



# 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



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## 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

|                               |   |
|-------------------------------|---|
| <b>Fluid types</b>            | Liquids: Acoustically conductive fluids, including most clean liquids and many liquids with small amounts of entrained solids or gas bubbles  |
| <b>Flow measurement</b>       | Patented Correlation Transit-Time™ mode   |
| <b>Pipe sizes</b>             | <ul style="list-style-type: none"> <li>Standard: 0.5 to 24 in. (15 to 600 mm)</li> <li>Optional: up to 300 in. (7500 mm) available upon request</li> </ul>  |
| <b>Pipe wall thickness</b>    | Up to 3 in. (76.2 mm)   |
| <b>Pipe material</b>          | All metals and most plastics<br>Consult Panametrics for concrete, composite materials and highly corroded or lined pipes.   |
| <b>Accuracy</b>               | <ul style="list-style-type: none"> <li>±1% of reading (2 in./50 mm or greater pipe sizes)</li> <li>±2% of reading (0.5 in./15 mm to &lt;2 in./50 mm pipe sizes)</li> </ul> <p>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.</p> <p>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, acceptable diagnostic 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.</p> |
| <b>Repeatability</b>          | ±0.2% of reading  |
| <b>Range (Bidirectional)</b>  | 0.1 to 40 ft/s (0.03 to 12.19 m/s)  |
| <b>Response time</b>          | Up to 2 Hz  |
| <b>Measurement Parameters</b> | Velocity, volume, mass, energy, total flow  |
| <b>Channels</b>               | 1 or 2 channels   |

## Flow transmitter

|                                    |  |
|------------------------------------|--|
| <b>Enclosure</b>                   | IP65 rating  |
| <b>Specifications</b>              | <ul style="list-style-type: none"> <li>Weight: 3 lb (1.4 kg)</li> <li>Size (h x w x md): 7.9 x 4.3 x 1.5 in (200x109 x 38 mm)</li> <li>Mounting: Soft strap around pipe or magnetic clamp</li> </ul>   |
| <b>Analog inputs</b>               | 4-20 mA (qty 2)  |
| <b>Analog output</b>               | 4-20 mA  |
| <b>Digital output</b>              | Pulse (Totalizer), Frequency, Alarm (qty 1)  |
| <b>Digital communication</b>       | <ul style="list-style-type: none"> <li>Bluetooth® wireless*</li> <li>Modbus via RS485 port</li> <li>Micro-USB port</li> </ul> <p>*Bluetooth certification in specific countries or regions. See page #6 for list of Bluetooth locations.</p>   |
| <b>Battery</b>                     | <ul style="list-style-type: none"> <li>Type: Lithium ion (high-energy, rechargeable) Life (continuous operation): 18-20 hours</li> <li>Life (power saver mode): &gt;4 days Charger: 100 to 240 VAC (50/60/Hz)</li> <li>Charging time: Up to 3 hours (from 0% to 100%)</li> </ul>                       |
| <b>Operating temperature</b>       | <ul style="list-style-type: none"> <li>Charge: 0 to 45°C (32 to 113°F)</li> <li>Discharge: -20 to 55°C (-4 to 131°F)</li> </ul>  |
| <b>Storage temperature</b>         | -20 to 60°C (-4 to 140°F)  |
| <b>Electronics classifications</b> | <ul style="list-style-type: none"> <li>CE (EMC Directive) IEC 61326-1:2013, IEC 61326-2-3:2013, LVD 2006/95/EC, EN 61010-1 2010</li> <li>ANSI/UL STD. 61010-1, CAN/CSA STD. C22.2 NO. 61010-1</li> <li>WEEE compliant (Directive 2012/19/EU)</li> <li>RoHS compliant (Directive 2011/65/EU)</li> </ul> |



