

DISMAFER



HEIDENHAIN



Preliminary
Product Information

MSE 1000

Modular Electronic Unit
for Multipoint Inspection
Apparatuses

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MSE 1000

Modular Electronic Unit for Multipoint Inspection Apparatuses

Production-integrated measurement is one of the central demands of modern manufacturing. Unlike a total measurement on a coordinate measuring machine in a separate room, special measuring apparatuses in the production department can minimize the duration of measurement and sometimes enable processes to rapidly adapt to the results. At the same time, such measuring apparatuses—which can be designed as stations for statistical process control (SPC)—also serve for statistical evaluation of the measured values and thus permit a qualified process control. They can be equipped with a large number of differing measuring devices.

These stringent requirements for the subsequent electronics can be met with the MSE 1000 modular electronic unit from HEIDENHAIN:

- Flexibility for adaptation to differing conditions of operations
- A variety of interfaces for connection of many measuring devices
- Fast communication with higher-level computer systems over Ethernet
- Outputs for controlling sorting switches, warning lamps, PLC, etc.
- Output of measurement results for documentation and further processing

Design

The user installs the MSE 1000 as a series of modules and configures it for his specific requirements. The individual modules permit connection of incremental, absolute and analog measurands, the output of switch signals, and communication over diverse interfaces. In all, over 250 axes or channels can be configured. In its basic configuration, the MSE 1000 consists of a power supply unit and a basic module. It can be expanded by further modules as needed.

Mounting

The MSE 1000 modules are easily mounted on a standard rail in a cabinet or on a mounting base (accessory). The individual modules are plugged onto each other and fixed together with a lock. This also connects the internal bus and the power supply. The module widths are selected so that the MSE 1000 is also suitable for a 19" housing.

Functions

The functions of the MSE 1000 are defined by the associated PC software.

MSEsetup

This software package is included with the basic module. It includes the basic functions of the MSE 1000:

- Configuration (modules, encoder inputs, data transmission)
- Diagnostics
- Data transfer to the PC
- Writing the measured values to an Excel table

MSEplus (option)

MSEplus is a universal software package for metrology and statistical process control in manufacturing. It offers the following functions in addition to the basic functions of MSEsetup:

