

Download firmware & software for Mark III electronics



## Firmware Release Summary: Daniel 3400 Series Gas Ultrasonic Flow Meters with Mark III Electronics

### Version 1.79

- Corrected issue where Analog Output 2 ceases updating when placed in test mode and returned to normal operation mode.
- Added new Modbus registers for MeasVolGrossHeatingVal and SpecificGravity, enabling both to be written in a contiguous block with the gas components.

### Version 1.78

- Fixed an issue where an excessive number of log entries were being generated which caused Mark III meter memory to prematurely reach full capacity. Highlights of this fix include:
  - Meter memory usage is now monitored and an alarm is generated if usage reaches a user configurable limit. This 'early warning' alarm ensures logs can be collected and cleared before logging is halted due to a full memory bank.
  - Logging will stop if memory usage hits a predefined set point. This safeguard ensures the meter will continue to measure event if logging must be halted.
  - Users can now force the meter to empty all log files while keeping the meter configuration intact. A restart is required to clear all log files. (Note: Daniel MeterLink™ Software v1.21 is required to perform this operation.)
- Transducer Health Monitoring, released in v1.76, has been modified to reduce the number of transducer maintenance required alarms that are generated and to prevent transducers from failing prematurely.

### Version 1.76

- Enhanced chord substitution feature to improve the accuracy of the calculated measurement in the event of a chord failure.
- Added transducer health monitoring to monitor gains and signal-to-noise (SNR) ratios to help identify and pinpoint a transducer with degraded performance.
- Improved signal detection algorithm to prevent acquisition of a reflected signal. A symptom of a reflected signal is when the chord is reading higher than expected gain and the speed of sound measured is about one third the value expected.
- Corrected processing of invalid dates from a gas chromatograph (GC). A symptom of this condition occurs when operators are experiencing alarms from the GC but cannot determine the cause.
- Additional minor enhancements include:
  - Fixed timer problem in FPGA device driver.
  - Fixed meter reporting flow while at no flow condition and low pressure.
  - Fixed false peak switch detection for all chords.
  - Fixed dependency that did not function properly for PropUpdtBatches.
  - Fixed intermittent peak switch that was detected for all chords while Waveform Viewer indicated no peak switch.
  - Changed SetXdcrType to 2, 12 and 22 to correctly default to Tspf, TspfLo, TspfHi and Tspe.
  - Fixed IsPropUpdtActive data point that was not working properly.
  - Fixed IsPropUpdtActive to always set to FALSE for JuniorSonic 2-path meter.
  - Fixed [Fwd/Rev]PropVel[A..D]Bin[1..10] data points that were not set to default after cold start.
  - Changed default value of IsPropUpdtActive.

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### Version 1.74

- Reinstated chord GAIN Modbus registers 77 to 84 which were removed in version 1.73.
- Reinstated GainHighLmt Modbus register 30 and GainLowLmt Modbus Register 28 which were removed in 1.73.
- Other minor enhancements include:
  - Added chord Gain Modbus registers 10834-10848 as type FLOAT and units DECIBELS.
  - Added GainHighLmt Modbus register 10832 and GainLowLmt Modbus Register 10830 as type FLOAT and units DECIBELS.

### Version 1.73

- Added support for 75° meters.
- Allowed reading of Modbus register blocks with mixed data types.
- Changed writes to /nvdata/SysLogToText.txt to prevent the file from growing indefinitely.
- Other minor enhancements include:
  - Corrected the handling of Modbus US volume units for registers 14914 and 14868 (i.e. ReverseFlowVolLmt and ReverseFlowVol).
  - Changed reserved and depreciated Modbus registers to read only access.
  - Added detection of a corrupted header in extpd.
  - Sped up identification of “Unsupported” Modbus registers.
  - Corrected the counting of Modbus TCP connections when they are closed rapidly to prevent a state where fewer than the specified 10 connections are allowed.
  - Changed Modbus TCP to ignore bad MBAP headers.
  - Changed extpd to ignore corrupted headers on port 10000.

### Version 1.72

- Improved chord substitution by zeroing CurrPropUpdateBatches during total chord failure.
- Added sanity check to batch time stamps to prevent frequency feedback from going to extreme states. This fix prevents the meter from transmitting half of the expected frequency output rate or 1.5 times the maximum frequency output rate.
- Additional minor enhancements include:
  - Added band pass filter and support for T-19 transducers.
  - Added Modbus registers for SNRA1-SNRD2.
  - Corrected handling of latched alarms on warm start.
  - Added clearing of IsSndVelCompEnabled when AGA10 Key becomes disabled.
  - Corrected error handling in HART® command 167.
  - Changed default values for XA-XD and LA-LD to allow cold start to compute angles and eliminate system log error message.
  - Changed noise energy from 16 bit to 32 bit value to prevent attenuation at larger values.
  - Corrected handling of waveforms with duplicated timestamps.
  - Prevented ‘super batch’ during chord failure and/or chord inactivity.
  - Depreciated GAIN registers 77 to 84. Registers 10814-10828 can now be read as FLOAT.

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### Version 1.71

- Removed audit log entries for RTCSecondsSinceEpochSet, Viscosity, MeasVolGrossHeatingVal, SpecificGravity, MoleFractionN2Method2, MoleFractionCO2, MoleFractionH2, MoleFractionCO, MoleFractionMethane, MoleFractionEthane, MoleFractionPropane, MoleFractionIsoButane, MoleFractionNButane, MoleFractionIsoPentane, MoleFractionNPentane, MoleFractionNHexane, MoleFractionNHeptane, MoleFractionNOctane, MoleFractionNNonane, MoleFractionNDecane, MoleFractionH2S, MoleFractionHelium, MoleFractionWater, MoleFractionOxygen, and MoleFractionArgon.
- Removed write protection from MeasVolGrossHeatingVal and SpecificGravity.

### Version 1.70

- Added Continuous Flow Analysis diagnostics (i.e. Blockage, Bore Buildup, Liquid Detection, Reverse Flow, Abnormal Profile and Meter SOS to AGA10 Comparison).
- Added baseline functionality.
- Added Modbus TCP support on Ethernet.
- Additional minor enhancements include:
  - Added reporting of signal-to-noise ratios in units of dB.
  - Fixed turbulence calculation for JuniorSonic meters.

### Version 1.63

- Duplicated Modbus registers 10000 and larger to an address 8000 or less (i.e. 10640 is also at 2640).

### Version 1.61

- Added support to indicate if Kernel, FileSystem, and Firmware components are compatible.
- Repackaged firmware to reduce file size.

### Version 1.60

- Added support for HART Option Board.
- Added support for PPP. Required for serial connects from Daniel CUI or MeterLink using Microsoft® Windows® Vista® or 7.
- Fixed spurious IsCommErrAcqBd alarm.

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