

GE  
Measurement & Control

# Ultrasonics<sup>3</sup>

## The PanaFlow Z3 Ultrasonic Liquid Flow Meter



High-end  
design



Advanced  
performance



Low cost of  
ownership



imagination at work

# Why Z3 ultrasonics?

Ultrasonics is the fastest growing technology for flow measurement today. So why is it replacing other technologies?

## The measurement principle

The Z3 uses the transit-time technique for accurate flow measurement. The transducers serve as both signal generators and receivers of an identical number of acoustical pulses. The time between transmission and reception of the signals is measured in both directions.

When liquid is flowing in the pipe, its transit time downstream is less than its transit time upstream. The difference in these times is proportional to the velocity of the flowing liquid and its sign indicates the direction of flow.

## Maintenance-free

Unlike traditional flow technologies, ultrasonic meters do not drift over time so they do not require periodic re-calibration. They do not have moving parts, filters or strainers that can be damaged by the flowing liquid.

With no calibration or maintenance required, ultrasonic measurement is extremely reliable and cost effective.

## No process interference

Unlike vortex, Coriolis, differential pressure and turbine flow meters, ultrasonic measurement is non-intrusive. Without restrictions in the pipe, contamination does not damage an ultrasonic meter and pipes can be cleaned without meter removal.

## Better performance

Ultrasonic meters cost less in the long run. They have no pressure drop to waste energy. They measure flow in both directions without the need for more flow meters.

Changes in temperature, pressure, viscosity and conductivity do not affect ultrasonic meters, preserving their accuracy and reducing process downtime.

The high turndown ratio of ultrasonic meters avoids the significant cost of requiring additional meters of piping runs for different flow ranges.

## Easy to install

Wetted flow meter installation is complicated and incorrect setup can impact the reliability and accuracy of the measurement. The Z3 comes fully assembled from the factory and only needs to be bolted into place.

**Z3 is another example of how GE works.**

The PanaFlow Z3 joins a portfolio of new ultrasonic meters that couple decades of Panametrics ultrasonic experience with new industrial-design engineering. Our commitment is to deliver the best in reliability, durability and quality.



# The PanaFlow Z3

## Ultrasonic advantages for process flow measurement



### High-end design

Industrial design is so much more than aesthetics.

#### Integrated flow cell

Install and maintain the Z3 more quickly because of its sleek design. Fully enclosed transducers, buffers, junction boxes and cables not only make the meter better to look at, but make it rugged, compact and easier to handle.

#### Cleaner design software

Be more productive with new Vitality software that is completely intuitive and easy to use.

#### Removable transducers

The Z3's transducers can be removed in the field without shutting down production or interfering with your flow measurement.



### Advanced performance

Z3 is ultrasonic flow measurement at it best.

#### Three-path technology

Get better accuracy and see more of the flow profile with three-path measurement. An extra path also provides you peace of mind redundancy.

#### Engineered for reliability

Put brand new, ultra-reliable electronics on a sleek, rugged flow cell and you get the latest generation of Panametrics flow meters, known for low-risk, highly accurate and thoroughly repeatable measurements.

#### State-of-the-art electronics

Communicate seamlessly in HART® or Modbus protocols with the XMT910 transmitter.



### Low cost of ownership

Ultrasonic performance saves more in the end.

#### Optimised process

With no drifting, pressure drop or restriction in the pipe and no moving parts, filters or strainers, nothing impacts the process or damages the meter.

#### Better bottom line

Take care of your assets without the cost common to non-ultrasonic meters. Save on maintenance, installation and calibration, and make money while your process remains up and running.

#### Experience to count on

You know Panametrics for high-end, harsh environment flow measurement. You know GE as a reliable, dependable supplier. The Z3 brings these together for performance and a cost of ownership competitive with lesser meters.

