

Compact Pressure Sensor 12 Series

Compact Sensor heads for positive/negative pressure (switch output and analog output types)

Safety instructions for this product

Safety instructions, Common safety instructions for each product category and Detailed safety instructions for each product are in the end of this catalog and our website.

Model Designation (Example)



(1) Type

VUS: Negative pressure sensor

(2) Display, Lead wire type

12: No display, Connector cable type

(3) Connecting port type and size

Code	Male thread type				Plug-in type			Union type			
	Metric thread	Taper pipe thread	Unified fine thread	inch NPT	Push-in fitting size			Tube O.D.			
	M5 *1	O1	U10U *1 *3	N1U *3	4	6	1/4	4U *2	6U *2	5/32U *2 *3	1/4U *2 *3
Size	M5x0.8	R1/8	10-32UNF	NPT1/8	ø4mm	ø6mm	ø1/4"	ø4mm	ø6mm	ø5/32"	ø1/4"

*1 The gasket for metric and unified fine thread is SUS304+NBR.

*2 Union type comes with a mounting bracket.

*3 -S3 spec. is not available.

(4) Output type

Code	A	S
Specifications	Analog output	Switch output

(5) Connector cable length

Code	No code	-C50	-C100	-C200	-C300	-C500
Cable length (mm)	Without cable	500	1,000	2,000	3,000	5,000

(6) -S3 spec. (Metal option)

Code	No code	-S3 (*)
Metal material	Standard spec.	No copper-based metallic material used in flow paths.
Seal rubber material	Standard spec.	HNBR or FKM

*-S3 specification is applied only to air path part and not corresponding to electronic parts or electrical wires.

Model designation of Connector cable (Example)



(1) Connector cable

(2) Connector cable length

Code	C50	C100	C200	C300	C500
Cable length (mm)	500	1,000	2,000	3,000	5,000

Characteristics

Small pressure sensor (Width: 8.5mm, Length: 25.4mm)

Easier wiring and maintenance with connector type lead wire.

Three types of pressure port configuration

With use of an separate type indicator, separation of sensor head and the indicator is possible.

* Use an analog output type display.

Switch output and analog output type for output spec.

5 types of connector cable length are available.

Select best suitable length from 500 mm, 1000 mm, 2000 mm, 3000 mm and 5000 mm according to your applications.

● -S3 spec. (Metal option) *For air path parts only.

No copper-based metallic material used in flow paths.

HNBR or FKM, which are good in ozone resistance, is used for seal rubber.

* Plug-in type corresponds to -S3 spec. as standard.



Related product



Display for Analog output sensor

► P.188

Specifications

■ Switch output type

Fluid medium	Air, Inert gas	
Pressure detection	Diffused metaloxide semiconductive pressure switch	
Power supply	10.8 to 30VDC including Ripple	
Current consumption	20 mA or less (no-load at 24 VDC)	
Operating pressure range	-100 to 0 kPa	
Proof pressure	1 MPa	
Storage temp. range	-20 to 70°C (Atmospheric pressure, Humidity 60% or less)	
operating temperature range	0 to 60°C(No freezing)	
Operating humidity pressure	35 to 85%RH (No dew condensation)	
Protective structure	IP40 equiv.	
Switch output	No. of press. setting	1
	Switch output	NPN open collector output: 30 V 80 mA max. Residual voltage 0.8 V max.
	Operation indicator	N.O. (Red LED turns on when pressure is above setting)
	Hysteresis	Fixed (2% F.S. max.)
	Operating accuracy	±3%F.S. max. (standard ref. temp. at 25 °C)
	Response	About 2msec.
	Pressure setting range	-100 to 0 kPa

■ Analog output type

Fluid medium	Air, Inert gas	
Pressure detection	Diffused metaloxide semiconductive pressure switch	
Power supply	10.8 to 30VDC including Ripple	
Current consumption	20 mA or less (no-load at 24 VDC)	
Operating pressure range	-100 to 0 kPa	
Proof pressure	1 MPa	
Storage temp. range	-20 to 70°C (Atmospheric pressure, Humidity 60% or less)	
operating temperature range	0 to 60°C(No freezing)	
Operating humidity pressure	35 to 85%RH (No dew condensation)	
Protective structure	IP40 equiv.	
Analog output	Output voltage	1 to 5V
	Zero-point voltage	1±0.04V
	Voltage at max. press.	5±0.04V
	Output current	1mA max.(Load resistance: 5kΩ)
	Temp. characteristics	±2%F.S. max.(standard ref. temp. at 25 °C)
	Linearity	±0.5%F.S. max. (standard ref. temp. at 25 °C)

