
HERON ELECTRIC COMPANY LTD

Advanced Features and Options

HT-pro and HM-pro Irrigation Controllers

1. About This Manual

This manual describes the Advanced Controller options and the following advanced features:-

- Configuring Programs.
- Advanced Pump Configuration
- Adding additional cards
- Reprogramming to factory default

2. Changing Controller Options

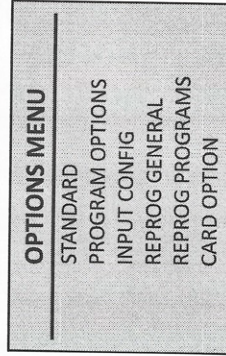
This section describes the configuration options you can set on your controller. Your controller has 13 basic configuration options which are described in the installation manual, the remaining more advanced options are described here.

WARNING

Always fully test any new configuration values after you have changed them to ensure the controller functions as you require.

Your Installer may have already set your controller to the required values.

To access the controller's Configuration Options, select **OPTIONS** from the **Main Menu**.



Now select "**STANDARD**" from the **Options Menu** and the following screen will be displayed.

STANDARD OPT		ROW 001
1	NUMBER OF ZONES	016
2	NUMBER OF 24HR STARTS	006
3	NUMBER OF WEEKLY STARTS	000
4	SKIP DAYS STARTS	000
5	NUMBER AUTO STOPS	000

The table below lists the Configuration Options.

No.	Standard Option	Brief Description	Allowed values
1	NUMBER OF ZONES	Set number of zones (see basic manual)	1-240
2	NUMBER 24HR STARTS	Set number of Daily auto starts.	0-64
3	NUMBER WEEKLY STARTS	Set number of Weekly auto starts.	0-64
4	SKIP DAY STARTS	Set number of days to miss before auto start activated again.	1 - 32
5	NUMBER AUTO STOPS	Set number of automatic stops	1 - 64
6	NUMBER OF PROG	Set number of programs.	1-28
7	USE RAIN GAUGE	Rain gauge connected.	YES/NO
8	MANUAL PERCENT	Manual percentage adjustment of irrigation programs	YES/NO
9	INPUT 1 USE	Controller suspends irrigation programs or permanently stops irrigation programs.	0-2
10	INPUT 1 MESSAGE	Display Low Tank instead of Suspend or Stop.	YES/NO
11	AUTO DISABLE	Use 'Disable Automatic Starts' facility	YES/NO
12	Not used		
13	ZONE INFORMATION	Turn Zone Information display on /off	YES/NO
14	CONFIG PROGRAM	Allows zones within a program to be changed.	YES/NO
15	PROGRAM PERCENT	Increase or decrease an irrigation program run time by a specified percentage	YES/NO
16	Not Used		
17	NUMBER OF CYCLING STARTS	Set the number of cycling starts required, i.e. the cycling of programs between specified times of the day.	0-32
18	NUMBER FLUSH FILTERS	See Backflush Manual	N/A
19	SUSPEND FLUSH	See Backflush Manual	N/A
20	PARALLEL PROGRAMS	Specify the maximum number of programs that can be run in parallel.	0-6
21	PARALLEL MANUAL ZONES	Specifies the maximum number of zones that can run in parallel whilst an irrigation program is running.	0-4
22	PRIORITY PROGRAM	Set the program that overrides existing programs that may be running	0-28
23	Not Used		
24	ENG OPTION ENABLE	See Engineering Options Manual	N/A
25	GSM/LAN	See GSM Manual	N/A
26-27	Not Used		
28	NUMBER OF FLOW METERS	Specify the number of flow meters attached to the controller.	0-9
29	FLOW TEST ENABLED	Send a text alert if zone flow falls outside of its specified flow volume range.	YES/NO
30	ADVANCE LOW FLOW	Advance to the next zone if low flow fault detected.	YES/NO
31	ADVANCE HIGH FLOW	Advance to the next zone if high flow fault detected.	YES/NO
32	MAX FLOW FAULTS	Specify maximum number of flow faults before a program is stopped.	0-99
33	Not Used		
34	ZONE VOLUME LOG	Set	YES/NO
35	WEEK AUTO EXTRA	Set to YES to display daily, odd day, even day.	YES/NO

Use the arrow keys to scroll through the options. Pressing the Menu key will exit and save.

