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# WEEE and the Battery Directive

Waste Electrical and Electronic Equipment.

HWM-Water Ltd is a registered producer of Electrical and Electronic Equipment in the United Kingdom (registration number WEE/AE0049TZ). Our products fall under category 9 (Monitoring and Control Instruments) of The Waste Electrical and Electronic Equipment (WEEE) Regulations. We take all environmental issues seriously and fully comply with the requirements for collection, recycling and reporting of waste products.

HWM-Water Ltd is responsible for WEEE from customers in the United Kingdom provided that:

The equipment was produced by HWM-Water Ltd (Palmer Environmental / Radcom Technologies / Radiotech / ASL Holdings Ltd) and supplied on or after 13th August 2005 The equipment was supplied before 13th August 2005 that has been directly replaced HWM-Water Ltd products manufactured since 13th August 2005.

HWM-Water products supplied after 13th August 2005 can be identified by the following symbol:

X

Under HWM-Water Ltd's Terms and Conditions of Sale, customers are responsible for the cost of returning WEEE to HWM-Water Ltd and we are responsible for the costs of recycling and reporting on that waste.

Instructions for returning WEEE:

Ensure that the WEEE meets one of the two conditions above.

The waste will need to be returned in accordance with the regulations for transporting data loggers with lithium batteries.

a. Pack loggers in strong, rigid outer packaging to protect them from damage.

b. Attach a Lithium Warning Label to the package.

c. The package must be accompanied by a document (e.g. consignment note) that indicates:

i. The package contains lithium metal cells;

ii. The package must be handled with care and that a flammability hazard exists if the package is damaged;

iii. Special procedures should be followed in the event the package is damaged, to include inspection and repacking if necessary; and iiii. A telephone number for additional information.

d. Refer to the ADR regulations on shipping dangerous goods by road.

Return the WEEE to HWM-Water Ltd using a licensed waste carrier.

In accordance with the regulations, customers outside the United Kingdom are responsible for WEEE.

#### The Battery Directive

As a distributor of batteries HWM-Water Ltd will accept old batteries back from customers for disposal, free of charge, in accordance with the Battery Directive.

PLEASE NOTE: All lithium batteries MUST be packaged and returned in accordance with the relevant regulations for transporting lithium batteries.

A licensed waste carrier must be used for transporting all waste. For more information on WEEE compliance or the Battery Directive please e-mail <u>CService@hwm-water.com</u> or phone +44 (0)1633 489 479

# **Basic Configuration**

The first time Radwin is used the System Configuration window will appear automatically, it can also be accessed from "Configuration" in any of the Radwin Modules.

🔀 Radcom View V4.65.7 - [Empty 1]		
File Download Options Graph Options Data Options Advanced	Configuration Start Window Help	_ & ×
	Basic Configuration Advanced Configuration	Radcom View
		Search: Topics Search Results

In the "Database" tab you can set the folder where you will store all data received, by default this is C:\Radwin\Data.

In the "Startup" tab you can configure how you want Radwin to Start, checking the box "Short Splash Screen on Startup" reduces the amount of time which the spinning Radcom logo appears, and unchecking "Display Help Bar" cancels the appearance of the Radwin Help at startup.

System Configuration : R	ladwin All	×
Configure: Basic Manual Call Wiew Call	Startup - Select 'Display Help Bars On Startup' to display the help bars when programs are s Database System Selections Startup Transducers/Sensors/Units Statistics Manual Call Help Bar Display Help Bars On Startup Splash Screen V Short Splash Screen On Startup	started.
	OK	Cancel

In the "Units" tab you can change the default units for pressure and flow, by double clicking on them.

Basic	Transducers/Ser	nsors/Units - Select the default en Metric and Imperial units.	units for sensor types. Base flow units m	ay be selected
Manual Call	Database System Se	lections Startup Transducer	rs/Sensors/Units   Statistics   Manual I	Call Autoca
Autocall	Configuration Path:	C:\Radwin		Edit
Export	Base Flow Units:	Litres	•	
Alarm Programmi	Transducers			
- K Remote Autocall	Channel Type:	🎸 Digital (Flow)	Edit Transducer Ty	pes
	Sensors/Units			
	Sensor Type:	Units:	Missing Data Replacement Va	lue 🔺
	Pressure	Metres Head	Next Data Value	
	Flow	Litres/Sec	Next Data Value	
	Depth	Metres	Next Data Value	
	Chlorine	Base Units Base Units	Next Data Value Next Data Value	-
	Edit Sensor	Types	Edit Selected Ite	m
			OK	Cancel

In this example the flow units are configured to Litres/sec.

Select the defaul	t units to be used wł	nen displaying d	lata for this sensor	
type. Specify the	Missing Data Repla	cement Value, (	which is the value to	
Units: Litres Missing Data Rep Litres Missing Data Rep Litres Next Data Va Utres C User Defined 0.000000	/Sec /Sec /Min /Hour Metres/Hour Litres/Sec		Edit Units	

The logger type that appears by default can be configured in the "Logger Lists" tab. Which logger types appear in the drop down list can also be configured.



