1 # CERTIFICATE

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

3 Certificate Number:

PF21CERT6290X Rev. 4

4 Equipment: VisuNet FLX System, Type RM-320S-R*-****-*-*******-***,
PC-320S-R*-****-*-*******-***, DM-320S-R*-****-*-*******-***

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, EN IEC 60079-31:2024

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 Gc] IIC T4 Gc
II 3 D Ex tc [ic Dc] IIIC T85°C Dc

DM*:

II 3G Ex ec IIC T4 Gc
II 3 D Ex tc IIIC T85°C Dc

Mannheim, 16.09.2024

i.V. Roolf Wessels
Executive Vice President
Business Unit EM+HMI

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Product Compliance
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13 # SCHEDULE

14 ## Certificate Number PF21CERT6290X

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. The 'system' of the product family is covered by this certificate for gas and dust atmospheres:
VisuNet FLX System, Type
RM-320S-R*-****-*-*******-***, PC-320S-R*-****-*-*******-*** and
DM-320S-R*-****-*-*******-***

****-320S-R*-****-*-*******-***			
Variable	**Feature**	**Option**	**Description**
-**-	Technology	RM-320S-	Remote Monitor System
		PC-320S-	PC System
		DM-320S-	Direct Monitor System
R	Certification	R	ATEX Zone 2/22 (via P+F)
*-	Operating Temperature	A-	Ambient Temperature: 0…40 °C
		B-	Ambient Temperature: -20°C…50 °C
****-	Display DPU3200-*	22GT-	21.5", capacitive touch
		22FC-	21.5", capacitive touch w/ optical bonding
*-	Power Supply	D-	24 V DC (+/- 20%) [SELV/PELV]
		A-	115/230 V AC, 50-60 Hz
**	Computing Platform BPC3200-* or DMU3200-*	1N	Intel Celeron 3965U
		2N	Intel Core i5-7300U (ambient temperature range: B)
		VN	Direct Monitor unit
*	RAM	N	None (Computing platform VN)
		A	1x4GB
		B	1x8GB
		C	1x16GB
		K	1x 4GB (ambient temperature range: B)
		L	1x 8GB (ambient temperature range: B)
		M	1x 16GB (ambient temperature range: B)
*	Storage	N	None (Computing platform VN)
		A	32GB
		B	64GB
		C	128GB
		D	256GB
		E	512GB
		K	32GB (ambient temperature range: B)
		L	64GB (ambient temperature range: B)
		M	128GB (ambient temperature range: B)
		P	256GB (ambient temperature range: B)
		Q	512GB (ambient temperature range: B)
*	Operating system (not safety relevant)	N	None (Computing platform VN)
		1	Win10
		2	P+F RM Shell
		*	Can be an alphanumeric character, representing another Operating System & Software
**-	Housing	H1-	Mounted in Housing AG-3200
		P1-	Mounted in Housing AG-3200
		B*-	Mounted in Housing AG-3200 *can be any alphanumeric character describing versions of housing with cutouts to mount various control elements

		A1	Aluminum EN AW-5754, diff. finishes (Operating Temperature: B)
		Y1	Stainless steel such as 304A or 316L (vertical short housing)
		Y*	Stainless steel such as 304A or 316L (vertical short housing variants)
***	Special Accessories and Options	X**	Can be an alphanumeric character
		N**	None
		C**	*can be any alphanumeric character describing various customer specific configurations with control elements (for allowed control elements see below)
		R**	Integrated RFID Reader Elatec TWN4 MultiTech 3 M LF HF
		F**	Integrated RFID Reader Elatec TWN4 MultiTech 3 LEGIC M LF HF

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

For DC supply:

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

For AC supply:

Rated voltage U_r	AC	115/230 V, 50-60 Hz
Rated current I_r		0.7 A (RM*, PC*)
		0.4 A (DM*)
Maximum input voltage U_m	AC	250 V

15.1.2 Non-intrinsically safe interface ports

1 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*)
(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 IEC 60079-0, e.g.: LM506.)
2 x LAN ports (RJ45) (only RM* and PC*)
Card interfaces: 1 x PCIe and 1 x mPCIe card (only RM* and PC*)
1 x HDMI (only DM*)
1 x DVI-I (only DM*)
1 x VGA (only DM*)
1 x USB (type B) (only DM*)

