

MP2F

**Panel mounting professional
indicator with 1 channels**

Measure of : ● WEIGHT ● FORCE ● PRESSURE ● DISPLACEMENT ● TORQUE



Risoluzione STANDARD
 ± 50.000 div
 STANDARD Resolution

ACCURATEZZA
 $\leq \pm 0.01\%$
 ACCURACY

Smart

CE RoHS

15
 Stabilità a
 lungo termine
 Long term
 high stability

Alta Affidabilità
 High Reliability

"THE EVOLUTION OF THE SPECIES" after over 30 years of service in the various versions the new MP2F was born. Professional panel digital indicator with **1 input** suitable for receiving signals from strain gauge sensors, transmitters with voltage or current output.

It is particularly suitable for static and dynamic applications in industrial environments where it is necessary to make measurements of weight, force, pressure, displacement or torque.

To **ADAPT TO EVERY APPLICATION**, the instrument can be configured and customized so as to present the most interesting operating functions directly on the F1 key, such as: PEAK and UNLOAD.

The instrument works with a resolution of ± 50.000 divisions and an accuracy better than 0.010% thanks to a 24-bit Sigma-Delta internal AD converter and to a measurement control that occurs by switching at a frequency equal to that of sampling, this system ensures better suppression of disturbances due to offset drift and connecting cables.

The sampling frequency can be set from 2.5 samples per second up to 1200 (1.2kHz), thus being able to satisfy the needs of applications where a high response speed is required.

Input channels can be supplied in 4 different configurations:

- Version with **input for strain gauge transducers** with standard resolution of ± 50.000 div. suitable for working with load cells, force transducers, pressure transducers, torque etc ... with $\pm 2\text{mV} / \text{V}$ or $\pm 3\text{mV} / \text{V}$ output and 4-wire or 6-wire connection system.
- Version with **voltage input** with standard resolution of ± 50.000 div. suitable for working with pressure transmitters, torque transducers, etc. with $\pm 10\text{V}$ or $\pm 5\text{V}$ output.
- Version with **current input** with standard resolution of ± 50.000 div. suitable for working with pressure transmitters, torque transducers, etc. with 4-20mA or 0-20mA output and 2 or 3-wire connection.
- Version with **POTENTIOMETER input** suitable for working with linear or displacement transducers.

The instrument is equipped with:

- **4 DIGITAL INPUTS** programmable at 24Vdc.
- **4 programmable SET POINTS.**
- **4 RELAY OUTPUTS** with exchange contact that can be programmed to work in combination with the set points to realize simple automations or intervention logics.
- A rear panel **USB** port to connect directly to PC or Tablet.

In **OPTION** the instrument can be equipped with:

- An **analogue output** programmable in voltage ($\pm 10V$, 0-10V, $\pm 5V$, 0-5V) or current (4-20mA) with refresh rate equal to the conversion frequency of the input channel.
- An **RS232C** digital output to directly connect the instrument to a PC, PLC, **PRINTER** or to a **REPEATER**.
- An **RS485** digital output with **MODBUS RTU** protocol used to connect several instruments on the network to the PLC.

Other important features and functions are:

- RED LED display 8 segments of large size and high brightness.
- **ZERO** and **AUTOZERO** function to automatically zero the measurement if less than a programmed threshold.
- **HOLD**, **PEAK**, programmable **FILTER** function.
- **UNLOAD** function in order to measure the quantity of product discharged for example from a tank.
- **KEY LOCK** function to protect the instrument settings by unauthorized persons.
- 24-column **PRINTER** (option) connected to the serial port through which it is possible to print the measuring points with the data of the company that carried out the survey.
- **REPEATER** function: The instrument can be configured to display (in passive-slave mode) measurements coming from the RS232C serial channel (for example from another **MP2F** Master) for a remote display of the measurements. In this case all the local functionalities enabled on the **MP2F** Slave will be active (Setpoint, USB, etc).

MP2F can be accompanied by the program on PC **MPSupervisor (Option)** that allows an immediate interface through the USB port with the instrument and allows you to view graphs, to export to Microsoft Excel and to change all the main parameters of the instrument very easily.

