

In order to establish internal communication between the FUx1010 meter and the Communications card, the FUx1010 needs to have an operating SITE and to have the Datalogger set.

Set datalogger

Go to Menu: "Logger Setup"

Logger Mode: RS232 output

Logger Data: On (all data – except Sonilocator - should be selected)

Logger Interval: 5 sec. – note: on 4 Channel Meters, min. is 30 sec.

Logger Events: None

Display Logger: Off

Set the internal communication between the FUx1010 and the Communications card

Go to "Meter Facilities" => "RS-232 Setup"

Baud Rate: 9600

Parity: Odd

Data Bits: 7

Line Feed: No

Network ID: 0

RTS Key time: 0.0 secs

External (RS485) settings:

Baud rate: set by DIP SW 1 (A)



	A7	A8
9600	OFF	OFF
19200	ON	OFF
38400	OFF	ON
76800	ON	ON

Parity: NONE

Databits: 8

Stopbits: 1

Modbus Network Address is set By DIP SW 1 (A)

	A1	A2	A3	A4	A5	A6
Binary code	1	2	4	8	16	32

DIP SW 2 (B) are used to set the communication protocol and the Profile

MODBUS: B7=OFF ; B8=OFF

B1 to B6 are used for Profile selection:

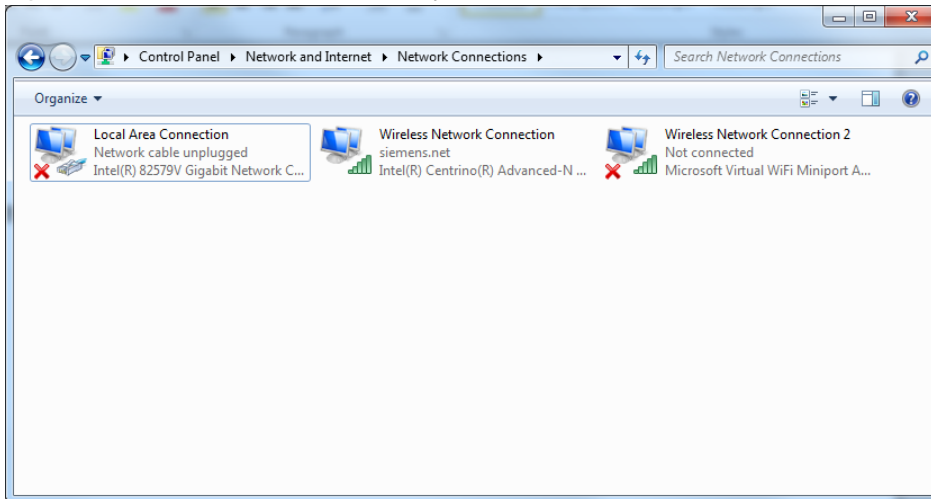
Flow Meter Firmware Version & Configuration	B1	B2	B3	B4	B5	B6
5N01-5.04.05 CH1: Clamp-On	Off	Off	Off	Off	Off	Off
5N01-5.04.05 CH1: Reflexor	On	Off	Off	Off	Off	Off
5N02-5.04.05 CH1: Clamp-On	On	On	On	On	Off	Off
5N02-5.04.05 CH1: Reflexor	On	On	Off	Off	Off	Off
5N03-5.04.05 CH1: Clamp-On CH2: Clamp-On	Off	Off	On	Off	Off	Off
5N03-5.04.05 CH1: Reflexor CH2: Reflexor	On	Off	On	Off	Off	Off
5N03-5.04.05 CH1: Clamp_on CH2: Reflexor	Off	On	On	Off	Off	Off
5N03-5.04.05 DP: Clamp-On	On	On	On	Off	Off	Off
5N03-5.04.05 CH1+2: Clamp-On	Off	Off	Off	On	Off	Off
5N03-5.04.05 CH1-2: Clamp-On	On	Off	Off	On	Off	Off
5N04-5.04.05 CH1: Clamp-On CH2: Clamp-On	On	Off	Off	On	Off	Off
5N04-5.04.05 CH1: Reflexor CH2: Reflexor	On	On	Off	On	Off	Off
5N04-5.04.05 CH1: Clamp-On CH2: Reflexor	Off	Off	On	On	Off	Off
5N04-5.04.05 DP: Clamp-On	On	Off	On	On	Off	On
5N04-5.04.05 CH1+2: Clamp-On	Off	On	On	On	Off	Off
5N04-5.04.05 CH1-2: Clamp-On	On	On	On	On	Off	Off
5MN01-5.04.05 4 Channel Flow: Clamp-On	Off	Off	Off	Off	On	Off
5MN01-5.04.05 CH5: Clamp-On	On	Off	Off	Off	On	Off
5MN01-5.04.05 Quad Path: Clamp-On	Off	On	Off	Off	On	Off
5MN02-5.04.05 4 Channel Flow: Clamp-On	On	On	Off	Off	On	Off
5MN02-5.04.05 CH5: Clamp-On	Off	Off	On	Off	On	Off
5MN02-5.04.05 QP: Clamp-On	On	Off	On	Off	On	Off
5EN02-5.04.05 Ch1: Clamp-On	Off	On	On	Off	On	Off
5EN02-5.04.05 Ch1: Reflexor	On	On	On	Off	On	Off
5EN03-5.04.05 Ch1: Clamp-On Ch2: Clamp-On	Off	Off	Off	On	On	Off
5EN03-5.04.05 Ch1:Reflexor Ch2: Reflexor	On	Off	Off	On	On	Off
5EN03-5.04.05 Ch1: Clamp-On Ch2: Reflexor	Off	On	Off	On	On	Off
5EN03-5.04.05 DP: Clamp-On	On	On	Off	On	On	Off
5EN03-5.04.05 Ch1+2: Clamp-On	Off	Off	On	On	On	Off
5EN04-5.04.05 Ch1: Clamp-On Ch2: Clamp-On	On	Off	On	On	On	Off
5EN04-5.04.05 Ch1: Reflexor Ch2: Reflexor	Off	On	On	On	On	Off
5EN04-5.04.05 Ch1: Clamp On Ch2: Reflexor	On	On	On	On	On	Off
5EN04-5.04.05 Ch1+2: Clamp-On	Off	Off	Off	Off	Off	On
5EN04-5.04.05 DP: Clamp-On	On	Off	Off	Off	Off	On
5PVN01-5.04.05 CH1: Clamp-On	Off	On	Off	Off	Off	On
5PVN02-5.04.05 DP: Clamp-On	On	On	Off	Off	Off	On
5PVN03-5.04.05 DP: Clamp-On	Off	Off	On	Off	Off	On
5BN01-5.04.05 CH1: Clamp-On	On	Off	On	Off	Off	On
5BN02-5.04.05 CH1: Clamp-On CH2: Clamp-On	Off	On	On	Off	Off	On
5DVN02-5.04.05 DP: Clamp-On	On	On	On	Off	Off	On
5DVN03-5.04.05 DP: Clamp-On	Off	Off	Off	On	Off	On
5DVN04-5.04.05 QP: Clamp-On	On	Off	Off	On	Off	On
5GN03-5.04.05 CH1: Clamp-On	Off	On	Off	On	Off	On
5GN04-5.04.05 DP: Clamp-On	On	On	Off	On	Off	On
5GN05-5.04.05 DP: Clamp-On	Off	Off	On	On	Off	On
5GN07-5.04.05 QP: Clamp-On	On	Off	On	On	Off	On

