



BROCHURE 2024

## **M-Bus**

Modular system for  
measurement acquisition

INDUSTRIE 4.0

# M-Bus

## Modular system for measurement acquisition



« The M-Bus network can be used to connect probes and measuring instruments of different brands to Metro displays, a PLC or a PC.»

These universal modules can be connected to each other to offer you a complete, scalable measurement acquisition solution.

## The M-Bus network

Do you want to use different types of sensor or measuring instrument on a manual control station or automatic machine?

The M-BUS is the ideal solution, with or without a Metro display. The strength of M-BUS lies in its great flexibility, modularity and scalability.

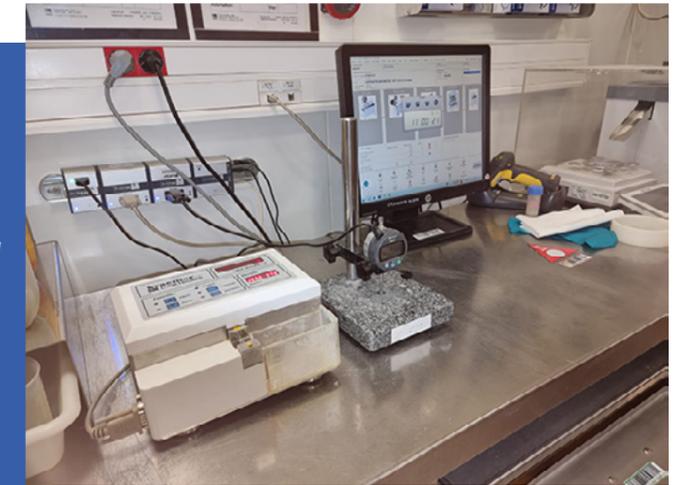
## Applications

This tablet manufacturer uses a variety of equipment for quality control, including hardness testers, comparators and scales.

Metro supplies acquisition systems for centralising the measurements from these various devices for import into quality monitoring software.

Installed here are: MB-RS module (master module for communication with the PC), MB-1D (for the comparator) and 2 MB-1R modules (for the durometer and the scale).

### Medical



This control system is used to check several dimensions on connecting rods using air gages. Several parameters are checked, including internal diameters, bend and twist. The measurements are temperature-compensated.

The operator enters the connecting rod serial number and other information on the M400 display screen via a QR-code reader. Finally, the measurements and associated information are then automatically exported to the customer's server in QDAS format via an MB-NET module.



### Automation

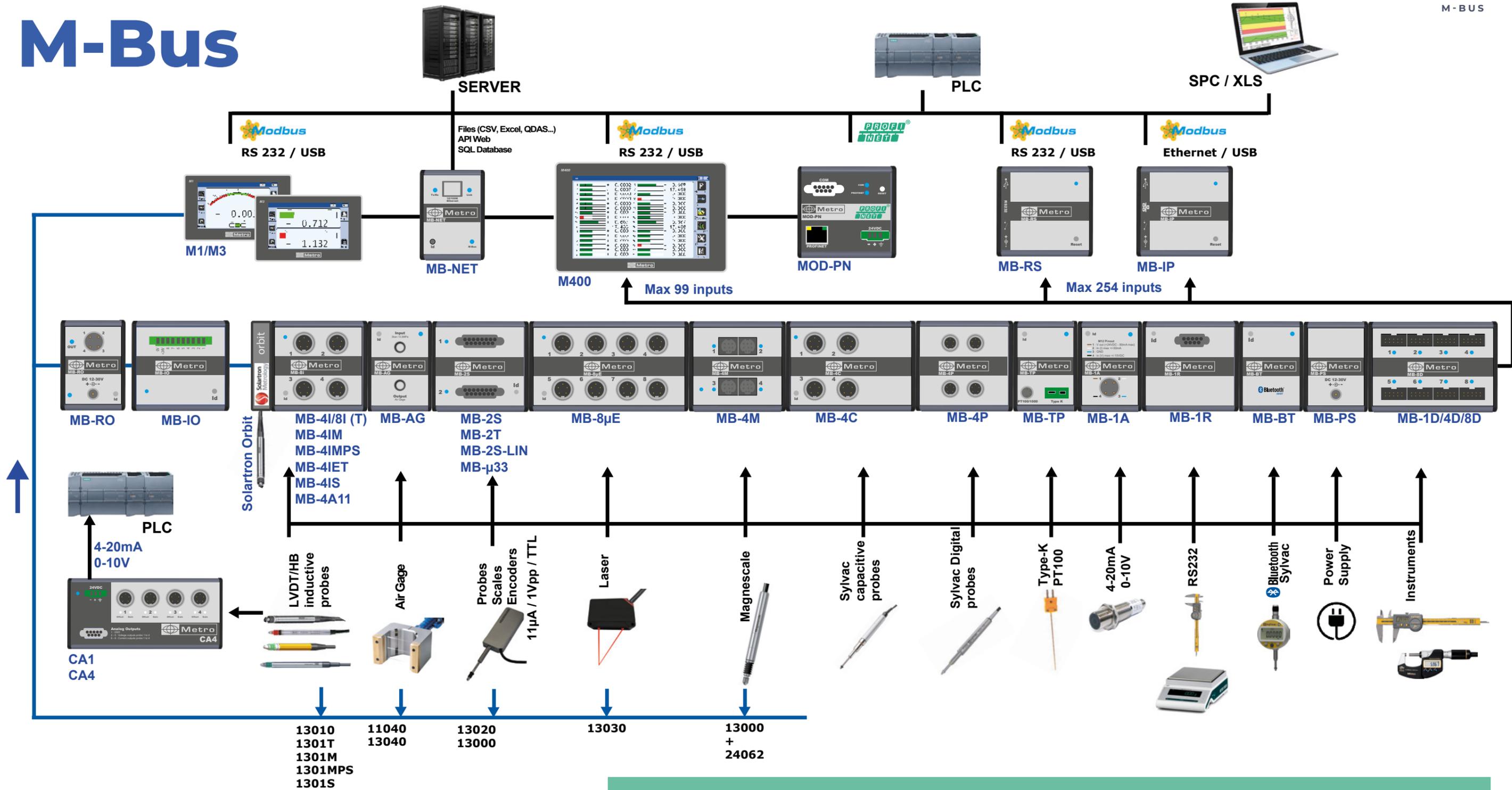
Automated sorting machine. Here, the M-BUS is used to measure 9 internal diameters on 2 air gages, and heights using inductive probes.

