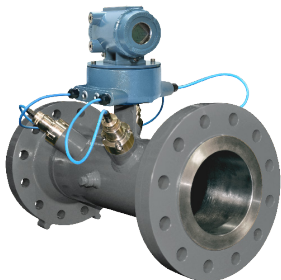
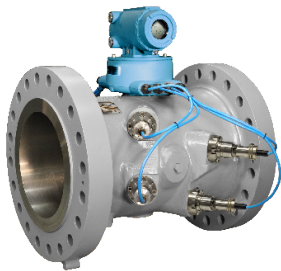


# Firmware Release Summary: Daniel 3410 Series Gas Ultrasonic Flow Meters

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## Version 1.27

- Enhanced meter connectivity via Ethernet, enabling the meter to communicate with a gas chromatograph (GC) to read gas compositions using Modbus TCP/IP over Ethernet. (Daniel MeterLink v1.31 or newer must be installed)
- Updated HART® commands to Revision 6 to support configuration of:
  - Additional frequency outputs and digital outputs (FODOs) on the Type 4 CPU Board<sup>1</sup>
  - GC Modbus TCP/IP
  - Daniel Dual-Configuration Gas Ultrasonic Flow Meters (Models 3415, 3416 and 3417).
- Additional minor enhancements include:
  - Fixed issue where measurement was affected during waveform collection when the meter was in rapid batch mode.
  - Fixed issue where firmware intermittently read incorrect pressure and temperature input values when the meter was running under high stress.
  - Fixed issue where the meter generated an empty log file during creation of an event or timed log if the meter's clock was backdated.
  - Fixed issue where the meter did not generate an alarm during firing synchronization (IsXdcrFiringSyncActive) resets.

## Version 1.24

- Added support for the new Type 4 CPU Board that includes six Frequency/Digital Outputs and removes Analog Output 2.
- Added support for new Daniel T-41 transducers.<sup>2</sup>
- Minor enhancements include:
  - Fixed GHOST network vulnerability discovered within Linux libraries.
  - Fixed issue with frequency output in test mode dropping when meter goes from measurement into acquisition mode.
  - Fixed issues with AGA10 sound velocity and SOS compare difference algorithm where AGA10SndVelStatus and SOSComparePctDiff were incorrectly computed by firmware.

## Version 1.23

- Added support for new dual-configuration Models 3415 and 3416 meters.
- Added support of diagnostic chord alarms in the dual-configuration Model 3416 meter to detect speed of sound error.
- Added support for configurable GC gas component indices, allowing the meter to communicate with all Rosemount gas chromatographs as well as third party gas chromatographs that support SIM 2251.
- Enhanced 'Transducer Health Monitoring' to avoid transducer maintenance alarms when there is no flow in the meter (i.e. meter is below LowFlowLmt) or when the meter is in acquisition mode.
- Added support to display volume for a minimum of 8000 hours of operation at Qmax without the display rolling back to zero, ensuring the meter is in compliance with the European MID directive and OIML R137.

<sup>1</sup> Type 4 CPU Module releasing for sale in December 2016.

<sup>2</sup> Daniel T-41 transducers releasing for sale in January 2017.

