Advantage Controls — Manual

MegaTron
Controller
Supplemental

LonWorks Communications Manual

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LonWorks
Communications Manual
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I. LonWorks Introduction

The LonWorks feature enables the MegaTron to be connected to a LonWorks network and communicate with other LonWorks enabled devices. The MegaTron uses a Free Topology, twisted pair connection for the physical connection to a LonWorks network.

II. LonWorks Overview

The MegaTron's external interface definition can be uploaded from the device or from a XIF file. The Neuron ID can be found on the main Network menu on the MegaTron. A service pin event can be triggered from the main Network menu of the MegaTron using the SRVC button or the event can be trigger by pressing the S1 switch on the MegaTron LonWorks interface board.

The MegaTron supports "Winking" via the LonWorks network. When a winking event is triggered, the MegaTron will replace the connection status on the main run screen with the following symbol "[ ]". The symbol will remain for 5 seconds and then the current connection status will be redisplayed.

The LED D6 on the MegaTron LonWorks interface board can be used to determine the commissioned state of the device. If the LED is blinking at 500ms then the device is in a "Decommissioned" state. If the LED is off then the device is on a "Commissioned" state.

* For more information about LonWorks please visit www.lonworks.com.

III. LonWorks Data Dictionary - JA.12.01

Configuration Data

Functional Block	External Name	Functional Profile Template	Support Variables	Notes
fbNode	Node	SFPTnodeObject	nviRequest (SNVT_obj_ request)	
			nvoStatus (SNVT_obj_status)	
			nciLocation (SCPTlocation)	
			nvoTimeStamp (SVNT_time_ stamp)	Controller Date/Time
fbCond[0]	Conductivity[0]	SFPTopenLoopSensor	nvoValue (SNVT_count_f)	System #1 - Cond
			nvoSetpPt1 (SNVT_count_f)	
			nvoSetpPt2 (SNVT_count_f)	
			nvoLowAlarm (SNVT_count_f)	
			nvoHighAlarm (SNVT_count_f)	
fbCond[1]	Conductivity[1]	SFPTopenLoopSensor	nvoValue (SNVT_count_f)	System #2 - Cond
			nvoSetpPt1 (SNVT_count_f)	
			nvoSetpPt2 (SNVT_count_f)	
			nvoLowAlarm (SNVT_count_f)	
			nvoHighAlarm (SNVT_count_f)	
fbCond[2]	Conductivity[2]	SFPTopenLoopSensor	nvoValue (SNVT_count_f)	System #3 - Cond
			nvoSetpPt1 (SNVT_count_f)	
			nvoSetpPt2 (SNVT_count_f)	
			nvoLowAlarm (SNVT_count_f)	
			nvoHighAlarm (SNVT_count_f)	
fbCond[3]	Conductivity[3]	SFPTopenLoopSensor	nvoValue (SNVT_count_f)	System #4 - Cond
			nvoSetpPt1 (SNVT_count_f)	
			nvoSetpPt2 (SNVT_count_f)	
			nvoLowAlarm (SNVT_count_f)	
			nvoHighAlarm (SNVT_count_f)	
fbMCond[0]	M_Conductivity[0]	SFPTopenLoopSensor	nvoValue (SNVT_count_f)	System #1 - M. Cond
			nvoSetpPt (SNVT_count_f)	
			nvoLowAlarm (SNVT_count_f)	
			nvoHighAlarm (SNVT_count_f)	
fbMCond[1]	M_Conductivity[1]	SFPTopenLoopSensor	nvoValue (SNVT_count_f)	System #2 - M. Cond
			nvoSetpPt (SNVT_count_f)	
			nvoLowAlarm (SNVT_count_f)	
			nvoHighAlarm (SNVT_count_f)	
fbMCond[2]	M_Conductivity[2]	SFPTopenLoopSensor	nvoValue (SNVT_count_f)	System #3 - M. Cond
			nvoSetpPt (SNVT_count_f)	
			nvoLowAlarm (SNVT_count_f)	
			nvoHighAlarm (SNVT_count_f)	
fbMCond[3]	M_Conductivity[3]	SFPTopenLoopSensor	nvoValue (SNVT_count_f)	System #4 - M. Cond
			nvoSetpPt (SNVT_count_f)	