Only for connection to SELV/PELV circuits

Maximum input voltage U_m	DC	30 V

Non-intrinsically safe interface ports (only RM* and PC*)

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 1.27 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 = 32 µF and L_o = 5 µH

For group IIB and IIIC:
Maximum external capacitance at maximum external inductance (combined values):
C_o = 989 µF and L_o = 4 µH
For group IIA:
Maximum external capacitance at maximum external inductance (combined values):
C_o = 989 µF and L_o = 4 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 999 µF*
Maximum external inductance L_o 100 mH
Maximum external L_o/R_o ratio 6.4 µH/Ω

Following values of Lo and Co can be applied combined. (Ci already subtracted)

C_o [µF]	2.1	3.8	11	31	189
L_o [µH]	100000	5000	100	10	2

15.1.5 **Intrinsically safe operated Control Elements:**
15.1.5.1 Switch Emergency Stop FRVK* (Georg Schlegel GmbH & Co. KG)
Maximum internal voltage Ui DC 30 V
Maximum internal current Ii 1 A
To barriers e.g. Z778 in A1, A2 or B configuration (BAS 01 ATEX 7005), KCD0-SD-Ex1.1245.SP (Baseefa 06 ATEX 0170), KCD2-SOT-Ex2.SP 8 (Baseefa13ATEX 0080) from Pepperl+Fuchs SE, 0750-439, 0750-535 or 750-663/000-003 (TÜV 12 ATEX 106032 X) from WAGO Kontakttechnik GmbH & Co. KG.

(Switch Emergency Stop can be protected against unintentional activation by means of protective shroud RRSK)

15.1.5.2 Push Button Switch SVATLR* (Georg Schlegel GmbH & Co. KG)
(Contacts and LED)
Maximum internal voltage Ui DC 30 V
Maximum internal current Ii 500 mA
To barriers e.g. Z778 in A1, A2 or B configuration (BAS 01 ATEX 7005), KCD0-SD-Ex1.1245.SP (Baseefa 06 ATEX 0170), KCD2-SOT-Ex2.SP 8 (Baseefa13ATEX 0080) from Pepperl+Fuchs SE, 0750-439, 0750-535 or 750-663/000-003 (TÜV 12 ATEX 106032 X) from WAGO Kontakttechnik GmbH & Co. KG.

15.1.5.3 Ex Summer Werma 71800055 (DMT98 ATEX E 005X)
(WERMA Signaltechnik GmbH + Co. KG)
Maximum input voltage Ui DC 30 V
Maximum input current Ii 660 mA
Maximum input power P_i 1.0 W
Maximum internal capacitance C_i 34 nF
Maximum internal inductance L_i negligible
To barriers e.g. Z778 in A1, A2 or B configuration (BAS 01 ATEX 7005), KCD0-SD-Ex1.1245.SP (Baseefa 06 ATEX 0170) from Pepperl+Fuchs SE, 0750-535 (TÜV 12 ATEX 106032 X) from WAGO Kontakttechnik GmbH & Co. KG.

15.1.5.4 Sounder SI-pA1 (SIRA 10ATEX2317X)
Maximum input voltage Ui DC 40 V
Maximum input current Ii 660 mA
Maximum input power P_i 1.3 W (Temperature Class T4)
Maximum internal capacitance C_i 32.5 nF
Maximum internal inductance L_i negligible
To barriers e.g. Z778 in A1, A2 or B configuration (BAS 01 ATEX 7005), KCD0-SD-Ex1.1245.SP (Baseefa 06 ATEX 0170) from Pepperl+Fuchs SE, 0750-535 (TÜV 12 ATEX 106032 X) from WAGO Kontakttechnik GmbH & Co. KG.

15.1.5.5 Iluminated selector SVAST* / SWAV* (Georg Schlegel GmbH & Co. KG)
(Contacts and LED)
Maximum internal voltage Ui DC 30 V
Maximum internal current Ii 500 mA
To barriers e.g. Z778 in A1, A2 or B configuration (BAS 01 ATEX 7005), KCD0-SD-Ex1.1245.SP (Baseefa 06 ATEX 0170), KCD2-SOT-Ex2.SP 8 (Baseefa13ATEX 0080) from Pepperl+Fuchs SE, 0750-439, 0750-535 or 750-663/000-003 (TÜV 12 ATEX 106032 X) from WAGO Kontakttechnik GmbH & Co. KG.

