FD-R50

Sensor Main Unit 40A/50A Type

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

Specifications

Model		FD-R50
Supported pipe diameter		1 1/2" (40 A), ø44 to ø55 1.73" to 2.17" 2" (50 A), ø55 to ø64 2.17" to 2.52"
Supported pipe materials		Metal / resin*1
Supported fluids		Various liquids (i.e. water, oils, chemicals)*1
Supported fluid temperature		- 20 to + 120°C - 4.0 to + 248 °F (no freezing on the pipe surface)*2
Maximum rated flow		Rated flow velocity range: 5.0 m/s Flow rate range (Typical): 1 1/2" (40 A): 400 L / min 100 gal / min 24 m^3/ h) 2" (50 A): 600 L / min 150 gal / min 36 m^3 / h
Zero cut flow rate		Zero cut: 0.3 m/s (default)*3 Flow rate (Typical): 36 L / min 9 gal / min 2.4 m^3 / h
Display method		Dual row, 5-digit display with white, 14-segment LED; Large status indicator; Output indicators; Stability indicator; Unit indicator
Display update cycle		Approx. 3 Hz
Display resolution		0.1 / 1 (L / min)
Response time		0.5 s / 1.0 s / 2.5 s / 5.0 s / 10.0 s / 30.0 s / 60.0 s / 120.0 s / 200.0 s (variable)
Measurement accuracy		Between 20 and 100% of F.S. : ±2.0% of RD*4*5 Between 6 and 20% of F.S. : ±0.4% of F.S. *4*5
Protection circuit		Power supply reverse connection protection, Power supply surge protection, Short-circuit protection for each output, Surge protection for each output
Zero point error		±0.5% of F.S.*4*6
Hysteresis		Variable
Flow units		L / min, m^3 / h, gal / min
Integrated flow unit display		1 / 10 / 100 / 1000 / 10000 (L)
Pipe temperature measurement accuracy		±3°C ±5.4°F (liquid temperature of - 20 to + 50°C, - 4 to + 122°F) ±5°C ±9°F (liquid temperature of 50 to + 120°C, 122 to 248°F) (ambient operating temperature of 25°C 77°F)*4
Wiring specifications	Power supply	DC power supply: M12 4-pin connector / AC power supply: M4 screw terminal block (selectable)
	I/O	When using a DC power supply: M12 4-pin connector / when using an AC power supply: M3 screw terminal block
Input/Output (Selectable)	Output (ch.1/ch.2)	Control output / Integrated pulse output / Error output / Temperature alarm, NPN / PNP setting switchable,open collector output 30 VDC or less, max. 100 mA / ch., residual voltage: 2.5 V or less*7
	Analog output (ch.1/ch.2)	Flow rate analog output / Temperature analog output and 4 - 20 mA / 0 - 20 mA (selectable), load resistance: 500 Ω or less*7
	External input (ch.2)	Integrated flow reset input / Flow rate zero input / Origin adjustment input (selectable), short-circuit current: 1.5 mA or less, input time: 20 ms or more*7
Rating	Power voltage	20 to 30 VDC including 10% ripple (P-P), Class 2 / 100 to 240 VAC - 15% or + 10% (50 / 60 Hz)

	Current consumption	When using a DC power supply: 200 mA or less (load current excluded), 400 mA or less (load current included) When using an AC power supply: 15 VA or less
Environmental resistance	Enclosure rating	IP65 / 67 (IEC60259), IP69K (ISO20653), Enclosure Type 4X (NEMA250)
	Ambient temperature	- 20 to + 60°C - 4.0 to 140 °F (no freezing)*2
	Relative humidity	5 to 90%RH (no condensation)
	Vibration resistance	10 to 55 Hz, compound amplitude 1.5 mm 0.06", XYZ axes 2 hours for each axis
	Shock resistance	100 m/s² , 16 ms pulse, XYZ axes, 1000 times for each axis
Dimensions		Main unit size: 218.5 mm × 66.9 mm × 70.7 mm 8.60" × 2.63" × 2.78"
Material	Main unit	Body: aluminum die-casting + coating / PPS, display: reinforced glass, connectors: SUS304-equivalent
	Unit rear	Rubber
	Upper/lower bracket	SUS304
Weight		Main unit: Approx. 1.0 kg Upper/lower bracket: Approx.1.5 kg (including sub unit)