Typical applications:

Automatic weighing and small dosing systems.

Level control systems on tanks, silos and hoppers.

Measurement systems integrated on test and test benches.

Measurement systems integrated in automatic processes.

Industrial process control systems.






Automatic testing and quality control systems in production lines.

Measurement control on board of materials testing machines.




Checking of spring measurements, friction detection, breakout forces, leakage tests.

Tests on protection and safety devices.

CONFIGURATION

INPUT	CH1 ± 2 mV/V, ± 3 mV/V ± 10 V, ± 5 V 4-20 mA, 0-20 mA POTENTIOMETER				
FUNCTIONS	POWER SUPPLY 220 Vac  NO External power supply	 USB 2.0 	PEAK UNLOAD Programmable FILTER ZERO AUTOZERO DIGITAL CALIBRATIONS	4 Set points 4 programmable relays outputs  Used for: <ul style="list-style-type: none"> • motor ON / OFF • valves ON / OFF 	4 Digital Inputs  Used for: <ul style="list-style-type: none"> • Remote manual commands • Direct commands from PLC

OPTIONS

OPTIONS	SERIAL COMMUNICATION: RS232C, RS485 MODBUS 	ANALOG OUTPUT refresh rate equal to the conversion frequency of the input channel 	POWER SUPPLY 115 Vac 24 Vdc	SOFTWARE: MP Supervisor Instrument Configuration Analysis, archive and test report 
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TECHNICAL DATA

NUMBER OF CHANNELS	1 (CH1)
ACCURACY	$\leq \pm 0,010$ %
LINEARITY ERROR	$\leq \pm 0,010$ %
INTERNAL DIVISIONS	24 bit
CH1 INPUT STRAIN GAUGE TRANSDUCERS	± 2 mV/V and ± 3 mV/V (max ± 3.5 mV/V)
RESOLUTION	± 50.000 div
TRANSDUCERS POWER SUPPLY	5 Vac (± 3 %)
BRIDGE CONNECTION	4 or 6 wires
BRIDGE RESISTANCE	from 100 Ω to 2000
MAX NUMBER OF STRAIN GAUGE CONNECTED IN PARALLEL	4 @350 Ω or 8 @700 Ω
CH1 INPUT VOLTAGE AMPLIFIED TRANSDUCERS	± 10 V and ± 5 V
RESOLUTION	± 50.000 div
TRANSDUCERS POWER SUPPLY	20 Vdc (± 1 Vdc)
CH1 INPUT CURRENT AMPLIFIED TRANSDUCERS	0-20 mA 4-20 mA
RESOLUTION	+50.000 div +50.000 div
TRANSDUCERS POWER SUPPLY	20 Vdc (± 1 Vdc)
CH1 INPUT POTENTIOMETER	Input ± 5 V , R min. 1 k Ω
POWER SUPPLY	5 Vdc
MEASUREMENT UNIT	Fixed on the front panel
LED RED Display	6 digit 7 segment display
CHARACTER HEIGHT	~ 13 mm
SENSOR CALIBRATION	Both in the POSITIVE and NEGATIVE range
FIELD LINEARITATION	From 1 to 5 points
ZERO FUNCTION	100% (on whole measurement range)
AUTOZERO FUNCTION	Programmable time and threshold range
PEAK FUNCTION	POSITIVE and NEGATIVE
UNLOAD	YES