			nvoLowAlarm (SNVT_count_f)	
			nvoHighAlarm (SNVT_count_f)	
fbMcycles[0]	M_Cycles[0]	SFPTopenLoopSensor	nvoValue (SNVT_count_f)	System #1 - M. Cycles
fbMcycles[1]	M_Cycles[1]	SFPTopenLoopSensor	nvoValue (SNVT_count_f)	System #2 - M. Cycles
fbMcycles[2]	M_Cycles[2]	SFPTopenLoopSensor	nvoValue (SNVT_count_f)	System #3 - M. Cycles
fbMcycles[3]	M_Cycles[3]	SFPTopenLoopSensor	nvoValue (SNVT_count_f)	System #4 - M. Cycles
fbPh[0]	pH[0]	SFPTopenLoopSensor	nvoValue (SNVT_count_f)	System #1 - pH
			nvoSetpPt1 (SNVT_count_f)	
			nvoSetpPt2 (SNVT_count_f)	
			nvoLowAlarm (SNVT_count_f)	
			nvoHighAlarm (SNVT_count_f)	
fbPh[1]	pH[1]	SFPTopenLoopSensor	nvoValue (SNVT_count_f)	System #2 - pH
			nvoSetpPt1 (SNVT_count_f)	
			nvoSetpPt2 (SNVT_count_f)	
			nvoLowAlarm (SNVT_count_f)	
			nvoHighAlarm (SNVT_count_f)	
fbPh[2]	pH[2]	SFPTopenLoopSensor	nvoValue (SNVT_count_f)	System #3 - pH
			nvoSetpPt1 (SNVT_count_f)	
			nvoSetpPt2 (SNVT_count_f)	
			nvoLowAlarm (SNVT_count_f)	
			nvoHighAlarm (SNVT_count_f)	
fbPh[3]	pH[3]	SFPTopenLoopSensor	nvoValue (SNVT_count_f)	System #4 - pH
			nvoSetpPt1 (SNVT_count_f)	
			nvoSetpPt2 (SNVT_count_f)	
			nvoLowAlarm (SNVT_count_f)	
			nvoHighAlarm (SNVT_count_f)	
fbOrp[0]	ORP[0]	SFPTopenLoopSensor	nvoValue (SNVT_volt_f)	System #1 - ORP
			nvoSetpPt1 (SNVT_volt_f)	
			nvoSetpPt2 (SNVT_volt_f)	
			nvoLowAlarm (SNVT_volt_f)	
			nvoHighAlarm (SNVT_volt_f)	
fbOrp[1]	ORP[1]	SFPTopenLoopSensor	nvoValue (SNVT_volt_f)	System #2 - ORP
			nvoSetpPt1 (SNVT_volt_f)	
			nvoSetpPt2 (SNVT_volt_f)	
			nvoLowAlarm (SNVT_volt_f)	
			nvoHighAlarm (SNVT_volt_f)	
fbOrp[2]	ORP[2]	SFPTopenLoopSensor	nvoValue (SNVT_volt_f)	System #3 - ORP
			nvoSetpPt1 (SNVT_volt_f)	
			nvoSetpPt2 (SNVT_volt_f)	
			nvoLowAlarm (SNVT_volt_f)	
			nvoHighAlarm (SNVT_volt_f)	
fbOrp[3]	ORP[3]	SFPTopenLoopSensor	nvoValue (SNVT_volt_f)	System #4 - ORP
			nvoSetpPt1 (SNVT_volt_f)	
			nvoSetpPt2 (SNVT_volt_f)	
			nvoLowAlarm (SNVT_volt_f)	
			nvoHighAlarm (SNVT_volt_f)	

fbSTemp[0]	S_Temp[0]	SFPTopenLoopSensor	nvoValue (SNVT_temp_p)	System #1 - S. Temp
			nvoSetpPt (SNVT_temp_p)	
			nvoLowAlarm (SNVT_temp_p)	
			nvoHighAlarm (SNVT_temp_p)	
fbSTemp[1]	S_Temp[1]	SFPTopenLoopSensor	nvoValue (SNVT_temp_p)	System #2 - S. Temp
			nvoSetpPt (SNVT_temp_p)	
			nvoLowAlarm (SNVT_temp_p)	
			nvoHighAlarm (SNVT_temp_p)	
fbSTemp[2]	S_Temp[2]	SFPTopenLoopSensor	nvoValue (SNVT_temp_p)	System #3 - S. Temp
			nvoSetpPt (SNVT_temp_p)	
			nvoLowAlarm (SNVT_temp_p)	
			nvoHighAlarm (SNVT_temp_p)	
fbSTemp[3]	S_Temp[3]	SFPTopenLoopSensor	nvoValue (SNVT_temp_p)	System #4 - S. Temp
			nvoSetpPt (SNVT_temp_p)	
			nvoLowAlarm (SNVT_temp_p)	
			nvoHighAlarm (SNVT_temp_p)	
fbMTemp[0]	M_Temp[0]	SFPTopenLoopSensor	nvoValue (SNVT_temp_p)	System #1 - M. Temp
			nvoSetpPt (SNVT_temp_p)	
			nvoLowAlarm (SNVT_temp_p)	
			nvoHighAlarm (SNVT_temp_p)	
fbMTemp[1]	M_Temp[1]	SFPTopenLoopSensor	nvoValue (SNVT_temp_p)	System #2 - M. Temp
			nvoSetpPt (SNVT_temp_p)	
			nvoLowAlarm (SNVT_temp_p)	
			nvoHighAlarm (SNVT_temp_p)	
fbMTemp[2]	M_Temp[2]	SFPTopenLoopSensor	nvoValue (SNVT_temp_p)	System #3 - M. Temp
			nvoSetpPt (SNVT_temp_p)	
			nvoLowAlarm (SNVT_temp_p)	
			nvoHighAlarm (SNVT_temp_p)	
fbMTemp[3]	M_Temp[3]	SFPTopenLoopSensor	nvoValue (SNVT_temp_p)	System #4 - M. Temp
			nvoSetpPt (SNVT_temp_p)	
			nvoLowAlarm (SNVT_temp_p)	
			nvoHighAlarm (SNVT_temp_p)	
fbDTemp[0]	D_Temp[0]	SFPTopenLoopSensor	nvoValue (SNVT_temp_p)	System #1 - D. Temp
			nvoSetpPt (SNVT_temp_p)	
			nvoLowAlarm (SNVT_temp_p)	
			nvoHighAlarm (SNVT_temp_p)	
fbDTemp[1]	D_Temp[1]	SFPTopenLoopSensor	nvoValue (SNVT_temp_p)	System #2 - D. Temp
			nvoSetpPt (SNVT_temp_p)	
			nvoLowAlarm (SNVT_temp_p)	
			nvoHighAlarm (SNVT_temp_p)	
fbDTemp[2]	D_Temp[2]	SFPTopenLoopSensor	nvoValue (SNVT_temp_p)	System #3 - D. Temp
			nvoSetpPt (SNVT_temp_p)	
			nvoLowAlarm (SNVT_temp_p)	
			nvoHighAlarm (SNVT_temp_p)	
fbDTemp[3]	D_Temp[3]	SFPTopenLoopSensor	nvoValue (SNVT_temp_p)	System #4 - D. Temp
			nvoSetpPt (SNVT_temp_p)	

