

Case Study of Sage Metering Customer using New Sage Bluetooth Option with Paramount Flow Meters



By Bob Steinberg-President

A large Aluminum fabricator purchased a significant quantity of [Sage Paramount](#) Insertion Style Natural Gas flow meters with Remote enclosures for 4" pipes, and opted for the Sage Bluetooth option to communicate between their laptop(s) or PC(s) and any of the Sage Thermal Mass flow meters. The Natural Gas meters were purchased for controlling the fuel flow to their ovens in order to optimize the air/ fuel ratio for a higher BTU rate.

In addition, the customer also purchased numerous Sage Paramount Insertion Style Nitrogen flow meters for 4" and 6" pipes with the Bluetooth option for annealing the finished aluminum, and to keep the finished product from oxidizing by blanketing their ovens with the ideal flow rate of Nitrogen. Depending on the piping locations, some of the Sage Nitrogen flow meters were Integral, and some had Remote enclosures.



Figure 1: Bluetooth technology now permits enhancement of downloading data and performing vital validation checks up to 100' away from meter.

The availability from Sage Metering of the recently introduced option for Bluetooth connectivity ("-BT") to all of the flow meters, offered numerous advantages to the client:

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>They would have access to all of the functionality of the user-friendly [SageCom™ software](#) without the need to connect cabling between any of their Sage Flowmeters and the Laptop or PC.

>Thus, instead of physically plugging in the meter's USB communication cable to any of the meters, they just need to select (within a field in SageCom) any of the meter's auto-generated COM ports (depending on which flow meter they wanted to access).

>This ability to communicate individually with any of their Sage flow meters (within 50 to 100 feet) from the Laptop or PC with SageCom by simply selecting the meter's assigned port, offers great flexibility and allows access to any of the features below for each flow meter through Bluetooth communication:

- Change the Full Scale of the flow meter
- Change the Decimal Point displayed on the flow meter
- Add a Low Flow Cutoff on the flow meter
- Change the response rate (filtering) of the flow meter
- Change Engineering Units on the flow meter
- Change the Pulse Rate of the Totalizer



Figure 2: Paramount Insertion with Bluetooth



Figure 3: Aluminum Foil Plant in the 1950's

Additionally, the customer could take advantage of the following features within SageCom:

- Log Real Time Flow Data (and Temperature) from the meter and export the data and its time stamps to Excel (time between each data point is selectable), providing up to 1,000,000 data points!)
- Conduct a Validation Test on the flow meter, and print a Pass/Fail Test Report complete with Flow Rate, mA output and the original calibration data points in milliwatts (mW) which also includes the meter's original process data and settings
- Store all of the meter's original register settings by selecting the "Save .DAT file" button
- Print a report of all of the meter's settings by selecting "Print SMB Data"
- Read and Reset the Resettable Totalizer on SageCom that is on the flow meter's display
- Read the Non-Resettable Totalizer on SageCom
- Read the actual raw calibration values (mW) on SageCom (Real Time tab)

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The flexibility offered by having Bluetooth connectivity available between SageCom Software and any of the Sage flow meters saves valuable time for the client whenever flow meter settings need to be changed, or a Validation Report is required.



Figure 4: Bulk Rolled Aluminum at the mill



Figure 5: Rolled Aluminum finished product

In the aluminum industry, optimal air/ fuel ratio is critical, especially in low-fire conditions of the ovens. Although Sage Paramount flow meters have a turndown of at least 100 to 1, and resolution of 1000 to 1, the customer can easily add additional resolution on the meter's flow display by quickly changing the Decimal Points selection on any of the Flow Meters. And it can be changed back just as easily. Furthermore, if a high fire condition is beyond the customer's original Full Scale setting, the customer has the option to change the Full Scale flow rate setting (within reason) to still be able to read the flow rate even if it is greater than the original Full Scale flow rate expected.

Finally, the data logging capability of using SageCom to wirelessly record flow data, allows the customer to periodically generate data over a desired time period to analyze if the Nitrogen flow rate in the annealing process is optimized.

In conclusion the flexibility and convenience of the Bluetooth option on Sage Paramount allows the plant to make periodic setting changes on their Sage Paramount flow meters without the need to climb ladders to access any of the flow meters, and provides a simple means to generate annual Pass/Fail validation reports of the meter's proper functioning and calibration.

For more information on upgrading your current gas flow technology, you may reach us at **(844) GAS-FLOW** or at sales@k-iinstruments.com.



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