiring equipment category 2G on approved backplanes FB BP. The FB BP provides supply and control signals in type of protection "Ex e" and "Ex d" (via separately certified components: "MC-jack"). The input signals are connected at the front via a connector suitable for protection "Ex eb". FB7304*3 uses a "single-wide" "Ex q" container.

The component FB IO, listed in this certificate, meets the relevant parameters of FB concept.

Electrical data

Supply and communication signals (Backplane connections - "Ex d" connectors)

All signals listed below are Extra Low Voltage (ELV), in detail SELV (Safety Extra Low Voltage) or PELV (Protected Extra Low Voltage), derived from FB power supply (FB PS), placed at a dedicated slot on the FB BP. All NON-IS signals must meet overvoltage category II (or better).

Power supply 12 V:

Value	Backplane Connector Pin 6 [+], Pin 5 [-]
Nominal voltage (U_n)	12 V _{DC} SELV/PELV
Rated voltage (U_r)	12 V _{DC} (-2/+4%), 12.48 V _{DC} SELV/PELV
Maximum voltage (U_{max})	60 V _{DC}

Bus signal:

Value	Backplane Connector, Pin 2, Pin 3
Nominal operating voltage (U_n)	±2.5 V signal with reference level 2.5 V _{DC} (Manchester-Signal)
Rated voltage (U_r)	12 V _{DC} (-2/+4%), 12.48 V _{DC} SELV/PELV (same GND reference as power supply)
Maximum voltage (U_{max})	60 V _{DC}

Shut-Down signal:

Value	Backplane Connector, Pin 1 [+], Pin 5 [-]
Nominal voltage (U_n)	12 V _{DC} SELV/PELV (derived from FB PS e.g. FB9206)
Rated voltage (U_r)	12 V _{DC} (-2/+4%), 12.48 V _{DC} SELV/PELV
Maximum voltage (U_{max})	60 V _{DC}



Digital Input (Front connector - "Ex eb" connectors)

The front connector supports 4x 2-wire ports, each providing an adjustable loop power and a current sensing for digital and analogue input/output functionality.

The maximum voltage for the front connector is rated to $U_{max} = 30\text{ V}$ (in order to functional protect the electronic in 2-wire mode).

Electrical data:

FB7304*3	Front connector
Voltage	$U_{max} \leq 30\text{ V}$
Current	$I_{max} \leq 1\text{ A}$

Rated data

Service temperature range for Ex component: $-40\text{ °C} \leq T_s \leq +100\text{ °C}$.

Ingress protection: IP20 if mounted on backplane, IP30, if IP30 cover is attached correctly.

In respect to FB concept; the permitted ambient temperature range for the components FB IO is:

$$-40\text{ °C} \leq T_{amb} \leq +60\text{ °C}$$

Ambient temperature range is referenced to measurement point in a distance of 30 mm perpendicular to the centre of the front of the component FB IO.

[16] Confidential Report No. FIDI 21 CR 013

[16.1] Routine testing

The manufacturer shall carry out the following routine tests:

- The dielectric strength test for the filling material is to be executed prior to each batch before filling process according to clause 5.2.2 of standard EN 60079-5.
- The manufacturer shall carry out dielectric strength test according to clause 7.1 of standard EN IEC 60079-7.

[17] Schedule of Limitations

- The component FB IO shall be provided with protection that ensures a pollution degree 2 (or better).
- The component FB IO shall only be used together with approved backplanes FB BP, power supply FB PS and gateways (FB GW) and bus-termination FB BT (if applicable).
- Supply the component FB IO with a source that meets the requirements for Safety Extra Low Voltage (SELV) or Protective Extra Low Voltage (PELV) with a maximum voltage of $U_m = 60\text{ V}$.
- All circuits connected to the device shall comply with the overvoltage category II (or better) according to EN 60664-1.
- Permitted supply short-circuit current for the components is 50 A.
- The component FB IO shall be installed and operated only in surrounding enclosures that comply with the safety requirements for equipment category 2G enclosures according to EN IEC 60079-0 and are rated with the degree of protection IP54 according to EN 60529.



[18] Essential Health and Safety Requirements

Covered by the conformity with harmonized standards listed under item 9.

[19] Drawings and Documents

Title:	Drawing No.:	Rev. level:	Date:
Description	16-1397FI-00	-	20.11.2020
Schematics FB7304*3 (PCB)	16-1397FI-01	-	09.11.2020
Part list safety components	16-1397FI-02	-	11.11.2020
Assembly plan FB7304*3	16-1397FI-03	-	09.11.2020
Mechanical Drawing (distances within container)	16-1397FI-04	-	11.11.2020
Layouts FB7304*3 (PCB)	16-1397FI-05	-	09.11.2020
Assembly (FB device)	16-1397FI-07	-	11.11.2020
Extract of instruction	16-1397FI-09	-	11.11.2020
Marking	16-1397FI-10	-	11.11.2020