KEY BLOCK FUNCTION	Enabled using a password
PROGRAMMABLE RESOLUTION	1 ... 100
PROGRAMMABLE DIGITAL FILTER	0 ... 5
PROGRAMMABLE DIGITAL POINT POSITION	0 ... 5
PROGRAMMABLE ACQUISITION FREQUENCY	from 2.5 to 1200 samples per second
KEY WITH PROGRAMMABLE FUNCTION	F1
PROGRAMMABLE SET POINT	4
24V DIGITAL INPUT	4
RELAY OUTPUT (SPDT form)	4
MAX TENSION	220 Vdc – 250 Vac
MAX CURRENT	500mA
MAX POWER	60 W – 62,5 VA
USB port on rear panel, type B Connector	Max Cable Length 3.5 m
NOMINAL WORKING TEMPERATURE	0... +50 °C
MAX WORKING TEMPERATURE	0... +50 °C
STORAGE TEMPERATURE	-20... +70 °C
TEMPERATURE EFFECTS on zero (10°C variation)	≤± 0,005 %
TEMPERATURE EFFECTS on full scale (10°C)	≤± 0,005 %
POWER SUPPLY	230 Vac ± 10 %
FREQUENCY	50/60 Hz
EXTERNAL PROTECTION FUSE	250 mA / 250 V
MAX. POWER REQUIRED	10 VA
PANEL MOUNTING CASE	DIN 43700
CASE MATERIAL	NORYL UL94 V-O
FRONT AND REAR PANEL MATERIAL	UL94 V-2
PROTECTION CLASS (EN 60529)	IP40 (solo pannello frontale)
DEGREE OF ENVIRONMENTAL CONT.	1
DIMENSIONS (H x L x D)	72 x 144 x 150 mm
DRILLING TEMPLATE (A x L)	68 x 138 mm
WEIGHT	~ 0,8 kg

OPTIONS

COMMUNICATION SYSTEMS



The analog output, USB, RS232 and RS485 are **INDEPENDENT** so it is possible to connect at the same time a PC , a PLC and a 24 columns serial printer.

SERIAL RS232C	MAX cable Length 13 m
RS485 MODBUS RTU (max 32 devices in multipoint)	MAX cable Length 1000 m
PRINTER	24 columns (RS232C)
On the report is it possible to print up to 3 header lines with the company data. A measurement point will be printed by pressing the key PRINT or using a remote digital command. You can print on both paper and adhesive labels.	
Analog Outputs	1
Current Output range (max 400Ohm)	4-20 mA
Voltage Output range (max 20mA – RL min: 1kΩ)	0-5 V, 0-10 V, ± 10 V, ± 5 V
RELAY OUTPUT (SPDT form)	5° Relay
POWER SUPPLY	115 Vac or 24 Vdc

COMPONENTS SUPPLIED



Mounting Brackets

DB9 connector for Transducer

CD with Manual and USB driver

COMPONENTS IN OPTION (purchased separately)



USB cable



RS232C cable

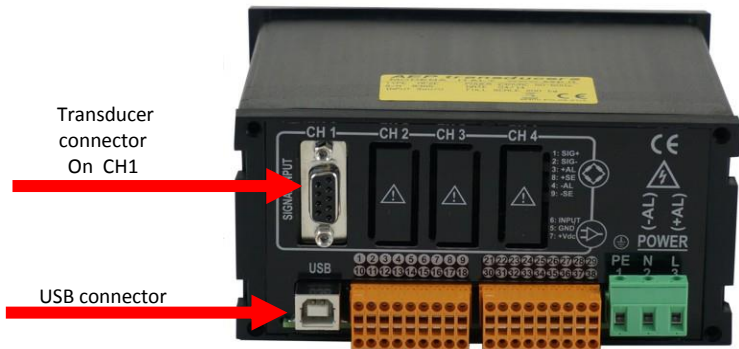


DB9 male connector for transducers



24 columns desktop printer

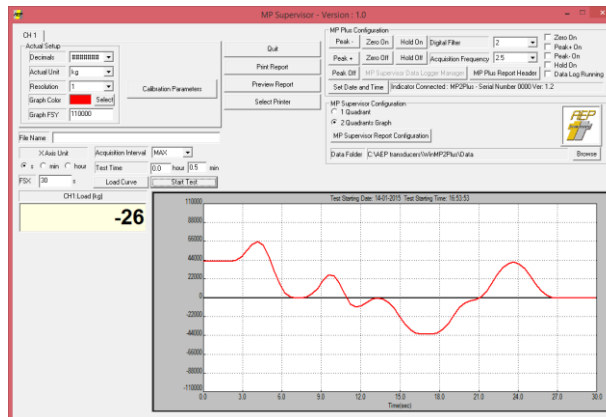
Electrical connections



Serial ports RELAYS Power Supply
Analog output connector
Digital inputs

MP Supervisor (Optional)

A dedicated program that allows an immediate interfacing through the USB port with the **MP2F** and allows you to view graphs, export data to Microsoft Excel directly from the PC and set all configuration parameters.