Access the Webinterface:

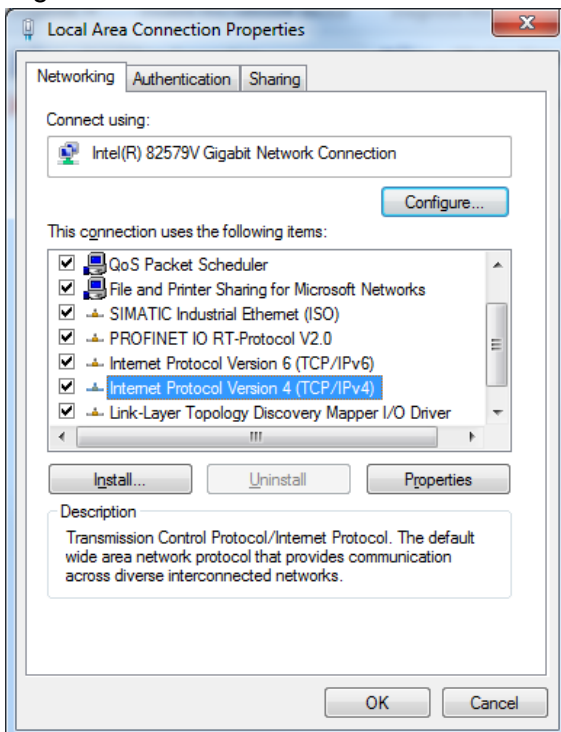
The default IP Address for the Communication card is 192.168.0.2

For the network connection to function properly, the Settings must also be changed in the PC (this example shows how it is done in Windows 7).