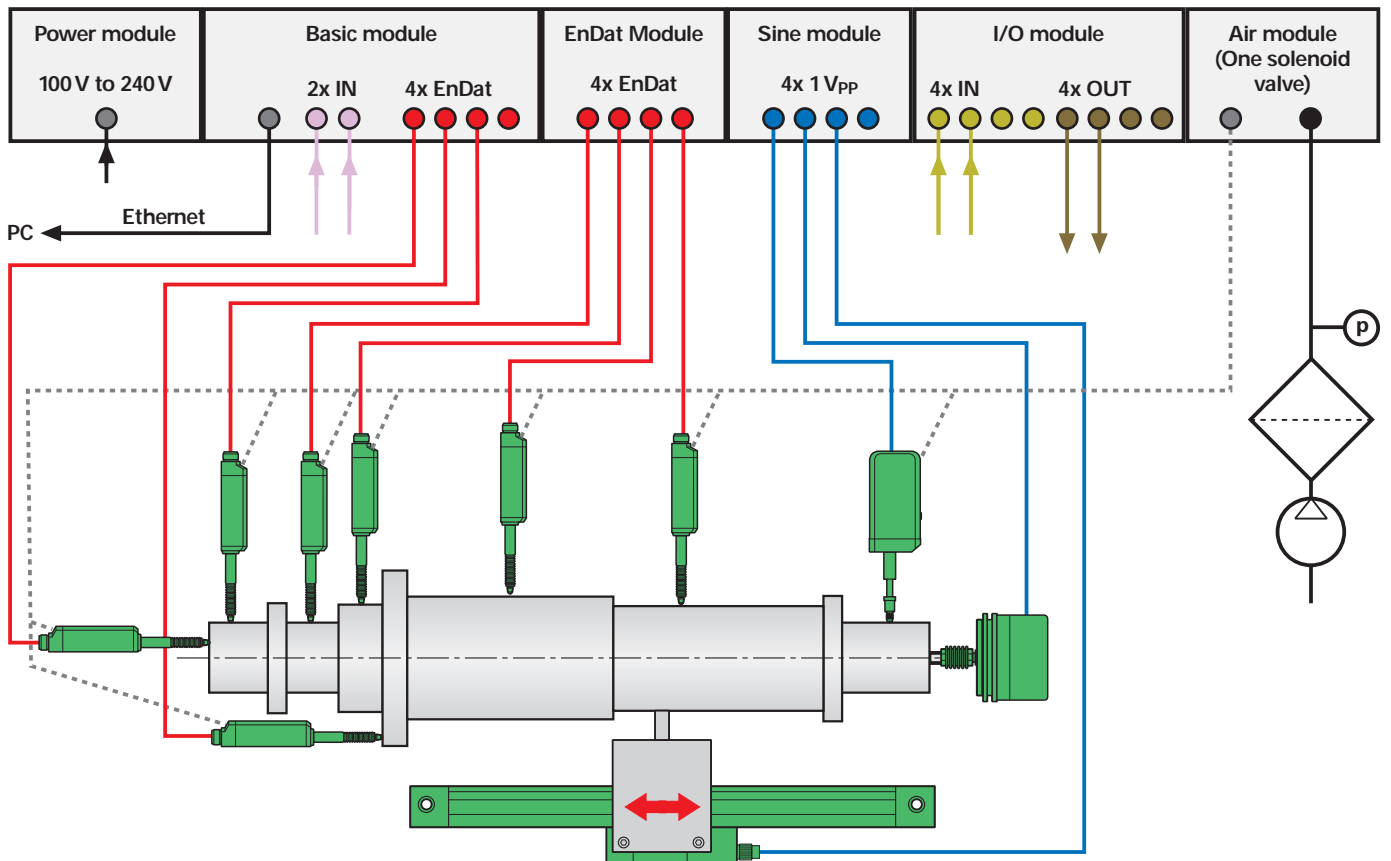
- Mathematical, trigonometric or statistical operations between measured values and calculated values
- Axis-specific temperature compensation
- Classification using tolerance and warning limits
- Functions or statistical process control (SPC)
- Fast measured value acquisition permits dynamic measurements
- Creation of inspection plans
- Automated measuring processes
- Control of switching outputs
- Graphical representation of the measurement results as graphs, bar charts or circle diagrams
- User management
- Import of 3-D CAD data
- Connection to the qs-STAT database

Ethernet driver (option)

This device driver is needed if the MSE 1000 is to be operated through a customer-specific software application. The Ethernet driver establishes communication between a PC and the MSE 1000 as well as transfers the data.



