



FD-XS1

Sensor head Maximum rated flow rate 1 L/min



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

Specifications

Model				FD-XS1
Supported pipe materials				Metal pipes, Plastic pipes (soft/hard) *1
Supported fluids				Liquids (water, oil, adhesive, grease, chemical solutions, etc.) *1
Supported fluid temperature				0 °C (no freezing on the pipe surface) to 100 °C 32 to 212 °F (Pipe surface temperature)
Clamp set model	Plastic pipe/tube attachment			FD-XC1R1, FD-XC1R2
	Metal pipe attachment			FD-XC1M*2
Maximum rated flow rate				0 to 1000 mL/min
Zero cut flow rate				20 mL/min*3 (variable, default)
Display resolution	Instantaneous flow rate			0.1/1/10 mL/min (Displayed on controller)
	Shot amount			0.001/0.01/0.1/1 mL (Displayed on controller)
Repeatability	Plastic pipe/tube attachment	Response time: 50 ms	F.S.	± 0.6 %*4*5
			Instantaneous flow rate	±6 mL/min*4*5
		Response time: 500 ms		±1.9 mL/min*4
	Metal pipe attachment	Response time: 50 ms	F.S.	± 1 %*4*5
			Instantaneous flow rate	±10 mL/min*4*5
		Response time: 500 ms		±3.2 mL/min*4
Hysteresis				Variable
Integrated unit display				0.1/1/10/100/1000/10000 mL (displayed on controller)
Display method				Status indicator
Environmental resistance	Enclosure rating			IP65/IP67 (IEC60529) , IP68G (JIS C0920) *6
	Ambient temperature			0 to 60 °C (No freezing) 32 to 140 °F
	Relative humidity			35 % to 85 %RH (No condensation)
	Vibration resistance			10 to 55 Hz, double amplitude 1.5 mm 0.06 ", 2 hours each for X,Y,Z direction
	Shock resistance			50 G 11 ms 3 times each for X,Y,Z direction
Material	Sensor head			Head body: PPS/PPSU, in-cable amplifier: PPS, cable: PVC, controller connector: PPS/PBT/POM
	Clamp set	For plastic pipe		Body, fixing screw: PPS, detection surface: special rubber, pipe support rubber: FKM, sensor head fixing screw: SUSXM7
		For metal pipe		Metal: SUS304/SUSXM7, detection surface: special rubber, clamp support rubber: FKM, sensor head fixing screw: SUSXM7
Weight				Approx. 230 g

*1 Liquid must allow for the passage of an ultrasonic pulse, as well as not contain large air pockets or excessive bubbles. Readings may become unstable depending on the type of pipe.

*2 When using stainless steel or iron pipes, the ideal pipe wall thickness is as follows, FD-XS1: approx. 0.5 mm 0.02", FD-XS8: approx. 1 mm 0.04", FD-XS20: approx. 1 0.04" to 2 mm 0.08". FD-X signal strength and stability will decrease as the thickness of the pipe wall increases or decreases from the suggested size.

*3 The zero cut flow rate can be changed in the settings. When using the unit with a low flow rate range, perform an origin adjustment when the fluid is not moving if you change the zero cut flow rate.

*4 This specification is valid when the flow velocity distribution is stable. This value does not take into account the effects of pulsation or fluctuations in flow velocity distribution due to facility factors. Convert the F.S. (full scale value) listed in the table according to the rated flow range.

