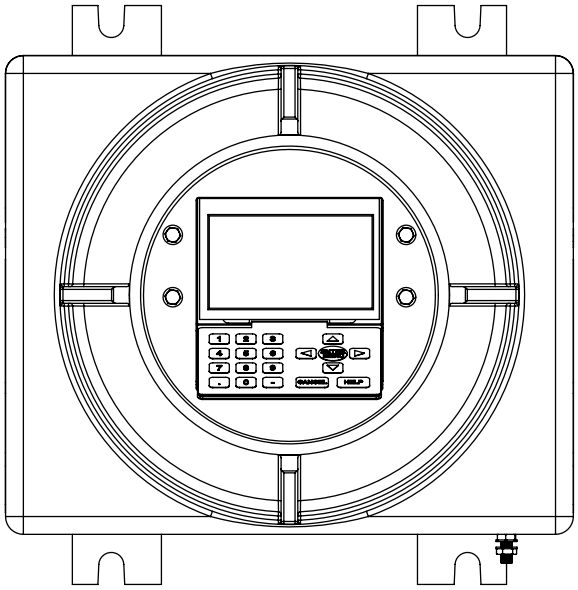
AMETEK®
PROCESS INSTRUMENTS

ESSENTIAL HEALTH and SAFETY

AMEVision, Zone 1

For 3050 Moisture Analyzer Series
3050-OLV, 3050-SLR, 3050-DO, 3050-TE



PN 305983902_Rev A

To obtain a PDF of this manual, visit our Products page at www.ametekpi.com.

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Overview

About This Document

This document describes the Essential Health and Safety requirements (EH&S) for the AMEVision Display User Interface intended for use in explosive atmosphere locations (Zone 1).

The procedures and information discussed in this document include only abbreviated steps to install, operate, and perform maintenance on the AMEVision User Interface Display. They do, however, include all relevant safety warnings and cautions to ensure the safety of personnel, the analyzer, and the AMEVision Display User Interface in explosive atmosphere locations.

AMETEK takes great effort to ensure that its translations of documents into foreign languages are accurate and complete. However, in the case of any discrepancies between the English version and the translated version, the original English version shall take precedence. AMETEK will not assume liability for any such discrepancies, or issues arising from them.

Important Safety Information

Warnings, Cautions, Notes

WARNINGS, CAUTIONS, and NOTES contained in this manual emphasize critical instructions as follows:

An operating procedure which, if not strictly observed, may result in personal injury or environmental contamination.

An operating procedure which, if not strictly observed, may result in damage to the equipment.

Important information that should not be overlooked.

Burn hazard. Hot surface. Do not touch, allow to cool before servicing.

Warning Labels

These symbols may appear on the instrument to alert you of existing conditions.

Protective Conductor Terminal
(BORNIER DE L'ECRAN DE PROTECTION)
Schutzerde

Caution – Risk of electric shock
(ATTENTION – RISQUE DE DÉCHARGE ÉLECTRIQUE)
Achtung – Hochspannung Lebensgefahr

Caution – Refer to accompanying documents
(ATTENTION – SE RÉFERER AUX DOCUMENTS JOINTS)
Achtung – Beachten Sie beiliegende Dokumente

CAUTION – Hot Surface
(ATTENTION – SURFACE CHAUDE)
Achtung – Heiße Oberfläche

Special Conditions for Safe Use

The AMEVision Display User Interface is designed to be used in Category 2 hazardous locations where explosive gases may be present. Protection against explosion is provided by a flameproof enclosure.

Do not open the enclosure when an explosive atmosphere is present until the power is removed and the area is demonstrated to be non-hazardous.

Verify ground continuity of all equipment before applying power. For electrical shock protection, the AMEVision Display must be operated from a grounded power source that has a securely connected protective ground contact.

Entry to the equipment must be made using suitably certified Ex d IIB+ H_2 Gb entry devices.

Unused entry holes must be fitted with suitably certified Ex d IIB+ H_2 Gb blanking elements.

