

Panasonic[®] INSTRUCTION MANUAL

Pressure Sensor

High-performance Digital Display

DP-100 Series

For use outside Japan

MEUML-DP100 V1.1

Thank you for purchasing products from Panasonic Electric Works SUNX Co., Ltd. Please read this Instruction Manual carefully and thoroughly for the correct and optimum use of this product. Kindly keep this manual in a convenient place for quick reference.

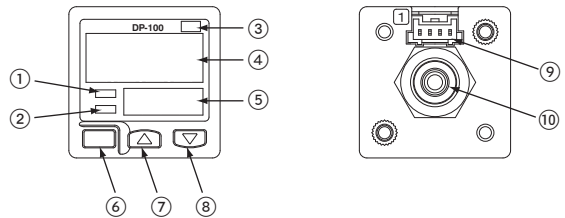
⚠ WARNING

- Never use this product as a sensing device for personnel protection.
- In case of using sensing devices for personnel protection, use products which meet laws and standards, such as OSHA, ANSI or IEC etc., for personnel protection applicable in each region or country.
- DP-100 series is designed for use with non-corrosive gas. It cannot be used for liquid or corrosive gas.
- Japanese Measurement Laws prohibit the use of this product in Japan.

1 CAUTIONS

- This product has been developed / produced for industrial use only.
- Use within the rated pressure range.
- Do not apply pressure exceeding the pressure resistance value. The diaphragm will be damaged resulting in faulty operation.
- Make sure that the power supply is off while wiring.
- Incorrect wiring will damage the sensor.
- Verify that the supply voltage including the ripple is within the rating.
- If power is supplied from a commercial switching regulator, ensure that the frame ground (F.G.) terminal of the power supply is connected to an actual ground.
- In case noise generating equipment (switching regulator, inverter motor, etc.) is used in the vicinity of this sensor, connect the frame ground (F.G.) terminal of the equipment to an actual ground.
- Do not use during the initial transient time (0.5s) after the power supply is switched on.
- Do not run the wires together with high-voltage lines or power lines or put them in the same raceway. This can cause malfunction due to induction.
- The specification may not be satisfied in a strong magnetic field.
- Avoid dust, dirt, and steam.
- Take care that the sensor does not come in direct contact with water, oil, grease, or organic solvents such as thinners, etc.
- Do not insert wires, etc., into the pressure port. The diaphragm will be damaged resulting in faulty operation.
- Do not operate the keys with pointed or sharp objects.
- Do not apply stress directly to the sensor cable joint by forcibly bending or pulling.

2 PART NAMES

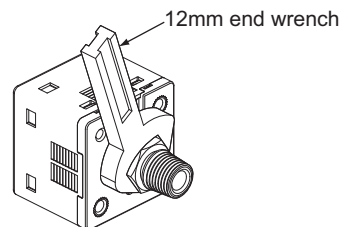


No.	Part	Description
①	Output 1 operation indicator	Lights up when comparative output 1 is ON
②	Output 2 / analog voltage operation indicator	<ul style="list-style-type: none"> • Standard type: lights up when comparative output 2 is ON • Multifunction type: lights up when analog voltage output is ON
③	Pressure unit display	Depending on the model, "MPa" or "kPa" appears here. If you set another pressure unit, attach the appropriate label, e.g. psi, bar, etc.
④	Main display	Large 4-character LCD display.
⑤	Sub-display	Small 4-character LCD display.
⑥	Mode selection key	For details, see page 3, section 8, SELECTING MODES.
⑦	Up key	Increases value being set.
⑧	Down key	Decreases value being set.
⑨	4-pin male connector	See "Pin assignment, 4-pin male connector" on page 2.
⑩	Pressure port	<ul style="list-style-type: none"> • DP-100 type: R1/8 + M5 female screw • DP-100-E type: G1/8 + M5 female screw • DP-100-M type: M5 female screw • DP-100-N type: NPT1/8 + M5 female screw

3 PIPING

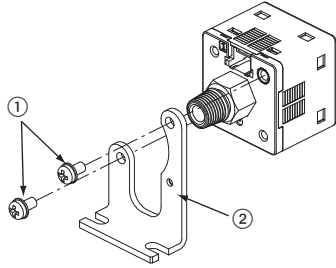
Use a 12mm end wrench (14mm for DP-100-E type) when tightening a commercial coupler to the pressure port. The tightening torque should be 9.8N·m or less (M5 female connector: 1N·m or less). The commercial coupler or pressure port section will be damaged if the tightening torque is excessive.

Wrap sealing tape around the coupler when connecting to prevent leaks.



4 MOUNTING

- The sensor mounting bracket (MS-DP1-1) is available as an option. When mounting the sensor onto the sensor mounting bracket, etc., the tightening torque should be 0.5N·m or less.