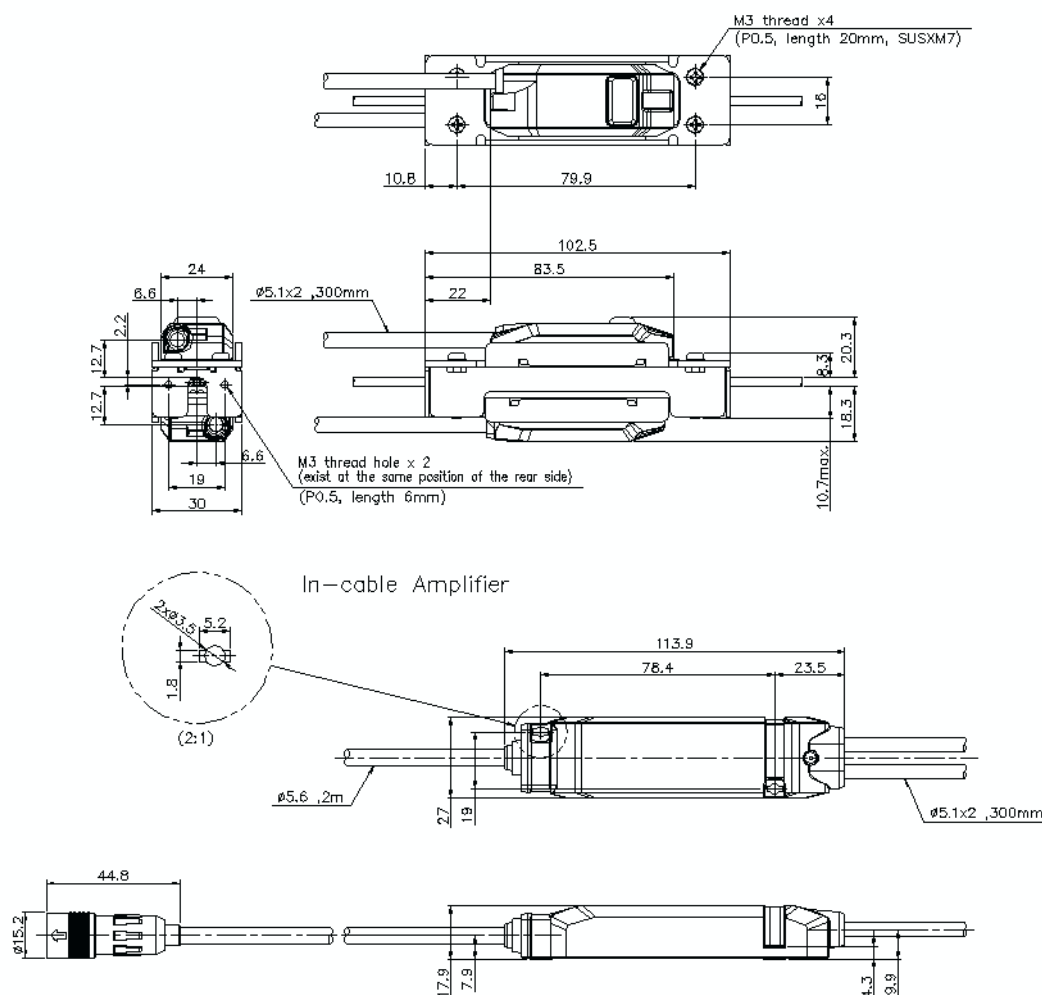
*5 The longer the response time is set, the more repeatability is improved. As a guideline, use $\sqrt{}$ (50 ms/response time) times.

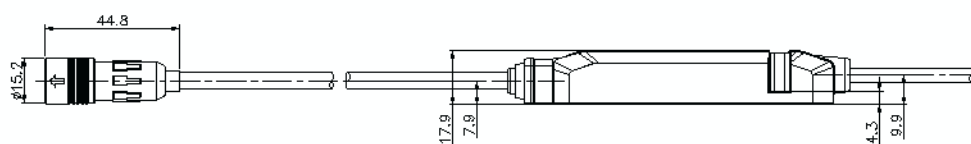
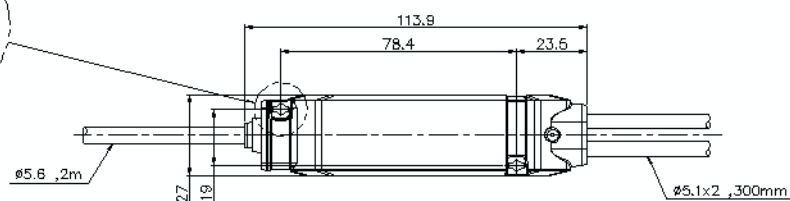
*6 The connector part of the sensor head cable is IP65/IP67.

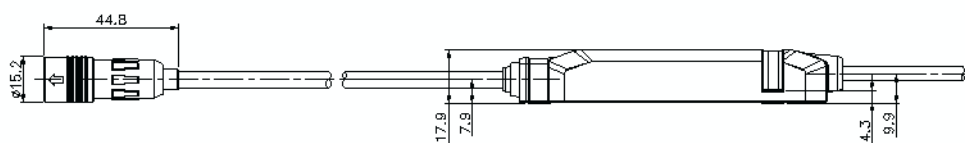
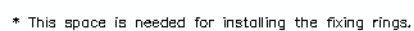
Dimensions

* Download CAD file or product manual for larger image/text and more detail.

