

LoLog R data logger Basic User Manual for installation and use



Version 1



Warning: This manual contains important safety and operating information. Please read, understand and follow the instructions in the manual.

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Introduction

Thank you for choosing an HWM data logger(s), we trust it will provide you with many vears of service.

The individual configuration of your logger(s) may differ slightly from the detailed descriptions that follow, but any additional setup information that you need, can easily be obtained from our customer support team.

Unpacking

As you unpack your new logger, please confirm that you have the following parts required to install the equipment. If there are any omissions, please contact our sales team to rectify or supply the missing parts.

- LoLog R data logger
- Radwin Software CD-ROM (also available at www.hwm-water.com)
- RT COM USB Wireless Interface Receiver (optional)
- Connection hose for a pressure logger (optional)
- Flow connection cable (optional)

Please dispose of your waste packaging responsibly.

Before proceeding to site for physical installation, please take the time to configure your logger in an office environment. Most settings can be configured before visiting site and this will save time at the point of install, especially if the weather is bad.

You will need to have:-

A PC with Windows 7/8 installed (Radwin also supports Windows XP & Vista)

A description and reference number for the installation site:

The reference number is split into a Zone and Location format to allow for grouping of individual "Locations" into larger regions or "Zones".

The format of the number is configured during the initial installation of the software but essentially is a 7 character code, e.g. AB123CD

Installing the software

- 1. Insert the CD-ROM supplied CD drive. into your (If your PC does not have a CD drive, then either copy the files from the CD-ROM onto a memory stick, or download and run the Radwin installation file from the HWM website at www.hwm-water.com)
- 2. When prompted:-





(i)

If the prompt does not appear automatically, please open the CR-ROM folder using Windows explorer (My Computer).

Double Click the CD-ROM icon to run the installer



3. Now click <<Radwin>> from the Installer



Click to install Radwin software.

Note Radwin Lite is only for specialist use.

The I/R Driver is normally installed

automatically, however, in case it does not in step 0 below, please click the <<USB I/R Reader Driver>> after the main installation is complete.

4. When prompted by the InstallShield Wizard to install:



5. Read and agree the terms of the Licence agreement to continue:



6. Choose the Destination folder you wish to install to by clicking <<Change>>





Note: Ensure that you choose a folder that you have read/write access to. Check with your IT team if you are not sure.

7. The installation process now has all the information it needs to proceed so click



Wait while the installation completes...





and the I/R Driver installs...

8. Finally click <<Finish>> to close the InstallShield Wizard.



9. Then click <<Exit>> to close the Installer.



10. If you have installed from a downloaded file instead of the CD you will see the extra window below.

The Installation process has now finished so click <<OK>> to confirm.

Finished.	
Finished.	
	ОК

First time run of Radwin

Once you have installed Radwin you need to make some initial setup choices and configurations.

Creating your first Database

- 1. From the start menu, click <<All programs>> and find the program group "Radlog for Windows"
- 2. Click <<Radlog for Windows>> to expand the group and then click <<Radcom View>> <

You may wish to "Pin" the program to your taskbar for convenience. To do this, **right** click on the Radcom View icon and select "Pin to Taskbar" from the pop up menu.

The program can now be conveniently started from the taskbar.



3. After the program starts you will be automatically prompted to set up a new database path

This is for local storage of configuration information and any data that you may directly download from the logger or from DataGate[™] after site installation.

Advanced	Database - Select the data database is Local or on a M	base location, Local or Net Network Server, enter the d	work Server, or Internet based (FTP : atabase path (where the logger datab	ate). If the sace and
	Database			
	Database Location C Local PC or Network Serve C Internet (FTP site)	xk Server Logger Identity Selection Method: Zones and Locations		
	- Local or Network Server Databa	se Configuration	J	
	Database Path:	C:\Radwin\DATA	▼ Br	omse
	Mirror Database Paths	C:\Radwin\DATA2		DHSE

A note about Logger Identity Selection Method:-A logger is identified with a single 7 digit reference ID. If you select Single Identity from the menu then you can use the full 7 digits how you like. E.g. account no, customer number, etc.

