Panametrics

Datasheet

TransPort® PT900

PT900 portable ultrasonic flowmeter for liquids

The TransPort PT900 is the latest generation of portable clamp-on flow meters from Panametrics line of ultrasonic meters. It capitalizes on the ruggedness and superior performance of its predecessor, the TransPort PT878, but delivers a whole new level of intuitive and user-friendly capability based on today's technology.

PANA033DS Rev. 15

TransPort PT900 makes your job so much easier

The PT900 has undergone the most involved voice of the user effort to date for Panametrics flow products.
Several years of learning about how people use portable flow meters and what they want and need while making flow rate measurements have influenced the PT900's design. Panametrics validated this learning and modified the design approach by sharing initial concepts and early prototypes with users. The result? The best portable flow meter needs to be versatile, easy to install, intuitive to use and capable of making reliable measurements even in the most difficult applications.

What's new about the TransPort PT900?

The PT900 maintains the same high performance as the PT878, but features a total redesign of the flow transmitter, clamping fixture and user interface. Key improvements include a redesigned fixture and a streamlined user interface on an Android tablet.
PT900 is designed to improve the user experience and deliver a measurement that inspires a high level of user confidence. All users, regardless of experience level with the meter, will be able to:

- Install the clamping fixture with minimal confusion or repositioning
- Connect the transmitter and transducer cables correctly
- Turn on the tablet and pair it via Bluetooth® with the transmitter
- Start taking measurements within minutes

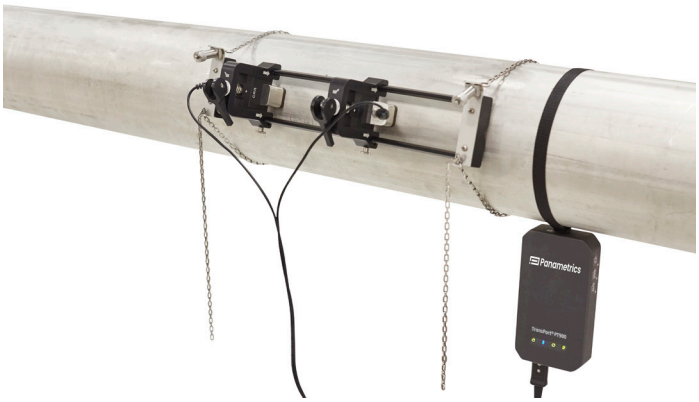
Product details

The TransPort PT900 system includes:

- Clamping fixture with transducers
- Flow transmitter (the electronics)
- Carrying case
- Accessories

Available options include:

- Tablet
- Rechargeable battery pack or spare battery
- Waygate Technologies DM5E thickness gauge
- Energy measurement kit



Clamping fixture, transducers and transmitter mounted on pipe

Advantages

- A wide selection of transducers suitable for most applications
- Wireless (Bluetooth®) or wired communication from tablet transmitter
- Easy programming with bright touch screen and multiple-language user interface
- Fast-responding, high-accuracy transmitter with green/red light health indication and 8 GB of datalogging storage
- Velocity, volume, mass, totalizer and energy flow rate measurements
- Easy-to-install clamping fixture

Applications

- Suitable for most pipe sizes and materials, both lined and unlined
- Suitable for virtually every industry that requires temporary or spot flow rate measurement
- Suitable for many fluids, including potable water, wastewater, cooling and heating water, ultrapure water and other liquids such as water/glycol solutions, crude oil, refined hydrocarbons, chemicals and beverages

Technical **Specifications**

Operation and performance

Fluid types	Liquids: Acoustically conductive fluids, including most clean liquids and many liquids with small amounts of entrained solids or gas bubbles
Flow measurement	Patented Correlation Transit-Time™ mode
Pipe sizes	• Standard: 0.5 to 24 in. (15 to 600 mm) • Optional: up to 300 in. (7500 mm) available upon request
Pipe wall thickness	Up to 3 in. (76.2 mm)
Pipe material	All metals and most plastics Consult Panametrics for concrete, composite materials and highly corroded or lined pipes.
Accuracy	• ±1% of reading (2 in./50 mm or greater pipe sizes) • ±2% of reading (0.5 in./15 mm to <2 in./50 mm pipe sizes) Installation assumes a fully developed, symmetrical flow profile (typically 10 pipe diameters upstream and 5 pipe diameters downstream of straight pipe run). Final installation accuracy is a function of multiple factors including fluid, temperature range, pipe centricity among other factors. Pipe layouts with obstructions (bends, tees, valves, etc.) will result in different levels of meter reading bias. Dual-path readings in opposite planes can be used to indicate the presence of bias (assymetrical flow profile). Reasonable accuracy (±5% of reading) could be maintained in non-ideal conditions down to approximately 5D upstream and 1D downstream with accurate inputs, acceptible diafgnostic parameters, and dual plane readings in close agreement with a simple flow disturbance. Other piping layout resulting in a non-fully developed flow profile will deliver different biases. Computation fluid dynamics (CFD) corrections can also be used in non-ideal conditions.
Repeatability	±0.2% of reading
Range (Bidirectional)	0.1 to 40 ft/s (0.03 to 12.19 m/s)
Response time	Up to 2 Hz
Measurement Parameters	Velocity, volume, mass, energy, total flow
Channels	1 or 2 channels

