

Visunet FLX Edge User Manual

RM-EDGE-*
PC-EDGE-*

Manual



With regard to the supply of products, the current issue of the following document is applicable:
The General Terms of Delivery for Products and Services of the Electrical Industry, published
by the Central Association of the Electrical Industry (Zentralverband Elektrotechnik und Elek-
troindustrie (ZVEI) e.V.) in its most recent version as well as the supplementary clause:
"Expanded reservation of proprietorship"

Worldwide

Pepperl+Fuchs Group
Lilienthalstr. 200
68307 Mannheim
Germany
Phone: +49 621 776 - 0
E-mail: info@de.pepperl-fuchs.com

North American Headquarters

Pepperl+Fuchs Inc.
1600 Enterprise Parkway
Twinsburg, Ohio 44087
USA
Phone: +1 330 425-3555
E-mail: sales@us.pepperl-fuchs.com

Asia Headquarters

Pepperl+Fuchs Pte. Ltd.
P+F Building
18 Ayer Rajah Crescent
Singapore 139942
Phone: +65 6779-9091
E-mail: sales@sg.pepperl-fuchs.com
<https://www.pepperl-fuchs.com>

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1 Introduction

1.1 Content of this Document

This document contains information that you need in order to use your product throughout the applicable stages of the product life cycle. These can include the following:

- Product identification
- Delivery, transport, and storage
- Mounting and installation
- Commissioning and operation
- Maintenance and repair
- Troubleshooting
- Dismounting
- Disposal



Note

This document does not substitute the instruction manual.



Note

For full information on the product, refer to the instruction manual and further documentation on the Internet at www.pepperl-fuchs.com.

The documentation consists of the following parts:

- Present document
- Instruction manual
- Datasheet

Additionally, the following parts may belong to the documentation, if applicable:

- Type examination certificate
- EU declaration of conformity
- Attestation of conformity
- Certificates
- Control drawings
- Additional documents

1.2 Manufacturer

Pepperl+Fuchs Group Lilienthalstraße 200, 68307 Mannheim, Germany
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Internet: www.pepperl-fuchs.com
--

1.3 Target Group, Personnel

Responsibility for planning, assembly, commissioning, operation, maintenance, and dismounting lies with the plant operator.

Only appropriately trained and qualified personnel may carry out mounting, installation, commissioning, operation, maintenance, and dismounting of the product. The personnel must have read and understood the instruction manual and the further documentation.

Prior to using the product make yourself familiar with it. Read the document carefully.

1.4 Symbols Used

This document contains symbols for the identification of warning messages and of informative messages.

Warning Messages

You will find warning messages, whenever dangers may arise from your actions. It is mandatory that you observe these warning messages for your personal safety and in order to avoid property damage.

Depending on the risk level, the warning messages are displayed in descending order as follows:



Danger!

This symbol indicates an imminent danger.

Non-observance will result in personal injury or death.



Warning!

This symbol indicates a possible fault or danger.

Non-observance may cause personal injury or serious property damage.



Caution!

This symbol indicates a possible fault.

Non-observance could interrupt the device and any connected systems and plants, or result in their complete failure.

Informative Symbols



Note

This symbol brings important information to your attention.



Action

1. This symbol indicates a paragraph with instructions. You are prompted to perform an action or a sequence of actions.

2 Product Description

2.1 Overview

The VisuNet Edge is a universal design that is well suited for many applications within the Process Automation industry and can be configured either as a general purpose, Class I/II, Division 2, or a Class I, Division 1 certified HMI.

Specifically designed for manufacturing environments where dust, bacteria, water, and other undesirable materials might accumulate, the sloped enclosure provides washdown solutions with proper drainage to prevent standing water. The formed lip enclosure opening prevents the flow of liquid or other contaminants from entering the enclosure. The wastershed enclosure with optional extended keyboard housing is available with an integrated 6000 Series Type X Purge & Pressurization system to meet to requirements for Division 1 hazardous location installations. Configurable options for display size, function, and mounting allow the unit to be uniquely tailored to the specific application within the plant.

In addition, customized solutions that deviate from the standard configurations outlined in this manual can also be created and manufactured at Pepperl+Fuchs' Solution Engineering Centers (SEC), which are located around the world.

