



FD-XS20

Sensor head Maximum rated flow rate 20 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-XS20	
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-XC20R1, FD-XC20R2, FD-XC20R3, FD-XC20R4	
	Metal pipe attachment	FD-XC20M1, FD-XC20M2*2	
Maximum rated flow rate		Outer diameter of pipe 3/8 " (9.53 mm) , ø 10 0.39 " , ø 10.5 0.41 " : 0 to 15.00 L/min Outer diameter of pipe ø 12 0.47 " , 1/2 " (12.7 mm) , ø 13.8 0.54 " : 0 to 20.00 L/min	
Zero cut flow rate		0.10 L/min (standard), 40 mL/min (high resolution*3)*4 (variable, default)	
Display resolution	Instantaneous flow rate	0.001/0.01/0.1 L/min (standard), 0.1/1/10 mL/min (high resolution*3) (Displayed on controller)	
	Shot amount	0.001/0.01/0.1 L (standard), 0.001/0.01/0.1/1 mL (high resolution*3) (Displayed on controller)	
Repeatability	Plastic pipe/tube attachment	Response time: 50 ms	F.S. Instantaneous flow rate ± 0.1 %*5*6 Outer diameter of pipe 3/8 " (9.53 mm) , ø 10 0.39 " : ±15 mL/min Outer diameter of pipe ø 12 0.47 " , 1/2 " (12.7 mm): ±20 mL/min*5*6
		Response time: 500 ms	Outer diameter of pipe 3/8 " (9.53 mm) , ø 10 0.39 " : ±4.7 mL/min Outer diameter of pipe ø 12 0.47 " , 1/2 " (12.7 mm): ±6.3 mL/min*5
	Metal pipe attachment	Response time: 50 ms	F.S. Instantaneous flow rate ±0.15 %*5*6 Outer diameter of pipe 3/8 " (9.53 mm) , ø 10 0.39 " , ø 10.5 0.41 " : ±23 mL/min Outer diameter of pipe ø 12 0.47 " , 1/2 " (12.7 mm) , ø 13.8 0.54 " : ±30 mL/min*5*6
		Response time: 500 ms	Outer diameter of pipe 3/8 " (9.53 mm) , ø 10 0.39 " , ø 10.5 0.41 " : ±7.2 mL/min Outer diameter of pipe ø 12 0.47 " , 1/2 " (12.7 mm) , ø 13.8 0.54 " : ±9.5 mL/min*5
Hysteresis		Variable	
Integrated unit display		0.01/0.1/1/10/100 L (standard), 0.1/1/10/100/1000/10000 mL (high resolution*3) (displayed on controller)	
Display method		Status indicator	
Environmental resistance	Enclosure rating	IP65/IP67 (IEC60529) , IP68G (JIS C0920) *7	
	Ambient temperature	-10 to 60 °C (No freezing) 14 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. 260 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 Only controllers with serial numbers beginning with "G" (FD-XA1/XA2/XA5) are supported.

*4 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.

*5 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.