	5 day and weekend program start options	Default YES
36	Not Used	N/A
37	FLOW FAULT FILTER Set time that flow a fault is re-tested before logging real flow fault. Time in seconds	0-99
38	PROGRAM LOCK Set 4 digit security to stop unauthorised keypad Use	0000-9999
39	CO ZONE Sets the number of Co Valves	
40	REMOTE START PROG Specify which program to initiate when contact closed on remote input.	0-28
41	REMOTE START TYPE Caution – allows specified program to continuously run until remote input contact opens.	0-1
42	FERTIGATION TYPE See Fertigation Manual	0-2
43	USE WEATHER STATION See Weather Station manual	N/A
44	USE ET CALCULATION See Weather Station Manual	N/A
45	ET REFERENCE See Weather Station Manual	
46	LIGHT INTERGRATION See Weather Station Manual	
47	GROUP PERCENT Adjust a group of zones by a given percentage.	YES/NO
48	BACK UP PROG The number of programs that can be delayed when program run times overlap.	0-4
49	STOP INPUT ACTIVE Stop input active on one zone only	0
50	TEST DECODER See Test Controller Manual (2-Wire Only)	N/A
51	DISPLAY CURRENT Displays the current on the run time page.	YES/NO
52	EXTRA INFO Displays additional parameters to be displayed on Time screen. Pumps, Flow rate etc	YES/NO
53	NUMBER OF MOISTURE See Moisture Sensor Manual (2 - Wire only)	N/A
54	FIRST MOISTURE See Moisture Sensor Manual (2 - Wire only)	N/A
55	MOISTURE PROGRAM See Moisture Sensor Manual (2 - Wire only)	N/A
56	MOISTURE & CYCLING See Moisture Sensor Manual (2 - Wire only)	N/A
57	MOISTURE TYPE See Moisture Sensor Manual (2 - Wire only)	N/A
58	FLOW LOG RATE x10S Irrigation Flow log rate x10S	0-99
59	EC/pH LOG RATE x10S EC/pH and pressure log flow rate x10S	0-99
60	WEATHER LOG RATE Weather station log rate (minutes)	0-99
61-64	Not Used	
65	PRESSURE INPUT Sets the type of Pressure input	
66	PRESSURE DELAY The delay before the pressure is read (S)	
67	PRESSURE MINIMUM The pressure fault threshold (Bar)	
68	PRESSURE FILTER The pressure filter delay (S)	
69	PRESSURE CONFIGURATION The pressure range of the pressure sensor	
70	PRESSURE LOG RATE Set the logging rate for the pressure sensor Log rate x10 seconds	0-99
71	NUMBER OF LATCH The number of latching decoders	
72	FIRST LATCH Zone reference of first latching decoder	
73	LATCH DELAY The delay to charge up latching decoders (S)	
74	LATCH PROGRAM The program that will be run to force off latching solenoids	
75-80	Not used	

14. Configure Program

This option permits programs to be configured by allowing the cursor to move freely over the program screen. Set this option to Yes before you configure programs. Configuration of programs is described in Section 3.

15. Program Percentage

This option allows a percentage adjust to be entered on a program by program basis.

If this option is activated then "PROGRAM PERCENT" will appear as an additional item on the Main Menu.

Select PROGRAM PERCENT to display the Prog Percent screen as shown below.

PROG PERCENT	
PROG01	PERCENT 100 %
PROG02	PERCENT 100 %
PROG03	PERCENT 100 %
PROG04	PERCENT 100 %
PROG05	PERCENT 100 %

A percentage adjustment can be made for any individual program.

WARNING: Leave the percentage value at 100% for programs to have their normal run time. If the percentage value is left at 0%, the program will not run.

17. Number of Cycling Starts

This option sets the number of cycle starts required. Up to 32 cycle starts can be set.

If this option is activated then "CYCLING START" will appear as an additional item on the Auto Menu.

Select "CYCLING START" from the Auto Menu.