VisuNet FLX System Components








Figure 2.1

No.	Component
(1)	VisuNet FLX Panel Mount: 19" or 21.5", PC or Thin Client
(2)	VisuNet EXTA4 Keyboard (optional): Touchpad, Trackball, or Joystick Mouse with multiple language layouts
(3)	6000 Purge & Pressurization System User Interface: (Division 1 only)
(4)	6000 Purge & Pressurization System Vent: (Division 1 only)
(5)	Internal / Not Shown: 6000 Purge & Pressurization manifold Explosionproof enclosure Wiring (Division 1 only)

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2.2 Reference Documents

Important Instructions and Manuals for Operating the Device

	Documentation	Contents
	<p>6000 Series Purge & Pressurization System Manual</p>	<ul style="list-style-type: none"> • Purge and pressurization system • Type X & Ex provides protection in Class I, Class II, Division 1 / Zone 1, Zone 21 environments • Pressure relief vent with flow and pressure monitoring at the exhaust • Intrinsically safe electrical / pneumatic manifold assembly
	<p>VisuNet FLX Panel Manual</p>	<ul style="list-style-type: none"> • Panel installation • Information regarding 21.5", 19" and 15.6" DPU • Connecting the BPC3200-* to the DPU3200-* • Panel dimensions • Cut out dimensions • Support Pixel Errors • Gloves Tested for Touch Sensitivity
	<p>BPC3200-* Manual</p>	<ul style="list-style-type: none"> • Technical data and expanded technical data • Electrical installation • I/O connection • DIP Switch positions when exchanging
	<p>RM Shell 6 Manual</p>	<ul style="list-style-type: none"> • Overview • App Management • System Settings • Factory Reset • How-tos
	<p>EXTA4-* Manual</p>	<ul style="list-style-type: none"> • Product description • Installation and Commissioning • Chemical Resistance

General information on all these products and systems can be found on our website at www.pepperl-fuchs.com.

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2.3 Technical Data

Hardware	
Processor	Intel® Core™ i5-7300U Intel® Celeron™ 3965U
RAM	1 x 8 GB DDR4 (Thin Client or PC) 1 x 16 GB DDR4 (PC)
Mass storage	64 GB M.2 SATA III (Thin Client) 256 GB M.2 NVMe (PC) 512 GB M.2 NVMe (PC)

Software	
Operating system	PC: Microsoft® Windows® 10 IoT Enterprise 2021 LTSC (x64) Thin Client: Pepperl+Fuchs RM Shell 6 (based on Microsoft® Windows® 10 IoT Enterprise 2021 LTSC (x64)), ThinManager Ready or IGEL OS

Supply	
Connection	Terminals
Power Consumption	100 ... 240, 50 ... 60 Hz 20 ... 30 VDC

Indicators/operating means	
Display	
Type	Liquid Crystal Display (LCD) with LED backlight
Screen diagonal	22FC: 54.61 cm (21.5 inches) 19SC: 48.26 cm (19 inches)
Resolution	22FC: 1920 x 1080 pixels (Full HD) Aspect Ratio (16.9) 19SC: 1820 x 1024 pixels (SXGA) Aspect Ratio (5.4)
Color depth	24 bit (16.7 M) color
Contrast	Typically 22FC: 5000:1 19SC: 1000:1
Brightness	Configurable display options: 22FC: 300 cd/m ² 19SC: 450 cd/m ²
Reading angle	22FC, 19SC: horizontal: 170°, vertical: 160°
Life span	Back lamp life (22FC, 19SC): 50.000-hrs typical half life, at 25°C (77°F)

Input devices	
Touch screen	Display options: 10-finger multi-touch, glove friendly 22FC, 19SC: Capacitive touch, optical bonding
Keyboard	Optional: Foil keyboard with different pointing device options available (See EXTA4 technical data.)

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Interface	
Interface type	1 x DisplayPort 1.2 (DP++) 1 x mini DisplayPort 1.2 (DP++ w/ mono locking screw) 1 x Audio Line-out 2 x USB Ex i ports prepared for Pepperl+Fuchs intrinsically safe keyboard 2 x USB 3.1 Gen1 (5 Gbps) ports 1 x USB 2.0 port 2 x LAN ports (RJ45, 10/100/1000 Mbps) 2 x RS232/422/485 (BIOS configurable) with 5V/12V to power peripherals (1 x DB9 male + 1 x RJ45)

Ambient conditions	
Ambient temperature	-20 ... 50 °C (-4 ... 122 °F)
Storage temperature	-20 ... 65 °C (-4 ... 149 °F)
Relative humidity	Max. relative humidity 93% (noncondensing) according to EN60068-2-78.