Flow transmitter

Enclosure	IP65 rating
Specifications	• Weight: 3 lb (1.4 kg) • Size (h x w x md): 7.9 x 4.3 x 1.5 in (200x109 x 38 mm) • Mounting: Soft strap around pipe or magnetic clamp
Analog inputs	4-20 mA (qty 2)
Analog output	4-20 mA
Digital output	Pulse (Totalizer), Frequency, Alarm (qty 1)
Digital communication	• Bluetooth® wireless* • Modbus via RS485 port • Micro-USB port *Bluetooth certification in specific countries or regions. See page #6 for list of Bluetooth locations.
Battery	• Type: Lithium ion (high-energy, rechargeable) Life (continuous operation): 18-20 hours • Life (power saver mode): >4 days Charger: 100 to 240 VAC (50/60/Hz) • Charging time: Up to 3 hours (from 0% to 100%)
Operating temperature	• Charge: 0 to 45°C (32 to 113°F) • Discharge: -20 to 55°C (-4 to 131°F)
Storage temperature	-20 to 60°C (-4 to 140°F)
Electronics classifications	• CE (EMC Directive) IEC 61326-1:2013, IEC 61326-2-3:2013, LVD 2006/95/EC, EN 61010-1 2010 • ANSI/UL STD. 61010-1, CAN/CSA STD. C22.2 NO. 61010-1 • WEEE compliant (Directive 2012/19/EU) • RoHS compliant (Directive 2011/65/EU)