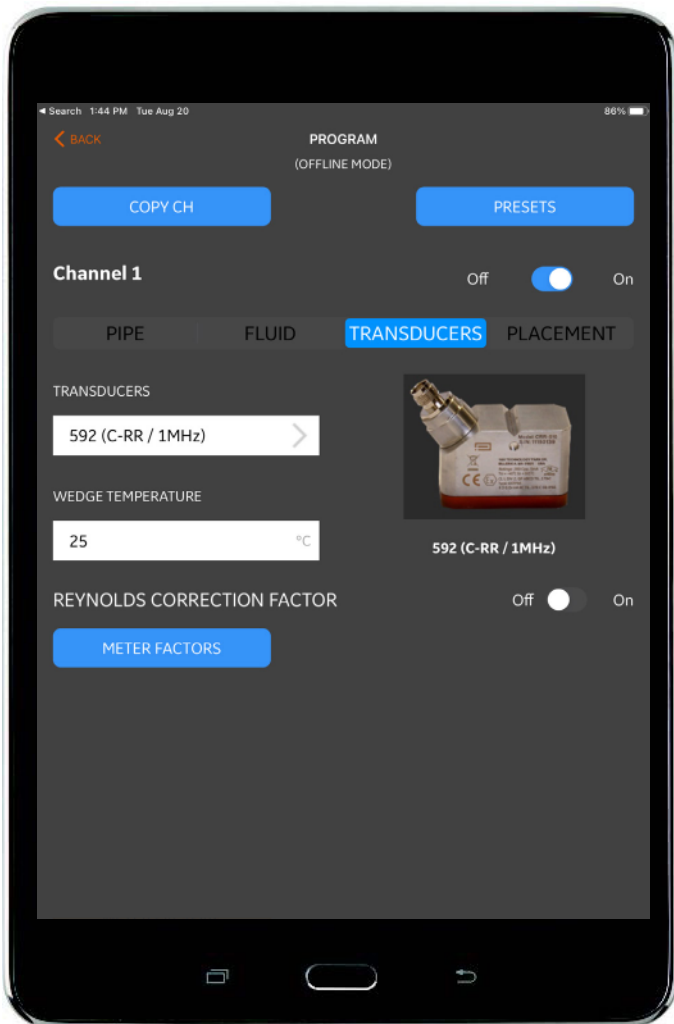
Transmitter electrical connections

## User interface

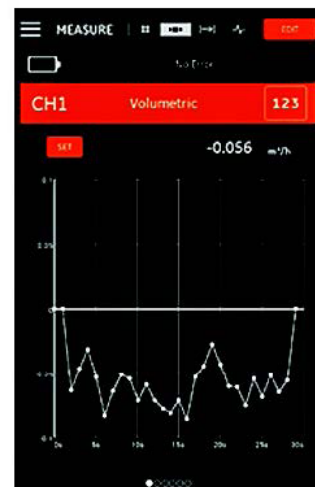
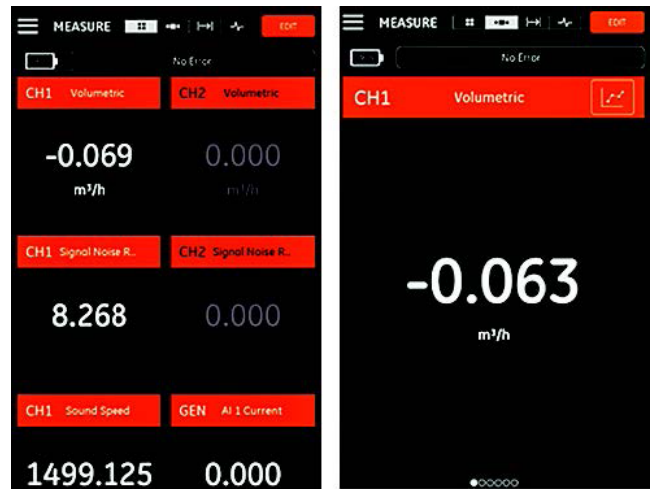
|  |  |
|--|--|
| <b>Display</b>                             | Requires a tablet. Android operating system (version 4.4 or greater) or iOS operating system (iOS version 11.0 or greater, BLE 4.0 or greater, capacity of 16GB and greater).                |
| <b>Dimensions</b>                          | <ul style="list-style-type: none"> <li>7 in. Tablet: 7.75 x 4.75 x 0.75 in. (196 x 120 x 19 mm) typical</li> <li>8 in. Tablet: 8.75 x 6.00 x 0.75 in. (222 x 152 x 19 mm) typical</li> </ul> |
| <b>Battery life</b>                        | >12 hours of continuous use, function of final settings of tablet  |
| <b>Battery charger</b>                     | 100 to 250 VAC (50/60 Hz)  |
| <b>Communication with flow transmitter</b> | Bluetooth® or wired (wired for Android only)   |

