

# Label Printer Solution for Zone 1/21 and Zone 2/22 Applications

The 6500 Series Purge and Pressurization System Enables Direct Printing in Hazardous Areas

## At a Glance

- Preconfigured industrial printer solutions
- Fast manufacturing, ready to ship within a short time
- Designed for use in Zone 1 and Zone 2 environments
- Suitable for use in harsh industrial environments or pharmaceutical cleanrooms
- Special design with type of protection Ex p technology
- Stainless steel enclosure

### 6500 Series control unit

### Inspection window

For checking (e. g. label roll fill level)

### Visible printer control panel

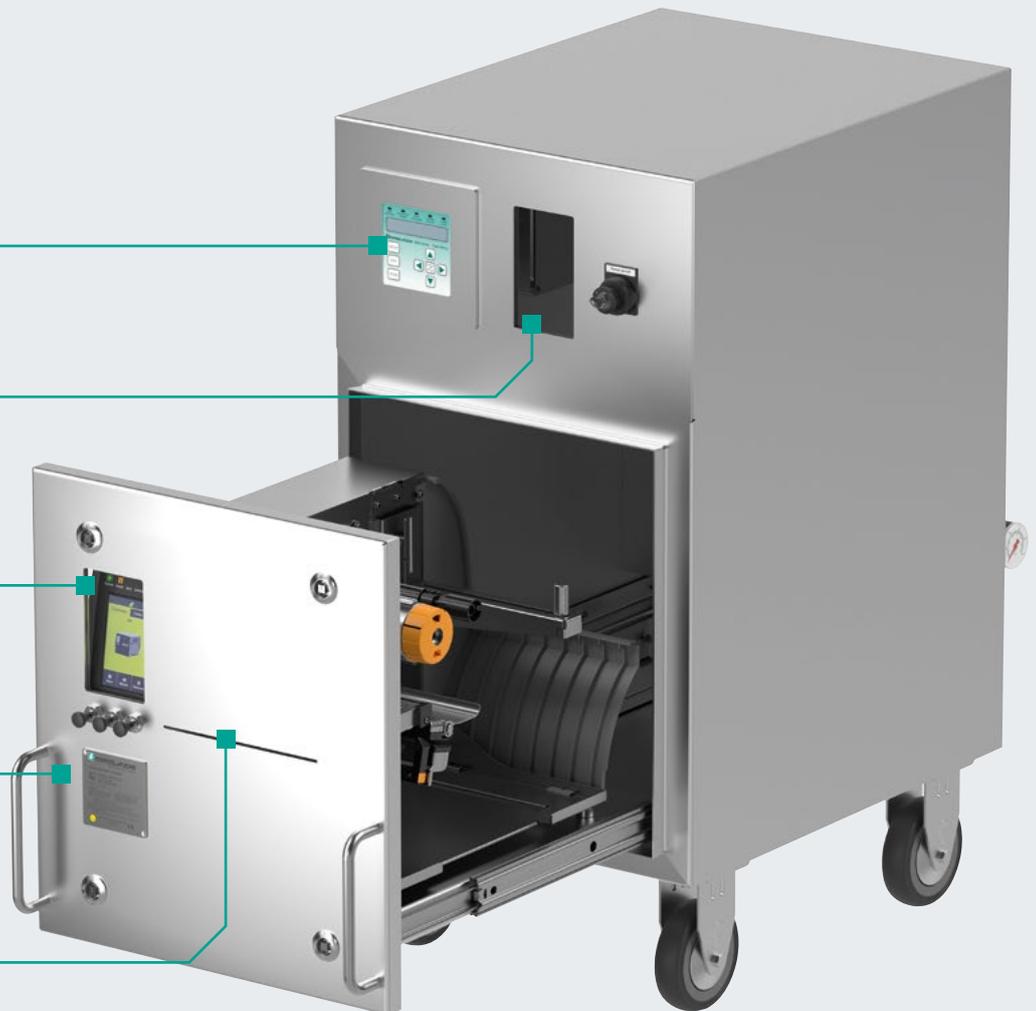
With integrated control elements to operate the printer from the outside

