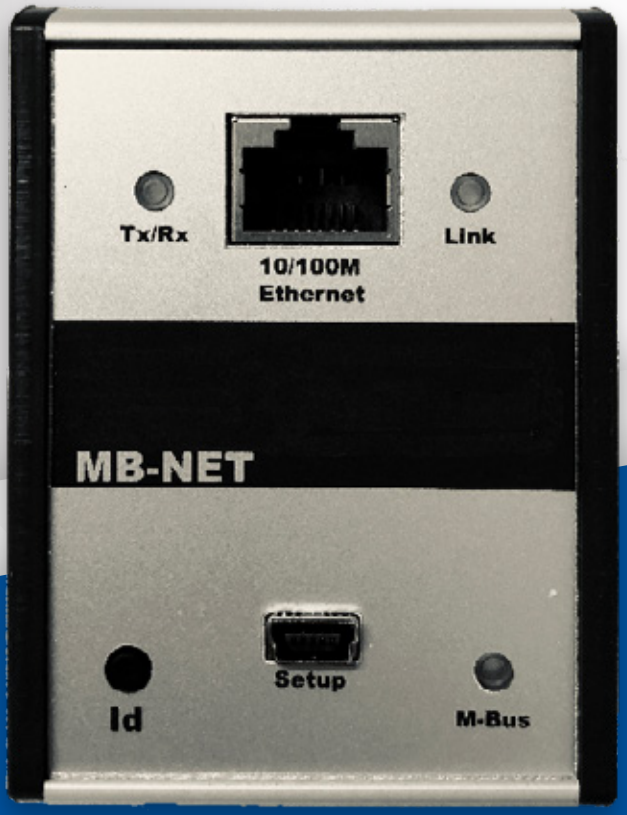
QPT

MESSTECHNIK



qpt.de • made for precision

MB-NET

MODUL

MB-NET-Modul

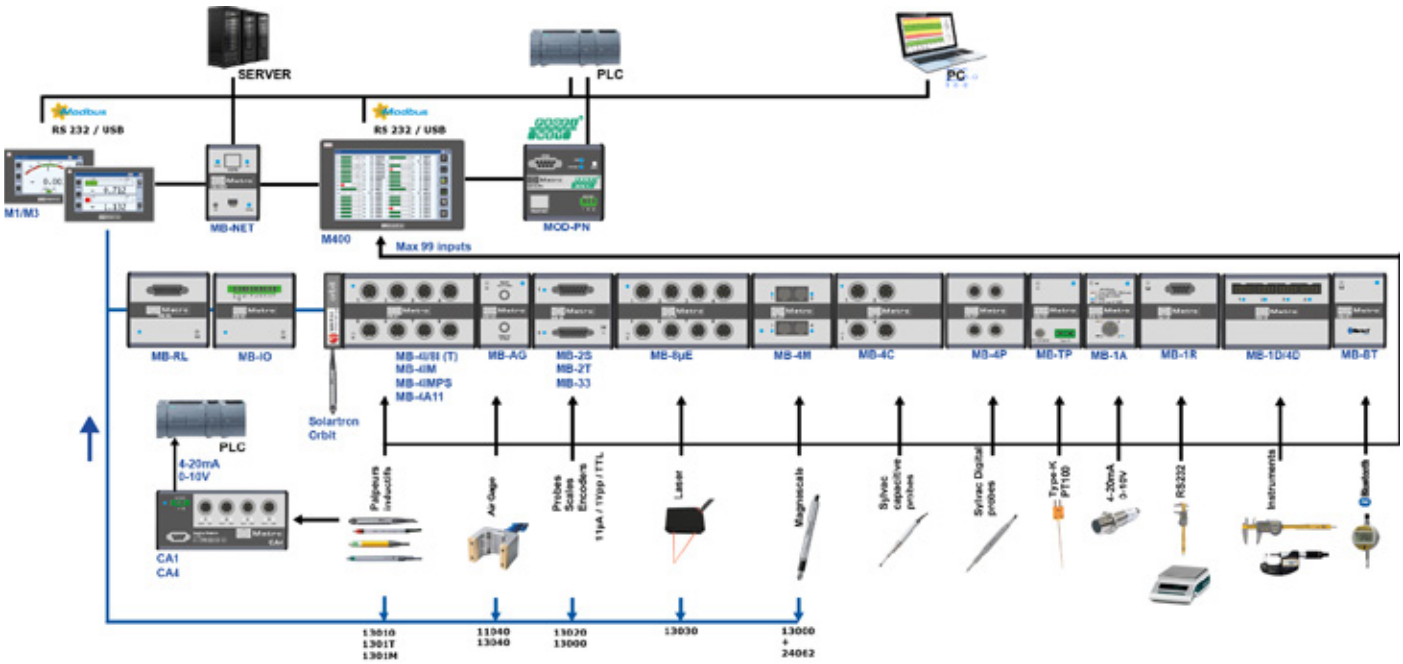
The MB-NET module allows to connect a digi display on the network of the company.
The system consists on a package including the module itself (hardware) + a Service-type software.
Once the system is installed and configured, measuring files can be generated from the digi displays and placed on a defined folder on the network.
It allows also to program the digi displays from a remote place.

