

In-mold measurement  
Mold marshaling system

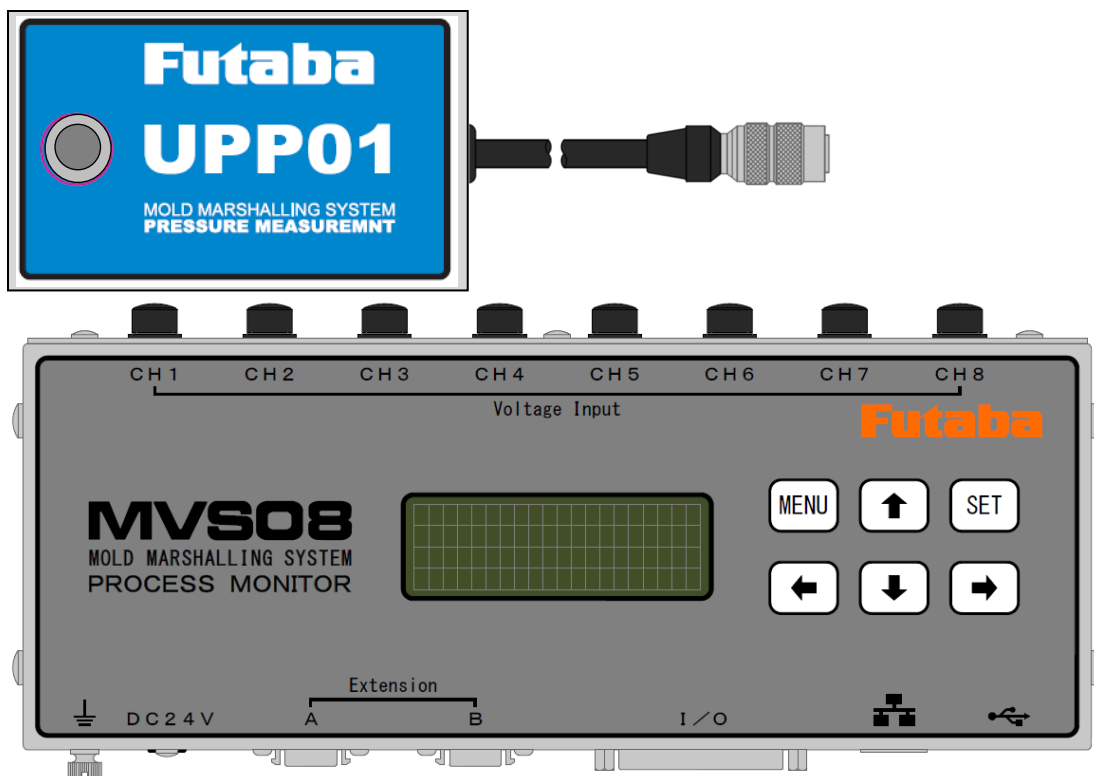
## MVS08 pressure preamplifier UPP01

### Instruction Manual

Thank you very much for purchasing the products of Futaba Corporation.

Please read this instruction manual thoroughly and use it for a long time.

Do not use the product in any way other than that described in the instruction manual.



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## SAFETY PRECAUTIONS (Be sure to read these precautions before using our products.)

### ■BEFORE USE

Read this "Safety Precautions" and the instruction manual carefully before use.

After reading this manual, keep it in a safe place for future reference.

Be sure to observe the following safety precautions when using the product.

Futaba Corporation assumes no responsibility or warranty for injuries caused by the use of the product contrary to these precautions.

■To ensure safe use of this product, the following warning messages are used in this manual.



**Warning** In the column of this indication, "the possibility of death or serious injury, etc. is assumed."



**Caution** In the column of this indication, "only possible injury or property damage is assumed"

### ■General notes

- Before and during operations, be sure to check that this product functions properly.
- Provide adequate safety measures to prevent damage in the unlikely event that our products should fail.
- Use outside indicated specifications or purposes and modification of our products will void any warranty of the functions and performance as specified of our products.
- Use this product in combination with other devices only after careful consideration, as the product may fail to satisfy its functionality and performance capabilities as a result of the conditions and environment in which it is used.