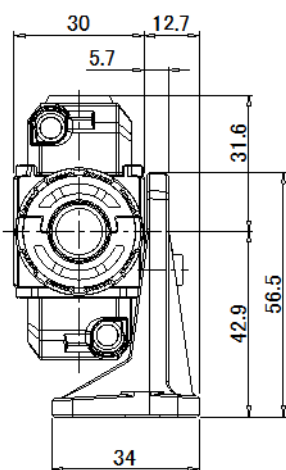
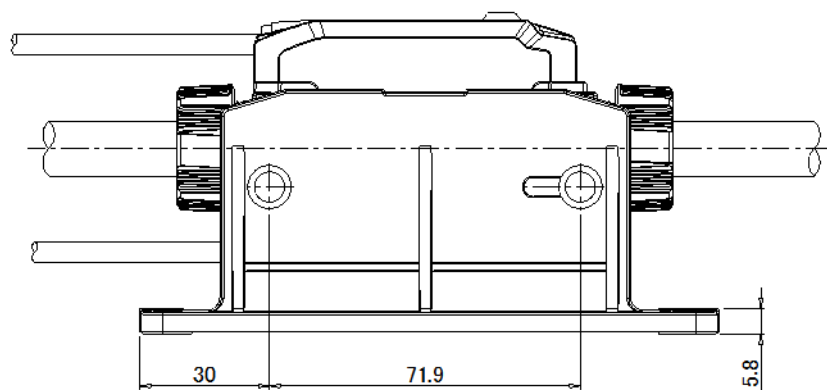
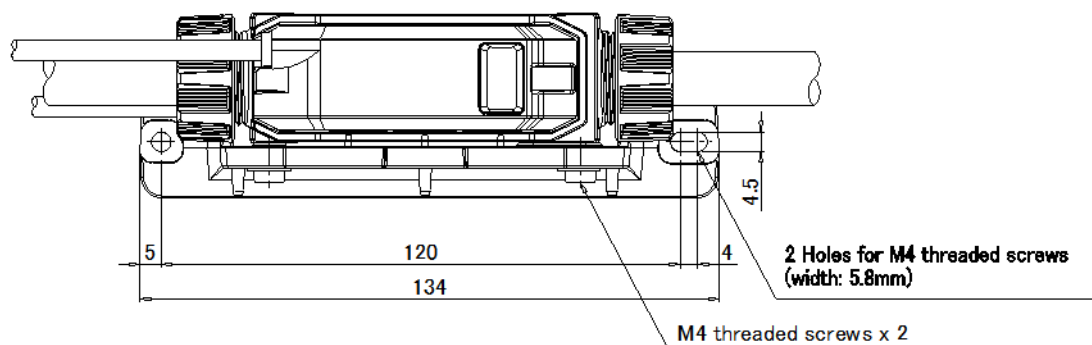
*6 The longer the response time is set, the more repeatability is improved. As a guideline, use $\sqrt{}$ (50 ms/response time) times.