The MB-NET system is compatible with the following displays:

- digi 400plus
- digi 3plus (air gage, inductive, Heidenhain)

It might require a firmware update of your existing displays, if they were purchased prior to the existence of the MB-NET system.

The diagram on the next page shows the connection possibilities.



digi displays

Advantages

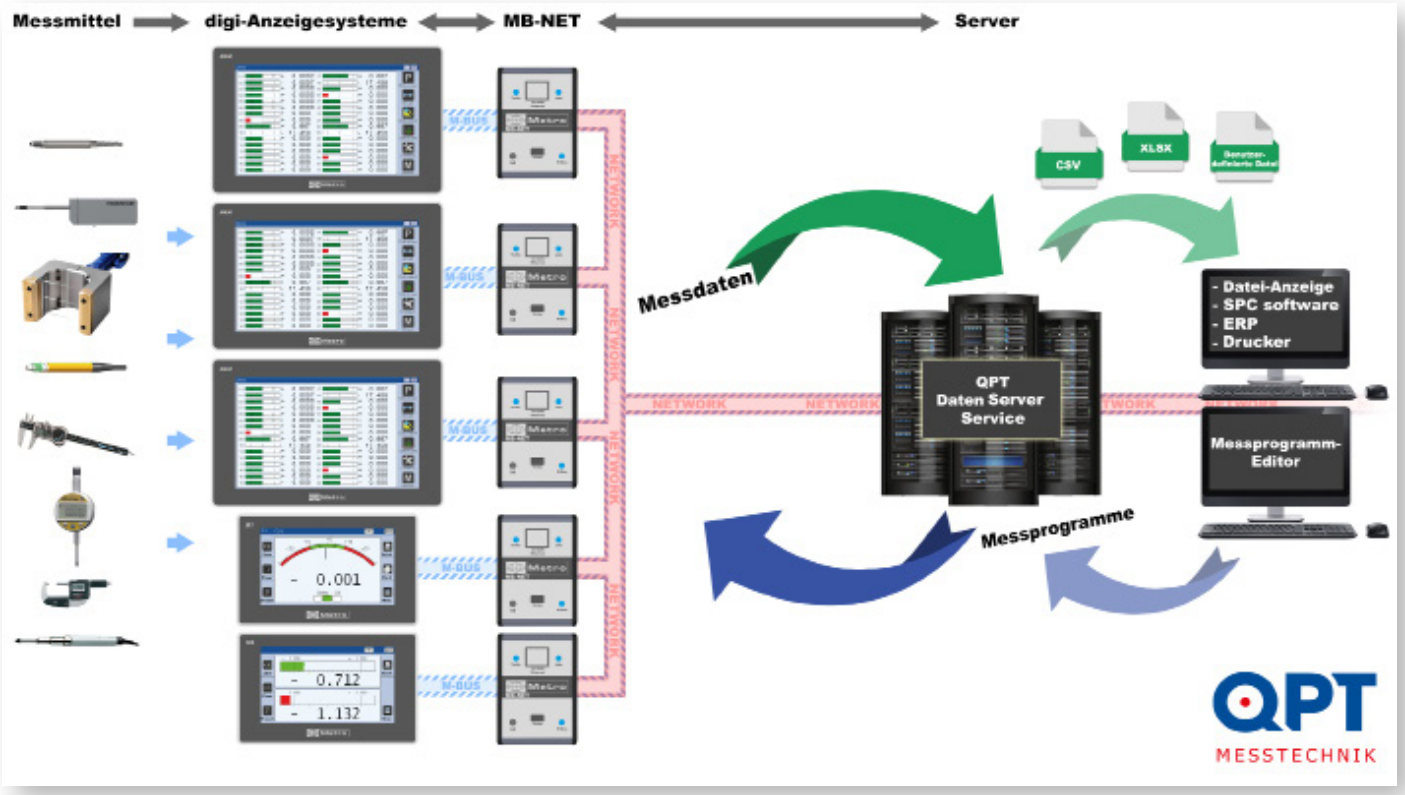
The digi display system is an embedded industrial electronics not running under windows or linux. It is compatible with harsh shop floor environment and are very user friendly to program and to use. It allows to digitalize the measuring stations by connecting a variety of measuring tools : air gage, probes, hand tools, weight scale etc. and to generate traceability and make further analysis possible with the measurement made.

