For your safety, please read the following before using.

① Do not use corrosive or flammable gas or liquid with this product.

② Please use within the operating pressure range. Do not apply pressure beyond recommended maximum pressure, permanent damage to the pressure sensor may occur.

③ Do not drop, hit or allow excessive shock. Even if switch body appears undamaged, internal components may be broken and can cause malfunction.

④ Turn power off before connecting wiring. Wrong wiring or short circuit will damage and/or cause malfunction.

⑤ Do not use in environment containing steam or oil vapor.

⑥ This product is not explosion-proof rated. Do not use in atmosphere containing flammable or explosive gases.

⑦ Wiring for pressure sensor should avoid power source line and high voltage line. If use in the same circuit, noise may cause malfunction.

SPECIFICATIONS		DVN-100 (VACUUM)	DVP-100 (VACUUM)
Rated pressure range		-29.5 ~ 29.5 inHg	
Setting pressure range		-29.5 ~ 29.5 inHg	
Withstand pressure		88.6 inHg	
Fluid		Filtered air, Non-corrosive/Non-flammable gases	
Set pressure resolution	kPa	0.1	
	kgf/cm^2	0.001	
	bar	0.001	
	psi	0.01	
	inHg	0.1	
	mmHg	1	
	mmH_2O	0.1	
Power supply voltage		12 to 24V DC ±10%, Ripple (P-P) 10% or less	
Current consumption		≦55mA	
Switch output		NPN: open collector 2 outputs Max. load current: 100mA Max. supply voltage: 30V DC Residual voltage: ≦1V	PNP: open collector 2 outputs Max. load current: 100mA Max. supply voltage: 24V DC Residual voltage: ≦1V
Repeatability(Switch output)		±0.2% F.S. ±1digit	
Hysteresis	Hysteresis mode	Adjustable	
	Window comparator mode	Fixed (3 digits)	
Response time		≦2.5ms (chattering-proof function: 24ms, 192ms and 768ms selections)	
Output short circuit protection		Yes	
7 segment LED display		3 ½ digit LED display (Sampling rate: 5 times/1sec.)	
Indicator accuracy		±2% F.S. ±1 digit (Ambient temperature: 25 ±3°C)	
Indicator		OUT1=Green, OUT2=Red	
Environment	Enclosure	IP40	
	Ambient temp. range	Operation: 0 ~ 50°C, Storage: -20 ~ 60°C (No condensation or freezing)	
	Ambient humidity range	Operation/Storage: 35 ~ 85% RH (No condensation)	
	Withstand voltage	1000V AC in 1-min (between case and lead wire)	
	Insulation resistance	50MΩ (at 500V DC, between case and lead wire)	
	Vibration	Total amplitude 1.5mm, 10Hz-55Hz-10Hz scan for 1 minute, two hours each direction of X, Y and Z	
	Shock	980m/s²(100G), 3 times each in direction of X, Y and Z	
Temperature characteristic		±2% F.S. of detected pressure (25°C) at temp. Range of 0~50°C	
Port size		G1/8 NPS, M5	
Lead wire		Oil-resistance cable (0.15mm²)	
Weight		Approx. 35g (with M8, 4Pin male connector)	

