

# UL Type Examination Certificate

ATEX Directive 2014/34/EU

## Certificate

UL 22 ATEX 2479X  
Rev. 2

Issue date  
2022-07-29

Re-issued  
2025-12-17

This is to acknowledge that

**Pepperl+Fuchs SE**

Lilienthalstrasse 200, 68307 Mannheim, Germany

has had

**VisuNet FLX Panel**

**Models RM-320P, PC-320P, DM-320P**

evaluated and meets the requirements of the standards

**EN IEC 60079-0:2018**

**EN 60079-7:2015**

**EN IEC 60079-7:2015/A1:2018**

**EN 60079-11:2012**

Test Report No. **DK/ULD/ExTR22.0018/02**



Certification Manager  
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This is to certify that the sample(s) of the product described herein ("Certified Product") has been investigated and found in compliance with the above mentioned harmonized Standard(s) per Article 12 of Directive 2014/34/EU of the European Parliament and of the Council relating to equipment and protective systems for use in potentially explosive atmospheres indicated on this Certificate, in accordance with the UL Type Examination Certificate Scheme Requirements.

The responsibilities of manufacturers, their authorized representatives are provided in Articles 6 and 7 of the Directive 2014/34/EU. This remains the responsibility of the manufacturer and authorized representative and is not covered as part of this certificate.

This certificate and test results obtained apply only to the product sample(s) submitted by the Applicant. UL International Demko A/S (UL) did not select the sample(s) or determine whether the sample(s) provided were representative of other manufactured product. UL has not established follow-up service for inspection or other surveillance of the product. The Certificate Holder is solely and fully responsible for conformity of all products to all applicable Standards, specifications, requirements or Directives/Regulations. The test results may not be used, in whole or in part, in any other document without UL's prior written approval.

# UL TYPE EXAMINATION CERTIFICATE

## TECHNICAL DETAILS/SCHEDULE

### Description of product

VisuNet FLX Panels consist of a display unit with touch screen in combination with a computing unit. Various display sizes and configurable computing units like Box PC BPC3200 and Direct Monitor Unit DMU3200 are available. The BPC3200 (certified under UL 22 ATEX 2478X) and DMU3200 are installed on the backside of the display and form a VisuNet FLX Panel.

The devices are classed as Panel Mount equipment to be installed in or as part of an enclosure that provides a degree of protection not less than IP 54 in accordance with EN 60079-0 by the end-user.

Configurations available are:

- Direct Monitor (DM-320P-) Based on the DPU with an additional interface (DMU – direct monitor unit) for direct connection of an external graphic card.
- Remote Monitor (RM-320P-) Based on the DPU with an additional interface (BPC3200 TCU – thin client unit) for connection to a thin client (Ethernet) network and a host
- PC (PC-320P-) Based on the DPU with an additional industrial PC (BPC3200 PCU – PC unit) for connection to an Ethernet network and a host PC.

The optical radiation output of the product with respect to explosion protection, according to Annex II clause 1.3.1 of the Directive 2014/34/EU is covered in this certificate based on Exception 1) to the scope of EN 60079-28:2015.

### Nomenclature

VisuNet FLX Panel

|     |     |    |   |     |    |   |      |   |    |   |         |   |      |    |
|-----|-----|----|---|-----|----|---|------|---|----|---|---------|---|------|----|
| I   |     | II |   | III | IV |   | V    |   | VI |   | VII     |   | VIII | IX |
| RM- | 320 | P  | - | X   | A  | - | 22GT | - | D  | - | 1NNNNS1 | - | N    | N0 |

|       |                                    |                                                               |
|-------|------------------------------------|---------------------------------------------------------------|
| I –   | <b>Technology</b>                  |                                                               |
|       | RM-:                               | Remote Monitor                                                |
|       | PC-:                               | Panel-PC                                                      |
|       | DM-:                               | Direct Monitor                                                |
| II –  | <b>Type</b>                        |                                                               |
|       | P:                                 | Panel                                                         |
| III – | <b>Approvals</b>                   |                                                               |
|       | L:                                 | ATEX/IECEx Zone 2, cULus CL I, DIV 2                          |
|       | N:                                 | General purpose                                               |
| IV –  | <b>Operating Temperature range</b> |                                                               |
|       | A:                                 | Ambient Temperature: 0...45°C                                 |
|       | B:                                 | Ambient Temperature: -20...55°C                               |
| V –   | <b>Display Unit</b>                |                                                               |
|       | 22GT:                              | 21.5 inch, Full-HD, capacitive touch                          |
|       | 22KT:                              |                                                               |
|       | 22FC:                              | comparable to 22GT and 22KT, differences like optical bonding |
|       | 19SC:                              | 19 inch, SXGA, capacitive touch optical bonding               |
|       | 15FC:                              | 15.6 inch, Full-HD, capacitive touch optical bonding          |
| VI –  | <b>Supply</b>                      |                                                               |
|       | D:                                 | 24Vdc (+/-20%), SELV/PELV, Class 2                            |
| VII – | <b>Configurations</b>              |                                                               |
|       | Computing platform                 |                                                               |
|       | 1N:                                | Intel Celeron 3965U                                           |
|       | 2N:                                | Intel Core i5-7300U                                           |
|       | VN:                                | Direct Monitor Unit                                           |
|       | RAM                                |                                                               |