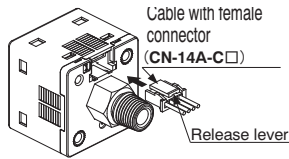
No.	Part	Description
①	M3 (length 6mm) screws with washers	Accessory with MS-DP1-1
②	Sensor mounting bracket (MS-DP1-1)	Optional

- The panel mounting bracket MS-DP1-2 (optional) and MS-DP1-4 (optional), as well as the front cover MS-DP1-3 (optional) and DPX-04 (optional) are also available.
- The type of the front cover differs depending on the mounting bracket. Use MS-DP1-3 for MS-DP1-2, and DPX-04 for MS-DP1-4.
- To mount the panel mounting bracket, refer to the Instruction Manual enclosed with MS-DP1-2 or MS-DP1-4.

5 WIRING

Connection method

Attach the female connector of cable CN-14A-□ to the 4-pin male connector.

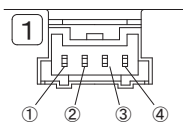


<Recommended product>
Contact: SPHD-001T-P0.5
Housing: PAP-04V-S
[JST Mfg. Co., Ltd.]

Disconnection method

While pressing the release lever, pull out the connector.

Pin assignment, 4-pin male connector



Pin no.	Terminal name
①	+V
②	Comparative output 1
③	<ul style="list-style-type: none"> Standard type: Comparative output 2 Multifunction type: Analog voltage output or external input
④	0V

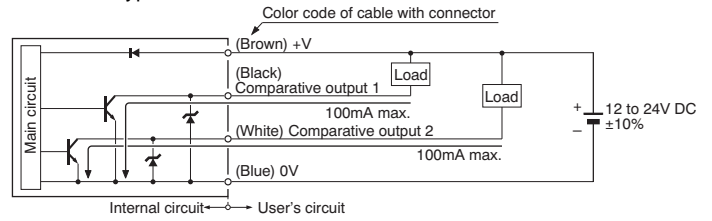
6 I/O CIRCUIT DIAGRAMS

Notes:

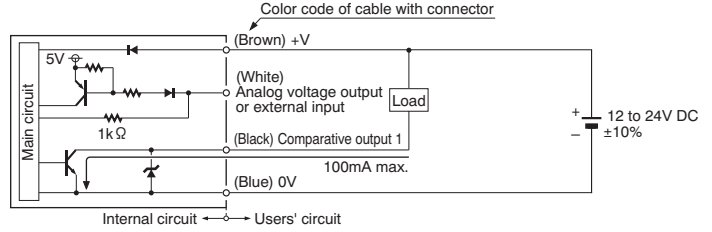
- When using the analog voltage output, pay careful attention to the connected device's input impedance.
- If the cable is extended, the cable resistance will cause the voltage to drop.

NPN output type

Standard type

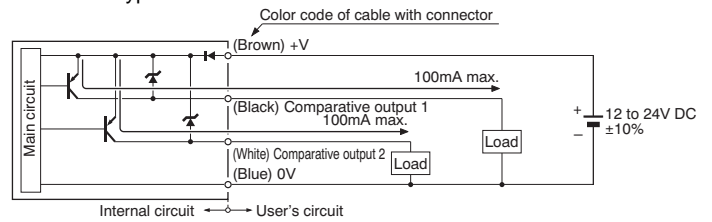


Multifunction type

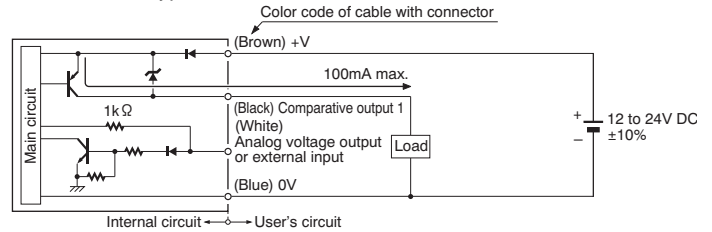


PNP output type

Standard type



Multifunction type



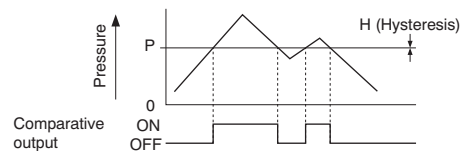
7 OUTPUT MODE AND OUTPUT OPERATION

The EASY mode, hysteresis mode or window comparator mode can be selected as the output mode for comparative output 1 and, for the standard type DP-100, comparative output 2.

For details, see page 5, section 10, MENU SETTING MODE.

Easy mode

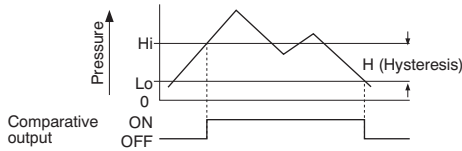
The comparative output is turned ON or OFF (depending on the N.O./N.C. setting) when the threshold is reached. The tolerance of the threshold is specified by the hysteresis setting. For details, see page 6, section 11, PRO MODE.



