

AVIATION SYMPOSIUM 2025



The Standard of Measurement™

SMART METERING – REFUELER INTEGRATION

Flow Meters

Metrology

VS

Non-Metrological Features



SMART METERING – REFUELER INTEGRATION



RFID Readers
(Fixed or Mobile)



Wireless Connectivity
(Internal or External)



QT or Varec



Pump



POS Printer



External Display



Tank Level X 6



Flow Meters



TCS 3000 Register

Preset Valve



Air/Water
Elimination



Densitometer



Temperature Probe



Water Sensor



Additive Injector



Additive Meter



Corrected
Differential Pressure



SMART METERING – REFUELER INTEGRATION



Water Defense

- Measure Free Water in PPM
- Meets EI 1598 Criteria / JIG Compliant
- Range up to 50 PPM
- Four phases: Armed, Pass, Alert, Alarm & Stop
(User Defined Limits)
- Fail Safe Programming
- 4-20 mA Current Input
- Visual Lamp Indication





SMART METERING – REFUELER INTEGRATION

Water Defense

Feb 07, 2019 11:17:07 AM		System Gross GAL 3016	
 			
Mass lbs		442	
JET A		Gross	
		68	
ALERT! FREE WATER DETECTED!			
Additive mL	0	Additive PPM	0
H2O ppm	16	Density lbs/GAL	7
PEAK H2O ppm	16	PEAK DNS lbs/GAL	7
AVG.H2O ppm	14	AVG.DNS kg/L	7



ALERT DISPLAY

Feb 07, 2019 11:17:49 AM		System Gross GAL 3069	
 			
Mass lbs		792	
JET A		Gross	
		121	
ALARM! FREE WATER DETECTED!			
Additive mL	0	Additive PPM	0
H2O ppm	31	Density lbs/GAL	7
PEAK H2O ppm	31	PEAK DNS lbs/GAL	7
AVG.H2O ppm	17	AVG.DNS kg/L	7

ALARM DISPLAY

SMART METERING – REFUELER INTEGRATION

Water Defense

Feb 07, 2019 11:20:02 AM	System Gross GAL 3107	
 		
Mass lbs	138	
JET A	Gross	21
DELIVERY ABORTED! FREE WATER DETECTED!		
Additive mL	0	Additive PPM
H2O ppm	31	Density lbs/GAL
PEAK H2O ppm	31	PEAK DNS lbs/GAL
AVG.H2O ppm	30	AVG.DNS kg/L

Delivery Aborted

Feb 07, 2019 11:18:23 AM	System Gross GAL 3086	
<p>SAFETY INTERLOCK!</p> <p>MAXIMUM FREE WATER CONTAMINATION EXCEEDED!</p> <p>FREE WATER CONTAMINATION IS ABOVE THE LIMIT VALUE, DELIVERY ABORTED!</p> <p>PRESS ANY KEY TO CONTINUE</p>		

Safety Interlock

Feb 07, 2019 11:18:53 AM	System Gross GAL 3086	
<p>Gross GAL</p> <p>138</p> <p>FREE WATER! SYSTEM LOCKED! SH+MODE = UNLOCK</p>		

System Locked

TCS Hub Delivery Software

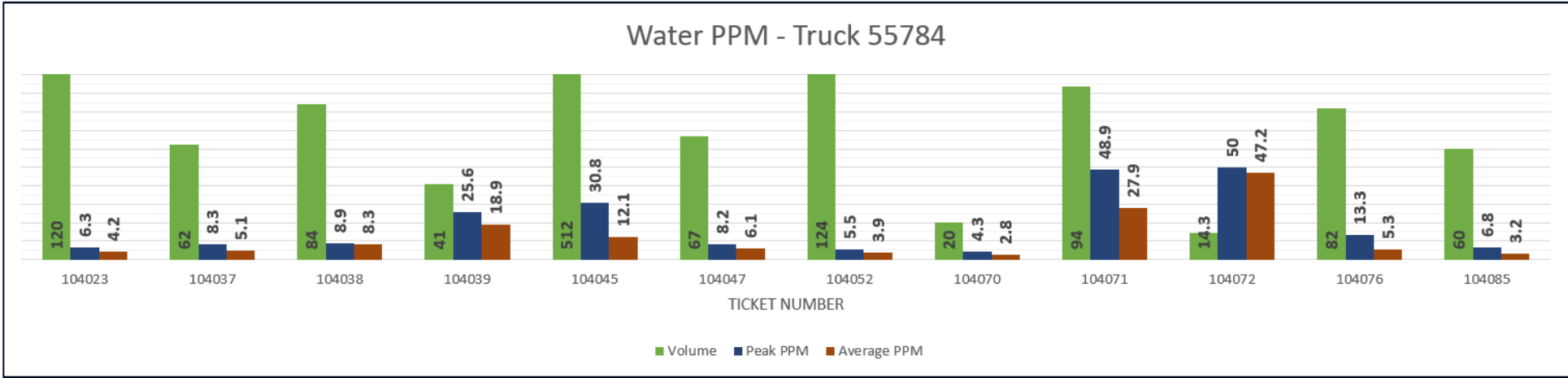


- Electronically Collect Delivery Information
- Cellular, Radio, Bluetooth or Wi-Fi Communication
- Export Information to 3rd Party Software Automatically
- Versatility to create Custom Solutions
- Single or Multiple Site Locations
- Access Anywhere!

TCS Hub – Water Content Analysis



☰ **TCSHUB** Ticket 📊 🗃️ 📄 + 🔍 ↗️



TCS Hub – Tickets Detail Page



Equipment	602
Ticket	102437
Meter #	1
Customer	NK
Start Time	2021-04-22 09:33:29
End Time	2021-04-22 09:46:18
Imported	2021-04-22 09:47:56
Product	JET A
Start Gross	3993517
End Gross	3995728
Gross	2211
Start Net	3993517
End Net	3995728
Net	2211
Field1	5662
Field2	NK
Field3	2077
Field4	3283
Price	0
Latitude	0
Longitude	0
Mass	15035
Temp.	0
Avg.Flow	194.1611
MaxFlow	296.5226
DP	0
Avg.CDP	0
Inv. Begin	0
Inventory	0
Additive	0
Add. Ratio	0
FlowRatePeak	237.2676
WaterAverage	0
WaterPeak	0
DensityAverage	6.8
DensityMin	0
DensityMax	0

Historical PDF Copies of Printed Tickets

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START           Apr 22, 2021 09:33:29
FINISH          Apr 22, 2021 09:46:18
TRUCK #                602
TICKET NUMBER         102437
PRODUCT               JET A
SYS.GRS TOTAL BEGIN GAL 3993517
SYS. GRS TOTALIZER GAL 3995728
===== DELIVERY =====
TAIL #                5662
AIRLINE CODE/GA      NK
FLIGHT #              2077
EMPLOYEE ID           3283
-----
GROSS BEGIN GAL                0
GROSS END GAL                  2211
GROSS DELIVERED GAL            2211
-----
AVERAGE FLOWRATE GAL/min      194

CALCULATED MASS lbs            15035
    
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A Manufacturer of Positive Displacement Flow Meters,
Electronic Registration, and Accessories

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Questions?

Thank you!



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