FCI FLUID COMPONENTS INTERNATIONAL LLC

FCI THERMAL NEWS DISPERSION

November 2022 – Issue No. 27

Thermal News Dispersion shares latest FCI news and sales partner sales successes on the first Monday of each month. We are interested in learning what type of product, application, or industry content you would like to see in this newsletter. Please click here to give feedback on both topics.

CORPORATE UPDATE

PKW in Europe

The FCI Europe Office hosted a successful product knowledge workshop on October 11 & 12 for representatives from 5 different distributors. Prior to the training participants watched the workshop recorded last year. The first session can be found here and the second session can be found here. Additional webinars and preparatory material can be found on the FCI Rep Support Site under the Demos and Videos section.

We began by discussing theory, but quickly moved onto hands-on experience. Participants practiced installing instruments and measuring U-length, B-length, and insertion length on a pipe. They also practiced basic troubleshooting on the FLT93, the FS10, the ST51, and the ST100A and working with the accompanying software. Thanks to everyone for your hard work and enthusiasm!

Advanced PKW in the U.S.

We were delighted to host 11 rep associates for FCI's inaugural Advanced Product Knowledge Workshop held at our US headquarters October 24 – 27. The objective of this course was to provide rigorous and interactive training to help experienced FCI salespeople become true experts in selling our products. In addition to three modules of hands-on training led by the FCI field service team, we focused on sharpening selling skills in competitive situations, and measures that can be taken to win specification.

Each day attendees made sales presentations on FCI products, and why customers should choose FCI in a specific competitive situation – for example FCI ST100A vs the Sierra QuadraTherm. Attendees and the FCI training team selected winners and prize money was given each day based on how well the presenter demonstrated the FCI value proposition, technical depth of conversation, and how likely they would be to place an order as a customer. Congratulations to the winners:

Day 1 Product Presentations:

First Place: Chris Massey from WGS on the ST100A/ST100AL

Second Place: Chip Maye from WT Maye on the ST02AA

Day 2 Competitive Counter-Pitch & Deeper Technical Presentations:

First Place: David Maye from WT Maye on ST75V & ST75AV w/ Integral Vortab

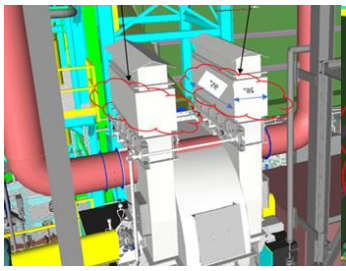
Second Place: Anton Loof from Ponton Northern California on Natural Gas vs. Air Equivalency Calibration

We were impressed with the energy and level of preparation of each attendee. We hope to hold another PKW during Q1 of 2023. Please reach out to your regional manager if you're interested in attending!

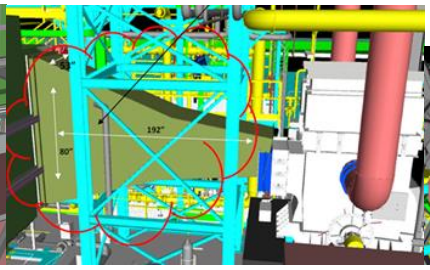
Selling and Application Spotlight

*Congratulations to **EB Horsman** for earning highlight recognition for this month's selling and application spotlight! We are constantly on the lookout to hear of sales and application wins from our sales partner, so please don't hesitate to share any you may have with your regional manager to be shared in this newsletter.*

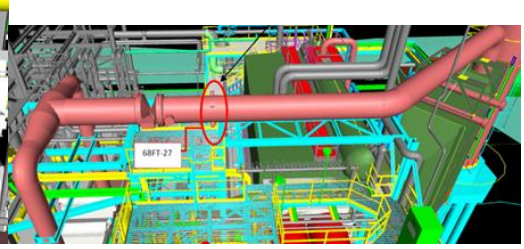
An end user engaged an EPC on a boiler replacement project at their Edmonton refinery. To operate the boiler at optimum efficiency and maintain safe operating conditions, the refinery measured three critical flows: Forced Draft Air, Combustion Air, and Fuel Gas Recirculation.



Forced Draft Air Inlet Duct



Combustion Air



Fuel Gas Recirculation

The original specifications called out averaging pitot tubes for the air flow measurements, but the EPC quickly realized that the technology was limited in its flow range capability and would require a massive effort to maintain. The EPC engaged EB Horsman and FCI to evaluate these applications. Impressed with how well our meters would perform in the air applications, the EPC requested that we evaluate the fuel gas application to further take advantage of our multipoint technology performance capabilities.

Large boiler applications always come with challenges. Properly evaluating the measurement is relatively easy. Determining the ideal meter location gets challenging when you consider access and clearances in addition to accuracy objectives. A lot of work went into selecting locations that not only could be measured accurately, but also didn't pose an issue when it came to installation and maintenance of the instruments.

At start-up, Field Service will perform in-situ traverses of each duct at several boiler loadings (flow rates) to ensure the meters on the Air Inlet and Combustion Air ducts are measuring within an acceptable tolerance. This is critical in the case of the redundant meters since not all of them will be in the ideal position for equal area measurement of the duct. This will also ensure that the measurements are not being negatively influenced by any field conditions that may have been unknown during the design phase.

Being responsive to requests, taking the time to ask questions, providing STEP files for 3D modeling, and educating the design engineer team along the way played a big role in securing this project. When the time came for approval, it helped that the end user had favorable experience with FCI meters in other applications when the EPC proposed their alternatives to the original design.