The whole system is controlled by an M400 display for calculating dimensions with their tolerances and calibrations, and Profinet communication is provided to the machine's main PLC.

### Automotive



# M-Bus



## Robust construction

The M-Bus modules are manufactured in an anodised aluminium profile for mounting on a DIN rail. The modules can be connected directly to each other via the M-Bus ports located on either side of the module (male / female port). These modules are very robust and suitable for use in industrial environments.



## Digitalise your measurement stations and enter the era of Metrology 4.0!

Thanks to our displays, such as the M400, you can connect all the measuring instruments in a production control station via the M-BUS network: probes, air gages, comparators, micrometers, callipers, scales, roughness testers, etc.

The interface guides operators through their measurement tasks, enabling them to collect information via QR codes (Batch number, operator name, etc.) and even input attributes characteristics.

At the end of the inspection, the operator can view all the data, including a few SPC curves to help with adjusting its machine, then export to the network in a format compatible with your quality system or ERP via the MB-NET module (file creation or export to web software).

All this is based on a Windows-free IoT system, eliminating any risk of virus or computer attack via these systems.

<b>M-Bus</b>	<b>Reference</b>
<b>Master Modules</b>	
M-Bus for connecting the entire M-Bus range to a PC or PLC (USB or RS232 + MODBUS-RTU connection)	MB-RS
M-Bus for connecting the entire M-Bus range to a PC or PLC (USB or Ethernet connection + MODBUS-TCP)	MB-IP
<b>Measurement acquisition modules</b>	
M-Bus for 4 or 8 inductive probes (half-bridge) METRO	MB-4I / 8I
M-Bus for 4 or 8 inductive probes (half-bridge) TESA	MB-4IT / 8IT
M-Bus for 4 Mahr type P2004M inductive (LVDT) probes	MB-4IM
M-Bus for 4 Marposs LVDT probes type F10-F25	MB-4IMPS
M-Bus for 4 Etamic LVDT probes type ZDBxx	MB-4IE
M-Bus for 4 Solartron LVDT probes type AX/xx/S	MB-4IS
M-Bus for 8 Micro Epsilon opto NCDT laser sensors	MB-8μE
M-Bus for 2 Heidenhain probes or scales with 11μA or 1Vpp signal (interpolation max 2000)	MB-2S
M-Bus for 2 Heidenhain probes or scales with 11μA or 1Vpp signal with channel linearisation	MB-2S-LIN
M-Bus for 4 Sylvac capacitive sensors (type P25)	MB-4C
M-Bus for 8 Sylvac Bluetooth instruments	MB-BT
M-Bus for 1 or 4 Digimatic instruments (or other via Metro adapter cable)	MB-ID / 4D
M-Bus for 4 Sylvac digital probes (Type P12D)	MB-4P
M-Bus for 1 Air Gage (Plug, Ring...). Requires air preparation ref ACS-PNE-003 or ACS-PNE-004 (air saving) + MB-RO	MB-AG
M-Bus for 2 TTL sensors, scales or encoders with SUBD-15 connector	MB-2T
M-Bus for 4 Magnescale sensors (e.g. Sony)	MB-4M
<b>Accessory modules - automation - communication</b>	
M-Bus for PT100/1000 sensor or type K thermocouple	MB-TP
M-Bus with 1 relay output (to control ACS-PNE-001 or 004 air preparation units)	MB-RO
M-Bus remote control with 4 programmable buttons (new version 2024)	MB-RC
M-Bus with 1 analogue input 4-20mA or 0-10VDC	MB-1A
M-Bus with RS232 input for instrument (list of compatible instruments on request)e)	MB-1R
M-Bus power supply for M-Bus	MB-PS
M-Bus with 8 optocoupled inputs/outputs	MB-IO
M-Bus relay for retrofitting old «Monocote» units fitted with relay card	MB-RL
M-Bus network communication for displays (network file generation)	MB-NET
<b>Compatible displays &amp; Accessories</b>	
M400 display (max 32 characteristics, 99 inputs, 128 programs)	45500
M1-M3 displays (1 or 2 characteristics, 1 or 2 channels)	11XXX - 13XXX



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