

01) Max. / Min. pressure value is available to check by monitoring.  
 [Option external input model] Auto shift judgment level checking / setting is available when P-9 External input terminal is set as SHFT. (no input displays 0)

**Parameter Setting**

- Some parameter are activated / deactivated depending on other parameters. Refer to the description.
- The setting item name and setting value are cross-displayed on the display part.
- It returns to RUN mode when there is no additional key input for 60 sec in each parameter group.
- Guaranteed write life: 100,000 times
- [M] key: Saves setting value and moves to next parameter
- [▼], [▲] key: Selects setting value

Parameter	Display	Default	Setting range															
P-1	Display unit	MPa	[Negative / Compound pressure model] kPa, KG/C; kgf/cm <sup>2</sup> , bar, psi, mmHg, inHg, H <sub>2</sub> O: mmH <sub>2</sub> O [Static pressure model] MPa, kPa, KG/C; kgf/cm <sup>2</sup> , bar, psi															
P-2	OUT operation mode	HY-W	HYS:M: Hysteresis WIN: Window comparison output HY-W: Hysteresis-Window comparison output AUTO: Auto sensitivity setting F.OUT: Forced output control															
P-3	Output type	IO2O	<table border="1"> <thead> <tr> <th></th> <th>OUT1</th> <th>OUT2</th> </tr> </thead> <tbody> <tr> <td>IO2O</td> <td>Normally open</td> <td>Normally open</td> </tr> <tr> <td>IO2C</td> <td>Normally closed</td> <td>Normally open</td> </tr> <tr> <td>IC2O</td> <td>Normally closed</td> <td>Normally open</td> </tr> <tr> <td>IC2C</td> <td>Normally closed</td> <td>Normally closed</td> </tr> </tbody> </table>		OUT1	OUT2	IO2O	Normally open	Normally open	IO2C	Normally closed	Normally open	IC2O	Normally closed	Normally open	IC2C	Normally closed	Normally closed
	OUT1	OUT2																
IO2O	Normally open	Normally open																
IO2C	Normally closed	Normally open																
IC2O	Normally closed	Normally open																
IC2C	Normally closed	Normally closed																
P-4	Response time	2.5	2.5, 5.0, 100, 500, 1,000 ms															
P-5	Voltage low limit scale	0.0	[Option voltage output model] Min. rated pressure ≤ Low limit scale ≤ 90% of rated pressure															
P-6	Voltage high limit scale	1.0	[Option voltage output model] Low limit scale setting value + 10% of rated pressure ≤ High limit scale ≤ Max. rated pressure															
P-7	Current low limit scale	0.0	[Option current output model] Min. rated pressure ≤ Low limit scale ≤ 90% of rated pressure															
P-8	Current high limit scale	1.0	[Option current output model] Low limit scale setting value + 10% of rated pressure ≤ High limit scale ≤ Max. rated pressure															
P-9	External input terminal	HOLD	[Option external input model] HOLD: Hold SHFT: Auto shift															
P-10	Auto shift output <sup>01)</sup>	SHFT	[Option external input model] OUT1, OUT2, ALL															
P-11	Lock	OFF	LOC1: Parameter, preset, zero-point adjustment setting lock / Monitoring value reset lock LOC2: Parameter lock (available to check setting value) OFF															

01) Condition: P-9. External input terminal SHFT setting

**Preset Setting**

■ **Setting method**

- Setting name and value are cross-displayed in SV display part.
- 1. Set the operation mode in P-2.OUT operation mode.
- 2. Enter the preset setting mode by pressing [M] key from RUN mode.
- 3. Select the setting item by [M] key and change the preset by [▼] or [▲] key.
- 4. Press [M] key to save setting or no key input over 60 sec not to save setting and return to RUN mode. (except forced output control mode)

■ **Preset setting by operation mode**

Operation mode	Preset	Setting range
Hysteresis	Pressure detection level 1	St1
	Hysteresis level 1	HYS1
	Pressure detection level 2	St2
	Hysteresis level 2	HYS2
Window comparison output <sup>01)</sup>	Pressure detection low limit 1	Lo-1
	Pressure detection high limit 1	Hi-1
	Pressure detection low limit 2	Lo-2
	Pressure detection high limit 2	Hi-2
Hysteresis-Window comparison output <sup>02)</sup>	Pressure detection level 1	St1
	Hysteresis level 1	HYS1
	Pressure detection low limit	LoW
	Pressure detection high limit	HiGH
Auto sensitivity setting	Pressure level 1	St1
	Pressure level 2 <sup>03)</sup>	St2
	Pressure detection level	SEt
Forced output control <sup>04)</sup>	F.oUT	-

01) Hysteresis: 1 (min display interval, fixed)  
 02) ST1 = HYS1, actual hysteresis is 1 (min. display interval)  
 03) When error appears, check setting conditions and set proper setting values.  
 04) [Option external input model] Forced output does not support external input terminal.

■ **Precaution**

- The preset value (default) of the changed operation mode is set when changing P-2 OUT operation mode setting.
- Preset value is converted as the changed unit automatically when changing P-1 Display unit setting.
- Preset is reset when changing P-9 External input terminal setting.