|  |        |                                                   |                                                                                    |
|--|--------|---------------------------------------------------|------------------------------------------------------------------------------------|
|  |        | N:                                                | None                                                                               |
|  |        | A:                                                | 1x4GB                                                                              |
|  |        | B:                                                | 1x8GB                                                                              |
|  |        | C:                                                | 1x16GB                                                                             |
|  |        | K:                                                | 1x4GB wide temperature grade for operating temperature range B                     |
|  |        | L:                                                | 1x8GB wide temperature grade for operating temperature range B                     |
|  |        | M:                                                | 1x16GB wide temperature grade for operating temp. range B                          |
|  |        | Storage                                           |                                                                                    |
|  |        | N:                                                | None                                                                               |
|  |        | A:                                                | 32GB                                                                               |
|  |        | B:                                                | 64GB                                                                               |
|  |        | C:                                                | 128GB                                                                              |
|  |        | D:                                                | 256GB                                                                              |
|  |        | E:                                                | 512GB                                                                              |
|  |        | K:                                                | 32GB wide temperature grade for operating temperature range B                      |
|  |        | L:                                                | 64GB wide temperature grade for operating temperature range B                      |
|  |        | M:                                                | 128GB wide temperature grade for operating temperature range B                     |
|  |        | P:                                                | 256GB wide temperature grade for operating temperature range B                     |
|  |        | Q:                                                | 512GB wide temperature grade for operating temperature range B                     |
|  |        | Operating System & Software (not safety-relevant) |                                                                                    |
|  |        | 1                                                 | Win10                                                                              |
|  |        | 2                                                 | P+F RM Shell                                                                       |
|  |        | X:                                                | Can be an alphanumeric character, representing another Operating System & Software |
|  |        | Housing                                           |                                                                                    |
|  |        | S1:                                               | Mounting: Stainless steel bezel such as 304A or 316L                               |
|  |        | S2:                                               | Mounting: Stainless steel bezel such as 304A or 316L                               |
|  | VIII – | <b>Special Accessories (not safety-relevant)</b>  |                                                                                    |
|  |        | X:                                                | Can be an alphanumeric character                                                   |
|  |        | N:                                                | None                                                                               |
|  | IX –   | <b>Options (not safety-relevant)</b>              |                                                                                    |
|  |        | X:                                                | Can be an alphanumeric character                                                   |
|  |        | N0:                                               | Standard, No options                                                               |

#### Ex marking

 II 3 G Ex ec [ic Gc] IIC T4 Gc (when fitted with BPC3200: RM-320P, PC-320P)

 II 3 G Ex ec IIC T4 Gc (when fitted with DMU: DM-320P)

#### Temperature range

The ambient temperature range is 0 °C to +45 °C or -20°C to +55°C.

#### Trademark

The trademark  **PEPPERL+FUCHS** will be used as the company identifier on the marking label.

## Ratings

VisuNet FLX Panel,  
Designated RM-320P, PC-320P (fitted with BPC3200)  
24 V DC +/- 20%, 4.0 Amp, 80W max, SELV/PELV/Class 2

VisuNet FLX Panel,  
Designated DM-320P (fitted with DMU3200 Direct Monitor Unit)  
24 V DC +/- 20% 1.5 Amp, 30W max, SELV/PELV/Class 2

### Intrinsically safe specifications:

Um = 30 V DC (when fitted with BPC3200)

### Ex i USB ports

Uo: ≤ 5.3 V  
Io: ≤ 240 mA  
Po: ≤ 1.27 W  
Li: negligible  
Ci: ≤ 11 µF  
Output characteristic: rectangular

For group IIC:

Co = 989µF

Lo = 50µH

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

|         |    |    |    |     |     |
|---------|----|----|----|-----|-----|
| Co (uF) | 6  | 15 | 32 | 129 | 989 |
| Lo (uH) | 20 | 10 | 5  | 2   | 1   |

For group IIB/IIIC:

Co = 989µF

Lo = 1400µH

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

|         |      |     |    |     |     |
|---------|------|-----|----|-----|-----|
| Co (uF) | 5    | 32  | 76 | 329 | 989 |
| Lo (uH) | 1000 | 200 | 50 | 10  | 4   |

For group IIA:

Co = 989µF

Lo = 5500µH

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

|         |      |     |     |     |     |
|---------|------|-----|-----|-----|-----|
| Co (uF) | 14   | 28  | 75  | 239 | 989 |
| Lo (uH) | 1000 | 500 | 100 | 20  | 4   |

### Ex i Remote Power (connector for external switch)

Uo: ≤ 5 V  
Io: ≤ 10 mA  
Po: ≤ 50 mW  
Li: negligible  
Ci: ≤ 1 µF

For group IIC:

Co = 999 µF

Lo = 100 mH

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

|         |        |      |     |    |     |
|---------|--------|------|-----|----|-----|
| Co [µF] | 2.1    | 3.8  | 11  | 31 | 189 |
| Lo [µH] | 100000 | 5000 | 100 | 10 | 2   |

## Routine tests

N/A

## Descriptive documents

The scheduled drawings are listed in the report no. provided under item "Test Report No." on page 1 of this UL Type Examination Certificate.

### **Specific Conditions of Use**

- The equipment shall be installed as part an enclosure that provides a degree of protection not less than IP 54 in accordance with EN IEC 60079-0 and used in an environment of not more than pollution degree 2 as defined in EN 60664-1.
- 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 force for the housing parts is 4 N; the maximum force for light transmitting parts is 2 N.
- Connections of non-intrinsically safe circuits must be secured against loosening by suitable means.
- Connection to non-intrinsically safe interface Audio Jack is not allowed in hazardous areas.
- Connection to non-intrinsically safe card interfaces e.g., PCIe is not allowed in hazardous areas.
- The use of OSD power button is not allowed in hazardous areas.

### **Additional Information**

The VisuNet FLX Panel has in addition passed the tests for Ingress Protection to IP 66 in accordance with EN60529:1991+A1:2000+A2:2013.