HAZARDOUS LOCATION LIMITATIONS

The AMEVision is a Category 2 analyzer specifically designed and certified for use in ATEX II 2 G hazardous locations. It can be safely operated in a location in which:

- No gases are present with a higher probability of ignition than hydrogen (e.g., acetylene).
- The ambient temperature does not exceed 60 °C.
- Voltages are 104–127 VAC or 230 VAC, 40 VA. The unit has been tested to 230 VAC ± 10 %.

Make sure the location in which the AMEVision Display is installed meets all of the Hazardous Location Limitation criteria for a Category 2 analyzer described above.

Electrical Safety

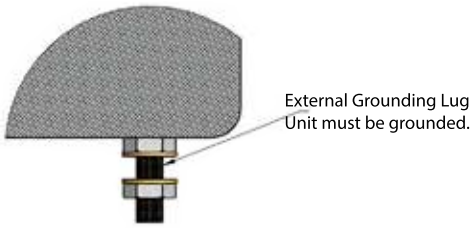
Always shut down power source(s) before performing maintenance or trouble-shooting. Only a qualified electrician should make electrical connections and ground checks.

Any use of the equipment in a manner not specified by the manufacturer may impair the safety protection originally provided by the equipment.

Grounding

Instrument grounding is mandatory. Performance specifications and safety protection are void if instrument is operated from an improperly grounded power source.

Verify ground continuity of all equipment before applying power.

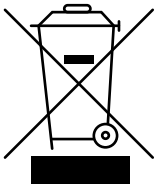


External Grounding Lug.

Environmental Information (WEEE)

This AMETEK product contains materials that can be reclaimed and recycled. In some cases the product may contain materials known to be hazardous to the environment or human health. In order to prevent the release of harmful substances into the environment and to conserve our natural resources, AMETEK recommends that you arrange to recycle this product when it reaches its "end of life".

Waste Electrical and Electronic Equipment (WEEE) should never be disposed of in a municipal waste system (residential trash). The Wheelie Bin marking on this product is a reminder to dispose of the product properly after it has completed its useful life and been removed from service. Metals, plastics, and other components are recyclable and you can do your part by doing one of the following steps:



- When the equipment is ready to be disposed of, take it to your local or regional waste collection administration for recycling.
- In some cases, your "end of life" product may be traded in for credit towards the purchase of new AMETEK instruments. Contact your dealer to see if this program is available in your area.
- If you need further assistance in recycling your AMETEK product, contact us through our Customer Support page at https://www.ametekpi.com/customersupport/request-support.

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Specifications

AMEVision Display User Interface

Environment	Ambient Temperature: -4 °F to 140 °F (-20 °C to +60 °C) Relative Humidity: 5 % to 95 %, non-condensing Maximum Altitude: 5000 meters
Power Requirements	15 VAC, ±10 %, 47–63 Hz, 40 VA max. 115 or 230 VAC, ±10 %, 47–63 Hz, 40 VA max.
Enclosure	Flameproof Aluminum

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Approvals and Certifications

System Compliance

EMC	Directive 2014/30/EU
Safety	Directive 2014/35/EU

AMEVision Display User Interface Rating Label

Figure 1.
AMEVision Display User Interface label.

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Installing the AMEVision Display User Interface

Pre-Installation Requirements

Before installing, operating, or servicing the 3050-Series Analyzer or AMEVision Display User Interface, and before opening either device at any time after they have been in operation, read and follow all Warnings, Cautions, and Notes in this document and in this document and the analyzer *User Manual*. This information contains important safety and general information about the AMEVision Display unit and the analyzer.

The Zone 1 version of the AMEVision Display unit is designed to comply with requirements for use of electrical equipment in Zone 1 classified hazardous areas.

Read this entire section before beginning installation of the AMEVision Display unit. Failure to do so, and/or use in a manner not specified in this manual, may impair the protection against fire, electrical shock and personal injury originally provided by this equipment.

The installation of the analyzer and AMEVision Display unit must be in accordance with all of the customer (end user) and local regulatory standards and procedures. There are no operator-serviceable components inside the display unit. Refer service requirements to qualified personnel.

Any electrical connections, adjustments, or servicing of the analyzer should be performed only by personnel properly trained and qualified in that type of protection.

