



## GAUGE FOR GRINDING MACHINE

Process optimisation, part quality, real time control are some key elements for industrial production to be a success.

For dimensional control on grinding machines, the latest system from Marposs includes the new **P3ME** electronic unit that represents a precise, reliable, economic and compact solution.

### Requirements:

- Parts having small tolerances
- Avoid effect of grinding wheel wear
- Operator influence minimised
- Integration with machine logic
- Harsh working environment
- Size controls of parts with restricted access
- Consistent process
- Short cycle time
- Maximum uptime

### Solution:

The **P3ME** when connected to Marposs measuring heads can position the part and control the part dimensions in various types of grinding machines. The operator can view the analogue meter and digital display for part status in real time and the set of LEDs show the signals to the machine control system.

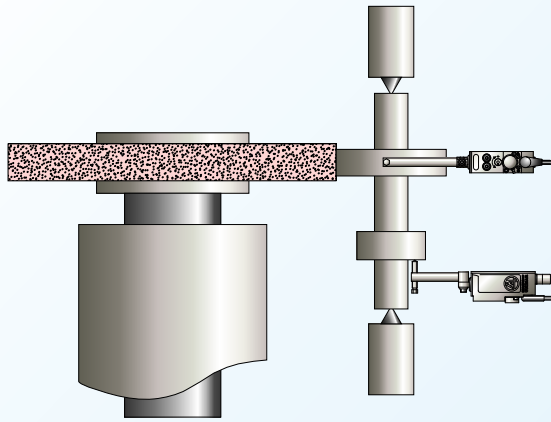
For over 50 years Marposs has understood the grinding machine environment, our range of systems are able to withstand the harsh process while being in direct contact with abrasive grit, metallic particles, cutting oils and aggressive coolants.

### Benefits

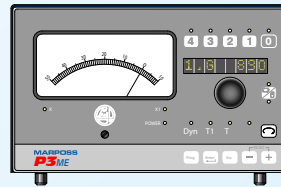
- Part production within tolerance
- Cycle time optimization
- Direct presence of an operator is not required
- Constant productivity is assured and maintained
- Grinding wheel wear compensation
- Immediate payback due to production throughput improvement

# System application

Here below are only some examples of possible applications

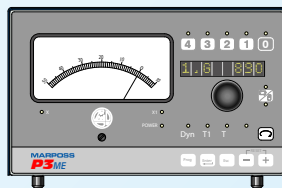
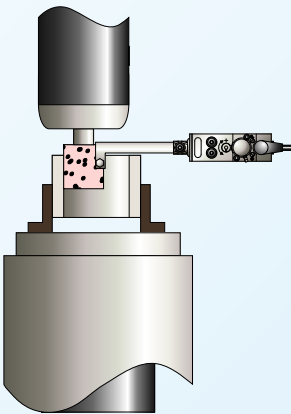


**External grinding machine**  
(smooth or interrupted surfaces,  
with or without passive positioning)

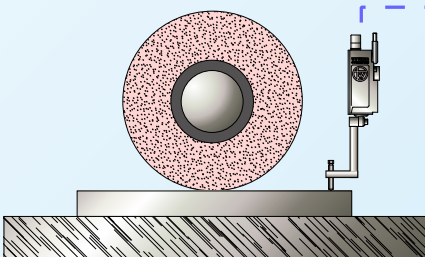


MACHINE  
LOGIC  
INTERFACE

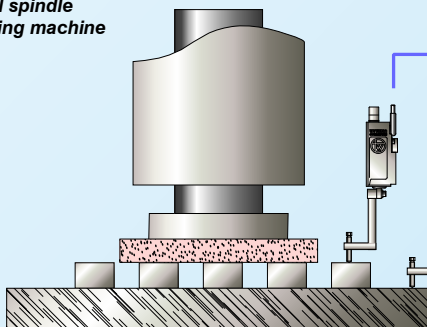
**Internal and reciprocating grinding machine**  
(smooth or interrupted surfaces)