The cycle start page will be displayed as shown below:-

CYCLING 1	
PROG NUMBER	01
ENABLED	NO
DAY START TIME	00:00
DAY STOP TIME	00:00
DELAY HRS	00:00
MIN	00:00
NEXT START	INVALID

Specify the program to be cycled, the time of day to start, the time of day to end cycling and any required delay between cycles.

A cycling start must be activated in order for it to work. The next cycling start time will be displayed when the cycling start is activated.

20. Parallel Programs

Set this option from 1 to 6 to specify the maximum number programs to run in parallel. The Heron controller can run up to 6 programs in parallel.

21. Parallel Manual Starts

Set this option from 1 to 4 to specify the maximum number of zones that can be manually started together.

22. Priority Programs Starts

Set this option from 1 to 28 to specify the program that has priority over other programs.

28. Number of Flow Meters

A standard controller can have one flow meter connected. Up to 9 flow meters can be added with the addition of expansion cards. A single flow meter is connected across to the "+V F G" terminals as shown in Fig 1 of the installation manual.

Set this option to one for a single flow meter. "FLOW METER" will be displayed in the Option Menu and "FLOW VOLUME" will be displayed in the Main Menu.

Now you must configure the flowmeter. Select "FLOW METER" from the Option Menu.

METER 1	
METER TYPE	VOL 1 L
METER CONNECTED TO	2W1
K-FACTOR	00:00
DELAY BEFORE TEST	000 SECS
LEAK FLOW	0000 LPM

You need to configure the following fields:-

METER TYPE

With the cursor on the METER TYPE field press the OK/SELECT to set the meter type.

Meter Type	Flow/Volume meter type installed
VOL 1L	Pulse meter. 1 pulse per litre
VOL 10L	Pulse meter. 1 pulse per 10 litre
VOL 100L	Pulse meter. 1 pulse per 100 litre
VOL 1000L	Pulse meter. 1 pulse per 1000 litre
ROTOR	Paddle Wheel/Rotor Type (K Factor must be set)

Select where the flow meter is connected in the next field. This will be 2W1 for a two-wire controller and MW1 for a multi wire controller.

K-FACTOR

Set the K-FACTOR if it is a paddle wheel flow meter (Rotor type).

DELAY BEFORE TEST

If required, set the delay before the flow is tested after a valve has opened. The delay is in seconds.

FLOW LEAK

The FLOW LEAK field can be set to a flow that is considered to be a leak from the irrigation system. A leak flow fault will then be generated.

You can view the irrigation flow by selecting "FLOW VOLUME" from the Main Menu. The following screen will be displayed.

FLOW VOLUME 1	
FLOW	000.0 LPM
VOLDAILY	00 LITRES
VOLTOTAL	00 LITRES
HOLD OFF	00
HIGH LIMIT	000.0 LPM
LOW LIMIT	000.0 LPM

If the irrigation is running the real-time flow will be displayed.

The daily volume and the total volume is also displayed. The daily volume is reset at midnight. The volume totals can be manually reset from "CLEAR VOLDAILY" or "CLEAR VOLTOTAL" on the Flow Menu.

The HOLD OFF field displays a countdown in seconds before the measuring the flow following a zone start.

The "HIGH LIMIT" and "LOW LIMIT" fields will display the expected flow limits according to the zone running at that moment in time. If zones are running in parallel, then the accumulative limits for the zones will be displayed.

29. Flow Test Enabled

This option enables flow testing on each zone. The high and low limits for each zone can be specified in "ZONE INFO". If the high or low limit is set to zero, the irrigation flow rate will not be tested for that particular zone.

30. Advance Low Flow

This option controls what happens to the irrigation sequence on a low flow fault. If set, the irrigation sequence will advance to the next zone. If it is not set then the controller will continue to run the zone in fault until the time expires in the normal way.

31. Advance High Flow

This option controls what happens to the irrigation sequence on a high flow fault. If set, the irrigation sequence will advance to the next zone. If it is not set, then the controller will continue to run the zone in fault until the time expires in the normal way.

32. Max Flow Faults

This option specifies the number of flow faults to be detected before the irrigation is stopped.

