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AIR GAUGE SYSTEM

Designed for **1-2 air gauges**

INNOVATIVE MEASUREMENT TECHNOLOGY LTD.

Metro

Air Gauge system overview.

This system is a compact, high-performance air gauging unit designed for precision measurement in demanding industrial environments. The perfect replacement for old analogue devices.

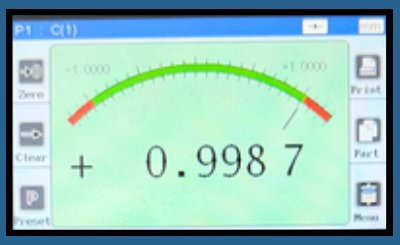
Now paired with the robust stand, it transforms into a versatile, self-contained solution ideal for both lab and shop-floor applications.

This display has multiple communication methods, USB and RS232, which allows to drive the device and to read the measurements from a computer or a PLC.

Compatible with all the air gauge brands available making possible to keep your current air gage and to use this modern and versatile display. We can also supply a full solution including electronic and air gauge according to your drawing.

Key features.

- **High-Resolution Measurement:** The system delivers accurate, repeatable results for dimensional inspection using air gauging technology.
- **Plug-and-Play Setup:** With its intuitive interface and ergonomic design, the system is easy to integrate into existing workflows. No complex configuration which reduces setup time.
- **Stable Platform:** Provides a robust and secure base for consistent measurements, especially in high-throughput environments.
- **Integrated Air Supply Management:** Keeps tubing and connections tidy and efficient.



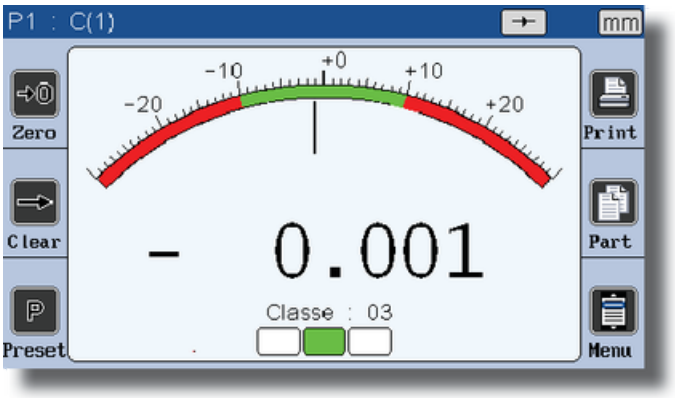
Air gauging is a long-established and reliable non-contact measurement technique used to achieve very high precision on mechanical components. It is particularly effective for checking diameters with tight tolerances. Metro has modernised this technology to improve performance and ease of use which makes it a valuable solution for precision engineering.

Typical applications include measuring external diameters with pneumatic ring gauges or internal diameters with air plug gauges. Air gauging can also be used to assess tapers or flatness.

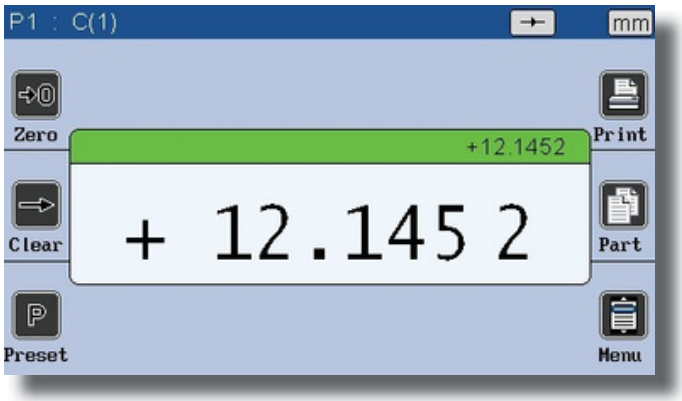
The method is well suited to high-volume production in sectors such as automotive or to components with high added value in aerospace, medical or defence industries. Depending on the setup it can measure diameters from 0.8 mm to 150 mm or more with excellent accuracy.

Graphical interface with touch screen display.

