

Modbus® RTU Serial Communications User Manual

Configuration Interface for DR4500

Supplement to 51-52-25-66

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Rev A

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Reference: Modicon Modbus Protocol Reference Guide - PI-MBUS-300 Rev. G

About This Document

Abstract

This document provides configuration information specific to Honeywell's DR4500 recorders and should be used in tandem with document number 51-52-25-66, Modbus® RTU Serial Communications User Manual.

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1. Overview of Modbus RTU Configuration Interface

This User Manual is intended to accompany the Modbus RTU Serial Communications User Manual (51-52-25-66). It describes the function codes needed to upload and download the configuration from a host computer into the DR4500 recorder.

Refer to document 51-52-25-66 (Modbus RTU Serial Communications User Manual) for general Modbus RTU message formatting and other information.

2. Modbus RTU Configuration Function Codes

The Modbus Read/Write general reference function codes (20 and 21) are used to access configuration information in the DR4500. Each message can be divided into a series of sub-messages, each of which provides access for one configuration item. Information other than the actual configuration value is available for each item by accessing register numbers 0 through F. Refer to Sections 2.2 and 2.3 for more detail concerning the structure of the query messages. The tables in Section 2.1 define the registers.

2.1 Register Definitions

2.1.1 Register Definitions - Integer Parameter (Type 1)

REG Num (hex)	Name	Access	Notes
0	Type = 1	RD	16 Bit Unsigned Integer
1	Attribute	RD	1= Read Only, 2=Read/Write
2	Configuration Value (int16)	RW	
3	0000	RW	
4	Low Range (int16)	RD	
5	0000	RD	
6	High Range (int16)	RD	
7	0000	RD	
8 to F	Description Text (ASCII string)	RD	8 characters

2.1.2 Register Definitions - Floating Point Parameter (Type 2)

REG Num (hex)	Name	Access	Notes
0	Type = 2	RD	IEEE Floating Point
1	Attribute	RD	1= Read Only, 2=Read/Write
2	Configuration Value (float high word)	RW	
3	Configuration Value (float low word)	RW	
4	Low Range (float high word)	RD	
5	Low Range (float low word)	RD	
6	High Range (float high word)	RD	
7	High Range (float low word)	RD	
8 to F	Description Text (ASCII string)	RD	8 characters

2.1.3 Register Definitions - Enumerated Parameters (Type 5)

REG Num (Dec)	Name	Access	Notes
0	Type = 5	RD	Enumerated value list type
1	Attribute	RD	1= Read Only, 2=Read/Write
2	Configuration Value (Int16)	RW	Current enumeration value
3	0000	RW	
4	Enumeration Low Limit	RD	Low limit of enumerated value
5	0000	RD	
6	Enumeration High Limit	RD	High limit of enumerated value
7	0000	RD	
8 to F	Description Text (ASCII string)	RD	8 characters

2.2 Function Code 20 (14h) - Read Multiple Configuration Values

Description

Reads multiple configuration records. Each record provides access to parameter type, access, value, high and low range limits, and the ASCII prompt for that configuration item as it appears on the DR4500 display.

Query

The query message is structured using sub-messages which define each configuration record along with the associated parameters desired to be read. The Reference type, included to be consistent with the General Modbus specification, is not used. Each sub-message begins with the reference type and is defined by a starting register and the number of registers to be read. Refer to tables in Sections 2.1.1, 2.1.2, and 2.1.3 for a definition of the registers.

ATTENTION

For reading values only, the starting address is 2 (0002h) and the number of registers to read is 2 (0002h).

Query message format for function code 20

Slave Address	Function Code (14h)	Byte Count	Ref Type (06)	Item # Hi	Item # Lo	Starting Address High	Start Address Low	Number Addresses High	Number Addresses Low
Ref Type (06)	Item # Hi	Item # Lo	Starting Address High	Start Address Low	Number Addresses High	Number Addresses Low	(etc)	crc	crc

Example: Read one configuration value starting at 1000 and 1 value starting at 1020:

```
02 15 0E 06 10 00 00 02 00 02 06 10 20 00 02 00 02 crc crc
```

Response

The response is a series of sub-messages, each corresponding the sub-request. There is a total overall byte count as well as a byte count for each sub-response.

Response message format for function code 20

Slave Address	Function Code	Overall byte count	Sub byte count	Ref type (06)	Reg Data Hi	Reg Data Lo	etc. Hi	etc. Lo	Sub byte count	Ref type (06)	Reg data Hi	Reg data Lo	etc	crc	crc
---------------	---------------	--------------------	----------------	---------------	-------------	-------------	---------	---------	----------------	---------------	-------------	-------------	-----	-----	-----

Example: Reads 1.00 at 1000 and 3.00 at 1020.

```
02 15 0C 05 06 3F 80 00 00 08 06 40 40 00 00 crc crc
```

ATTENTION

Chart title, Pen range tags, and Engineering Unit strings are not supported configuration values.

2.3 Function Code 21 (15h) - Write Multiple Configuration Values

Description

Writes multiple configuration values.

Query

The query message is structured using sub-messages which define each configuration record along with the associated value to be written. The Reference type, included to be consistent with the General Modbus specification, is not used. Each sub-message begins with the reference type and is defined by a starting register and the number of registers to be written followed by the data.

Query message format for function code 21

Slave Address	Function Code (14h)	Byte Count	Ref Type (06)	Item # Hi	Item # Lo	00	02	00	02
Data Hi	Data Lo	Data Hi	Data Lo	Another sub message				crc	crc

Example: Write 4 registers starting at 1000 (values 1 and 2) and 2 register starting at 1020 (value 100):

02 15 1A 06 00 00 10 00 00 04 3F 80 00 00 40 00 00 00 06 00 00 10 20 00 02 42 C8 00 00 crc crc

Response

The response is an echo of the query.

Response message format for function code 10h

Slave Address	Function Code	Overall byte count	Sub byte count	Reg Data Hi	Reg Data Lo	Reg Data Hi	Reg Data Lo	etc.	etc.	Sub byte count	Reg data hi	Reg data lo	etc	crc	crc
---------------	---------------	--------------------	----------------	-------------	-------------	-------------	-------------	------	------	----------------	-------------	-------------	-----	-----	-----

3. Configuration Values

3.1 Floating Point (Analog) Configuration Values

3.1.1 Input Floating Point Configuration Values

3.1.1.1 Input 1 Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Input 1 High Range	1000	4097	-999 to 9999	
Input 1 Low Range	1002	4099	-999 to 9999	
Input 1 Bias	1004	4101	-999 to 9999	
Filter 1 Value	1006	4103	0 to 120	
Input 4 Emissivity	1008	4105	.01 to 1.00	
Low Flow Cutoff	100A	4107	0 to 100	

3.1.1.2 Input 2 Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Input 2 High Range	10A0	4257	-999 to 9999	
Input 2 Low Range	10A2	4259	-999 to 9999	
Input 2 Bias	10A4	4261	-999 to 9999	
Filter 2 Value	10A6	4263	0 to 120	
Input 4 Emissivity	10A8	4265	.01 to 1.00	
Low Flow Cutoff	10AA	4267	0 to 100	