The digi 400plus gives an immediate and very clear information with colored bargraphs depending on the measurement position compared to the part tolerances. The risk of error or wrong interpretation is therefore very limited.

On the digi 400plus display, the user has the possibility to input information related to the control, like batch number, operator name, machine number etc.
The digi 400plus is also able to display simple SPC curves (run chart, histogram with gauss curve, pareto etc).

MB-NET system connection

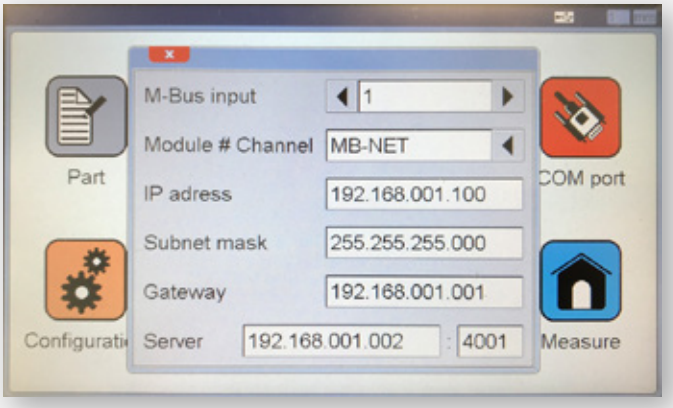
Principle of the MB-NET system connection



The MB-NET system operates as a client-server system.
The measurement and related information are sent from the digi 400plus to the MB-NET through the M-BUS RS485 protocol and then from the MB-NET to the server on a TCP frame.

The MB-NET is a TCP-Client
The "Metro Data Server" Service software is the TCP-Server.

The IP configuration of the MB-NET is done on the digi 400plus interface:



MB-NET system connection

The "Metro Data Server" Service software listen the connected clients (MB-NET and therefore the Metro displays) on a TCP Port. As a standard, the port 4001 is used but another port can be defined on a XML file located on the root of the private folder.

The "Metro Data Server" Service software must have the Network rights to access to the private and public folders.
The advantage of the service software is that it can run outside a user session on the server, with an auto launch.