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

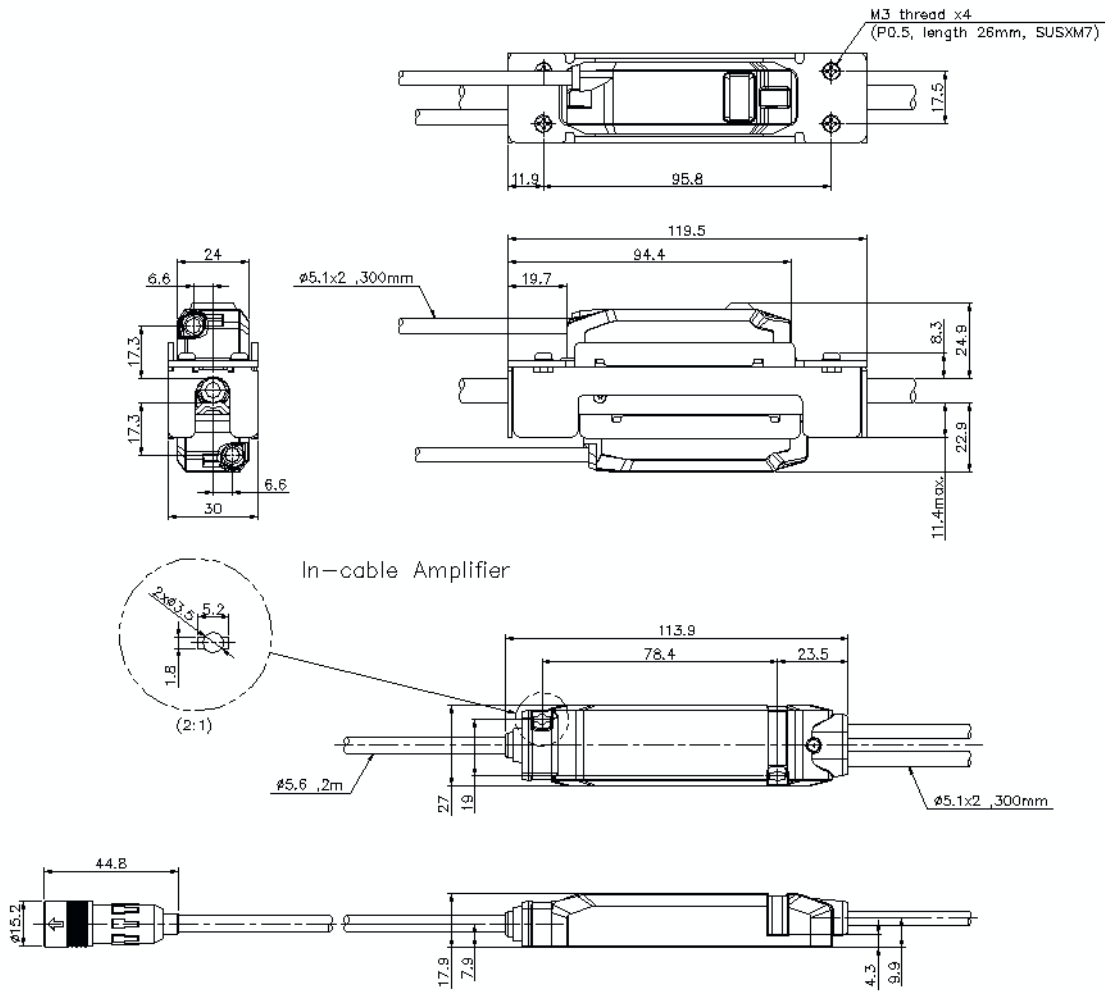
Dimensions

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

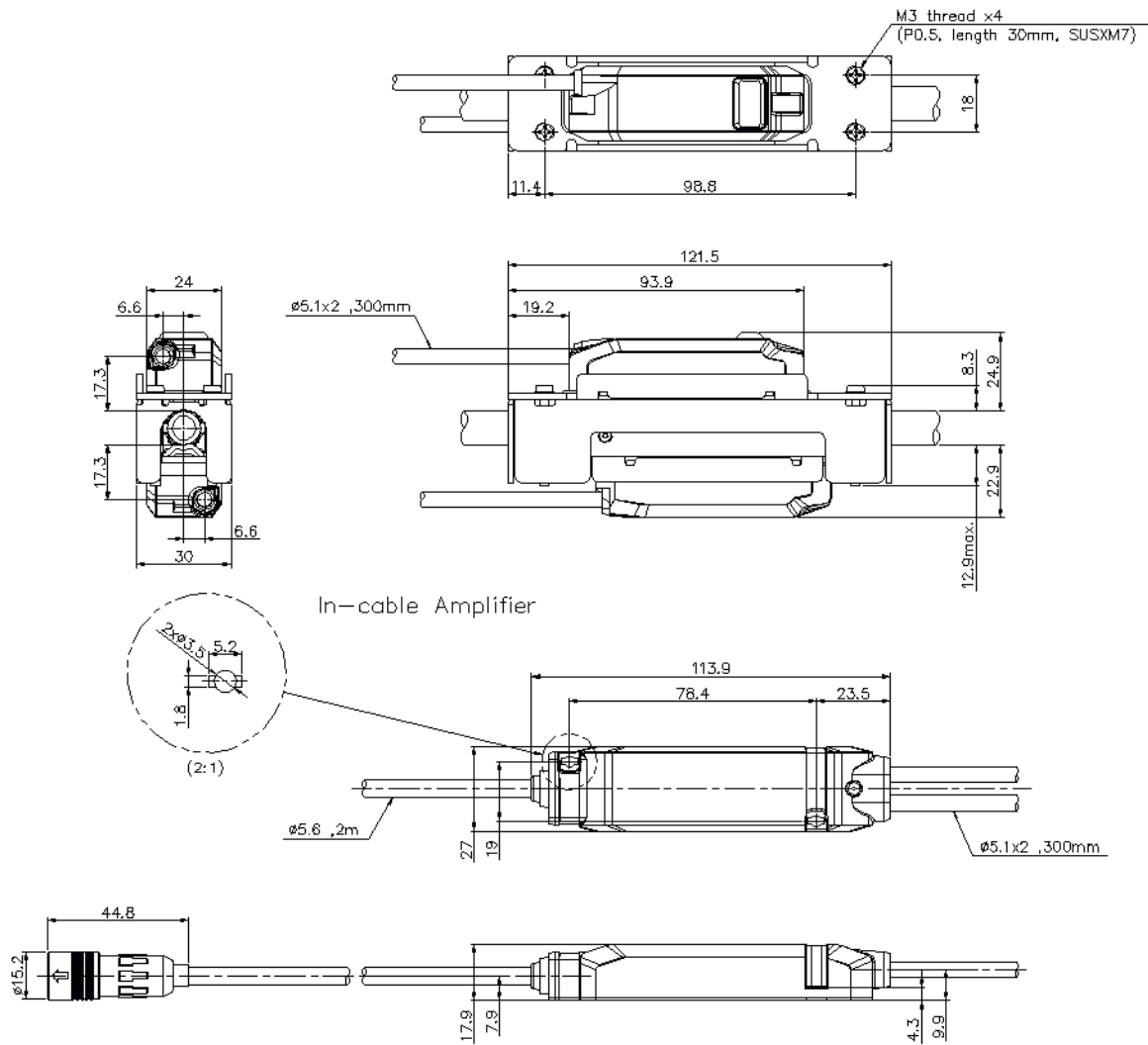