			nvoLowAlarm (SNVT_temp_p)	
			nvoHighAlarm (SNVT_temp_p)	
fbFlowSw[0]	FlowSw[0]	SFPTopenLoopSensor	nvoValue (SNVT_switch)	System #1 - Flow Switch
fbFlowSw[1]	FlowSw[1]	SFPTopenLoopSensor	nvoValue (SNVT_switch)	System #2 - Flow Switch
fbFlowSw[2]	FlowSw[2]	SFPTopenLoopSensor	nvoValue (SNVT_switch)	System #3 - Flow Switch
fbFlowSw[3]	FlowSw[3]	SFPTopenLoopSensor	nvoValue (SNVT_switch)	System #4 - Flow Switch
fbFlowState	FlowState	SFPTopenLoopSensor	nvoValue (SNVT_state)	bit0 - System #1 - Flow Switch
				bit1 - System #2 - Flow Switch
				bit2 - System #3 - Flow Switch
				bit3 - System #4 - Flow Switch
fbWmtr1[0]	W_Mtr1[0]	SFPTopenLoopSensor	nvoValue (SNVT_count_f)	System #1 - Water Meter #1 (scale: *1000)
fbWmtr1[1]	W_Mtr1[1]	SFPTopenLoopSensor	nvoValue (SNVT_count_f)	System #2 - Water Meter #1 (scale: *1000)
fbWmtr1[2]	W_Mtr1[2]	SFPTopenLoopSensor	nvoValue (SNVT_count_f)	System #3 - Water Meter #1 (scale: *1000)
fbWmtr1[3]	W_Mtr1[3]	SFPTopenLoopSensor	nvoValue (SNVT_count_f)	System #4 - Water Meter #1 (scale: *1000)
fbWmtr2[0]	W_Mtr2[0]	SFPTopenLoopSensor	nvoValue (SNVT_count_f)	System #1 - Water Meter #2 (scale: *1000)
fbWmtr2[1]	W_Mtr2[1]	SFPTopenLoopSensor	nvoValue (SNVT_count_f)	System #2 - Water Meter #2 (scale: *1000)
fbWmtr2[2]	W_Mtr2[2]	SFPTopenLoopSensor	nvoValue (SNVT_count_f)	System #3 - Water Meter #2 (scale: *1000)
fbWmtr2[3]	W_Mtr2[3]	SFPTopenLoopSensor	nvoValue (SNVT_count_f)	System #4 - Water Meter #2 (scale: *1000)
fbMaOut[0]	mA_Out[0]	SFPTopenLoopSensor	nvoValue (SNVT_count_f)	mA Output #1
fbMaOut[1]	mA_Out[1]	SFPTopenLoopSensor	nvoValue (SNVT_count_f)	mA Output #2
fbMaOut[2]	mA_Out[2]	SFPTopenLoopSensor	nvoValue (SNVT_count_f)	mA Output #3
fbMaOut[3]	mA_Out[3]	SFPTopenLoopSensor	nvoValue (SNVT_count_f)	mA Output #4
fbMaOut[4]	mA_Out[4]	SFPTopenLoopSensor	nvoValue (SNVT_count_f)	mA Output #5
fbMaOut[5]	mA_Out[5]	SFPTopenLoopSensor	nvoValue (SNVT_count_f)	mA Output #6
fbRly[0]	Relay[0]	SFPTopenLoopSensor	nvoValue (SNVT_switch)	Relay #1 (Value: 0 = Auto, 100 = Forced)
fbRly[1]	Relay[1]	SFPTopenLoopSensor	nvoValue (SNVT_switch)	Relay #2 (Value: 0 = Auto, 100 = Forced)
fbRly[2]	Relay[2]	SFPTopenLoopSensor	nvoValue (SNVT_switch)	Relay #3 (Value: 0 = Auto, 100 = Forced)
fbRly[3]	Relay[3]	SFPTopenLoopSensor	nvoValue (SNVT_switch)	Relay #4 (Value: 0 = Auto, 100 = Forced)
fbRly[4]	Relay[4]	SFPTopenLoopSensor	nvoValue (SNVT_switch)	Relay #5 (Value: 0 = Auto, 100 = Forced)
fbRly[5]	Relay[5]	SFPTopenLoopSensor	nvoValue (SNVT_switch)	Relay #6 (Value: 0 = Auto, 100 = Forced)
fbRly[6]	Relay[6]	SFPTopenLoopSensor	nvoValue (SNVT_switch)	Relay #7 (Value: 0 = Auto, 100 = Forced)