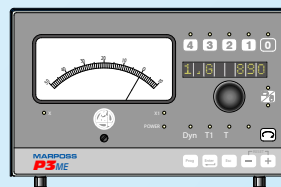
MACHINE  
LOGIC  
INTERFACE



**Horizontal spindle surface grinding machine**



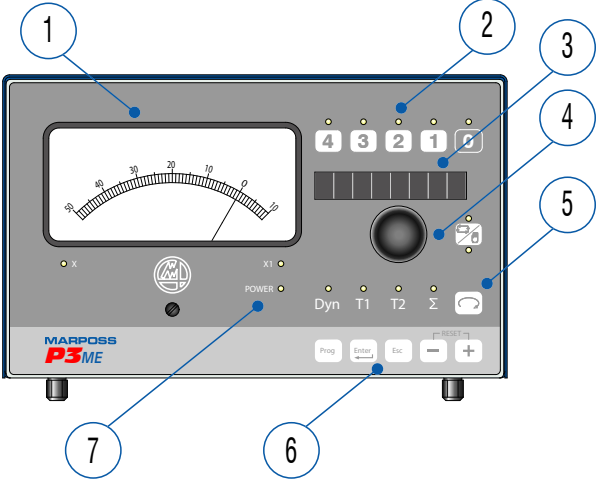
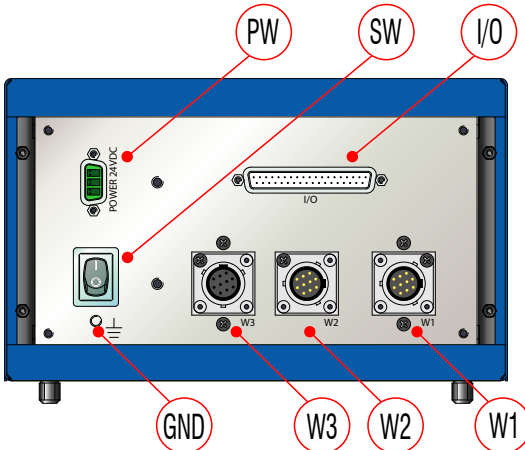
**Vertical spindle surface grinding machine with rotary table**



