Product Datasheet

Ex Print

Zone 1 & 2, 21 & 22
Class I / II Div 1 & 2

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 and NFPA Compliance
- 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. Purge & Pressurization (Ex p) 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 / standard. 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 or Class I / II Div 1, 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.

Simplifying Complexity. Delivering Safety.

expo Technologies

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Specifications

Printer	Zebra ZT111 thermal transfer label printer (203 or 300 dpi). (Zebra SKU: ZT11142-T0E000FZ or ZT11143-T0E000FZ)
Approvals	ATEX, IECEx certification; NFPA 496 Compliance
Hazardous environment–ATEX, IECEx	Zone 1 & 2. Protection by purge & pressurization. Zone 21 & 22. Protection by pressurization only.
Hazardous environment–NFPA	Class I Division 1/2. Protection by purge & pressurization. Class II Division 1/2. Protection by pressurization only.
Purge Gas	Supply Pressure: 3.5–7.5 barg (50–101 psig) Instrument Air Supply
Purge Gas connection	1/4" NPT inlet
Enclosure Pressure	1.5–4.5 mbarg (0.6" - 1.8" wc)
Purge Flow Rate	Purge phase: 225 NLPM (8.5 SCFM) Pressurization phase: approx. 20 NLPM (0.7 SCFM)
Purge Time	Zone 1 / Class I Div 1: 10 minutes (auto timer) Zone 2 / Class I Div 2: 4 minutes (manual)
Minimum Enclosure Pressure	Gas & Vapours: 0.5 mbar (0.2"wc) Dust: 2.5 mbar (1"wc)
Action on Loss of Pressure	Local alarm; Trip Power for Zone 1 & 21 or Class I/II Division 1 only
Electrical connections–ATEX, IECEx	Zone 1 & 21: Ex e certified junction box. Zone 2 & 22: Connections to internal terminal rail.
Electrical connections–NFPA	Class I Division 1/2: Ex d certified junction box Class II Division 1/2: Connections to internal terminal rail.
Operating temperature	+5 °C to +40 °C (+41 °F to +104 °F)
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* mm (15" x 15 " x 22"*) *Overall system depth dependant on electrical terminal box configuration
Supply Power	100–240 VAC; 50–60 Hz.
Unit weight	Up to 35 kg (77lb) *Overall system weight on electrical terminal box configuration
Communication	Wired ethernet. Push buttons for Pause, Feed, Cancel.

MKTG 17032026_V1

Ex Print

Ordering Code

	Ex Print 2.0	PR	-	12	E	-	A
Pressurised Enclosure & Thermal Transfer Printer							
Printer resolution option:							
Printer Model ZT11142 Thermal Transfer (4", 203 dpi)				12			
Printer Model ZT11142 Thermal Transfer (4", 300 dpi)				13			
Printer supplied and integrated by EXPO							
Approvals:	Junction Box:						
ATEX & IECEx Zone 1	Ex e certified						A
ATEX & IECEx Zone 21	Ex e certified						B
ATEX & IECEx Zone 2	Not fitted						D
ATEX & IECEx Zone 22	Not fitted						E
Class I Division 1	Ex d certified						G
Class II Division 1	Ex d certified						H
Class I Division 2	Not fitted						K
Class I Division 2	Not fitted						L

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Class I / II Div 1 & 2

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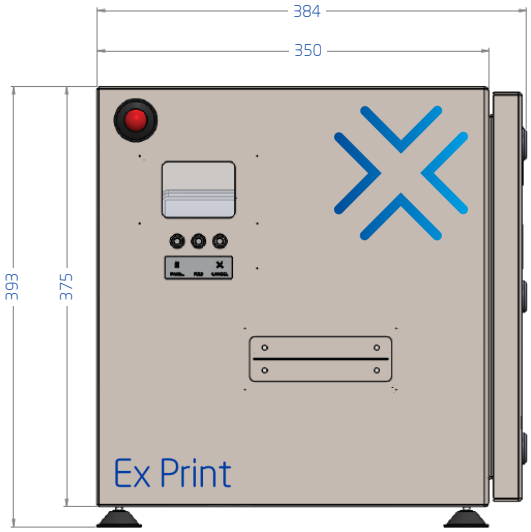
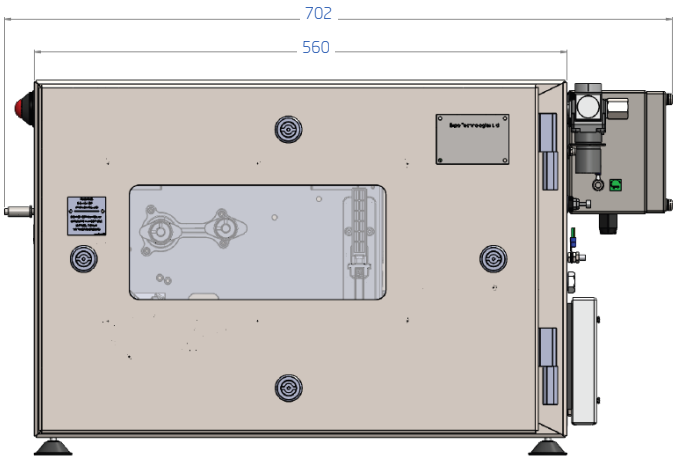
General Arrangement Drawings

Dimensions in mm





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

Hazardous Area Certification

ATEX, IECEx Certification:

Zone 1:
Ex pxb db eb IIC T4 Gb
+5°C ≤ Tamb ≤ +40°C

Zone 2
Ex pzc IIC T4 Gc
+5°C ≤ Tamb ≤ +40°C

Zone 21
Ex pxb IIIC T135°C Db
+5°C ≤ Tamb ≤ +40°C

Zone 22
Ex pzc IIIC T135°C Dc
+5°C ≤ Tamb ≤ +40°C

Manufacturer's Declaration to NFPA 496

Class I, Division 1
Gas groups B, C, D
Tamb 41 °F to 104 °F

Class I, Division 2
Dust groups E, F, G
Tamb 41 °F to 104 °F

Class I, Division 2
Gas groups B, C, D
Tamb 41 °F to 104 °F

Class II, Division 2
Dust groups E, F, G
Tamb 41 °F to 104 °F

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