ORDERING INFORMATION

D V N - 1 0 0

Output Specifications

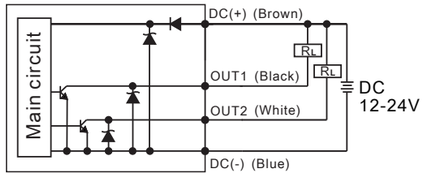
N : 2 NPN output
P : 2 PNP output

Cable Length/Connector

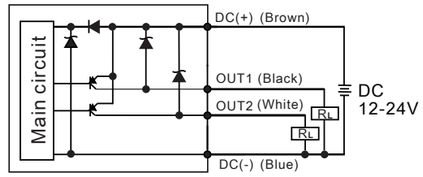
QD : With M8, 4Pin male connector

OUTPUT CIRCUIT WIRING DIAGRAMS

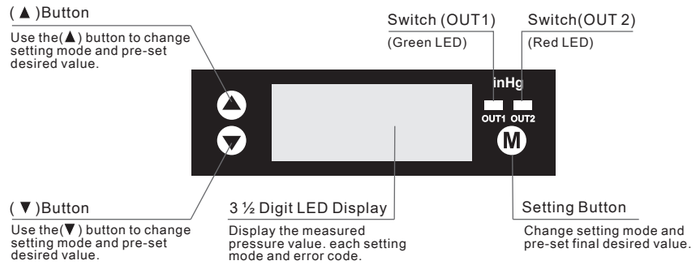
DVN-100
NPN output



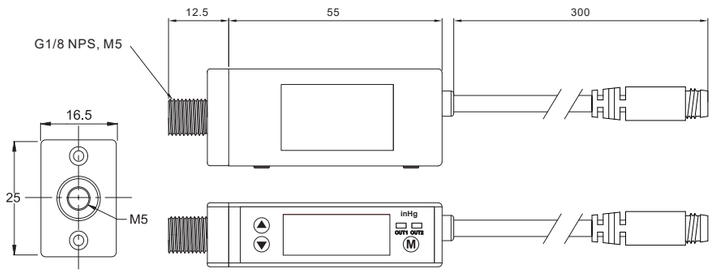
DVP-100
PNP output



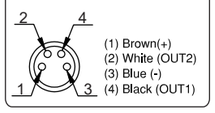
PANEL DESCRIPTION



DIMENSIONS



QD PINOUT



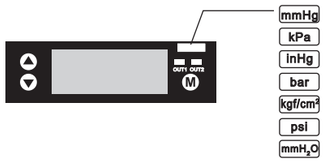
Unit:mm

High Precision Digital Pressure

DV-100 CE

CHANGE PRESSURE UNIT TAG

When the pressure setting is not kPa or MPa, please remove the pressure unit tag and place the selected tag on the indicated area of the faceplate to assure the pressure unit is not misemployed and that setting error does not occur.



From \ To	Pa	kPa	kgf/cm²	mmHg	psi	bar	inHg	mmH$_2$O
1 Pa	1	0.001	0.000010197	0.00750062	0.000145038	0.00001	0.0002953	0.101968
1 kPa	1000.000	1	0.010197	7.500616	0.145038	0.010000	0.2953	101.9689
1 kgf/cm²	98066.5	98.0665	1	735.559	14.2233	0.980665	28.95979	10000.20
1 mmHg	133.32	0.13332	0.0013595	1	0.019336	0.0013332	0.039370	13.5954
1 psi	6895	6.895	0.07031	51.7157	1	0.06895	2.036074	703.07
1 bar	100000.0	100.0000	1.01972	750.062	14.5038	1	29.52998	10196.89
1 inHg	3386.388	3.386388	0.034530	25.40000	0.491141	0.033863	1	345.324
1 mmH$_2$O	9.80665	0.00980	0.000099	0.0735578	0.00142	0.000098	0.002895	1

【Note :】When using a unit mmH$_2$O, please multiply display value by 100.

SETTING STEPS

Measure Mode → Initial Setting Mode → Pressure Setting Mode → Zero Point Setting → Measure Mode

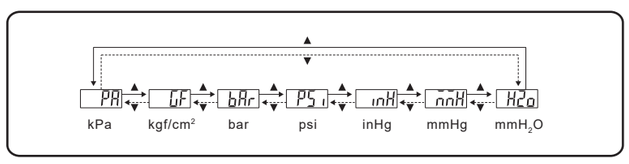
- Initial Setting Mode: Unit / Output Mode / Response Time / Auto/Manual
- Pressure Setting Mode: P_1 or n_1 / P_2 or n_2 / P_3 or n_3 / P_4 or n_4
- Zero Point Setting: Setting zero point under **atmospheric pressure**

INITIAL SETTING MODE

Measure mode ● Press(M) button for more than 3 seconds.

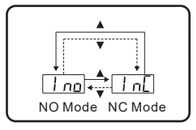
(M)

Unit setting ● Use the▲ or▼ button to set desired pressure unit.



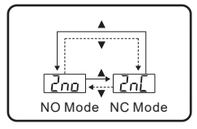
(M)

OUT1 mode setting ● Use the▲ or▼ button to set OUT1 mode.
● Output type：
NO: normal open mode
NC: normal close mode



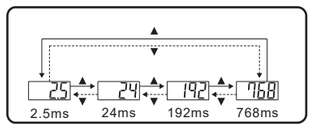
(M)

OUT2 mode setting ● Use the▲ or▼ button to set OUT2 mode.
● Output type：
NO: normal open mode
NC: normal close mode



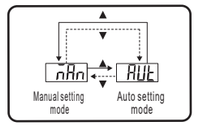
(M)

Response time setting ● Use the▲ or▼ button to select response time.



(M)

Pressure value setting : Auto/Manual ● Use the▲ or▼ button to select auto/manual setting.



