



SWD

Hydraulic Pressure Switch, Main Unit, Positive-pressure Type, 25 MPa



Model			SWD		
Rated pressure			0 to +3626 PSI (0 to +25 MPa)		
Possible display range			-363 to +3989 PSI (-2.50 to +27.50 MPa)		
Zero-cut pressure value			±0.5% of F.S.		
Allowable pressure			7252 PSI (50 MPa)		
Burst pressure			14504 PSI (100 MPa)		
Display resolution	kPa		None		
	MPa		0.01		
	PSI		1		
	bar		0.1		
	kgf/cm ²				
Fluid type			Liquid that will not corrode the liquid contact part		
Type of pressure			Gage pressure		
Precision			±1.0% of F.S. or less ^{*1}		
Repeatability			±0.3% of F.S. or less ^{*2}		
Temperature characteristics			±0.6% of F.S./10°C 50°F		
Connection port			G3/4 (Changes to the R male 1/8, R male 1/4, R male 3/8, G female 1/4, NPT male 1/8, and NPT male 1/4 option adaptors are available.)		
Box rotation angle			Maximum 330°		
Medium temperature			-20 to +100°C -4°F to +212°F (no freezing/condensation) ^{*3}		
Power voltage			10-30 VDC, Ripple (P-P): 10% max, Class 2 or LPS		
Current consumption			50 mA or less (when 24 V: 32 mA or less, when 12 V: 48 mA or less. Not including load) ^{*4}		
Display method			4 column, digital LED, red/Vertical inversion display possible		
Operation display light			Operation indicator (output 1) (orange), Operation indicator (output 2) (orange)		
Hysteresis			During hysteresis mode: variable (Difference between switch-on point and switch-off point is hysteresis) During window mode: fixed (0.5% of F.S.)		
Response	Control output		Selectable from 3 to 5000 ms		
	Analog output		As above + 2 ms (90% response)		
Output	Output 1 control output		NPN/PNP open collector (Selectable), Max. 250 mA (30 V max) Main unit residual voltage 1 V max, N.O./N.C. selectable		
	Output 2 replacement type	Control output			
		Analog output	4-20 mA, maximum load resistance 500 Ω (When the electric voltage is more than 20 V) ^{*5}		
Environmental resistance	Ambient temperature		-20 to +80°C -4°F to +176°F (no freezing/condensation)		
	Relative humidity		35 to 85% RH (no condensation)		
	Vibration		IEC60068-2-6 20 G (10 to 2000 Hz, 2 hours each in the X, Y, and Z axis)		
	Shock		IEC60068-2-27 50 G (11 ms, 3 times for each of X, Y and Z axis)		
	Enclosure rating		IP67		
Material properties	Wetted part		Pressure port: SUSXM7, Diaphragm pressure port: Al ₂ O ₃ (Alumina), O ring: FKM		
	Other parts		Housing metal portion: SUS304, SUS303, Housing plastic portion: PPSU		
Applicable cable			M12 connector 4 pin		
Weight			App. 150 g		

^{*1} This is the value when considering linearity + hysteresis + repeatability in a stable environment of 23°C 73°F.

^{*2} The repeatability, based on consistent conditions, is the variation in the value that will be displayed.

^{*3} When the temperature of the piping exceeds 80°C 176°F, do not connect the cable.

^{*4} Consumption current including output is 0.6 A and under.

^{*5} The maximum load resistance R will be the values below in response to the electric voltage E. When 10-23V: R = [36 x (E-10) + 128] Ω When 23-30V: R = 622 Ω

	Relative humidity	35 to 85 % RH (No condensation)
	Vibration resistance	IEC60068-2-6 20 G (10 to 2000 Hz, 2 hours each in the X, Y, and Z axis)
	Shock resistance	IEC60068-2-27 50G (11 ms, 3 times for each of X, Y and Z direction)
Material properties	Wetted part	Pressure port: SUSXM7, Diaphragm pressure port: Al ₂ O ₃ (Alumina), O ring: FKM
	Other parts	Housing metal portion: SUS304, SUS303, Housing plastic portion: PPSU
Applicable cable		M12 connector 4 pin
Weight		Approx. 150 g

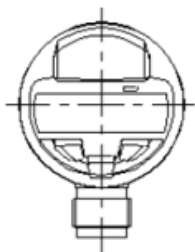
*1 This is the value when considering linearity + hysteresis + repeatability in a stable environment of 23°C 73°F.