# **Communications Configuration**

To configure the port for local communication, click on the tab "Manual Call" and for "Direct Cable Port" choose the correct port that the communications cable is connected to.

If you intend to use a GSM modem to communicate with the logger during a power window then "Modem Port" should also be configured.

System Configuration : R	adwin All	×
Configure: Basic Basic Manual Call View Call Cal	Manual Call - Select the directly to the PC, the Di Database System Selections Comms Port Direct Cable Port Modem Port Satellite Modem Port Bluetooth Port Paknet Modem Port SMS Modem Port Download Comments Always Enter Comment	comm ports to be used for Manual Data Downloads. For loggers connected rect RS232 Port must be specified that is used to connect the logger to the PC. Startup Transducers/Sensors/Units Statistics Manual Call Autoc: • • COM16 COM16 COM2: Standard Serial over Bluetooth link (COM27) COM2: Standard Serial over Bluetooth link (COM27) COM8 COM3 Messages are sent from Autocall using a port configured as SMS Modem
	Help - Find Available Ports	OK Cancel

To configure the central computer to receive data, click on the "Autocall Ports" tab

nfigure: Basic Radwin All Manual Call	Autocall Ports - Select the comm ports enable it and specify its function. If pro- System Selections Startup Transducers/S	to be used for Autocall Downloads. Sel cessing of SMS Messages is required, t Gensors/Units   Statistics   Manual Cal	ect the required port to out no SMS Modern is   Autocall Ports   Au
🕂 😽 Autocall	Enable Port:	Connection Type:	Default Baud:
	асом1	Modem	300
Export	COM2: Standard Serial over Bluetooth	Modem	300 =
	а сомз	Modem	300
	COM4	Modem	300
- Bemote Alarm B	COM5	Modem	300
	СОМЕ	Modem	300
	COM7	Modem	300
	Сомя	Modem	300
	Сомя	Modem	300
	асом10	Modem	300
	асом11	Modem	300
	Сеом12	Modom	200
			Edit Selected Item
-	Help - Find Available Ports		OK Cancel

Choose a communications port number that is not in use for another application. To do this, double click on the port and in the new window that appears check "Enable Port ". To direct data to HWM Datagate, select "Datagate", and enter "username" and "password" in the boxes below.

Port Configuration	on the port of doed to tark to loggers. The default badd		
Enable Port:	Connection Type:	Default Baud:	
COM10	DataGate	300	~
SMS Modem Teleph	one Number:		
	Select		
SMS Message Centr	e Number		
€ Use SIM Card D	Default C Specify Number:		
Use SIM Card E HTTP Configuration	Default C Specify Number:		
<ul> <li>Use SIM Card E</li> <li>HTTP Configuration</li> <li>HTTP Address:</li> </ul>	Default C Specify Number:		
<ul> <li>Use SIM Card E</li> <li>HTTP Configuration</li> <li>HTTP Address:</li> <li>Username:</li> </ul>	Default C Specify Number: http://datagate.mobifi.com/datagate Password:		
Use SIM Card D HTTP Configuration HTTP Address: Username:	Default C Specify Number: http://datagate.mobifi.com/datagate Password:		
Use SIM Card E HTTP Configuration HTTP Address: Username:	Default C Specify Number: http://datagate.mobifi.com/datagate Password:		
Use SIM Card D HTTP Configuration HTTP Address: Username:	Default C Specify Number: http://datagate.mobifi.com/datagate Password:		

# **Logger Configuration**

In the previous steps we configured the central computer to receive the data correctly. In these steps we will configure the logger and the database for correct operation in the field this can be done with "Radcom View".

🔀 Radcom View V4.65.7 - [Empty 1]	
1 File Download Options Graph Options Data Options Advanced Configuration Start Window Help	_ @ ×
	Radcom View
	Search: Topics Search Results
	Introduction Getting Stated Setting the Dadbase Path Setting Comm Pots Configuring a Logger
	Introduction View is the graphing package of Radlog for Windows. It provides advanced graphing functionality data statistics, data seport, and allows loggers to be configured and downloaded using witzards.
	Getting Started
	It will be necessary to specify where the data is stored.
	Setting the Database Path
	Menu - Configuration / Basic Configuration
	Select the 'System' tab. This will display the database configuration.
, e	The default location for this database is in a
Copyright ©2013 Radcom Technologies	Logger Time: 17/12/2013 14:05:52 NUM

Select "Dwonload Options" then "Advanced Download/Upload/Utilities"



Note - It is not possible to configure the Pegasus Plus PRV controller using the Configure Logger Wizard, but if you prefer the Logging/GPRS elements can be configured using the wizard and logger type (Multilog SMS / GPRS).