- Notes:
- Hysteresis can be fixed in 8 levels. For details, see page 6, section 11, PRO MODE.
 - P-1 is displayed for comparative output 1 and P-2 for comparative output 2 on the sub-display.

Hysteresis mode

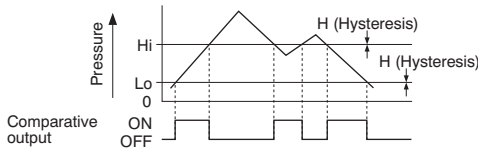
The comparative output is turned ON or OFF (depending on the N.O./N.C. setting) when the upper or lower threshold is reached and remains ON or OFF until the other threshold is reached.



- Notes:
- H (Hysteresis): 1 digit or more, 2 digits or more when psi is selected as the pressure unit.
 - Hi-1 or Lo-1 is displayed for comparative output 1 and Hi-2 or Lo-2 for comparative output 2 on the sub-display.

Window comparator mode

The comparative output is turned ON or OFF (depending on the N.O./N.C. setting) when the pressure lies between the upper or lower threshold. The tolerance of the threshold is specified by the hysteresis setting. For details, see page 6, section 11, PRO MODE.



- Notes:
- Hysteresis can be fixed in 8 levels. For details, see page 6, section 11, PRO MODE.
 - Hi-1 or Lo-1 is displayed for comparative output 1 and Hi-2 or Lo-2 for comparative output 2 on the sub-display.

8 SELECTING MODES

DP-100 has 3 different modes:

- RUN mode. For details, see page 3, section 9, RUN MODE.
- Menu setting mode. For details, see page 5, section 10, MENU SETTING MODE.
- Pro mode. For details, see page 6, section 11, PRO MODE.

Switching modes

Press **MODE** to switch between modes.

From RUN mode, press **MODE** for 2s to select the menu setting mode.

From RUN mode, press **MODE** for 4s to select pro mode.

To return to RUN mode, press **MODE** for 2s.

9 RUN MODE

In RUN mode, you can lock the keys and adjust the threshold for the parameters set in menu setting mode while the sensor is operating. For details, see page 5, section 10, MENU SETTING MODE.

Threshold settings are displayed in the sub-display.

If you attempt to set threshold values that exceed the pressure range allowed, DP-100 will alert you. UP (exceeds the upper limit) or DOWN (exceeds the lower limit) will appear on the sub-display. DOWN will also appear if the Hi threshold value exceeds the Lo threshold value for the hysteresis mode or window comparator mode.

Standard type

Setting condition 1

Comparative output 1 set to: EASY (EASY mode)

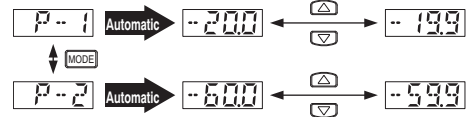
Comparative output 2 set to: OFF (OFF)



Setting condition 2

Comparative output 1 set to: EASY (EASY mode)

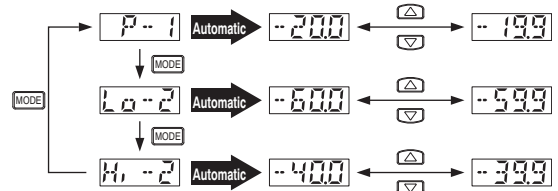
Comparative output 2 set to: EASY (EASY mode)



Setting condition 3

Comparative output 1 set to: EASY (EASY mode)

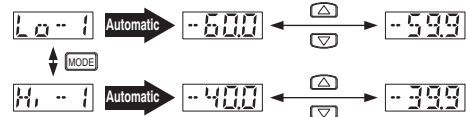
Comparative output 2 set to: HYS (Hysteresis mode), or WCMP (Window comparator mode)



Setting condition 4

Comparative output 1 set to: HYS (Hysteresis mode), or WCMP (Window comparator mode)

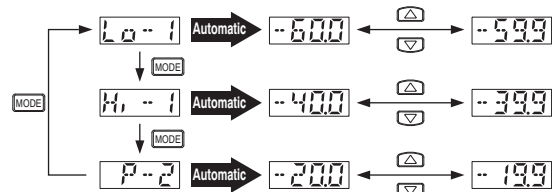
Comparative output 2 set to: OFF (OFF)



Setting condition 5

Comparative output 1 set to: HYS (Hysteresis mode), or WCMP (Window comparator mode)