Mechanical specifications	
Degree of protection	Type 4X
Material	
Housing	304 (UNS S30400) stainless steel
Surface	Ra (max) + 64 µin
Mass	Empty housing: approx. 52.16 kg (115 lbs); varies with configuration
Dimensions	19" pedestal: 24.5" W x 15.25" D x 70.5" H 19" wall-mount: 24.5" W x 15.25" D x 34" H 21.5" pedestal: 28.5" W x 15.25" D x 70.5" H 21.5" wall-mount 28.5" W x 15.25" D x 35" H
Mounting	Wall or pedestal mount

International Approvals	
ETL approval	ETL Industrial Control Panels: Control Number 5003368
Approved for	Class I, Division 1, Groups A, B, C, D with 6000 Series Type X Purge Class I, II, Division 2, Groups A, B, C, D, F, G without 6000 Series Type X Purge

Purge Data	
Series	6000
Indicators/settings	
LED indicator	Safe pressure: Blue (safe pressure is achieved) Enclosure power: Green (power on); Red (power off) Rapid exchange: Blue (purging is running) System bypass: Yellow (bypass is activated) Alarm fault: Blinking red (any alarm input detected); Solid red (6000 Series system fault)

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Purge Data	
Pneumatic parameters	
Protective gas supply	Instrument grade air or inert gas
Pressure requirements	20 ... 120 psig (1.4 ... 8.3 bar) (138 ... 827 kPa) regulated
Safe pressure	Gas: 0.25" in (6.4 mm wc) (0.625 mbar) (62 Pa)
Purge flow and enclosure pressure rate	5 SCFM @ 1.5" wc, (141 l/min @ 3.7 mbar) 12 SCFM @ 2.0" wc, (340 l/min @ 5.0 mbar)
Flow rate for leakage consumption	0.01 SCFM (0.30 l/min) @ 0.25" 0.2 SCFM (5.6 l/min) @ 0.75" and up (depends on enclosure seal)
Purge time (4 volume exchanges)	Purge time is dynamically controlled max = 4.00 min
Mechanical specifications	
Connection type	Pneumatic: Inlet fitting to manifold: 3/8" NPT (female) Outlet fitting from manifold: 3/8" bulkhead fitting (provided)



Note

For complete specifications of the purge system, see the datasheet for the 6000 control system, Type X & Ex px purge and pressurization system.

