



PNEUMAX S.p.A

Components for Pneumatic Automation Via Cascina Barbellina,10
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Pressure switch DS.30 series

For your safety, please read the following before using.

- Do not use corrosive or flammable gas or liquid with this product.
- Please use within the operating pressure range. Do not apply pressure beyond recommended maximum pressure, permanent damage to the pressure switch may occur.
- Do not drop, hit or allow excessive shock. Even if switch body appears undamaged, internal components may be broken and can cause malfunction.
- Turn power off before connecting wiring. Wrong wiring or short circuit will damage and/or cause malfunction.
- Do not use in environment containing steam or oil vapor.
- This product is not explosion-proof rated. Do not use in atmosphere containing flammable or explosive gases.
- Wiring for pressure switch should avoid power source line and high voltage line. If use in the same circuit, noise may cause malfunction.

SPECIFICATIONS		DS.30
Rated pressure range		-100.0 + 100.0kPa
Setting pressure range		-100.0 + 100.0kPa
Withstand pressure		300kPa
Fluid		Filtered air, Non-corrosive/Non-flammable gas
Set pressure resolution	kPa	0.1
	kgf/cm ²	0.001
	bar	0.001
	psi	0.01
	inHg	0.1
	mmHg	1
	mmH ₂ O	0.1
Power supply voltage		12 to 24 VDC (include ripple voltage)
Current consumption		≤ 55mA
Switch output		PNP: open collector 2 outputs Max. load current: 80mA Max. supply voltage: 24V DC Voltage drop: ≤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
Indicator		OUT1=Green, OUT2=Red
Environment	Protection degree	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/s ² (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" swivel
Lead wire		Oil-resistance cable (0.15mm ²)
Weight		Approx. 67g (with 2 meter lead wire), Approx. 35g (with M8, 4Pin male connector)

ORDERING CODE

DS . 30 . C . C . F 8 . D . 0

Pressure Range

C : Compound
(-100.0+100.0kPa)

Output Specifications

C : 2 PNP output

Pressure Port

F8 : G1/8" swivel

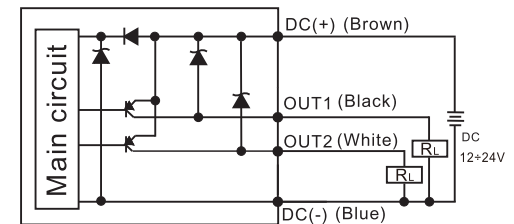
Cable Length/Connector

D.0 : With 2 meter cable

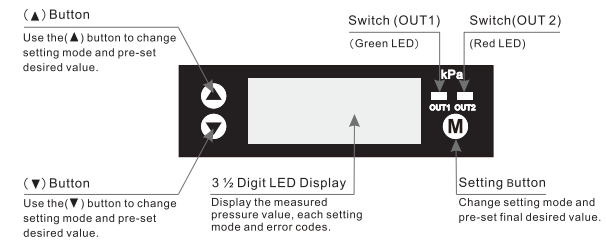
B.2 : With M8,4Pin male connector (300mm cable)

SIMPLIFIED DIAGRAM

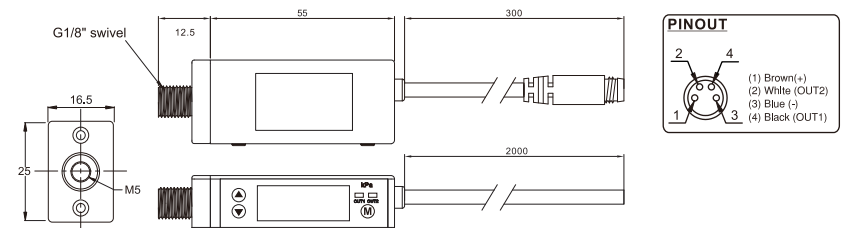
PNP output



PANEL DESCRIPTION



DIMENSIONS



Unit:mm

CHANGE PRESSURE UNIT TAG

When the pressure setting is not **kPa**, 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	MPa	kgf/cm ²	mmHg	psi	bar	inHg	mmH ₂ O
1 Pa	1	0.001	0.000001	0.000010197	0.00750062	0.000145038	0.00001	0.0002953	0.101968	
1 kPa	1000.000	1	0.001000	0.010197	7.500616	0.145038	0.010000	0.2953	101.9689	
1 MPa	1000000	1000	1	10.197	7500.616	145.038	10	295.2998	101968.9	
1 kgf/cm ²	98066.5	98.0665	0.0980665	1	735.559	14.2233	0.980665	28.95979	10000.20	
1 mmHg	133.32	0.13332	0.00133	0.0013595	1	0.019336	0.0013332	0.039370	13.5954	
1 psi	6895	6.895	0.006895	0.07031	51.7157	1	0.06895	2.036074	703.07	
1 bar	100000.0	100.0000	0.100000	1.01972	750.062	14.5038	1	29.52998	10196.89	
1 inHg	3386.388	3.386388	0.003386	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 as unit mmH₂O, please multiply display value by 100.