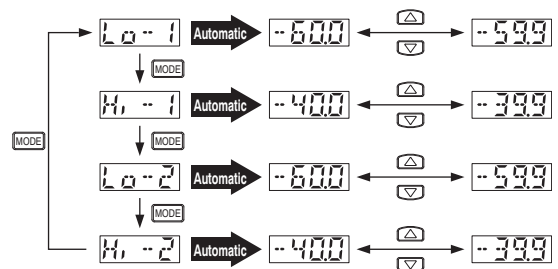
Comparative output 2 set to: EASY (EASY mode)



Setting condition 6

Comparative output 1 set to: HYS (Hysteresis mode), or WCMP (Window comparator mode)

Comparative output 2 set to: HYS (Hysteresis mode), or WCMP (Window comparator mode)



Multifunction type

Setting condition 1

Comparative output 1 set to: EASY (EASY mode)

Analog voltage output / external input: R_{OUT} (Analog voltage output)



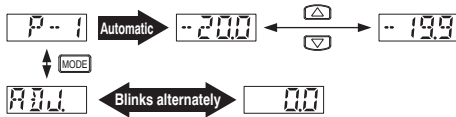
Setting condition 2

Comparative output 1 set to: EASY (EASY mode)

Analog voltage output / external input: AREF (Auto-reference input)¹, or ZERO (Remote zero-adjustment input)²

¹For details, see page 7, section 13, AUTO-REFERENCE FUNCTION.

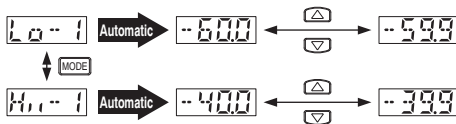
²For details, see page 8, section 14, REMOTE ZERO-ADJUSTMENT FUNCTION, MULTIFUNCTION TYPE.



Setting condition 3

Comparative output 1 set to: HYS (Hysteresis mode), or WCMP (Window comparator mode)

Analog voltage output / external input: R_{OUT} (Analog voltage output)



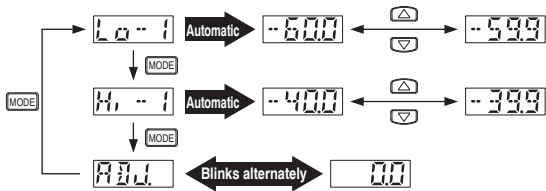
Setting condition 4

Comparative output 1 set to: HYS (Hysteresis mode), or WCMP (Window comparator mode)

Analog voltage output / external input: AREF (Auto-reference input)¹, or ZERO (Remote zero-adjustment input)²

¹For details, see page 7, section 13, AUTO-REFERENCE FUNCTION.

²For details, see page 8, section 14, REMOTE ZERO-ADJUSTMENT FUNCTION, MULTIFUNCTION TYPE.

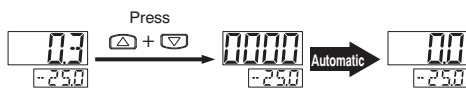


Common

Zero-adjustment function

The zero-adjustment function forcibly sets the pressure value to zero when the pressure port is opened.

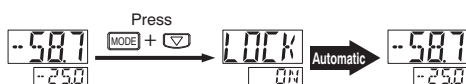
To force the pressure value to zero, simultaneously press Δ + ∇ .



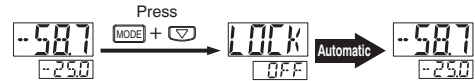
Key lock function

The key lock function protects settings from being changed inadvertently.

To lock, simultaneously press MODE + ∇ .



To unlock, simultaneously press MODE + ∇ .



Peak / bottom hold function

The peak / bottom hold functions display the peak value and bottom value of the fluctuating pressure. The peak value is displayed on the main display and the bottom value is displayed on the sub-display.

To set the peak / bottom hold function, simultaneously press MODE + Δ .



To release the peak / bottom hold function, simultaneously press MODE + Δ .



10 MENU SETTING MODE

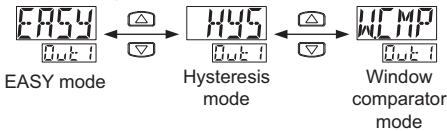
Item	Description
Comparative output 1 mode setting	Sets operation of comparative output 1.
Comparative output 2 mode setting (Standard type only)	Sets operation of comparative output 2.
Analog voltage output / external input (Multifunction type only)	Selects analog voltage output, auto-reference input, or remote zero-adjustment input.
N.O. / N.C. selection	Selects normally open (N.O.) or normally closed (N.C.).
Response time setting	Sets response time in milliseconds (ms). Response times available: 2.5, 5, 10, 25, 50, 100, 250, 500, 1000, 5000ms
Display color for the main display	Selects color of main display.
Pressure unit selection	Selects desired pressure unit.

From RUN mode, press **MODE** for 2s to select the menu setting mode. The examples below begin with the factory default settings.