34. Zone Volume Log

Volume logs for each zone can either be created using the real measured volume of using the expected flow per valve. The real volume log is more accurate but is only appropriate if you running one valve at a time.

If you require real volume logs rather than using the expected flow set this to Yes

35. Week Auto Extra

This option adds an additional two options to the weekly starts. By default, weekly starts can be set as Week Day Odd Even or Daily. This option adds 'Monday to Friday' and 'Weekend'.

37. Flow Fault Filter

The flow fault filter sets an additional delay after a flow error has been detected before the flow is tested again. Only if the flow fails the second test will a flow fault be generated. The timer is in seconds.

38. Program Lock

This option sets a 4 digit security code to prevent unauthorised access to the controller. If this option is 0, there is no security lock.

40. Remote Start Prog

This option specifies the program that is to be started by the remote start input. The remote start input is across "C2-12". A closed contact will start the program.

41. Remote Start Type

This option defines alternative uses for the remote start input as per the table below. The remote start input is across "C2-12".

Remote Start Type	Use
0 / 1	Remote start of program defined in Option 40
2	Remote start is used with cycling. A closed contact will reduce the delay time of the current cycling program to zero and the program will start immediately.

47. Group Percent

This option allows a percentage adjust to be set for a group of zones. You can assign Zones to a particular group in "ZONE INFO".

If this option is activated then "GROUP PERCENT" will appear as an additional item on the Main Menu.

Select GROUP PERCENT to display the Group Percent screen as shown below.

GROUP PERCENT	
GROUP01	PERCENT 100 %
GROUP02	PERCENT 100 %
GROUP03	PERCENT 100 %
GROUP04	PERCENT 100 %
GROUP05	PERCENT 100 %

WARNING: If the percentage is at 0%, this group of valves will not run.

48. Back Up Program Starts

If irrigation programs overlap the controller will remember the automatic start and then run the program when the original program has finished. This option sets the maximum number of programs starts that will be backed up.

A maximum of 4 programs can be backed up. If this option is set to zero then any overlapping programs will not run.

51. Display Current

Set this option to Yes to display the solenoid current on the run time page.

52. Extra Info

This option allows another screen to be displayed to view additional information.

58. Flow Log Rate (x10S)

This option sets the Irrigation Flow Log rate when the irrigation is running. The rate is in seconds x 10. For example, if this option is set to 10, then the flow rate will be measured every 100 seconds. The log flow rate when irrigation is not running is set in Engineering Option 31.

59. EC pH and Pressure Log Rate (x10S)

This option sets the EC/pH/Pressure Log rate when the irrigation is running. The rate is in seconds x 10. For example, if this option is set to 10, then logs will be created every 100 seconds. The log rate that is used when the irrigation is not running is set in Engineering Option 32.

60. Weather Parameter Log Rate (minutes)

This option sets the weather parameter Log rate in minutes.

65. Pressure Input Type

One pressure sensor can be connected to the irrigation controller. The pressure sensor can then be used to test correct pressure when the irrigation is running. The pressure sensor can be simple switch or an analogue sensor. In the case of an analogue sensor the pressure value can be displayed and logged

Pressure sensor Type	Use
0	Not used pressure faults will be disabled
1	The pressure sensor is a switch. A closed contact means good pressure
2	The pressure sensor is an analogue type. The operation pressure range is set in Option70 and the pressure fault threshold in option 67

66. Pressure Delay

Sets the pressure delay before the pressure is tested after an irrigation program starts. If the pressure is not at a level set in Option 67, then a fault is created. The pressure delay is in seconds.

67. Pressure Threshold (analogue pressure sensor only)

Sets the pressure threshold for pressure faults. If the pressure is below this threshold a fault is generated. The threshold is tested after the pressure delay (Option 66) and optionally re-tested after an additional time set in Option 68. The pressure threshold is in Bars.

68. Pressure Filter Delay

Sets the pressure filter delay. This is an additional delay before a second test of the pressure is made to verify whether the pressure is at the desired level. This delay is optional. The delay is in seconds.

70 Pressure Range Configuration (analogue pressure sensor only)

Sets the pressure range of the analogue pressure sensor as per the table below.

