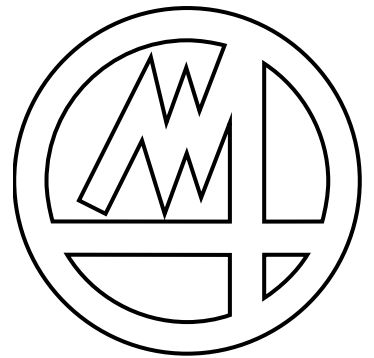


# M10

## ELECTRONIC MEASURING PLUG



MARPOSS

### APPLICATION

Designed to check bore diameters within range 13-140 mm for inter-operational gauging on transfer machines, special purpose machines, and post-process gauging stations.

### ADVANTAGES

The process automation, including part measurement and closed loop feedback for machine tool wear compensation, yields great improvements in terms of reliability and productivity.

### GENERAL FEATURES

**Plug body** – A nosepiece with or without self-centering function is available within the system standard configuration.

**Output signal setting** - The plug is provided with a special buffer that can be set in order to switch the output signal from HBT (summed or separated) to LVDT (summed or separated as well).

The separated signals mode, two output channels, allows for center position detection.

**Reliability** – A simple design with high quality components and a severe testing campaign result in a very reliable product.

**Robustness** - Protected for use in harsh machine tool environments. Coolant and chip proof.

**Part cleaning** – The measuring section of the part to be checked is cleaned by an air-blow-off system.

**Safety** - A recoiling system, rigid or floating, is provided in order to save the plug integrity in case of improper positioning of the part or excessive overstock.

**Connection to electronics** - The gage connected to Gage Pod can perform complex dynamic applications and statistical analysis.

**Delivery time** - More efficient commercial and productive procedures, and a new configuration tool, yield a delivery time of only 6 weeks.



## BASIC CONFIGURATION

There are three different types of plug, depending on the value of the diameter of the part to be checked:

- type A for range 13-21 mm (fig. 1)
- type B for range 21-45 mm (fig. 2)
- type C for range 45-140 mm (fig. 3)

Contacts made of diamond, carbide or carbide with DLC treatment are available. Special applications are provided upon request.

## ACCESSORIES

For an easy fit to the machine, two different recoiling system can be provided:

- Quick connection with rigid recoil
- Quick connection with floating recoil (for a minimum gap between bore and nosepiece).

The application may be completed with the following:

- Zero-setting master rings made of hardened and stabilized steel, built within 25% or 10% of the part tolerance (fig. 4).
- Master ring holders for plugs with vertical axis (fig. 5).
- Extension cables 3-6-10-15 m long.
- Thermal probe.

## TECHNICAL SPECIFICATIONS

2.77 $\sigma$ REPEATABILITY WITH $Ra \leq .8$	< MAX ( 7% of the tolerance; $0.9 \mu\text{m} - .000045''$ as absolute limit )
MEASURING RANGE	$\pm 500 \mu\text{m} ( \pm .020'' )$
TIR BETWEEN PLUG CENTERING DIAMETER AND NOSEPIECE	$50 \mu\text{m} ( .0020'' )$
PLUG THERMAL DRIFT ON MASTER	$< .3 \mu\text{m}/^\circ\text{C} ( .000012''/^\circ\text{C} )$
IEC PROTECTION DEGREE	IP67
NET WEIGHT DEPENDING ON APPLICATION RANGE	from 0.65 to 4.1 Kg (from 1.43 to 9.04 lb )

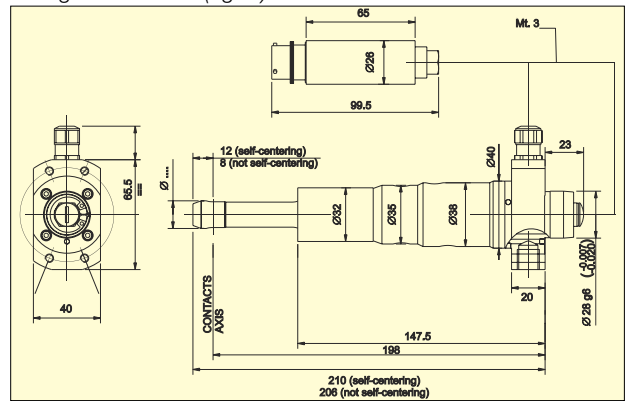
(fig. 4)



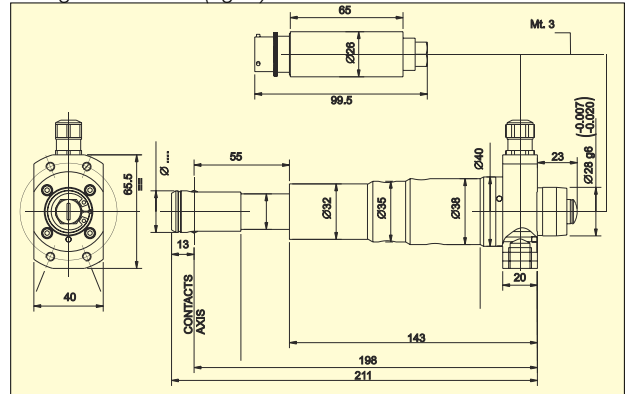
(fig.5)



Range 13-21 mm (fig. 1)



Range 21-45 mm (fig. 2)



Range 45-140 mm (fig. 3)