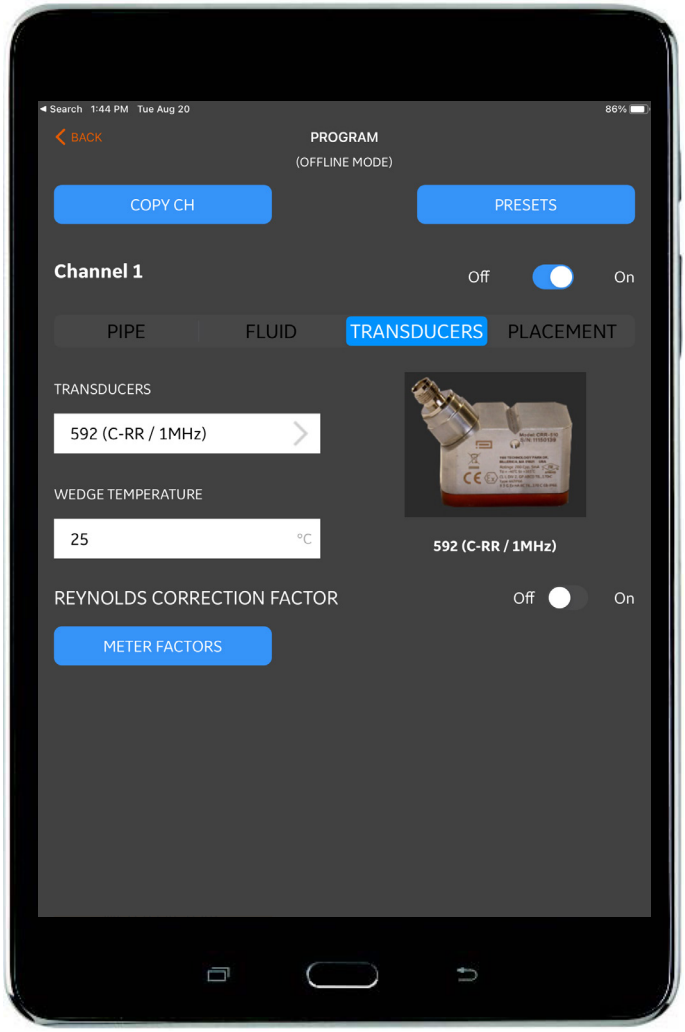
Transmitter electrical connections

User interface

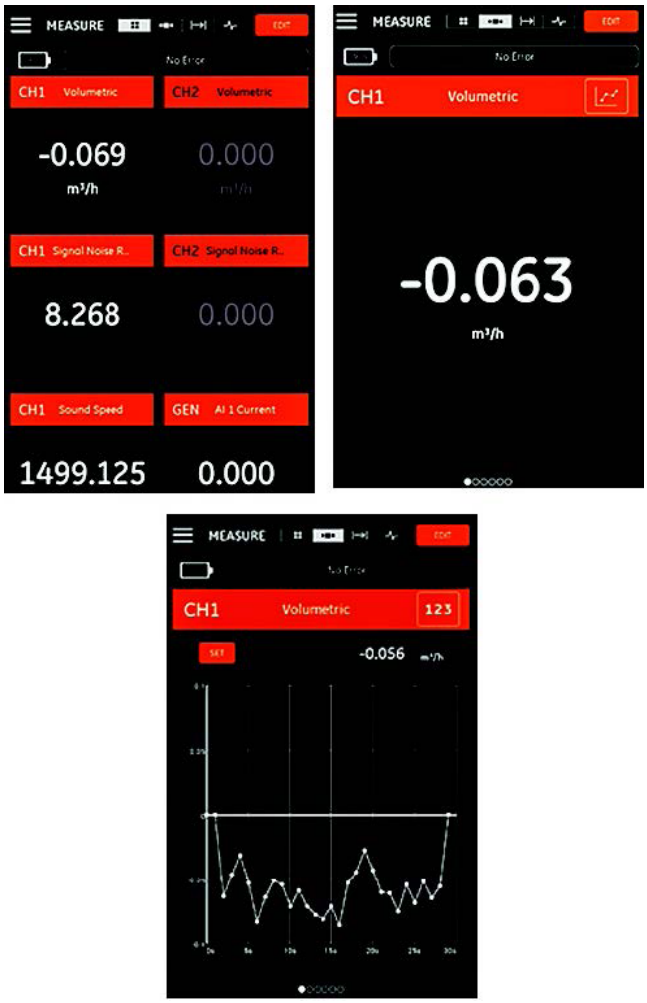
Display	Requires a tablet. Android operating system (version 4.4 or greater) or iOS operating system (iOS version 11.0 or greater, BLE 4.0 or greater, capacity of 16GB and greater).
Dimensions	• 7 in. Tablet: 7.75 x 4.75 x 0.75 in. (196 x 120 x 19 mm) typical • 8 in. Tablet: 8.75 x 6.00 x 0.75 in. (222 x 152 x 19 mm) typical
Battery life	>12 hours of continuous use, function of final settings of tablet
Battery charger	100 to 250 VAC (50/60 Hz)
Communication with flow transmitter	Bluetooth® or wired (wired for Android only)

Software application (PT900 APP)

Intuitive, swipe screen interface	• Colorful, icon-driven design • Tutorial-style programming • Site parameter presets • Multiple display options • Extensive online help
Languages	English, Arabic, Chinese (Simplified), Dutch, French, German, Italian, Japanese, Korean, Portuguese, Russian, Spanish, Swedish, Turkish
Installing the PT900 APP	Obtain the PT900 APP: • File provided on SD card (Android) • Free download from Google Play (Android) • Free download from App Store (Apple) • Free download from Panametrics website (Android)



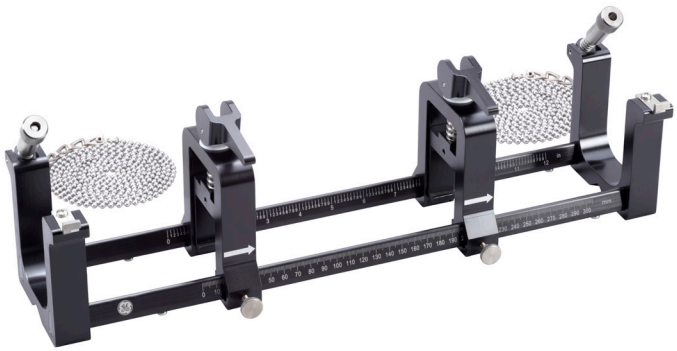
PT900 APP tablet display



Measurement Screens

Clamp-on transducers

Temperature range*	• Standard: -40 to 302°F (-40 to 150°C) • Optional: -328 to 752°F (-200 to 400°C) *See individual transducer model specifications for exact temperature range.
Mounting	• New PT clamping fixture for pipes ≥2 in. (50 mm) • CF-LP clamping fixture for 1/2 in. (15 mm) to 2 in. (50 mm) pipes
PT900 transducer cables	• Standard length: 25 ft (8 m) of RG316 coaxial cable (P/N: 101N0321) • Maximum length: 100 ft (30 m) of RG316 coaxial cable (P/N: PT9-EXT) • Temperature range: -40° to 302°F (-40° to 150°C)