Allowable Value	Pressure sensor range
0	Not used pressure faults will be disabled
6	Pressure range is 0-6 bar
10	Pressure range is 0-10 bar
16	Pressure range is 0-16 bar

71. Number of Latching decoders (HT40 and HT240 controllers Only)

Sets the number of Heron latching decoders (DEC-CL1) installed on the system. Latching decoders operate latching solenoid valves. This option is normally set to zero as solenoid valves are normally standard AC solenoid valves.

72. First Latching Solenoid Number of Latching decoders

This option sets the zone reference of the first latching decoder in Zone Information.

73. Latching Delay

Sets the delay to allow latching decoders to charge up. The delay is in seconds. A delay of 3 seconds should be adequate.

74. Latching Solenoid program

This option sets the program that will run at power up to force all latching solenoids to close.

3. Configuring Programs

The HT and HM controllers allow any zones to be arranged in any order in an irrigation program. You can customize your programs so only the zones that are needed appear in the program in the correct running order. Furthermore, configuration of programs allows you to set what zones run in parallel.

Changing a Zone

First you must set the Configure Program Option (Option 14), see previous section to allow the cursor to move freely over the program screen. Now open the program that you want to configure. The following screen will be displayed.

PROG 1		R001 C01-
ZN	NAME	TIME
1	Area 1	0:30
2	Area 2	1:00
3	Area 3	0:00
4	Area 4	0:00

For example, if you want to remove Zn2 and run Zn9 in its place, proceed as follows. Move the cursor over Zn2 as shown below.

PROG 1		R002 C01-
ZN	NAME	TIME
1	Area 1	0:30
2	Area 2	0:00
3	Area 3	0:00
4	Area 4	0:00

Now simply press the 9 key and the zone will change to Zone 9 (Area 9) as shown below.

PROG 1		R001 C01-
ZN	NAME	TIME
1	Area 1	0:30
9	Area 9	0:00
3	Area 3	0:00
4	Area 4	0:00

Setting The Number of Rows

The number of rows a program contains is set in Program Options (see Basic Manual). For example, if you want the above program to contain just three zones, Set Program Option 2 to 3. Now if you return to Program 1 it will just have three zones, Zn1 Zn9 and Zn 3, as shown below:-

PROG 1		R001 C01-
ZN	NAME	TIME
1	Area 1	0:30
9	Area 9	0:00
3	Area 3	0:00

Setting The Number of Columns

By default, a program will have one column meaning that zones are run sequentially. If you add an additional column, zones will run in parallel. The zones in the 2nd column will run in parallel with the zones in the 1st column.

For example, if you want the above program to run Zn 9 with Zn 1 proceed as follows:-

Set the number of columns to 2 and the number of rows to 2. Go to Program1 Options and set Option 3 to 2 and Option 2 to 2. Now return to Program 1 and you will see the screen has changed to the following.

PROG 1 R001 C01-				
ZN	NAME	TIME	Zn	Name Time
1	Area	1	0:30	0
9	Area	9	0:00	0

Now move the cursor over Zn 0 on the first row as shown below:-

PROG 1 R001 C02-				
ZN	NAME	TIME	Zn	Name Time
1	Area	1	0:30	0
9	Area	9	0:00	0

Now simply press the 9 key and Zn 9 will be entered in column 2 as shown below:-

PROG 1 R001 C02-				
ZN	NAME	TIME	Zn	Name Time
1	Area	1	0:30	9 Area 9 0:00
9	Area	9	0:00	0

You will see you have lost Zn3 and Zn is still in column 1. You now need to replace Zn9 in column 1 with Zn3. Move The cursor over Zn 9 and press the key 3.

PROG 1 R001 C01-				
ZN	NAME	TIME	Zn	Name Time
1	Area	1	0:30	9 Area 9 0:00
3	Area	3	0:00	0

4. Advanced Pump Configuration

The sections describes how to set the pump prime time and assign pumps to zones.

A pump prime time can be set for each of the pumps connected to your controller.

Select "PUMP PRIME" from the Pump Menu.

PUMP PRIME		
1	PUMP	1 0:00
2	PUMP	2 0:00
3	PUMP	3 0:00
4	PUMP	4 0:00
5	PUMP	5 0:00

Pump prime times are set in minutes and seconds.