Configuration Summary:	Configuration Option:
₩ Logger Type: Multilog SMS/GPRS	Logger Type:           What type of Logger do you with to configure? If you do not know the logger type, select Unknown - Auto Detect.           Logger Type:           Image: Mining SMS / GDPS
	Select Location Auto Detect

Next is to set the logger type "Pegasus Plus (PRV Controller)" the speed of communication (Baud:) will automatically be set to 19200 and "Connection:" should be "Direct (cable)". "Download Parameter Settings for Last Recording" should also be selected.

dvanced Download/Uple - Logger Zone Location	oad/Utilities		×
Type: Connection: Number: Pager Number:	Pegasus Plus ( PRV Controll Direct (Cable)	er] 💌 Baud: 💌 Port:	🧊 19200 💌
Download/Upload Utiliti C Enter New Paramete O Download Paramete O Download Paramete	es   Signal   ers er Settings For Last Recording er Settings And All Recorded Data		
C Download Last Nun C Download Logger M	nber Of Hours Data: 6 Iemory From Address: 0	Of Length:	0 Cancel

Having made the above changes click on the OK button to start the communication with the logger.

Downloading	×
S 2	
Comm 16 - 19200 (Pegasus Plus ( PRV Controller ))	
Downloading Header	
	Abort
Estimated Time Remaining:	

Once the current configuration has been downloaded we need to go through the headings on the left side to configure the logging and pressure control.

Choose the Zone and Location of the logger, either by selecting from the Database or by creating an new. This will be the folder location where data files will be downloaded and stored in this example \_\_00\_0F.

	,	/	
Pegasus Plus ( PRV (	Identity:		
Identity	Zone:	00	
Controller			
Control Status	Location:	_0F	
Time Control	-		
Secondary Time Control	lime		
Flow Control	Logger Time:	13:49:39 01/04/2014 Error: 0 Minutes	;
Manual Override			
Status			
Logging	Comments:		
Channel Configuration	Name:	Test Comment.	
Main Recording			
Pseudo Recording	Site Info:	Halma Water Management	~
Secondary Recording		Ty Coch House	
Data Display Configurat		Liantarnam Park Way	
Status		UK	
Comms		NP44 3AW	
Contraction of the second second			-
gPRS Configuration			

### **Select Communication**

Click on "GPRS Configuration"

To send data to Datagate "GPRS UDP" should be selected, alarms can be sent directly by SMS, or by through Datagate (GPRS UDP), where they would be forwarded by email, or SMS(UK Only).

Pegasus Plus ( PRV Control	ler ) - v3.58 - GPRS ( ontroller ) - v3.58	Configurati	on •	Alarms:	GPRS UDP	
Identity     Controller     Control Status     Time Control     Secondary Time Control     Secondary Time Control	[1] UDP: [2] UDP: Call Times:	Call Freque	wmonline.com	SMS Backup Nur	mber: +4	Edit
Anow Control     Manual Override     Status     Logging     Channel Configuration	Enable (1] inbound.hw (2]	monline.c	Frequency 2 Hours 2 Hours			
Main Recording     Pseudo Recording     Secondary Recording     Data Display Configurat	GPRS Network Co Network Name: APN:	nfiguration - mol	piledata	Username:		Select
Status Comms GPRS Configuration Power Windows	SMTP Server: Email Username:			Password: Password:		
	Load	Save			Upload	Cancel

SMS backup can only be used either directly to Datagate (+447786200833) or if an SMS modem is also available on the central computer.

### **Call Times**

There are 3 options for call in

"Call times table" specifies the exact time(s) data should be sent each day.

"Call Frequency" allows data to be sent at a specific interval. "Dual Call Frequency" allows different call frequency for "day" and "night" "Dual Alarm" Allows call frequency to be increased when and alarm condition occurs.

Call Times:	Call Times Table	•
Enable	Call Times Table	
<b>X</b> 01	Dual Call Frequency	Γ
<sup>3</sup> ∕×02 <sup>3</sup> ∕×03	Dual Alarm 09:00:00	

The APN of the celluallar network provider can be entered if known, or GPRS Test can be used to identify it, later, click "Select.." to edit APN.

	vouatorie uk		Select
APN:	internet	Username:	
SMTP Server:		Password:	
Email			,

Power Windows allow communication by SMS/GSM with the logger at a predefined time, they are not normally required for GPRS loggers as messages can be sent through the server. To use GSM the sim card in the logger must have a GSM data number, and a GSM Modem is required on the central computer.

Pegasus Plus ( PRV (	Enable	Start Time	End Time	
Identity	01	00:00:00	01:00:00	
Controller				
Flow Control				
Time Control				
Secondary Time Control				
Manual Override				
Control Status				
Logging				
Channel Configuration				
Main Recording				
Pseudo Recording				
Secondary Recording				
🗐 Data Display Configurat				
Comms				
GPRS Configuration				
Power Windows				
	1			
			Edit Selected List Item	

At this point we set up the phone number from the SIM card, which is in the Pegasus Plus

Upload Parameters				×
Logger Zone,., PG40 Location,., 652 Type: Connection: GSM Data Number:	Pegasus P Direct (Cable)	Plus ( PRV Controller ) 💌	Baud: Port:	☐ 19200 ☐ COM2: US
SIM Voice Number: Options GPRS Parameters SIM Card Voice Number Stop Main Recording Stop Secondary Recordin Control Parameters and Secondary Time Parameters	ng Restart			E T
Update Logger Time as: SIM Card Voice Number ('+'	format ):	PC Time +447624965897		Cancel

# **Configuring Input Channels**

When using either Contact Closure or Open Collector pulse devices "Power Save" should be used.