Clamp-on fixture with CRR transducers

Energy measurement kit

The optional energy measurement kit calculates energy flow rate and totalized energy.

- Temperature transmitter: loop-powered, 4-wire PT1000 surface-mount RTDs, NIST-certified
- Accuracy: ± 0.12°C (± 0.22°F) of reading
- Range: 0 to 149°C (32 to 300°F) standard

Waygate Technologies DM5E thickness gauge	• Range from 1 to 200 mm (0.040 to 8”) • High-resolution graphical LCD • IP54 weatherproof rating • 5MHz probe, -20 to 70°C • Standard two AA batteries
Spare battery	• Battery pack: Lithium ion, high-energy, rechargeable • Battery charger: 100 to 240 VAC (50/60/Hz)
Cable adapter	TNC to BNC or UTXDR connectors

Accessories

Cases	• Soft nylon carry bag with strap and dedicated equipment dividers (standard) • Hard case with wheels and dedicated equipment compartments (optional)
Cables	• Input and output cables: analog and digital • Cable adapters: TNC to BNC or UTDR connectors

Options

Tablet	Android IP68 Tablet

Standard soft shell carrying case

Optional hard shell carrying case

How to order the Transport PT900 system

PT9-SYS — Base Model Number

Code	Channels
1C	One Channel PT900 (Bluetooth or Direct Wired - Android, Bluetooth - iOS)
2C	Two Channel PT900 (Bluetooth or Direct Wired - Android, Bluetooth - iOS)
1CW	One Channel PT900 (Direct Wired Only - Android)
2CW	Two Channel PT900 (Direct Wired Only - Android)

Code	Code Power Cord
1	110/120 VAC (NEMA 5-15P - typical North America)
2	230 VAC (Schuko CEE 7/7 2 poles and earth - typical European)
3	230 VAC (BS 1363 A, 3pin square - typical United Kingdom)
4	230V AC (GB 15934-2008 - typical Asia)
5	110VAC (JIS8308/3 JP)
6	230VAC (AS3112 - AUS/NZ)

Code	Transducer & Fixture Kit #1
0	None
A	-40 to 150°C (-40 to 302°F), 50 mm to 600 mm (2" to 24") typical pipe size
B	-40 to 230°C (-40 to 446°F), 15 mm to 50 mm (0.5" to 2") pipe size
C	-40 to 150°C (-40 to 302°F), 150 mm (6") or larger pipe size
D	-40 to 210°C (-40 to 410°F) applications, 50 mm to 600 mm (2" to 24") pipe size
E	Combination of A and C
F	Combination of A, B and C
G	Combination of A and B
I	-40 to 150°C (-40 to 302°F), 15 mm to 50 mm (0.5" to 2") pipe size
J	Combination of A and I
K	Combination of A, C and I
L	Combination of D and I
M	-40 to 150oC (-40 to 302oF), 50mm to 150mm (2" to 6")
N	Combination of B and M
P	Combination of A, B, and M

Code	Transducer & Fixture Kit #2
0	None
A	-40 to 150°C (-40 to 302°F), 50 mm to 600 mm (2" to 24") typical pipe size
B	-40 to 230°C (-40 to 446°F), 15 mm to 50 mm (0.5" to 2") pipe size
C	-40 to 150°C (-40 to 302°F), 150 mm (6") or larger pipe size
D	-40 to 210°C (-40 to 410°F) applications, 50 mm to 600 mm (2" to 24") pipe size
I	-40 to 150°C (-40 to 302°F), 15 mm to 50 mm (0.5" to 2") pipe size
M	-40 to 150°C (-40 to 302°F), 50mm to 150mm (2" to 6")

Code	Carrying Case
SC	Standard soft shell carrying case; ideal for everyday user
HC	Optional hard shell carrying case; ideal for shipping and transportation

