



TECHNICAL LIBRARY

AS A SERVICE TO THE
HYDROCARBON MEASUREMENT
INDUSTRY, CRT-SERVICES
CURATES THIS COLLECTION OF
DIGITAL RESOURCES.



User-Xperience

26-27 September
Istanbul, Turkey

Spirit 
Innovative Technologies

www.SpiritXperience.com

FlowX



Communications

Liquid_USC 2.0.7.1_JAG_MASTER_LACT_08262013.fxa - Microsoft Excel

File Home Insert Page Layout Formulas Data Review View Developer Add-Ins Acrobat

Save New Open Read from Device Write to Device(s) Compile Debug Offline Output Window Tags Properties General Math Metering Names Basic Mode Online Mode Help

C391 mod1_LU_Run!BATCH_ACT

ModbusID	Modbus server/slave ID	integer	1	w	1.254	1
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						

tQuery

ID	Device	Interval	Timeout	Retries	SleepTime	Type	Address	Length	Size	SW	MW	MR	Options	Archive	Tag	Tag function
1	\$(Modbus)	0	0	0	0	2	0	600	16	6	16	3			QUERY_STS_1	0
2	\$(Modbus)	0	0	0	0	6	701	250	8			3	mod1_Batch		QUERY_STS_2	0
3	\$(Modbus)	0	0	0	0	6	702	250	8			3	mod1_Batch		QUERY_STS_3	0
4	\$(Modbus)	0	0	0	0	6	705	232	8			3	mod1_Daily		QUERY_STS_4	0
5	\$(Modbus)	0	0	0	0	6	706	232	8			3	mod1_Daily		QUERY_STS_5	0
6	\$(Modbus)	0	0	0	0	1	1000	2000	1	5	15	1			QUERY_STS_6	0
7	\$(Modbus)	0	0	0	0	2	3000	1000	16	6	16	3			QUERY_STS_7	0
8	\$(Modbus)	0	0	0	0	2	3867	6	16	6	16	3			QUERY_STS_8	0
9	\$(Modbus)	0	0	0	0	2	4000	1000	64	6	16	3			QUERY_STS_9	0
10	\$(Modbus)	0	0	0	0	2	5000	4000	32	6	16	3			QUERY_STS_10	0
11	\$(Modbus)	0	0	0	0	2	13000	1000	16	6	16	3			QUERY_STS_11	0
12	\$(Modbus)	0	0	0	0	2	14000	1000	128	6	16	3			QUERY_STS_12	0
13	\$(Modbus)	0	0	0	0	2	15000	5000	32	6	16	3			QUERY_STS_13	0
14	\$(Modbus)	0	0	0	0	1	20000	1000	1	5	15	1			QUERY_STS_14	0
15	\$(Modbus)	0	0	0	0	2	21000	1000	32	6	16	3			QUERY_STS_15	0
16	\$(Modbus)	0	0	0	0	2	22001	1000	16	6	16	3			QUERY_STS_16	0