FD-XS20+FD-XC20R4+OP-88294



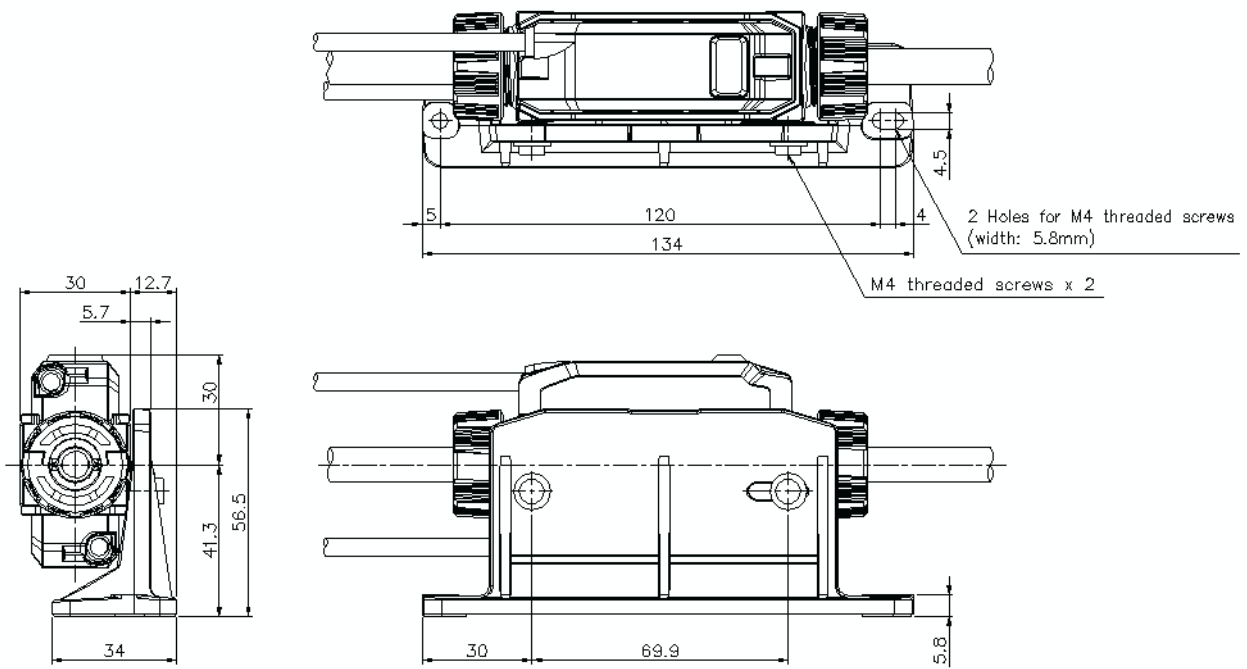
FD-XS20+FD-XC20M1



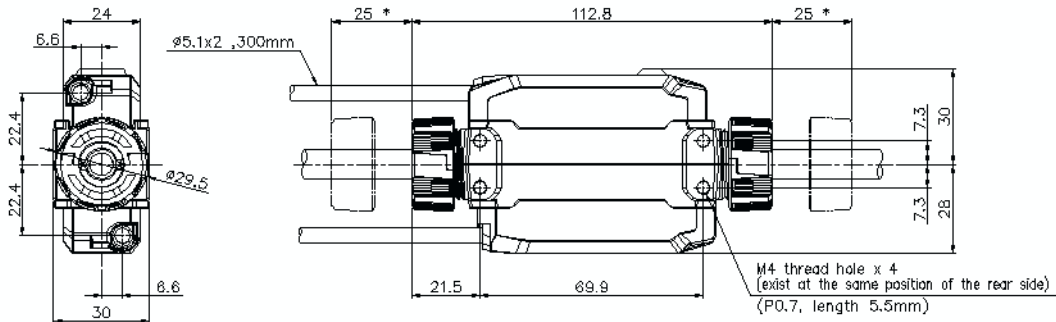
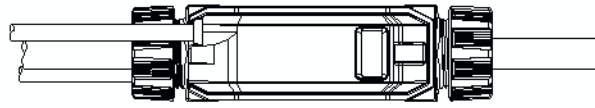
FD-XS20+FD-XC20M2