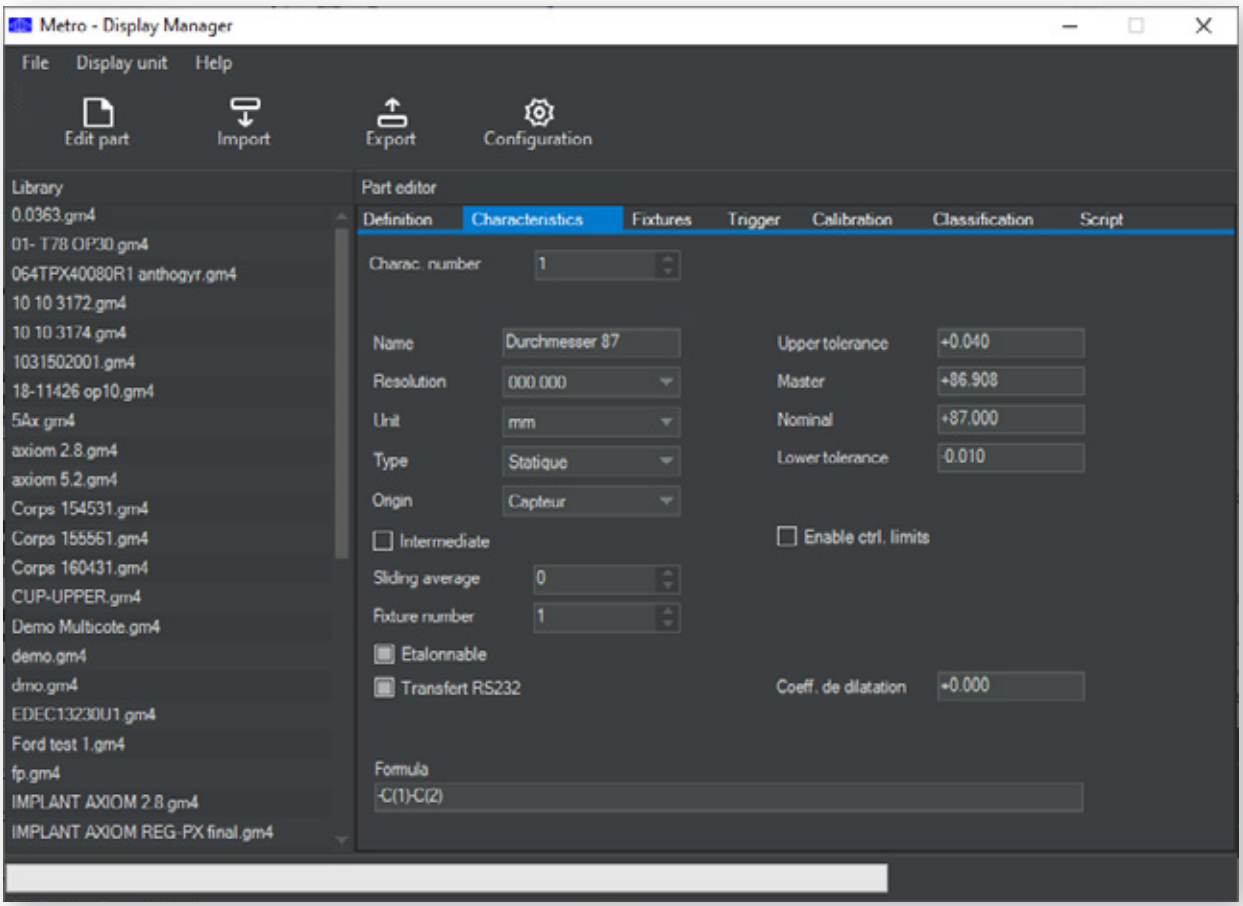
The communication between the MB-NET and the Server is secured:
- Retry in case of communication failure
- Integrity check of the frames through a CRC check
- If the server is not in operation, the MB-NET will inform the digi 400plus and a message will appear on the digi 400plus screen on a popup window.

Each MB-NET (and therefore each digi display) connected will create a private folder in which the log files will be placed.
At a defined frequency: number of parts or time (defined on the XML configuration file), the "Metro Data Server" Service software will copy the log file into a public folder.
Eventually during this copy the "Metro Data Server" Service software can use a plugin (placed on the public folder) that can convert the log file into a custom file. Example XML, CSV, XLS, or other to be defined with Metro. Thanks to this possibility it is therefore possible to generate files adapted to the customer's environment and software.
Once the files are on the Public folder, it is accessible by the users or by a SPC software or ERP.

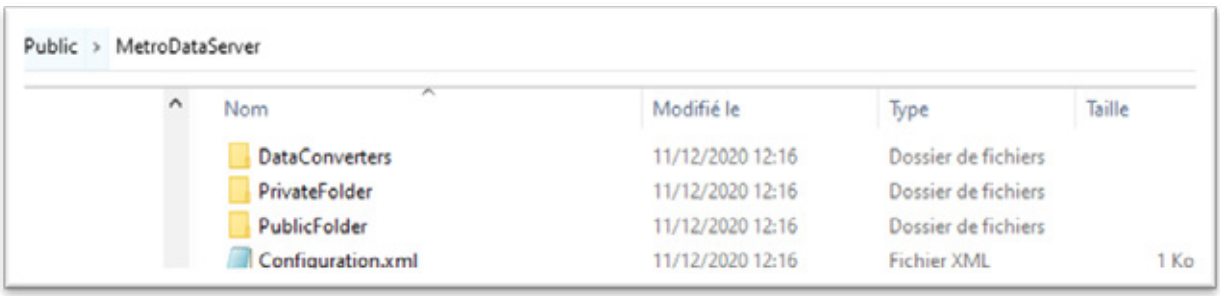
Remote configuration of the digi displays

On the other direction, it is also possible to place a *.GM4 file (digi 400plus configuration file) on the public folder, and then the related digi 400plus can be programmed.
The *.GM4 file can either be complete (full configuration except the MBUS configuration) or incomplete (example only the tolerances or master values),
The *.GM4 file is generated by another software from Metro : "Metro display Manager". But it can also be generated by another software in order to be fully integrated on the customer's environment.
Please contact QPT for further information.

