FD-H32K

Flow Sensors High-temperature model 25A/32A

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

Specifications

Model		FD-H32K
Type		High-temperature model
Supported pipe diameter		1" (25A), ø28–37 ø1.10"-1.46" 1 1/4" (32A), ø37–44 ø1.46"-1.73"
Supported pipe materials		Metal piping, hard plastic piping*1
Supported fluids		All fluids (water, oil, chemicals, etc.)*1
Supported fluid temperature		0–180°C 32–356°F (no freezing on pipe surface)*2*3
Maximum rated flow		1" (25A) : 200 L/min 52.8 gal/min 1 1/4" (32A) : 300 L/min 79.3 gal/min
Zero cut flow rate		1.0 L/min 0.3 gal/min (variable, initial value)
Detection principle		Delta TOF + Pulse Doppler
Function for automatic correction for speed of sound in liquid		Yes
Display		QVGA 2.0 model: color LCD, status indicator light
Display update cycle		Approx. 10 times/second
Display resolution	Instantaneous flow	0.01/0.1/1 (L/min) (default value: 1)
	Integrated flow	0.01/0.1/1 (L) (default value: 1; up to 8 digits)
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
Measurement accuracy		Between 10 and 100% of F.S.: ±3.0% of RD*4*5 Between 0 and 10% of F.S.: ±0.3% of F.S.*4*5
Repeatability		0.5 s: ±1.0%, 1 s: ±0.7%, 2.5 s: ±0.45%, 5 s: ±0.3%, 10 s: ±0.2%, 30 s: ±0.15%, 60 s: ±0.1% of F.S.*4*6
Hysteresis		Variable
Flow units		L/min m3/h G/min
Pulse output increments (L)		0.02–999.99
Pipe temperature measurement accuracy		—
Network support		IO-Link*7
Heat calculation function	Unit	MJ/h kW kBTU/h*8
	Display resolution	Instantaneous value (MJ/h): 0.01/0.1/1 (default value 0.1); Integrated value (MJ): 0.01/0.1/1 (default value 0.1)*8
	Pulse output increments (MJ)	0.02–999.99*8
Data accumulation	Accumulation period	Approx. 1 year
	Data reading	USB2.0
Power I/O connector		M12 8-pin connector (male)
I/O (switchable)	Output (Ch1/2/3/4)	Instantaneous flow mode / area mode / pulse output mode / integrated flow mode / bubble detection mode / error output NPN/PNP setting switching, open collector output 30 VDC or less, max. 100 mA/Ch or less, residual voltage 2.5 V or less
	Analog output (Ch1/2)	4–20 mA/0–20 mA (switchable), load resistance 500 Ω or less

	External input (Ch2/3)	Integrated reset input / flow-rate zero input / zero-point adjustment input / bank input Short circuit current: 1.5 mA or less; input time: 20 ms or more
Power supply	Power voltage	20–30 VDC, ripple (P-P) 10% included, Class 2/LPS
	Current consumption	240 mA or less (when using flow sensor standalone; with analog output; excluding load current)*9
Protection circuit		Protection against reverse power connection, power supply surges, output short circuits, and output surges
Environmental resistance	Enclosure rating	IP65/67 (IEC 60529)*10
	Ambient temperature	Sensor head: −20 to +60°C –4 to +140°F (no freezing); Display unit: −20 to +50°C –4 to +122°F (no freezing)*2
	Relative humidity	35–85% RH (no condensation)
	Vibration resistance	10–500 Hz; Power spectral density: 0.816 G^2/Hz; X, Y and Z directions
	Shock resistance	100 m/s^2 (approx. 10 G), 16 ms pulses, 1000 times each for X, Y and Z axes
Material	Display unit	Body: PPS/PET/POM; Display window: PAR
	Sensor head	Body: PEEK/PPS/PET/PAR/SUS304 Sensor element: special rubber; Mounting bracket: SUS304/SUSXM7
Weight		approx. 680 g 23.99 oz

