

# **Technical Note 123**

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### Interpreting Flow Values Recorded Via Tucor's Cycle Manager+

Tucor's TWI can record flow from up to 10 flow sensors and react separately or collectively to a combination of sensors. This Document will review interpreting flow values recorded with Tucor's Cycle Manager+.

### Values for Water

(Figure 1)

ж					$\bigcirc$		Interval Selectors   Month Day   Hour Image: Construction of the second sec
₩	Water				$\bigcirc$	В	
- 10 - 10 - 10	Measures	Year	Month	Day	Irrigated gallons	Expected gallons	
	Error & Status	2021	April	30	0	0	A
		2021	April	Monthly Totals	0	0	
₹⊙	Program	2021	May	1	0	0	
	All	2021	May	2	0	0	
		2021	May	3	0	0	
		2021	May	4	0	0	
		2021	May	10	349	400	
		2021	May	11	563	434	
		2021	May	12	668	0	
		2021	May	13	681	90	
		2021	May	14	8,050	135	
		2021	May	15	14,002	13,935	
		2021	May	16	14,365	135	
		2021	May	17	5,334	45	
		2021	May	18	417	13,800	
		2021	May	19	691	0	
		2021	May	20	4,535	13,918	
		2021	May	21	14,207	135	
		2021	May	22	11,947	13,935	
		2021	May	23	12,103	135	

Figure 1

- 1. *Irrigated Gallons* (A) is the sum of all flow sensors' unscheduled & scheduled flow in gallons while the TWI in either Manual or Auto mode.
  - a. For a high-frequency pulse meter, Tucor's sensor decoder counts pulses over a 10 second interval and delivers the value to the controller.
- 2. *Expected Gallons* (B) is the TWI's anticipated water usage in gallons. Tucor recommends generating Expected Gallons via a *Learned Flow Program*, which records the real flow of a system at the station level during a set test interval.
- 3. Interval Selectors display Irrigated & Expected Flow in Gallons at Monthly & Daily intervals.

#### Values for Measures

(Figure 2)

×	Water						B		
	Measures	Date	Time	Name	Description	Туре	Value	Units	
		09/17/2021	1:00 PM	Fl	Newfields Pumphouse	Flow Sensor	31	GPM	A
÷	Error & Status	09/17/2021	1:00 PM	F2	Canal Pumphouse	Flow Sensor	0	GPM	
⋑	Program	09/17/2021	2:00 PM	FI	Newfields Pumphouse	Flow Sensor	23	GPM	
10 10 10	All	09/17/2021	2:00 PM	F2	Canal Pumphouse	Flow Sensor	0	GPM	C
		09/17/2021	3:00 PM	Fl	Newfields Pumphouse	Flow Sensor	39	GPM	
		09/17/2021	3:00 PM	F2	Canal Pumphouse	Flow Sensor	0	GPM	
		09/17/2021	4:00 PM	Fl	Newfields Pumphouse	Flow Sensor	31	GPM	
		09/17/2021	4:00 PM	F2	Canal Pumphouse	Flow Sensor	0	GPM	
		09/17/2021	5:00 PM	FI	Newfields Pumphouse	Flow Sensor	31	GPM	
		09/17/2021	5:00 PM	F2	Canal Pumphouse	Flow Sensor	0	GPM	
		09/17/2021	6:00 PM	Fl	Newfields Pumphouse	Flow Sensor	0	GPM	
		09/17/2021	6:00 PM	F2	Canal Pumphouse	Flow Sensor	0	GPM	
		09/17/2021	7:00 PM	F1	Newfields Pumphouse	Flow Sensor	31	GPM	

#### Figure 2

- 1. *Name* (A) refers to a specific sensor's identification as defined by the sensor type in the *Stations & Sensors menu*. You can add up to 10 flow sensors via sensor decoder using Tucor's TWI & sensor decoders (SD-100).
- 2. *Value* (B) shows value at a chosen interval for the corresponding sensor (possible are continuously, hourly, and daily).
- 3. **Reporting Interval** (C) is the frequency a given sensor value is recorded in the *Measures* section. This is established in the *Stations & Sensors menu*. For a flow sensor, this value is totalized for a given interval. If "continuously" is selected as the reporting interval, any change in flow value will be recorded. Tucor recommends selecting an hourly interval for this reason.

## Values for *Program*

(Figure	3)
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×							Interval Selectors	
<b>#</b>	Water						Overview Detailed	)
*	Measures	Date	Program	Start Time	Stop Time	Runtime	Water Usage in gallons	
, 🔶	Error & Status	09/01/2021	7	6:00 PM	7:01 PM	1h 1m	4,408	
=		09/01/2021	1	10:00 PM	11:37 PM	1h 37m	10,592	
₹⊙	Program	09/01/2021	5	12:01 AM	2:03 AM	2h 2m	11,721	
40 40 40	All	09/01/2021	4	1:00 AM	3:10 AM	2h 10m	15,614	
		09/01/2021	8	3:15 AM	7:06 AM	3h 51m	30,486	
		09/02/2021	2	6:00 AM	6:30 AM	30m	5,580	
		09/02/2021	9	7:30 AM	8:31 AM	1h 1m	6,240	
		09/02/2021	6	1:00 AM	6:09 AM	5h 9m	26,898	
		09/03/2021	9	7:30 AM	8:31 AM	1h 1m	6,210	
		09/03/2021	3	10:00 PM	11:00 PM	1h	8,424	
		09/03/2021	4	1:00 AM	3:10 AM	2h 10m	14,501	
		09/03/2021	8	3:15 AM	7:06 AM	3h 51m	31,500	
		09/04/2021	2	6:00 AM	6:30 AM	30m	5,544	
		09/04/2021	9	7:30 AM	8:31 AM	1h 1m	4,361	
		09/15/2021	7	6:00 PM	7:01 PM	1h 1m	1,556	
		09/15/2021	1	10:00 PM	11:37 PM	1h 37m	12,374	
		09/15/2021	5	12:01 AM	2:03 AM	2h 2m	4,707	

Figure 3

- 1. *Water Usage in Gallons* (A) refers to *Irrigated Gallons* recorded during a given program runtime. Note running overlapping programs will skew the program-level value.
- 2. Interval Selectors default is program-level (Overview). Note: the detailed level requires a firmware upgrade.