All electrical connections, materials, and methods (plus all safety standards and procedures) must be made in compliance with local wiring regulations and electrical code for the hazardous area, as specified by the owner company, local electrical inspection authority, and National/EU regulations.

For electrical shock protection, the analyzer must be operated from a grounded power source that has a securely connected protective ground contact.

For AC electrical supply cable and conduit requirements refer to, and comply with, local wiring regulations and electrical codes for the hazardous area.

Never service the AMEVision Display User Interface or open its enclosure when an explosive atmosphere is present until power has been removed from both analyzer and AMEVision Display unit and the area is demonstrated to be non-hazardous. Also, always use gloves when working on the analyzer.

Installation drawings found in this section are for typical installations. Customer drawings supplied with the system supersede the drawings included here.

Personnel Technical Level Required for Installation

Installation must be performed by trained and qualified persons in accordance with local codes and NEC and CEC codes, where applicable. Prior to installation, consult the local codes to understand what is acceptable. To the extent this information is not consistent with local codes, the local codes should be followed. ***AMETEK recommends that only trained personnel perform these installation steps.***

AMEVision Display Site Location

Consider the following guidelines when selecting the location to install the AMEVision Display User Interface:

- Select a readily accessible location for the analyzer and AMEVision Display unit to allow for routine maintenance.
- Consider comfort levels for maintenance personnel when selecting placement of the AMEVision Display unit.

Unpacking and Inspecting the Equipment

Remove any packing material from the AMEVision Display User Interface. Check for damage and check contents against packing list. If equipment is damaged, notify the carrier and contact AMETEK Service (https://www.ametekpi.com/customersupport/requestsupport) immediately if parts are missing or damage is found, and to verify if damaged parts will require replacement prior to safely installing and operating the analyzer and AMEVision Display unit.

AMEVision Display User Interface Overview

The AMEVision Display User Interface used with 3050-Series Analyzers in Zone 1 Hazardous Locations. The AMEVision Display unit is housed in a flame-proof enclosure that allows access to the controller keypad once the area is determined to be clear of hazardous or explosive gases.