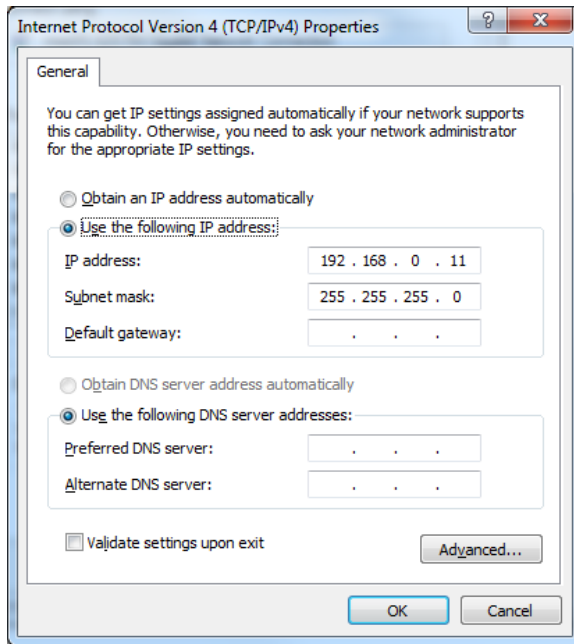
1. Open "Network Connections" on your PC.



2. Right click on Local Area Connection and choose "Properties".



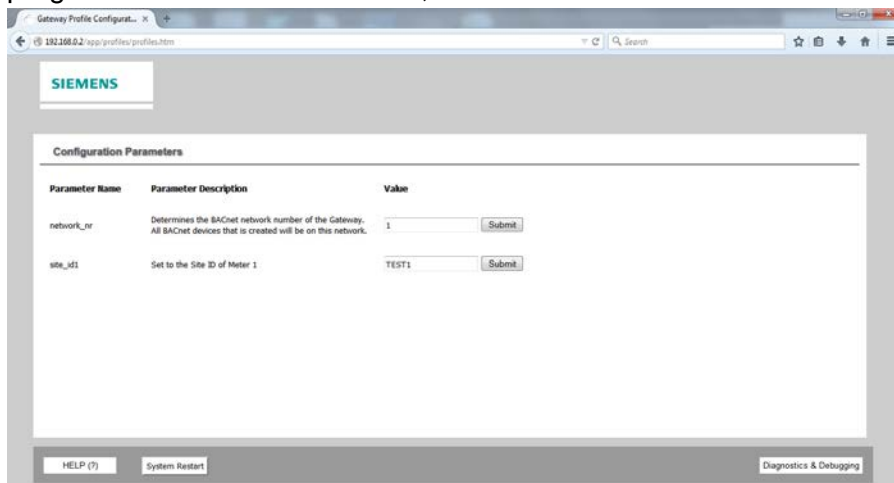
3. Scroll to Internet Protocol Version 4, and select “properties”.



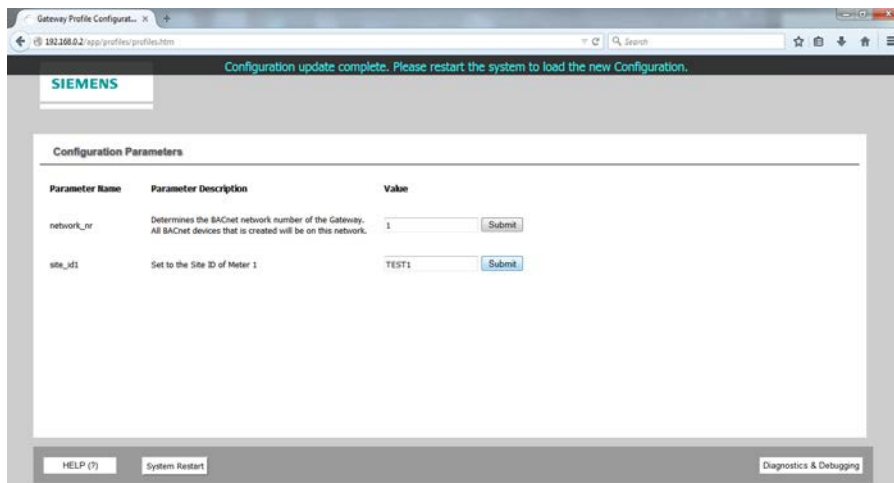
4. Click on “Use the following IP address:” and enter a fixed IP address in same range as the card (192.168.0.xx).
“Subnet mask” must be : 255.255.255.0

Now the web interface can be accessed with a web browser.