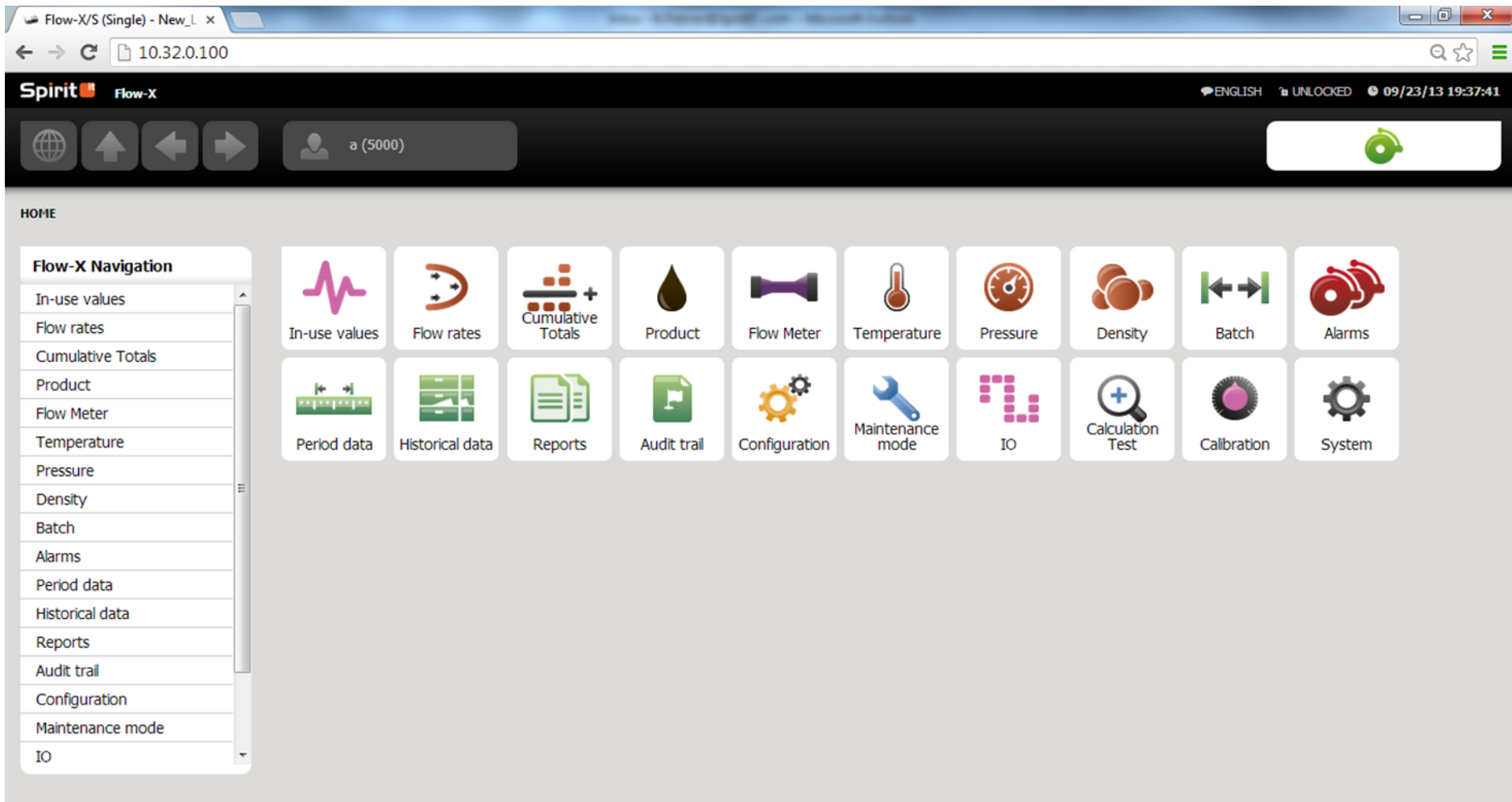
tItems

Query	Address	TagName	Description	Units	Data Type	Level	Format	Initial	ScaleMin	ScaleMax
1	1	mod1_LU_Run!IV_BTOT_FWD_CUR	Meter #1 Batch in Progress - Gross Total		long					
1	3	mod1_LU_Run!GSV_BTOT_FWD_CUR	Meter #1 Batch in Progress - Net Total		long					
1	5	mod1_LU_Run!MASS_BTOT_FWD_CUR	Meter #1 Batch in Progress - Mass Total		long					0.001
1	7	mod1_LU_Run!NSV_BTOT_FWD_CUR	Meter #1 Batch in Progress - Energy/NSV Total		long					
1	9	mod1_LU_Run!IV_FWD_CUM	Meter #1 Cumulative Gross Total		long					
1	11	mod1_LU_Run!GSV_FWD_CUM	Meter #1 Cumulative Net Total		long					
1	13	mod1_LU_Run!MASS_FWD_CUM	Meter #1 Cumulative Mass Total		long					0.001
1	15	mod1_LU_Run!NSV_FWD_CUM	Meter #1 Cumulative Energy/NSV Total		long					