3.1.1.3 Input 3 Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Input 3 High Range	10AC	4269	-999 to 9999	
Input 3 Low Range	10AE	4271	-999 to 9999	
Input 3 Bias	10B0	4273	-999 to 9999	
Input 3 Filter	10B2	4275	0 to 120	
Input 4 Emissivity	10B4	4277	.01 to 1.00	
Low Flow Cutoff	10B6	4279	0 to 100	

3.1.1.4 Input 4 Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Input 4 High Range	10B8	4281	-999 to 9999	
Input 4 Low Range	10BA	4283	-999 to 9999	
Input 4 Bias	10BC	4285	-999 to 9999	
Input 4 Filter	10BE	4287	0 to 120	
Input 4 Emissivity	10C0	4289	.01 to 1.00	
Low Flow Cutoff	10C2	4291	0 to 100	

3.1.2 Pen Floating Point Configuration Values

3.1.2.1 Pen 1 Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Pen 1 High Limit	100C	4109	-999 to 9999	
Pen 1 Low Limit	100E	4111	-999 to 9999	
Pen 1 Event On Position	1010	4113	0 to 100	
Pen 1 Even Off Position	1012	4115	0 to 100	
Pen 1 Major Divisions	1014	4117	2 to 10	
Pen 1 Minor Divisions	1016	4119	2 to 10	

3.1.2.2 Pen 2 Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Pen 2 High Limit	1124	4389	-999 to 9999	
Pen 2 Low Limit	1126	4391	-999 to 9999	
Pen 2 Event On Position	1128	4393	0 to 100	
Pen 2 Event Off Position	112A	4395	0 to 100	
Pen 2 Major Divisions	112C	4397	2 to 10	
Pen 2 Minor Divisions	112E	4399	2 to 10	

3.1.2.3 Pen 3 Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Pen 2 High Limit	1130	4401	-999 to 9999	
Pen 3 Low Limit	1132	4403	-999 to 9999	
Pen 3 Event On Position	1134	4405	0 to 100	
Pen 3 Event Off Position	1136	4407	0 to 100	
Pen 3 Major Divisions	1138	4409	2 to 10	
Pen 3 Minor Divisions	113A	4411	2 to 10	

3.1.2.4 Pen 4 Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Pen 4 High Limit	113C	4413	-999 to 9999	
Pen 4 Low Limit	113E	4415	-999 to 9999	
Pen 4 Event On Position	1140	4417	0 to 100	
Pen 4 Event Off Position	1142	4419	0 to 100	
Pen 4 Major Divisions	1144	4421	2 to 10	
Pen 4 Minor Divisions	1146	4423	2 to 10	

3.1.3 Chart Floating Point Configuration Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Chart Speed (Hr/Rev)	1018	4121	6 to 744	
Number of Chart Divisions	101A	4123	8 to 24	

3.1.4 Input Algorithm Point Configuration Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Math Coefficient	114C	4173	0.000 to 1000	
Math High PV	114E	4431	-999 to 9999	
Math Low PV	1150	4433	-999 to 9999	
Math Input 1 Ratio	1152	4435	-20 to 20	
Math Input 1 Bias	1154	4437	-999 to 9999	
Math Input 2 Ratio	1156	4439	-20 to 20	
Math Input 2 Bias	1158	4441	-999 to 9999	
Math Input 3 Ratio	115A	4443	-20 to 20	
Math Input 3 Bias	115C	4445	-999 to 9999	
Polynomial C0 Value	115E	4447	-99.99 to 99.99	
Polynomial C1 Value	1160	4449	-9.99 to 99.99	
Polynomial C2 Value	1162	4451	-9.99 to 99.99	
Polynomial C3 Value	1164	4453	-9.99 to 99.99	
Polynomial C4 Value	1166	4455	-9.99 to 99.99	
Polynomial C5 Value	1168	4457	-9.99 to 99.99	

3.1.5 Control Floating Point Configuration Values

3.1.5.1 Control 1 Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Local SP 1	1030	4145	within SP HI/LO limits	
Local SP 2	1032	4147	within SP HI/LO limits	
SP High Limit	1034	4149	-999 to 9999	
SP Low Limit	1036	4151	-999 to 9999	
High Output Limit	1038	4153	-5 to 105	
Low Output Limit	103A	4155	-5 to 106	
Output Deadband	103C	4157	-5 to 25	
Output Hysteresis	103E	4159	0 to 5	
Failsafe Output	1040	4161	0 to 100	
PV Switch Value	1042	4163	-999 to 9999	
Remote SP Ratio	1044	4165	-20 to 20	
Remote SP Bias	1046	4167	-999 to 9999	
Dropoff	1048	4169	-5 to 105	

3.1.5.2 Control 2 Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Local SP 1	10D6	4311	within SP HI/LO limits	
Local SP 2	10D8	4313	within SP HI/LO limits	
SP High Limit	10DA	4315	-999 to 9999	
SP Low Limit	10DC	4317	-999 to 9999	
High Output Limit	10DE	4319	-5 to 105	
Low Output Limit	10E0	4321	-5 to 106	
Output Deadband	10E2	4325	0 to 5	
Relay Hysteresis	10E4	4327	0 to 100	
Failsafe Output	10E6	4323	-5 to 25	
PV Switch Value	10E8	4329	-999 to 9999	
Remote SP 2 Ratio	10EA	4331	-20 to 20	
Remote SP 2 Bias	10EC	4333	-999 to 9999	
Dropoff	10EE	4335	-5 to 105	

3.1.6 Tuning Floating Point Configuration Values

3.1.6.1 Tuning 1 Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Heat Gain/PB 1	101E	4127	.1 to 1000	
Heat Rate 1	1020	4129	0 to 10	
Heat Reset/RPM 1	1022	4131	.02 to 50	
Manual Reset	1024	4133	-100 to 100	
Cycle Time 1 (Heat)	1026	4135	1 to 120	
Cool Gain/PB 2	1028	4137	.1 to 1000	
Cool Rate 2	102A	4139	0 to 10	
Cool Reset/RPM 2	102C	4141	.02 to 50	
Cycle Time 2 (Cool)	102E	4143	1 to 120	

3.1.6.2 Tuning 2 Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Heat Gain/PB 1	10C4	4293	.1 to 1000	
Heat Rate 1	10C6	4295	0 to 10	
Heat Reset/RPM 1	10C8	4297	.02 to 50	
Manual Reset	10CA	4299	-100 to 100	
Loop 2 Cycle Time 1	10CC	4301	1 to 120	
Cool Gain/PB 2	10CE	4303	.1 to 1000	
Cool Rate 2	10D0	4305	0 to 10	
Cool Reset/RPM 2	10D2	4307	.02 to 50	
Loop 2 Cycle Time 2	10D4	4309	1 to 120	

3.1.7 SP Ramp/Rate/Program Floating Point Configuration Values

3.1.7.1 SP Ramp/Rate/Program 1 Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Ramp Time	1056	4183	0 to 255	
Ramp Final SP	1058	4185	within SP HI/LO limits	
SP Rate Up Limit Value	105A	4187	0 to 9999	
SP Rate Down Limit Value	105C	4189	0 to 9999	
SPP Recycles	1060	4193	0 to 99	
SPP Soak Deviation	1062	4195	0.0 to 99	
Profile	105E	4191	1 to 6	

3.1.7.2 SP Ramp/Rate/Program 2 Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Ramp Time	10F2	4339	0 to 255	
Ramp Final SP	10F4	4341	within SP HI/LO limits	
SP Rate Up Limit Value	10F6	4343	0 to 9999	
SP Rate Down Limit Value	10F8	4345	0 to 9999	
SPP Recycles	10FC	4349	0 to 99	
SPP Soak Deviation	10FE	4351	0 to 100	
Profile	10FA	4347	1 to 6	