FD-XS20+FD-XC20R1+OP-88294

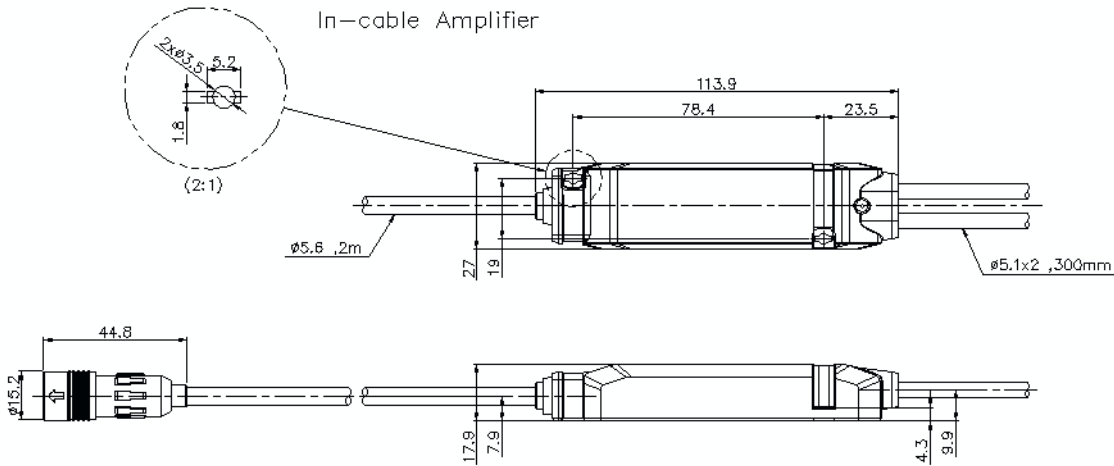


FD-XS20+FD-XC20R1

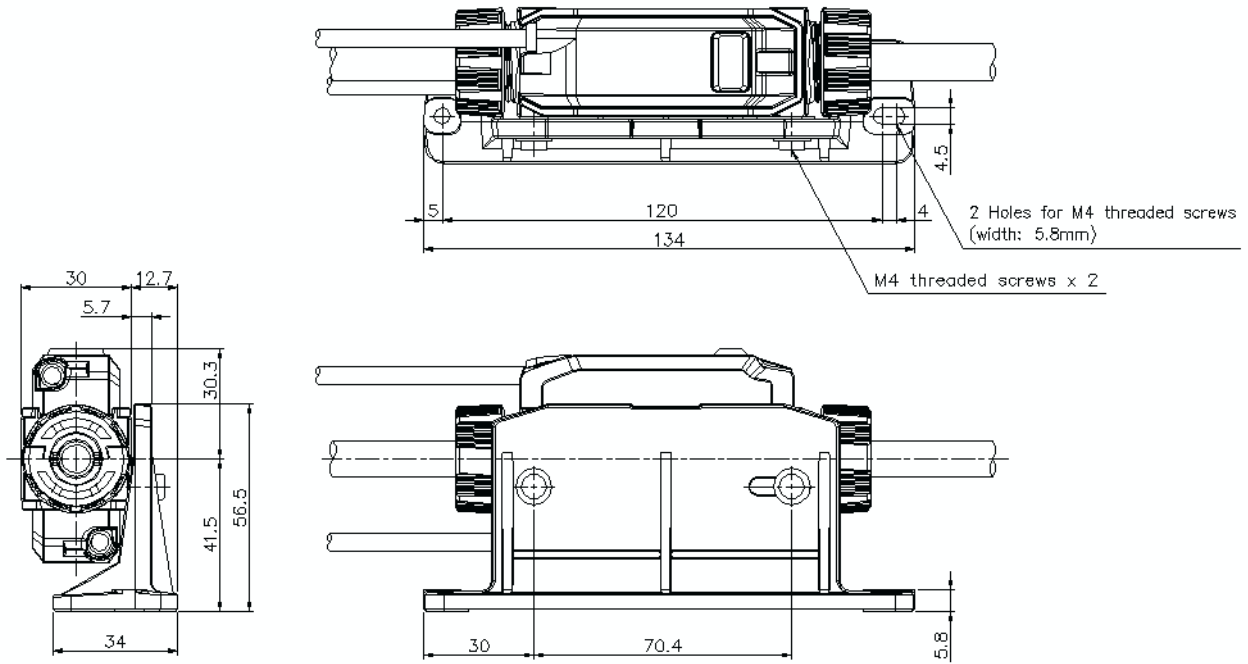


* This space is needed for installing the fixing rings.