2.4 Dimensions and Nameplates

Dimensions: 19" Version

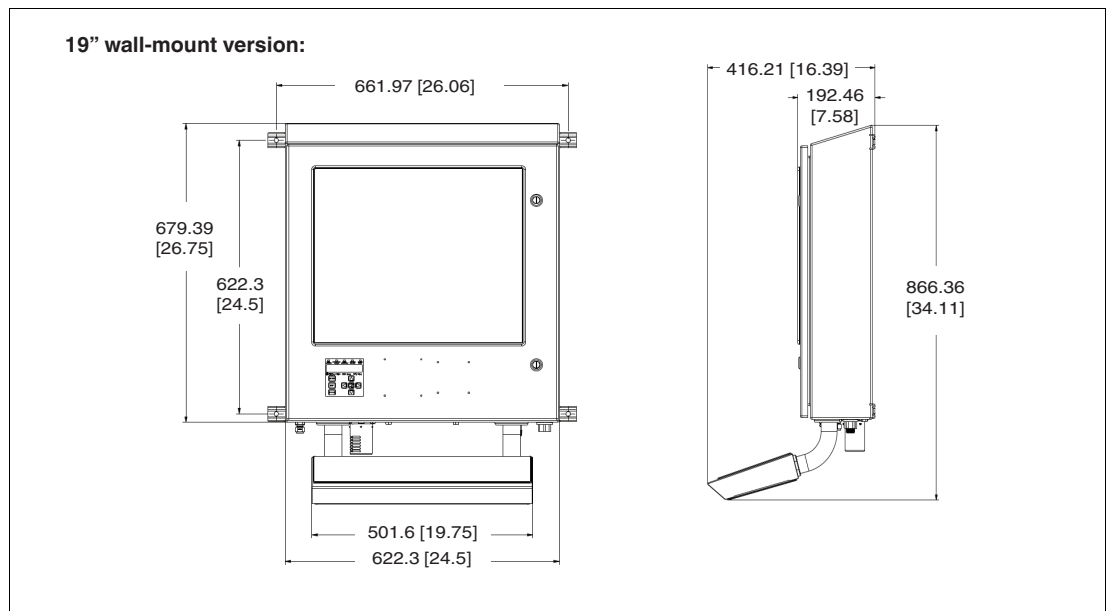


Figure 2.2 Wall-mount option

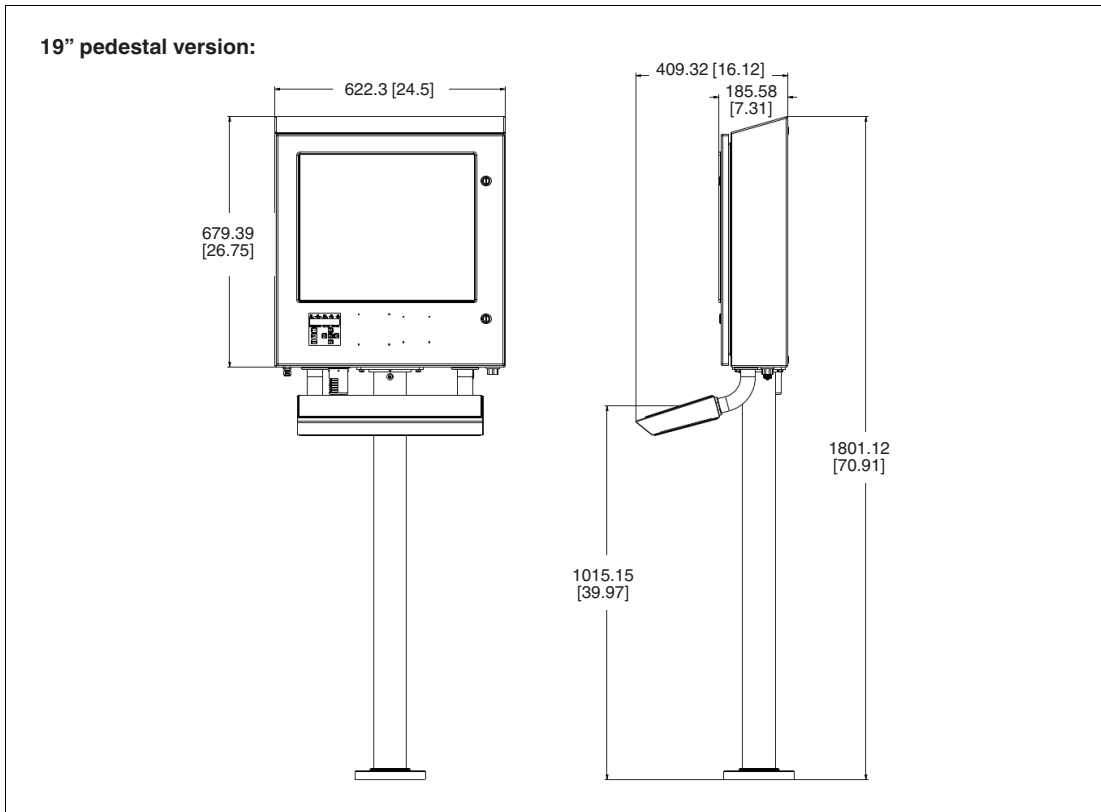


Figure 2.3 Pedestal option

Dimensions: 21.5" Version

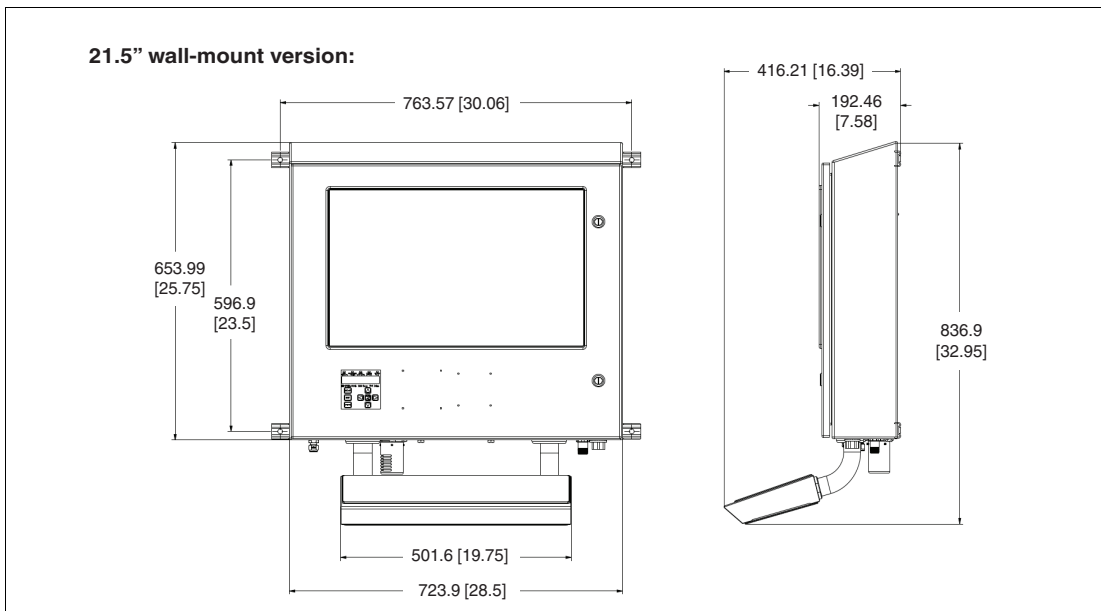


Figure 2.4 Wall-mount option