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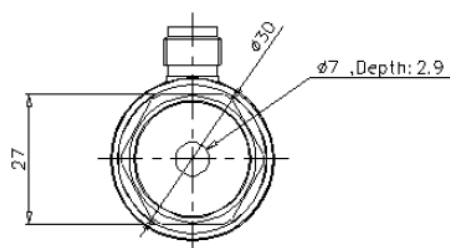
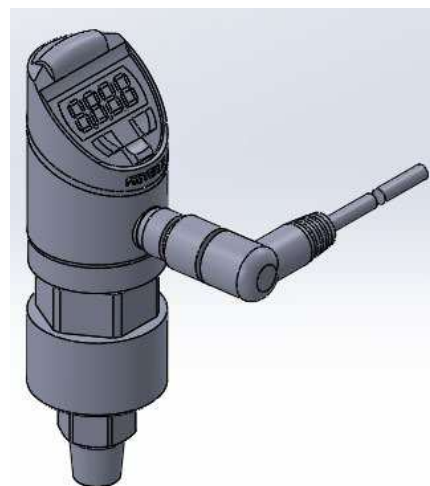
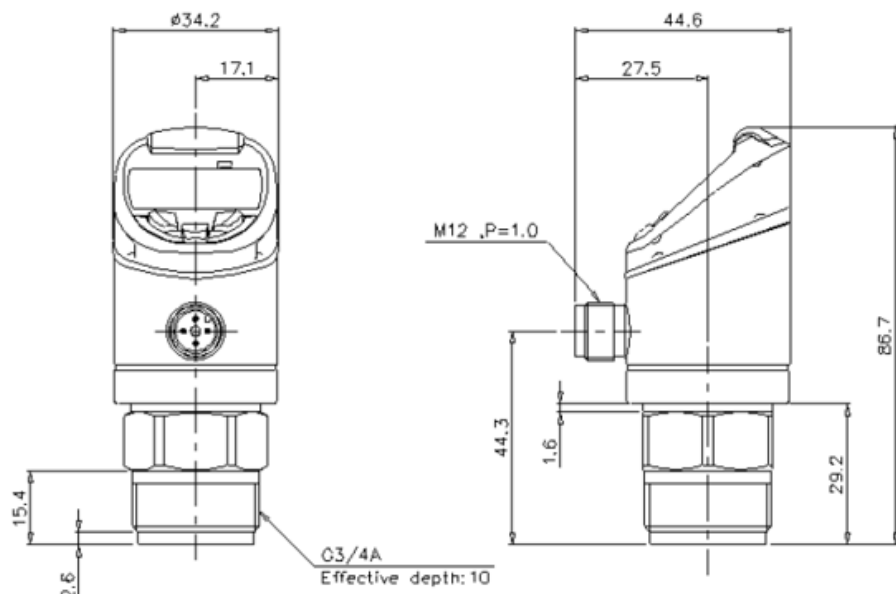
*4 Consumption current including output is 0.6 A and under.

*5 The maximum load resistance R will be the values below in response to the electric voltage E. When 10-23V: $R = \{38 \times (E-10) + 128\} \Omega$ When 23-30V: $R = 622 \Omega$

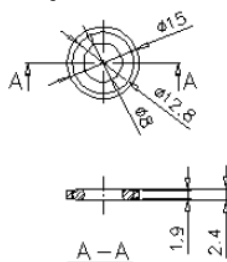


Download CAD file or product manual for larger image/text, and additional details.

* Please note that accessories depicted in the image are for illustrative purposes only and may not be included with the product.



O Ring Set



FKM(O Ring)
PTFE(Back-up Ring)

NPN/PNP selectable

Selectable between [2 outputs]
or [1 output + analog output]

Various cables and adapter
accessories are available



Inverse display function

The digital display can be inverted 180 degrees, which allows installation in nearly any orientation.

Prevent unauthorized changes

Key Lock and Password Protection settings are available to prevent unauthorized changes from being made.

Easy Maintenance

Clogging inside of the sensor may lead to a delayed response or errors in detection values. The GP-M can be removed and cleaned when couplings or other connecting parts become clogged. The step flush diaphragm design simplifies debris removal.