3.1.7.3 Setpoint Program Segment Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
SPP Segment 1 Ramp Time	1064	4197	0.0 to 99.59	Any decimal number accepted (e.g., 10.87 = 10 hours, 87 minutes)
SPP Segment 2 Soak SP	1066	4199	within SP HI/LO limits	
SPP Segment 2 Soak Time	1068	4201	0.0 to 99.59	Any decimal number accepted (e.g., 10.87 = 10 hours, 87 minutes)
SPP Segment 3 Ramp Time	106A	4203	0.0 to 99.59	Any decimal number accepted (e.g., 10.87 = 10hrs, 87 minutes)
SPP Segment 4 Soak SP	106C	4205	within SP HI/LO limits	
SPP Segment 4 Soak Time	106E	4207	0.0 to 99.59	Any decimal number accepted (e.g., 10.87 = 10 hours, 87 minutes)
SPP Segment 5 Ramp Time	1070	4209	0.0 to 99.59	Any decimal number accepted (e.g., 10.87 = 10 hours, 87 minutes)
SPP Segment 6 Soak SP	1072	4211	within SP hi/lo limits	
SPP Segment 6 Soak Time	1074	4213	0.0 to 99.59	Any decimal number accepted (e.g., 10.87 = 10 hours, 87 minutes)
SPP Segment 7 Ramp Time	1076	4215	0.0 to 99.59	Any decimal number accepted (e.g., 10.87 = 10 hours, 87 minutes)
SPP Segment 8 Soak SP	1078	4217	within SP HI/LO limits	
SPP Segment 8 Soak Time	107A	4219	0.0 to 99.59	Any decimal number accepted (e.g., 10.87 = 10 hours, 87 minutes)
SPP Segment 9 Ramp Time	107C	4221	0.0 to 99.59	Any decimal number accepted (e.g., 10.87 = 10 hours, 87 minutes)
SPP Segment 10 Soak SP	107E	4223	within SP HI/LO limits	
SPP Segment 10 Soak Time	1080	4225	0.0 to 99.59	Any decimal number accepted (e.g., 10.87 = 10 hours, 87 minutes)
SPP Segment 11 Ramp Time	1082	4227	0.0 to 99.59	Any decimal number accepted (e.g., 10.87 = 10 hours, 87 minutes)

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
SPP Segment 12 Soak SP	1084	4229	within SP HI/LO limits	
SPP Segment 12 Soak Time	1086	4231	0.0 to 99.59	Any decimal number accepted (e.g., 10.87 = 10 hours, 87 minutes)
SPP Segment 13 Ramp Time	1100	4353	0.0 to 99.59	Any decimal number accepted (e.g., 10.87 = 10 hours, 87 minutes)
SPP Segment 14 Soak SP	1102	4355	within SP HI/LO limits	
SPP Segment 14 Soak Time	1104	4357	0.0 to 99.59	Any decimal number accepted (e.g., 10.87 = 10 hours, 87 minutes)
SPP Segment 15 Ramp Time	1106	4359	0.0 to 99.59	Any decimal number accepted (e.g., 10.87 = 10 hours, 87 minutes)
SPP Segment 16 Soak SP	1108	4361	within SP HI/LO limits	
SPP Segment 16 Soak Time	110A	4363	0.0 to 99.59	Any decimal number accepted (e.g., 10.87 = 10 hours, 87 minutes)
SPP Segment 17 Ramp Time	110C	4365	0.0 to 99.59	Any decimal number accepted (e.g., 10.87 = 10 hours, 87 minutes)
SPP Segment 18 Soak SP	110E	4367	within SP HI/LO limits	
SPP Segment 18 Soak Time	1110	4369	0.0 to 99.59	Any decimal number accepted (e.g., 10.87 = 10 hours, 87 minutes)
SPP Segment 19 Ramp Time	1112	4371	0.0 to 99.59	Any decimal number accepted (e.g., 10.87 = 10 hours, 87 minutes)
SPP Segment 20 Soak SP	1114	4373	within SP HI/LO limits	
SPP Segment 20 Soak Time	1116	4375	0.0 to 99.59	Any decimal number accepted (e.g., 10.87 = 10 hours, 87 minutes)
SPP Segment 21 Ramp Time	1118	4377	0.0 to 99.59	Any decimal number accepted (e.g., 10.87 = 10 hours, 87 minutes)
SPP Segment 22 Soak SP	111A	4379	within SP HI/LO limits	
SPP Segment 22 Soak Time	111C	4381	0.0 to 99.59	Any decimal number accepted (e.g., 10.87 = 10 hours, 87 minutes)
SPP Segment 23 Ramp Time	111E	4383	0.0 to 99.59	Any decimal number accepted (e.g., 10.87 = 10 hours, 87 minutes)
SPP Segment 24 Soak SP	1120	4385	within SP HI/LO limits	
SPP Segment 24 Soak Time	1122	4387	0.0 to 99.59	Any decimal number accepted (e.g., 10.87 = 10 hours, 87 minutes)
SPP Segment 25 Ramp Time	11B0	4529	0.0 to 99.59	Any decimal number accepted (e.g., 10.87 = 10 hours, 87 minutes)
SPP Segment 26 Soak SP	11B2	4531	within SP HI/LO limits	
SPP Segment 26 Soak Time	11B4	4533	0.0 to 99.59	Any decimal number accepted (e.g., 10.87 = 10 hours, 87 minutes)
SPP Segment 27 Ramp Time	11B6	4535	0.0 to 99.59	Any decimal number accepted (e.g., 10.87 = 10 hours, 87 minutes)

Configuration Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
SPP Segment 28 Soak SP	11B8	4537	within SP HI/LO limits	
SPP Segment 28 Soak Time	11BA	4539	0.0 to 99.59	Any decimal number accepted (e.g., 10.87 = 10 hours, 87 minutes)
SPP Segment 29 Ramp Time	11BC	4541	0.0 to 99.59	Any decimal number accepted (e.g., 10.87 = 10 hours, 87 minutes)
SPP Segment 30 Soak SP	11BE	4543	within SP HI/LO limits	
SPP Segment 30 Soak Time	11C0	4545	0.0 to 99.59	Any decimal number accepted (e.g., 10.87 = 10 hours, 87 minutes)
SPP Segment 31 Ramp Time	11C2	4547	0.0 to 99.59	Any decimal number accepted (e.g., 10.87 = 10 hours, 87 minutes)
SPP Segment 32 Soak SP	11C4	4549	within SP HI/LO limits	
SPP Segment 32 Soak Time	11C6	4551	0.0 to 99.59	Any decimal number accepted (e.g., 10.87 = 10 hours, 87 minutes)
SPP Segment 33 Ramp Time	11C8	4553	0.0 to 99.59	Any decimal number accepted (e.g., 10.87 = 10 hours, 87 minutes)
SPP Segment 34 Soak SP	11CA	4555	within SP HI/LO limits	
SPP Segment 34 Soak Time	11CC	4557	0.0 to 99.59	Any decimal number accepted (e.g., 10.87 = 10 hours, 87 minutes)
SPP Segment 35 Ramp Time	11CE	4559	0.0 to 99.59	Any decimal number accepted (e.g., 10.87 = 10 hours, 87 minutes)
SPP Segment 36 Soak SP	11D0	4561	within SP HI/LO limits	
SPP Segment 36 Soak Time	11D2	4563	0.0 to 99.59	Any decimal number accepted (e.g., 10.87 = 10 hours, 87 minutes)

