

TOTALFLOW *Technical Bulletin 103*

Configuring an AGA-7 Application for Liquid Measurement with Turbine or Positive Displacement Meters

Totalflow Technical Bulletin

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Outline for Configuring an AGA-7 Application for Liquid Turbine or PD Use

- 1) Insure AGA-7 application is available or instantiate one.
- 2) Wire turbine with pre-amp to a high-speed pulse input in the XFC or XRC.
- 3) Assign App/Array/Register of PI chosen to Pulse Input in Calibration-Setup Tab.
- 4) Configure AGA-7 measurement application in PCCU-32.
- 5) Add and configure display group for turbine readings.

Insure AGA-7 Application is available or instantiate one

The AGA-7 Application is instantiated in Applications 11 through 18. If the desired application is not present, add the AGA-7 Application in the next available slot of Application 11 through 18.





Wire turbine with pre-amp to a high-speed pulse input in the XFC or XRC

XFC

Wire + & - leads to J6 Pins 3 & 4 (DI-1) or J6 Pins 1 & 2 (DI-2) of the XFC board.

Provide external power for pre-amp or supply power from XFC. Positive is wired to Vbatt J4 Pin 2 or SwBatt J4 Pin 3 (with zero listen cycle) while negative is wired to Ground J4 Pin 1. Using SwBatt will turn power off to pre-amp when XFC is in sleep mode, protecting the battery. Negative is wired to Pin 1.



XFC



XRC

Wire + & - leads to J8 Pins 5 & 6 (DI-1) or J8 Pins 7 & 8 (DI-2) of the XRC board. DO NOT use DI3 or DI4, as these are digital inputs only

Provide external power for pre-amp or supply power from XRC. Positive is wired to Vbatt J6 Pin 1 or SwBatt J6 Pin 3 (with zero listen cycle) of either Comm 1 or 2. Using Swbatt will turn power off to preamp when XRC is in sleep mode, protecting the battery. Negative is wired to Pin 2.





Assign App/Array/Register of PI chosen to Pulse Input in Calibration-Setup Tab

Find the Application/Array/Register of the PI wired to the turbine pre-amp. Choose one of the Current Sec. Pulse Count registers. The onboard IO Subsystem is shown below. If a remote TFIO module is used, open this folder and choose the Current Sec. Pulse Count register.

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	7.0.12290	P12	488792		



Assign this App/Array/Register to the PI. Choose Setup tab in calibration screen of desired AGA-7 tube, then click in white area to right of "Pulse Input" to cause a pop-up screen to enter App/Array/Register.

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Configure AGA-7 measurement application in PCCU-32

In the General tab of measurement AGA-7 application, assign "Contract Hour", "Vol Calc Period", "Log Period", "Flow Period", "Display Rate", "Corrected Vol Unit", and "Uncorrected Vol Unit". USE MSCF and MACF respectively for the volume units. Since the WINCCU reports are fixed using MCF, choosing MSCF will insure the volume stored in WINCCU has the correct decimal place.

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In the Constants tab of measurement AGA-7 application, enter the K Factor. SINCE MSCF WAS CHOSEN FOR THE VOLUME UNITS, USE THE FOLLOWING METHOD TO DETERMINE THE K FACTOR.

(Pulses/Gallon X 42) = Pulses per Barrel.

Take the reciprocal of Pulses per Barrel to arrive at Barrels per Pulse. (1 / Pulses per Barrel) = Barrels per Pulse

THEN MULTIPLY BY 1000. This is done because the XFC/XRC will divide the answer by 1000 to obtain MSCF volume units.

EXAMPLE: 1.5" Turbine has a 326.51 Pulse per gallon from turbine manufacture.

326.51 X 42 = 13713.42 >>> 1/13713.42 = .0000729 Barrels per Pulse >>> .0000729 X 1000 = .0729

In one step:

(1 / (326351 X 42)) X 1000 = .0729

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In the Factors tab of measurement AGA-7 application, leave all the factors defaulted to "no".

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Add and configure display group for turbine readings

Obtain the App/Array/Register numbers for the turbine group to be added from the AGA-7 measurement application, Current Values tab (Shown Below). Note the units are MSCF and MSCF/Day, though the volumes are Barrels and Barrels/Day.

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operations	11.3.3	Temperature	80.800	Deg F		
OTALFLOW	11.7.0	Pulse Count	300	Counter/Terry Period		
EC61131	11.7.6	Plaw Rate	1440.001	MSCF/Dwy		
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At the Display folder, increase the "Number of Display Groups" by one and send data.

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At the new Display Group, rename the "Group Description" (NOT GROUP FILE NAME) to a useful name (Water turbine 1, Smith #1 Oil Turbine, etc.) and choose number of displays to add and enter.

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Insert "Name of Display Item" Register from "Current Values" (See Last Page), "Display Interval", "Unit Desired", and "Data Format".

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There are several enhancements by using an AGA-7 Measurement Application to record liquid turbine volumes instead of trending & operations.

- 1. Regular collection instead of a trend collection
- 2. No need of setting operation application to arrive at daily volumes, resetting at contract hour.
- 3. Full data base, with editing and graphing functions available.
- 4. Turbine volumes available on poll WITHOUT custom reports and custom template required.

Station ID:	TOTALFLOW							
Device ID :	TOTALFLOW	ACF :	1440.00	Current Flow:	1440.00			
Location :	Measurement and Control	AP:	14.73	Yest. Volume:	0.00	aadd zbr	a tad	ll amc
Dev. type :	FCU (Turbine)	TF:	60.00	Lhrs. Volume:	1000.00	hlhl ff:	C 666	cl nge
Date/Time :	05/21/03 21:12:41	BV:	10.75	Acom. Volume:	1306.38	x		X=

Date	Counts	89	TT	Corr Vel	Energy	Uneor Val	FlowTime	Alerma	CPviane	Clinar	BackPicez	AVol 18
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01.00E0	402015.000	14.730	80.080	1440.050	1440.050	1440.050	100.808	UNICPH	1.000	0	0.800	100.0
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06	17999.000	14.720	80.080	58-997	59-897	58-997	100.80	UNLOFIC	151	
00	18000.000	14,730	80.080	68.008	60.000	68.000	100.80	UHLCFH	152	
00	18000.000	14,730	80.080	60.000	60,000	68.000	100.80	UHILCPH	153	
30	18000.000	14.230	80.080	68.008	60.000	68.008	100.80	UHLCFH	164	
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1	18000.000	14,730	80.080	68.008	60.000	68.008	100.80	UHLCPH	154	
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it	10001-000	14,720	80.080	68.000	60.000	68,000	100.80	UNLOFIN	170	
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