Attachments

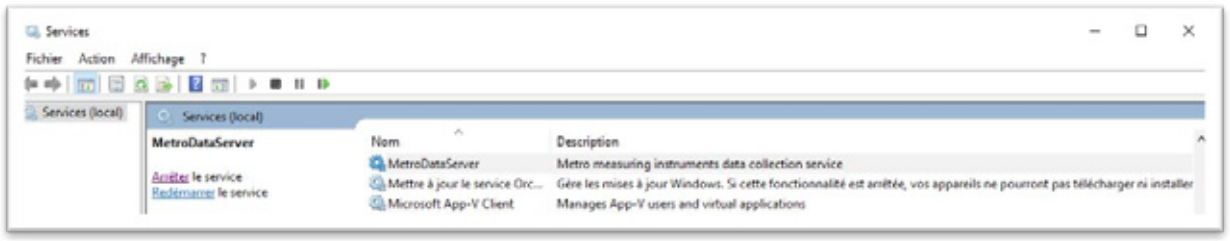


Screen shot of the Display Manager software



Screen shot of the content of the public folder

Attachments



Screen shot of the Metro Data Server in the service list.

```
<?xml version="1.0"?>
<Configuration>
    <NetworkFolderPath>C:\Users\Public\Documents\MetroDataServer\PublicFolder</NetworkFolderPath>
    <TimeSpan>10</TimeSpan>
    <PartSpan>1</PartSpan>
    <DeleteSourceFile>True</DeleteSourceFile>
    <ConvertFile>True</ConvertFile>
    <ConverterFolderPath>C:\Users\Public\Documents\MetroDataServer\DataConverters</ConverterFolderPath>
    <ConverterName>Customer</ConverterName>
</Configuration>
```

XML configuration file

	A	B	C	D	E	F	G	H	I	J	K
1	PART=Conrod_1547	Field 0:Workshop=WS_474	Field 1:Machine=451784_D0	Field 2:Product=457.54.484	Field 3:Inspection=Grinding	01=-00002.153000	02=-00002.174000	03=-00002.176000	STATUS=GO	DATE=20/11/26	TIME=14:38:58
2	PART=Conrod_1547	Field 0:Workshop=WS_474	Field 1:Machine=451784_D0	Field 2:Product=457.54.484	Field 3:Inspection=Grinding	01=-00002.153000	02=-00000.606000	03=+00000.021000	STATUS=GO	DATE=20/11/26	TIME=14:39:05
3	PART=Conrod_1547	Field 0:Workshop=WS_474	Field 1:Machine=451784_D0	Field 2:Product=457.54.484	Field 3:Inspection=Grinding	01=-00002.154000	02=-00000.219000	03=+00008.420000	STATUS=NO GO	DATE=20/11/26	TIME=14:39:06
4	PART=Conrod_1547	Field 0:Workshop=WS_474	Field 1:Machine=451784_D0	Field 2:Product=457.54.484	Field 3:Inspection=Grinding	01=-00002.154000	02=-00000.673000	03=-00000.051000	STATUS=GO	DATE=20/11/26	TIME=14:39:07
5	PART=Conrod_1547	Field 0:Workshop=WS_474	Field 1:Machine=451784_D0	Field 2:Product=457.54.484	Field 3:Inspection=Grinding	01=-00002.154000	02=-00000.479000	03=+00000.163000	STATUS=GO	DATE=20/11/26	TIME=14:39:09
6	PART=Conrod_1547	Field 0:Workshop=WS_474	Field 1:Machine=451784_D0	Field 2:Product=457.54.484	Field 3:Inspection=Grinding	01=-00002.153000	02=-00002.173000	03=-00002.175000	STATUS=GO	DATE=20/11/26	TIME=14:39:22
7	PART=Conrod_1547	Field 0:Workshop=WS_474	Field 1:Machine=451784_D0	Field 2:Product=457.54.484	Field 3:Inspection=Grinding	01=-00002.153000	02=-00002.173000	03=-00002.175000	STATUS=GO	DATE=20/11/26	TIME=14:39:23

Example of raw log file with 4 special fields

For questions, technical advice or device demos: Contact us!

QPT Innovative Technik Handels GmbH

Headquarter München
Ölbergring 30a • D-83620 Feldkirchen
Tel. +49 (0)8063 97370-0
Fax +49 (0)8063 97370-10
info@qpt.de • www.qpt.de

Location Schweinfurt
Lindestraße 12a • D-97469 Gochsheim
Tel. +49 (9721) 730 88-0
Fax +49 (9721) 730 88-19
info@qpt.de • www.qpt.de

QPT
MESSTECHNIK

- MB-NET-Modul
- system connection with digi display device
- MB-NET system connection
- Remote configuration of the digi displays