■ **Default setting value**

Operation mode	Preset	Negative	Static	Compound	
		0.1 kPa	0.1 kPa	1 kPa	0.1 kPa
Hysteresis	St1	-50.0	50.0	500	50.0
	HYS1	0.0	0.0	0	-50.0
	St2	-50.0	50.0	500	50.0
	HYS2	0.0	0.0	0	-50.0
Window comparison output	Lo-1	0.0	0.0	0	-50.0
	Hi-1	-50.0	50.0	500	50.0
	Lo-2	0.0	0.0	0	-50.0
	Hi-2	-50.0	50.0	500	50.0
Hysteresis-Window comparison output	St1	-50.0	50.0	500	50.0
	HYS1	0.0	0.0	0	-50.0
	LoW	0.0	0.0	500	-50.0
	HiGH	-50.0	50.0	0	50.0
Auto sensitivity setting	St1	0.0	0.0	0	-50.0
	St2	-50.0	50.0	500	50.0
	SEt	-25.0	25.0	250	0.0
Forced output control	F.oUT	-	-	-	-

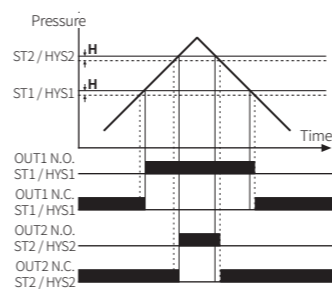
**Output Operation Mode**

Change the output operation mode to change pressure detection method.

ON: [ ] OFF: [ ] H: Hysteresis A: Min display interval

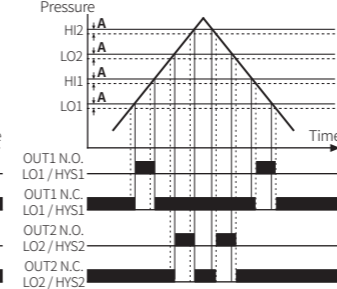
■ **Hysteresis**

- Set the hysteresis for pressure detection directly.
- Setting: Pressure detection level (ST1, ST2), Hysteresis (HYS1, HYS2)



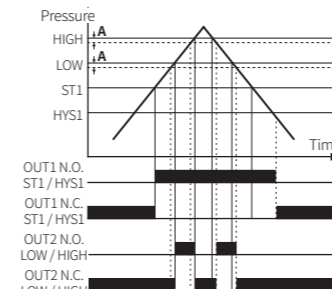
■ **Window comparison output**

- It detects pressure at the desired range.
- Hysteresis is fixed as min. display interval.
- Setting: High limit (HI1, HI2), Low limit (LO1, LO2)



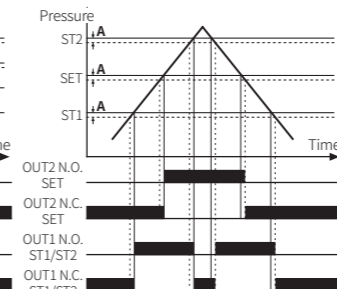
■ **Hysteresis - Window comparison output**

- It is available both hysteresis mode and window comparison output mode operations.
- Setting: Pressure detection level (ST1), Hysteresis (HYS1), High limit (HIGH), Low limit (LOW)



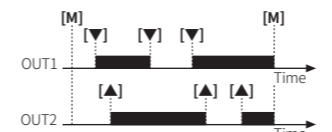
■ **Auto sensitivity setting**

- This function is to set the proper position (SET) automatically by applied pressure from two positions (ST1, ST2).  
 $SET = \frac{ST1+ST2}{2}$
- Hysteresis is fixed as min. display interval.



■ **Forced output control**

- It displays the present pressure with forcibly holding comparing output OFF regardless of setting value.
- Manual ON/OFF for OUT1/2 is possible by [M], [▼] or [▲] key during forced output control operation.



**Auto shift Preset Setting**

■ **Setting method**

- [Parameter setting]
- Select P-9 External input terminal: SHFT.
  - Press the [▲] key for over 3 sec. in RUN mode to enter Max / Min monitoring / Auto shift menu.
  - Press the [M] key to entering Auto shift setting and press the [▼] or [▲] key to change preset.
  - When reset the set correcting value, press the [▼] + [▲] keys for over 1 sec .

[External input setting]

- At the desired preset value pressure, maintain low level for over 1 ms of Auto shift input (orange).
- The pressure at this time is measured and applied after 7.5 ms and is stored in the auto shift correction value.

Operation mode	Preset	Default	Setting range		
Auto-shift	SHFT	Auto-shift correction	Min. preset setting < SH.IN ≤ Max. preset setting		
			Pressure	Setting range (after correction)	Setting range (preset range)
			Negative	-101.3 to 5.0 kPa	-101.3 to 101.3 kPa
			Static	-5.0 to 110.0 kPa	-110.0 to 110.0 kPa
Compound	-101.3 to 110.0 kPa	-101.3 to 110.0 kPa			

■ **Precaution**

- Auto shift correction is reset as 0 when changing P-2 OUT operation mode and preset value.
- Preset setting range is wider than the rated pressure with the source pressure fluctuations.
- In case of forced output control mode or PV HHHH/LLLL, Auto shift function does not operate.

**Error**

Display	Cause	Troubleshooting
Err1	When external pressure is input while adjusting zero point.	Try again after removing external pressure.
Err2	When overload is applied on control output	Remove overload.
Err3	When 'ST1', 'ST2' setting range is not met in auto sensitivity setting mode.	Check setting conditions and set proper setting values.
HHHH	When applied pressure exceeds high-limit of display pressure range.	Apply pressure within display pressure range.
LLLL	When applied pressure exceeds low-limit of display pressure range.	
-HH-	Auto shift correction error.	Set the corrected setting value within setting pressure range.
-LL-		
-HL-		