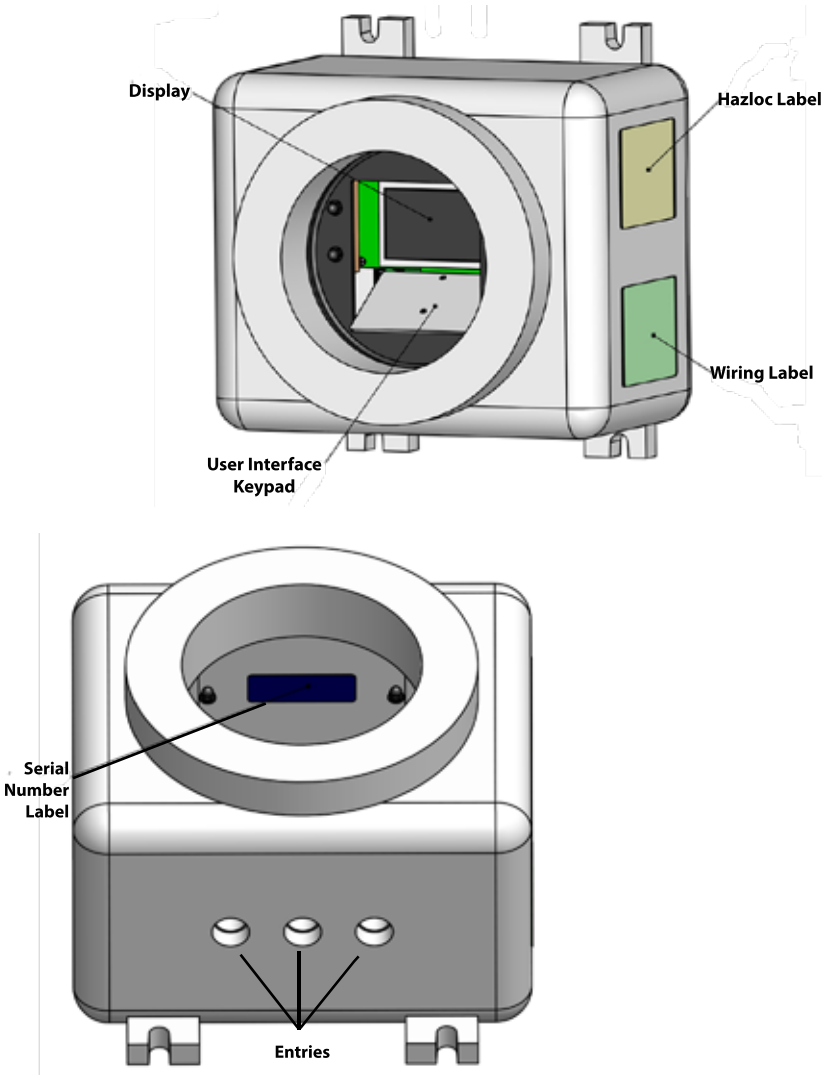

Figure 2. Explosion-Proof AMEVision Display front and bottom views.

AMEVision Software Display and Keypad

The 3050-Series Analyzers are configured, calibrated, and monitored via the MODBUS RTU interface. AMETEK provides two options for communicating with the 3050-Series Analyzers:

- 3050 Configurator Software (via a PC, provided with each unit).
- AMEVision Display User Interface.

The AMEVision Display User Interface is an optional means of controlling the 3050-Series Analyzers and includes:

- 4.2" color, 1/4 VGA display.
- 19-key keypad.
- Web interface (TCP/IP) and modbus (RTU).
- Trend Data Logging/charting screen.
- USB port inside for firmware downloads and data uploads.

Basic Elements of the AMEVision Display Unit

- **AMEVision Display Screen**
  The menu display is a three dimensional graphical user interface accessed using the navigation **Arrows** and the **ENTER/MENU** key. These keys allow you to cycle through the icons and to select the required menu option.
- **Controller and Keypad**
  The control unit is operated by pressing the arrows and buttons on the keypad. **ENTER/MENU** selects the selected option and **Cancel** exits the option. The numeric keypad is used to enter information in the fields. Navigation arrows are used to move throughout the display.

Accessing the Keypad on the Explosion-Proof Unit

To access the user keypad and controller:

- Ensure that the atmosphere is clear of any explosive gases and is safe.
- Unscrew the glass face on the front of the AMEVision Display unit.

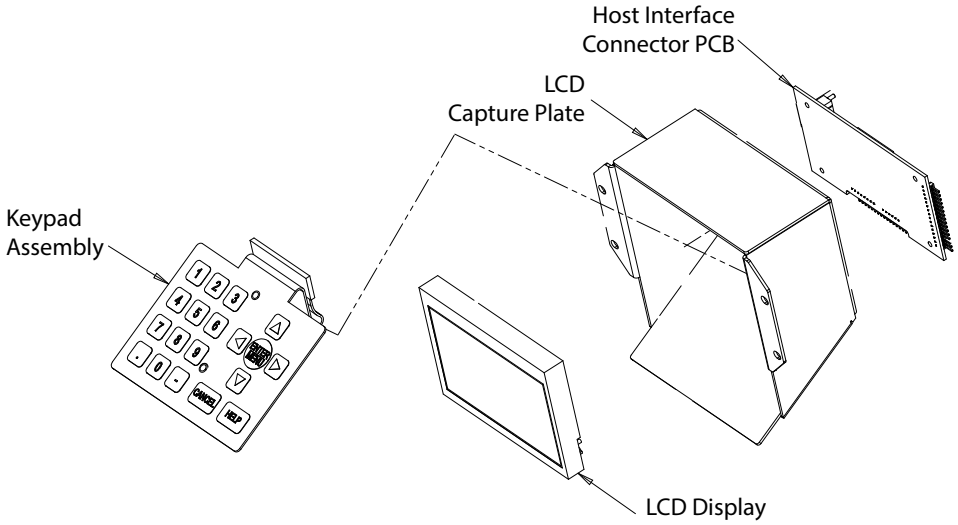

Figure 3.
AMEVision User Interface Display as seen inside explosion-proof enclosure.