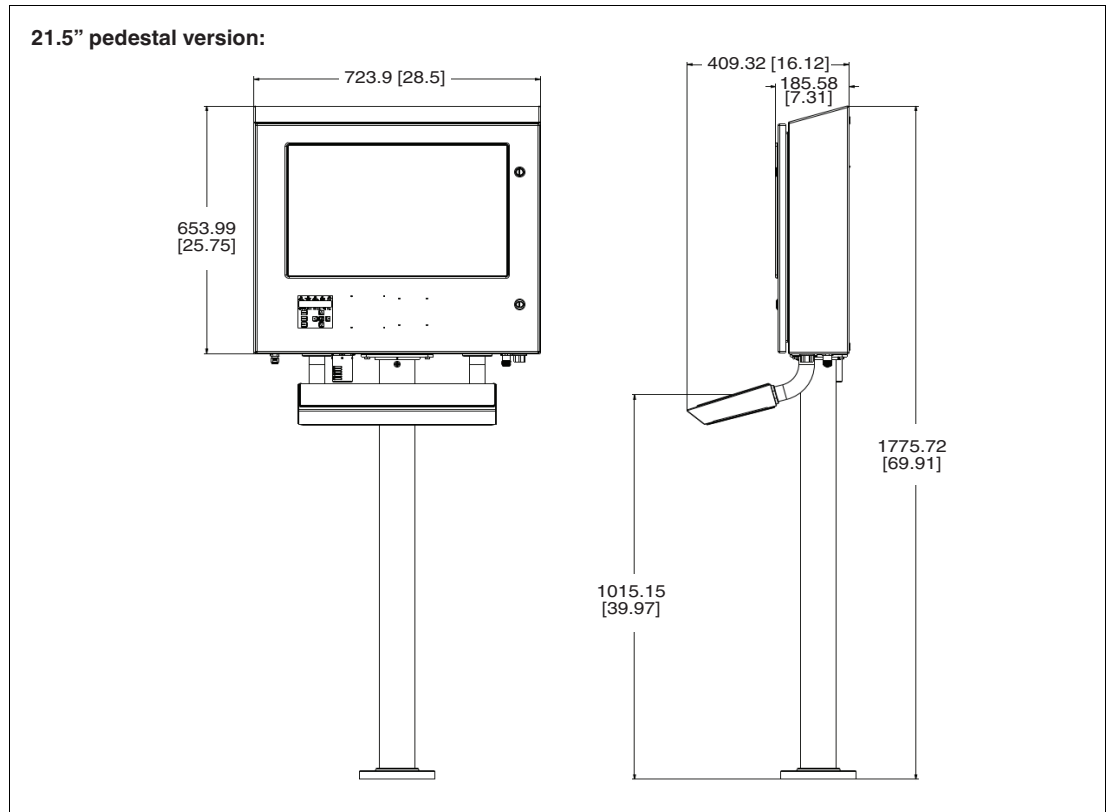


Figure 2.5 Pedestal option



Note

In all cases, dimensions are shown as the Division 1 variant with the 6000 Purge & Pressurization System installed. General Purpose or Division 2 units will not have the 6000 user interface, vent, or bulkhead fitting.