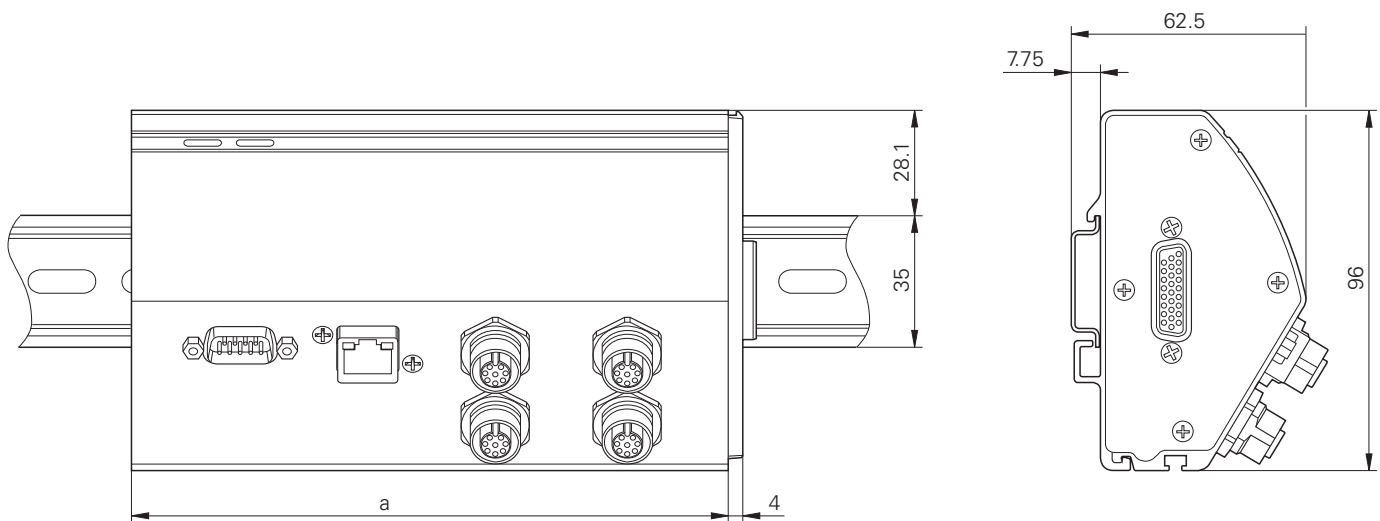
	Specifications
Measuring channels/axes	> 250; depending on the configuration
Data transfer rate	> 100 measured values per second; depending on the configuration
Data transfer	Standard Ethernet, IEEE 802.3
Addressing	Fixed IP address or DHCP
External latch inputs	2 (e.g. for foot switch)
Software	<p>MSEsetup: Graphic-supported configuration of the system, diagnosis of the encoders, read-in of measured data in Excel</p> <p>Ethernet driver for Windows (option) (Linux and LabVIEW in preparation): Integration of the MSE 1000 in the network for customer-specific software solutions</p> <p>MSEplus (option): Creation of an inspection plan, graphic representation of measurement results, customer-specific expansion of the inspection process over script language, import of 3-D data, SPC, connection to database</p>
Power supply	100 to 240 V ~
Operating temperature	10 °C to 45 °C
Relative humidity	40 % to 80 %
Protection	IP 40, optionally IP 65 (in preparation)
Mounting	Top hat rail, on mounting base or in electrical cabinet (specially conceived for 19-inch cabinet)
Accessories	Mounting base, cable channel, foot switch




Modules

Modules		Fundamentals	Connections	Width a
Required	Basis	Basic unit with complete functionality <ul style="list-style-type: none"> • Ethernet for connection to a PC • Encoder inputs • Switching inputs (e.g. latch) 	<ul style="list-style-type: none"> • Ethernet 10/100 • Four encoders with EnDat 2.2 or $\sim 1 V_{pp}$ • Switching input TTL 	159 mm
	Power supply	Power supply unit	Line voltage: 100 V to 240 V	159 mm
Additional	EnDat	Bidirectional encoder interface	4 EnDat-2.2 encoders	106 mm
			8 EnDat-2.2 encoders	159 mm
	Sinusoidal	Counter module for incremental encoders	4 inputs $\sim 1 V_{pp}$ interface	106 mm
			8 inputs $\sim 1 V_{pp}$ interface	159 mm
	Rectangular	Counter module for incremental encoders	4 inputs \square TTL interface	106 mm
			8 inputs \square TTL interface	159 mm
	Analog	Axis module for analog inputs	2 inputs	106 mm
Inductive	Axis module for inductive LVDT or HBT (half-bridge) measuring sensors	8 inputs	159 mm	
I/O	Floating inputs/outputs	4 relay outputs 4 TTL switching inputs	106 mm	

Modules providing connection to further encoders and interfaces are planned.



Dimensions in mm

 Tolerancing ISO 8015
 ISO 2768 - m H
 < 6 mm: ± 0.2 mm

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