

Hazardous area label printers

ATEX & IECEx Gas & Dust certified solutions for Zebra ZT 411 (4") and ZT 421 (6") industrial label printers



Advantages

- Hazardous area solution for industry standard label printing – systems for 4" and 6" label sizes available
- ATEX/IECEx Zone 1/21 and 2/22 certified for gas or dust using Expo's proven Ex p capability
- Power and signal safety interlocked for full code compliance
- 316L stainless steel enclosure for industrial & ultra-clean environments

Overview

Printers for bar code and batch number labels are found in many industrial locations. If the printer is to be located in a hazardous area, then a certified solution is required to ensure safe operation.

Due to operational requirement & constraints, many of the possible Ex protection concepts are not suitable. Ex p (Purge & Pressurization) provides the most flexible and cost-effective solution.

Expo has worked with Zebra Technologies, a leading manufacturer of industrial label printers to develop a standard certified solution based around their popular ZT400 series.

What is Purge and Pressurization (Ex p)?

A two-step process that is required prior to energizing electrical equipment inside a suitable leak-tight enclosure.

Using instrument quality air, the enclosure is first purged for a set time. This time is calculated based on the enclosure dimensions and the number of volume changes required by the certificate.

After successful completion of the purge sequence, the enclosure is maintained at a set over-pressure (typically 5 mbarg) and the electrical equipment can be energised.

This process must be controlled and monitored by a certified purge & pressurization system that can energise/de-energise the system as required.

Expo's certified solution

The printer is installed inside a robust stainless steel enclosure. The system is fitted with a purge system to control and monitor the purge & pressurization process, and an isolation unit to provide power and ethernet control.

While the overall system is standard, the internal mounting arrangements are adaptable to house either Zebra printer model.

Expo's design incorporates several unique features:

- Through-the-enclosure-wall pushbuttons to actuate the printer membrane switches for label feed control
- A clear window to view the printer display screen
- A low leakage, anti-static label slot to permit label exit while maintaining positive pressure inside the enclosure.

The printer sits on an adjustable, sliding internal tray allowing accurate alignment for the label feed and pushbuttons. A side access door is provided for print media roll change.

The system has three mounting configurations: table top; wall-mount or plinth-mount.

Printer specifications : Zebra ZT411 (4") & ZT421 (6")



For full details see the Zebra data sheet for ZT400 series. Note some functions and features are not enabled or accessible once the printer is installed inside the enclosure.

Print method: Thermal transfer & direct thermal printing

Communications: Ethernet

Screen: 4.3" colour (display only once inside enclosure)

Operation: Label pause/feed/cancel buttons. All other functions via ethernet.

Print resolution: 200 / 300 / 600 dpi

Maximum print widths: ZT411 –4"; ZT421 –6.6"

Note that Expo makes certain modifications to the printer to enable safe operation within the purged enclosure.

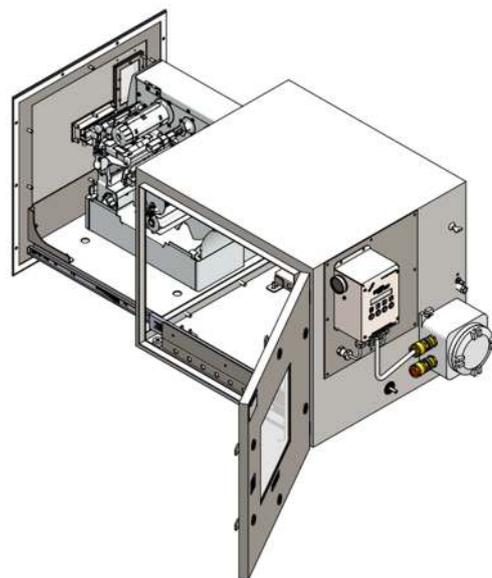
Expo part codes:

Gas: 4" - PRI-Z410-X2A; 6" - PRI-Z620-X2A

Dust: 4" - PRI-Z410-X2B; 6" - PRI-Z620-X2B

X defines printer resolution (dpi): 2=200; 3=300; 6=600

Hazardous area protection: Expo system specifications



Enclosure: 316L stainless steel, 2 mm thickness

Ext. dimensions (mm): 570H x 560W x 650D (Excl. purge)

Access: Side door for print media change; sliding front for full printer access.

Purge system: SmartPurge SP2-PM-SS

Interface unit: SIU-2S01-U00 for ethernet isolation

Key operated override switch for maintenance where permitted under a hot work permit

Utilities: Instrument air @ 3.5-7 bar; Electrical power 100 - 254VAC; Ethernet.

Maximum ambient temperature for operation: 30°C

Certification:

ATEX: II 2 G D

Ex pxb IIC T4 Gb; Ex pxb IIIC T1 35°C Db T_{amb} 5 to 30°C

IECEx: Ex pxb IIC T4 Gb; Ex pxb IIIC T1 35°C Db

Systems for North America are available with a different purge system configurations. Please discuss with Expo.