Nameplates and Labels

For all systems, the appropriate Intertek Control Panel for Hazardous Locations label will be applied. The label will be engraved with additional information for: model number, serial number, drawing number, area classification, power requirement, temperature rating, and manufacturing date and location.



For Class I, Division 1 systems, the 6000 Type X purge and pressurization label will be applied to the system.

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○ **Model 6000 Type X / Ex px** ○

450 CF / 12.75 CM Maximum Enclosure Volume
System Operation Instructions

1. With Pepperl+Fuchs Purging system air supply on
 2. Apply power to the 6000 series control unit.
 3. Follow set-up configuration in manual.
For GAS only areas proceed to step 5
For DUST only areas proceed to step 4, Omit step 7
 4. Clean all dust inside of enclosure.
 5. With enclosure sealed,
 6. Set safe pressure (pressurization) with the control valve.
 7. Start the purging by (DO NOT DO FOR DUST):
 - a. FA - Fully automatic will start purging after a safe pressure is set, will automatically stop.
 - b. SA - Semi-automatic purging initiated by activating keypad, will automatically stop.
 - c. STD - Standard mode, purging starts and stops by activating Keypad.
- After flow rate is met, purging timer will count down until complete.
8. Power to the enclosure can be initiated.
 9. Loss of pressure will automatically start the deenergizing of the enclosure power.



3 Mechanical Installation

3.1 Mounting

Wall

Preparing for Wall Installation

For wall mounting, the FLX Edge comes pre-installed with wall mount brackets determined by the ordered nomenclature. The installed wall brackets consist of four 12 gauge 304 stainless steel external mounting brackets and can support 500 lb. maximum load. The fastener thread size is #3/8-16. Please consult Figure 1.2 and Figure 1.4 for mounting dimensions of the wall brackets.



Warning!

Proper installation on the wall!

It is the installer's responsibility to select a suitable location with sufficient strength to hold the device. It is the installer's responsibility to select the proper screws based on the installation conditions.

Pedestal

Preparing for Pedestal Installation

For floor mounting, the FLX Edge comes pre-installed with a fixed or rotating pedestal option determined by the ordered nomenclature. All hardware affixing the FLX Edge to the pedestal will be pre-installed upon delivery.



Warning!

Proper floor installation!

It is the installer's responsibility to select a suitable location with sufficient strength to hold the equipment. It is the installer's responsibility to select the proper screws based on the installation conditions.

