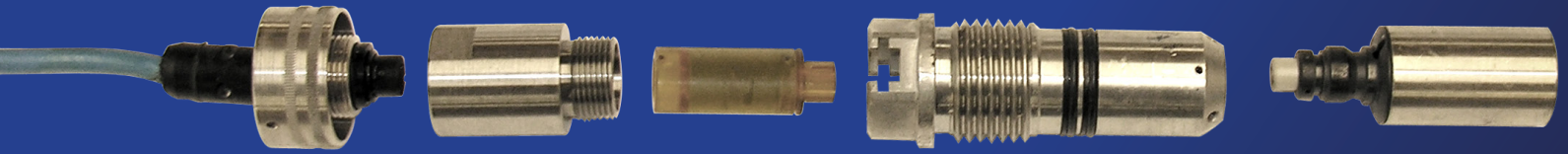




T-20 Series Transducer Upgrade and Gas Ultrasonic Flow Meter Audit



Robust Transducer Design

All gas ultrasonic measurement components must operate at peak efficiency to ensure accuracy, maximize uptime and reduce financial exposure. The new more robust Daniel T-20 Series Gas Transducers feature a low-maintenance design that is resistant to liquid borne dirt, less sensitive to process conditions and more tolerant of corrosive fluids such as H₂S. The new transducers endure wet, rich and/or dirty gas applications and are engineered to be serviced as needed down to the transformer without interrupting the process.

New T-20 Series Transducers: A Smart Investment

- More robust transducer design for continuous, reliable performance in all environments, including wet, rich and/or dirty gas applications
- Non-wetted transformer unaffected by liquid borne dirt and corrosive fluids such as H₂S to increase durability
- Mechanically-robust electrical connectors minimize contaminant build-up for a superior connection in harsh environments
- Maximize meter uptime by servicing down to the transformer with no process interruption or meter depressurization
- Reduce maintenance time and expense with fewer cleaning cycles required even in harsh environments

In-Line Replacement

The new T-20 Series Transducers have been engineered for direct replacement of Daniel T-11 or T-12 Transducers in most cases and must be installed in pairs. To help expedite installation, the same holders and mounts installed for Daniel T-11 or T-12 transducers can be used for the T-20 series transducers to facilitate in-line replacement. In addition, the new transducers will operate with the same firmware and electronics to further simplify transducer conversion.

Performance Validation

Before installation of the new T-20 series transducers, a complete assessment and inspection of the meter is recommended. A Daniel service technician will:

- Run an 'as found' meter performance report to identify abnormal flow profiles, including cross flow, asymmetry and swirl disturbances
- Install the T-20 series transducers
- Perform the speed of sound calculation to validate path-to-path meter performance.

Having a qualified Daniel technician service the meter ensures immediate identification and correction of any issues that may be compromising meter performance to reduce measurement uncertainty.



Continuous Flow Analysis

Receive faster, more in-depth diagnostics by activating the Continuous Flow Analysis (CFA) feature within MeterLink™ software. While on-site, a Daniel service technician can advance the flow meter's CPU board by adding the CFA key if the firmware is current. Once installed, CFA helps validate the integrity of the meter and analog measurements and will generate actionable alerts for:

- Blockage
- Bore build-up
- Reverse flow detection
- Liquid detection
- Abnormal flow profile
- Speed of sound deviation.

Sustain Your Equipment

Partnering with Daniel for an equipment audit is a proven way to ensure a comprehensive health check of your metering operation. Daniel's Metering Equipment Audit Service provides the following deliverables:

- Performance 'health check' of gas ultrasonic meters
- Detailed audit report
- Operator training.

Services Available

Upgrade your meter today by contacting Daniel Measurement Services. Our highly skilled technicians can provide a variety of services, including:

- Start-up and commissioning
- Meter inspection and recertification
- Advanced technical support
- Metering equipment audits
- Measurement uncertainty analysis
- Gas chromatograph refurbishment program.

Ordering Conversion Kits

T-22 and T-21 Transducer Conversion Kits and Itemized Parts for Daniel Gas Ultrasonic Meters

T-22 (meters 4" - 12")	T-21* (meters over 12")	
Part Numbers	Part Numbers	Upgrade Kits
1-360-03-210	1-360-03-200	Single Pair/Transformer Assembly/ Housing Retainer
1-360-03-211	1-360-03-201	Four Pair/Transformer Assembly/ Housing Retainer
Part Numbers	Part Numbers	Individual Replacements Parts
1-360-03-103	1-360-03-083	Transducer Pair
1-360-03-110	1-360-03-090	Transducer Assembly
1-360-01-958	1-360-01-958	Transducer Housing Retainer

* All JuniorSonic™ ultrasonic meters have T-21 transducers.

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