Installing the AMEVision Display Unit

Install the AMEVision Display unit in an accessible location to allow for routine maintenance. See Figure 4 for mounting dimensions.

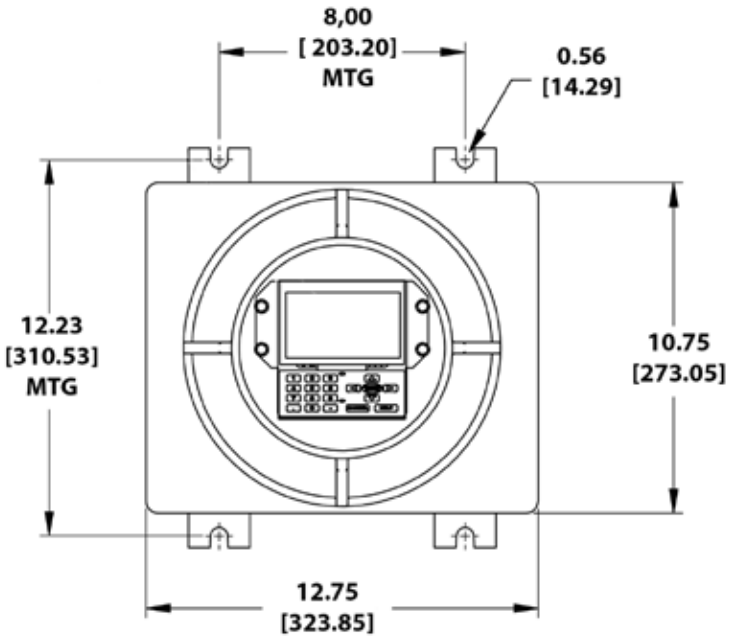

Figure 4.
AMEVision Display User Interface mounting dimensions.

Install the explosion-proof unit using the four (4) screws on the back plate, connecting to the AC mains, and securing the ground wire.

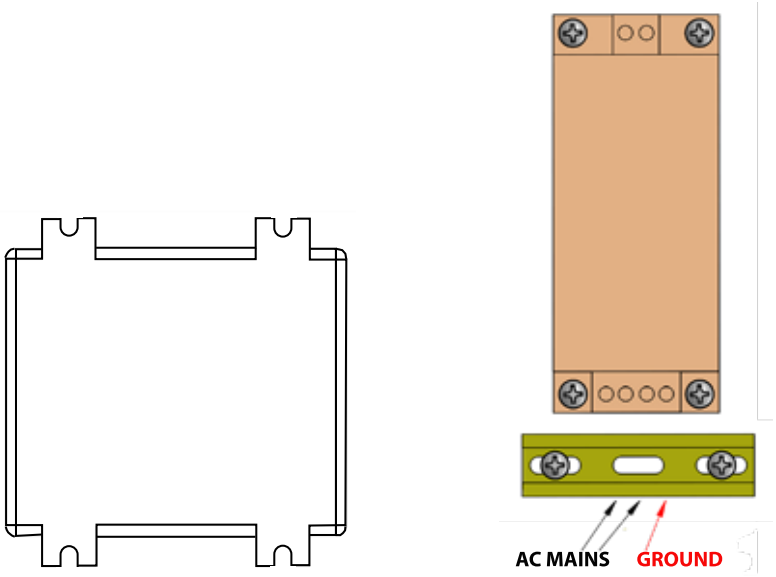

Figure 5.
Rear of Explosion-Proof Unit.

AC Power and Communication Connections

Remove AC mains power from the AMEVision before beginning wiring.

General Wiring and Conduit Requirements

This section provides mandatory EMC grounding, shielding, and noise protection requirements.