Dimensions of the Pedestal Base

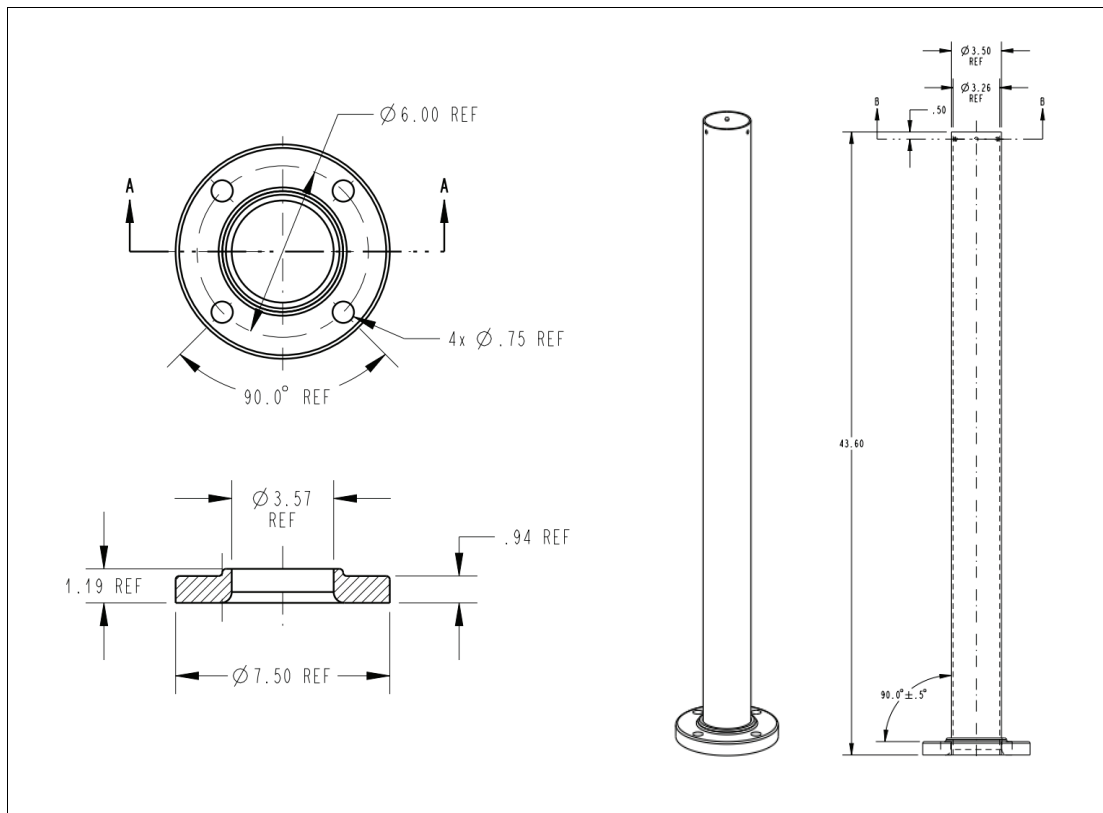
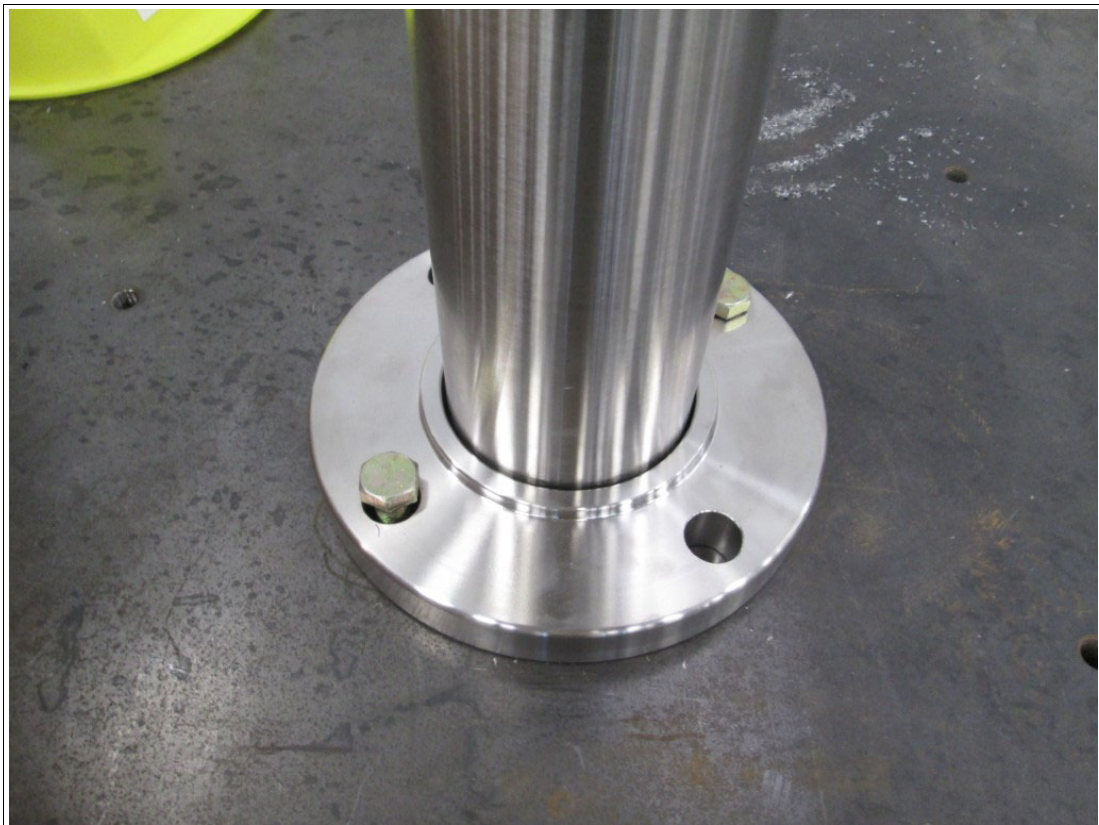


Figure 3.1 Dimensions of pedestal



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3.2 Installation Information

Air

Incoming air supply is connected via the 3/8" bulkhead fitting labelled "Purge Air" on the bottom of the enclosure.