### ■Precautions



**Warning** Be sure to unplug the power cable from the outlet when installing or connecting the cable. Failure to do so may cause an electric shock or malfunction.



**Warning** Do not use a cable that is broken or has a damaged cable coating.  
Failure to do so may cause a fire, electric shock, damage to the equipment or malfunction.



**Caution** Do not splash water on the sensors, amplifiers, preamplifiers, or connection cables. Failure to do so may result in electric shock or damage to the equipment.

# Preface

The Mold Marshalling System UPP01 is a dedicated accessory that connects to the Injection Molding Monitoring System MVS08 to measure the in-mold pressure. One preamplifier is required per pressure sensor for measurement.

Refer to MVS08 Operator's Manual for more information on the injection molding monitoring system.

Please read this instruction manual thoroughly to ensure correct use.

If you have any questions, please contact our sales department.

## Standard accessories

■ This instrument has the following standard accessories.

After unpacking, check that all accessories are included.

- Pressure preamplifier main unit "UPP01".....1 unit
- Instruction manual (this booklet).....1 pc.

## Handling Precautions

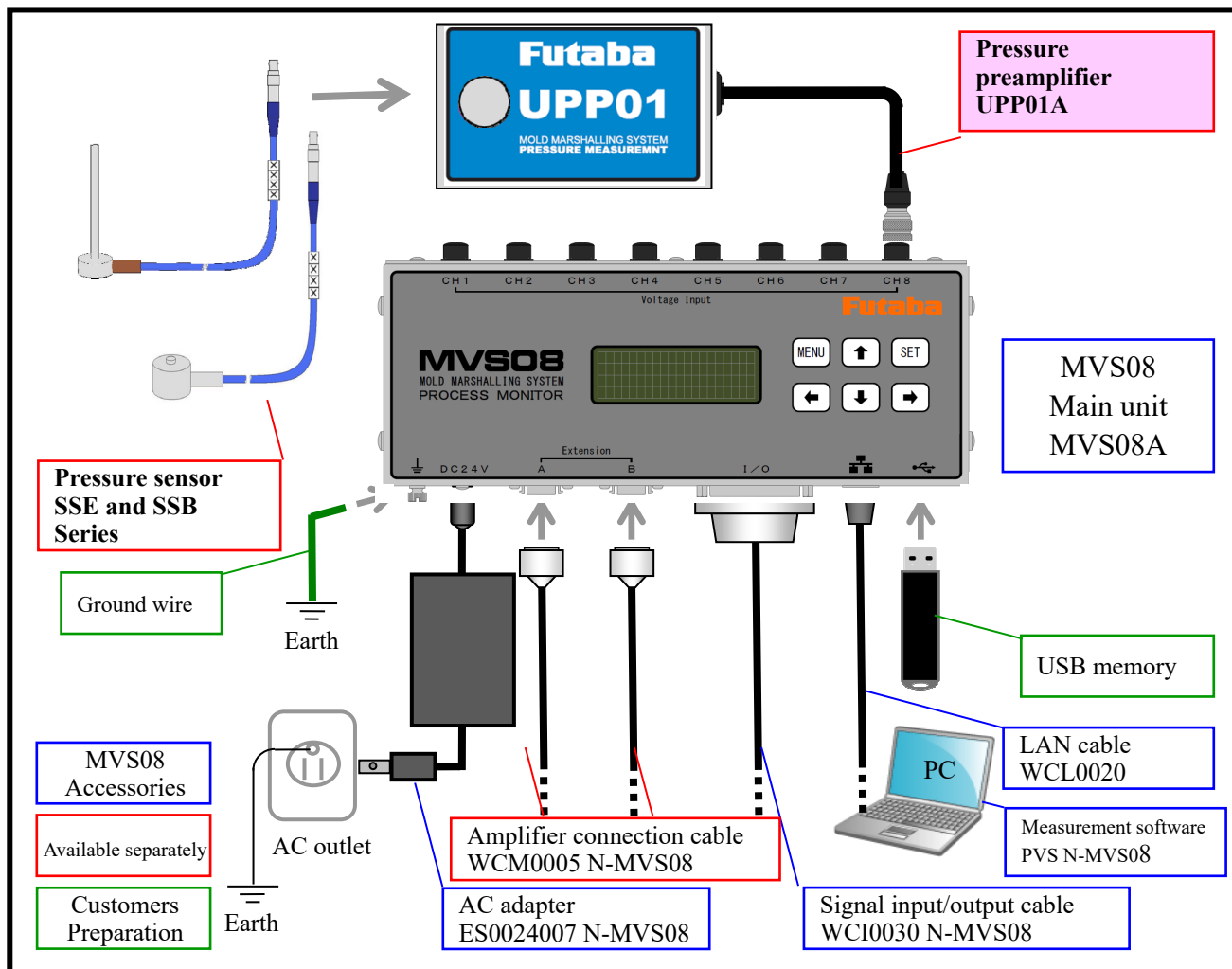
- Turn on the injection molding monitoring system (hereafter abbreviated as MVS08) after connecting the systems. Be sure to power MVS08 from an AC outlet. Never plug in or unplug the AC adapter jack to operate the power supply. Doing so may damage the unit and the AC adapter.
- Wait at least 5 seconds before turning the power on again after turning it off. If the power is turned on within 5 seconds or ON/OFF is repeated, it may fail due to the rush current (inrush current) that occurs when the power is turned on.
- Warm up the unit before use. Provide a warm-up time of about 30 minutes after the power is turned on.
