Product Specification

Flow Meters Clamp-On 1½" – 8"

Wirelessly measure flow within 1½" – 8" NPS (DN40A-DN200A) 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
- 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, IP69, Nema 4x 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)

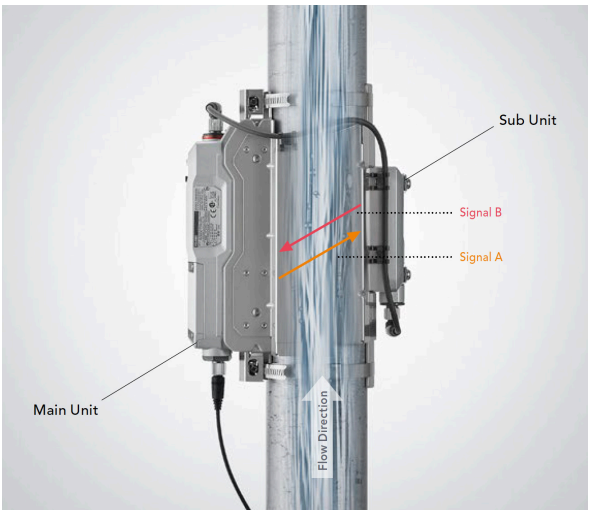
- 80070033: 1 ½ – 2" (44mm – 64mm)
- 80070011: 2 ½ – 3" (64mm – 100mm)
- 80070012: 4 – 5" (100mm – 152mm)
- 80070015: 6 – 8" (152mm – 220mm)

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
- Attach the bracket with 4 or 6 screws (size dependent)



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		80070033		80070011		80070012		80070015	
Supported Pipe Diameter	DN (Diameter Nominal)	40 A	50 A	65 A	80 A	100 A	125 A	150 A	200 A
	NPS (nominal pipe size)	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	8"
	Outer diameter of pipe (mm)	ø44 to ø55 1.73" to 2.17"	ø55 to ø64 2.17" to 2.52"	ø64 to ø83 2.52" to 3.27"	ø83 to ø100 3.27" to 3.94"	ø100 to ø127 3.94" to 5.00"	ø127 to ø152 5.00" to 5.98"	ø152 to ø191 5.98" to 7.52"	ø191 to ø220 7.52" to 8.66"
Supported Pipe Materials		Metal/resin[1]							
Supported Fluids		Various liquids (i.e. water, oils, chemicals)[1]							
Fluid Temperature		-20 to +120°C -4.0 to +248 °F (no freezing on the pipe surface)[2]							
Rated flow velocity range		5.0 m/s							
Flow rate range (Typical)		(400 L/min 100 gal/min 24 m³/h)	(600 L/min 150 gal/min 36 m³/h)	(1000 L/min 260 gal/min 60 m³/h)	(1500 L/min 390 gal/min 90 m³/h)	(2500 L/min 660 gal/min 150 m³/h)	(3700 L/min 990 gal/min 220 m³/h)	(5500 L/min 1400 gal/min 330 m³/h)	(9500 L/min 2500 gal/min 570 m³/h)
Zero cut (default)[3]		0.3 m/s							
Flow rate (Typical)		(36 L/min 9 gal/min 2.4 m³/h)		(90 L/min 24 gal/min 5.4 m³/h)		(220 L/min 60 gal/min 12 m³/h)		(570 L/min 150 gal/min 36 m3/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)		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]							
Zero point error		±0.5% of F.S.[4, 6]							
Hysteresis		Variable							
Flow units		L/min, m³/h, gal/min							
Integrated flow unit display		1/10/100/1000/10000 (L)							
Pipe temperature measurement accuracy (ambient operating temperature of 25°C 77°F)[4]		±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)							
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							
I/O[7] (selectable)	Control 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							
	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							
	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							
Rating	Power supply 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							
Protection circuit		Power supply reverse connection protection, Power supply surge protection, Short-circuit protection for each output, Surge protection for each output							
Environmental resistance	Enclosure rating	IP65/67(IEC60529), IP69K(ISO20653), Enclosure Type 4X(NEMA250)							
	Ambient temperature	-20 to +60°C -4.0 to 140 °F (no freezing)[2]							
	Ambient 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							
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 (including sub unit)	Approx. 1.5 kg 3.31 lb		Approx. 2.0 kg 4.41 lb		Approx. 2.3 kg 5.07 lb		Approx. 2.5 kg 5.51 lb	
Main unit size		218.5 mm × 66.9 mm × 70.7 mm 8.60" × 2.63" × 2.78"							

[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.

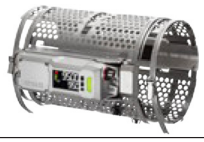
[4] This value is guaranteed by Nexa inspection facilities. Errors will be introduced by the type and status of the pipes, the type and temperature of the fluid, and the zero cut flow rate.

[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 Nexa website (nexaplatform.com). If using the unit in an environment where downloading the file is not accessiblevia Internet, contact your nearest Nexa office. IO-Link is either registered trademarks or trademarks of PROFIBUS Nutzerorganisation e.V. (PNO)