3.1.8 Timer Floating Point Configuration Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Period	1094	4245	0.00 to 99.59	

3.1.9 Alarms 1 to 6 Floating Point Configuration Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Alarm 1 SP 1	104C	4173	-999 to 9999	
Alarm 1 SP 2	104E	4175	-999 to 9999	
Alarm 2 SP 1	1050	4177	-999 to 9999	
Alarm 2 SP 2	1052	4179	-999 to 9999	
Alarm 3 SP 1	1192	4499	-999 to 9999	
Alarm 3 SP 2	1194	4501	-999 to 9999	
Alarm 4 SP 1	1196	4503	-999 to 9999	
Alarm 4 SP 2	1198	4505	-999 to 9999	
Alarm 5 SP 1	119A	4507	-999 to 9999	
Alarm 5 SP 2	119C	4509	-999 to 9999	
Alarm 6 SP 1	119E	4511	-999 to 9999	
Alarm 6 SP 2	11A0	4513	-999 to 9999	
Alarm 1 Hysteresis	11A2	4515	0 to 100	
Alarm 2 Hysteresis	11A4	4517	0 to 100	
Alarm 3 Hysteresis	11A6	4519	0 to 100	
Alarm 4 Hysteresis	11A8	4521	0 to 100	
Alarm 5 Hysteresis	11AA	4523	0 to 100	
Alarm 6 Hysteresis	11AC	4525	0 to 100	

3.1.10 Auxiliary Output Floating Point Configuration Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Aux. OUT Scale Low	1088	4233	depends on Auxiliary Source limits	
Aux. OUT Scale High	108A	4235	depends on Auxiliary Source limits	
Aux. OUT 2 Scale Low	108C	4237	same as above	
Aux. OUT 2 Scale High	103E	4239	same as above	
Aux. OUT 3 Scale Low	1090	4241	same as above	
Aux. OUT 3 Scale High	1092	4243	same as above	

3.1.11 Options Floating Point Configuration Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Atmospheric Pressure	1148	4425	590 to 800	
Deviation Setpoint	114A	4427	-999 to 9999	

3.1.12 Event Message Floating Point Configuration Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Event Message 1 Position	1170	4465	0 to 100	
Event Message 2 Position	1172	4467	0 to 100	
Event Message 3 Position	1174	4469	0 to 100	
Event Message 4 Position	1176	4471	0 to 100	
Event Message 5 Position	1178	4473	0 to 100	
Event Message 6 Position	117A	4475	0 to 100	

3.2 Enumerated (Digital) Configuration Values

3.2.1 Input Enumerated Configuration Values

3.2.1.1 Input 1 Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Input 1	1800	6145	0 - Disable 1 - Enable	
Input 1 Decimal Point	1801	6146	0 - None 1 - One 2 - Two 3 - Three	
Input 1 Engineering Units	1802	6147	0 - Degrees F 1 - Degrees C 2 - None	
Input 1 Actuation	1803	6148	0 - B Thermocouple 1 - E Thermocouple 2 - E Thermocouple low 3 - J Thermocouple 4 - J Thermocouple low 5 - K Thermocouple 6 - K Thermocouple low 7 - NNM Thermocouple 8 - NIC Thermocouple 9 - R Thermocouple 10 - S Thermocouple 11 - T Thermocouple 12 - T Thermocouple low 13 - W Thermocouple 14 - W Thermocouple low 15 - 100 ohm RTD 16 - 500 ohm RTD 17 - 100 ohm RH 18 - 4-20 mA 19 - 0-10 mV 20 - 10-50 mV 21 - 0-5V 22 - 0-10V 23 - Radiamatic	For Model DR45AR only: 0 - E Thermocouple 1 - E Thermocouple low 2 - J Thermocouple 3 - J Thermocouple low 4 - K Thermocouple 5 - K Thermocouple low 6 - S Thermocouple 7 - T Thermocouple 8 - T Thermocouple low 9 - 100 ohm RTD 10 - 200 ohm RTD Hi 11 - 200 ohm RTD Lo 12 - 500 ohm RTD 13 - 100 ohm RH 14 - 4-20 mA 15 - 0-10 mV 16 - 10-50 mV 17 - 0-5V 18 - 0-10V 19 - Radiamatic

Configuration Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Input 1 Transmitter Type	1804	6149	0 - B Thermocouple 1 - E Thermocouple 2 - E Thermocouple low 3 - J Thermocouple 4 - J Thermocouple low 5 - K Thermocouple 6 - K Thermocouple low 7 - NNM Thermocouple 8 - NIC Thermocouple 9 - R Thermocouple 10 - S Thermocouple 11 - T Thermocouple 12 - T Thermocouple low 13 - W Thermocouple 14 - W Thermocouple low 15 - 100 ohm RTD 16 - 500 ohm RTD 17 - 100 ohm RH 18 - Linear 19 - Square Root	<i>For Model DR45AR only:</i> 0 - E Thermocouple 1 - E Thermocouple low 2 - J Thermocouple 3 - J Thermocouple low 4 - K Thermocouple 5 - K Thermocouple low 6 - S Thermocouple 7 - T Thermocouple 8 - T Thermocouple low 9 - 100 ohm RTD 10 - 200 ohm RTD Hi 11 - 200 ohm RTD Lo 12 - 500 ohm RTD 13 - 100 ohm RH 14 - Linear 15 - Square Root
Input 1 Burnout	1805	6150	0 - None 1 - Up 2 - Down	

3.2.1.2 Input 2 Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Input 2 Enable	1870	6257	0 - Disable 1 - Enable	
Input 2 Decimal Point	1871	6258	0 - None 1 - One 2 - Two 3 - Three	
Input 2 Engineering Units	1872	6259	0 - Degrees F 1 - Degrees C 2 - None	