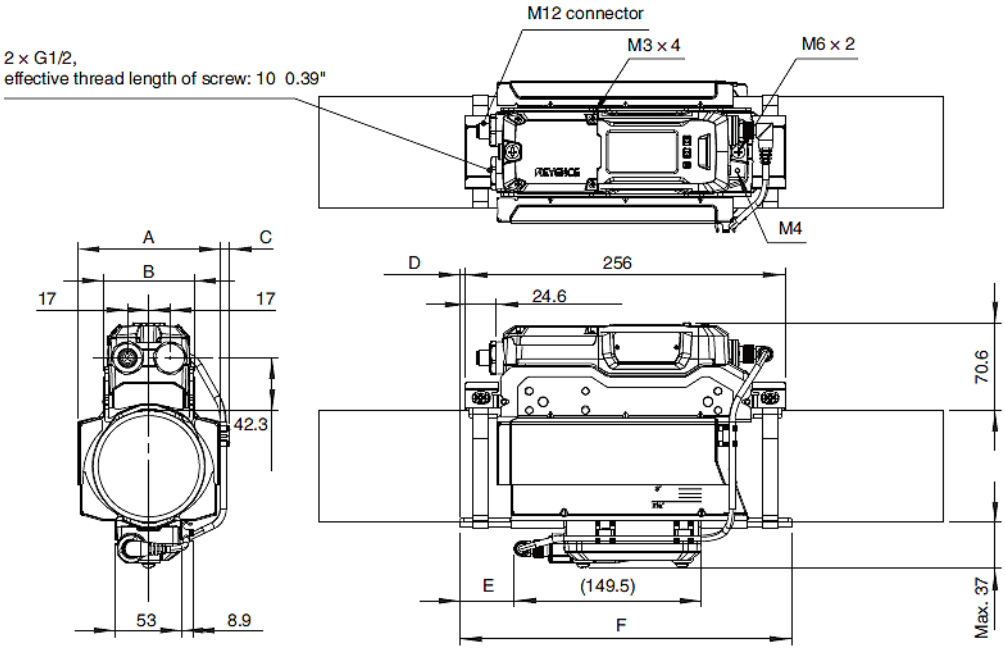
*1 Liquid must allow for the passage of an ultrasonic pulse, as well as not contain large air pockets or excessive bubbles. Detection may be unstable due to the type and status of the pipes.
*2 Perform derating depending on the ambient temperature and liquid temperature when using an AC power supply.
*3 The zero cut flow rate can be changed in the settings.
*4 This value is guaranteed by KEYENCE inspection facilities. Errors will be introduced by the type and status of the pipes, the type and temperature of the fluid, and the zero cut flow rate.
*5 This is the value when considering linearity + span error + repeatability in a stable environment of 25°C 77°F.
*6 It is possible to enhance the precision of zero point error by performing an origin adjustment.
*7 IO-Link: Compatible with Specification v1.1 / COM2 (38.4 kbps) The setting file can be downloaded from the KEYENCE website. If using the unit in an environment where downloading the file is not accessible via Internet, contact your nearest KEYENCE office. IO-Link is either registered trademarks or trademarks of PROFIBUS Nutzerorganisation e.V. (PNO)

Dimensions

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

FD-R50_80_dimension_01.gif

● **FD-R50/FD-R80**



	FD-R50	FD-R80
A	76	114
B	71	73
C	0	7.9
D*	-7.9 to -1.1 1 1/2" (40A): -2.6 2" (50A): -6.7	-1.6 to 14.1 2 1/2" (65A): 9.3 3" (80A): 4.3
E	(4.4)	(43.2)
F	247	265

* The correct orientation is one in which the upper bracket is to the right of the lower bracket.