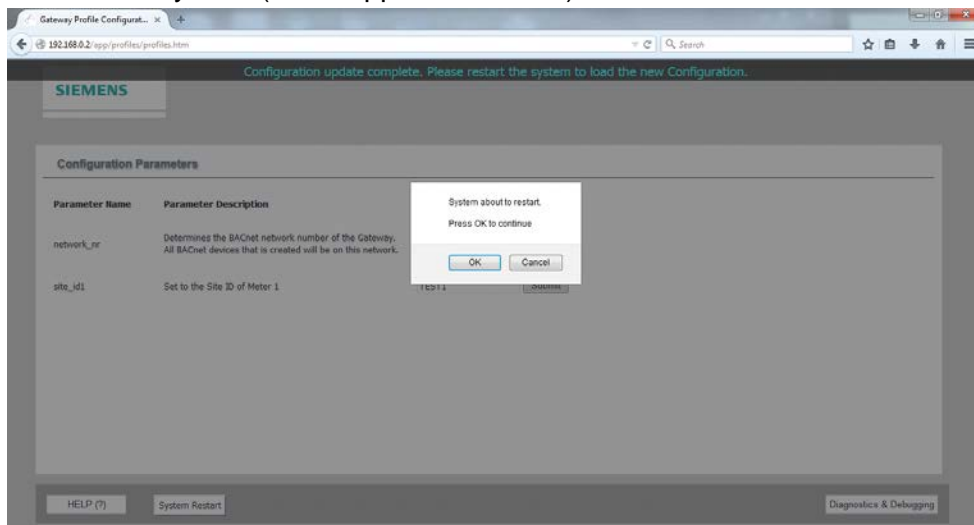
5. Activate the SITE by naming it as the active FUx1010. The site name must match the site programmed into the flow meter, for all channels.



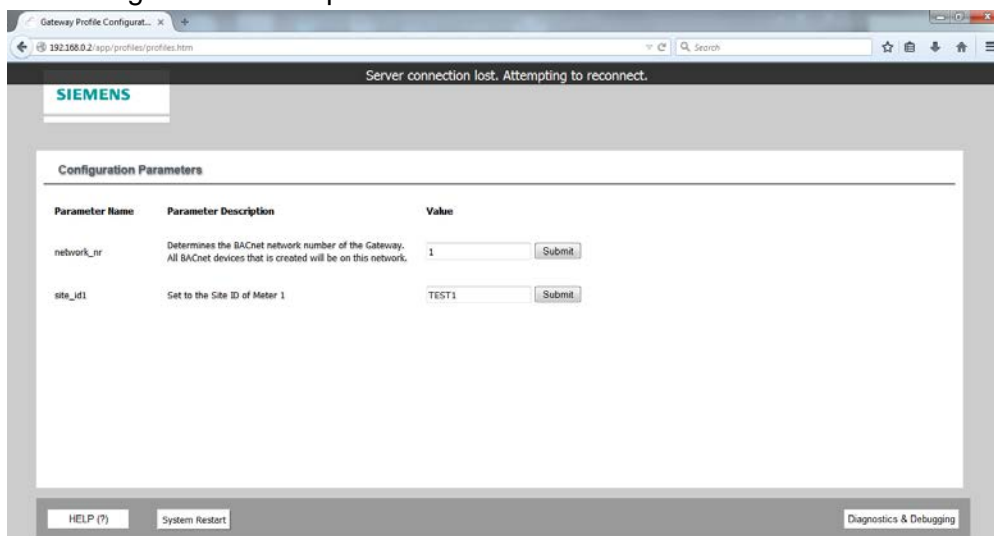
6. Press "Submit".



7. Restart the system (takes approx. 1 minute).



8. The configuration is completed.



Diagnostic and debugging:

General info

The screenshot shows the Siemens Gateway Profile Configuration web interface. The browser address bar displays '192.168.0.2:8080/html/fgui.htm#2_OID'. The page title is 'PG13000001'. The left navigation pane shows a tree structure with 'PG13000001' expanded, containing 'About', 'Setup', 'View', and 'User Messages'. The main content area has tabs for 'Status', 'Settings', and 'Info Stats', with 'Status' selected. Below the tabs is a table with columns 'Name' and 'Value'.

