1 # CERTIFICATE

2 Equipment Intended for Use in
Potentially Explosive Atmospheres - **Directive 2014/34/EU**

3 Certificate Number:

PF21CERT6287X

4 Equipment: VisuNet FLX Panel Type RM-320P-R*-****-D-*******-***,
PC-320P-R*-****-D-*******-***, DM-320P-R*-****-D-*******-***

5 Manufacturer: **Pepperl+Fuchs SE**

6 Address: Lilienthalstrasse 200
68307 Mannheim
Germany

7 This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

8 The manufacturer listed under item 5, herewith declares in sole responsibility that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive 2014/34/EU.

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

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 CERTIFICATE relates only to the design and construction of the specified equipment. 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 :

RM* and PC*:

II 3 G Ex ec [ic] IIC T4 Gc

DM*:

II 3 G Ex ec IIC T4 Gc

Mannheim, 27.01.2022

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13 # SCHEDULE

14 ## Certificate Number PF21CERT6287X

15 Description of Equipment

VisuNet FLx is a HMI product family used as operating and display console for visualization and handling of process data and procedures. The touch screen serves as interface for the operator.
Three parts of the product family are covered by this certificate for gas atmospheres: VisuNet FLX Panels, Type RM-320P-R*-****-D-*******-***, PC-320P-R*-****-D-*******-*** and DM-320P-R*-****-D-*******-***.

-320P-R*-**-D-*******-***			
Variable	**Feature**	**Option**	**Description**
**	Technology	RM-320P-	Remote Monitor Panel
		PC-320P-	Panel PC
		DM-320P-	Direct Monitor Panel
R	Certification	R	ATEX Zone 2 (via P+F)
*	Operating Temperature	A	0 … 45 °C
		B	-20 … 55 °C
****	Display DPU3200-*	22GT-	21.5", capacitive touch
		22FC-	21.5", capacitive touch w/ optical bonding
		19SC-	19", SXGA
		15FC-	15,6", FullHD
D	Power Supply	D-	24 V DC (+/- 20%) [SELV/PELV]
**	Computing Platform BPC3200-* or DMU3200-*	1N	Intel Celeron
		2N	Intel Core i5
		VN	Direct Monitor unit
*****	Configuration		RAM, storage, operating system and software, housing
***	Special Accessories and Options		*Not safety relevant*

Spare parts: Display DPU3200-* and Computing Unit BPC3200-* or DMU3200-* can be exchanged.

15.1 Electrical data

15.1.1 **Non-intrinsically safe supply**

Terminal: Power Input
Only for connection to a SELV/PELV

Rated voltage U_r	DC	20 V..28 V
Rated current I_r		4 A (RM*)
		3 A (PC*)
		1.5 A (DM*)
Maximum input voltage U_m	DC	30 V

15.1.2 **Non-intrinsically safe interface ports**

1 x1 x DisplayPort (only RM* and PC*)
1 x mini DisplayPort (only RM* and PC*)

1 x Audio Line-out (only RM* and PC*)
2 x USB 3.1 (type A) (only RM* and PC*)
1 x USB 2.0 (type A) (only RM* and PC*)
2 x LAN ports (RJ45) (only RM* and PC*)
1 x HDMI (only DM*)
1 x DVI-I (only DM*)
1 x VGA (only DM*)
1 x USB 2.0 (type B) (only DM*)
Only for connection to SELV/PELV circuits

Maximum input voltage U_m DC 30 V

Non-intrinsically safe interface ports
2 x RS232/422/485 (1 x DB9 male + 1 x RJ45)
Only for connection to SELV/PELV circuits

Maximum input voltage U_m ±15 V

15.1.3 **Intrinsically safe USB interface** (only RM* and PC*)
Connection Ports: USB Ex i Port A and USB Ex i Port B
Maximum output voltage U_o DC 5.3 V
Maximum output current I_o 240 mA
Rectangular output characteristics
Maximum output power P_o 1.26 W
Maximum internal capacitance C_i 11 µF
Maximum internal inductance L_i negligible

This output is suitable for connecting devices such as EXTA keyboard (EXTA*-*-**-**-X certified under BVS 21 ATEX E 009 X).