fbRly[7]	Relay[7]	SFPTopenLoopSensor	nvoValue (SNVT_switch)	Relay #8 (Value: 0 = Auto, 100 = Forced)
fbRly[8]	Relay[8]	SFPTopenLoopSensor	nvoValue (SNVT_switch)	Relay #9 (Value: 0 = Auto, 100 = Forced)
fbRly[9]	Relay[9]	SFPTopenLoopSensor	nvoValue (SNVT_switch)	Relay #10 (Value: 0 = Auto, 100 = Forced)
fbRly[10]	Relay[10]	SFPTopenLoopSensor	nvoValue (SNVT_switch)	Relay #11 (Value: 0 = Auto, 100 = Forced)
fbRly[11]	Relay[11]	SFPTopenLoopSensor	nvoValue (SNVT_switch)	Relay #12 (Value: 0 = Auto, 100 = Forced)
fbRly[12]	Relay[12]	SFPTopenLoopSensor	nvoValue (SNVT_switch)	Relay #13 (Value: 0 = Auto, 100 = Forced)
fbRly[13]	Relay[13]	SFPTopenLoopSensor	nvoValue (SNVT_switch)	Relay #14 (Value: 0 = Auto, 100 = Forced)
fbRly[14]	Relay[14]	SFPTopenLoopSensor	nvoValue (SNVT_switch)	Relay #15 (Value: 0 = Auto, 100 = Forced)
fbRly[15]	Relay[15]	SFPTopenLoopSensor	nvoValue (SNVT_switch)	Relay #16 (Value: 0 = Auto, 100 = Forced)
fbRly[16]	Relay[16]	SFPTopenLoopSensor	nvoValue (SNVT_switch)	Relay #17 (Value: 0 = Auto, 100 = Forced)
fbRly[17]	Relay[17]	SFPTopenLoopSensor	nvoValue (SNVT_switch)	Relay #18 (Value: 0 = Auto, 100 = Forced)
fbRly[18]	Relay[18]	SFPTopenLoopSensor	nvoValue (SNVT_switch)	Relay #19 (Value: 0 = Auto, 100 = Forced)
fbRly[19]	Relay[19]	SFPTopenLoopSensor	nvoValue (SNVT_switch)	Relay #20 (Value: 0 = Auto, 100 = Forced)
fbAlarm[0]	Alarm[0]	SFPTopenLoopSensor	nvoValue (SNVT_state_64)	System #1 - Alarms #1 (see Alarm Table)
fbAlarm[1]	Alarm[1]	SFPTopenLoopSensor	nvoValue (SNVT_state_64)	System #1 - Alarms #2 (see Alarm Table)
fbAlarm[2]	Alarm[2]	SFPTopenLoopSensor	nvoValue (SNVT_state_64)	System #2 - Alarms #1 (see Alarm Table)
fbAlarm[3]	Alarm[3]	SFPTopenLoopSensor	nvoValue (SNVT_state_64)	System #2 - Alarms #2 (see Alarm Table)
fbAlarm[4]	Alarm[4]	SFPTopenLoopSensor	nvoValue (SNVT_state_64)	System #3 - Alarms #1 (see Alarm Table)
fbAlarm[5]	Alarm[5]	SFPTopenLoopSensor	nvoValue (SNVT_state_64)	System #3 - Alarms #2 (see Alarm Table)
fbAlarm[6]	Alarm[6]	SFPTopenLoopSensor	nvoValue (SNVT_state_64)	System #4 - Alarms #1 (see Alarm Table)
fbAlarm[7]	Alarm[7]	SFPTopenLoopSensor	nvoValue (SNVT_state_64)	System #4 - Alarms #2 (see Alarm Table)
fbAlarm[8]	Alarm[8]	SFPTopenLoopSensor	nvoValue (SNVT_state_64)	Miscellanous - Alarms #1 (see Alarm Table)
fbAlarm[9]	Alarm[9]	SFPTopenLoopSensor	nvoValue (SNVT_state_64)	Miscellanous - Alarms #2 (see Alarm Table)