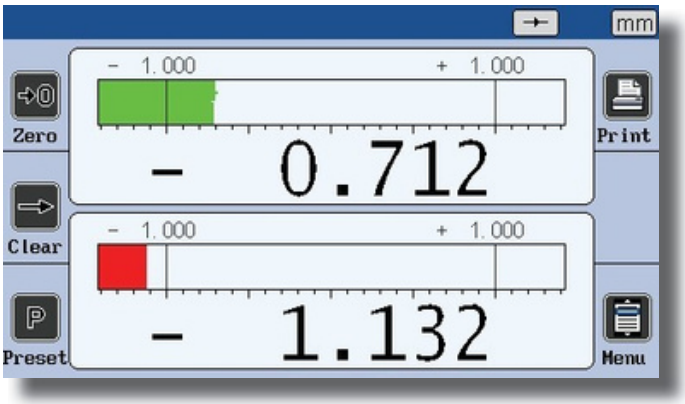
The units are fitted with 4’’3 (~11 cm) touch screen displays. The measurements can be displayed with different types of bar-graphs and needle indicators. Depending on the display, 1 or 2 characteristics can be displayed simultaneously.



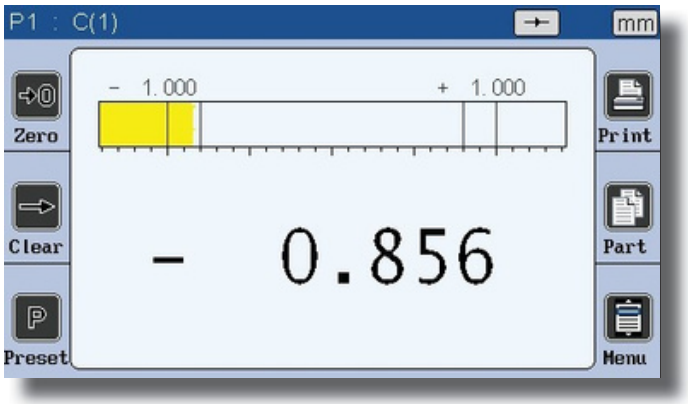
Analogue display type with classes indication



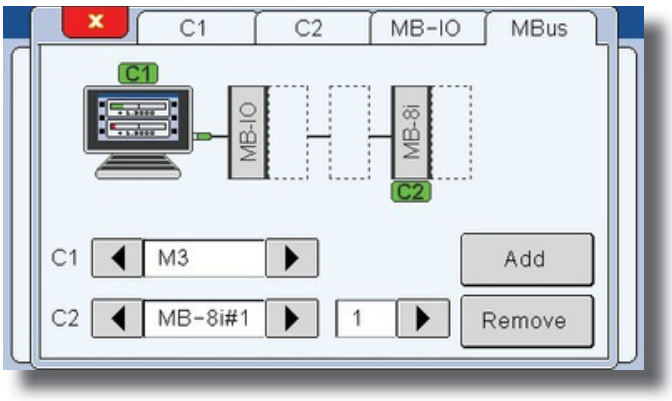
Value only with direct access to preset value modification



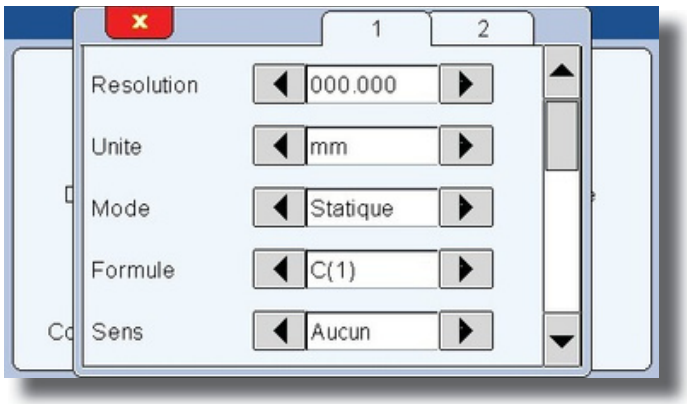
Double characteristics display



Display with warning indication



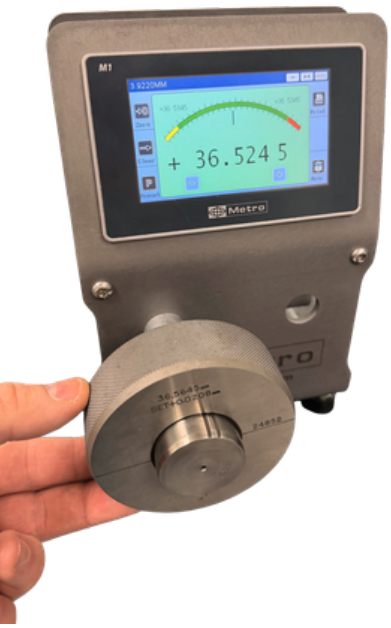
M-Bus management windows



Configuration window example

The M1 and M3 are running on our own operating system (not on Windows CE or similar). This feature allows to have high performances in terms of display, continuity of the hardware, absence of software license and absence of virus risk.