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TECHNICAL KNOWLEDGE & APPLICATION

AVAL Flow Rates

Did you know that the minimum flow entered in AVAL for every flowmeter is the low flow cut-off value? Below this minimum flow, the instrument will indicate zero flow. FCI strongly recommends that you always enter a flow range with a 100:1 turndown ratio or enter the lowest possible flow rate AVAL will recommend. Even if the customer datasheet has a 10:1 turndown, enter the lowest possible in AVAL rather than the customer-provided minimum flow. Remember: The flow range in AVAL dictates the actual calibrated flow range for the ordered flow meter!

Tips and Tricks

Did you know that the FPC sensor head is delivered with a ST50/51/51A 'E' calibration by default? Always make sure that the application in which the ST50/51/51A with an 'E' calibration is a clean application. If dust is expected, please reach out to your FCI support contact.

Continuous Emission Monitoring and the QAL 1 Approval

Large combustion plants (LCPs) are the most significant point source emitters of air pollution in Europe and fall under the EU Directive 2010/75/EU. LCPs include waste incineration plants, refineries, chemical and other plants which have large combustions are obliged to comply with the EN15267 emission regulations in all European countries when their total thermal rated input greater than 100 MW [some countries 50 MW].

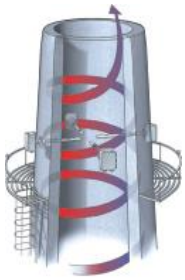
To support compliance with EU Directive 2010/75/EU, customers must install Automated Measuring Systems (AMS) per EN14181 requirements, which include dust monitors, gas analyzers and flow meters. Customers look for the lowest total cost of ownership as their investment is only necessary in order to comply with the local regulations.

Three quality assurance levels are defined, which all must be maintained to be in compliance:

QAL 1 = Type test approval / certificate of all instruments within the AMS (tested per EN15267-3)
QAL 2 = Verification AMS in-situ by accredited laboratory during commission
QAL 3 = Continuous monitoring/drift check per maintenance interval defined in QAL 1 certificate
AST (Annual Surveillance Tests) = Annual verification – QAL 2 by accredited laboratory

The flow meter technologies which are QAL 1 certified are Ultrasonic (UFM), Averaging Pitot Tube (DP), and Thermal Dispersion (TMF). TUV Germany has issued a QAL1 type test approval for the MT100 series as a result of extensive EN15267-3 tests of two MT100 flowmeters during 3 months in the laboratory and 12 months in the field. TUV has tested and verified the QAL 3 periodic verification test procedure and assigned a 6-month maintenance/verification interval which is best in class and carries the lowest total cost of ownership.

The only other thermal dispersion manufacturer with a QAL 1 certified instrument is Kurz. Per QAL 3 requirements, the customer needs to verify and record the flowmeter as per the maintenance interval specified on the instrument's QAL 1 certificate. In the case of the MT100, the customer only needs to verify the instrument at a 6-month interval, which is twice a year, while Kurz has a maintenance interval of 4 weeks, which is 14 times per year.



MT100 can be verified while the probes are installed and in less than 30 minutes (two decade boxes and an automated self-test) by the customers themselves. This means the QAL 3 verifications cost $300 per year. Since there are no moving parts or small ports to clog, there are no additional regular maintenance costs in addition to the verification costs.

Kurz verification must be performed 14 times per year due to the old design electronics and requires retracting the probes. This verification will cost the customer $3500 - $4000 if it is performed by themselves. The verification of UFM or DP flowmeters, which have 2 to 6 months maintenance interval, need to be performed by the manufacturers, charging field service rates resulting in $2500 - $5000 per year.

Reach out to your regional manager to receive additional details and competitive information. FCI also has established a list of all LCPs in Europe, including address details. Your regional manager can provide you with this list. These are great sales leads to start arranging visits with end customers to introduce the new QAL 1 solution by FCI!

PUBLICATIONS

*Please visit FCI's **website**, **press releases** , **articles page** , **video page** and **LinkedIn page** to check our latest publications (FCI and Sales Channels)*

FCI MT100 Gas Emissions Flow Meter Obtains Best-in-Class Maintenance Interval Rating

Environmental, process and plant engineers responsible for continuous gas emissions monitoring of stacks, flues, ducts and chimneys with EN15267 compliant automated measuring systems (AMS) will find that the MT100 Series Multipoint Mass Flow Meter from Fluid Components International (FCI) now has its certification enhanced to include an industry best maintenance interval check as required by the standards. *Read more >*

ST100A Wet Gas Flow Meter Solves Biogas Moisture, Corrosion and Accuracy Issues

With its innovative Wet Gas MASSter thermal dispersion flow sensor, the ST100A Flow Meter from Fluid Components International solves wet gas and entrained moisture issues that affect biogas measurement accuracy in landfill co-gen power systems and wastewater treatment digester applications, as well as providing down-the-pipe rain shielding in power plants, refineries and other types of stack monitoring. *Read more >*

Share our latest posts on LinkedIn!

- FCI Product Knowledge Workshop *Read more >*
- MT100 QAL1 Certification *Read more >*
- Sanitary Clean in Place (CIP) FLT93C *Read more >*

Approvals and Certifications

FCI invests hundreds of thousands of dollars every year in approvals and certifications. Here we share the latest status of new/updated approvals of existing products:

Approved:

- International – TUV QAL 1 certification (EN 15267-3)
  MT100 will be the only thermal QAL1 approved instrument with a 6-month verification interval
- FS10 Series K-Approval for Korea market.

Pending:

- UKCA / UKEX certification for FLT93
- NEPSI re-certification for China market

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