<RUN mode>

↓ **MODE** Press 2s.

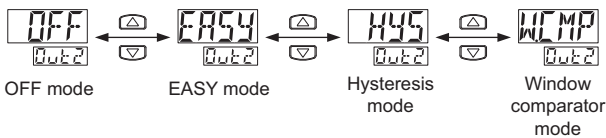
<Mode setting for comparative output 1>



↓ **MODE**

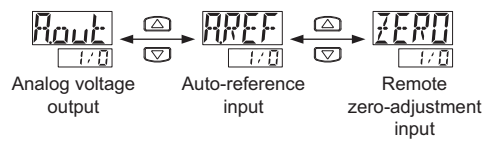
● Standard type

<Mode setting for comparative output 2>¹



● Multifunction type

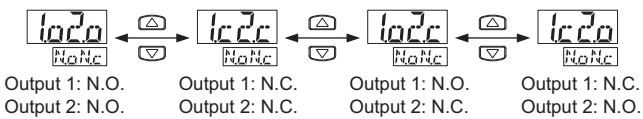
<Analog voltage output / external input>



↓ **MODE**

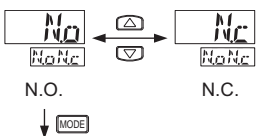
● Standard type

<N.O. / N.C. selection>^{1, 2}



● Multifunction type

<N.O. / N.C. selection>

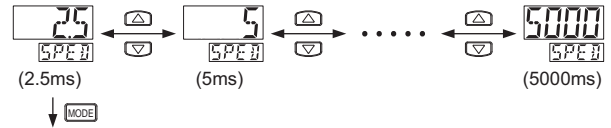


↓ **MODE**

¹If for the standard type DP-100 comparative output 2 is set to "OFF", the N.O. / N.C. selection (normally open, normally closed selection) is the same as for the multifunction type, i.e. you will only set N.O. or N.C. for comparative output 1, not for both comparative outputs.

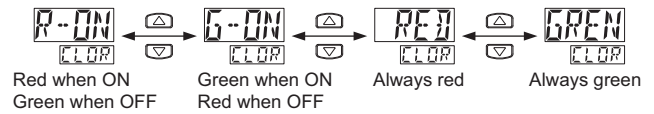
²The default setting of the high pressure type is N.O. (normally open), and that of the low pressure type is N.C. (normally closed).

<Response time setting>



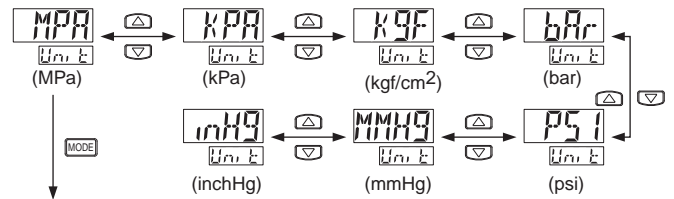
↓ **MODE**

<Display color for the main display>



↓ **MODE**

<Pressure unit selection>^{3, 4}



<Run mode>

³The default setting for the low pressure type is kPa. MPa is not available.

⁴For the high pressure type, "inchHg" and "mmHg" are not available.

11 PRO MODE

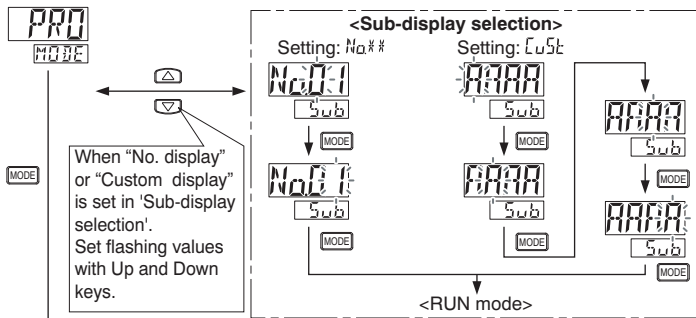
Item	Description
Sub-display selection	Selects what is displayed in the sub-display. <ul style="list-style-type: none"> • OFF: nothing. • Unit: pressure unit selected. • No.**: desired number. • CuSt: desired numbers, letters (as possible), signs.
Display speed selection	Sets the speed of how often the displayed pressure value on the main display is updated.
Hysteresis fixed value selection	Sets hysteresis for the EASY mode and window comparator mode (8 levels).
Color display scheme selection (Standard type only)	Color for main display based on either comparative output 1 or comparative output 2.
ECO mode setting	Current consumption can be lowered. <ul style="list-style-type: none"> • OFF: normal operation (ECO mode is off). • Std: if no key operation is carried out for approx. 5s in RUN mode, the display becomes dark. • FULL: if no key operation is carried out for approx. 5s in RUN mode, the display is turned off. Press any key to temporarily show the normal display.
Setting check code	Current settings for DP-100 are stored in code, which you can display. See "Code table" on page 7.
Setting copy mode	Settings can be copied from master sensors to slave sensors. For details, see page 7, section 12, SETTING COPY FUNCTION. <ul style="list-style-type: none"> ON: settings are copied. ON-L: settings are copied; slave sensor is set in key-lock state.
Reset setting	Returns to default (factory) settings.

