

Hazardous Area Label printer for Gas & Dust Applications



Key points

- Market leading Zebra ZT111 4" thermal transfer label printer
- Explosion protection for gas and dust environments
- ATEX, IECEx certification.
- 316L stainless steel enclosure for industrial & ultra-clean environments.
- Simple installation and operation

Overview

Printers for barcode and batch identification labels are found in many industrial locations. If the printer is to be located in a hazardous area, then an explosion protected solution is required to ensure safe operation.

Due to operational requirement & constraints, many of the possible Ex protection concepts for hazardous areas 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 certified solution based around their popular ZT111 4" thermal transfer label printer.

What is Purge & Pressurization?

A two-step process that is required prior to energising 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 and the electrical equipment can be energised.

Note that for dust applications, there is no initial purge phase - after cleaning the enclosure of any dust, the system is simply pressurized before it can be energised.

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, for Zone 1 & 21 duty, an isolation unit to provide power and ethernet control. Expo's design incorporates the following key features:

- Through-the-enclosure-wall push-buttons to actuate the printer membrane switches for label feed control
- A clear window to view the printer status LEDs
- A low-leakage label slot to permit label exit, whilst maintaining positive pressure inside the enclosure.
- A side access door with a window for monitoring and changing the print media roll.



Specifications

Printer	Zebra ZT111 thermal transfer label printer (203 or 300 dpi). (Zebra SKU: ZT111142-T0E000FZ or ZT111143-T0E000FZ)
Utilities: Instrument air	Supply pressure: 3.5 –7.5 barg. Flow rate–purge phase: 225 NLPM. Flow rate–pressurization phase: 25 NLPM approx.
Utilities: Power	100-240 VAC; 50-60 Hz.
Hazardous environment–gas	Zone 1 & 2. Protection by purge & pressurization. Purge time - Zone 1: 10 minutes (auto); Zone 2: 4 minutes (manual).
Hazardous environment–dust	Zone 21 & 22. Protection by pressurization only.
Approvals	ATEX, IECEx certification.
Electrical connections	Zone 1 & 21: Ex e & Ex tb certified junction box. Zone 2 & 22: Connections to internal terminal rail.
Operating temperature	+5 °C to +35 °C
Enclosure material	316L stainless steel 2.0 mm thick / laminated glass 6.4 mm thick.
Ingress protection	IP42
Enclosure dimensions	375 x 384 x 702 (max*) mm.
Weight with printer (excl. packaging)	32 kg
Communication to printer	Wired ethernet. Push buttons for Pause, Feed, Cancel.
Packaging	Wooden crate.

* Overall system depth dependent on electrical terminal box configuration.

Part Numbers

Pressurized Enclosure & ZT111 Thermal Transfer Printer	Print resolution	Part Number	Pressurization System	Junction Box
ATEX / IECEx Zone 1–Gas	203 dpi 300 dpi	PR-12E-A PR-13E-A	Type X leakage compensation	Ex e certified
ATEX / IECEx Zone 21–Dust	203 dpi 300 dpi	PR-12E-B PR-13E-B	Type X dust pressurization	Ex e certified
ATEX / IECEx Zone 2–Gas	203 dpi 300 dpi	PR-12E-D PR-13E-D	Type Z leakage compensation	Not fitted
ATEX / IECEx Zone 22–Dust	203 dpi 300 dpi	PR-12E-E PR-13E-E	Type Z dust pressurization	Not fitted

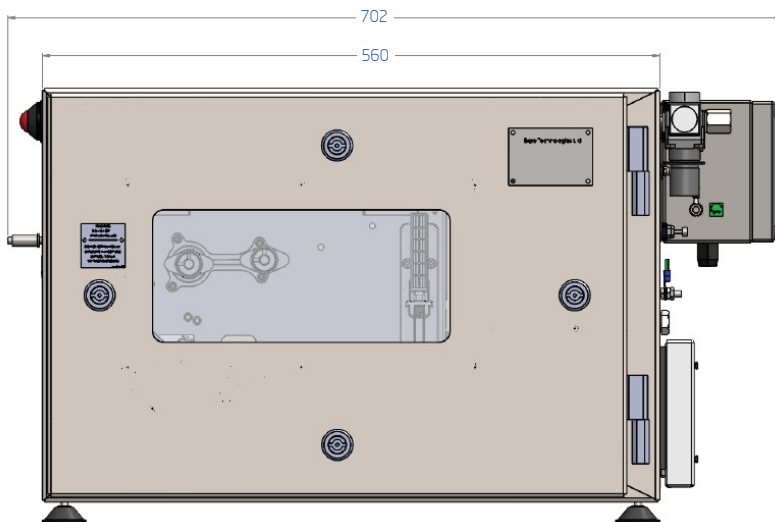
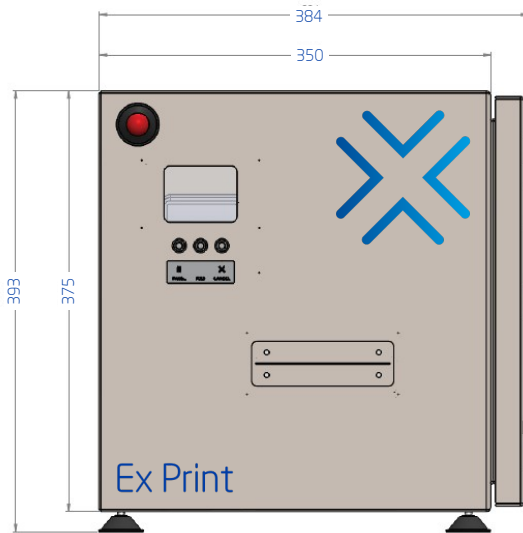


Simplifying Complexity. Delivering Safety.



General Arrangement Drawings

Dimensions in mm



Hazardous Area Certification

Zone 1:

IECEX certificate: IECEX EXV 19.0024X
 ATEX certificate: ExVeritas 19ATEX0469X
 Ex pxb db eb IIC T4 Gb +5°C ≤ Tamb ≤ +35°C

Zone 2:

IECEX certificate: IECEX EXV 19.0025X
 ATEX certificate: ExVeritas 19ATEX0470X
 Ex pzc IIC T4 Gc +5°C ≤ Tamb ≤ +35°C

Zone 21:

IECEX certificate: IECEX EXV 19.0024X
 ATEX certificate: ExVeritas 19ATEX0469X
 Ex pxb IIIC T1 35°C Db +5°C ≤ Tamb ≤ +35°C

Zone 22:

IECEX certificate: IECEX EXV 19.0025X
 ATEX certificate: ExVeritas 19ATEX0470X
 Ex pzc IIIC T1 35°C Dc +5°C ≤ Tamb ≤ +35°C

Rear layout and overall depth of the Ex Print will vary depending on the hazardous area.



Ex Print Datasheet EN ATEX_IECEX MKTG
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