## Software application (PT900 APP)

|  |   |
|--|---|
| <b>Intuitive, swipe screen interface</b> | <ul style="list-style-type: none"> <li>Colorful, icon-driven design</li> <li>Tutorial-style programming</li> <li>Site parameter presets</li> <li>Multiple display options</li> <li>Extensive online help</li> </ul>   |
| <b>Languages</b>                         | English, Arabic, Chinese (Simplified), Dutch, French, German, Italian, Japanese, Korean, Portuguese, Russian, Spanish, Swedish, Turkish   |
| <b>Installing the PT900 APP</b>          | <p>Obtain the PT900 APP:</p> <ul style="list-style-type: none"> <li>File provided on SD card (Android)</li> <li>Free download from Google Play (Android)</li> <li>Free download from App Store (Apple)</li> <li>Free download from Panametrics website (Android)</li> </ul> |



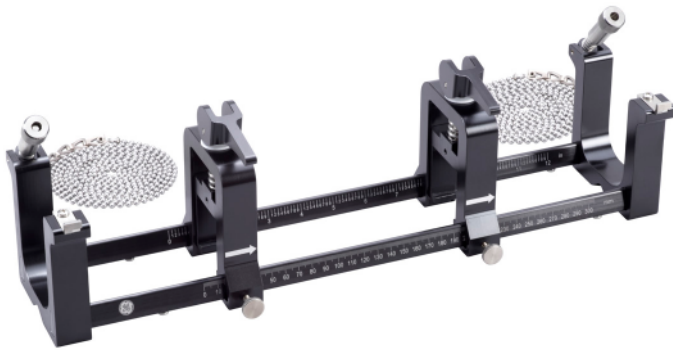
PT900 APP tablet display



Measurement Screens

## Clamp-on transducers

|                                |  |
|--------------------------------|--|
| <b>Temperature range*</b>      | <ul style="list-style-type: none"> <li>Standard: -40 to 302°F (-40 to 150°C)</li> <li>Optional: -328 to 752°F (-200 to 400°C)</li> </ul> <p>*See individual transducer model specifications for exact temperature range.</p>                                 |
| <b>Mounting</b>                | <ul style="list-style-type: none"> <li>New PT clamping fixture for pipes ≥2 in. (50 mm)</li> <li>CF-LP clamping fixture for 1/2 in. (15 mm) to 2 in. (50 mm) pipes</li> </ul>  |
| <b>PT900 transducer cables</b> | <ul style="list-style-type: none"> <li>Standard length: 25 ft (8 m) of RG316 coaxial cable (P/N: 101N0321)</li> <li>Maximum length: 100 ft (30 m) of RG316 coaxial cable (P/N: PT9-EXT)</li> <li>Temperature range: -40° to 302°F (-40° to 150°C)</li> </ul> |