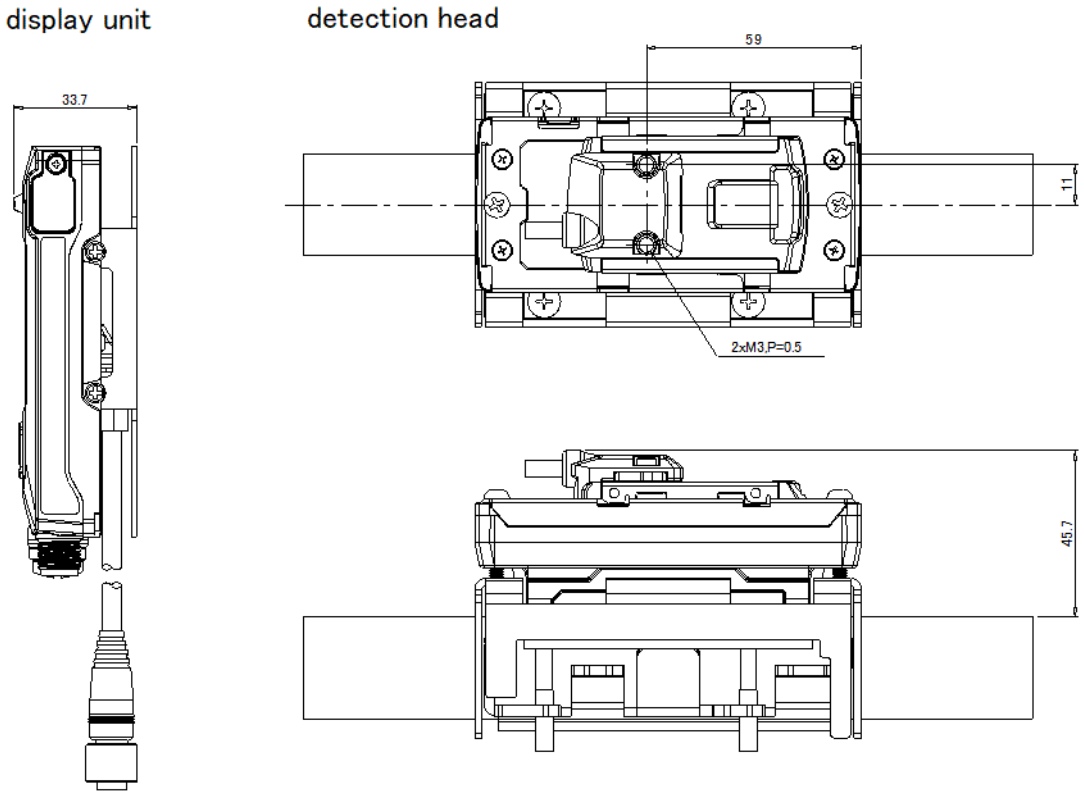
*1 For fluids through which ultrasonic waves propagate, and which do not contain a large quantity of bubbles. Detection may be unstable depending on the type and condition of the pipe.
*2 When the display unit is mounted directly on the sensor head, there is a de-rating according to the ambient temperature and fluid temperature.
*3 When using with fluids at temperatures of 140°C 284°F or greater, equip with the separately sold ultra-high-temperature couplant FD-HK1/HK2/HK3. Furthermore, the display unit must be separated from the sensor based on the de-rating.
*4 This is the guaranteed value from verification performed at KEYENCE inspection facilities. Measurement error may occur depending on the type and condition of the customer's pipes, the type of fluid, the fluid temperature and other factors.
*5 This is the value for when the zero point is adjusted, for a constant 25°C 77°F environment, taking into account the linearity and span error.
*6 In a state where flow velocity distribution is stable. Does not include pulsation and fluctuations in flow velocity distribution due to equipment factors. Please also convert the given F.S. (full scale) using the rated flow range.
*7 Supports IO-Link specification v.1.1/COM2 (38.4 kbps). Setting files can be downloaded from the KEYENCE website (www.keyence.com). IO-Link is a trademark or registered trademark of PROFIBUS Nutzerorganisation e.V. (PNO).
*8 Can be used when two temperature sensors (sold separately) are connected.
*9 640 mA or less including load. When connecting devices such as temperature sensors, please add on the current consumption of each sensor (up to a maximum of 830 mA or less).
*10 When a USB connection is in use, IP65/67 compliance is impaired.