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Input 2 Actuation	1873	6260	0 - B Thermocouple 1 - E Thermocouple 2 - E Thermocouple low 3 - J Thermocouple 4 - J Thermocouple low 5 - K Thermocouple 6 - K Thermocouple low 7 - NNM Thermocouple 8 - NIC Thermocouple 9 - R Thermocouple 10 - S Thermocouple 11 - T Thermocouple 12 - T Thermocouple low 13 - W Thermocouple 14 - W Thermocouple low 15 - 100 ohm RTD 16 - 500 ohm RTD 17 - 100 ohm RH 18 - 4-20 mA 19 - 0-10 mV 20 - 10-50 mV 21 - 0-5V 22 - 0-10V 23 - Radiamatic	<i>For Model DR45AR only:</i> 0 - E Thermocouple 1 - E Thermocouple low 2 - J Thermocouple 3 - J Thermocouple low 4 - K Thermocouple 5 - K Thermocouple low 6 - S Thermocouple 7 - T Thermocouple 8 - T Thermocouple low 9 - 100 ohm RTD 10 - 200 ohm RTD Hi 11 - 200 ohm RTD Lo 12 - 500 ohm RTD 13 - 100 ohm RH 14 - 4-20 mA 15 - 0-10 mV 16 - 10-50 mV 17 - 0-5V 18 - 0-10V 19 - Radiamatic
Input 2 Transmitter Type	1874	6261	0 - B Thermocouple 1 - E Thermocouple 2 - E Thermocouple low 3 - J Thermocouple 4 - J Thermocouple low 5 - K Thermocouple 6 - K Thermocouple low 7 - NNM Thermocouple 8 - NIC Thermocouple 9 - R Thermocouple 10 - S Thermocouple 11 - T Thermocouple 12 - T Thermocouple low 13 - W Thermocouple 14 - W Thermocouple low 15 - 100 ohm RTD 16 - 500 ohm RTD 17 - 100 ohm RH 18 - Linear 19 - Square Root	<i>For Model DR45AR only:</i> 0 - E Thermocouple 1 - E Thermocouple low 2 - J Thermocouple 3 - J Thermocouple low 4 - K Thermocouple 5 - K Thermocouple low 6 - S Thermocouple 7 - T Thermocouple 8 - T Thermocouple low 9 - 100 ohm RTD 10 - 200 ohm RTD Hi 11 - 200 ohm RTD Lo 12 - 500 ohm RTD 13 - 100 ohm RH 14 - Linear 15 - Square Root
Input 2 Burnout	1875	6262	0 - None 1 - Up 2 - Down	

3.2.1.3 Input 3 Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Input 3 Enable	1878	6265	0 - Disable 1 - Enable	
Input 3 Decimal Point	1879	6266	0 - None 1 - One 2 - Two 3 - Three	
Input 3 Engineering Units	187A	6267	0 - Degrees F 1 - Degrees C 2 - None	
Input 3 Actuation	187B	6268	0 - B Thermocouple 1 - E Thermocouple 2 - E Thermocouple low 3 - J Thermocouple 4 - J Thermocouple low 5 - K Thermocouple 6 - K Thermocouple low 7 - NNM Thermocouple 8 - NIC Thermocouple 9 - R Thermocouple 10 - S Thermocouple 11 - T Thermocouple 12 - T Thermocouple low 13 - W Thermocouple 14 - W Thermocouple low 15 - 100 ohm RTD 16 - 500 ohm RTD 17 - 100 ohm RH 18 - 4-20 mA 19 - 0-10 mV 20 - 10-50 mV 21 - 0-5V 22 - 0-10V 23 - Radiamatic	<i>For Model DR45AR only:</i> 0 - E Thermocouple 1 - E Thermocouple low 2 - J Thermocouple 3 - J Thermocouple low 4 - K Thermocouple 5 - K Thermocouple low 6 - S Thermocouple 7 - T Thermocouple 8 - T Thermocouple low 9 - 100 ohm RTD 10 - 200 ohm RTD Hi 11 - 200 ohm RTD Lo 12 - 500 ohm RTD 13 - 100 ohm RH 14 - 4-20 mA 15 - 0-10 mV 16 - 10-50 mV 17 - 0-5V 18 - 0-10V 19 - Radiamatic

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Input 3 Transmitter Type	187C	6269	0 - B Thermocouple 1 - E Thermocouple 2 - E Thermocouple low 3 - J Thermocouple 4 - J Thermocouple low 5 - K Thermocouple 6 - K Thermocouple low 7 - NNM Thermocouple 8 - NIC Thermocouple 9 - R Thermocouple 10 - S Thermocouple 11 - T Thermocouple 12 - T Thermocouple low 13 - W Thermocouple 14 - W Thermocouple low 15 - 100 ohm RTD 16 - 500 ohm RTD 17 - 100 ohm RH 18 - Linear 19 - Square Root	<i>For Model DR45AR only:</i> 0 - E Thermocouple 1 - E Thermocouple low 2 - J Thermocouple 3 - J Thermocouple low 4 - K Thermocouple 5 - K Thermocouple low 6 - S Thermocouple 7 - T Thermocouple 8 - T Thermocouple low 9 - 100 ohm RTD 10 - 200 ohm RTD Hi 11 - 200 ohm RTD Lo 12 - 500 ohm RTD 13 - 100 ohm RH 14 - Linear 15 - Square Root
Input 3 Burnout	187D	6270	0 - None 1 - Up 2 - Down	

3.2.1.4 Input 4 Enumerated Configuration Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Input 4 Enable	1880	6273	0 - Disable 1 - Enable	
Input 4 Decimal Point	1881	6274	0 - None 1 - One 2 - Two 3 - Three	
Input 4 Engineering Units	1882	6275	0 - Degrees F 1 - Degrees C 2 - None	

Configuration Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Input 4 Actuation	1883	6276	0 - B Thermocouple 1 - E Thermocouple 2 - E Thermocouple low 3 - J Thermocouple 4 - J Thermocouple low 5 - K Thermocouple 6 - K Thermocouple low 7 - NNM Thermocouple 8 - NIC Thermocouple 9 - R Thermocouple 10 - S Thermocouple 11 - T Thermocouple 12 - T Thermocouple low 13 - W Thermocouple 14 - W Thermocouple low 15 - 100 ohm RTD 16 - 500 ohm RTD 17 - 100 ohm RH 18 - 4-20 mA 19 - 0-10 mV 20 - 10-50 mV 21 - 0-5V 22 - 0-10V 23 - Radiamatic	<i>For Model DR45AR only:</i> 0 - E Thermocouple 1 - E Thermocouple low 2 - J Thermocouple 3 - J Thermocouple low 4 - K Thermocouple 5 - K Thermocouple low 6 - S Thermocouple 7 - T Thermocouple 8 - T Thermocouple low 9 - 100 ohm RTD 10 - 200 ohm RTD Hi 11 - 200 ohm RTD Lo 12 - 500 ohm RTD 13 - 100 ohm RH 14 - 4-20 mA 15 - 0-10 mV 16 - 10-50 mV 17 - 0-5V 18 - 0-10V 19 - Radiamatic
Input 4 Transmitter Type	1884	6277	0 - B Thermocouple 1 - E Thermocouple 2 - E Thermocouple low 3 - J Thermocouple 4 - J Thermocouple low 5 - K Thermocouple 6 - K Thermocouple low 7 - NNM Thermocouple 8 - NIC Thermocouple 9 - R Thermocouple 10 - S Thermocouple 11 - T Thermocouple 12 - T Thermocouple low 13 - W Thermocouple 14 - W Thermocouple low 15 - 100 ohm RTD 16 - 500 ohm RTD 17 - 100 ohm RH 18 - Linear 19 - Square Root	<i>For Model DR45AR only:</i> 0 - E Thermocouple 1 - E Thermocouple low 2 - J Thermocouple 3 - J Thermocouple low 4 - K Thermocouple 5 - K Thermocouple low 6 - S Thermocouple 7 - T Thermocouple 8 - T Thermocouple low 9 - 100 ohm RTD 10 - 200 ohm RTD Hi 11 - 200 ohm RTD Lo 12 - 500 ohm RTD 13 - 100 ohm RH 14 - Linear 15 - Square Root
Input 4 Burnout	1885	6278	0 - None 1 - Up 2 - Down	

3.2.2 Pen Enumerated Configuration Values

3.2.2.1 Pen 1 Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Pen 1 Enable	1808	6153	0 - Disable 1 - Enable	
Pen 1 Source	1809	6154	0 - Input 1 1 - RH 2 - Output 1 3 - Output 2 4 - Setpoint 1 5 - Setpoint 2 6 - Digital Input 1 7 - Digital Input 2 8 - Input 1 9 - Input 2 10 - Input 3 11 - Input 4 12 - Sterilization 13 - PV1	