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

|  |   |
|--|---|
| <b>Waygate Technologies DM5E thickness gauge</b> | <ul style="list-style-type: none"> <li>Range from 1 to 200 mm (0.040 to 8")</li> <li>High-resolution graphical LCD</li> <li>IP54 weatherproof rating</li> <li>5MHz probe, -20 to 70°C</li> <li>Standard two AA batteries</li> </ul> |
|--|---|

|                      |  |
|----------------------|--|
| <b>Spare battery</b> | <ul style="list-style-type: none"> <li>Battery pack: Lithium ion, high-energy, rechargeable</li> <li>Battery charger: 100 to 240 VAC (50/60/Hz)</li> </ul> |
|----------------------|--|

|                      |                                |
|----------------------|--------------------------------|
| <b>Cable adapter</b> | TNC to BNC or UTXDR connectors |
|----------------------|--------------------------------|

## Accessories

|               |  |
|---------------|--|
| <b>Cases</b>  | <ul style="list-style-type: none"> <li>Soft nylon carry bag with strap and dedicated equipment dividers (standard)</li> <li>Hard case with wheels and dedicated equipment compartments (optional)</li> </ul> |
| <b>Cables</b> | <ul style="list-style-type: none"> <li>Input and output cables: analog and digital</li> <li>Cable adapters: TNC to BNC or UTDR connectors</li> </ul>   |

## Options

|               |                     |
|---------------|---------------------|
| <b>Tablet</b> | 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 |   |   |   |   |    |    |                                |
|---------------------------|---|---|---|---|----|----|--------------------------------|
| <b>Code</b>               | <b>Channels</b>   |   |   |   |    |    |                                |
| 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)                                 |   |   |   |    |    |                                |
| <b>Code</b>               | <b>Code Power Cord</b>  |   |   |   |    |    |                                |
| 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)  |   |   |   |    |    |                                |
| <b>Code</b>               | <b>Transducer &amp; Fixture Kit #1</b>  |   |   |   |    |    |                                |
| 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 150°C (-40 to 302°F), 50mm to 150mm (2" to 6")                           |   |   |   |    |    |                                |
| N                         | Combination of B and M  |   |   |   |    |    |                                |
| P                         | Combination of A, B, and M  |   |   |   |    |    |                                |
| <b>Code</b>               | <b>Transducer &amp; Fixture Kit #2</b>  |   |   |   |    |    |                                |
| 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")                           |   |   |   |    |    |                                |
| <b>Code</b>               | <b>Carrying Case</b>  |   |   |   |    |    |                                |
| SC                        | Standard soft shell carrying case; ideal for everyday user                      |   |   |   |    |    |                                |
| HC                        | Optional hard shell carrying case; ideal for shipping and transportation        |   |   |   |    |    |                                |
| <b>Code</b>               | <b>System Options</b>   |   |   |   |    |    |                                |
| 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 rechargeable 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 |  |   |   |   |    |    |                                |
|----------------------------|--|---|---|---|----|----|--------------------------------|
| <b>Code</b>                | <b>Channels</b>  |   |   |   |    |    |                                |
| 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)  |   |   |   |    |    |                                |
| <b>Code</b>                | <b>Code Power Cord</b>   |   |   |   |    |    |                                |
| 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)   |   |   |   |    |    |                                |
| <b>Code</b>                | <b>Transducer &amp; Fixture Kit #1</b>   |   |   |   |    |    |                                |
| O                          | 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   |   |   |   |    |    |                                |
| <b>Code</b>                | <b>Transducer &amp; Fixture Kit #2</b>   |   |   |   |    |    |                                |
| O                          | 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                     |   |   |   |    |    |                                |
| <b>Code</b>                | <b>Carrying Case</b>   |   |   |   |    |    |                                |
| SC                         | Standard soft shell carrying case; ideal for everyday user                             |   |   |   |    |    |                                |
| HC                         | Optional hard shell carrying case; ideal for shipping and transportation               |   |   |   |    |    |                                |
| <b>Code</b>                | <b>System Options</b>  |   |   |   |    |    |                                |
| 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 rechargeable 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                   | IC   | 2 | A | A | HC | TG | (Example Configuration String) |



**CORAME SAS**  
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