MACHINE  
LOGIC  
INTERFACE

**Surface grinding machines**  
(smooth or interrupted surfaces)

# Layout

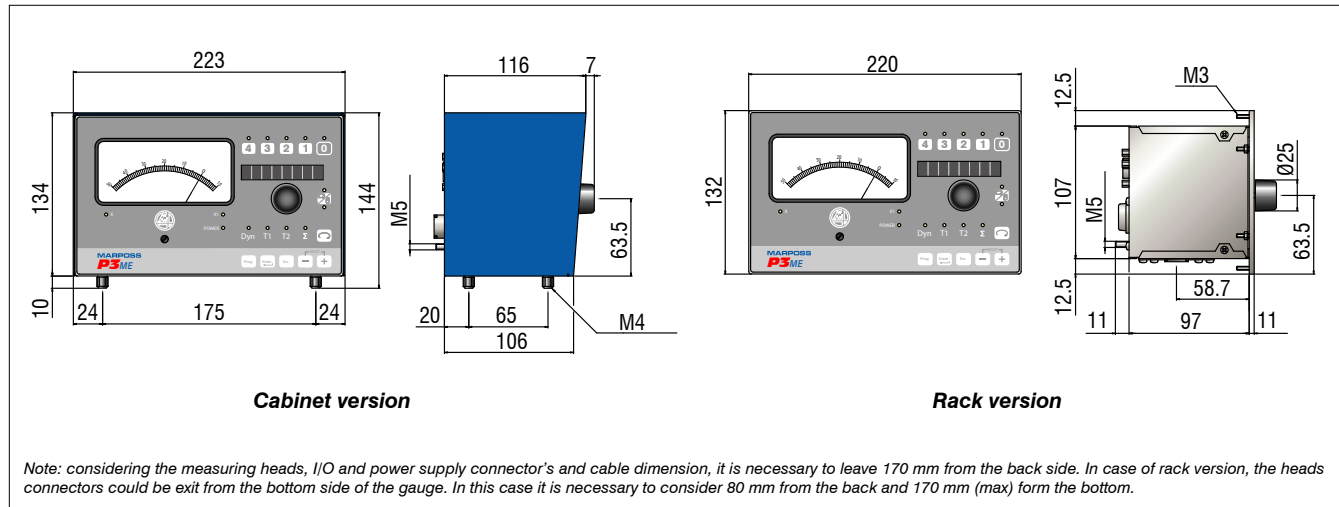
Front		
	1	<b>Analogue indicator</b> In-process cycle measure
	2	<b>In-process cycle controls</b> Grinding wheel progress indication (LED) Controls trigger regulation (buttons)
	3	<b>Alphanumeric display</b> Positioning cycle measure display Programming menu display Zero adjust display Alarms display
	4	<b>Regulation knob</b> Zero correction Menu programming selection
	5	<b>Channel selector</b> Selection of the measuring head and single transducer
	6	<b>Keyboard</b> Programming and data modification
	7	<b>Power supply</b> LED
Rear		
	W1	Channel #1/2 Veam connector 10 pin (male)
	W2	Channel #2 Veam connector 10 pin (male) - optional
	W3	Analog output Veam connector 10 pin (female) - optional
	I/O	Machine logic interface Cannon connector 37 pin
	PW	Power supply 24 Vdc Phoenix connector 3 pin
	SW	Power switch on/off
	GND	Ground connection M5 socket

### I/O features

Measuring cycle	Type	Signal	Use at machine side
In-Process grinding	Out	5 controls	Grinding wheel feed and spark-out cycle control
	Out	Alarm	Power supply, I/O, gauge, head failure indication
	In	Memory synchronization	Measure hold when the head's contacts don't touch the part. This control can also be done automatically by the gauge itself.
	In	Pulse Feedback	Wheel wear compensation
Part Positioning	Out	Measure value	Part position value in BCD or binary format
	Out	Alarm	Power supply, I/O, gauge, head failure indication



# Specification and dimensions



## Technical specifications

STRUCTURE	Cabinet or Rack
VERSION	1 to 2 channels (LVDT Marposs heads)
MEASURING CYCLES	In-process grinding Part positioning
MEASURE RANGE (In-process gauging)	According to dial indicator scale: 100-0-20 (+1000 ÷ -200 μm) 50-0-10 (+500 ÷ -100 μm)* 10-0-2 (+100 ÷ -20 μm)
MEASURE RANGE (Part positioning gauging)	±2000 μm*
POWER SUPPLY	24 Vdc (-15% / +20%)
POWER CONSUMPTION	42 W (max)
POWER On/Off LED	On front panel
WORKING TEMPERATURE	5° to 50°C
STORAGE TEMPERATURE	-25° to 70°C
WEIGHT	2.2 kg
PROTECTION DEGREE (IEC 60529 standard)	IP54 (front panel)
MACHINE CNC CONTROL I/O's	24 Vdc optoinsulated (37 pin Cannon connector)
I/O SIGNALS	Sink & Source
	IN current 5 mA OUT current 100 mA

ANALOGUE OUTPUT	T1	10 mV/μm
	T2	10 mV/μm
	In-process (according to dial indicator)	10 mV/μm (100-0-20 scale) 20 mV/μm (50-0-10 scale) 100 mV/μm (10-0-2 scale)
DISPLAY	8 alphanumeric digits	
ELECTRICAL SAFETY STANDARD	EN 61010-1	
EMC IMMUNITY STANDARD	EN 61326	

(\*) = also available in inches

For a full list of address locations, please consult the Marposs official website

D6P00301G0 - Edition 06/2015 - Specifications are subject to modifications  
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