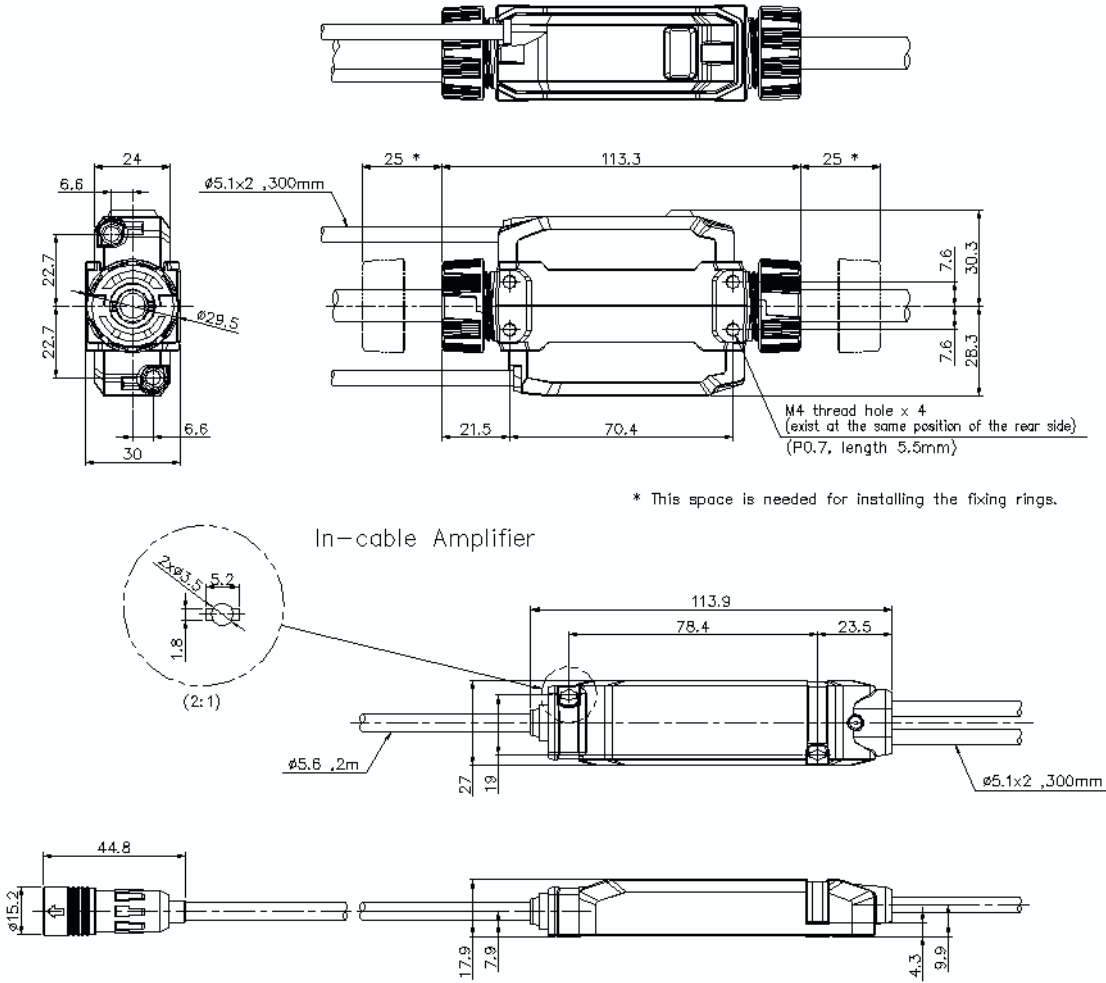
In-cable Amplifier



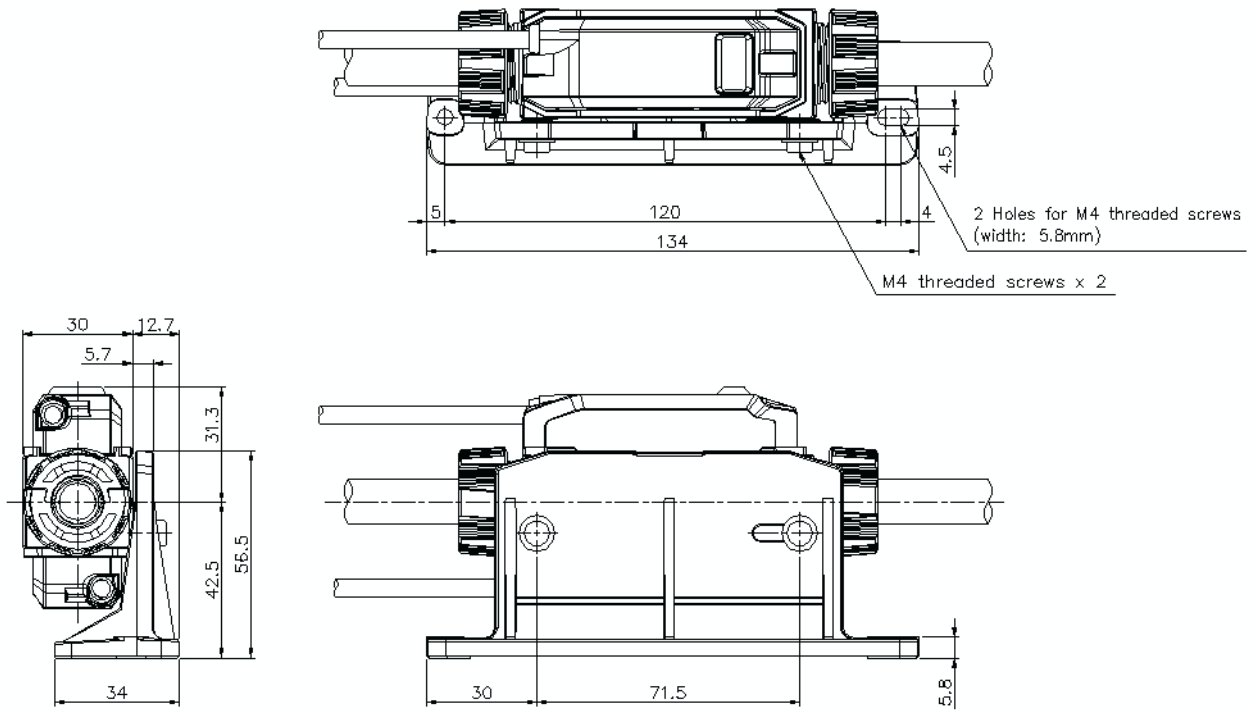
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