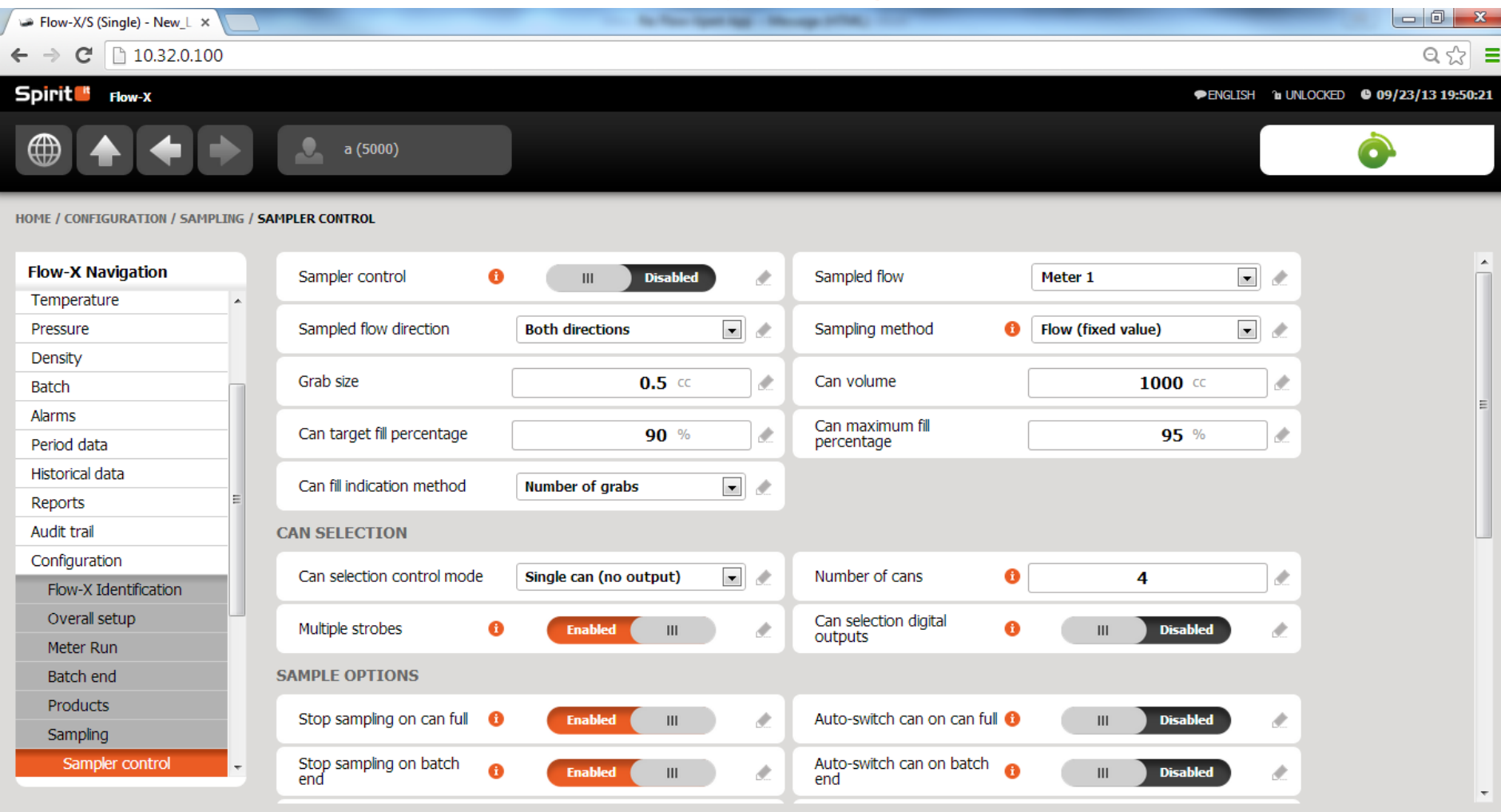
IO LU_Run LU_Stn LU_Pro LU_Global LU_Aux LU_Control LU>Loading LU_Customers SYS Comm RemFlowX Comm_v20_BiDir Comm HART 1xmt Comm MicroMo

Ready 100%

User Interface



Sampler Logic



The screenshot displays the Spirit Flow-X web interface for configuring the Sampler Logic. The browser address bar shows the URL 10.32.0.100. The interface includes a top navigation bar with the Spirit logo, a user profile icon, and a language selector set to English. A sidebar on the left provides navigation options, with 'Sampler control' currently selected. The main content area is titled 'HOME / CONFIGURATION / SAMPLING / SAMPLER CONTROL' and contains several configuration sections:

- Flow-X Navigation:** A sidebar menu with options like Temperature, Pressure, Density, Batch, Alarms, Period data, Historical data, Reports, Audit trail, Configuration, Flow-X Identification, Overall setup, Meter Run, Batch end, Products, Sampling, and Sampler control (highlighted).
- Sampler control:** A section with a 'Disabled' toggle switch and an information icon.
- Sampled flow direction:** A dropdown menu set to 'Both directions'.
- Grab size:** A text input field set to '0.5 CC'.
- Can target fill percentage:** A text input field set to '90 %'.
- Can fill indication method:** A dropdown menu set to 'Number of grabs'.
- Sampled flow:** A dropdown menu set to 'Meter 1'.
- Sampling method:** A dropdown menu set to 'Flow (fixed value)'.
- Can volume:** A text input field set to '1000 CC'.
- Can maximum fill percentage:** A text input field set to '95 %'.
- CAN SELECTION:**
 - Can selection control mode:** A dropdown menu set to 'Single can (no output)'.
 - Number of cans:** A text input field set to '4'.
 - Multiple strobes:** A toggle switch set to 'Enabled'.
 - Can selection digital outputs:** A toggle switch set to 'Disabled'.
- SAMPLE OPTIONS:**
 - Stop sampling on can full:** A toggle switch set to 'Enabled'.
 - Auto-switch can on can full:** A toggle switch set to 'Disabled'.
 - Stop sampling on batch end:** A toggle switch set to 'Enabled'.
 - Auto-switch can on batch end:** A toggle switch set to 'Disabled'.

Support for 2 Provers

The screenshot displays the Spirit Flow-X web interface. The browser address bar shows '10.32.0.100'. The page title is 'Flow-X/S (Single) - New_L'. The interface includes a navigation sidebar on the left with options: Alarms, Period data, Historical data, Reports, Audit trail, Configuration (selected), Flow-X Identification, Overall setup, Common settings, Meter ticket, Proving (highlighted), Proving report, Station, Periods, Display Levels, Meter Run, and Batch end. The main content area is titled 'HOME / CONFIGURATION / OVERALL SETUP / PROVING'. It features two sections, 'PROVER A' and 'PROVER B', each with a grid of configuration options. Each option consists of a label, a dropdown menu, and an edit icon. Information icons (i) are present next to several options. The 'PROVER A' section includes: Prover A type (None), Prover A inlet temperature input type (Analog input), Prover A outlet temperature input type (None), Prover A rod temperature input type (None), Prover A inlet pressure input type (Analog input), Prover A outlet pressure input type (None), Prover A plenum pressure input type (None), and Prover A obs. dens/grav input type (None). The 'PROVER B' section includes: Prover B type (None), Prover B inlet temperature input type (Analog input), Prover B outlet temperature input type (None), Prover B rod temperature input type (None), Prover B inlet pressure input type (Analog input), Prover B outlet pressure input type (None), Prover B plenum pressure input type (None), and Prover B obs. dens/grav input type (None).

Flow-X Navigation

- Alarms
- Period data
- Historical data
- Reports
- Audit trail
- Configuration
 - Flow-X Identification
 - Overall setup
 - Common settings
 - Meter ticket
 - Proving**
 - Proving report
 - Station
 - Periods
 - Display Levels
 - Meter Run
 - Batch end