15.1.5.6 Key operated switch SVASSA* (Georg Schlegel GmbH & Co. KG)
Maximum internal voltage Ui DC 30 V
Maximum internal current Ii 500 mA
To barriers e.g. Z778 in A1, A2 or B configuration (BAS 01 ATEX 7005), KCD0-SD-Ex1.1245.SP (Baseefa 06 ATEX 0170), KCD2-SOT-Ex2.SP 8 (Baseefa13ATEX 0080) from Pepperl+Fuchs SE, 0750-439, 0750-535 or 750-663/000-003 (TÜV 12 ATEX 106032 X) from WAGO Kontakttechnik GmbH & Co. KG.

15.1.6 **Non-intrinsically safe Control Element USB connector RRJVA_USB* with combination with SDAL22RR**
(Georg Schlegel GmbH & Co. KG)
Shall only be operated when no hazardous atmosphere is present.

Rated voltage U_r	DC	5 V
Rated current I_r		500 mA

RFID Reader:

15.1.7 Limited power source according to the safety norms listed in the respective declaration of conformity, short-circuit current < 8 A

TWN4 MultiTech 3 LEGIC M LF HF

15.1.7.1	Frequency	125 kHz (LF) / 13.56 MHz (HF)
	Power	4.3 V - 5.5 V
	Transmission power	125 kHz: 34 mW, 15.3 dBm (Rout 10 Ohm, RL 10 Ohm, U0pp = 3.3V) 13.56 MHz: 17 mW, 12.3 dBm (Rout 20 Ohm, RL 20 Ohm, U0pp = 3.3V)
	Current Consumption RF field on:	200 mA typically / Sleep: 500 µA typ.

TWN4 MultiTech 3 M LF HF

	Frequency	125 kHz (LF) / 13.56 MHz (HF)
	Power	4.3 V - 5.5 V
15.1.7.1	Transmission power	125 kHz: 34 mW, 15.3 dBm (Rout 10 Ohm, RL 10 Ohm, U0pp = 3.3V) 13.56 MHz: 68,1 mW, 18.3 dBm (Rout 20 Ohm, RL 20 Ohm, U0pp = 3.3V)
	Current Consumption RF field on:	120 mA typically / Sleep: 500 µA typ.

16 Test report
The examination and test results are recorded in the confidential document CERX-6290D.

17 Specific Conditions of Use

17.1 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.

17.2 The device 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 energy for the housing parts is 4 J, the maximum energy for light transmitting parts is 2 J.

17.3 The danger of ignition due to propagating brush discharges must be avoided by mounting the apparatus in areas without intensive electrostatic charging mechanism.

17.4 Connections to non-intrinsically safe circuits must be mechanically secured against self-loosening by suitable means.

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

17.5 **For RM-* and PC-*:**

17.5.1 Connection to non-intrinsically safe interface Audio Jack is not allowed in hazardous areas.

17.5.2 Connection to non-intrinsically safe card interfaces e.g. PCIe or mPCIe is not allowed in hazardous areas.

17.6 **For DC supply:**

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

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

17.7 **For AC supply:**
The device must be installed and operated only in an environment of overvoltage category III (or better) according to IEC/EN 60664-1.

17.8 Non-intrinsically safe Control Element USB connector RRJVA_USB* must remain closed by protective cap SDAL22RR during operation in hazardous atmosphere.

17.9 The intrinsically safe control elements are required to be installed by the end-user in a suitably protected circuit in accordance with EN 60079-14.

17.10 The permitted ambient temperature range for temperature code is
for RM/PC/DM-320S-RA*: 0 °C to 40 °C
for RM/PC/DM-320S-RB*: -20 °C to 50 °C

17.11 **For RFID Reader:**
- The danger of ignition due to propagating brush discharges must be avoided by mounting the apparatus in areas without intensive charging mechanism. (valid for dust application)
- The danger of ignition due to electrostatic discharges must be avoided by mounting the apparatus in areas without electrostatic charging mechanism. (valid for gas application)
- Impacts from heavy or sharp-edged objects on the device have to be avoided. The maximum impact energy for the housing parts is 4 J
- The device has to be mounted in an area with a lower risk of mechanical impact.
- Mount the device in such a way that it is protected from direct sunlight

18 Essential Health and Safety Requirements

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