Name	Value
Driver_Configuration	DCC840
DCC_Version	V6.04x (A)
Kernel_Version	V6.13a (A)
Release_Status	Normal
Build_Revision	46-199-pd343813
Build_Date	Wed Dec 18 15:19:43 2013 +0200
BSDS_Version	3.1.10
FieldServer_Model	Siemens Option Card
Data_Points_Used	423
Data_Points_Max	-
Application_Memory:	
Memory_Percent_Used	2.98%
Memory_Used	498 kB

At the bottom of the page, there are buttons for 'Home', 'HELP (F1)', 'Contact Us', 'System Restart', 'System Time Synch', and 'Reset Cycle Times'.

Modbus settings

The screenshot shows the Siemens Gateway Profile Configuration web interface. The browser address bar displays '192.168.0.2:8080/html/fgui.htm#46_OID_1'. The page title is 'R1 - MODBUS_RTU'. The left navigation pane shows a tree structure with 'PG13000001' expanded, containing 'Connections', 'Data Arrays', 'Nodes', and 'Map Descriptors'. Under 'Connections', 'R1 - MODBUS_RTU' is selected. The main content area has tabs for 'Settings', 'Info Stats', and 'Error Stats', with 'Settings' selected. Below the tabs is a table with columns 'Name' and 'Value'.

Name	Value
Connection_Mode	Server
Client/Server_Mode	-
Multidrop_Mode	Yes
Turnaround_Delay	0.005s
Config_Mode	-
Baud	19200
Data_Bits	8
Parity	NONE
Stop_Bits	1
Line_Drive_On	0.001s
Line_Drive_Off	0.001s
IC_Timeout	0.500s
IP_Port	-

At the bottom of the page, there are buttons for 'Home', 'HELP (F1)', and 'Contact Us'.

Go to "Data Arrays → C1_AI_01" to check that data is being transmitted from FUx1010 to card.

The screenshot shows the Siemens Gateway Profile Configuration interface. The left sidebar contains a navigation tree with 'Data Arrays' expanded, and 'C1_AI_01' selected. The main window displays the configuration for 'C1_AI_01'.

Data Array Attributes:

Name	Value
Data Array Name	C1_AI_01
Data Format	Float
Length in Items	25
Bytes per Item	4
Data Age	0.074s

Data Array Table:

Offset	0	1	2	3	4	5	6	7	8	9
0	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.020000	850.000000	0.000000
10	850.000000	14.000000	0.000000	14.000000	26.000000	0.368000	0.118000	-45.560001	-45.560001	-0.005510
20	0.000000	0.000000	0.000000	0.000000	0.000000					

Check RS485 connection.

The screenshot shows the Modbus Master V2.6 software interface. The 'Communication Protocol' is set to 'RTU OVER RS232/485'. The 'Modbus' section is active, showing the following settings:

- Slave Address: 2
- Type: 3: Input Registers
- Start Address: 157
- Size: Float
- Total Values: 2
- Format: [Dropdown]
- ScanRate: 1000 ms
- Signed Decimals:
- Timeout: 1000 ms

The 'Ethernet' section shows IP Address: 192.168.0.2 and Port: 502.

The 'Serial' section shows ComPort: COM4, BaudRate: 19200, DataBits: 8, Parity: NONE, and StopBits: 1.

The 'Status' section shows Read Status: 1, Write Status: 0, and Com Status: Modbus_Device_Ok.

The 'Modbus Registers' table shows:

Address	Value
30157	850

The 'Raw Data Stream' section displays the following hex data: [02][04][00][9C][00][02][B1][D6][02][04][04][44][54][80][00][FC][64]

Example: Read time and date.

Modbus Master V2.6

Communication Protocol: RTU OVER RS232/485

Modbus

Slave Address: 2 Type: 3: Input Registers

Start Address: 101 Size: Word

Total Values: 6 Format: Decimal

ScanRate: 1000 ms Signed Decimals

Timeout: 1000 ms

Ethernet

IP Address: 192.168.0.2 Port: 502

Serial

ComPort: COM4

BaudRate: 19200 DataBits: 8

Parity: NONE StopBits: 1

Status

Polls Responses

Read Status: 15 15

Write Status: 0 0

Com Status: Modbus_Device_Ok

Modbus Registers:

