Product Specification

Flow Meter Clamp-On ¼" – 2"

Wirelessly measure flow within ¼" – 2" NPS (DN15A-DN50A) pipe without shutting off water

Features

- Works with Nexa! Nexa remotely connects to your flow meters, and receives real-time system data, empowering insight to identify system inefficiencies + enhance troubleshooting, issue resolution, and system optimization.
- Non-invasive installation and set up ensures that there will be zero impact on the flow system
- The clamp-on style of Nexa prevents pressure losses, contamination, and excessive downtime associated with conventional flow sensors
- The slim design enables mounting in close-proximity or in tight spaces
- Mounts securely in minutes. No pipe modifications are necessary
- Utilizes an ultrasonic signal 20X stronger than conventional models
- Automatically increases its signal strength to blast through harsh build-up for lasting detection
- High water resistance enables use in even the harshest environment, IP65 & IP67 approved

Operation

- Nexa emits and receives two different sets of ultrasonic pulses. One traveling from A to B and the other traveling from B to A. By doing this, Nexa can stably monitor flow by comparing the two signals. This method of detection minimizes the effects of any external factors.
- Build-up or rust on the inside of a pipe can become problematic over time for conventional sensors. Nexa automatically adjusts its power to compensate for build-up and provide long periods of stable detection.

Applications

- Domestic hot water pipes, risers, branches and returns
- Cold water lines
- Boiler and chiller supply and return
- Additional applications

Sizes (pipe outer diameter)

- 80070031: ¼ – 3/8" (13mm – 18mm)
- 80070032: ½ – ¾" (18mm – 28mm)
- 80070041: 1 – 1 ¼" (28mm – 44mm)
- 80070010: 1 ½ – 2" (44mm – 64mm)

Compatible Pipe Materials

- Copper, Iron, Stainless Steel, PVC, Resin

Tools Needed

- No special tools, parts or knowledge required
- Easily mounts with just a Philips screwdriver
- Bracket attaches with only four screws

Measure water flow from the outside of a pipe using high frequency acoustics through a variety of sizes, materials, and pipe thicknesses.

Important: Nexa Flow Meters must be installed with a Nexa Connection Kit which communicates to the cloud and Nexa platform. Please refer to the Nexa Connection Kit User Guide (UserGuide-N-ConnectionKit 2410), found at nexaplatform.com/hardware-support

Specifications

Model		80070031		80070032		80070041		80070010	
Supported Pipe Diameter	Outer diameter of pipe (mm)	Ø13 to Ø16	Ø16 to Ø18	Ø18 to Ø23	Ø23 to Ø28	Ø28 to Ø37	Ø37 to Ø44	Ø44 to Ø52	Ø52 to Ø64
	NPS (nominal pipe size)	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	DN (Diameter Nominal)	8A	10A	15A	20A	25A	32A	40A	50A
Supported Pipe Materials		Metal pipe / Resin pipe "1							
Supported Fluids		Various liquid (water, including DI - oils, chemicals, etc.)[1]							
Supported Fluid Temperature (Pipe surface temperature)		32°F to 185°F (0°C to 85°C) (No freezing on the pipe surface)[2]							
Maximum Rated Flow		5.2 gal/min	7.9 gal/min	15.9 gal/min	26.6 gal/min	52.8 gal/min	79.3 gal/min	105.7 gal/min	132.1 gal/min
Zero cut flow rate (Default)[3]		0.3 gpm 1.0L/min		0.7 gpm 2.5L/min		1.3 gpm 5L/min		6.6 gpm 25L/min	
Display method		Status indicator, output indicator, dual row display with 4-digit, 7 segment LED, stability level indicator							
Display update cycle		Approx 3 Hz							
Display resolution (L/min)		0/01/0.1/1 Default .1		0.1/1 Default 0.1		0.1/1 Default 1			
Response Time		0.5s / 1.0s / 2.5s / 5s /10s / 30s / 60s							
Repeatability (% of F.S.)[4] (Specific to selected response time)		.5s: ±2.0%. 1s: ±1.5%. 2.5s: ±1.0%. 5s: ±0.5%. 10s: ±0.35%. 30s: ±0.2%. 60s: ±0.15%							
Hysteresis		Variable							
Integrated flow unit display (L)		0.1/ 1/ 10/ 100/ 1000 (Default: 1)				1/ 10/ 100/ 1000/ 10000 (Default: 1)			
Integrated flow data storage cycle		Save to memory every 10 seconds							
Memory backup		EEPROM (Data storage length: 10 years or longer, Data read / write frequency: 1 million times or more)							
Power I/O connector		M12 4-pin connector							
Input/Output (Selectable)[5]	Output ch.1/ch.2	Control output / Pulse output / Error output (Selectable, Default: ch. 1 control output / ch. 2 not used). NPN / PNP setting switchable. Open collector output 30V or less, max. 100mA/ch, residual voltage 2.5V or less.							
	Analog output (ch.2)	4 to 20mA/0 to 20mA (Selectable, Default: not used). Load resistance 500Ω or less.							
	External input (ch.2)	Integrated flow reset input / Flow rate zero input / Origin adjustment input (Selectable, Default: note used). Short circuit current 1.5mA or less, input time 20ms or more							
Power Source	Power supply voltage	20 to 30 V DC, ripple (P-P) 10% max, Class 2/LPS							
	Current consumption	100mA or less (Load current excluded)[6]				130mA or less (Load current excluded)[6]			
Protection Circuit		Power supply reverse connection protection, power supply surge protection, each output short circuit protection, each output surge protection							
Environmental Resistance	Enclosure Rating	IP65/IP67 (IEC60529)							
	Ambient Temperature	14°F to 140°F (-10°C to 60°C) : No freezing							
	Ambient Humidity	35 to 85% RH : No condensation							
	Vibration resistance	10 to 55 Hz, compound amplitude 1.5mm, XYZ axes 2 hours for each axis							
	Shock resistance	100m/s2 16ms pulse X,Y,Z 1000 times for each axis							
Material	Sensor main unit	PPS/PES/PBT/SUS303/SUS304/SUSXM7							
	Sensor surface	Rubber							
	Mounting bracket	SUS304/PA/SUSXM7				SUS304/PA/POM/SUSXM7			
Weight (including mounting bracket)		Approx .75 lbs / 340g		Approx .88 lbs / 400g		Approx 1.2 lbs. / 530g		Approx 1.4 lbs. / 640g	