### Front pull-out

For easy maintenance and label replacement

### Printer label slot

Direct printing in Ex zone, no need to open a door/flap to access the label



## The Application

In Zone 1/Division 1 environments, traditional Ex d (explosionproof/flameproof) protection methods are often inherently incompatible for label printers. Because these enclosures rely on tight tolerances and flame paths to contain internal explosions, adding an opening for paper usually compromises the equipment's safety integrity. To address this, modern facilities have transitioned toward purge and pressurized (Ex p) solutions. Ex p printer cabinets allow for the use of standard high-performance printers while ensuring the operator can access the output without compromising Ex d integrity.

## The Goal

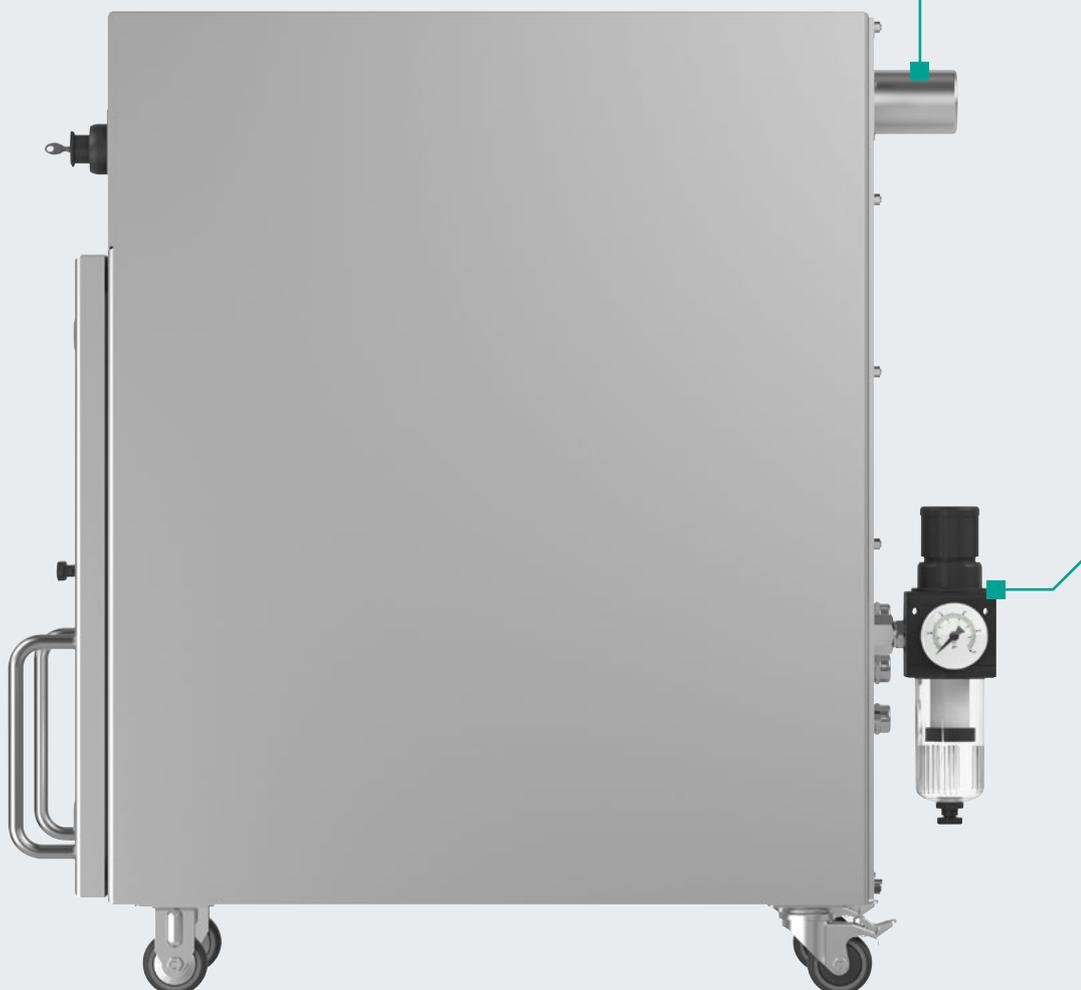
The printer must be able to produce labels in real time during operations without compromising the safety of the hazardous area and eliminates the need for operators to exit the hazardous area to retrieve labels from a "safe area" printer, significantly reducing downtime. It also needs to be compact, occupying minimal space within the environment. Additionally, many printers are specifically integrated into a particular process and cannot simply be swapped out. By converting the customer's existing printers into Ex-certified versions, companies can avoid redesigning workflows or replacing equipment with a different printer.