Alarm Settings

Alarm	Functional Block	Bit
SYS1 COND	fbAlarm[0]	0
SYS1 pH	fbAlarm[0]	1
SYS1 ORP	fbAlarm[0]	2
SYS1 TEMP 1	fbAlarm[0]	3
SYS1 TEMP 2	fbAlarm[0]	4
SYS1 DELTA TEMP	fbAlarm[0]	5
SYS1 TIMER1	fbAlarm[0]	6
SYS1 TIMER2	fbAlarm[0]	7
SYS1 TIMER3	fbAlarm[0]	8
SYS1 TIMER4	fbAlarm[0]	9
SYS1 TIMER5	fbAlarm[0]	10
SYS1 ALL ALARMS	fbAlarm[0]	11
SYS1 HI COND	fbAlarm[0]	12
SYS1 LO COND	fbAlarm[0]	13
SYS1 COND LIMIT	fbAlarm[0]	14
SYS1 HI pH	fbAlarm[0]	15
SYS1 LO pH	fbAlarm[0]	16
SYS1 ph LIMIT	fbAlarm[0]	17
SYS1 HI ORP	fbAlarm[0]	18
SYS1 LO ORP	fbAlarm[0]	19
SYS1 ORP LIMIT	fbAlarm[0]	20
SYS1 HI TEMP 1	fbAlarm[0]	21
SYS1 LO TEMP 1	fbAlarm[0]	22
SYS1 HI TEMP 2	fbAlarm[0]	23
SYS1 LO TEMP 2	fbAlarm[0]	24
SYS1 HI DELTA TEMP	fbAlarm[0]	25
SYS1 LO DELTA TEMP	fbAlarm[0]	26
SYS1 NO FLOW	fbAlarm[0]	27
SYS1 DIGITAL INPUT 1	fbAlarm[0]	28
SYS1 DIGITAL INPUT 2	fbAlarm[0]	29
SYS1 DIGITAL INPUT 3	fbAlarm[0]	30
SYS1 DIGITAL INPUT 4	fbAlarm[0]	31
SYS1 DIGITAL INPUT 5	fbAlarm[0]	32
SYS1 MCND	fbAlarm[0]	33
SYS1 HI MCND	fbAlarm[0]	34
SYS1 LO MCND	fbAlarm[0]	35
SYS1 MCND LIMIT	fbAlarm[0]	36
SYS1 NOTE 1 HI	fbAlarm[0]	37
SYS1 NOTE 2 HI	fbAlarm[0]	38
SYS1 NOTE 3 HI	fbAlarm[0]	39
SYS1 NOTE 4 HI	fbAlarm[0]	40
SYS1 NOTE 5 HI	fbAlarm[0]	41
SYS1 NOTE 6 HI	fbAlarm[0]	42
SYS1 NOTE 7 HI	fbAlarm[0]	43
SYS1 NOTE 8 HI	fbAlarm[0]	44
SYS1 NOTE 9 HI	fbAlarm[0]	45
SYS1 NOTE 10 HI	fbAlarm[0]	46
SYS1 NOTE 1 LO	fbAlarm[0]	47
SYS1 NOTE 2 LO	fbAlarm[0]	48
SYS1 NOTE 3 LO	fbAlarm[0]	49
SYS1 NOTE 4 LO	fbAlarm[0]	50
SYS1 NOTE 5 LO	fbAlarm[0]	51
SYS1 NOTE 6 LO	fbAlarm[0]	52
SYS1 NOTE 7 LO	fbAlarm[0]	53
SYS1 NOTE 8 LO	fbAlarm[0]	54
SYS1 NOTE 9 LO	fbAlarm[0]	55
SYS1 NOTE 10 LO	fbAlarm[0]	56
SYS1 NOTE 1 TIME	fbAlarm[0]	57
SYS1 NOTE 2 TIME	fbAlarm[0]	58
SYS1 NOTE 3 TIME	fbAlarm[0]	59
SYS1 NOTE 4 TIME	fbAlarm[0]	60
SYS1 NOTE 5 TIME	fbAlarm[0]	61
SYS1 NOTE 6 TIME	fbAlarm[0]	62
SYS1 NOTE 7 TIME	fbAlarm[0]	63
SYS1 NOTE 8 TIME	fbAlarm[1]	0
SYS1 NOTE 9 TIME	fbAlarm[1]	1
SYS1 NOTE 10 TIME	fbAlarm[1]	2
SYS1 pH2	fbAlarm[1]	3
SYS1 ORP2	fbAlarm[1]	4
SYS2 COND	fbAlarm[2]	0
SYS2 pH	fbAlarm[2]	1
SYS2 ORP	fbAlarm[2]	2
SYS2 TEMP 1	fbAlarm[2]	3
SYS2 TEMP 2	fbAlarm[2]	4
SYS2 DELTA TEMP	fbAlarm[2]	5
SYS2 TIMER1	fbAlarm[2]	6
SYS2 TIMER2	fbAlarm[2]	7
SYS2 TIMER3	fbAlarm[2]	8
SYS2 TIMER4	fbAlarm[2]	9
SYS2 TIMER5	fbAlarm[2]	10
SYS2 ALL ALARMS	fbAlarm[2]	11
SYS2 HI COND	fbAlarm[2]	12
SYS2 LO COND	fbAlarm[2]	13
SYS2 COND LIMIT	fbAlarm[2]	14
SYS2 HI ph	fbAlarm[2]	15
SYS2 LO ph	fbAlarm[2]	16
SYS2 ph LIMIT	fbAlarm[2]	17
SYS2 HI ORP	fbAlarm[2]	18
SYS2 LO ORP	fbAlarm[2]	19