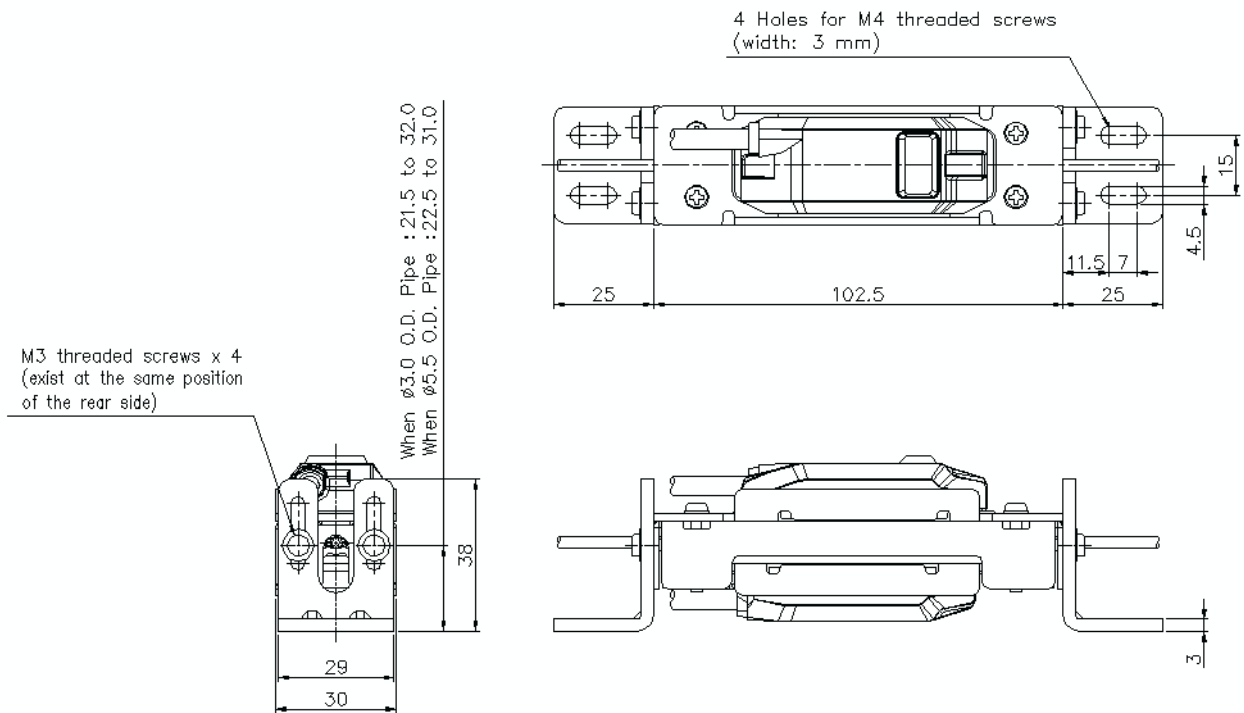
FD-XS1+FD-XC1M



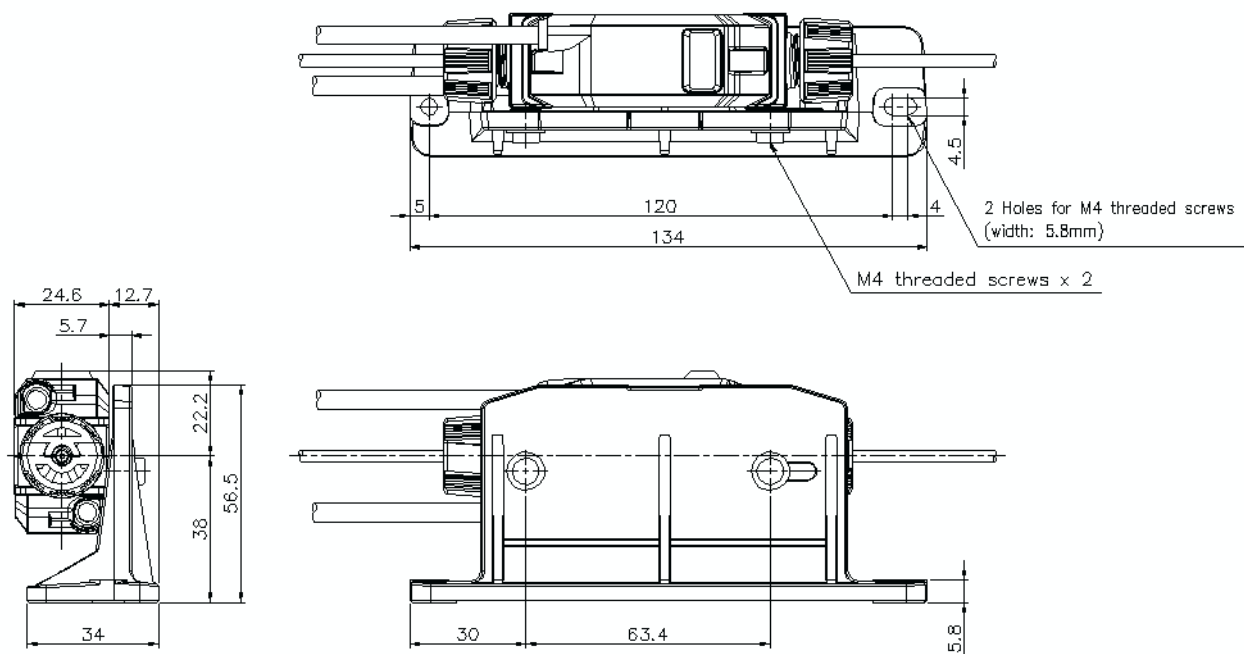




FD-XS1+FD-XC1M+OP-88297



FD-XS1+FD-XC1R1+OP-88294



FD-XS1+FD-XC1R2+OP-88294

