



# FD-EPH9

Sensor head Outer diameter of pipe 3/8"



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

## Specifications

Model			FD-EPH9
Pipe size	Outer diameter of pipe		3/8" (Approx. 9.53 mm <b>0.38"</b> ) *1
	Compatible outer diameter range	Polyurethane	9.53 ±0.15 mm <b>0.38" ±0.006"</b>
		Nylon	9.53 ±0.1 mm <b>0.38" ±0.004"</b>
	Pipe materials		Resin pipe connectible to a one-touch coupling
Supported gases			Air, nitrogen, argon, and non-corrosive gases*2
Supported gas temperature			−10°C to +60°C <b>14 to 140°F</b>
Pressure resistance			1 MPa
Flow rate detection principle			Ultrasonic transmission time difference method
Flow rate specifications	Rated flow rate (volume flow rate)	(20°C <b>68°F</b> , atmospheric pressure conversion) * Initial display	Gas at 20°C <b>68°F</b> , 0.0 MPa
			Gas at 20°C <b>68°F</b> , 0.2 MPa
			Gas at 20°C <b>68°F</b> , 0.4 MPa
			Gas at 20°C <b>68°F</b> , 0.6 MPa
	Measurement accuracy		±(2.0% of RD+1.0% of F.S.)*3*4
	Repeatability		Response time of 250 ms: ±2.5% of F.S.*3*5
Pressure specifications	Rated pressure		−100 kPa to +0.75 MPa * However, the flow rate cannot be measured in the range of −100 to −30 kPa.
	Overall accuracy		±2.0% of F.S.*3
	Repeatability		Response time of 2.5 ms: ±0.4% of F.S.
Display resolution	Instantaneous flow		0.1/1 L/min
	Accumulated flow		0.1/1/10/100/1000 L
	Pressure		0.1/1 kPa
Environmental resistance	Enclosure rating		IP65 (IEC60529)
	Ambient temperature		−10°C to +60°C <b>14 to 140°F</b> (no freezing)
	Relative humidity		35%RH to 85%RH (no condensation)
	Vibration resistance		10 to 500 Hz, power spectral concentration: 0.816 G <sup>2</sup> /Hz, XYZ axes
	Shock resistance		100 m/s <sup>2</sup> , 16 ms pulse, XYZ axes, 1000 times for each axis
Material	Sensor unit (parts that do not contact the gas)		PBT/PAR/iron/Brass electroless nickel plating/POM/NBR/stainless steel
	Flow channel (parts that contact the gas)		PBT/Brass electroless nickel plating/NBR/nylon
Weight			Approx. 193 g <b>6.81 oz</b>

\*1 To ensure stable detection, it is recommended to use a pipe inner diameter that is at least equivalent to the inner diameter of this product.

\*2 Gases that transmit ultrasonic waves. Measurement may be unstable due to the pressure inside of the pipe and the type of gas.

\*3 This value is guaranteed by KEYENCE inspection facilities. Errors will be introduced by factors such as the condition and type of pipes as well as the temperature and type of gas.

\*4 This specification is valid when sufficient straight sections of pipe are provided and the flow velocity distribution is stable. This value does not take into account the effects of fluctuations in flow velocity distribution due to facility factors.

\*5 Accuracy improves with longer response times. As a rule, this is by a proportion of  $\sqrt{(250 \text{ ms/response time})}$ .

## Dimensions

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

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