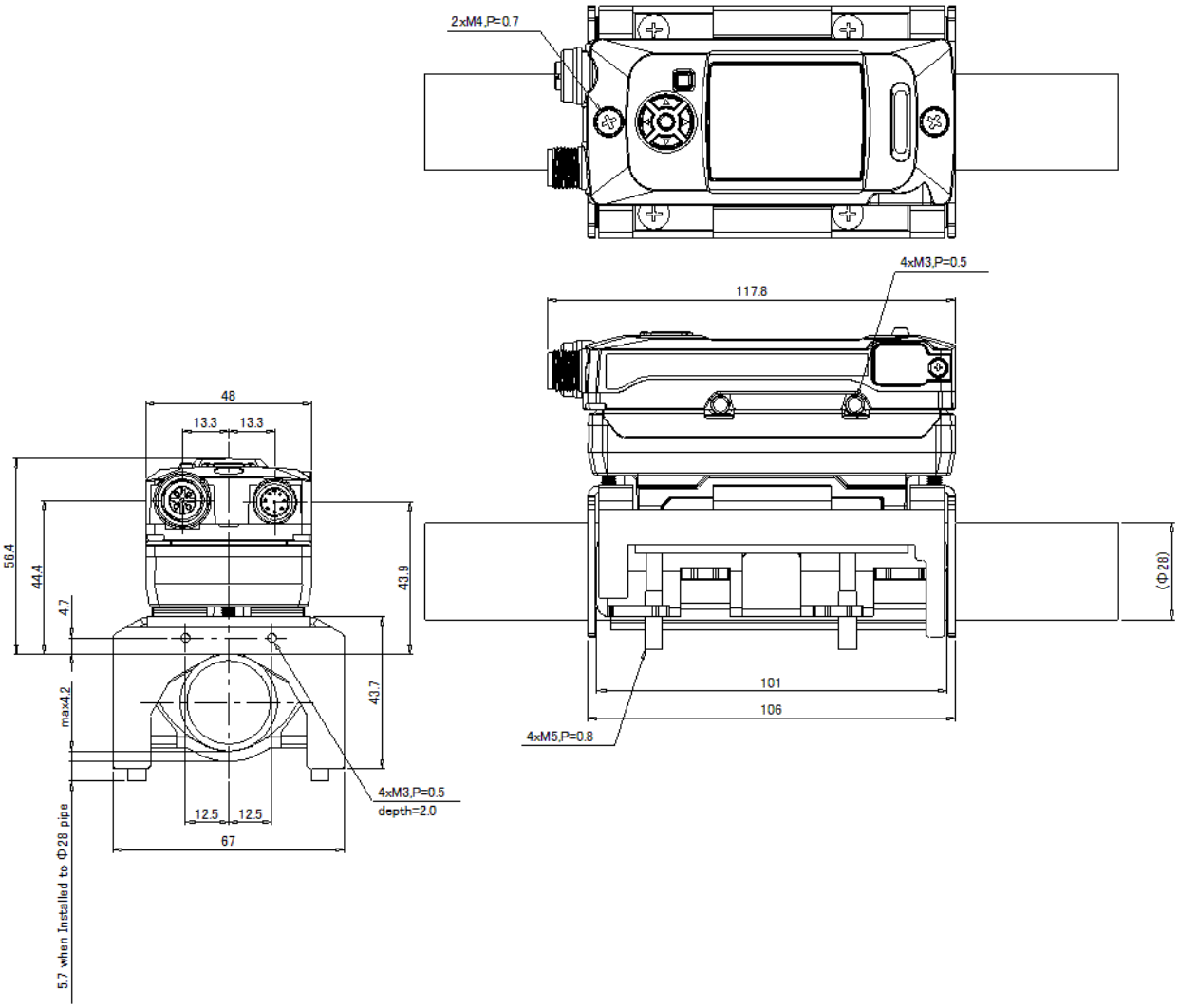
Dimensions

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

FD-H32K

When the display unit is separated




2xM4,P=0.7
4xM3,P=0.5
117.8
48
13.3
13.3
56.4
44.4
4.7
43.9
43.7
max4.2
12.5
12.5
67
4xM3,P=0.5
depth=2.0
5.7 when Installed to Φ28 pipe
4xM5,P=0.8
101
106
(Φ28)