SETTING STEPS



- Unit
- Output Mode
- Response Time
- Auto/Manual

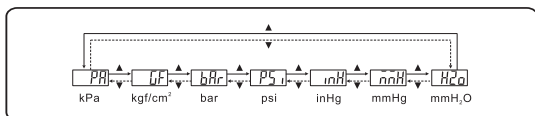
- P_1 or n_1
- P_2 or n_2
- P_3 or n_3
- P_4 or n_4

Setting zero point under atmospheric pressure

INITIAL SETTING MODE

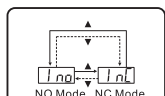
Measure mode ● Press(M) button for more than 3 seconds.

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



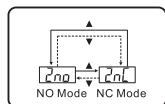
OUT1 mode setting ● Use the ▲ or ▼ button to set OUT1 mode.

- Output type) :
- NO: normally open mode
- NC: normally closed mode

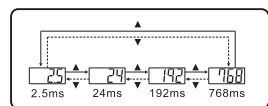


OUT2 mode setting ● Use the ▲ or ▼ button to set OUT2 mode.

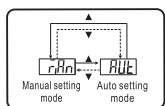
- Output type) :
- NO: normally open mode
- NC: normally closed mode



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



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

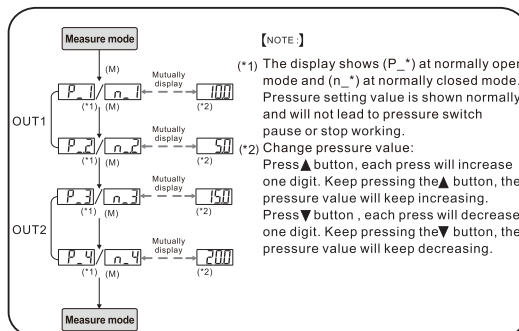


Measure mode

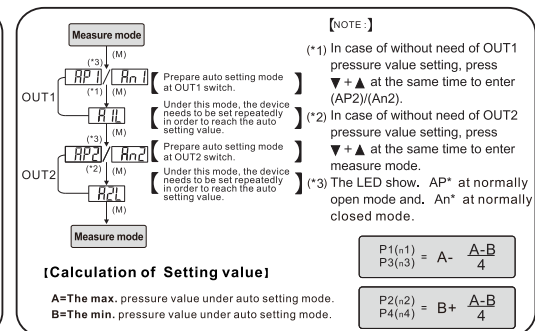
HOW TO SET PRESSURE THRESHOLD

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

Manual setting mode



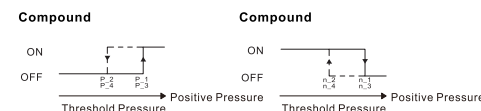
Auto setting mode



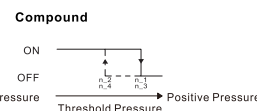
OUTPUT

Hysteresis Mode : P1(n1)>P2(n2)
P3(n3)>P4(n4)
Output hysteresis value can be pre-set.

Normally open mode

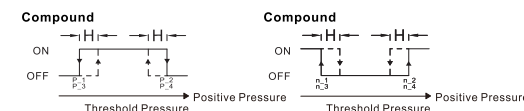


Normally closed mode

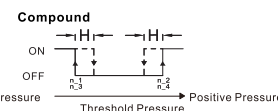


Window comparator mode : P1(n1)<P2(n2)
P3(n3)<P4(n4)
Within pressure setting range, pressure switch output can be ON or OFF..

Normally open mode



Normally closed mode



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

【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.

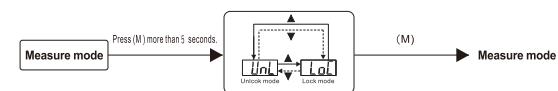
The Max. value display mode) :

- Press ▲ button 2 seconds to enter the max. value mode, pressure switch 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 switch 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 80 mA	Turn power off and check the cause of overload current or lower the current load under 80 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 exceeds the upper limit of pressure setting.	Adjust the pressure within applied pressure range.
	----	The applied pressure exceeds 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	