- Use only suitably certified Ex d IIB+ H2 Gb entry devices.
- If not using an entry, the entry holes must be fitted with suitably certified Ex d IIB+ H2 Gb blanking elements. Never leave any holes unplugged.
- Follow all applicable electrical codes for your location.
- Follow proper grounding, shielding and noise protection practices as described in this section.
- For all analyzer and signal wiring use twisted-pair cable, 18 to 22 AWG (0.82 mm^2 to 0.33 mm^2), with an overall braided shield, or twisted-pair cable in rigid metal conduit.
- For AC mains supply wiring, use between 12 and 14 American Wire Gauge (AWG) or equivalent metric between 3.3 mm^2 and 2.1 mm^2.
- Use the entry point closest to the connections you are making. **Do not add any additional entry holes.**

Interface Connectivity – Setting the Analyzer Address

The AMEVision Display User Interface provides an intuitive remote, graphical user interface and communications link that provides the capability to easily configure, calibrate, and monitor up to eight (8) 3050-Series Analyzers. A two-wire Modbus RTU interface connects the AMEVision Display unit to each analyzer. Each connected analyzer must have a unique address.

The AMEVision Display unit provides the following communication interfaces: Modbus RTU, web interface (TCP/IP), and USB flash drive capabilities for uploading/downloading data and firmware upgrades.

AMEVision D1/Z1 Mains Supply Connections

Do not run AC mains supply wiring in the same conduit with signal wires. By keeping this wiring separated, you prevent transient signals from reaching the analyzer unit.

The AMEVision Display unit can operate using 115 VAC ±10 % or 230 VAC. There is no power switch or circuit breaker on the analyzer so it must be protected. To do so, install the analyzer on a circuit-protected line, maximum 15 amperes, with a switch or circuit breaker in close proximity to the control unit and within easy reach of an operator. Mark the switch or circuit breaker as the control unit disconnecting device.

Mains supply connections to the control unit are as follows:

- L – Line connection
- N – Neutral connection (USA)
- Chassis Stud – Equipment ground (protective conductor)

Use the 3/4" entry hole in the AMEVision Display unit for AC mains supply wiring. Use the chassis stud next to the 3/4" entry hole for equipment ground (protective conductor).

AC (**L**) and (**N**) markings are provided by the terminal block for connection of AC power. These markings are for reference purposes only, such as for use on system wiring diagrams, etc. The system/product has or needs no specific **LINE** or **NEUTRAL** connection for any function, safety or otherwise. The (**N**) terminal is not internally grounded, nor does it need to be. The system will operate normally regardless of what AC input terminal (**L** or **N**) the AC Line or **Neutral** is connected to, or if there is a **Neutral** used at all (i.e., 208 VAC US power connection).

EMC Grounding, Shielding, and Noise Protection

For EMC purposes, do not leave cable shields disconnected at one or both ends of the cable (analyzer or control unit or other device) under any circumstances.

You must use twisted-pair cable in rigid metal conduit or use twisted pair cable with an overall braided shield. All cable shields or conduits connecting to the analyzer unit must be chassis grounded.

EMC Grounding Method

- **Shield Ring Method**
  Connect all shields for that conduit entry (other than power) to a supplied shield terminal ring. This shield ring is stainless steel with a metal tab. Place the shield ring under the conduit nut. Crimp the shields from all cables for that conduit entry to a 1/4" female quick disconnect, then push it onto the tab that sticks out of the conduit shield ring. Keep shields as short as possible.

- **Ground Stud Method**
  Connect all cable shields for that conduit entry to the grounding stud closest to that conduit entry hole.

Transient and RFI Interference

This section describes transient and RFI interference precautions:

- Although there are transient and noise protectors on all analyzer unit I/O connections (communications, current outputs, sensor, etc.), this protection is intended to act as a last line of defense against unwanted transient and RFI interference.

- Proper installation practices to prevent the introduction of transients and noise into the system must be followed. Inductive loads connected to the analyzer unit must have transient suppressors installed at the inductive loads. Place the transient suppressor as close to the load as possible. Examples of transient suppressors include MOVs, TRANSORBs, and RC snubbers.

- AC mains supply wiring should not be run in the same conduit with mains supply wiring that feeds heavy inductive loads.

- Avoid running signal wiring in the same cable or conduit with wires that power inductive loads unless all the cables within the conduit are shielded, the inductive loads are small, and transient suppressors are used at the loads.

- Do not run signal lines in the same cable or conduit with high voltage lines.