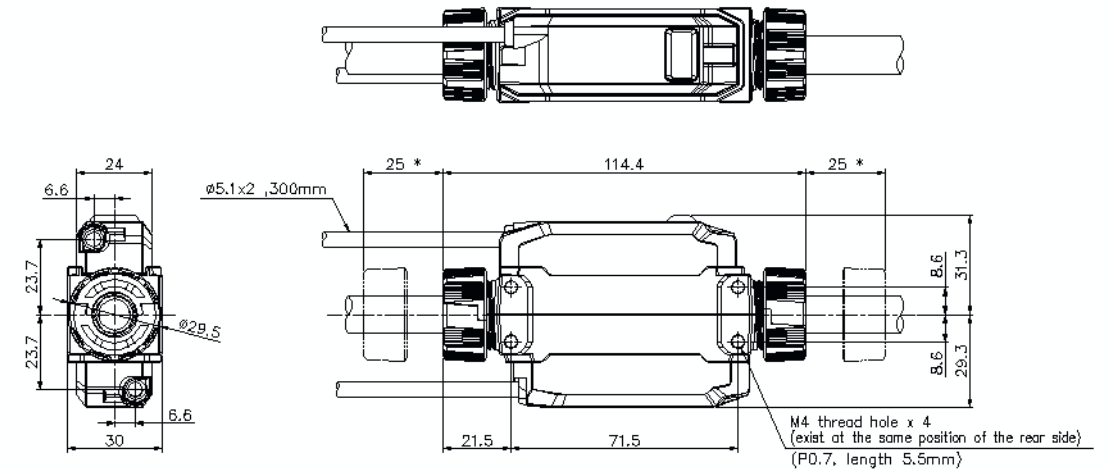
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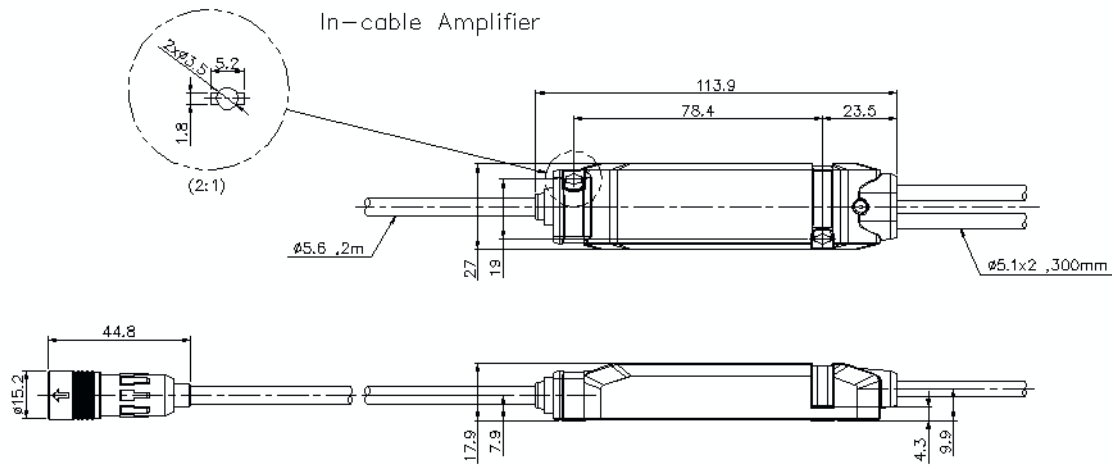
FD-XS20+FD-XC20R3+OP-88294