SYS2 ORP LIMIT	fbAlarm[2]	20
SYS2 HI TEMP 1	fbAlarm[2]	21
SYS2 LO TEMP 1	fbAlarm[2]	22
SYS2 HI TEMP 2	fbAlarm[2]	23
SYS2 LO TEMP 2	fbAlarm[2]	24
SYS2 HI DELTA TEMP	fbAlarm[2]	25
SYS2 LO DELTA TEMP	fbAlarm[2]	26
SYS2 NO FLOW	fbAlarm[2]	27
SYS2 DIGITAL INPUT 1	fbAlarm[2]	28
SYS2 DIGITAL INPUT 2	fbAlarm[2]	29
SYS2 DIGITAL INPUT 3	fbAlarm[2]	30
SYS2 DIGITAL INPUT 4	fbAlarm[2]	31
SYS2 DIGITAL INPUT 5	fbAlarm[2]	32
SYS2 MCND	fbAlarm[2]	33
SYS2 HI MCND	fbAlarm[2]	34
SYS2 LO MCND	fbAlarm[2]	35
SYS2 MCND LIMIT	fbAlarm[2]	36
SYS2 NOTE 1 HI	fbAlarm[2]	37
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SYS2 NOTE 3 HI	fbAlarm[2]	39
SYS2 NOTE 4 HI	fbAlarm[2]	40
SYS2 NOTE 5 HI	fbAlarm[2]	41
SYS2 NOTE 6 HI	fbAlarm[2]	42
SYS2 NOTE 7 HI	fbAlarm[2]	43
SYS2 NOTE 8 HI	fbAlarm[2]	44
SYS2 NOTE 9 HI	fbAlarm[2]	45
SYS2 NOTE 10 HI	fbAlarm[2]	46
SYS2 NOTE 1 LO	fbAlarm[2]	47
SYS2 NOTE 2 LO	fbAlarm[2]	48
SYS2 NOTE 3 LO	fbAlarm[2]	49
SYS2 NOTE 4 LO	fbAlarm[2]	50
SYS2 NOTE 5 LO	fbAlarm[2]	51
SYS2 NOTE 6 LO	fbAlarm[2]	52
SYS2 NOTE 7 LO	fbAlarm[2]	53
SYS2 NOTE 8 LO	fbAlarm[2]	54
SYS2 NOTE 9 LO	fbAlarm[2]	55
SYS2 NOTE 10 LO	fbAlarm[2]	56
SYS2 NOTE 1 TIME	fbAlarm[2]	57
SYS2 NOTE 2 TIME	fbAlarm[2]	58
SYS2 NOTE 3 TIME	fbAlarm[2]	59
SYS2 NOTE 4 TIME	fbAlarm[2]	60
SYS2 NOTE 5 TIME	fbAlarm[2]	61
SYS2 NOTE 6 TIME	fbAlarm[2]	62
SYS2 NOTE 7 TIME	fbAlarm[2]	63
SYS2 NOTE 8 TIME	fbAlarm[3]	0
SYS2 NOTE 9 TIME	fbAlarm[3]	1