From RUN mode, press **MODE** for 4s to select pro mode.
 The examples below begin with the factory default settings.

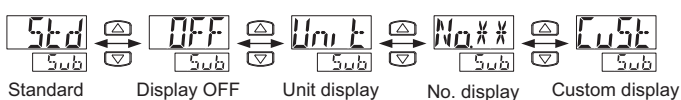
<RUN mode>

↓ **MODE** Press 4s.

<Pro mode>

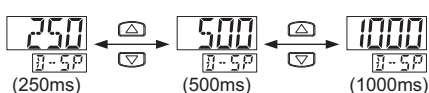


<Sub-display selection>



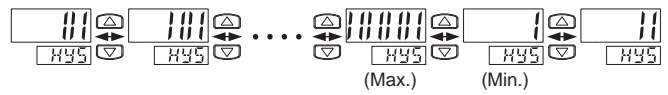
↓ **MODE**

<Display speed selection>



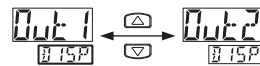
↓ **MODE**

<Hysteresis fixed value selection>¹



↓ **MODE**

<Standard type only: Color display scheme>



Main display color will change based on comparative output 1

Main display color will change based on comparative output 2

↓ **MODE**

<ECO mode setting>



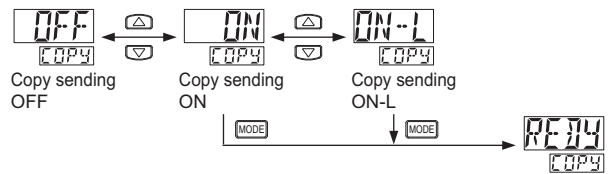
↓ **MODE**

<Setting check code>²



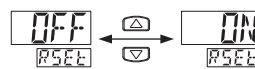
↓ **MODE**

<Setting copy mode>



↓ **MODE**

<Reset setting>



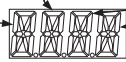
↓ **MODE**

¹ 1 level = approx. 1 digit, when Pa is selected as the pressure unit.

² See "Code table" on page 7.

Code table

Code	1st digit		2nd digit			3rd digit	4th digit		
	Comparative output 1 mode	N.O. / N.C. selection	Standard type		High-function type		Threshold display	Main display color	Standard type only
			Comparative output 2 mode	N.O. / N.C. selection					
0	EASY	N.O.	OFF	OFF	Analog voltage output	P-1, Lo-1	Red when ON	Comparative output 1	
1		N.C.	EASY	N.O.	Auto reference	Hi-1		Comparative output 2	
2	Hysteresis	N.O.	Hysteresis	N.C.	Remote zero-adjustment	P-2, Lo-2	Green when ON	Comparative output 1	
3		N.C.		N.O.		Hi-2		Comparative output 2	
4	Window comparator	N.O.	Window comparator	N.C.	—	ADJ.	Always red	Comparative output 1	
5		N.C.		N.O.		—		Comparative output 2	
6	—	—	—	N.C.	—	—	Always green	Comparative output 1	
7	—	—	—	—	—	—	—	Comparative output 2	



Code	Fifth digit	6th digit	7th digit	8th digit
	Response time	Unit selection	Display speed	ECO mode
0	2.5ms	MPa	250ms	OFF
1	5ms	kPa	500ms	Std
2	10ms	kgf/cm ²	1000ms	Full
3	25ms	bar	—	—
4	50ms	psi	—	—
5	100ms	mmHg	—	—
6	250ms	inchHg	—	—
7	500ms	—	—	—
8	1000ms	—	—	—
9	5000ms	—	—	—

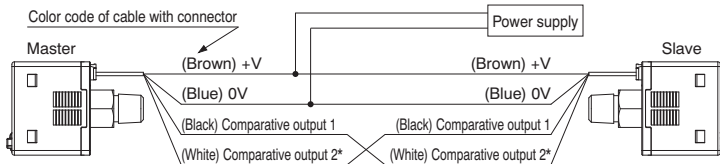
12 SETTING COPY FUNCTION

Use this function to copy the settings of a master sensor to a slave sensor.

- Notes:
- The master and slave must be identical models.
 - You can only copy settings to one slave at a time.

Procedure, set copy function

- Set the master sensor to 'Copy ON' or 'Copy ON-L'. Press **MODE** so that the sensor is in the copy ready state. For details, see page 6, section 11, PRO MODE.
- Turn off the master sensor.
- Connect the master and slave sensors as shown.