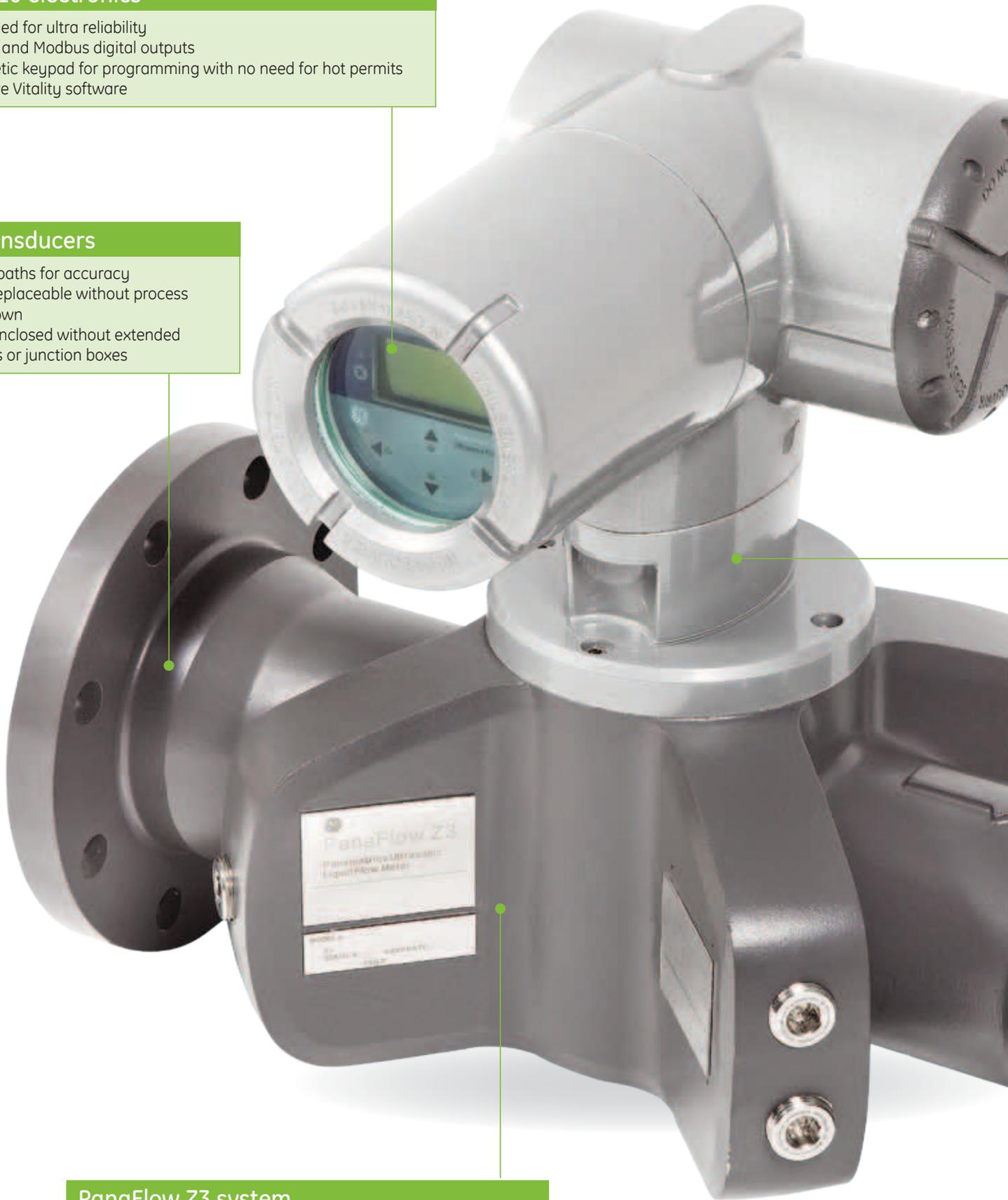


## XMT910 electronics

- Designed for ultra reliability
- HART® and Modbus digital outputs
- Magnetic keypad for programming with no need for hot permits
- Intuitive Vitality software

## LX transducers

- Three paths for accuracy
- Field replaceable without process shutdown
- Fully enclosed without extended buffers or junction boxes



## PanaFlow Z3 system

- Accuracy: +/- 0.5% (calibrated)
- Process temperature: -40°F to 185°F (-40°C to 85°C)
- Repeatability:  $\pm 0.2\%$  ( $V > 1.6\text{ft/s}$ ) (0.5 m/s)
- Range: -40 to 40 ft/s (-12.19 to 12.19 m/s)
- Certification: US/CAN, ATEX and IECEx



## Ready to work for process applications

Designed specifically for low-risk, accurate and repeatable measurement of process liquids, the capabilities of PanaFlow Z3 make it the right meter for a number of industries and applications.

### Customers

- Upstream, midstream and downstream oil and gas
- Chemical
- Petrochemical

### Applications

- Process control and monitoring
- Allocation measurement
- Batching and blending lines
- Transfer lines
- Cooling water lines

### Meter body

- Pipe sizes: 3 in to 8 in (80mm to 200mm), larger in future
- Flange rating: 150#, 300#, 600#
- Integrated design with no exposed cables
- Carbon steel and stainless steel

## Find out more

Take the PanaFlow Z3 3D tour or contact us at [www.ge-mcs.com/Z3](http://www.ge-mcs.com/Z3)



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