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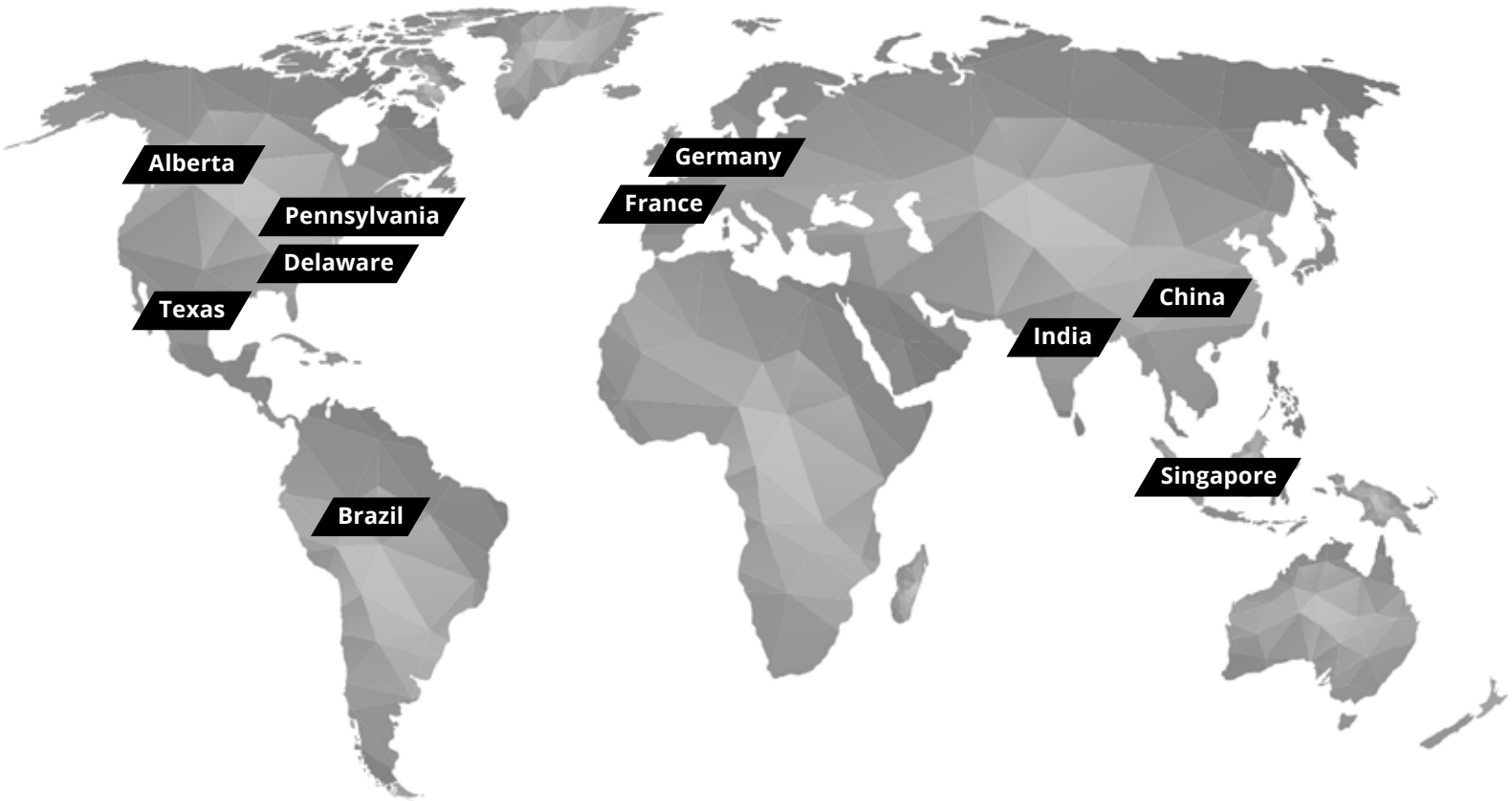
As worldwide experts in the manufacture of process analyzers and instrumentation, we have supplied solutions to industry since 1962, providing the widest range of analysis technology available.

Through process application consulting, we create custom-designed solutions that meet the needs of your specific application or process.



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