[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 instable on certain non-standard pipes (i.e., lined pipes)

[2] Contact Nexa when the temperature of the pipe is greater than 185°F (85°C) at support@nexaplatform.com

[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) listed in the table according to the rated flow range.

[5] IO-Link: Compatible with Specification v.1.1 COM2 (38.4k bps). Contact Nexa for support at support@nexaplatform.com

[6] When including the load current, please add 200mA to this value.

Unit Selection Size

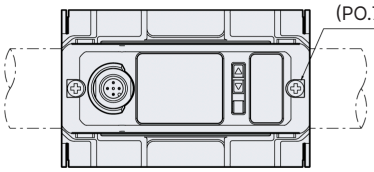
Appearance	Model	Rated Flow Range	Connection Bore Diameter
	80070031	20L/min	1/4"(8A)
		5.2 gal/min	13 mm to 16 mm
		30L/min	3/8" (10A)
		7.9 gal/min	16 mm to 18 mm
	80070032	60L/min	1/2" (15 A)
		15.9 gal/min	18 mm to 23 mm
		100 L /min	3/4" (20A)
		26.6 gal / min	23 mm to 28 mm
	80070041	200 L / min	1" (25A)
		52.8 gal / min	28 mm to 37 mm
		300 L / min	1 1/4" (32A)
		79.3 gal / min	37 mm to 44 mm
	80070010	400 L / min	1 1/2" (40A)
		105.7 gal / min	44 mm to 52 mm
		500 L / min	2" (50A)
		132.1 gal / min	52 mm to 64 mm

Sensor

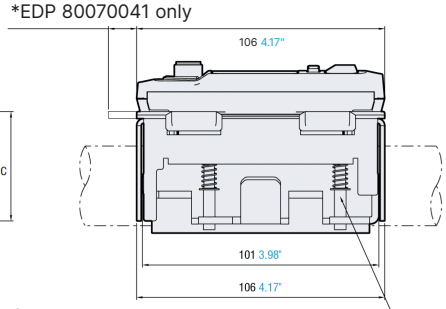
Model	A	B	C
EDP 80070031	2* | 0.08"	38 | 1.50"	25.3 | 1.00"
EDP 80070032	max. 2.5 | 0.10"	48 | 1.89"	30 | 1.18"
EDP 80070041	max. 4.2 | 0.17"	67 | 2.64"	46.7 | 1.84"
EDP 80070010	max. 3.6 | 0.14"	88 | 3.46"	56 | 2.20"

*When installing the unit on a 1/4" pipe, the threaded portion of the screw will protrude by approximately 0.8 mm 0.03".