Position the cursor over the minutes and seconds fields. Use the number keys to set the pump prime time for each pump.

Press the MENU key to return to the Pump Menu screen.

Assign Pumps to Zones

The basic manual described how to attach pumps to programs in Programs Options. This is the simplest and quickest way to define pumps. For greater flexibility you can also define pumps to Zones. This is more complicated to set up but means the right pump will always be started even if you are running a zone manually.

To assign a pump to a particular zone select "ZONE ASSIGN" from the Pump Menu.

PUMP ASSIGN					
PUMP	P1	P2	P3	P4	P5
ZONE 01	YES	NO	NO	NO	NO
ZONE 02	YES	NO	NO	NO	NO
ZONE 03	YES	NO	NO	NO	NO
ZONE 04	YES	NO	NO	NO	NO
ZONE 05	YES	NO	NO	NO	NO

To assign a pump to a particular zone, position the cursor over the relevant field and press the "Ok/Select" key. "NO" will change to "YES".

Press the MENU key to return to the Pump Menu.

5. Re-programming Back to Factory Settings

To reset either individual functions of your controller or the whole controller to factory default settings use the "REPROG GENERAL" option from the Option Menu.

Select "REPROG GENERAL" from the Options Menu.

REPROGRAM			
DATA	CODE	REENTER	REPROG
AUTO STARTS	086	000	NO
PUMPS DELAY	118	000	NO
ZONE NAMES	150	000	NO
ZONE CONFIG	182	000	NO
DOSE OPTIONS	214	000	NO
FACTORY RFSF	246	000	NO

In order to reset a function or complete a factory reset, the corresponding code must be entered in the "RE-ENTER" field and the "REPROG" field set to "Yes".

For example, to reset Auto Starts, the "REENTER" field must be set to "086".

To reset either individual programs or all programs use the "REPROG PROGRAMS" option from the Option Menu.

Select "REPROG GENERAL" from the Options Menu.

REPROGRAM			
DATA	CODE	REENTER	REPROG
PROG ALL	001	000	NO
PROG 01	002	000	NO
PROG 02	003	000	NO
PROG 03	004	000	NO
PROG 04	005	000	NO
PROG 05	006	000	NO

In order to reset a specific program or all programs, the corresponding code must be entered in the "REENTER" field and the "REPROG" field set to "Yes".

For example, to reset Prog 02, the "REENTER" field must be set to "002".

6. Adding Additional Cards to the Controller

If your controller has more than one two wire driver, multi wire driver or flow meter card then these additional cards need to be defined under **CARD OPTIONS**. Likewise, if your controller has a dosing controller, input or pressure card then these will also have to be defined.

Note Standard Option 24 must be set to "138" to display the **CARD OPTIONS** menu.

To define a card, select **CARD OPTION** from the Options menu. The following screen will be displayed:-

CARD OPT		ROW 001
1	CARD TYPE 2W1	1
2	CARD TYPE 2W2	0
3	CARD TYPE 2W3	0
4	CARD TYPE 2W4	0
5	CARD TYPE 2W5	0

To define a card, enter a 1 by the type of card. In the example below, cards 2W1 and 2W2 have been defined.

CARD OPT		ROW 001
1	CARD TYPE 2W1	1
2	CARD TYPE 2W2	1
3	CARD TYPE 2W3	0
4	CARD TYPE 2W4	0
5	CARD TYPE 2W5	0

Appendix 1 Engineering Options

The following table list the engineering options. These should not be changed unless instructed to do so by Heron or your distributor.