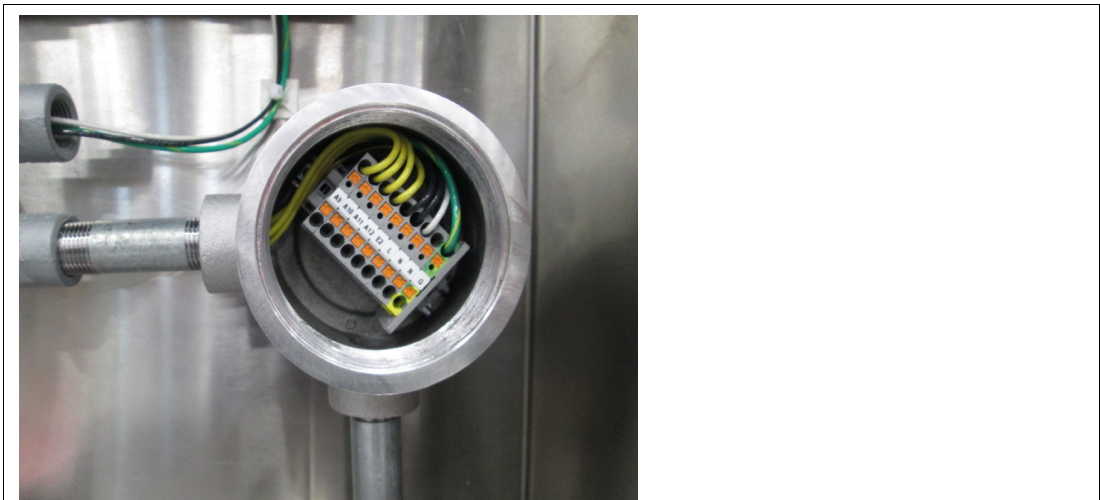
Air pressure requirements are outlined in the Purge Data table on Page 11.

Electric

Incoming power to the HMI system is connected by means of a 1/2" NPT conduit connector labeled "Power" on the bottom side of the enclosure.



Incoming power to the HMI system and relay connections are done within the explosionproof junction box and outlined in detail in the provided CSO-XXXX drawing with shipment.



Communication

Incoming Ethernet connections are brought into the enclosure via the 1/2" NPT conduit adapter hub labeled "Comm" on the bottom side of the enclosure. The Ethernet RJ45 connections land on the Ethernet patch panel labeled E1 and E2. The patch panel is pre-wired to the RJ45 connections on the backside of the HMI panel mount PC or Thin Client.



4 Maintenance and Repair

All VisuNet FLX models perform a degree of thermal management to avoid overheating under heavy load.



Note

Operating temperature has influence on the VisuNet FLX Edge lifetime.



Caution!

Use only approved spare parts.

The installation of spare parts not intended for the VisuNet FLX system may damage the device, machine, or system. The warranty is void if you install spare parts that are not permitted.

Only original service parts from P+F are allowed to be used.



Warning!

When exchanging any components, it is mandatory to follow the single de-/installation steps!



Warning!

Danger of Explosion!

An ignition may be triggered if the TCU/PCU/DMU is still energized when its terminal compartment is opened. Turn off the TCU/PCU/DMU and wait three minutes after de-energizing before opening the terminal compartment.



Note

Please refer to the individual component manuals regarding service and repair of the components.

Your automation, our passion.

Explosion Protection

- Intrinsic Safety Barriers
- Signal Conditioners
- FieldConnex® Fieldbus
- Remote I/O Systems
- Electrical Ex Equipment
- Purge and Pressurization
- Industrial HMI
- Mobile Computing and Communications
- HART Interface Solutions
- Surge Protection
- Wireless Solutions
- Level Measurement

Industrial Sensors

- Proximity Sensors
- Photoelectric Sensors
- Industrial Vision
- Ultrasonic Sensors
- Rotary Encoders
- Positioning Systems
- Inclination and Acceleration Sensors
- Fieldbus Modules
- AS-Interface
- Identification Systems
- Displays and Signal Processing
- Connectivity

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