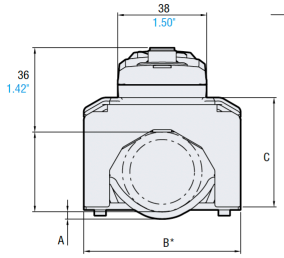
<for securing the main body>
M4 thread x2
(PO.7, length 16mm 0.63", SUSXM7)



12 0.47" (When a side cover is opened)
*EDP 80070041 only



Pipe outside diameter



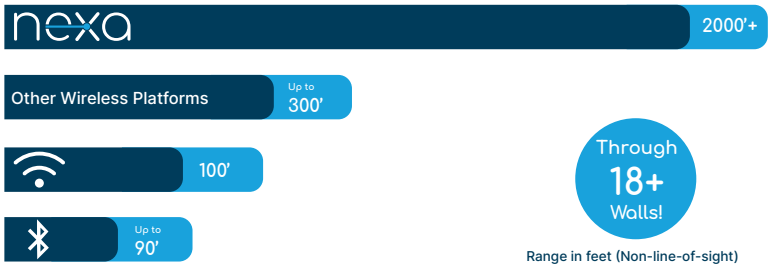
<for securing the bracket>
EDP 80070031 : M4 thread x 4 (PO.7, length 13 mm 0.51", SUSXM7)
EDP 80070032 : M4 thread x 4 (PO.7, length 19 mm 0.75", SUSXM7)
EDP 80070041 : M4 thread x 4 (PO.8, length 30 mm 1.18", SUSXM7)
EDP 80070010 : M4 thread x 4 (PO.8, length 38 mm 1.50", SUSXM7)

*When using the EDP 80070031, the width of the sensor and the bracket are the same.

Pulse Counter Connection Kit

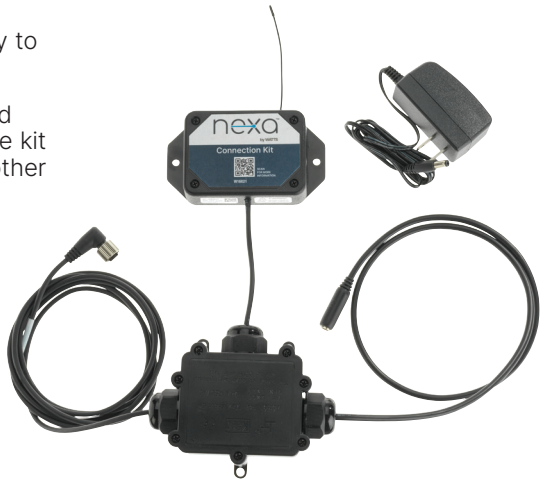
Allows for wireless 900MHz communication from flow meter to local gateway to the Nexa cloud platform.

The flow meter is connected wirelessly to a local Nexa gateway and powered through the pulse counter connection kit (PCCK). Using a 900MHz signal, the kit allows for superior wall penetration and is subject to less interference than other higher frequency communication means typical in IoT systems.



Through 18+ Walls!

Range in feet (Non-line-of-sight)



Communicate flow data to the cloud by way of the pulse counter connection kit and Nexa gateway (available separately)

Pulse Counter	Maximum Count	1.84467 * 10^19 (64-bit number)
Nexa Wireless	Data logging	Sensor logs 2,000 to 4,000 readings if gateway connection is lost (non-volatile flash, persists through power cycling): 10-minute heartbeats = ~22 days
	Wireless protocol	Proprietary Frequency-hopping Spread Spectrum (FHSS)
	Wireless transmission power (EIRP)	50 mW (900 MHz), 25 mW (868 MHz), 10 mW (433 MHz)
	Wireless range	2,000+ ft through 18+ walls with Nexa gateway
	Security	Encrypt-RF® (256-bit key exchange and AES-128 CTR)
General	Temperature Rating	-20°C to 85°C (-4°F to 185°F)
	Operating humidity	5% to 85% RH (non-condensing)
	Operating altitude (non-pressurized environments)	-50 ft to 6,500 ft (-15.2 m to 1,982 m)
	Storage altitude (non-pressurized environments)	-50 ft to 10,000 ft (-15.2 m to 3,048 m)
	Certifications FC Industry Canada CE UK CA	900 MHz sensors: FCC ID: ZTL-G2SC1 and IC: 9794A-G2SC1. 868 and 433 MHz sensors tested and comply with EN 55032: 2015/A11:2020; EN 55035:2017/A11:2020; ETSI EN 300 220 V3.2.1 (2018-06); ETSI EN 301 489-3 V2.2.0. (2021-11); and ETSI EN 303 645. All sensors tested and comply with EN 61010-1 and EN 60950 and meet RoHS 2015/863 and REACH 24 (June 2022), according to IEC 63000:2016/AMD1:2022

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