_ogger	Identity Selection Method:	
	Zones and Locations	-
	Zones and Locations Single Identity	

However, when installing a larger fleet of loggers, Radwin allows you to group individual logger *Locations* into larger *Zones*. This allows for geographic regions (*Zones*) to be easily indexed where large fleets are involved.

So, Locations refer to loggers Zones **contain** Locations (loggers) Many Zones may be created Each Zone may contain many Locations (loggers)

For example, split a town up into Zones then split the Zones up into Locations and deploy loggers within each Zone.

If you choose this (default) option you will be prompted (later on) to decide how the 7 digits are allocated. E.g. ZZ/LLLLL means you can have up to 99 zones with 99,999 loggers in each zone, or ZZZ/LLLL gives 999 zones with 9,999 loggers in each and so on.

In this way you can develop an indexing method to allow you to quickly find sites you wish to examine.

4. From the Logger Identity Selection Method, choose the option as described above.



igan: Advanced	Enddeare - Select the doubt defabere is Local or on a Me	seriocation, Land or Kel hubblic server, enter the d	inali Seven, or Internet based (FTP ske), 816 Intelnae parts (where the logger childhour and
	Defabere		
	O atubase Lacation		Lagger Identity Selection Method
	C Internet #1F stell		
	- Lacal or Network Server Database Endelsee Data	Configuration	
	F Herr Delabere Petra	C'Plader/OA1A2	1

Lt you wish to change to location of the folder where the database is stored, click <<Browse...>>

Then navigate to the desired folder and click << Open>> to choose the folder.

When prompted below click <<Yes>> to confirm the folder choice.

8	A database w a database in	as not found in th this folder?	ve selected folde	er. Do you wish	to create

5. Now click <<OK>> to create the database.

Calabase cardy format	777711
CE. Is cannot the depicture of	wh:
C Buck ONTA	
WMINING The Service For	and For This Dailabase Carlies
An Annual Constant Section	er.

(and

If you chose *Zones and Locations* in step 4, chose your format for the ID number. The default is the UK postcode format, e.g. AB12 3CD

Then click <<OK>> to continue.

Note: The Database format CANNOT be changed from this point. If you need to change it later you will need to delete the \DATA folder and start again.

If you have upgraded to this edition of Radwin from an earlier version, then the database format that was chosen in the previous edition will be maintained.

Setting up communications.

- 1. Connect the USB plug on the RT COM USB Wireless Interface Receiver to a spare USB port on your computer. Ensure the antenna is connected to the receiver.
- 2. Position the logger in close proximity to the receiver



3. Start Radcom View again (unless already running) and from the menu select <Configuration> and then <Advanced Configuration...>



 Select Radwin All > Manual Call tab (when you plug in the Receiver to your PC USB port you should be able to identify it in the Drop down for USB Transceiver Port -

Configure:	System C Manual Call - Select the directly to the PC, the Di Database System Selections	ionfiguration : Radwin All comm ports to be used for Manual Data Downloads. For loy rect RS232 Port must be specified that is used to connect t s) Startup Transducers/Sensors/Units Statistics Man	ggers connected he logger to the PC. ual Call Autoc
Autocall 2 Data Generator 2	Comms Port Direct Cable Port Modem Port Satellite Modem Port Bluetooth Port Paknet Modem Port USB Transceiver Port SMS Modem Port	COM4 COM4 COM2 COM2 COM2 COM2 COM3: USB Serial Port (COM3) COM3: USB Serial Port (COM3) COM3: USB Serial Port (COM3) Messages are sent from Autocal using a port configured Insert Default Comment:	v v v as SMS Modem
	Help - Find Available Ports	ОК	Cancel

Click <<OK>> to save the configuration.