3.2.2.2 Pen 2 Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Pen 2 Enable	1869	6250	0 - Disable 1 - Enable	
Pen 2 Source	186A	6251	0 - Input 2 1 - RH 2 - Output 1 3 - Output 2 4 - Setpoint 1 5 - Setpoint 2 6 - Digital Input 1 7 - Digital Input 2 8 - Input 1 9 - Input 2 10 - Input 3 11 - Input 4 12 - Sterilization 13 - PV1	

3.2.2.3 Pen 3 Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Pen 3 Enable	186B	6252	0 - Disable 1 - Enable	
Pen 3 Source	186C	6253	0 - Input 3 1 - RH 2 - Output 1 3 - Output 2 4 - Setpoint 1 5 - Setpoint 2 6 - Digital Input 1 7 - Digital Input 2 8 - Input 1 9 - Input 2 10 - Input 3 11 - Input 4 12 - Sterilization 13 - PV1	

3.2.2.4 Pen 4 Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Pen 4 Enable	186D	6254	0 - Disable 1 - Enable	
Pen 4 Source	186E	6255	0 - Input 4 1 - RH 2 - Output 1 3 - Output 2 4 - Setpoint 1 5 - Setpoint 2 6 - Digital Input 1 7 - Digital Input 2 8 - Input 1 9 - Input 2 10 - Input 3 11 - Input 4 12 - Sterilization 13 - PV1	

3.2.3 Chart Enumerated Configuration Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Chart Speed Selection	180A	6155	0 - 8hr 1 - 12hr 2 - 24hr 3 - 7day 4 - Xhr	
Minor Chart Divisions	180B	6156	0 - 4 divisions 1 - 8 divisions	
Chart Continue	180C	6157	0 - NO 1 - YES	
Chart Header	180D	6158	0 - NO 1 - YES	
Remote Chart	180E	6159	0 - None 1 - External SW1 2 - External SW2 3 - Alarm 1 4 - Alarm 2 5 - Time 6 - Alarm 3 7 - Alarm 4 8 - Alarm 5 9 - Alarm 6	

3.2.4 Time Enumerated Configuration Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Hours/Minutes	184B	6220	0-23, 0-59	Packed BCD format (e.g., 1505 = 15 hours, 5 minutes)
Month/Day	184C	6221	1-12, 1-31	Packed BCD format (e.g., 0318 = March 18)
Weekday/Year	184D	6222	0-6, 0-99	Packed BCD format (e.g., 0398 = Wednesday, 98)
Wake Hours/Minutes	184E	6223	0-23, 0-59	Packed BCD format (e.g., 1505 = 15 hours, 5 minutes)
Wake Month/Day	184F	6224	1-12, 1-31	Packed BCD format (e.g., 0318 = March 18)

3.2.5 Totalizer Enumerated Configuration Values

3.2.5.1 Totalizer 1 Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Totalizer Enable	1837	6200	0 - Disable 1 - Input 1 2 - Input 2 3 - Input 3 4 - Input 4 5 - PV1 6 - ETime	
Totalizer Integration Rate	1838	6201	0 - Second 1 - Minute 2 - Hour 3 - Day 4 - Million/Day	
Totalizer Scale Factor	1839	6202	0 - 1 1 - 10 2 - 100 3 - 1000 4 - 1E4 5 - 1E5 6 - 1E6	
Totalizer Reset	183A	6203	0 - None 1 - Keyboard 2 - External SW1 3 - External SW2 4 - Time	
Totalizer Inhibit	183B	6204	0 - None 1 - External SW1 Open 2 - External SW1 Closed 3 - External SW2 Open 4 - External SW2 Closed	

3.2.5.2 Totalizer 2 Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Totalizer 2 Enable	1889	6282	0 - Disable 1 - Input 1 2 - Input 2 3 - Input 3 4 - Input 4 5 - PV1 6 - ETime	
Totalizer 2 Integration Rate	188A	6283	0 - Second 1 - Minute 2 - Hour 3 - Day 4 - Million/Day	
Totalizer 2 Scale Factor	188B	6284	0 - 1 1 - 10 2 - 100 3 - 1000 4 - 1E4 5 - 1E5 6 - 1E6	
Totalizer Reset Lockout	188C	6285	0 - None 1 - Keyboard 2 - External SW1 3 - External SW2 4 - Time	
Totalizer Inhibit	188D	6286	0 - None 1 - External SW1 Open 2 - External SW1 Closed 3 - External SW2 Open 4 - External SW2 Closed	

3.2.5.3 Totalizer 3 Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Totalizer 3 Enable	18B2	6323	0 - Disable 1 - Enable	Input 3 only
Totalizer 3 Integration Rate	18B3	6324	0 - Second 1 - Minute 2 - Hour 3 - Day 4 - Million/Day	
Totalizer 3 Scale Factor	18B4	6325	0 - 1 1 - 10 2 - 100 3 - 1000 4 - 1E4 5 - 1E5 6 - 1E6	
Totalizer 3 Reset Lockout	18B5	6326	0 - None 1 - Keyboard 2 - External SW1 3 - External SW2	

3.2.5.4 Totalizer 4 Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Totalizer 4 Enable	18B7	6328	0 - Disable 1 - Enable	Input 4 only
Totalizer 4 Integration Rate	18B8	6329	0 - Second 1 - Minute 2 - Hour 3 - Day 4 - Million/Day	
Totalizer 4 Scale Factor	18B9	6330	0 - 1 1 - 10 2 - 100 3 - 1000 4 - 1E4 5 - 1E5 6 - 1E6	
Totalizer 4 Reset Lockout	18BA	6331	0 - None 1 - Keyboard 2 - External SW1 3 - External SW2	

3.2.6 Input Algorithm Enumerated Configuration Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Input Algorithm	1894	6293	0 - None 1 - A+B+C 2 - Square Root A*B/C 3 - Square Root A*B*C 4 - A*B/C 5 - A*B*C 6 - A-B*C 7 - Hi Select 8 - Lo Select	
Polynomial	1896	6295	0 - Disable 1 - Input 1 2 - Input 2 3 - Input 3 4 - Input 4	

3.2.7 Control Enumerated Configuration Values

3.2.7.1 Control 1 Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Control 1 Enable	1810	6161	0 - Disable 1 - Enable	
Control Algorithm Selection	1811	6162	0 - On-Off 1 - PID A 2 - PID B 3 - PD + MR 4 - Three Position Step	
Output Algorithm	1812	6163	0 - Time 1 - Current 2 - Position 3 - Time Duplex 4 - Current/Time 5 - Time/Current	
SP Source	1813	6164	0 - 1 Local 1 - 2 Local 2 - Remote 3 - Output 2	
PID Set Selection	1814	6165	0 - 1 Only 1 - 2 Keyboard SW 2 - PV SW 3 - SP SW	
LSP/RSP Tracking	1815	6166	0 - None 1 - RSP	
Power Up Mode	1816	6167	0 - Manual 1 - Auto LSP 2 - Auto RSP 3 - Last mode Last SP 4 - Last mode Last LSP	
Control Output Direction	1817	6168	0 - Direct 1 - Reverse	
Manual Mode Key Enable	1818	6169	0 - Disable 1 - Enable	
Gain/PB Selection	1819	6170	0 - Gain 1 - PB	
Min/RPM Selection	181A	6171	0 - Minutes per repeat 1 - Repeats per minute	
TPSC Failsafe	181B	6172	0 - 0 % 1 - 100 %	
TPSC Power Up Output Selection	181C	6173	0 - Last 1 - Failsafe	
Current Duplex 4-20 Range Algorithm	181D	6174	0 - 100 % 1 - 50 %	