E) Identity				
Controller	Channel 1:	Integral Pressure	Power Save	-
Control Status	Channel 2:	Digital Input	Power Save	•
Time Control	Channel 2	Integral Pressure	Power Save	
Secondary Time Control	charmer 5;	[ <b>]</b>	Fower save	
Flow Control	Channel 4:	mA	Power Save	•
Manual Override				
Status				
Logging				
Channel Configuration				
Main Recording				
Pseudo Recording				
Secondary Recording				
🗐 Data Display Configurat				
Status				
Comms				
GPRS Configuration				
Power Windows				
		C	Linkand	Canaal
	Load	Save I		

This window configures the start time of the recording the time you see here is the previous start time, as long as this is in the past, the logging will automatically start at the next sample period. "Record" should always be cyclic, and stop disabled. All available channels should Enabled in "Logging mode" and "Count" and "Standard" are normally used.

Pegasus Plus ( PRV Controlle	r ) - v3.58 - Main Re	ecording				×
🗐 Pegasus Plus ( PRV (	Record					
<ul> <li>Identity</li> <li>Controller</li> </ul>	Record Start Time	e: 13:1	5:00 • 0	1/04/2014	•	
<ul> <li>Control Status</li> <li>Time Control</li> </ul>	Record Stop Time	: 13:0	5:16 - 0	1/04/2014	-	
<ul> <li>Secondary Time Control</li> <li>Flow Control</li> </ul>	Sample Rate:	00	: 15 : 00			
<ul> <li>Manual Override</li> <li>Status</li> </ul>	Enable Stop	C Ble	ock Memory 🦷 🕫	Cyclic Mem	iory	
Logging     Channel Configuration	Logging Mode					
Main Recording	Channel 1:	Enabled	Count	-	Standard	-
<ul> <li>Pseudo Recording</li> <li>Secondary Recording</li> </ul>	Channel 2:	Enabled	Count	-	Standard	-
🗐 Data Display Configurat	Channel 3:	Enabled	Count	•	Standard	-
Status	Channel 4:	Enabled	Count	Ŧ	Standard	<b>v</b>
<ul> <li>GPRS Configuration</li> <li>Power Windows</li> </ul>						
	Load	Save			Upload	Cancel

Under "Data Display Configuration" for the flow transducer on "Channel 2" the "Litres Per Pulse" value should be entered according to the pulse output of the flow meter.

	dentity.		auon	[****				
<u>а</u> с	ontroller	Channel:		Channel 02	<b>•</b>			
■ 0	ontrol Status	Type:		Digital (Flow)	-			
E Ti	ime Control	Litres per Pulse:		10.000	Of	fset:	0.0	
≣ 50 ≣ 61	low Control	Mater Deadings		5389762 8160	Cubic Matra	-		
ШM	Ianual Override	Meter Reading:		3303702.010	Cubic Metre	5		
E St	tatus							
1	ogging							
🗐 d	hannel Configuration							
🗄 M	lain Recording							
🗐 Ps	seudo Recording							
🗏 Se	econdary Recording							
	ata Display Configurat							
St	tatus							
0	omms							
🗉 G	PRS Configuration							
E Po	ower Windows							
		Load	Save			Upload	•	Cancel
_								

### Setting the controller

The Pegasus Plus can be set to control by "Time", "Flow" or both. In the event of contradiction the highest pressure is always used

### **Flow Control**

In the tab "Flow Control" in the section "Flow Control" enter the "Sample Rate" and flow averaging Factor. This number should not be too high as flow, is measured at the "Sample Rate" and averaged according to the "Flow Averaging Factor" So each time a new sample is taken the rolling average is updated.

The higher the average factor, the smoother the output pressure curve will be.

Typical Sample Rate = 10 seconds.

Typical Flow Averaging factor = 1

Pegasus Plus ( PRV (     Identity     Control Status     Time Control     Secondary Time Control     Status     Channel Configuration     Main Recording     Pseudo Recording     Data Display Configurat     O.00	Control Dele Rate (mm:ss): Delulation Table: Cate: Pressure: 25.0 D 25.0 D 25.0 D 33.0	00:05 Flow Averaging Factor: 6
Secondary Time Control       Flow F         Manual Override       29.00         Status       144.00         Logging       324.30         Channel Configuration       0.00         Main Recording       0.00         Secondary Recording       0.00         Secondary Recording       0.00         Secondary Recording       0.00         Secondary Recording       0.00         Status       0.00         Secondary Recording       0.00         Status       0.00	Rate: Pressure: 25.0 0 25.0 0 33.0	
Comms     O.00     GPRS Configuration     Power Windows     O.00     O	5 35.0         	Ę

Click edit to enter the values in flow modulation look up table, enter values for flow (always Litres/second) and pressure (always in meters of water.) Then click Ok

You can set up a maximum of 32 points.

