



# M400

Digital Readout for gauging probes





The M400 is a new generation of digital readout for metrology probes.

The M400 is the successor of the SPC400 that have proved its utility during almost 20 years with thousands of units installed in various types of industries.

The M400 enables to realize dimensional control from 1 to 99 probes. The M400 is universal (different probe technologies accepted) and powerful (up to 32 characteristics displayed in the same time, trigonometrical functions, statistical functions, PLC functions...)

Thanks to its intuitive menus and its general simplicity the M400 is a device that will be immediately adopted by every operator.

Its housing machined in a solid aluminium block offers to the M400 an incomparable robustness, even used in the most severe industrial environments. The M400 front face is covered by an integral polyester sheet that ensures a protection against liquid projections like oil. Connectors are oriented to the bottom limiting also liquids infiltrations.

- The M400 is available in 2 versions
- Version on a swivelling support (possibility to fix the support with 4 M5 screws)
  - Version for panel mounting



### Colour touch screen display



The M400 digital readout is fitted with a 7" colour display with the touch screen functions allowing an easy configuration of the device thanks to its icon desktop, its windows and its drop down menus. Measurement is displayed with bargraphs, up the 32 measurement characteristics simultaneously.

Virtual keyboards (alphanumerical, numerical and with trigonometrical functions) allows entering part's names, IP addresses, calculation formulas... An automatic system checks if data is entered with the right format and prevent any typing error.

The M400 is running on our own operating system (not on Windows CE or similar), this allows high performances of display in terms of probe's reading rate for example.



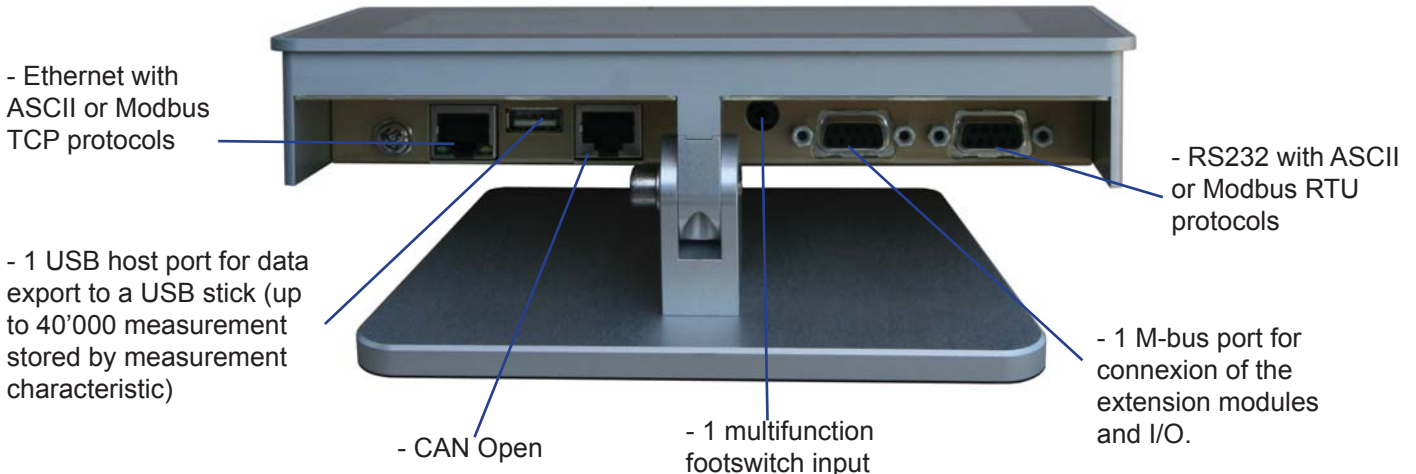
## Modularity and compatibility

One advantage of the M400 is its compatibility with different technologies of probes

Probes are connected on separate modules through the M-bus network. This modular configuration offers the following advantages :

- Flexibility of the probes number (up to 99)
- Possibility to use simultaneously different technologies of probes :
  - Inductive (Metro, Tesa compatible, Mahr)
  - Incremental linear encoders (Metro, Heidenhain)
  - Digital (Metro - Solartron)
  - Capacitive (Sylvac - under development)
- The M400 display unit can be installed far from the probes. Extension modules are connected by only one cable to the M400 without any risk of signal deterioration.

## Connection facilities and communication



## Automatism

The 8 I/O M-bus module enables to interface automatism devices to the M400 thanks to its 8 optocoupled I/O. The module can be fixed on a DIN rail.

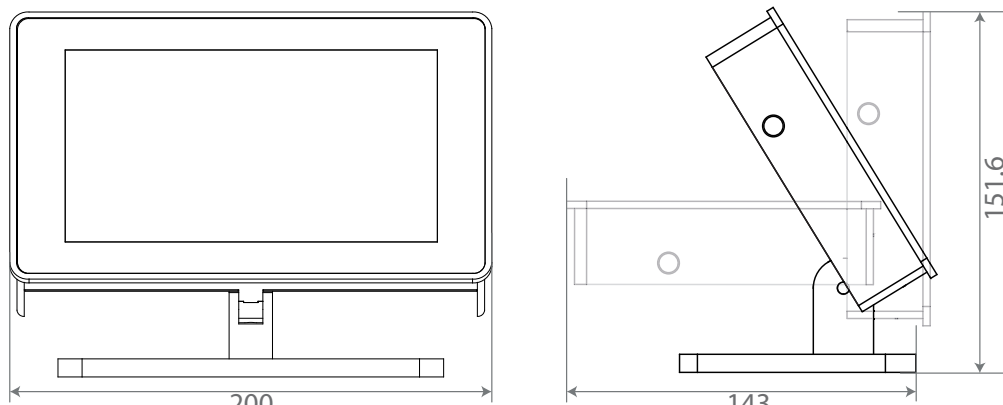
Modules are juxtaposed on the DIN rail ensuring the interconnection of the M-bus network. All the modules are connected to the «M-bus network» output of the M400. The connection of the input and outputs is done with screw terminal.