- Avoid using the product in environments where temperatures are extremely high or low. The operating temperature range is 10 to 40°C. If it is unavoidable to expose the product to direct sunlight or use it in cold climates, shade the product or keep it warm.
- Use within the relative humidity range of 35 to 85%RH or less. If the product is used outside the operating humidity range or in an environment exposed to water droplets, performance may drop or malfunction may result.
- Do not use the product in dusty places. If dust gets inside, performance will deteriorate. Do not allow dust to enter not only during use but also during storage. Use the product in an environment where the PC can be used.
- Do not use the product immediately if the environment changes suddenly. Leave the product in the operating environment and use it after blend with its surroundings. Condensation may occur if the ambient temperature and humidity change suddenly due to movement, etc., and this may cause a drop in performance or malfunction.
- Do not use the product in an environment subject to vibration or impact. Continuous vibration or large impact may cause a drop in performance or malfunction.
- Do not use the product in a strong electromagnetic field. Use the product in an environment where the PC can be used. Use in the vicinity of wireless devices, microwave ovens, electric furnaces, and other devices that generate strong electromagnetic fields may cause performance degradation, malfunction, or failure.
- Do not use the product in locations with poor power supply conditions. Use a power supply with AC100 ~240V, 50/60Hz, and no instantaneous power failure or noise.
- Do not pull on the connection cable. Connect the connection cable with sufficient margin so that excessive force is not applied to the connection part. Pulling or applying excessive force may cause failure, interruption of measurement or abnormal measurement value.