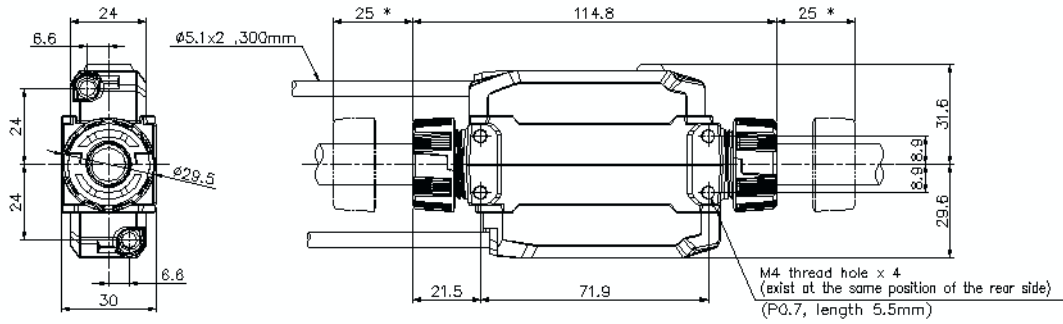
FD-XS20+FD-XC20R3



* This space is needed for installing the fixing rings.



FD-XS20+FD-XC20R4



* This space is needed for installing the fixing rings.

In-cable Amplifier