Functions.

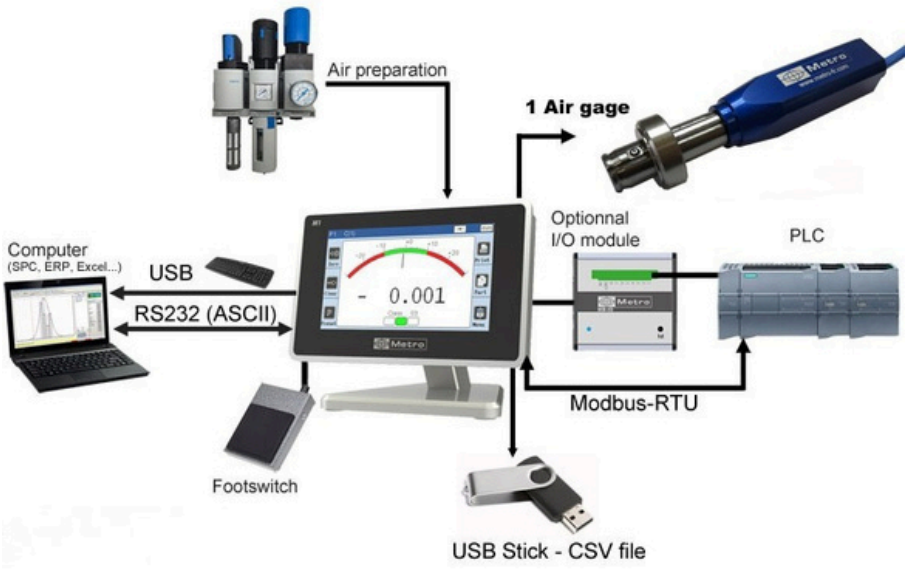


Many functions and operating modes can be defined:

- Nominal dimension, tolerance limits, control limits, standard dimension (reference part).
- Choice between 2 measurement configurations (2 dimensions)
- Calculation formula (C1, C2, -C1, -C2, C1+C2, C1-C2, -C1+C2, -C1-C2, 3-point diameter)
- Calibration
- Static or dynamic measurements (Min, Max, Max-Min, Average and Median)
- Relative or absolute mode
- Single or multi-range display mode (2 bar graphs) with or without tolerances
- Sorting by classes, up to 16 classes
- Locking of some functions with masking of buttons for a maximum simplified user interface
- Display resolution (2 to 5 decimal places)
- Metric (mm or µm) or inch measurements
- M-Bus connector to connect a box with 8 optocoupled inputs/outputs (good part, bad part, calibration etc...)
- Automatic dimension change by detection of sensor movements
- Choice of language for the user interface

RS232 interface.

A serial interface RS232 allows the transmission of measurements as well as the remote control of all the functions of the M3 thanks to ASCII commands or the MODBUS-RTU protocol



USB keyboard function.