4 Congratulations, you are now ready to begin configuring your new data logger.

Communicating with the LoLog R and configuration

- 1. Slide a magnet in a swiping motion over the label of a new LoLog R to 'wake it up' out of transport 'sleep' mode. (once it is 'awake' it will now remain 'awake')
- Note: Never use the magnet of another LoLog R to perform this 'wake up' routine - the strength of the LoLog R attachment magnet will cause permanent damage to the LoLog R's reed switch. Use only a low Power magnet for this operation



2. In Radwin View select 'Download Options'/ 'Advanced Download /'Upload'/ 'Utilites'



3. At the 'Advanced Download / Upload / Utilities' screen select Type : LoLog R from the drop down, Connection type - USB Transceiver , the correct Com port and a baud rate of 115200. Select 'download parameter settings for last recording' -

	Advanced Downl	load/Upload/U	tilities	×
Logger Zone Location Type: Connection: Number:	Lolog R USB Transceiver	• •	Baud: Port:	ଟ୍ଟି 115200 ▼ ଟ୍ଟି <mark>COM3 U</mark> § ▼
Download/Upload Utilities	Signal			
C Enter New Parameters	:			
Download Parameter S	Settings For Last Record	ding		
C Download Parameter S	Settings And All Records	ed Data		
C Download Last Numbe	er Of Hours Data:	6 👻		
C Download Logger Mer	mory From Address:	0 0	If Length:	0
			OK	Cancel

4. Select 'OK'

5. The Software will locate all LoLog R's in the vicinity identifying them by their Serial numbers (which can be found on the loggers Label) -

	Configu	re Logger		×
Select a logge	r from the list to configure.			
Identity:	Name:	Number:	dBm	FW
		00242072	-41	01.04
		00242066	-64	01.04
		00223932	-54	01.04
		OK		Abort

- 6. Highlight the serial number of the logger you want to configure then select 'OK'
- 7. If prompted to upgrade the firmware at this step select 'Yes'.
- 8. The software will then download the logger configuration

	Downloading	×
0242072:	Downloading Header 2	
		Abort

9. Once downloaded you will see the screen below -

		Lolog R - v1.04	×
Lolog R - v1.04 Identity Logging Main Recording Display Configuration Status	Identity: Zone: Location: Time Logger Time:	CF32 9Q8 10:34:48 06/08/2014 Error: -28 Minutes	
	Comments: Name: Site Info:	Field Test 1	^
	Load	Save Upload Ca	ancel

10. Select Identity and Edit the zone and location details to suit your database -

	Lolog R - v1.04 - Identity	ĸ
Lolog R - v1.04 Identity Identity Main Recording Display Configuration Status	Identity: Zone: CF32 Location: 9QB Time Logger Time: 10:34:48 06/08/2014 Error: -28 Minutes	
	Comments: Name: Field Test 1 Site Info: LoLogR at Rectory Close	
	Load Save Upload Cancel	1

11. Select Main recording -

Ensure the start time and date is before current to ensure the logger starts when it is uploaded. Enter sample rate (15 minutes is normal), and ensure channels are enabled by ticking the check boxes, as required -

	Lolog R - v1.04 - Main Recording
Lolog R - v1.04 Identity Logging Main Recording Display Configuration Status	Record Record Start Time: 11:50:00 Record Stop Time: 00:00:00 30/11/1999 > Sample Rate: 00:15:00
	Enable Stop C Block Memory Cyclic Memory Logging Mode Channel 1: Image: Enabled Count Image: Standard Image: Standard Channel 2: Image: Enabled Count Image: Standard Image: Standard Image: Standard
	Load Save Upload Cancel

12. Select Display Configuration -

Select Channel 1 from the drop down (Pressure Channel – if fitted) select units per pulse = 0.1

	Lolog R - v1.0	4 - Display Configuration	n 🔀
Lolog R - v1.04 Identity Logging Main Recording Display Configuration Status	Display Data Calibration Channel: Type: Units Per Pulse:	Channel 01	
J	Load Sav	ve	Upload Cancel

Select Channel 2 from the drop down (Flow Channel-if fitted) and select units per pulse to suit the sensor/meter to which the flow channel is connected (usually 1 or 10 or 100 litres per pulse). Apply the current meter reading if required.