3.2.7.2 Control 2 Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Control 2 Enable	1850	6225	0 - Disable 1 - Enable	
Control Algorithm Selection	1851	6226	0 - On-Off 1 - PID A 2 - PID B 3 - PD + MR 4 - Three Position Step	
Output Algorithm	1852	6227	0 - Time 1 - Current 2 - Position 3 - Time Duplex 4 - Current/Time 5 - Time/Current	
SP Source	1853	6228	0 - 1 Local 1 - 2 Local 2 - Remote	
Control 2 Enable	1850	6225	0 - Disable 1 - Enable	
PID Set Selection	1854	6229	0 - 1 Only 1 - 2 Keyboard SW 2 - PV SW 3 - SP SW	
LSP/RSP Tracking	1855	6230	0 - None 1 - RSP	
Power Up Mode	1856	6231	0 - Manual 1 - Auto LSP 2 - Auto RSP 3 - Last mode Last SP 4 - Last mode Last LSP	
Control Output Direction	1857	6232	0 - Direct 1 - Reverse	
Manual Mode Key Enable	1858	6233	0 - Disable 1 - Enable	
Gain/PB Selection	1859	6234	0 - Gain 1 - PB	
Min/RPM Selection	185A	6235	0 - Minutes per repeat 1 - Repeats per minute	
TPSC Failsafe	185B	6236	0 - 0 % 1 - 100 %	
TPSC Power Up Output Selection	185C	6237	0 - Last 1 - Failsafe	
Current Duplex 4-20 Range Algorithm	185D	6238	0 - 100 % 1 - 50 %	

3.2.8 External Switch Enumerated Configuration Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Digital Input 1	183E	6207	0 - None 1 - To Manual Mode 2 - To LSP 3 - To LSP2 4 - To Direct Action 5 - Run/Hold 6 - Tune 7 - FO Reset	
Digital Input 2	183F	6208	0 - None 1 - To Manual Mode 2 - To LSP 3 - To LSP2 4 - To Direct Action 5 - Run/Hold 6 - Tune 7 - FO Reset	

3.2.9 Tuning Enumerated Configuration Values

3.2.9.1 Tuning 1 Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Fuzzy Setpoint Suppression	18F0	6385	0 - Disable 1 - Enable	
Accutune II	18F1	6386	0 - Disable 1 - Enable	

3.2.9.2 Tuning 2 Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Fuzzy Setpoint Suppression	18F2	6387	0 - Disable 1 - Enable	
Accutune II	18F3	6388	0 - Disable 1 - Enable	

3.2.10 SP Ramp/Rate/Program Enumerated Configuration Values

3.2.10.1 SP Ramp/Rate/Program 1 Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
SP Ramp Enable	182D	6190	0 - Disable 1 - Enable	Trying to enable more than one of these results in all being disabled!
SP Rate Enable	182E	6191	0 - Disable 1 - Enable	Trying to enable more than one of these results in all being disabled!
SP Program Enable	182F	6192	0 - Disable 1 - Enable	Trying to enable more than one of these results in all being disabled!
SPP Program End	1831	6194	0 - Last SP 1 - Failsafe	
SPP End State	1832	6195	0 - Disable 1 - Hold	
SPP Power Recovery	1833	6196	0 - Disable 1 - Enable	
SPP Ramp Engineering Units	1834	6197	0 - Time 1 - EU/Min 2 - EU/Hr	

3.2.10.2 SP Ramp/Rate/Program 2 Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Ramp Enable	1860	6241	0 - Disable 1 - Enable	
SP Rate Enable	1861	6242	0 - Disable 1 - Enable	
SP Program Enable	1862	6243	0 - Disable 1 - Enable	
SPP End Enable State	1864	6245	0 - Last SP 1 - Failsafe	
SPP End State	1865	6246	0 - Disable 1 - Hold	
SPP Power Recovery	1866	6247	0 - Disable 1 - Enable	

3.2.10.3 Profile Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Profile 1 Start	18E1	6370	0 - Ramp 1 1 - Ramp 3 2 - Ramp 5 3 - Ramp 7 4 - Ramp 9 5 - Ramp 11 6 - Ramp 13 7 - Ramp 15 8 - Ramp 17 9 - Ramp 19 10 - Ramp 21 11 - Ramp 23 12 - Ramp 25 13 - Ramp 27 14 - Ramp 29 15 - Ramp 31 16 - Ramp 33 17 - Ramp 35	
Profile 1 End	18E2	6371	0 - Soak 2 1 - Soak 4 2 - Soak 6 3 - Soak 8 4 - Soak 10 5 - Soak 12 6 - Soak 14 7 - Soak 16 8 - Soak 18 9 - Soak 20 10 - Soak 22 11 - Soak 24 12 - Soak 26 13 - Soak 28 14 - Soak 30 15 - Soak 32 16 - Soak 34 17 - Soak 36	
Profile 2 Start	18E3	6372	Same as Profile 1 Start	
Profile 2 End	18E4	6373	Same as Profile 1 End	
Profile 3 Start	18E5	6374	Same as Profile 1 Start	
Profile 3 End	18E6	6375	Same as Profile 1 End	
Profile 4 Start	18E7	6376	Same as Profile 1 Start	
Profile 4 End	18E8	6377	Same as Profile 1 End	
Profile 5 Start	18E9	6378	Same as Profile 1 Start	
Profile 5 End	18EA	6379	Same as Profile 1 End	
Profile 6 Start	18EB	6380	Same as Profile 1 Start	
Profile 6 End	18EC	6381	Same as Profile 1 End	

3.2.10.4 SP Segment Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
SP Profile Synchronization for Control Loops 1 and 2	18E0	6369	0 - Disable 1 - Enable	

