

User Manual

Explosion-safe label printer

Type series AR-090



II 3 G Ex pzc IIC T6 Gc
II 3 D Ex tc IIIB T80°C Dc
II 3 D Ex pzc IIIC T80°C Dc



STANDARDS COMMITTEE MEMBER





1. Safety Instructions

The AR-090 label printer is an explosion-safe product suitable for use in hazardous areas with explosion hazard from flammable gases, vapors, mist and dust, classified as Zone 2 or Zone 22.

This manual must be read and understood for safe use of the label printer. All warnings and instructions must be followed.

- Installation must be carried out by personnel trained and qualified in explosion safety taking the instructions mentioned on the equipment and in this manual into consideration. Local regulations that apply to the installation must be followed.
- Connect this equipment to the supply voltage for which it is designed.
- Isolate electrical power to the label printer before electrical installation.
- All unused openings should be plugged off in a properly closed and tight way.
- Either decommission the label printer or do not use it when it is damaged.
- During installation of the label printer national safety regulations must be observed.
- Only use the label printer under the environmental conditions for which it is specified. Deviating environmental conditions can contribute to damage to the equipment and may lead to possible danger to the life of the user.
- Do not use the label printer at temperatures deviating from the specified ambient temperature range.
- Follow all instructions written on the equipment and as mentioned in this manual.
- Repairs may only be carried out by the manufacturer or by a person appointed by the manufacturer.
- Modifications to the equipment or changes to the design are not permitted.
- The product may only be used for the function for which it is designed and shall be maintained in a good and clean condition.

If these instructions are not followed, the explosion safety of the equipment cannot be guaranteed. The equipment could then endanger the life of the user and could cause the ignition of an explosive atmosphere. Consequently, Artidor as the manufacturer will waive any responsibility.

2. Description

The Zebra ZT410 label printer provides high superior thermal label printing. Its 203 DPI resolution means consistently high quality text, graphics and bar code labels for production, manufacturing and research. The Zebra ZT410 label printer is optimized for full efficiency and economical operation. The explosion safety to gas and dust is arranged by the appliance of protection degree against ignition 'protection by pressurized enclosure 'p' or 'protection by enclosure 'tc'.

The label printer control cabinet is a stainless steel 316 enclosure with a single door. The cabinet contains the printer, a power supply, a special cable entry device, and optionally a pressurization system consisting of Gönzheimer controller F830, a purge valve and a purge outlet. The system is designed to work with clean compressed air.

If present, the pressurization system of the label printer requires to be fed by clean compressed air at the single inlet port located on the back of the control cabinet. The air pressure has to be reduced in the cabinet to a pressure of 1.5 Bar. The air supply for purging is fixed by a flow adjustment nozzle. The nozzle cannot be changed. A by-pass is available to compensate for leakage compensation. The pressurization controller has been equipped with a pressure indicator for the cabinet pressure. A special door seal and paper output facility have been designed and produced to keep dust out of the cabinet and air pressure inside of the cabinet.

3. Characteristics

The characteristics of the label printer can be summarized as follows;

- Stainless steel 316 housing;
- Provided with Variozell flexible cable input;
- Polycarbonate window;
- Paper output facility designed for low air consumption;
- Manufactured on the basis of the European Directive 2014/34/EU (ATEX 114);
- Suitable for use in gas and dust hazardous areas classified as zone 2 and 22;
- Explosion safety category and protection degree against ignition applied:
 - II 3 G Ex pzc IIC T6 Gc
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- Full access to the printer from the side door;
- Suitable for internal use.

4. CE - Marking

The label printer complies to the European Directives for EMC and ATEX and implicit to the Low Voltage Directive.

With regard to explosion safety the label printer has been designed and manufactured on the basis of the essential health and safety requirements of European Directive 2014/34/EU (ATEX 114) relating to Group II Category 3GD.

Harmonized European construction standards have been applied fulfilling the essential requirements of the directives.