# 1. System configuration

## ■ System Configuration with Injection Molding Monitoring System "MVS08 Set"

The following shows the basic configuration when measuring the pressure in the mold using a pressure preamplifier (UPP01).

One UPP01 is required per pressure sensor.

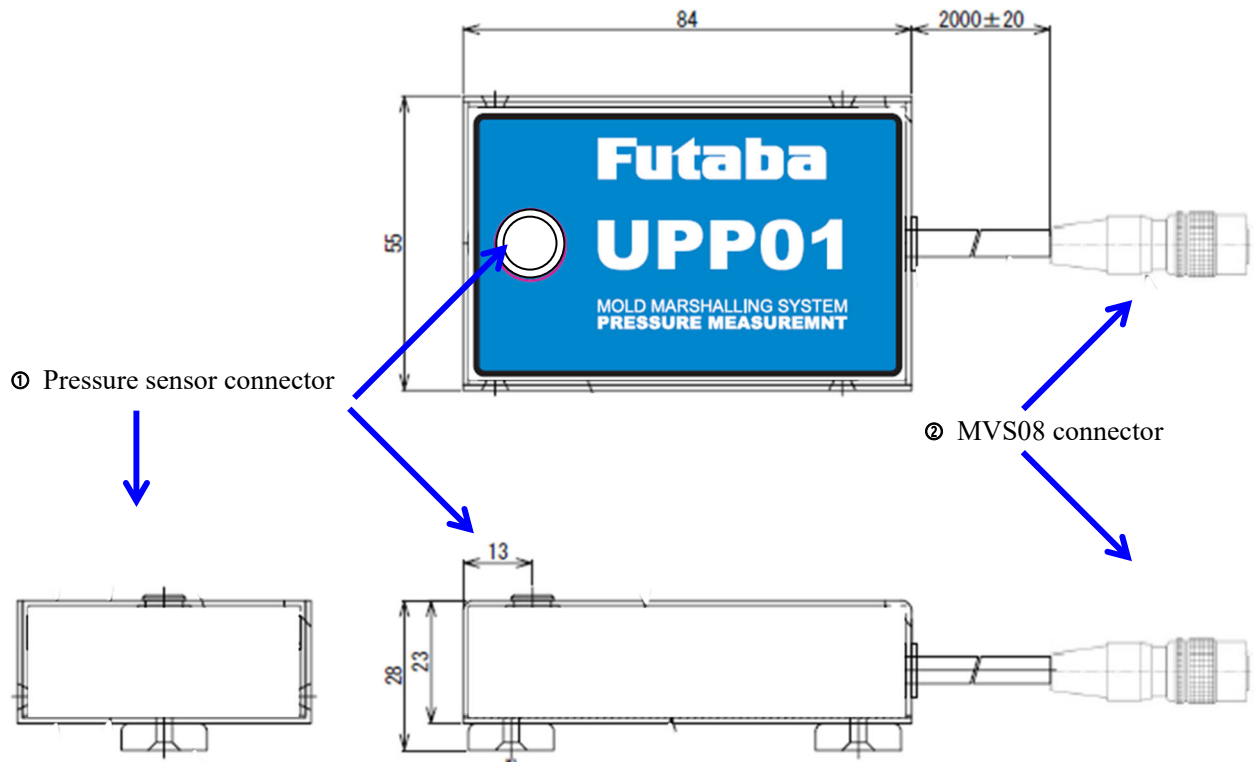


# 2. Specifications

## ■ Specifications <Pressure preamplifier UPP01>

Product code	UPP01A	
Number of measurement points	1	
Measurement range	Ejector pin 0 to 100MPa, depending on the button-type applicable sensor	
Accuracy	±2%F.S.	
Compatible sensor	SSE Series and SSB Series	
Cable length	2m	
Mounting method	Installed with two magnets at the bottom	
Environmental resistance	Operating temperature	+10~+50°C
	Operating humidity	35 to 85%RH (non-condensing)
Weight	Approx. 300g	

### 3. Part Names (Unit: mm)



### 4. Preparation

#### 4-1 Installation of the system

A magnet is attached to the back of the preamplifier UPP01. Install on a flat surface near the mold.

When installing the sensor on the movable side, determine the position of UPP01 so that excessive force is not applied to the sensor cable in the mold open/close operation.

**The operating temp. range of the preamplifier UPP01 is 10 to 50°C. For stable measurement, do not install it on the mold body.**

#### 4-2 Connecting MVS08 Unit and preamplifier UPP01

Connect the preamplifier UPP01 to MVS08 main unit.

Insert the plug of UPP01 into the connector of MVS08. There is a rotation-stop.

Therefore, twist the plug left and right to find the fitting position, and then insert it all the way in.



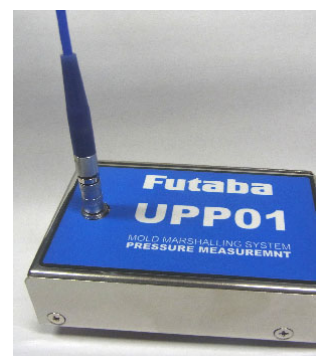
#### 4-3 Connecting the preamplifier UPP01 and pressure sensor

Connect the pressure sensor to the preamplifier UPP01.

With the red mark on UPP01 connector and the red mark on the sensor connector aligned, insert it all the way in and fix it.

When removing the sensor, pull up the knurled part and remove the sensor.

Since it is locked, please do not pull on the cable to disconnect it, as this may cause malfunction.



## 4-4 MVS08 PC software condition settings

### 4-4-1 About Software Versions

UPP01 is available from the versions below.