When using flow, the values are linearly interpolated between the points of the table.

## **Time Control**

In the tab "Time Control" can establish a table of values in which for at a certain time, a certain pressure is established.

In the first section you can set the date time change for summer and winter.

To modify or add hours change right position is selected and click on "Edit".

Pegasus Plus ( PRV ( I Identity Controller Control Status Time Control	Time Control Summer Time (dd/mm): Time Adjustment	24/03 • Winter	Time (dd/mr ]	n):	24/10
Secondary Time Control     Flow Control	Switching Times:			Expand	Edit
🗐 Manual Override	Day:	Time:	Pressure:		•
Status	Every Day	05:00	20.0		
Logging	Every Day	06:00	40.0		=
Channel Configuration	Every Day	12:15	30.0		
Main Recording	Every Day	20:00	40.0		
Pseudo Recording	Every Day	21:00	20.0		
Secondary Recording     Data Display Configurat	Week End	14:00	30.0		
E Status	Week End	14:15	40.0		
Comms	Saturday	12:00	40.0		
GPRS Configuration	Disabled	;			
Power Windows	Disabled	:			
	Disabled				Ŧ
	Load Save			Upload	Cancel

In this screen you can select days of the week, Monday to Friday, Weekend or Every day. You can also select the Time and Pressure (always in meters water column) desired. Click on OK to confirm.

The daily shift hours can be viewed by clicking on the Expand button. And appear in the following format:

Pegasus Plus ( PRV Controlle	er ) - v3.58 - Time Control				×
🗐 Pegasus Plus ( PRV (	Time Control		,		
Identity	Summer Time (dd/mm):	24/03	Winter Time (dd	/mm): 2	4/10 -
Controller	Time Adiustment	1.110000(0)		,	
Control Status	nime Adjustment	[1 Hour(s)			
E Secondary Time Control				(	-
E Flow Control	Switching Times:			Summary	Eult
Manual Override	Day:	Time:	Pressur	e:	*
Status	Monday - Every Day	05:00	20.0		
E Logging	Monday - Every Day	06:00	40.0		
Channel Configuration	Monday - Every Day	12:1	5 30.0		
Main Recording	Monday - Every Day	20:00	40.0		
E Pseudo Recording	Monday - Every Day	21:00	20.0		
Data Display Configurat				_	
Status	Tuesday - Every Day	05:00	20.0		
Comms	Tuesday - Every Day	06:00	40.0		
GPRS Configuration	Tuesday - Every Day	12:1	5 30.0		
Power Windows	Tuesday - Every Day	20:00	9 40.0		-
	Tuesday - Every Day	21.00	0.02		•
	Load Save			Upload	Cancel

This table shows the same data but extended.

In the tab "Secondary Time Control" a Radcom hydro switch can be used to switch between the Main and Bypass PRV. This is to prevent the bypass valve seizing.

Here we work with two states A and B are the states of the Hydro Switch

To use this feature first "Enable Time Control Table" and choose the Default state,

In "Table Restart Parameters" you can choose the time and period of days before the switching is started.

Pegasus Plus ( PRV Controlle Pegasus Plus ( PRV C Identity Controller Control Status Time Control	er ) - v3.58 - Secondary Time ( ✓ Enable Secondary Time Con Table Restart Parameters Restart Time (hh:mm):	Control Itrol Table Default State: Si 00:00  Time: 1	tate A  Days
<ul> <li>Secondary Time Control</li> <li>Flow Control</li> <li>Manual Override</li> <li>Status</li> <li>Logging</li> <li>Channel Configuration</li> <li>Main Recording</li> <li>Pseudo Recording</li> <li>Secondary Recording</li> </ul>	State: State B State A State B State A State B State A State B State A	Duration (Days): 7 0 0 0 0 0 0 0 0 0	Edit
<ul> <li>Data Display Configurat</li> <li>Status</li> <li>Comms</li> <li>GPRS Configuration</li> <li>Power Windows</li> </ul>	Current Position: Secondary Time Control Over Enable State; Load Save	Waiting     Days Remaining:       ride	0 Cancel

The "Secondary Time Control Override" allows temporary selection of one of the states for a period of time. After finishing time, the controller will return to Secondary Time control table.