*For the high-function type, analog voltage / external input.

- Turn on the master sensor and the slave sensor at the same time.^{1, 2}
 - The master's contents (16-bit coded) are shown in orange on its main display and copying starts. The same code appears in green on the slave's main display, and 0K appears on the sub-display when copying is complete.
 - Turn off the power of the master side sensor and the slave side sensor and disconnect the wire.
- To copy settings to another sensor, repeat steps ③ to ⑥.

¹If the power is not turned on at the same time, the setting contents may not be copied.

²When the power is on, pulse output is output to comparative output 1.

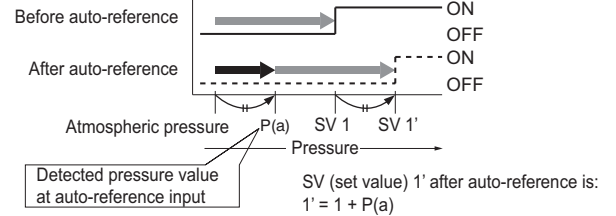
Procedure, cancel copy function

- While the slave sensor is disconnected, turn on the power of the master sensor.
- Press **MODE** for approx. 2s.

13 AUTO-REFERENCE FUNCTION

The auto-reference function corrects the setting value using the detected pressure value during auto-reference input as the reference pressure.

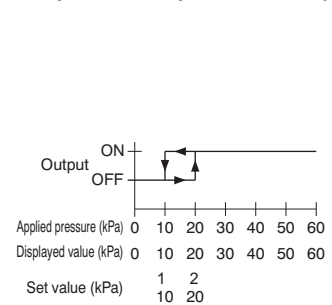
Using the detected pressure value at auto-reference input P(a) as a reference, the set value 1' is automatically corrected to "set value 1 + P(a)".



- Notes:
- The pressure range that can be set is wider than the rated pressure range so that the auto-reference function can be handled.
 - If the corrected setting value exceeds the set pressure range when auto-reference input is carried out, the setting value will be automatically corrected to fall within the set pressure range. Thus, take care not to exceed the set pressure range.

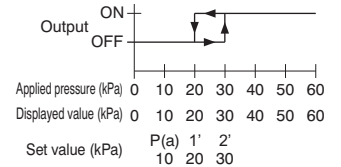
Operation charts

During normal operation. (Each comparative output set to N.O.)



During remote zero-adjustment input. (Each comparative output set to N.O.)

- Detected pressure at auto-reference input: 10kPa
- Output mode: Hysteresis mode



Note: The setting values shift in the same manner during EASY mode or the window comparator mode.

- The detected pressure value at auto-reference input becomes "zero" when the setting of the analog voltage output / external input function is changed or the power is turned ON again.
- The auto-reference input value can be checked when setting the threshold value in RUN mode. For details, see page 3, section 9, RUN MODE.

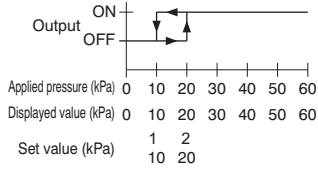
14 REMOTE ZERO-ADJUSTMENT FUNCTION, MULTIFUNCTION TYPE

The remote zero-adjustment function forcibly sets the pressure value to "zero" when the external signal is input.

The setting value is not corrected when remote zero-adjustment is input. Make sure that the pressure and setting value during remote zero-adjustment do not exceed the pressure range that can be set.

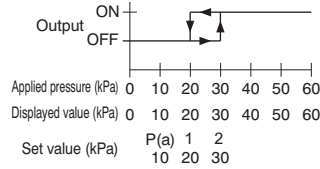
Operation charts

During normal operation. (Each comparative output set to N.O.)



During remote zero-adjustment input. (Each comparative output set to N.O.)

- Detected pressure at auto-reference input: 10kPa
- Output mode: Hysteresis mode



Note: The setting values shift in the same manner during EASY mode or the window comparator mode.

- The remote zero-adjustment value is cleared when the setting of the analog voltage output / external input is changed or the power is turned ON again, and normal operation based on the atmospheric pressure is resumed.
- The remote zero-adjustment value can be confirmed when setting the threshold value in RUN mode. For details, see page 3, section 9, RUN MODE.

15 ERROR INDICATION

Error	Cause	Corrective action
E-1	The load is short circuited causing overcurrent.	Turn off the power and check the load.
E-3	Pressure is being applied during zero-adjustment.	Do not apply pressure applied at the pressure port; pressure should equal atmospheric pressure. Redo zero-adjustment.
E-4	External input is carried out outside the rated pressure range.	Applied pressure range should be adjusted to fall within rated pressure range.
E-5	Communication error, e.g. disconnection, faulty connection, etc.	Check the wiring when using the copy function.
E-6	Communication error, incorrect model.	Make sure the master and slave sensors are the same model when using the copy function.
✕ ✕ ✕	The applied pressure exceeds the upper limit of the display pressure range.	Applied pressure range should be adjusted to fall within rated pressure range.
.. ✕ ✕ ✕	The applied pressure exceeds the lower limit (reverse pressure) of the display pressure range.	