No.	Engineering Option	Brief Description	Allowed values
1	Number of 2-Wire	Number of 2-Wire	N/A
2	Number of M-Wire	Number of multi wire cards fitted	N/A
3	Number of MPD	Number of MPD dose controllers	N/A
4	Number of Flow	Number of flow meter cards fitted	N/A
5	Number of Input	Number of input cards only	N/A
6	Number of pressure	Number of pressure cards fitted	N/A
7	Number of sensors	Number of sensor cards fitted	N/A
8-10	Not used		
11	Controller Size	Sets controller size	-
12	Controller Size	Sets controller size	-
13	Controller Size	Controller Size	N/A
14	Reset Default Type	Either Factory defaults or Test default	1/0
15	Program EC/pH	Program as EC/pH controller	0
16	Program EC/pH	Program as EC/pH controller confirm	0
17	Not used		
18	Reset log	Reset general log	0/1
19	Parallel zones	Maximum Number of Parallel zones	12
20	Edit program	Parallel valves using single column	0
21	Test socket	Test TCP/IP sockets as part of login	0
22	Back up Timer	Back up time (minutes)	5
23	Decoder Off	Decoder uses common off	1
24	2-Wire power	2-Wire power required	
25	Light calibration	Light Calibration %	100
26	Rain calibration	Rain calibration 20 = 0.2mm	20
27	Not used		
28	Backflush	Backflush input pressure filter (S)	10
29	Log Volume	Set volume log rate (m)	0
30	Pump Over Load	Pump O/P over load current (2-Wire only)	
31	Log Volume off	Log Volume at end of program (S)	10
32	Log EC/pH Off	Log rate for EC/pH when irrigation Off	
33	Cable Loading	Cable Loading threshold (High is good)	200
34	Decoder Ack	Decoder Ack threshold (Low is good)	45
35	Zero Flow time	Time to Zero flow for water meter (m)	2
36	Date set	Date set so OK to log	0
37	No Keyboard	No keyboard on small display	0
38	4G	4G Comms wait time	30
39	Not used		
40	LAN	No reset	0
41	Weather Simulation	Enable Weather Simulation	0
42	Temperature	Temperature Simulation	
43	Light	Light Simulation	
44	Humidity	Humidity Simulation	
45	Wind Speed	Wind Speed Simulation	
46	Rain Fall	Rain Fall Simulation	
47-48	Not used		
49	Moisture Calibration	Moisture sensor calibration	100
50-51	Not used		
52	Low Flow Meter	Water meter pulse is 0.1L	
53	Not Used		

The following table lists the irrigation parameters that can be optionally displayed at the bottom of the Time Page or on the Additional Information Page. Each parameter has an associated number. This number should be entered in one of the Engineering Options 61 to 76 to display the parameter.

Parameter Number	Parameter Name	Value	Display Option
54	Generator Voltage		
55	Invert Input		Heron Only
56	Invert Input		Heron Only
57	Invert Rx External		
58	Moisture	30	
59	Man Valve Flo test	0	
60	Perform Low flow test with manual valve		
61	Calibration of displayed 2-Wire current		
62	Calibration of displayed Multi-wire current		
63	Parameter to display in field top left	1	
64	Parameter to display in field top middle	2	
65	Parameter to display in field bot middle	0	
66	Parameter to display in field bot right	0	
67	Parameter to display in field bot left	0	
68	Parameter to display in row 1	0	
69	Parameter to display in row 2	0	
70	Parameter to display in row 3	0	
71	Parameter to display in row 4	0	
72	Parameter to display in row 5	0	
73	Parameter to display in row 6	0	
74	Parameter to display in row 7	0	
75	Parameter to display in row 8	0	
76	Parameter to display in row 9	0	
77	Parameter to display in row 10	0	
78	Not used		
79-80	Battery Power		
81	Hybrid Battery power control		
82	Not used		
83	Define card for special outputs	0,1,2	
84	Fertigation On Output	0	
85	Backflush On Output	0	
86	Alarm On Output	0	
87	Pump 3 On Output	0	
88	Pump 4 On Output	0	
89	Pump 5 On Output	0	

Parameter to display	Number	Comment
Blank	0	
Pump 1 On/Off	1	
Pump 2 On/Off	2	
Current on Card 1	3	
Current on Card 2	4	
Decoder 2 Wire Cable loading	5	
Decoder Acknowledge	6	
Pressure reading	7	
Flow meter 1 Reading	8	
Flow meter 2 Reading	9	
Flow meter 3 Reading	10	
Flow meter 4 Reading	11	
Flow meter 5 Reading	12	
Flow meter 6 Reading	13	
Flow meter 7 Reading	14	
Flow meter 8 Reading	15	
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