In the tab "Manual Override" you can set a time period in "Override Duration (hh: mm: ss)" in which the downstream pressure will keep the pressure is set to "Override Pressure". Once this time has elapsed, the controller will return to the Control Pegasus automatically. To reach this value can be done by two methods: Normal or fast

Pegasus Plus ( PRV Controlle	er ) - v3.58 - Manual Override	X	-
🗐 Pegasus Plus ( PRV (	Status		
Identity     Controller	Verride Enable		
Control Status	Override Type:	Normal	
Time Control     Secondary Time Control	Override Pressure:	25.00000	
Flow Control     Manual Override	Override Duration (hh:mm:ss):	00:80:00	
Status			
Channel Configuration			
Main Recording			
Pseudo Recording     Secondary Recording			
Data Display Configurat			
Status			
Comms			
Power Windows			
	Load Save	Upload Cancel	

gasus Plus ( PRV Controlle	r ) - v3.58 - Control Statu	;
Pegasus Plus ( PRV (	Status	
Identity           Identity           Controller	Control Mode:	Time and Flow 💌 Latch on High Unreachable 💌
Control Status	Control Status:	Enabled
<ul> <li>Secondary Time Control</li> <li>Flow Control</li> </ul>	Current Pressure:	57.400001 Target Pressure: 60.000001
Manual Override  Status	Dead Band:	1.000000 Control Gain: 12
Logging		
<ul> <li>Channel Configuration</li> <li>Main Recording</li> </ul>	Control Restart Time:	15:33:50 17/03/2014
Pseudo Recording Secondary Recording	Fault Pressure:	0.000000 Fault Timeout ( Minutes ): 15
🗐 Data Display Configurat 🗐 Status	Fault Condition:	In-Active
Comms		
GPRS Configuration		
Power Windows		

In the "Control Mode" to select from: None, Time, Flow or Time and Flow (making the maximum pressure of the two).

In "Control Status" you can see if the controller is enabled and disabled. Also you can see what the "Target Pressure" and "Current Pressure" downstream were when Pegasus Plus was downloaded.

The "Dead Band" can set the tolerance with which the driver must follow the target pressure. This value is given by + / - in meters water column. A typical value is 0.5 meters "Gain Control" depends on the response time of the PRV.

Typical Gain Control = 10

These values, together with hysteresis are modified by the controller over time depending on the difficulty you find to reach the target pressure.

This is intended to optimize the battery life of the controller.

In "Control Restart Time" will appear the date and time that the controller was reset last.

In "Pressure Fault" should set the pressure at which the controller will maintain if you see no pulses in a certain time period of "Fault Timeout (Minute)". This option is used for flow control.

In "Failure Condition" you can see if the failure pressure is active or inactive.

Once the configuration is complete, click "Save" to save logger configuration to the computer, then click upload to programme the logger,

Click on Advanced and select the lick boxes as bein	below
---	-------

ogger				
Zone	00			
Location,	_0F			
Type:	🗐 Pegasu	s Plus (PRV Controller )	- Baud:	<b>a</b> 19200 💌
Connection:	Direct (Cab	le)	▼ Port:	👼 COM2: US 💌
GSM Data Number:				
SIM Voice Number:				
0.9736503				
Dptions Main Recording Secondary Reco	Params and Restart ording Params and Res	tart		<u>^</u>
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If required "Secondary Time Parameters" can also be ticked.

Override Parameters should only be selected on it's own, once the controller is in an "Active" control state.

In View we can check the settings



We can see a drop-down appears with loggers (Zone/Locations) that exist in the database.



Right click on the Pegasus Plus created, and select "Location Database / Edit Location" to see the configuration. The most important tabs are Logger, Transducer, Units/Levels, Logger Call Numbers/Times and Logger Power Windows. To move through the different tabs use the arrows at the top, which are next to the tabs.

Connection Type: GPRS GSM Data Number: SMS Voice Number: +44123456789	Configure: Configure: Basic Autocal Configure: Co	Logger - Select the logger communicate with the logger Location Logger Statistics Tra Logger Type: Pegasus Date Manufactured: Last Battery Change:	ype and baud rate. Select the connection type (how the computer v r), and enter telephone numbers if required. The logger manufactur isducer   Unit/Levels   Meter   Autocall   Memo   Auto Database E Plus (PRV Controller ) Baud: 11/01/1970 Serial: 11/01/1970 Last Known Logger Configuration	
		Connection Connection Type: GSM Data Number: SMS Voice Number:	GPRS	[

# **Features controllers Pressure Reducing Valves**

- Control by Pressure profile or flow
- Built-in data logger
- Battery life up to 5 years
- Compact design with IP68 protection
- Intelligent Operation "failure mode"
- Manual Override Option

# Specifications PRV Controllers

The "Pegasus" has a flow channel (input pulses from a pulser voltage free).Maximum of 128 pulses / sec.)

"Pegasus" also has the option of a second flow channel.

"Pegasus" has two input channels for pressure recording. Pressure transducers may incorporate internal or military connectors for external pressure sensors.

#### OUTPUTS

Three outputs are available directly from the Pegasus, they act on two solenoid pulse (one to increase the pressure and one for decrement) and a solenoid latch for emergency conditions (rapid increase in pressure if high flow, fault, etc.).