## Firmware Release Summary: Daniel 3410 Series Gas Ultrasonic Flow Meters

### Version 1.23 continued

- Additional minor enhancements include:
  - Fixed issue with Modbus server to prevent locking of the TCP/IP port when client rapidly connects and then disconnects this server from the meter.
  - Fixed issue with hourly and daily logs where any entry with a zero value is not averaged.
  - Fixed issue with local display where the displayed value remains in overflow state and does not refresh.
  - Fixed issue with communications between the CPU and the acquisition module that caused fast configuration waveforms' packets to reset in the acquisition module.
  - Fixed issue where all chords can be set to inactive on 3410 Series JuniorSonic meters.
  - Fixed issue to prevent writing zero to 'LA..LD & PipeDiam' which can cause the meter to reset.
  - Fixed issue with PPP communication where communication drops if UnitsSystem is changed.
  - Fixed issue with local display where value of 9999998 is rounded to 1.000E07.
  - Fixed issue with archive logs causing the meter to not create a new record when DoOverwriteUnreadAlarmLog is set to 'FALSE' and the log is full.
  - Fixed issue where system logs are generated for inactivated chords when the meter is in acquisition mode.
  - Fixed issue with archive logs where alarms associated with "archive log is full" are not cleared when logs are marked as read until a new archive log is generated.
  - Fixed issue where meter does not acquire back when min hold time (MinHoldTm) is written back with a valid value. Fixed issue where transducer firing synchronization (XdcrFiringSyncActive) resets after inactivating chords.
  - Fixed issue with system logs where the system log XML file is not well formed due to a corrupt message.
  - Fixed issue with hourly and daily logs where time slips by one second.

### Version 1.18

- Added support for 3-slot retrofit enclosure.
- Added support for a Port C serial port.
- Added support for RS-485 on Port B and Port C.
- Enhanced Transducer Health Monitoring to avoid unnecessary alarms and prematurely discarding waveforms.
- Additional minor enhancements include:
  - Prevented issues with reoccurring live pressure and temperature errors in System logs.
  - Fixed issue where Port A RS-485 full duplex did not work at 1200 or 2400 BPS.
  - Fixed issue where units would be forced to 'U.S. Customary' and time base to 'per hour' for Port A when Port A override switch was toggled.
  - Fixed issue that could cause Acquisition Module communication errors while streaming waveform files.
  - Fixed issue where CurrDayFlowTime and CurrHourFlowTime always report zero.
  - Fixed issue where a chord remained in failure mode after activating an inactive chord.

## Firmware Release Summary: Daniel 3410 Series Gas Ultrasonic Flow Meters

### Version 1.16

- Enhanced chord substitution feature to improve the accuracy of the calculated measurement in the event of a chord failure.

### Version 1.13

- Added display of CRC-32 checksum on local display if installed for compliance to OIML R137.

### Version 1.11

- Fixed an issue that caused meters with larger path lengths (i.e. 24" JuniorSonic meter, etc.) to experience chord failure when the flow rate increased above a certain velocity. Chord recovery occurred during 'no flow' conditions.

### Version 1.09

- Fixed an issue introduced in V1.07 firmware. If the system clock was set to a date prior to 1 January 2003, as is often the case during installation, the externally visible meter time (i.e. RTCSecondsSinceEpochRead, RTCSecond) will not be properly updated.

### Version 1.07

- Enhanced 'Transducer Type' command (i.e. SetXdcrType) to default to different tracking parameters if running a JuniorSonic or SeniorSonic 3410 Series Meter. Previously, the meter did not distinguish between these two meter types when setting the tracking parameters.

### Version 1.06

- Added support for T-32 low pressure transducers.
- Additional minor enhancements include:
  - Fixed issue in which activating Write Protect while Output Test is underway led to meter rebooting.
  - Prevented selection of Live GC inputs if GCSerialPort is disabled.
  - Fixed issue to prevent proper chord weightings from being applied when DeviceNumber is changed.
  - Fixed issue in the local display that could cause task to fail when the local display configuration is changed.
  - Corrected errors in logging of temperature alarms.

### Version 1.04

- Added support for HART 7.
- Added support for Local Display.
- Added support for GC Master functionality on serial Port A.

### Version 1.03

- Required to achieve accurate analog output values for IOBdType 2 and later. Analog output error was  $\leq 0.38\%$ . IOBdType can be found in Daniel MeterLink™ Software in the 'Meter Information' section.

### Emerson Automation Solutions

Daniel Measurement and Control, Inc.

North America / Latin America:

Headquarters

USA - Houston, Texas

T +1.713.467.6000

USA Toll Free 1.888.FLOW.001

Europe: Stirling, Scotland, UK

T +44.1786.433400

Middle East, Africa: Dubai, UAE

T +971.4.811.8100

Asia Pacific: Singapore

T +65.6777.8211

[www.Emerson.com/Daniel](http://www.Emerson.com/Daniel)