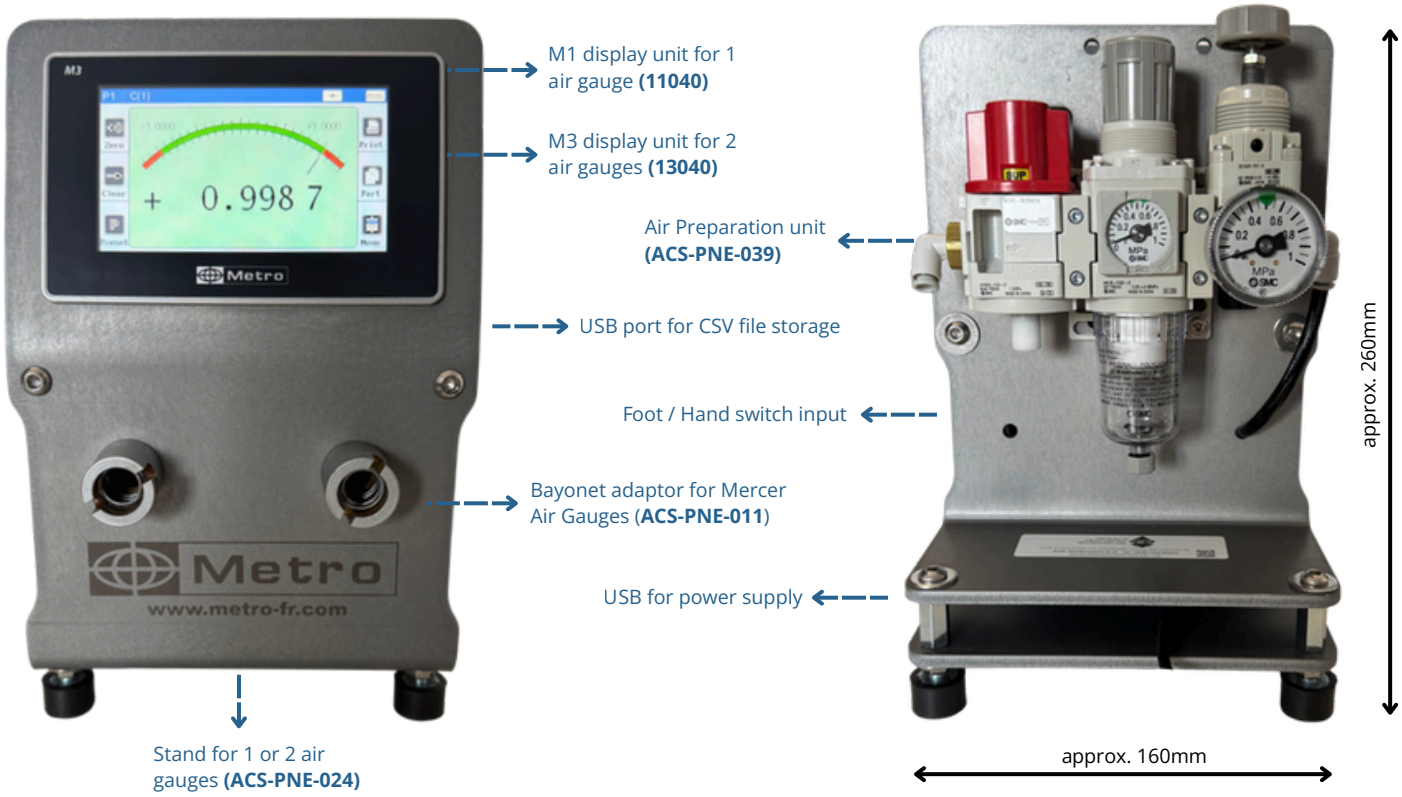
The M3 is equipped with a mini-USB connector with 2 functions:

1. Power supply via a supplied wall transformer.
2. Measurement transmission: When the M3 is connected in USB to a PC, it is detected as a keyboard with the standard drivers of your operating system (Windows, MacOS, Linux...). When you transfer measurements from the M3, they appear on your computer screen as if they had been entered on the keyboard. No need to install any specific driver or software.

Advantages of this feature:

- No risk of error when entering values
- Saves time
- Works everywhere on all software: Excel, SAP, Word....
- No need for a driver, interface software or computer knowledge: you just plug in the display and you can work

Parts list.



Mass: 2.60kg (approx.)

Part number	Product	
11040/System (Mercer)	**Metro Air gauging system with 1 input.** Complete with: M1 display unit (11040), UK mains cable (CBL-SEC-002), stand (ACS-PNE-024), air preparation (ACS-PNE-039), bayonet adaptor for Mercer Air gauges (ACS-PNE-011) and a set of restrictors (ACS-PNE-037).	
13040/System (Mercer)	**Metro Air gauging system with 2 inputs.** Complete with: M3 display unit (13040), UK mains cable (CBL-SEC-002), stand (ACS-PNE-024), air preparation (ACS-PNE-039), 2 x bayonet adaptor for Mercer Air gauges (ACS-PNE-011) and 2x set of restrictors (ACS-PNE-037).	
18020	Foot switch with jack connector	
18022	Hand switch (table button) with jack connector	
ACS-AFF-002	Ticket printer for M1/M3 + cable 45179	
ACS-AFF-003	QR Code reader for M1/M3/M400	
For any additional accessories / options please contact us for further details.		