#### CONTROL FEATURES

- Time Control
- Flow Control
- Real-time clock
- Possibility of communicating by SMS, GSM and GPRS
- Failure mode operation (sensor failure, etc.)
- Accuracy of flow measurement based on time
- Automatic diagnosis within the Controller

#### DATA LOGGER

- Very resistant housing, IP68 protection, replaceable battery
- Battery life at least five years in normal operating conditions
- Record modes by Count and Event
- Compatible with standard software for Windows Radlog
- Logging interval: 1 second to 1 hour
- Memory Capacity: 49,152 readings (block or cyclic)
- secondary capacity: 8192 readings (17 hours with 4 channels at intervals of 30 seconds)

#### COMMUNICATIONS

- Local communication in direct connection via serial port RS-232 direct connection to a laptop or fixed or portable reading terminal (TPL)
- Incorporates internal modem for remote communication via GPRS or GSM
- Programming, download and full scan with Windows Radlog

#### PHYSICAL CHARACTERISTICS

**Operating Temperature:**-10°C to +50°C **Material:**Aluminum alloy housing **Sealing:**IP68 (Totally submersible) **Dimensions:**250 x 175 x 90mm **Weight:**3kg

### **Installation Procedure**

The following assumes that the valve is not vented to the maximum or used to cut the water supply. The output pressure is not regulated during installation, and variations in inlet pressure affect the output pressure until the installation is complete.

Ensure that the valve is working properly before connecting to the actuator, if not, it is essential to repair the PRV control before.

- 1. Block the PRV into position, closing the valve on the top chamber if possible.
- 2. Alternatively, shutoff both input and output at the same time, to ensure that the valve is locked in that position. The volume of water in the main chamber remains constant.
- 3. Ensure that the thread of the actuator is the same type of thread.
- 4. Screw the Actuator thread in until finger tight, the pin should now be fixed.
- 5. Unscrew the pressure adjustment screw is located on the pilot of the PRV. If pressure drops at this point the valves are leaking.



- 6. Screw the actuator in the pilot of the PRV. Rotate the actuator to apply the same force that he had when placed the old screw.
- 7. Slowly open shutoff valves simultaneously both upstream and downstream, to reapply the pilot control.
- 8. Check the regulated pressure downstream of the PRV and set the maximum pressure required rotating the actuator.
- 9. Tighten the lock-nut on the bottom of the screw to secure the maximum output pressure.
- 10. While checking the regulated pressure downstream of the PRV, Rotate the top of the actuator anticlockwise adjust the minimum pressure required (eg Night) by turning the top of the actuator (support the fixed central nut with a spanner).
- 11. Tighten the lock-nut on the top of the screw to secure the minimum outlet pressure.

Maximum and minimum pressure are now adjusted.



- 12. Connect the pressure sensors between the controller and quick-connects upstream and downstream.
- 13. Connect the controller to the solenoid box using the 6-pin military connector.

- 14. (Where necessary) Connect the controller to the flow meter through the 4-pin military connector.
- 15. Connect the antenna to the FME connector and place it in the position to obtain better coverage.

The electrical system is now installed PRV

### Verification of the configuration.

It is recommended to download Parameter Settings again to check the configuration.

We will check that has been configured correctly the new identity, GPRS Configuration (phone and time sent), the times and dates of recordecording start are correct and finally, that in "Status" within Logging, "Main Recording Status" is "Waiting to Recording" or "Record".



#### **Option Save.**

If the settings are correct we recommend you click on the Save button, located at the bottom so that the hours of sending data and especially the hours of GSM windows remain stored in the database and can be consulted if required in the future.

### **General Notes**

- a) No need to remove the original pilot PRV during system installation.
- b) The needle valve may need adjustment.
- c) Keep plastic pipes as short as practical, the shorter Best (Maximum of 1 meter).4
- d) Do not extend connection cables (If done, the controller may not work properly).
- e) Protect plastic pipework from freezing using foam pipe insulation

# **General System Pressure Regulating**

### Introduction

The actuator (hydraulic device supplied with the system) replaces the screw on the pilot of the PRV, a moving rod is used to control the maximum and minimum pressures. Working operation of the pilot remains unchanged, the only difference is that the pressure exerted on the inner spring will vary according to the instructions of the controller.

The needle valve to the water inlet of the PRV does not need, in general, be modified. The needle valve prevents the PRV changing position rapidly, limiting the speed of opening and closing the valve.

The inlet pressure is restricted in the pilot before moving to the main chamber of the PRV. Equilibrium is achieved when the flow of water entering the upstream pilot is the same as downstream.

### **Hydraulics - Needle Valve**

The needle valve should be adjusted so that the amount of water is not very big, so it does not cause the rapid closure of the PRV, which could cause serious damage to the circuit of pipes.

### **Hydraulics - Actuator**

To set the maximum output pressure at the PRV, temporarily disconnect actuator tubing coming from the solenoid box, to allow the actuator top at atmospheric pressure. With the lower locknut loosened and the top of the actuator hitting the top of the screw, screwing the actuator in the PRV pilot to increase the downstream pressure (or unscrew to decrease pressure). Having gained the maximum desired pressure, tighten the lower locknut.

To adjust the minimum pressure at the PRV outlet. You have to turn the top of the actuator in the opposite direction to clockwise slowly until desired minimum pressure. Then adjust the upper jam to set minimum pressure.

When we have the high and low pressure, it is necessary to check them to make sure they are well tared. It is advisable to alternate between the two pressures acting on the solenoid.