Rugged durability and environmental resistance

Vibration
resistance
20g

Shock
resistance
50g

Light weight
150g

Fluid temperature range
-20 to +100°C*
-4 to +212°F

High chemical resistance and hardness
Ceramic diaphragm:
Alumina

SUS316L

Al₂O₃
(Alumina)

**TOUGH &
HEAVY-DUTY**



* No freezing or condensation

Model		GP-M250
Rated pressure		0 to +3626 PSI (0 to +25 MPa)
Possible display range		-363 to +3989 PSI (-2.50 to +27.50 MPa)
Zero-cut pressure value		
Allowable pressure		
Burst pressure		
Display resolution	kPa	
	MPa	
	PSI	
	bar	
	kgf/cm ²	
Fluid type		Gas or liquid that will not corrode the liquid contact part
Type of pressure		Gage pressure
Precision^{*1}		±1.0% of F.S. or less
Repeatability^{*2}		±0.3% of F.S. or less
Temperature characteristics		±0.6% of F.S./10°C 50°F
Connection port		G3/4 (Changes to the R male 1/8, R male 1/4, R male 3/8, G female 1/4, NPT male 1/8, and NPT male 1/4 option adapters are available.)
Box rotation angle		Maximum 330°
Medium temperature		-20 to +100°C -4°F to +212°F (no freezing/condensation) ^{*3, *5}
Power voltage		10-30 VDC, Ripple (P-P): 10% max, Class 2 or LPS
Current consumption		50 mA or less (when 24 V: 32 mA or less, when 12 V: 48 mA or less. Not including load) ^{*4}
Display method		4 column, digital LED, red/Vertical inversion display possible
Operation display light		Operation indicator (output 1) (orange), Operation indicator (output 2) (orange)
Hysteresis		During hysteresis mode: variable (Difference between switch-on point and switch-off point is hysteresis) During window mode: fixed (0.5% of F.S.)
Response	Control output	Selectable from 3 to 5000 ms
	Analog output	As above + 2 ms (90% response)
Output	Output 1 control output	NPN/PNP open collector (Selectable), Max. 250 mA (30 V max) Main unit residual voltage 1 V max./N.C. selectable
	Output 2 replacement type	
Environmental resistance	Ambient temperature	-20 to +80°C -4°F to +176°F (no freezing/condensation) ^{*5}
	Relative humidity	35 to 85% RH (no condensation) ^{*5}
	Vibration	IEC60068-2-6 20 G (10 to 2000 Hz, 2 hours each in the X, Y, and Z axis)
	Shock	IEC60068-2-27 50 G (11 ms, 3 times for each of X, Y and Z axis)
	Enclosure rating	IP67
Material properties	Wetted part	Pressure port: SUSXM7, Diaphragm pressure port: Al ₂ O ₃ (Alumina), O ring: FKM
	Other parts	Housing metal portion: SUS304, SUS303, Housing plastic portion: PPSU, Air hole [†] : PTFE, nickel-plated brass.
Applicable cable		M12 connector 4 pin
Weight		App. 150 g

^{*1} This is the value when considering linearity + hysteresis + repeatability in a stable environment of 23°C 73.4°F.

^{*2} The repeatability, based on consistent conditions, is the variation in the value that will be displayed.

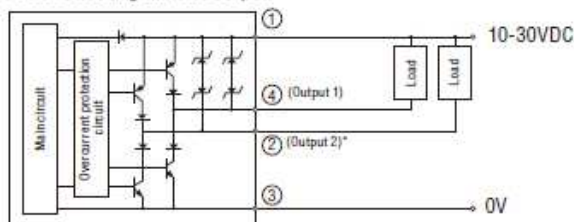
^{*3} When the temperature of the piping exceeds 80°C 176°F, do not connect the cable.

^{*4} Consumption current including output is 0.6 A and under.

^{*5} The maximum load resistance R will be the values below in response to the electric voltage E. When 10-23V: $R = (38 \times (E-10) + 128) \Omega$ When 23-30V: $R = 622 \Omega$

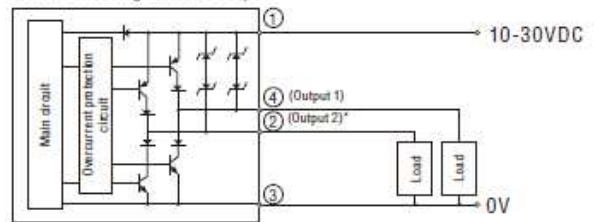
WIRING, OUTPUT DIAGRAM

When selecting an NPN output



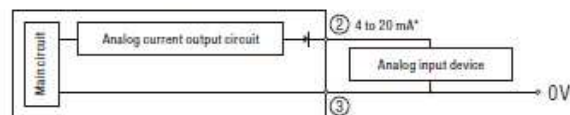
* When selecting "Out"(control output) of the function of output 2 only.

When selecting an PNP output



* When selecting "Out"(control output) of the function of output 2 only.

Analog output diagram



* When selecting "AnLG"(Analog output) of the function of Output 2 only.

M12 Connector Cable (Optional) Pin Position