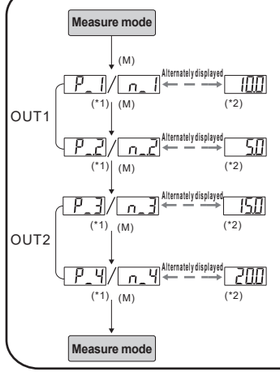
(M)

Measure mode

PRESSURE SETTING MODE

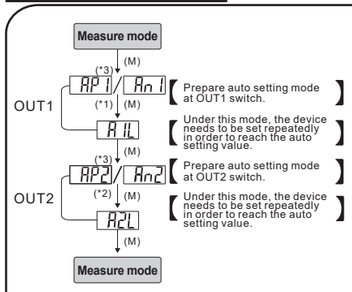
Select auto/manual setting mode during initial set-up.

Manual setting mode



【NOTE:】
*1.The LED shows (P_*) at normal open mode and (n_*) at normal close mode. Pressure setting value is shown normally and will not lead to pressure sensor pause or stop working.
*2.Change pressure value:
Press ▲ button, each press will increase one digit. Keep pressing the ▲ button, the pressure value will keep increasing.
Press ▼ button, each press will decrease one digit. Keep pressing the ▼ button, the pressure value will keep decreasing.

Auto setting mode



【NOTE:】
*1.In case of without need of OUT1 pressure value setting,press ▼+▲ at the same time to enter (AP2)/(An2).
*2.In case of without need of OUT2 pressure value setting,press ▼+▲ at the same time to enter measure mode.
3.The LED show 「AP」at normal open mode and 「An*」at normal close mode.

【Calculation of Setting value】

A=The max. pressure value under auto setting mode.
B=The min. pressure value under auto setting mode.

$$P1(n1) \quad P3(n3) = A - \frac{A-B}{4}$$

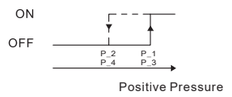
$$P2(n2) \quad P4(n4) = B + \frac{A-B}{4}$$

OUTPUT TYPE

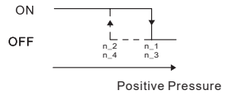
Hysteresis Mode : P1(n1)>P2(n2) P3(n3)>P4(n4)

Output hysteresis value can be pre-set.

Normal open mode



Normal close mode

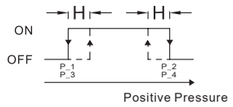


【Note :】When hysteresis mode setting is within 2 digits, if the input and pre-set pressure is quite near, pressure sensor output might cause chattering.

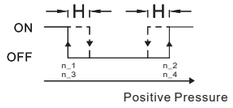
Window comparator mode : P1(n1)<P2(n2) P3(n3)<P4(n4)

Within pressure setting range, pressure sensor output can be ON or OFF.

Normal open mode



Normal close mode



【Note :】Hysteresis is fixed in 3 digits.
Pressure value level setting : At least 6 digits.

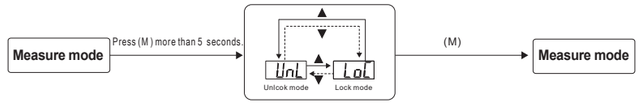
ZERO POINT SETTING / THE MAX. & MIN. DISPLAY MODE

Zero point setting：
● Press the ▼+▲ button at the same time until the "00" is shown. Release the button to end zero setting.

The Max. value display mode：
● Press ▲ button 2 seconds to enter the max. value mode, pressure sensor will detect the max. value and keep display.
● Press ▲ button 2 seconds to return to measure mode.

The Min. value display mode：
● Press ▼ button 2 seconds to enter the min. value mode, pressure sensor will detect the min. value and keep display.
● Press ▼ button 2 seconds to return to measure mode.

KEY LOCK/UNLOCK MODE



● Use▼or▲to select key lock/unlock mode.
● Key lock mode can prevent operation mistakes.

ERROR CODE INSTRUCTION

Error Name		Error code	Error instruction	Troubleshooting
Excess load current error	OUT1	Er1	Excess load current of 100 mA	Turn power off and check the cause of overload current or lower the current load under 100 mA, then restart.
	OUT2	Er2		
Residual pressure error		Er3	During zero reset, ambient pressure is over ±3% F.S.	Change input pressure to ambient pressure and perform zero reset again.
Applied pressure error		----	The applied pressure is excess the upper limit of pressure setting.	Adjust the pressure within applied pressure range.
		____	The applied pressure is excess the lower limit of pressure setting.	
System error		Er4	Internal data error	Turn power off, and then restart. If error condition remains, please return to factory for inspection.
		Er6	Internal system error	
		Er7	Internal data error	
		Er8	Internal system error	