Address	Value
30101	2015
30102	9
30103	24
30104	9
30105	31
30106	10

Raw Data Stream:

```
[02][04][00][64][00][06][31][E4][02][04][0C][07][DF][00][09][00][18][00][09][00][1F][00][0A][24][3B]
```


Modbus Master V2.6

Communication Protocol: RTU OVER RS232/485

Modbus

Slave Address: 2 Type: 3: Input Registers

Start Address: 101 Size: Word

Total Values: 6 Format: Decimal

ScanRate: 1000 ms Signed Decimals

Timeout: 1000 ms

Ethernet

IP Address: 192.168.0.2 Port: 502

Serial

ComPort: COM4

BaudRate: 19200 DataBits: 8

Parity: NONE StopBits: 1

Status

Polls Responses

Read Status: 17 17

Write Status: 0 0

Com Status: Modbus_Device_Ok

Modbus Registers:

Address	Value
30101	2015
30102	9
30103	24
30104	9
30105	31
30106	25

Raw Data Stream:

```
[02][04][00][64][00][06][31][E4][02][04][0C][07][DF][00][09][00][18][00][09][00][1F][00][0A][24][3B][02][04][00][64][00][06][31][E4][02][04][0C][07][DF][00][09][00][18][00][09][00][1F][00][0A][24][3B][02][04][00][64][00][06][31][E4][02][04][0C][07][DF][00][09][00][18][00][09][00][1F][00][0A][24][3B]
```


Refer to the Register map delivered with the card

Profile 44 (FUG1010-5GN04-5.04.05-DPCO)											
Data Description	Modbus			Ethernet/IP			HART		N2		
	Reg	Bytes	Type	Tag Name	OS	Format	CMD	VAR	Type	Ad	Sz
Site ID	30501	8	String	String_In	0	UINT16		n/a	BD(Byte)	1	8
Date: Year	30101	2	Integer	Analog_In	0	Float		n/a	ADI(Int)	1	1
Date: Month	30102	2	Integer	Analog_In	1	Float		n/a	ADI(Int)	2	1
Date: Day	30103	2	Integer	Analog_In	2	Float		n/a	ADI(Int)	3	1
Time: Hour	30104	2	Integer	Analog_In	3	Float		n/a	ADI(Int)	4	1
Time: Minute	30105	2	Integer	Analog_In	4	Float		n/a	ADI(Int)	5	1
Time: Second	30106	2	Integer	Analog_In	5	Float		n/a	ADI(Int)	6	1
Inst.Flow Rate Path 1	30109	4	Real	Analog_In	6	Float	129	10-0Ah	ADF(Float)	1	1
Inst.Flow Rate Path 2	30111	4	Real	Analog_In	7	Float	129	11-0Bh	ADF(Float)	2	1
Inst.Flow Rate	30107	4	Real	Analog_In	8	Float		n/a	ADF(Float)	3	1
Avg Flow Rate	30119	4	Real	Analog_In	9	Float	129	0-00h P	ADF(Float)	4	1
Flow Rate Units	30517	8	String	String_In	4	UINT16	131	0-00h	BD(Byte)	9	8
Raw Flow Path 1	30133	4	Real	Analog_In	10	Float		n/a	ADF(Float)	5	1
Raw Flow Path 2	30135	4	Real	Analog_In	11	Float		n/a	ADF(Float)	6	1
Raw Flow Units	30537	8	String	String_In	8	UINT16		n/a	BD(Byte)	17	8
Flow Velocity	30141	4	Real	Analog_In	12	Float	129	32-20h T	ADF(Float)	7	1
Flow Velocity Units	30553	8	String	String_In	12	UINT16	131	32-20h	BD(Byte)	25	8
Total	30143	4	Real	Analog_In	13	Float	129	33-21h S	ADF(Float)	8	1
Total Units	30557	8	String	String_In	16	UINT16	131	33-21h	BD(Byte)	33	8
Sonic Vel Path 1	30157	4	Real	Analog_In	14	Float		n/a	ADF(Float)	9	1
Sonic Vel Path 2	30159	4	Real	Analog_In	15	Float		n/a	ADF(Float)	10	1
Sonic Vel	30155	4	Real	Analog_In	16	Float		n/a	ADF(Float)	11	1
Sonic Vel Units	30577	8	String	String_In	20	UINT16		n/a	BD(Byte)	41	8
Signal Strength Path 1	30167	4	Real	Analog_In	17	Float		n/a	ADF(Float)	12	1
Signal Strength Path 2	30168	4	Real	Analog_In	18	Float		n/a	ADF(Float)	13	1