HOME / CONFIGURATION / OVERALL SETUP / PROVING

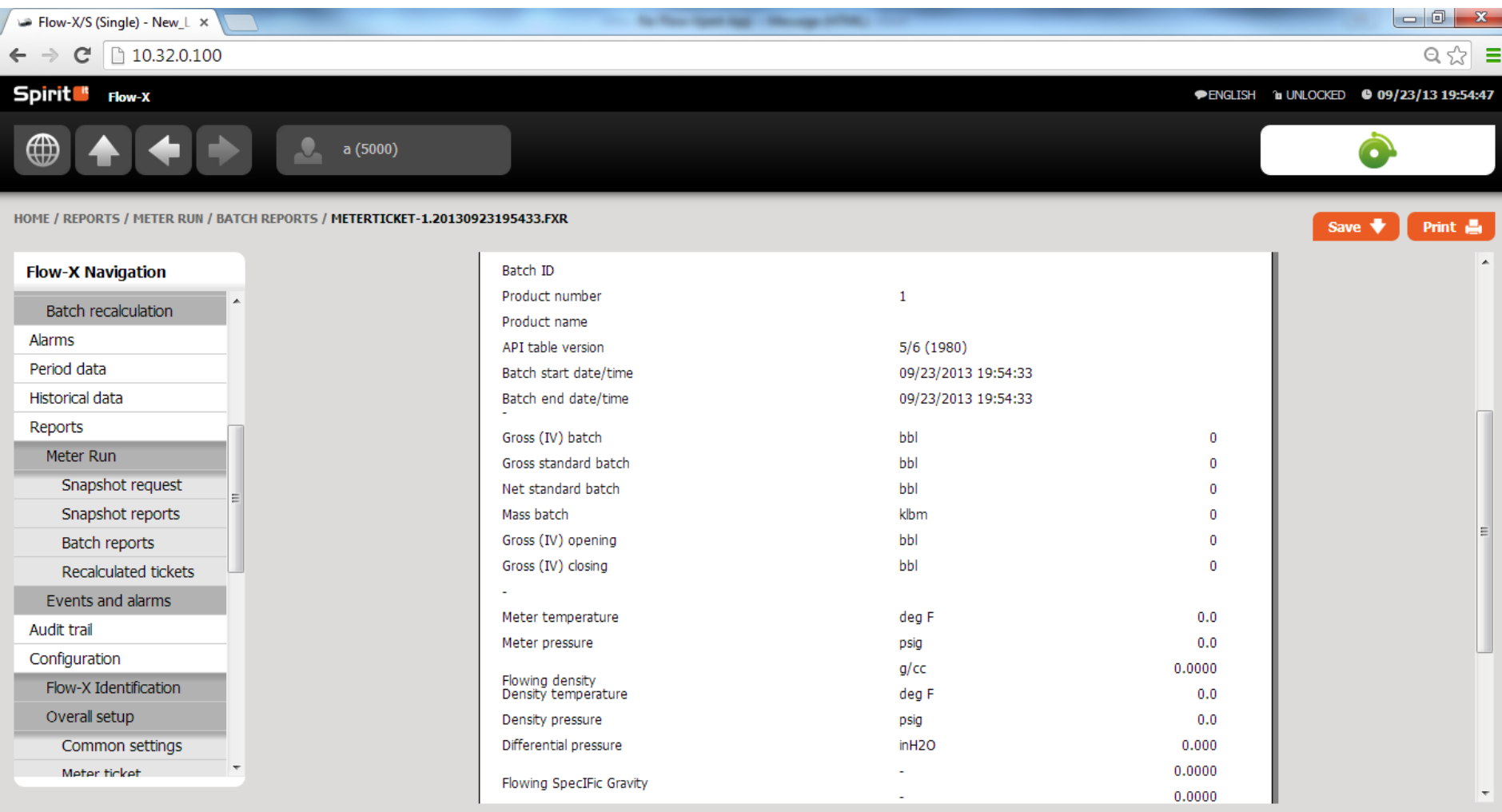
PROVER A

Prover A type	None	Prover A inlet temperature input type	Analog input
Prover A outlet temperature input type	None	Prover A rod temperature input type	None
Prover A inlet pressure input type	Analog input	Prover A outlet pressure input type	None
Prover A plenum pressure input type	None	Prover A obs. dens/grav input type	None

PROVER B

Prover B type	None	Prover B inlet temperature input type	Analog input
Prover B outlet temperature input type	None	Prover B rod temperature input type	None
Prover B inlet pressure input type	Analog input	Prover B outlet pressure input type	None
Prover B plenum pressure input type	None	Prover B obs. dens/grav input type	None

Storage for thousands of unique reports



The screenshot displays the Spirit Flow-X web application. The browser address bar shows the URL 10.32.0.100. The application header includes the Spirit logo, 'Flow-X', and navigation links for 'HOME / REPORTS / METER RUN / BATCH REPORTS / METERTICKET-1.20130923195433.FXR'. The interface features a sidebar with a 'Flow-X Navigation' menu, a main content area displaying a batch report, and a right-hand panel with 'Save' and 'Print' buttons.