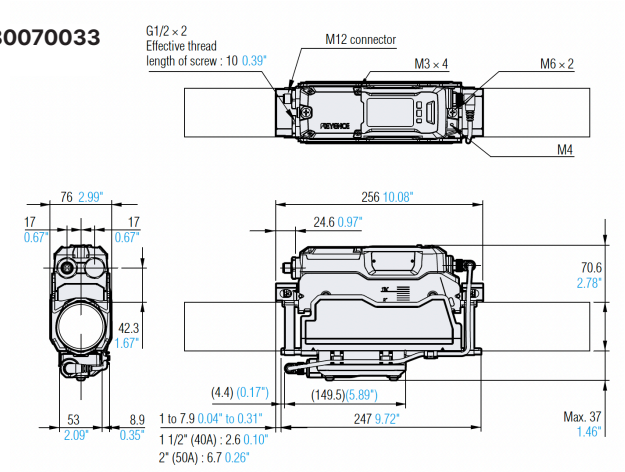
Unit Selection Size

Supported Pipe Size (outer diameter)	Appearance	Model	Rated Flow Velocity Range	Flow Rate Range (typical)	Weight
1 1/2" (40A) (ø44 to ø55 ø1.73" to ø2.17")		80070033	0.3 m/s to 5 m/s	36 to 400 L/min 9 to 100 gal/min 2.4 to 24 m3/h	Approx. 2.5 kg 5.51 lb
2" (50A) (ø55 to ø64 ø2.17" to ø2.52")				36 to 600 L/min 9 to 150 gal/min 2.4 to 36 m3/h	
2 1/2" (65A) (ø64 to ø83 ø2.52" to ø3.27")		80070011		90 to 1000 L/min 24 to 260 gal/min 5.4 to 60 m3/h	Approx. 3.0 kg 6.61 lb
3" (80A) (ø83 to ø100 ø3.27" to ø3.94")				90 to 1500 L/min 24 to 390 gal/min 5.4 to 90 m3/h	
4" (100A) (ø100 to ø127 ø3.94" to ø5.00")		80070012		220 to 2500 L/min 60 to 660 gal/min 12 to 150 m3/h	Approx. 3.3 kg 7.28 lb
5" (125A) (ø127 to ø152 ø5.00" to ø5.98")				220 to 3700 L/min 60 to 990 gal/min 12 to 220 m3/h	
6" (150A) (ø152 to ø191 ø5.98" to ø7.52")		80070015		570 to 5500 L/min 150 to 1400 gal/min 36 to 330 m3/h	Approx. 3.5 kg 7.72 lb
8" (200A) (ø191 to ø220 ø7.52" to ø8.66")				570 to 9500 L/min 150 to 2500 gal/min 36 to 570 m3/h	

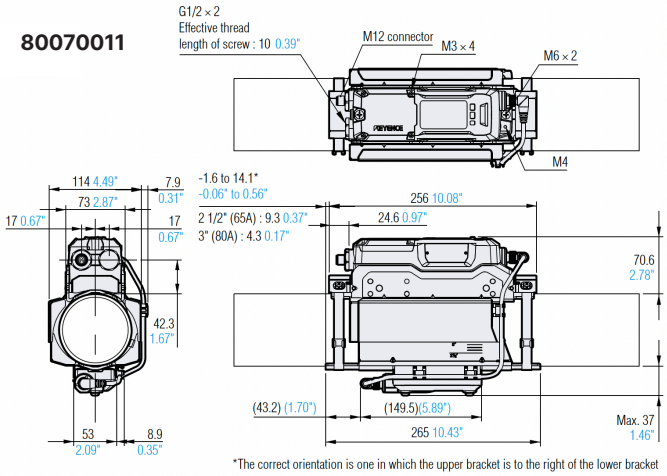
*The minimum flow rates (zero cut flow rates) can be changed in the settings.

Dimensions

80070033

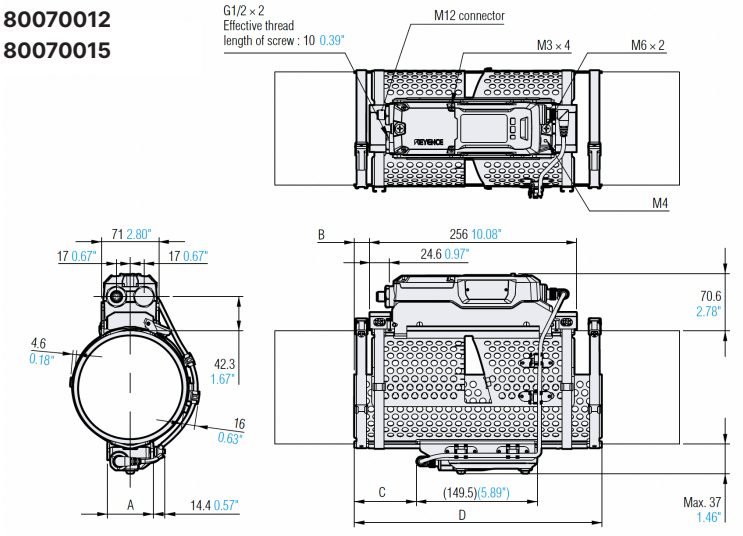


80070011



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

80070012
80070015

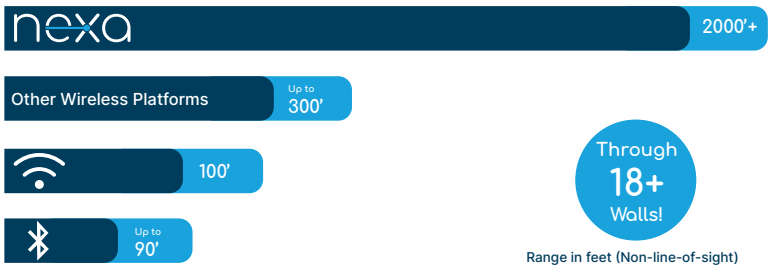


	80070012	80070015
A	57 2.24"	62 2.44"
B	14.1 to 34.6 0.56" to 1.36" 4"(100 A): 29 1.14" 5"(125 A): 19 0.75"	17.1 to 42.9 0.67" to 1.69" 6"(150 A): 37.6 1.48" 8"(200 A): 18.5 0.73"
C	(76.9)(3.03")	(104.3)(4.11")
D	306 12.05"	315 12.40"

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.



	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	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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