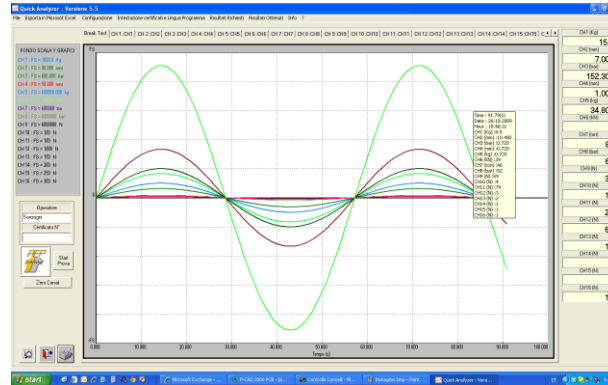


Quick Analyzer (Optional)

Quick Analyzer is a powerful software that allows you to connect efficiently and easily with all of AEP instrumentation transducers with RS232 or USB serial communication channels.

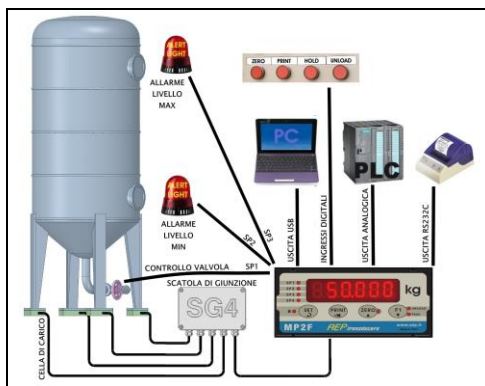
Through a simple configuration of the channels and to an effective setting of the sensor characteristics to which instruments are connected, you can check the communication status, run tests and save the curves obtained graphs, calculate the principal test results, print the relevant certificates and export the measurements in Excel.

Dedicated to recording and graphical analysis of up to 16 different instruments for measurements of force, weight, pressure, torque and displacement.

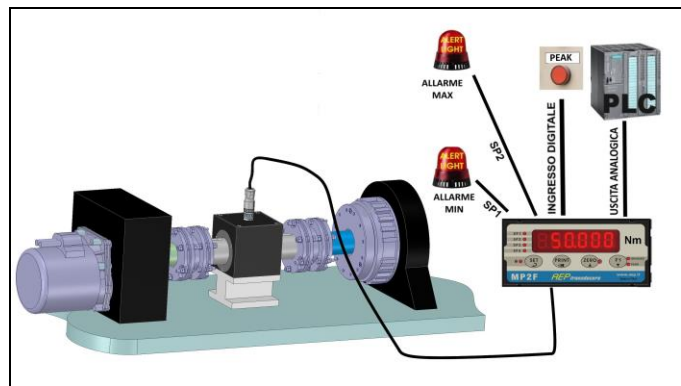


The test curves obtained can be displayed simultaneously in a single graph with respect to time or to other chosen channel, with different colors and can be set, for an easier recognition of the same, or individually (with respect to time) for easy analysis of details of a single sensor connected.