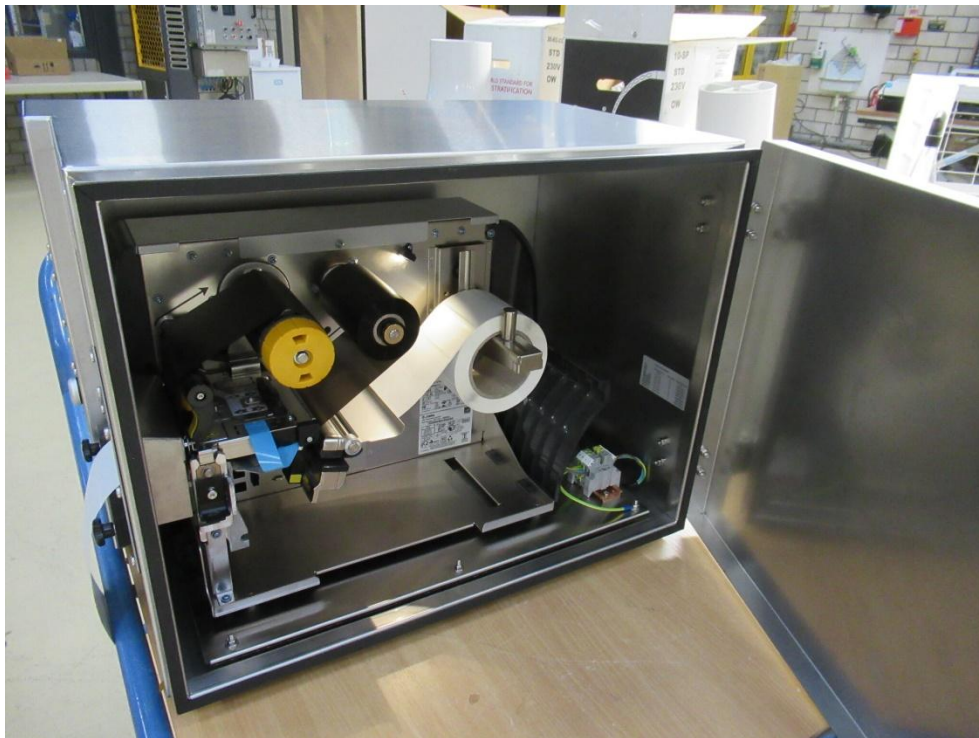
5. Application

The explosion-safe AR-090 label printer has been designed for and is suitable for use in hazardous classified areas due to flammable gases, vapors, mist, fibers and dust. Because it is explosion-safe and certified on the basis of Group II Category 3GD of the ATEX Directive it is suitable for use in the following types of zones in explosion hazardous areas:

- for combustible gases, vapors and mist: zone 2;
- for (combustible) fibers and dust: zone 22.

- For the installation and use of this product the relevant safety regulations and also the generally recognized latest state of the technology apply.
- During assembly, care must be taken that the housing is placed on a flat and stable surface, strong enough to take the weight of the label printer.
- Isolate power from the electrical supply cable prior to installation.
- Install the connection cable and make sure that it is protected from mechanical and chemical influences.
- Connect the end of the cable in a proper way to an external connection box and ensure this is done professionally. The connection box is not supplied. Use a connection box that it is suitably protected for the (explosion hazard) classification of the surroundings in which it will be used.
- The label printer offers 3 connection terminals, L,N and PE:
All internal wiring is connected by Artidor. Only the power supply has to be connected to the terminals in the back of the ground plate. The Gönzheimer F830 controller will control the purging stage (only set up for gas and dust IIIC environment) and switch power to the label printer when the internal area inside the housing is safe. Power will be disconnected if pressure inside the cabinet is lost.