16 MODELS, ORDERING INFORMATION

DP10 - - -

1: low pressure type
2: high pressure type

Nil: standard type
A: high function type

Nil: R $\frac{1}{8}$ +M5 female screw
E: G $\frac{1}{8}$ +M5 female screw
M: M5 female screw
N: NPT $\frac{1}{8}$ +M5 female screw

Nil: NPN output type
P: PNP output type

Nil: cable with connector enclosed
J: no cable

17 SPECIFICATIONS

Item	Standard type		Multifunction type		
	Low pressure type	High pressure type	Low pressure type	High pressure type	
Pressure type	Gauge pressure				
Rated pressure range	-100 to + 100kPa	-0.1 to +1.0MPa	-100 to + 100kPa	-0.1 to +1.0MPa	
Set pressure range	-100 to + 100kPa	-0.1 to +1.0MPa	-100 to + 100kPa	-0.1 to +1.0MPa	
Pressure resistance	500kPa	1.5MPa	500kPa	1.5MPa	
Applicable fluid	Non-corrosive gas				
Supply voltage	12 to 24V DC $\pm 10\%$, Ripple P-P 10% or less				
Power consumption	<ul style="list-style-type: none"> • Normal operation: 840mW or less (current consumption 35mA or less at 24V supply voltage) • ECO mode (STD): 600mW or less (current consumption 25mA or less at 24V supply voltage) • ECO mode (FULL): 480mW or less (current consumption 20mA or less at 24V supply voltage) 				
Comparative output	NPN output type <ul style="list-style-type: none"> • NPN open-collector transistor • Maximum sink current: 100mA • Applied voltage: 30V DC or less (between comparative output and 0V) • Residual voltage: 2V or less (at 100mA sink current) 		PNP output type <ul style="list-style-type: none"> • PNP open-collector transistor • Maximum source current: 100mA • Applied voltage: 30V DC or less (between comparative output and +V) • Residual voltage: 2V or less (at 100mA source current) 		
	Output operation	Either N.O. or N.C., selectable			
	Hysteresis	Min. 1 digit (variable). When using psi units, 2 digits.			
	Repeatability	$\pm 0.1\%$ F.S. \pm within 2 digits	$\pm 0.2\%$ F.S. \pm within 2 digits	$\pm 0.1\%$ F.S. \pm within 2 digits	$\pm 0.2\%$ F.S. \pm within 2 digits
	Response time (ms)	2.5, 5, 10, 25, 50, 100, 250, 500, 1000, 5000ms, selectable			
Analog voltage output	—		<ul style="list-style-type: none"> • Output voltage: 1 to 5V • Zero point: within 3V $\pm 5\%$ F.S. • Span: within 4V $\pm 5\%$ F.S. • Linearity: within $\pm 1\%$ F.S. • Output impedance: approx. 1kΩ 	<ul style="list-style-type: none"> • Output voltage: 0.6 to 5V • Zero point: within 1V $\pm 5\%$ F.S. • Span: within 4.4V $\pm 5\%$ F.S. • Linearity: within $\pm 1\%$ F.S. • Output impedance: approx. 1kΩ 	
External input	—		<ul style="list-style-type: none"> • ON voltage: NPN type: 0.4V DC or less, PNP type: 5V to +V DC • OFF voltage: NPN type: 5 to 30V DC or open, PNP type: 0.6V DC or less or open • Input impedance: approx. 10kΩ • Input time: 1ms or more 		
Ambient temperature	-10 to +50°C (No dew condensation or ice formation allowed). Storage: -10 to +60°C.				
Ambient humidity	35 to 85% RH. Storage: 35 to 85% RH.				
Temperature characteristics	$\pm 0.5\%$ F.S. (20°C reference)	$\pm 1\%$ F.S. (20°C reference)	$\pm 0.5\%$ F.S. (20°C reference)	$\pm 1\%$ F.S. (20°C reference)	
Material	Enclosure: PBT (with glass fiber); LCD display: acrylic; Pressure port: stainless steel (SUS 303); Mounting screws: brass (nickel-plated); O-ring: H-NBR; Switch: silicon rubber				
Weight	40g approx. (DP-100-E type: 45g approx., DP-100-M type: 30g approx.) (Main body only)				
Accessories	CN-14A-C2 (Cable with a connector, 2m long; optional for J type). Unit switching label: 1 pc.				

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