### 6500 Series digital valve

Secondary venting on the side panel in case of overpressure

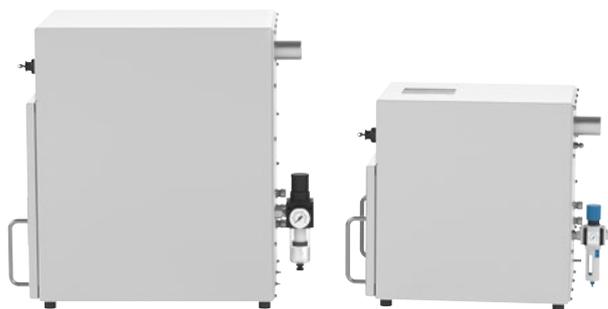
### 6500 Series enclosure protection vent

Exhausts excess pressure from the enclosure and measures flow and pressure during operation



## The Solution

A new solution from Pepperl+Fuchs enables a wide range of printer models to be installed within the hazardous areas safely and with minimal effort. In most cases, printers already used in non-Ex environments can continue to be used, eliminating the need for time-consuming software modifications. The printers are housed in an airtight enclosure that is pressurized with air or an inert gas, creating an explosion-free environment inside the cabinet. When the internal pressure is maintained at least 50 Pa (approximately 0.5 mbar) above the surrounding atmosphere, explosive gas-air mixtures are prevented from entering the enclosure. After the enclosure door is closed and power is switched on, it is essential that no explosive gases remain inside. This is ensured through an automatic pre-purge process, which purges the enclosure removing any potentially hazardous gases. An integrated Ex p protection controller inside the enclosure continuously monitors and manages all pressurization functions. It also automatically supplies power to the non-Ex devices once safe operating conditions are confirmed.



## The Benefits

The Bebco EPS purged printer solution ensures safety, operational reliability, reduces downtime, and minimal air/gas consumption. The system's automatic leakage compensation offsets gradual leaks caused by aging seals, cable glands, or other enclosure components, maintaining consistent protection over time. This Ex p printed solution is designed for flexibility. A variety of printer models can be integrated, along with standard features such as viewing windows and operating elements like line-feed and print-abort buttons. Communication interfaces can also be added if needed. The viewing window allows operators to easily check the label roll fill level, and direct printing in hazardous areas is possible without opening the enclosure door or flap. The Ex p printer cabinet is approved for worldwide use, and standard versions are available with short delivery times.

### Technical Data

<b>Enclosure material</b>	Stainless steel SS316
<b>Large cabinet dimensions (W × H × D)</b>	600 × 450 × 680 mm
<b>Small cabinet dimensions (W × H × D)</b>	500 × 350 × 500 mm
<b>Rated voltage</b>	100 ... 240 V AC
<b>Rated current</b>	5 A max.
<b>Frequency</b>	50 ... 60 Hz
<b>Degree of protection</b>	IP6X
<b>Heat dissipation</b>	< 100 W
<b>Communication relay</b>	Customer related

### Technical Features

- Flexible enclosure design with viewing window
- Externally mounted controls for operating the printer
- Various mounting options, e.g. table mounting, on stand, with rollers, etc.
- International certifications: ATEX/IECEX Zone 1/21, 2/22, NEC Class/Div. (on request), UKCA (on request)
- Ambient temperature range 5 °C ... 40 °C (depending on printer)
- Communication relay (optional)
- Available in two enclosure sizes
- Easy-access front pull-out