Flow-X Navigation

- Batch recalculation
- Alarms
- Period data
- Historical data
- Reports
 - Meter Run
 - Snapshot request
 - Snapshot reports
 - Batch reports
 - Recalculated tickets
- Events and alarms
- Audit trail
- Configuration
 - Flow-X Identification
 - Overall setup
 - Common settings
 - Meter ticket

Batch Report Data:

Batch ID			
Product number	1		
Product name			
API table version	5/6 (1980)		
Batch start date/time	09/23/2013 19:54:33		
Batch end date/time	09/23/2013 19:54:33		
-			
Gross (IV) batch	bbl	0	
Gross standard batch	bbl	0	
Net standard batch	bbl	0	
Mass batch	klbm	0	
Gross (IV) opening	bbl	0	
Gross (IV) closing	bbl	0	
-			
Meter temperature	deg F	0.0	
Meter pressure	psig	0.0	
Flowing density	g/cc	0.0000	
Density temperature	deg F	0.0	
Density pressure	psig	0.0	
Differential pressure	inH2O	0.000	
Flowing Specific Gravity	-	0.0000	
-	-	0.0000	

Live Calculation Verification

Flow-X/S (Single) - New_L x
10.32.0.100

Spirit **Flow-X** ENGLISH UNLOCKED 09/23/13 19:56:21

a (5000)

HOME / CALCULATION TEST

Flow-X Navigation

- Periods
- Display Levels
- Meter Run
- Batch end
- Products
- Sampling
- Sampler control
- Can settings
- Valve Control
- Flow Control
- Auxiliary inputs
- Customers
- Maintenance mode
- IO
- Calculation Test**
- Calibration
- System

INPUTS

Product #1 dens./grav method	5/6A:1980 Crude	Meter temperature override	60 °F
Meter pressure override	0 psi	Standard dens/grav input type	From product table
Observed dens/grav override	0	Product #1 std dens/grav override	1
Observed dens/grav units	Density [g/cc]	Product #1 std dens/grav override unit type	API gravity

OUTPUTS

Standard rel.dens. / spec. grav.	1.067925	Standard API gravity	1.00000 °API
Ctl	1.000000	Cpl	1.000000
Ctpl	1.000000	Compressibility factor F	0.00000311
Equilibrium pressure	0.000 psig	Meter density	66.60281 lb/ft3
Selected product	A -Crude oil	API_K0	341.0957

LACT



LACT



LACT



LACT



LACT



LACT



LACT

Flow-X/S (Single) - New_L x

Flow-X/S (Single) - Liquid x

localhost:9888/flowx.html

Login

2 (2)

HOME / LOADING

Flow-X Navigation

Loading

In-use values

Flow rates

Product

System

Unloading state

Enter customer

AUTHORIZATION

Pin #

Trucked by

-

Driver number

-

Log out

Log out

Driver name

-

LOAD INFORMATION

Truck ticket #

Truck number

Driver observed gravity

Lease number

Driver observed gross barrels

Driver observed temperature

LACT

LACT Flow-X Master Unit V1.11 - (Preview)



Operations

Equipment

Reports



LACT

Flow-X/S (Single) - New_L x Tickets

https://jagusaterminalreports.jagenergy.com/index.php?id=19

Spirit it eXSite Logged in as admin (Sign out)

eXSite / Tickets

Tickets

Filters

Download Default Layout

Site	Rack Nr.	Batch Nr.	Batch End	Ticket Nr.	Delivery Driver	Transporter	Lease Name	IV
Martin	3	2685	09-20-2013 16:29	2099108	Victor Valdez	Dufour - DPI	4400	17
Martin	1	2584	09-20-2013 16:20	340766	Ricardo Perez	Gazelle Transportation	119271	19
Cheyenne	2	734	09-20-2013 16:17	1090480	Jesus Zapata	ITL Transportation	415835945	2.4
Cheyenne	2	733	09-20-2013 16:11	1090480	Jesus Zapata	ITL Transportation	415835945	5.3
Oakville	2	3607	09-20-2013 16:08	13A078399A	Darryl Leon Carnall	NABORS	91367	16
Oakville	1	4939	09-20-2013 15:58	13a087279a	Kelly Dorsey	NABORS	91012	16
Pettus	2	2342	09-20-2013 15:51	1200484	Demecio Vejil	Permian Crude Transport	114849	17
Martin	3	2684	09-20-2013 15:42	1339830	Driver	Palletized Trucking Inc.	113530	17

So, Where Do We Go From Here?



Questions?

Please feel free to ask!

Thank you!



Find us online