3.2.11 SPP Events Enumerated Configuration Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
SPP Event 1	18BB	6332	0 - None 1 - Alarm 1 2 - Alarm 2 3 - Alarm 3 4 - Alarm 4 5 - Alarm 5 6 - Alarm 6	
SPP Event 2	18BC	6333	Same as SPP Event 1	
SPP Event 3	18BD	6334	Same as SPP Event 1	
SPP Event 4	18B#	6335	Same as SPP Event 1	
SPP Event 5	18BF	6336	Same as SPP Event 1	
SPP Event 6	18C0	6337	Same as SPP Event 1	
SPP Event 7	18C1	6338	Same as SPP Event 1	
SPP Event 8	18C2	6339	Same as SPP Event 1	
SPP Event 9	18C3	6340	Same as SPP Event 1	
SPP Event 10	18C4	6341	Same as SPP Event 1	
SPP Event 11	18C5	6342	Same as SPP Event 1	
SPP Event 12	18C6	6343	Same as SPP Event 1	
SPP Event 13	18C7	6344	Same as SPP Event 1	
SPP Event 14	18C8	6345	Same as SPP Event 1	
SPP Event 15	18C9	6346	Same as SPP Event 1	
SPP Event 16	18CA	6347	Same as SPP Event 1	
SPP Event 17	18CB	6348	Same as SPP Event 1	
SPP Event 18	18CC	6349	Same as SPP Event 1	
SPP Event 19	18CD	6350	Same as SPP Event 1	
SPP Event 20	18CE	6351	Same as SPP Event 1	
SPP Event 21	18CF	6352	Same as SPP Event 1	
SPP Event 22	18D0	6353	Same as SPP Event 1	
SPP Event 23	18D1	6354	Same as SPP Event 1	
SPP Event 24	18D2	6355	Same as SPP Event 1	
SPP Event 25	18D3	6356	Same as SPP Event 1	
SPP Event 26	18D4	6357	Same as SPP Event 1	
SPP Event 27	18D5	6358	Same as SPP Event 1	
SPP Event 28	18D6	6359	Same as SPP Event 1	
SPP Event 29	18D7	6360	Same as SPP Event 1	
SPP Event 30	18D8	6361	Same as SPP Event 1	
SPP Event 31	18D9	6362	Same as SPP Event 1	
SPP Event 32	18DA	6363	Same as SPP Event 1	

Configuration Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
SPP Event 33	18DB	6364	Same as SPP Event 1	
SPP Event 34	18DC	6365	Same as SPP Event 1	
SPP Event 35	18DD	6366	Same as SPP Event 1	
SPP Event 36	18DE	6367	Same as SPP Event 1	

3.2.12 Timer Enumerated Configuration Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Timer Enable	1845	6214	0 - Disable 1 - Enable	
Start Initiation	1846	6215	0 - Run/Hold Key 1 - Alarm 2 2 - Time	
Timer Display	1847	6216	0 - Time Remaining 1 - Elapsed Time	
Timer Reset Control	1848	6217	0 - Run/Hold Key 1 - Alarm 1 2 - Reset	
Timer Count Increment	1849	6218	0 - Minutes 1 - Seconds	
Timer Relay On Time	184A	219	0 - 1 second 1 - 2 seconds 2 - 3 seconds 3 - 4 seconds 4 - 5 seconds	

3.2.13 Alarms 1 to 6 Enumerated Configuration Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Alarm 1 SP 1 Type	1820	6177	0 - None 1 - Input 1 2 - Input 2 3 - Input 3 4 - Input 4 5 - RH/PV 6 - Deviation 7 - Output 8 - Deviation 2 9 - Output 2 10 - Event 11 - Total 1 12 - Total 2 13 - Total 3 14 - Total 4	
Alarm 1 SP 1 Event	1821	6178	0 - Low 1 - High	
Alarm 1 SP 2 Type	1822	6179	Same as Alarm 1 SP 1 Type	
Alarm 1 SP 2 Event	1823	6180	0 - Low 1 - High	
Alarm 2 SP 1 Type	1824	6181	Same as Alarm 1 SP 1 Type	
Alarm 2 SP 1 Event	1825	6182	0 - Low 1 - High	
Alarm 2 SP 2 Type	1826	6183	Same as Alarm 1 SP 1 Type	
Alarm 2 SP 2 Event	1827	6184	0 - Low 1 - High	
Totalizer Alarm Scale for Alarm 1 SP 1	1828	6185	0 - 1 1 - 10 2 - 100 3 - 1000 4 - 1E4 5 - 1E5 6 - 1E6	
Totalizer Alarm Scale for Alarm 1 SP 2	1829	6186	same as above	
Totalizer Alarm Scale for Alarm 2 SP 1	182A	6187	same as above	
Totalizer Alarm Scale for Alarm 2 SP 2	182B	6188	same as above	
Alarm 3 SP1 Type	18A1	6306	Same as Alarm 1 SP 1 Type	
Alarm 3 SP1 Event	18A2	6307	0 - Low 1 - High	

Configuration Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Alarm 3 SP2 Type	18A3	6308	Same as Alarm 1 SP 1 Type	
Alarm 3 SP2 Event	18A4	6309	0 - Low 1 - High	
Alarm 4 SP1 Type	18A5	6310	Same as Alarm 1 SP 1 Type	
Alarm 4 SP1 Event	18A6	6311	0 - Low 1 - High	
Alarm 4 SP2 Type	18A7	6312	Same as Alarm 1 SP 1 Type	
Alarm 4 SP2 Event	18A8	6313	0 - Low 1 - High	
Alarm 5 SP1 Type	18A9	6314	Same as Alarm 1 SP 1 Type	
Alarm 5 SP1 Event	18AA	6315	0 - Low 1 - High	
Alarm 5 SP2 Type	18AB	6316	Same as Alarm 1 SP 1 Type	
Alarm 5 SP2 Event	18AC	6317	0 - Low 1 - High	
Alarm 6 SP1 Type	18AD	6318	Same as Alarm 1 SP 1 Type	
Alarm 6 SP1 Event	18AE	6319	0 - Low 1 - High	
Alarm 6 SP2 Type	18AF	6320	Same as Alarm 1 SP 1 Type	
Alarm 6 SP2 Event	18B0	6321	0 - Low 1 - High	

3.2.14 Auxiliary Output Enumerated Configuration Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Auxiliary Output Selection	1840	6209	0 - None 1 - Input 1 2 - Input 2 3 - PV1 4 - Deviation 1 5 - Output 1 6 - Setpoint 1 7 - PV2 8 - Deviation 2 9 - Output 2 10 - Setpoint 2 11 - Input 3 12 - Input 4	
Auxiliary Output 2 Selection	1843	6212	Same as Auxiliary Output	
Auxiliary Output 3 Selection	1844	6213	Same as Auxiliary Output	

3.2.15 Options Enumerated Configuration Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Power Frequency	1890	6289	0 - 60 Hz 1 - 50 Hz	
Spike Filter	1891	6290	0 - Disable 1 - Enable	
Relative Humidity	1892	6291	0 - No 1 - Yes	
Deviation	1893	6292	0 - None 1 - Setpoint 2 - Channel 1	
Grand Totalizer	1895	6294	0 - Disable 1 - Enable	
Scroll	1842	6211	0 - None 1 - 1 second 2 - 2 seconds 3 - 3 seconds	

3.2.16 Event Message Enumerated Configuration Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Event Type 1	189B	6300	0 - None 1 - External SW1 2 - External SW2 3 - Alarm 1 4 - Alarm 2 5 - Alarm 3 6 - Alarm 4 7 - Alarm 5 8 - Alarm 6	
Event Type 2	189C	6301	Same as Event Type 1	
Event Type 3	189D	6302	Same as Event Type 1	
Event Type 4	189E	6303	Same as Event Type 1	
Event Type 5	189F	6304	Same as Event Type 1	
Event Type 6	18A0	6305	Same as Event Type 1	

3.2.17 Lockout Enumerated Configuration Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Lockout	1841	6210	1 - Calibration 2 - Configuration 3 - Maximum	

3.2.18 Pen Printing Enumerated Configuration Values

Parameter Description	Resister Number		Range	Notes
	(hex)	(dec)		
Pen Trace Darkness	1898	6297	0 - Light 1 - Medium 2 - Dark	
Pen Grid Darkness	1899	6298	0 - Light 1 - Medium 2 - Dark	
Jewel/No Jewel	189A	6299	0 - Normal 1 - Jewel	

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