For group IIC:
Maximum external capacitance at maximum external inductance (combined values):
C_o = 39 µF and L_o = 5 µH

For group IIB:
Maximum external capacitance at maximum external inductance (combined values):
C_o = 1000 µF and L_o = 5 µH

For group IIA:
Maximum external capacitance at maximum external inductance (combined values):
C_o = 1000 µF and L_o = 5 µH

15.1.4 **Intrinsically safe terminal: Remote Power** (only RM* and PC*)

Maximum output voltage U_o DC 5.0 V
Maximum output current I_o 10 mA
Linear output characteristics
Maximum output power P_o 50 mW
Maximum internal capacitance C_i 10 µF
Maximum internal inductance L_i negligible

For group IIC:
Maximum external capacitance C_o 990 µF*
Maximum external inductance L_o 800 mH
Maximum external L_o/R_o ratio 6.4 µH/Ω

Alternatively, the combined values of C_o and L_o in table below can be applied without further reduction.

C_o [µF]*	1	4	11	20	38	140	990
L_o [µH]	100	50	20	10	5	2	1

** internal capacitance is already considered.*

For group IIB:

Maximum external capacitance C_o 990 µF*
Maximum external inductance L_o 3200 mH
Maximum external L_o/R_o ratio 25.6 µH/Ω

Alternatively, the combined values of C_o and L_o in table below can be applied without further reduction.

C_o [µF]*	15	19	32	68	130	680	990
L_o [µH]	100000	20000	2000	200	50	10	5

** internal capacitance is already considered.*

For group IIA:

Maximum external capacitance C_o 990 µF*
Maximum external inductance L_o 6400 mH
Maximum external L_o/R_o ratio 51.2 µH/Ω

Alternatively, the combined values of C_o and L_o in table below can be applied without further reduction.

C_o [µF]*	64	71	90	130	200	440	990
L_o [µH]	100000	50000	10000	2000	500	100	20

** internal capacitance is already considered.*

15.2 Bluetooth interface

USB 2.0 interface port can be used to provide a Bluetooth interface by using a Bluetooth module that complies with the requirements of EN 60079-0, e.g.: LM506.

16 Test report

The examination and test results are recorded in the confidential document CERX-6290A.

17 Specific Conditions of Use

17.1 The device has to be installed in a suitable housing corresponding to EN 60079-0 in such a way, that a degree of protection of at least IP54 according to EN 60529 is reached.

17.2 The device must be installed and operated only in a controlled environment that ensures a pollution degree 2 (or better) according to IEC/EN 60664-1.

17.3 The device must be installed and operated only in an environment of overvoltage category II (or better) according to IEC/EN 60664-1.

17.4 The device shall only be connected to SELV/PELV circuits according to EN 62368-1, EN 61010-1 or EN 61010-2-201.

17.5 The permitted ambient temperature range for temperature code A is 0 °C to 45 °C.
The permitted ambient temperature range for temperature code B is -20 °C to 55 °C.

17.6 The equipment has to be mounted in an area with a lower risk of mechanical impact. Impacts from heavy or sharp-edged objects on the device have to be avoided. The maximum force for the housing parts is 4 N, the maximum force for light transmitting parts is 2 N.

17.7 Connections to non-intrinsically safe interface ports must be mechanically secured against self-loosening.

For RM-* and PC-*:
Following connections can be secured e.g. with ATEN LockPro:
on the back: Mini DisplayPort, USB type A
on the side: both USB type A

Following connections must be secured by means of screws:
on the back: Power Supply
on the side: D-SUB 9, External Power Supply

Connection to Display Port can be secured by means of the use of a hooked Display Port connector or it can be secured e.g. with ATEN LockPro.

For DM-*:
Following connections can be secured e.g. with ATEN LockPro:
HDMI, USB type B

Following connections must be secured by means of screws:
Power Supply, DVI-I, VGA

17.8 **For RM-* and PC-*:**
Connection to non-intrinsically safe interface Audio Jack is not allowed in hazardous areas.

17.9 **For RM-* and PC-*:**
Connection to non-intrinsically safe card interfaces e.g. PCIe is not allowed in hazardous areas.

17.10 The use of OSB power button is not allowed in hazardous areas.

18 Essential Health and Safety Requirements
All relevant Essential Health and Safety Requirements are covered by the standards listed at item 9.