

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: **Presafe 19 ATEX 14059 U** **Issue 0**
- [4] Product: **FB PS model: FB9206*;
FB BT model: FB9293*, FB9294* and
FB9295***
- [5] Manufacturer: **Pepperl+Fuchs GmbH**
- [6] Address: **Lilienthalstrasse 200
68307 Mannheim
Germany**
- [7] This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
- [8] DNV GL Presafe AS, notified body number 2460, 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 confidential reports listed in section 16.
- [9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 60079-0:2012/A11:2013, EN 60079-1:2014, EN 60079-5:2015 and EN 60079-7:2015 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 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:

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



Date of issue:
2019-03-20




Bjørn Spongsveen
For DNV GL Presafe AS
The Certificate has been digitally signed.
See www.dnvgl.com/digitalsignatures for info

[13] **Schedule**

[14] **EU-Type Examination Certificate No:** Presafe 19 ATEX 14059U Issue 0

[15] **Description of Product**

The components FB PS, models FB9206*, and components FB BT models FB9293*, FB9294*, and FB9295*, provide non-intrinsically safe functionality.
 The components FB PS and FB BT are intended to be mounted in areas requiring EPL Gb (Zone 1) on approved backplanes FB BP (FB-Backplane).

The component FB PS is also called "FB-Module", type Power Supply, and component FB BT is called "FB-Module", type Bus Termination.

The components FB PS and FB BT listed in this document meet the relevant parameters of "FB concept".

Type designation

FB9206*; FB9293/4/5*

Electrical Data

All Non-IS signals listed below are Extra-low voltage supply system signals, type: SELV or PELV. The power supply FB PS is supposed to provide power directly (and indirectly – via FB internal communication circuitry) to other FB components.
 All circuits connected to the components FB PS and FB BT must meet overvoltage category II (or better). Voltage U_m (e.g. 60V) shall apply as a common mode failure voltage (in respect to PA / PE) only. As differential mode failure voltage the rated voltage U_r (e.g. +12.48 V) has to be applied.

Non-intrinsically safe connections:

Power supply (FB PS):

Input, Value	Backplane Connector Pin 2 [+], Pin 1 [-]
Nominal voltage (U_n)	24 V _{DC} , SELV/PELV
Rated voltage (U_r)	[18...32 V _{DC}]
Maximum common mode voltage (U_m)	60 V _{DC}
Output 1 (12 V output), Value	Backplane Connector Pin 6 [+], Pin 5 [-]
Nominal voltage (U_n)	12 V _{DC} (-2/+4%), SELV/PELV
Rated voltage (U_r)	12.48 V _{DC}
Maximum voltage (U_m) - common mode only	30 V
Output 2 (5.4 V output), Value	Backplane Connector Pin 4 [+], Pin 5 [-]
Nominal voltage (U_n)	5.4 V _{DC} (±5%), SELV/PELV
Rated voltage (U_r)	12.48 V _{DC}
Maximum voltage (U_m) - common mode only	30 V

Signal at Pin 3 of backplane connectors is Earth (named PE) used for EMC purposes only. Signal at Pin 7 is Power good out (open collector output, referenced to Pin 5)

Bus-Termination (FB BT):

Supply Value	Backplane Connector, Pin 4 [+], Pin 5 [-]
Nominal voltage (U _n)	+5.4 V _{DC} SELV/PELV derived from FB-power supply (e.g. FB9206*)
Rated voltage (U _r)	+5.4 V _{DC} (+5/+5%) SELV/PELV
Maximum common voltage (U _m)	30 V
Field-Bus, Value	Backplane Connector, Pin 2 to 3 and/or 6 to 7
Nominal voltage (U _n)	+5 V (e.g. RS-485) SELV/PELV
Rated voltage (U _r)	Field-bus: 11.4V SELV/PELV, Service-bus: 8.4 V SELV/PELV
Maximum common voltage (U _m)	30 V

Degrees of protection (IP Code)

IP20 (if mounted on backplane).

Temperature range:

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

Ambient temperature range is referenced to measurement point in a distance of 30 mm perpendicular to the center of the front of the front of the component FB PS or FB BT.

Service temperature range of Ex components: $-40^{\circ}\text{C} \leq T_s \leq +100.1^{\circ}\text{C}$

Routine tests

The manufacturer of the components shall carry out the following routine tests:

- The dielectric strength test for the filling material of each batch before filling process.

[16] **Report No.:** D0003772_6

[17] **Schedule of Limitations**

- The components FB PS and FB BT shall be provided with protection that ensures a pollution degree 2 (or better).
- The components FB PS and FB BT shall only be used together with approved backplanes FB BP.
- Supply the component FB BT with a power supply FB PS (meets the requirements for extra-low protective voltage (SELV or PELV) supply).
- 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 FB BT is 50 A.
- Permitted supply short-circuit current for the components FB PS is 1500 A.

Installation in areas requiring category 2G / EPL Gb equipment:

- The components FB PS and FB BT shall be installed and operated only in surrounding enclosures that comply with the safety requirements for EPL Gb enclosures according to EN 60079-0 and are rated with the degree of protection IP54 according to EN 60529.

[18] **Essential Health and Safety Requirements**

Essential Health and Safety Requirements (EHSRs) are covered by the standards listed at item 9

[19] Drawings and documents

Number	Title	Rev.	Date
16-1381EX-00	Description	-	2018-07-26
16-1381EX-01	Schematics	-	2018-11-15
16-1381EX-02	BOM / Part list safety components	-	2018-07-21
16-1381EX-03	Assembly plan (PCB)	-	2018-11-15
16-1381EX-04	Mechanical Drawing	-	2018-07-20
16-1381EX-05	Layouts	-	2018-11-15
16-1381EX-07	Assembly of FB-Module	-	2018-07-20
16-1381EX-09	Extract of instruction	-	2018-07-20
16-1381PR-10	Marking	-	2019-02-26
16-1000EX-00	FB-Module enclosure	-	2016-09-05
16-1000EX-04_2	Specification Filling Material (Glass beads) (1 page)	-	2017-05-18
16-1395PF-00	FB Concept paper (19 Pages)	-	2018-01-26

[20] Certificate History

Issue	Description	Issue date	Report no.
0	Original issue	201x-xx-xx	D0003772_6

END OF CERTIFICATE