Power in:	Output to label printer through F830:
L 230 VAC phase	L' 230 VAC phase – switched
N Neutral	N Neutral (connected to N1)
PE Earth	PE Earth



9. Operating instructions

For operating this Zebra printer we refer to the Zebra operation instructions. As soon as the door of the cabinet is opened the power to the label printer is switched off. The labels and ink ribbon can be accessed and handled as usual

through the side door. Of course the label paper has to be fed through the paper output facility. We advise not to open this facility when feeding the paper. In case a label gets stuck inside the paper facility you can open the facility by unscrewing the star knobs. The paper facility can be cleaned and assembled back in place. Adjust the gap between the upper and lower part as small as possible to reduce the loss of pressure as much as possible.

For operating the Gönzheimer F830 we refer to the Gönzheimer operating manual. In case the printer is set up for dust environment and is later on used in gas environment the purge setting has to be changed to YES and the cabinet size has to be entered in order to make the system purge correctly. Change of a gas environment to a dust environment allows you to take out the purging phase by setting the purge parameter to NO.

In case of a dust application after opening the side door, remove all dust from the inside of the housing before connecting or restoring the electrical power supply.

10. Troubleshooting

In general the only way the power to the label printer is not released is when the pressure is lost or the system is still in purge phase. Please check the display of the Gönzheimer F830 to see what the problem is. If pressure is too low, check the following causes:

- Not enough compressed air supply
- Leakage on seals of door, paper output facility, cable entry or window. Repair the leakage source and retry to operate the system
- After correcting leakage problems and the pressure is still too low, It is possible to enlarge the pressure or air flow to enlarge the pressure in the housing. Adjusting the pressure can be done on the back with the pressure regulator. Default setting by Artidor is on the product label and can be enhanced a little, but it is better to enlarge the flow by opening up the by-pass valve on the inside of the housing. Refer to the Gönzheimer F830 manual for this.

11. Maintenance

For the maintenance of the AR-090 label printer the requirements as stated in EN 60079-17 apply. If the label printer or the connection cable is no longer in good condition, very dirty or damaged, it must be repaired or cleaned immediately. The power supply to the label printer must be switched off and may only be restored after the maintenance has been carried out and approved. Access to the label printer for maintenance purposes can be obtained by disassembling the bottom plate from the housing, including the label printer. This requires the following steps:

- loosen the front two nuts of the bottom plate.
- disconnect the power supply cable from the connection terminals
- unplug the power supply cable to the printer running to the L', N and PE terminal
- disconnect the air supply to the printer (6mm black air hose)
- unscrew the DIN rails with the connection terminals from the bottom plate but leave all wiring connected to it
- disassemble the paper output facility
- take out the printer including the bottom plate

The advised maintenance cycle for this label printer depends on its specific use and is equal to a non-explosion safe label printer.

12. Repair

If repairs are carried out in an incompetent manner, the explosion-safety of the label printer can no longer be guaranteed. Therefore it is preferred that the label printer is returned to the manufacturer for repair.

13. Removal / re-use

The equipment can be completely processed as electronic waste. For processing regarding disposal or reuse of the product and its packaging, national disposal and environmental laws and legislation must be taken into consideration.

EU Declaration of Conformity


We

Artidor Explosion Safety B.V.
Emopad 38, 5663 PB Geldrop, The Netherlands

herewith declare that the
explosion-safe Label printer type series

AR-090/*

labelled with the distinctive community mark including the code of the
protection degree against ignition and temperature class:

CE  II 3 G Ex pzc IIC T6 Gc
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produced under the Artidor Quality Assurance system in accordance with
ISO 9001:2015 and annex VIII of European directive 2014/34/EU

is in conformity with the relevant Union harmonization legislation:

2014/30/EU
Concerning electromagnetic compatibility

2014/34/EU
Concerning equipment and protective systems intended
for use in potentially explosive atmospheres,

and that the following standards regarding explosion safety have been applied:

EN 60079-0:2018
EN 60079-2:2014
EN 60079-31:2014

This declaration of conformity is issued under the sole responsibility of the manufacturer

Geldrop, 10 October 2025 Signed



F. Hartman
QA Manager and EX Authorized Person