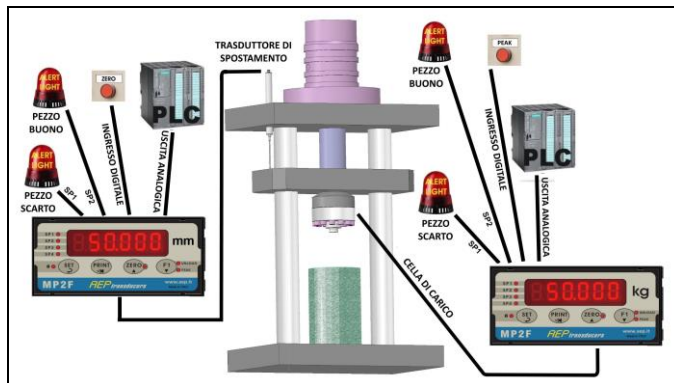
Typical application



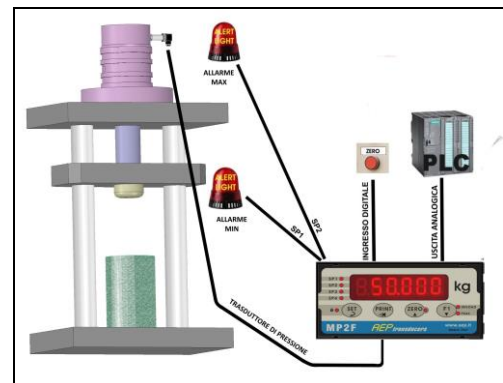
WEIGHING system of a silos.



Measurement system on brake test bench with torque control developed by the brake

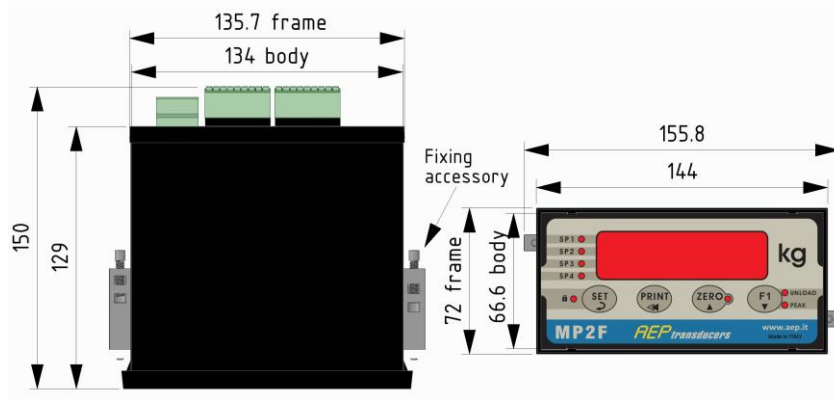


Measurement system on hydraulic or pneumatic press with direct control of FORCES and TRANSFER.

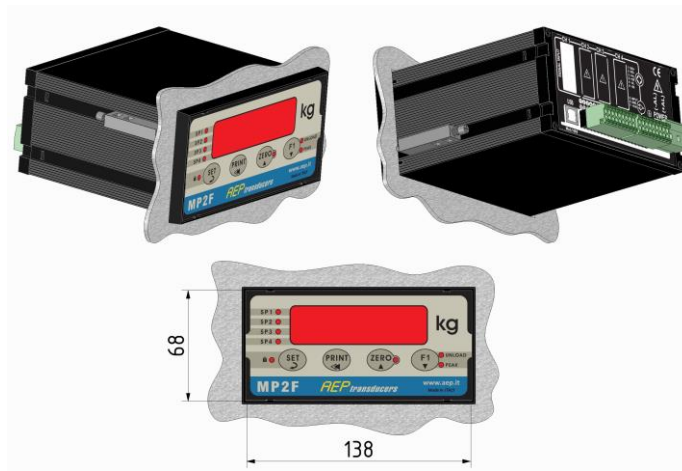


Measuring system on press with direct control of FORCE and TRANSFER.

Dimensions (mm)



MOUNTING PANEL APPLICATION



PURCHASE CODES

MP2F	Power Supply XXX	Analog Output XX	Serial X	Relay Output XX
	230 230 Vac	A1 Analog Output	S RS485 Modbus RS232C, Printer	R5 5° Relay
	115 115Vac			
	24 24Vdc			

Example: **MP2F 230** (MP2F power supply 230Vac base version)

Example: **MP2F 24 A1 S** (MP2F power supply 24Vdc + Analog output + serial port)

ALWAYS SPECIFY in the purchase order how to configure the input channels.

After the sale, the input type **can not be changed** by the customer.



Channel configuration example: **2 mV/V**, unit **kg**

Channel configuration example: **4-20 mA**, unit **bar**

Channel configuration example: **POTENTIOMETER**, unit **mm**