SYS2 NOTE 10 TIME	fbAlarm[3]	2
SYS2 pH2	fbAlarm[3]	3
SYS2 ORP2	fbAlarm[3]	4
SYS3 COND	fbAlarm[4]	0
SYS3 pH	fbAlarm[4]	1
SYS3 ORP	fbAlarm[4]	2
SYS3 TEMP 1	fbAlarm[4]	3
SYS3 TEMP 2	fbAlarm[4]	4
SYS3 DELTA TEMP	fbAlarm[4]	5
SYS3 TIMER1	fbAlarm[4]	6
SYS3 TIMER2	fbAlarm[4]	7
SYS3 TIMER3	fbAlarm[4]	8
SYS3 TIMER4	fbAlarm[4]	9
SYS3 TIMER5	fbAlarm[4]	10
SYS3 ALL ALARMS	fbAlarm[4]	11
SYS3 HI COND	fbAlarm[4]	12
SYS3 LO COND	fbAlarm[4]	13
SYS3 COND LIMIT	fbAlarm[4]	14
SYS3 HI ph	fbAlarm[4]	15
SYS3 LO ph	fbAlarm[4]	16
SYS3 ph LIMIT	fbAlarm[4]	17
SYS3 HI ORP	fbAlarm[4]	18
SYS3 LO ORP	fbAlarm[4]	19
SYS3 ORP LIMIT	fbAlarm[4]	20
SYS3 HI TEMP 1	fbAlarm[4]	21
SYS3 LO TEMP 1	fbAlarm[4]	22
SYS3 HI TEMP 2	fbAlarm[4]	23
SYS3 LO TEMP 2	fbAlarm[4]	24
SYS3 HI DELTA TEMP	fbAlarm[4]	25
SYS3 LO DELTA TEMP	fbAlarm[4]	26
SYS3 NO FLOW	fbAlarm[4]	27
SYS3 DIGITAL INPUT 1	fbAlarm[4]	28
SYS3 DIGITAL INPUT 2	fbAlarm[4]	29
SYS3 DIGITAL INPUT 3	fbAlarm[4]	30
SYS3 DIGITAL INPUT 4	fbAlarm[4]	31
SYS3 DIGITAL INPUT 5	fbAlarm[4]	32
SYS3 MCND	fbAlarm[4]	33
SYS3 HI MCND	fbAlarm[4]	34
SYS3 LO MCND	fbAlarm[4]	35
SYS3 MCND LIMIT	fbAlarm[4]	36
SYS3 NOTE 1 HI	fbAlarm[4]	37
SYS3 NOTE 2 HI	fbAlarm[4]	38
SYS3 NOTE 3 HI	fbAlarm[4]	39
SYS3 NOTE 4 HI	fbAlarm[4]	40
SYS3 NOTE 5 HI	fbAlarm[4]	41
SYS3 NOTE 6 HI	fbAlarm[4]	42

SYS3 NOTE 7 HI	fbAlarm[4]	43
SYS3 NOTE 8 HI	fbAlarm[4]	44
SYS3 NOTE 9 HI	fbAlarm[4]	45
SYS3 NOTE 10 HI	fbAlarm[4]	46
SYS3 NOTE 1 LO	fbAlarm[4]	47
SYS3 NOTE 2 LO	fbAlarm[4]	48
SYS3 NOTE 3 LO	fbAlarm[4]	49
SYS3 NOTE 4 LO	fbAlarm[4]	50
SYS3 NOTE 5 LO	fbAlarm[4]	51
SYS3 NOTE 6 LO	fbAlarm[4]	52
SYS3 NOTE 7 LO	fbAlarm[4]	53
SYS3 NOTE 8 LO	fbAlarm[4]	54
SYS3 NOTE 9 LO	fbAlarm[4]	55
SYS3 NOTE 10 LO	fbAlarm[4]	56
SYS3 NOTE 1 TIME	fbAlarm[4]	57
SYS3 NOTE 2 TIME	fbAlarm[4]	58
SYS3 NOTE 3 TIME	fbAlarm[4]	59
SYS3 NOTE 4 TIME	fbAlarm[4]	60
SYS3 NOTE 5 TIME	fbAlarm[4]	61
SYS3 NOTE 6 TIME	fbAlarm[4]	62
SYS3 NOTE 7 TIME	fbAlarm[4]	63
SYS3 NOTE 8 TIME	fbAlarm[5]	0
SYS3 NOTE 9 TIME	fbAlarm[5]	1
SYS3 NOTE 10 TIME	fbAlarm[5]	2
SYS3 pH2	fbAlarm[5]	3
SYS3 ORP2	fbAlarm[5]	4
SYS4 COND	fbAlarm[6]	0
SYS4 pH	fbAlarm[6]	1
SYS4 ORP	fbAlarm[6]	2
SYS4 TEMP 1	fbAlarm[6]	3
SYS4 TEMP 2	fbAlarm[6]	4
SYS4 DELTA TEMP	fbAlarm[6]	5
SYS4 TIMER1	fbAlarm[6]	6
SYS4 TIMER2	fbAlarm[6]	7
SYS4 TIMER3	fbAlarm[6]	8
SYS4 TIMER4	fbAlarm[6]	9
SYS4 TIMER5	fbAlarm[6]	10
SYS4 ALL ALARMS	fbAlarm[6]	11
SYS4 HI COND	fbAlarm[6]	12
SYS4 LO COND	fbAlarm[6]	13
SYS4 COND LIMIT	fbAlarm[6]	14
SYS4 HI ph	fbAlarm[6]	15
SYS4 LO ph	fbAlarm[6]	16
SYS4 ph LIMIT	fbAlarm[6]	17
SYS4 HI ORP	fbAlarm[6]	18
SYS4 LO ORP	fbAlarm[6]	19