A simple programming language allows then to define the needed actions in functions of the inputs and the internal status of the M400. Thanks to this language the user can define an automatism program included in the control characteristics in order to perform the requested functions.

These remote I/O are made to automate the measurements. They bring the following additional functionalities :

- Direct automation of a machine by the M400 (SPC400)
- Automation of the measurement by an external system (PLC)
- Transmission of messages on the serial link or display of messages on the screen in function of programmable events.

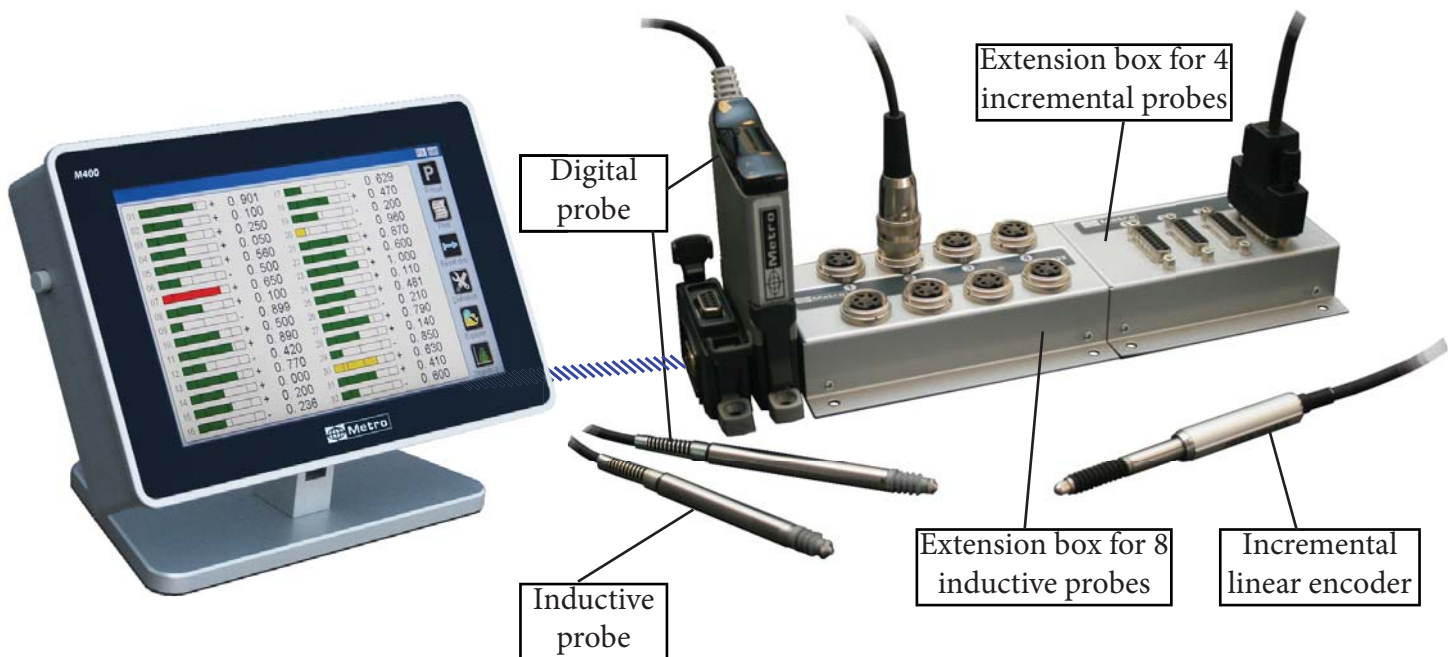
## Dimensions



## The M-bus network

The M-bus network has been developed in order to link easily probes and interfaces to measuring devices. This system brings the following improvements :

- The display unit receives digital data from the probes. The transmitted signal is therefore no anymore damaged by the cable length. The digital data are the same not depending of the probe's technology used (inductive, linear encoder...). The display unit is not anymore dedicated to a single technology of probe and it is therefore possible to choose the most adapted technology depending on each measuring case.
- A single cable is used to connect all the probes to the display unit, this greatly simplify the wiring.
- Capacity of 99 probes for the M400
- The M-bus network is able to receive probes individually as well as multi-probes systems.



Example of M-bus configuration

### Item references

Item	Reference
M400 display unit	45500
M-bus Extension module for 8 inductive probes	50022
M-bus Extension module for 16 inductive probes	51310
M-bus Extension module for 4 incremental linear encoder Heidenhain (TTL output)	50020
M-bus Extension module for 4 incremental linear encoder Heidenhain (1Vpp - 11µA output)	50026



Metro  
Rue de la Jonchère  
74420 Boège  
France

Phone. +33(0)4-50-39-08-49  
Fax. +33(0)4-50-39-08-33  
E-mail : info@metro-fr.com  
Web : http://www.metro-fr.com

Your distributor

M4ENI000512