RoHS2 (2011/65/EU+EU2015/863) compliant

Switch output type

Type	Model code		Type	Model code		Type	Model code	
Union type VUS 	VUS12-4US	VUS12-1/2US	Plug-in type VUS 	VUS12-4S	VUS12-1/4S	Male thread type VUS 	VUS12-M5S	VUS12-U10US
	VUS12-6US	VUS12-1/4US		VUS12-6S	VUS12-1/4S-C50		VUS12-01S	VUS12-N1US
	VUS12-4US-C50	VUS12-1/2US-C50		VUS12-4S-C50	VUS12-1/4S-C100		VUS12-M5S-C50	VUS12-U10US-C50
	VUS12-6US-C50	VUS12-1/4US-C50		VUS12-6S-C50	VUS12-1/4S-C200		VUS12-01S-C50	VUS12-N1US-C50
	VUS12-4US-C100	VUS12-1/2US-C100		VUS12-4S-C100	VUS12-1/4S-C300		VUS12-M5S-C100	VUS12-U10US-C100
	VUS12-6US-C100	VUS12-1/4US-C100		VUS12-6S-C100	VUS12-1/4S-C500		VUS12-01S-C100	VUS12-N1US-C100
	VUS12-4US-C200	VUS12-1/2US-C200		VUS12-4S-C200			VUS12-M5S-C200	VUS12-U10US-C200
	VUS12-6US-C200	VUS12-1/4US-C200		VUS12-6S-C200			VUS12-01S-C200	VUS12-N1US-C200
	VUS12-4US-C300	VUS12-1/2US-C300		VUS12-4S-C300			VUS12-M5S-C300	VUS12-U10US-C300
	VUS12-6US-C300	VUS12-1/4US-C300		VUS12-6S-C300			VUS12-01S-C300	VUS12-N1US-C300
	VUS12-4US-C500	VUS12-1/2US-C500		VUS12-4S-C500			VUS12-M5S-C500	VUS12-U10US-C500
	VUS12-6US-C500	VUS12-1/4US-C500		VUS12-6S-C500			VUS12-01S-C500	VUS12-N1US-C500

Analog output type

Type	Model code		Type	Model code		Type	Model code	
Union type VUS 	VUS12-4UA	VUS12-1/2UA	Plug-in type VUS 	VUS12-4A	VUS12-1/4A	Male thread type VUS 	VUS12-M5A	VUS12-U10UA
	VUS12-6UA	VUS12-1/4UA		VUS12-6A	VUS12-1/4A-C50		VUS12-01A	VUS12-N1UA
	VUS12-4UA-C50	VUS12-1/2UA-C50		VUS12-4A-C50	VUS12-1/4A-C100		VUS12-M5A-C50	VUS12-U10UA-C50
	VUS12-6UA-C50	VUS12-1/4UA-C50		VUS12-6A-C50	VUS12-1/4A-C200		VUS12-01A-C50	VUS12-N1UA-C50
	VUS12-4UA-C100	VUS12-1/2UA-C100		VUS12-4A-C100	VUS12-1/4A-C300		VUS12-M5A-C100	VUS12-U10UA-C100
	VUS12-6UA-C100	VUS12-1/4UA-C100		VUS12-6A-C100	VUS12-1/4A-C500		VUS12-01A-C100	VUS12-N1UA-C100
	VUS12-4UA-C200	VUS12-1/2UA-C200		VUS12-4A-C200			VUS12-M5A-C200	VUS12-U10UA-C200
	VUS12-6UA-C200	VUS12-1/4UA-C200		VUS12-6A-C200			VUS12-01A-C200	VUS12-N1UA-C200
	VUS12-4UA-C300	VUS12-1/2UA-C300		VUS12-4A-C300			VUS12-M5A-C300	VUS12-U10UA-C300
	VUS12-6UA-C300	VUS12-1/4UA-C300		VUS12-6A-C300			VUS12-01A-C300	VUS12-N1UA-C300
	VUS12-4UA-C500	VUS12-1/2UA-C500		VUS12-4A-C500			VUS12-M5A-C500	VUS12-U10UA-C500
	VUS12-6UA-C500	VUS12-1/4UA-C500		VUS12-6A-C500			VUS12-01A-C500	VUS12-N1UA-C500

Maintenance parts

Type	Model code
Connector cable FSED 	FSED012B07-C50
	FSED012B07-C100
	FSED012B07-C200
	FSED012B07-C300
	FSED012B07-C500



Notes

*1 Plug-in type corresponds to -S3 spec. as standard.

*2 Output impedance of analog output type is 1kΩ. In the case impedance of connected load is low, margin of output becomes large.

Check the margin of connected load before use the product

<Calculation example (connected load impedance = 1 MΩ)>

· Output impedance VUS12: Ro = 1 kΩ

· Connected load impedance: Rx = 1 MΩ

· Output = $(1 - Ro/(Ro + Rx)) \times 100\% = (1 - 1k\Omega/(1k\Omega + 1M\Omega)) \times 100\% = 99.9\% \dots 0.1\%$ margin.



CAD data is available
at PISCO website.



Packaging specifications
1 pc. /bag



Options

[6] : -S3 ⇒ -S3 spec.

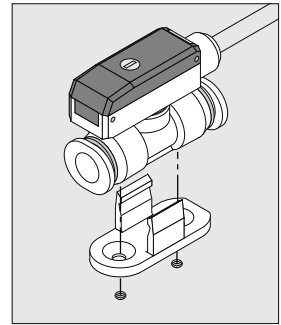
* The gasket material is POM for -S3 spec.

■ How to fix the body

Fixing Compact Pressure Sensor (Union type)

Use the fixing holes in the mounting bracket for Compact Pressure Sensor and fix with the included M3 screws.

(Refer to the dimensional drawings of Compact Pressure Sensor Union type for the hole pitch under Type & Price List on PISCO website. (<https://www.pisco.co.jp/en/product/p/p05/>))



Refer to the user's manual for the handling method.