# Application Note
## Connect digital HIRT probes to Metro M-Bus

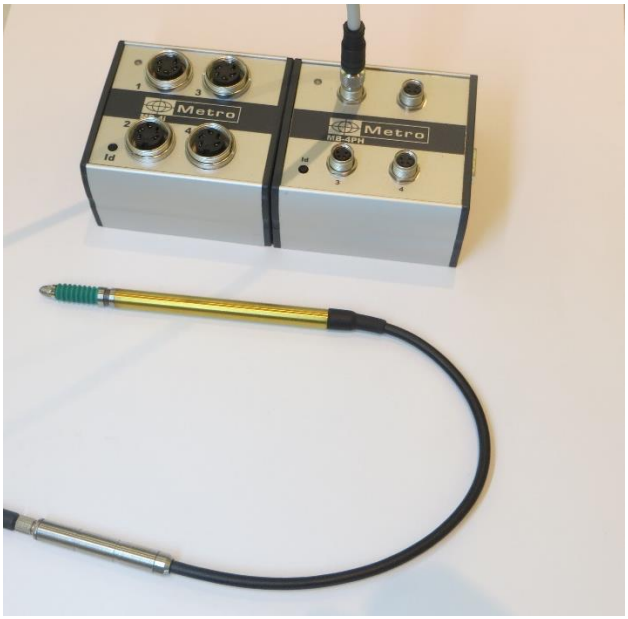
**Introduction**
The company Metro has been a manufacturer of measuring electronics and display devices since 1986. By combining different connection modules, the Metro M-Bus allows the acquisition of measured values from various measuring devices, especially from inductive probes, micro-meters, incremental scales and others. The modules for analog and digital signal inputs and outputs also allow the connection of further sensors or actuators required for control purposes.
Digital HIRT probes are the continuation of the tactile half-bridge probes that have been successfully used in the market for decades. The combination of a high-precision, playfree-free ball bearing guide, a robust inductive measuring system and measuring electronics based on the latest ASIC technology has resulted in a smart sensor that can fully meet the requirements of the digitalised industry. A minimal total error, clear and traceable measurement results and other functions make tactile measurement more accurate, easier and more efficient.

**About the Metro M-Bus**


Various modules for sensors and a wide range of gateways (USB, RS232, Ethernet and others) cover a variety of metrological tasks, from simple measuring applications to multi-fixture arrangements. The display units available from Metro offer an efficient way to compactly implement even complex measuring tasks.

**Digital HIRT probes**
Digital HIRT probes consist of the transducer and remote electronics. This takes over the entire conditioning, signal processing, communication and device data storage. Due to this design, the sensor can still be clamped on the entire shaft. The probe is connected to a suitable master electronics or to an interface converter via a connecting cable.

**Connection to the M-Bus**
To setup a M-Bus system we refer to the corresponding documentation available from Metro. The MB-4PH module, designed for digital HIRT probes, can be installed and identified on the bus like all other available modules. The connection to the probe is made by a connecting cable (M8 to M5) available from PETER HIRT GmbH. Currently available lengths are 0.5, 1.0 and 2.5 m.




Measuring probes can be exchanged hot-plug. Means the sensor can be attached and dettached without a power down of the M-Bus.
The connected transducers appear as individual measuring points when the M-Bus is configured.

**Advantages**
Digital HIRT probes offer the metrological advantage of being a closed chain measuring unit. In-system errors (linearity and sensitivity) are largely eliminated. One of the most common sources of errors when using such measuring devices - the wrong configuration of sensitivities, graduation steps or similar become obsolete. A digital probe with a



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different measuring stroke can thus be quickly connected to a measuring channel - without changing any sensor configuration or setting.
The measuring result of Digital HIRT probes can be traced back to the corresponding length reference.
Digital HIRT probes carry all information to fully trace back their identity. Beside the aricle number, also the sensor name, the serial number, the provided measuring stroke and calibration information are stored.
Due to their mechanical design the probes can be dis-/connected on the point of measurement. In case of a failure this safe a lot of time in means of keeping the cable installed.

**Conclusion**
Digital HIRT probes can be easily connected to the Metro M-Bus via the MB-4PH module. The metrological advantages of the Smart Sensors can be fully used on Metro systems.

**Informationen**
Information about the M-Bus can be found on the website of Metro, www.metro-fr.com

Information, documents and further data about the HIRT digital probes are available on the webpage www.peterhirt.ch. In addition to the product specifications, the following contents can be found
- Drawing of the measuring device
- 3D model
- Operating instructions
- application notes
- Accessories Products
- Related Products

If you have any questions about the HIRT digital probes, please contact us at info@peterhirt.com.
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**Change note**

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