Code	System Options
TG2	Pipe wall thickness gauge (DM5E)
E	Energy kit with matched pair PT1000 surface mounted RTDs with transmitter
C48	Additional chain assembly for mounting on pipe sizes up to 1200 mm (48")
2C48	Two additional chain assemblies for mounting on pipe sizes up to 1200 mm (48")
AIO	Analog input and output cable
DIO	Digital and discrete input and output cable
BAT	Spare rechargable battery
CHG	External battery charger for spare battery
EXT	Pair 100 ft extension cables (C-RR transducers)
EXT2	Two pairs of 100 ft extension cables (C-RR transducers)
WUSB2	Cable for wired USB tablet connection

PT9-SYS	1C	2	A	A	HC	TG	(Example Configuration String)

Bluetooth Certification (PT900)

Argentina, Brazil , Canada , Chile , China, Colombia Costa Rica , Egypt, European Union, Hong Kong , India , Indonesia, Japan , Malaysia, Mexico , Monaco, New Zealand, Nigeria , Oman, Pakistan, Peru, Philippines , Qatar, State of , Saudi Arabia , Singapore, South Africa, South Korea, Taiwan, Thailand, Turkey , Ukraine, United Arab Emirates, United States, Vietnam

How to order the Transport PT900 system (PT9-SYSI)

PT9-SYSI — Base Model Number

Code	Channels
1C	One Channel PT900 (Bluetooth or Direct Wired - Android, Bluetooth - iOS)
2C	Two Channel PT900 (Bluetooth or Direct Wired - Android, Bluetooth - iOS)
1CW	One Channel PT900 (Direct Wired Only - Android)
2CW	Two Channel PT900 (Direct Wired Only - Android)

Code	Code Power Cord
1	110/120 VAC (NEMA 5-15P - typical North America)
2	230 VAC (Schuko CEE 7/7 2 poles and earth - typical European)
3	230 VAC (BS 1363 A, 3pin square - typical United Kingdom)
4	230V AC (GB 15934-2008 - typical Asia)
5	110VAC (JIS8308/3 JP)
6	230VAC (AS3112 - AUS/NZ)

Code	Transducer & Fixture Kit #1
0	None
A	-40 to 150°C (-40 to 302°F), 50 mm to 600 mm (2" to 24") typical pipe size (C-RS)
B	-40 to 230°C (-40 to 446°F), 15 mm to 50 mm (0.5" to 2") pipe size
C	-40 to 150°C (-40 to 302°F), 150 mm (6") or larger pipe size (C-RS)
D	-40 to 210°C (-40 to 410°F) applications, 50 mm to 600 mm (2" to 24") pipe size (C-RR)
E	Combination of A and C
F	Combination of A, B and C
G	Combination of A and B
H	Combination of B and D
I	-40 to 150°C (-40 to 302°F), 15 mm to 50 mm (0.5" to 2") pipe size
J	Combination of A and I
K	Combination of A, C and I
L	Combination of D and I

Code	Transducer & Fixture Kit #2
0	None
A	-40 to 150°C (-40 to 302°F), 50 mm to 600 mm (2" to 24") typical pipe size (C-RS)
B	-40 to 230°C (-40 to 446°F), 15 mm to 50 mm (0.5" to 2") pipe size
C	-40 to 150°C (-40 to 302°F), 150 mm (6") or larger pipe size (C-RS)
D	-40 to 210°C (-40 to 410°F) applications, 50 mm to 600 mm (2" to 24") pipe size (C-RR)
I	-40 to 150°C (-40 to 302°F), 15 mm to 50 mm (0.5" to 2") pipe size

Code	Carrying Case
SC	Standard soft shell carrying case; ideal for everyday user
HC	Optional hard shell carrying case; ideal for shipping and transportation

Code	System Options
TG2	Pipe wall thickness gauge (DM5E)
E	Energy kit with matched pair PT1000 surface mounted RTDs with transmitter
C48	Additional chain assembly for mounting on pipe sizes up to 1200 mm (48")
2C48	Two additional chain assemblies for mounting on pipe sizes up to 1200 mm (48")
AIO	Analog input and output cable
DIO	Digital and discrete input and output cable
BAT	Spare rechargable battery
CHG	External battery charger for spare battery
EXT	Pair 100 ft extension cables (C-RR transducers)
EXT2	Two pairs of 100 ft extension cables (C-RR transducers)
WUSB2	Cable for wired USB tablet connection

PT9-SYSI	1C	2	A	A	HC	TG	(Example Configuration String)

Per avere più informazioni
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