# Maintenance

### **Electronic controller**

The battery life of the controller is more than five years under normal working conditions. These conditions are based on a maximum of two thousand solenoid operations daily. Once the battery fails, the controller must be returned to "HWM-Water Ltd" where batteries are replaced.

The internal battery is measured by the firmware all its life. Before the battery fails, the solenoids are switched to high-pressure and change to low pressure is prevented until the batteries have been replaced.

The logger will continue to record data in its memory until the battery completely fails. The data logger cannot be downloaded after this condition occurs.

If any other problem occurs, the logger should be returned to "HWM-Water Ltd", for repair.

The controller is designed for continuous operation over the life of the batteries. You do not need any maintenance.

Unauthorised servicing will void the warranty and any potential liability for "HWM-Water Ltd".

### Hydraulic Components of the PRV

The hydraulic system consists of quick couplings, hoses and actuator that may require maintenance during the normal life of these products.

To obtain these parts contact "HWM-Water Ltd"







# AutoCall

At this time we have prepared the Pegasus and database for data reception. The last step that remains is to open the Automatic Download module that is to be responsible for the receipt and processing of data.

From any Radwin module go to the Start menu and click on Automatic Download. At this time we will see a window in which ports are checked data reception.

e Options Configu	ation Start Help		
볼 📳 🗇			
Port10	DataGate {http://datagate.mobili.com/data		🛛 🖳 Autocall
<sup>g2</sup> Port Idle		Abort	
	Ports Initialised	×	Search:
	Par State		Topics Search Results
	Foit Status	DataGate (kite: / /datagate mehili oom /da	Introduction
		Diatadrate (http://datagate.htopin.com/da	Getting Started Configuring Autocall Comm Ports
			Configuring Loggers for Autocal Download
			Scheduled Calling
			Introduction
	- Autocal Manager		
			Autocall is the automatic data download
	Autocall Enable	Update Logger I me	configured to use up to 32 comm ports,
	Direct Autocall Ena	ble	providing parallel download capability of
		Continue Energy About	Radcom data loggers. It supports Direct, PSTN Modem, CSM Modem, SMS Modem
		Continue Elfors Abort	and Paknet Modern connection types.
			Getting Started
			octang otartou

Once the check click on "Continue".

Now Autocall is waiting to receive UDP data to be processed by the Radwin.

It is not necessary to have Autocall running all the time, but new data will only be available in Radwin, when Autocall has received and processed messages from the server.

# **APPENDIX A - Examples**

# **Graphics Example of Reducing**

### Time control - Two pressure points

Night-time pressure has been significantly reduced, consequently the water losses due to leaks have also been reduced. During the day it is restored pressure to meet the daytime demand. The flow downstream of the PRV, and the pressure at the "critical point "of the system can also be measured more control over the zone.

The downstream pressure is regulated between two pressures. No flow variation significantly affects the output pressure.

#### Control Time - Two pressures

Up to 32 time points can be programmed to vary the downstream pressure between two preset values of high and low pressure. Four values (t1, t2, t3 and t4) are shown in the following application:







# **APPENDIX C – MANUAL COMMUNICATION**

It is possible to communicate with the logger either by GPRS through Datagate, or directly by GSM with GSM Modem.

Parameters uploaded by GPRS will be collected from Datagate when the Pegasus Plus next calls in.

Upload Parameters		X
Logger00 Location0F Type: Connection: Address:	Baud:       Image: Select HTTP/FTP	]
SIM Voice Number:	+447123456789	
Options		
Main Recording Params an Secondary Recording Para General Parameters Channel Configuration An	nd Restart  ams and Restart	
Update Logger Time	-	
Update Logger Time as: SIM Card Voice Number ( '+' fo	PC Time  v rmat ); +447624965897	
	OK Cancel	

When communicating by GSM Modem with the Pegasus Plus, it must have GSM Data Number, and be called during a power window,

Upload Parameters				×
Logger00 Location0F Type:	Pegasus P	lus ( PRV Controller ) 💌	Baud:	چ 19600 ع
Connection: GSM Data Number:	Modem +4471234567	789	Port:	G COM5: St ▼
SIM Voice Number:				
Main Recording Paran Secondary Recording General Parameters	is and Restart Params and Restari	t		•
Channel Configuration	n And Stop Recordin	ıg		-
Update Logger Time as:		PC Time	<b>~</b>	
SIM Card Voice Number (	+' format ):	+447624965897	Ok	Cancel

### SIMPLIFIED DECLARATION OF CONFORMITY

This simplified EU declaration of conformity referred to in article 10(9) shall be provided as follows:

Hereby, HWM Ltd declares that the radio equipment type transceiver is in compliance with Directive 2014/53/EU.

The full text of the EU declaration of conformity is available at www.hwmglobal.com

HWM-Water Ltd Ty Coch House Llantarnam Park Way Cwmbran NP44 3AW United Kingdom +44 (0)1633 489479 www.hwmglobal.com



MAN-125-0001-E (Pegasus+ Basic User and Installation Guide)

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