3. Conditions of use

- Malfunctions will occur if the device is not used correctly. The sensor can be damaged. Make sure that the following specifications are always observed:
  - This product has been developed/produced for Industrial use only.
  - Fitting and commissioning to be carried out by qualified personnel only in accordance with the operating instructions.
  - Compare the maximum values specified in these operating instructions with your application (e.g., forces, torques, temperatures, voltages).
  - Take care that the sensor does not come in contact with water, oil, grease, or organic solvents, such as, thinners, etc.
  - Use a blunt pencil to press a key. Do not press the keys with pointed or sharp objects.
  - SPAB is designed for use with air and non-corrosive gas. It cannot be used for liquid or corrosive gas.
  - Please note the permitted pressure range.
  - Take into consideration the ambient conditions at the location of use.
  - Please comply with national and local safety laws and regulations.
  - Remove all transport packing such as protective wax, foils (polyamide), caps (polyethylene), cardboard boxes (except for the sealing elements of the pneumatic connections).
  - Use the product in its original state. Unauthorized modification is not permitted.

4. Pneumatic

When connecting a commercial coupler to the pressure port, attach a 1mm spanner (12mm for -R18-... or -N18-...) to the pressure port's hexagon section to fix the port, and then tighten with a tightening torque of 5Nm or less (M5 internal thread; then or less). The commercial coupler or pressure port section will be damaged if the tightening torque is excessive. Wrap sealing tape around the coupler when connecting to prevent leaks.

5. Mounting

- Wall mounting bracket SPAB (SAM-P4-A)

When mounting the sensor onto the wall mounting bracket, etc., the tightening torque should be 0.5Nm or less.

6. Electrical installation

- SELV setting

Table colors

| Pin/cable colors | 2 / black (BK) | 3 / white (WH) | 4 / blue (BU) | 5 / green (GN) |

Pin description

| Connection | Electrical | Pneumatic | Pressure |

- U1: +V (Brown) +V or +5V (Brown) +V (Brown) +V or +5V (Brown)
- U2: COM (Black) COM (Black) COM (Black) COM (Black)
- U3: P10 (Red or yellow) P10 (Red or yellow) P10 (Red or yellow) P10 (Red or yellow)
- U4: N10 (Green) N10 (Green) N10 (Green) N10 (Green)

7. Accessories

Switching points (DP-) and hysterisis

Defining the desired switching behaviour of the digital outputs.

8. Preparing for Commissioning

- Setting for analog voltage output/external input

RUN mode

- Switching characteristic (torque or window comparator)
- Switching points selection
- Hysterisis selection
- Switching characteristic (normally open/close) selection
- Analog voltage output/external input selection

SPE setting

Unit of measurement selection (see, kPa, MPa, psi)
- Delay timer selection
- Main display color selection
- Display color selection (red when ON/Green when ON/Always Red/Always Green)
- Security code lock setting (L=9999)

Copy function

Note 1) Only -PB-.../-NB-...

- TEACH mode

Enables setting of switching points within the maximum setting range.

Please note

TEACH mode is not possible when using external input.

- MIN/MAX mode

The MIN/MAX mode displays the lowest and highest pressure values up to the time of displaying.

- ZERO ADJUST mode

The ZERO ADJUST mode forcibly sets the pressure value to “zero” when the pressure port is opened.

- RESET mode

Return to default settings.

- COPY mode

The COPY mode can copy the settings of the master side sensor to the slave side sensor.

Please note

- Be sure to use the copy function between the identical models. This function cannot be used between different models.
  - Only one sensor can be connected on slave side with a master side sensor for the copy function.
  - Do not use the copy function other than the following wiring, as pulsed output generates when turning the power ON after setting the master side sensor to the copy ready state.

Setting procedure

1. Set the copy function of the master side sensor to copy ready state. (see EDIT mode under section 10)
2. Turn off the master side sensor.
3. Connect the master side sensor with the slave side sensor as shown below.

To cancel the setting copy mode of master side sensor

1. When the slave side sensor is disconnected, turn on the power of the master side sensor.
2. Press the mode selection key for approx. 3 seconds.