PC Software : Ver 1. 0. 0. 16

Firmware : Ver 01. 00. 25

<Checking method>

Please check by selecting "Software Version" → "Software Version" on the main menu.

※ The latest version can be downloaded from our website.

Please refer to the following URLs.

[http://www.futaba.co.jp/precision/mold\\_marshall/software](http://www.futaba.co.jp/precision/mold_marshall/software)

<How to update>

Refer to P8 of MVS08 Instruction Manual for how to update the software.

### 4-4-2 Conditioning

From the setting screen, set the following parts.

<For ejector pin type pressure sensor>

The screenshot shows the MVS08 PC software settings interface. At the top, the system is identified as MVS08 and the current screen is for SENSORS. The module name is MODULE1. Below this, there are tabs for SENSORS and I/O signals. The main area is titled 'MVS08 setting list' and contains a table with the following columns: Enabled, Measuring subject, Measuring Unit, Normal Trigger enable, Normal Trigger offset, Normal Trigger offset value, TriggerA enable, TriggerA offset, and TriggerA offset value. The row for CH1 is highlighted in orange and has the following values: Enabled (checked), Measuring subject (Pressure UPP01), Measuring Unit (MPa), Normal Trigger enable (checked), Normal Trigger offset (unchecked), Normal Trigger offset value (0), TriggerA enable (unchecked), TriggerA offset (unchecked), and TriggerA offset value (0). Below the table, there are several sections for channel settings. The 'Channel setting' section includes 'Enab' (checked), 'Measuring subject' (Pressure UPP01), and 'Measuring Unit' (MPa). The 'Normal Trigger' section has 'Enabled' checked and 'Offset value' set to 0.000. The 'Sensor Sensitivity' section has a dropdown set to 1 and a value of 2400. The 'Upper Limit' section has a value of 10.000 V and 200.000 MPa. The 'Lower Limit' section has a value of 0.000 V and 0.000 MPa. The 'TriggerA' and 'TriggerB' sections have 'Enabled' unchecked. The 'Shape Setting' section has 'Shape' set to Round, 'Diameter[mm]' set to 1.00, 'Long[m]' set to 1.00, 'Wide[mm]' set to 1.00, and 'Area[mm2]' set to 0.01. The 'UPI01 Setting' section has 'Sensitivity classification' set to BA, 'Mold Temperature' set to 0, and 'Measurement CH' set to 2. The 'Channel Name' field is set to CH01. A 'Reflect' button is located at the bottom right.

- ① Select the input channel.
  - ② Select the "Pressure UPP01" measuring subject.
  - ③ Enter the sensor sensitivity.
- Press "Save" after the setting is completed.

<For Button Type Pressure Sensor>

System MVS08 SENSOR

Module Name : MODULE1

SENSOR I/O signal

MVS08 setting list

	Enabled	Measuring subject	Measuring Unit	Normal Trigger enable	Normal Trigger offset	Normal Trigger offset value	TriggerA enable	TriggerA offset	TriggerA offset value
▶ CH1	<input checked="" type="checkbox"/>	Pressure UPP01	MPa	<input type="checkbox"/>	<input type="checkbox"/>	0	<input type="checkbox"/>	<input type="checkbox"/>	0

Channel setting

Enab Measuring subject Pressure UPP01 Measuring Unit MPa

Normal Trigger  Enabled  Offset Offset value 0.000 Sensor Sensitivity A 1200 A

TriggerA  Enabled  Offset Offset value 0.000 Upper Limit 10.000 V 200.000 MPa

TriggerB  Enabled  Offset Offset value 0.000 Lower Limit 0.000 V 0.000 MPa

Shape Setting Shape Round Diameter[mm] 8.00 Long[m] 1.00 Wide[mm] 1.00 Area[mm2] 0.01

UPI01 Setting Sensitivity classification BA Mold Temperature 0

Input value  Measured value Measurement CH 2

Channel Name CH01

Reflect

- ① Select the input channel.
  - ② Select the "Pressure UPP01" measuring subject.
  - ③ Enter the sensor sensitivity.
  - ④ Enter the shape setting. Enter the pin shape and tip diameter (area).
- Press "Save" after the setting is completed.

FUTABA CORPORATION

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[Inquiries about this product](#)

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The specifications are subject to change without prior notice for product improvement.

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