SYS4 ORP LIMIT	fbAlarm[6]	20
SYS4 HI TEMP 1	fbAlarm[6]	21
SYS4 LO TEMP 1	fbAlarm[6]	22
SYS4 HI TEMP 2	fbAlarm[6]	23
SYS4 LO TEMP 2	fbAlarm[6]	24
SYS4 HI DELTA TEMP	fbAlarm[6]	25
SYS4 LO DELTA TEMP	fbAlarm[6]	26
SYS4 NO FLOW	fbAlarm[6]	27
SYS4 DIGITAL INPUT 1	fbAlarm[6]	28
SYS4 DIGITAL INPUT 2	fbAlarm[6]	29
SYS4 DIGITAL INPUT 3	fbAlarm[6]	30
SYS4 DIGITAL INPUT 4	fbAlarm[6]	31
SYS4 DIGITAL INPUT 5	fbAlarm[6]	32
SYS4 MCND	fbAlarm[6]	33
SYS4 HI MCND	fbAlarm[6]	34
SYS4 LO MCND	fbAlarm[6]	35
SYS4 MCND LIMIT	fbAlarm[6]	36
SYS4 NOTE 1 HI	fbAlarm[6]	37
SYS4 NOTE 2 HI	fbAlarm[6]	38
SYS4 NOTE 3 HI	fbAlarm[6]	39
SYS4 NOTE 4 HI	fbAlarm[6]	40
SYS4 NOTE 5 HI	fbAlarm[6]	41
SYS4 NOTE 6 HI	fbAlarm[6]	42
SYS4 NOTE 7 HI	fbAlarm[6]	43
SYS4 NOTE 8 HI	fbAlarm[6]	44
SYS4 NOTE 9 HI	fbAlarm[6]	45
SYS4 NOTE 10 HI	fbAlarm[6]	46
SYS4 NOTE 1 LO	fbAlarm[6]	47
SYS4 NOTE 2 LO	fbAlarm[6]	48
SYS4 NOTE 3 LO	fbAlarm[6]	49
SYS4 NOTE 4 LO	fbAlarm[6]	50
SYS4 NOTE 5 LO	fbAlarm[6]	51
SYS4 NOTE 6 LO	fbAlarm[6]	52
SYS4 NOTE 7 LO	fbAlarm[6]	53
SYS4 NOTE 8 LO	fbAlarm[6]	54
SYS4 NOTE 9 LO	fbAlarm[6]	55
SYS4 NOTE 10 LO	fbAlarm[6]	56
SYS4 NOTE 1 TIME	fbAlarm[6]	57
SYS4 NOTE 2 TIME	fbAlarm[6]	58
SYS4 NOTE 3 TIME	fbAlarm[6]	59
SYS4 NOTE 4 TIME	fbAlarm[6]	60
SYS4 NOTE 5 TIME	fbAlarm[6]	61
SYS4 NOTE 6 TIME	fbAlarm[6]	62
SYS4 NOTE 7 TIME	fbAlarm[6]	63
SYS4 NOTE 8 TIME	fbAlarm[7]	0
SYS4 NOTE 9 TIME	fbAlarm[7]	1

SYS4 NOTE 10 TIME	fbAlarm[7]	2
SYS4 pH2	fbAlarm[7]	3
SYS4 ORP2	fbAlarm[7]	4
MA IN1	fbAlarm[8]	0
MA IN1 HIGH	fbAlarm[8]	1
MA IN1 LOW	fbAlarm[8]	2
MA IN2	fbAlarm[8]	3
MA IN2 HIGH	fbAlarm[8]	4
MA IN2 LOW	fbAlarm[8]	5
MA IN3	fbAlarm[8]	6
MA IN3 HIGH	fbAlarm[8]	7
MA IN3 LOW	fbAlarm[8]	8
MA IN4	fbAlarm[8]	9
MA IN4 HIGH	fbAlarm[8]	10
MA IN4 LOW	fbAlarm[8]	11
MA IN5	fbAlarm[8]	12
MA IN5 HIGH	fbAlarm[8]	13
MA IN5 LOW	fbAlarm[8]	14
MA IN6	fbAlarm[8]	15
MA IN6 HIGH	fbAlarm[8]	16
MA IN6 LOW	fbAlarm[8]	17
MA IN7	fbAlarm[8]	18
MA IN7 HIGH	fbAlarm[8]	19
MA IN7 LOW	fbAlarm[8]	20
MA IN8	fbAlarm[8]	21
MA IN8 HIGH	fbAlarm[8]	22
MA IN8 LOW	fbAlarm[8]	23

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