Instruction Manual "Cable storage space Pressure Sensor Button Type Low Capacity Type"

Before using this product, please read this manual thoroughly and be sure to observe the precautions in this manual.
Futaba Corporation assumes no responsibility or warranty for injuries caused by the use of the product contrary to these precautions.

1. Introduction

Thank you very much for purchasing our cable storage space type pressure sensor button type. First, check that there is no damage during transportation or that there is no difference in the model.
If there are any defects, contact the distributor from whom you purchased the product or our sales office.

2. Overview

The sensor outer diameter and cable diameter are smaller than those of conventional button-type sensors, making it easier to introduce them into small molds. In addition, by using the dedicated junction box with cable storage space "UCP04", it is possible to prevent the cable from being crushed or broken outside the mold. These are used in conjunction with our MPS08 in-mold pressure measuring amplifier.

3. Precautions for Use

- Use the product within the rated capacity.
- Be careful not to apply current to the sensor body.
- Do not connect to other than our MPS08 amplifier (UCP04 version).
- Do not disassemble the internal parts. Doing so will impair the performance and safety of the product.
- For accurate measurement, the sensitivity must be set. To set the sensitivity, use the pressure measurement amplifier. Refer to the instruction manual of MPS08.
- 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.
- The temperature resistance is 150°C or less for the sensor, 200°C or less for the cable, and 120°C or less for the connector. Use the product within the specified range.
- When disposing of the product, take care of the environment and dispose of the product.

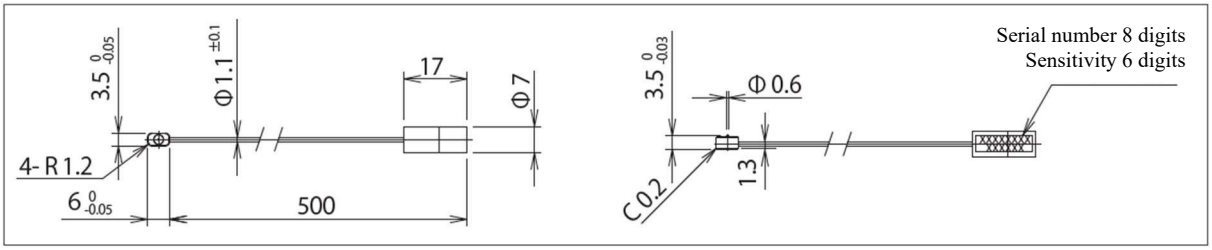
4. Measurement Amplifier & Software

When using the Pressure Sensor Button Type with Cable Retractable, use software of the following versions or later for MPS08.

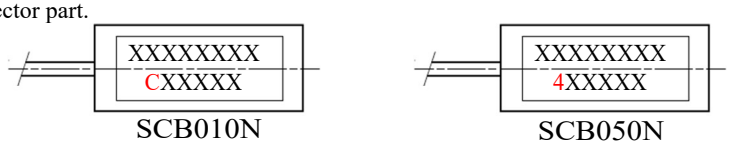
- Measurement software version on PC side　　V er.11.10.60
- Firmware version in MPS08 amplifier　　V er.00.00.60.00

If you are using an old version, please download the latest software from our website and use it after updating.
URL for the latest software downloads: http://www.futaba.co.jp/precision/mold_marshall/software

5. Product Specifications (Unit: mm)



The sensor type (SCB010N, SCB050N) can be distinguished by the first character of the 6-digit sensitivity classification described in the connector part.



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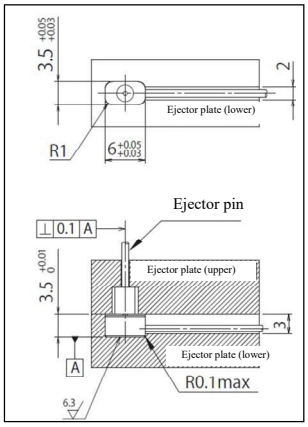
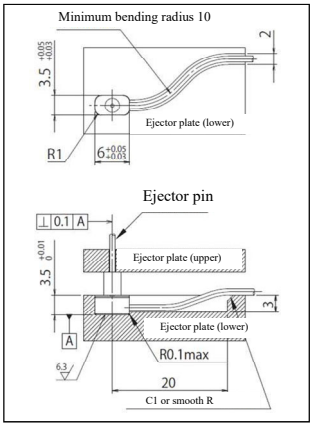
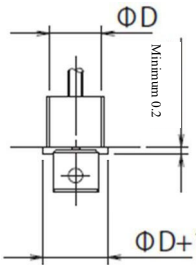
6. Embedded example (Unit: mm)

For the ejector plate specification counterbored type



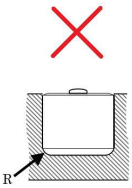
For ejector plate specification spacer type



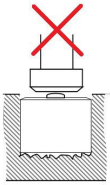


※If the ejector pin flange diameter is larger than the sensor outer diameter, counterbore as shown in the figure above.

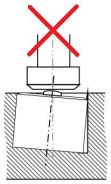
Precautions for sensor installation



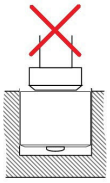
Do not machine the bottom with rounded edges.



The machined underside must be smooth.



Install perpendicular to the pin shaft.



Do not install the sensor upside down.

・Consider positioning of the top and bottom of the ejector plate so that the center of the ejector pin and sensor are misaligned ±0.2 or less.

・If a load exceeding the allowable overload is applied to the protrusion, damage may occur. Handle with care when assembling the mold, etc.
・This sensor is filled with resin inside the housing part (outer circumference thickness 0.5mm). The resin part is not resistant to the load, so be careful not to damage it if it is pushed hard.

7. Correction

Sensitivity varies depending on the installation environment temperature (ambient temperature of the sensor) due to the characteristics of the strain gauge. In order to perform measurement with higher accuracy, it is necessary to change the sensitivity classification according to the installed environment.

Calculation example

<Prerequisites for calculation example>

・Sensitivity classification of the pressure sensor: C0800A

・Installation environment temperature: 1 50°C

(The coefficient in the table on the right is 0.964.)

<Calculation>

Use the factor "0.964" in the chart at 800 on C0800A and at 150°C.

800 ÷ 0.964 □ 771

Fit this calculated 771 to the 800 positions used in the calculation, and change the sensitivity classification to be set for the software or amplifier as shown below to perform measurement.

(before conversion) → (after conversion)

C0800A → C0771A

Serial number 8 digits
Sensitivity 6 digits

Ambient temperature ℃	coefficient	Ambient temperature ℃	coefficient
25	1.000	90	0.981
30	0.999	95	0.979
35	0.997	100	0.978
40	0.996	105	0.977
45	0.994	110	0.975
50	0.993	115	0.974
55	0.991	120	0.972
60	0.990	125	0.971
65	0.988	130	0.969
70	0.987	135	0.968
75	0.985	140	0.967
80	0.984	145	0.965
85	0.982	150	0.964

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