Isolag R - v1.04 Identity Logging Main Recording Display Configuration Display Configuration Status Display Configuration Display Configuration Utres per Pulse: 10.000 Meter Reading: 24 5400 Cubic Metres

13. Select Upload -

At the Upload screen tick the check boxes for 'Main Recording and Restart', 'General Parameters', and 'Update logger time' and select 'OK' –

		Uploa	ad Parameter	rs			×
Zone Zone Location Type: Connection: Number:	CF32 9QB	Lolog R USB Transceiver		→ Ba	aud: ort:	දි 115200 දි COM4	•
Options Main Recordi General Para Update Logg Stop Main Re	ng and Res meters er Time ecording	start					
Update Logger T	ime as:		PC Time	•			
				[ОК	Can	icel

14. The configuration will be uploaded to the logger -

	Configure Logger	×
0242072:	Uploading - Site Info:2	
		Abort

15. At the following screen the logger configuration is now complete and the logger is recording -

	Advanced Download/Upload/Utilities
Logger Zone CF3 Location 9QB Type: Connection: Number:	2 ▲ Lolog R USB Transceiver VSB Transceiver Port:
Download/Upload Utilit	ies Signal
C Enter New Parame	ers
Ownload Paramet	er Settings For Last Recording
C Download Paramet	er Settings And All Recorded Data
C Download Last Nur	nber Of Hours Data: 6
C Download Logger M	femory From Address: 0 Of Length: 0
	OK Cancel

16. If you have a pressure logger use the Utilities tab and Re-Zero the loggers transducer –

```
17.
```

Advanced	Download/Uploa	d/Utilities	×
Logger Zone CF32 Location 9QB Type: & Lolog Connection: USB Trans Number:	R	▼ Baud: ▼ Port:	ේ 115200 ▼ ි COM4 ▼
Download/Upload Utilities Signal			
C Instantaneous Value	C GPRS T	est	
C Calibrate Logger			
Re-Zero Logger			
C Check Calibration			
C Enter Calibration values			
		01	K Cancel

Select 'Re-Zero the logger' and 'OK'

	Re-Zero Logger	- 🗆 🗙
Sec. 1		
Downloading Header		
		Abort
Current Value		
Zero		
1		

At the error message below select 'Yes'



At the below screen allow the values to settle and as the most prevalent value appears in the top window select 'Accept this zero value'

-Zero Logger 🛛 🗕 🔍
S 🛄
Abort
Accept this ZERO value

Select 'Store new values ' and 'OK'

Re-Zero Options ×
Zero 00574
Channel 01 Options Store new values C Redo Zero C Abort Re-Zero
OK Cancel

'Yes'



As the Advanced Download/Upload / Utilities screen re-appears select 'Cancel' to exit.

18. The logger can now be installed and it will record data for the channels that have been enabled and connected.

If required you can confirm that the logger is measuring real data from the sensors by taking an Instantaneous Value –

In the Advanced Download/Upload /Utilities screen from the Utilities tab select 'Instantaneous Value' –

Advanced Download/Upload/Utilities							
Logger Zone Location Type: Connection: Number:	Lolo USB Tra	g R ansceiver	v	Baud: Port:	☞ 115200 ▾ ☞ COM3 ▾		
Download/Upload C Instantaneous V C Calibrate Logger C Re-Zero Logger	Itilities Signal alue	C a	iPRS Test				
C Check Calibratio C Enter Calibration	n values			OK	Cancel		
	Corm 4 - 9000 Downloading Header	Instantaneous 2	Value –	Ahot			
	Battery Vokages	r/a					

Radwin will now start reading the current sensor values that the logger is receiving, so for our example Pressure and Flow logger, we will see -

omm 2 • 9600	<i>~</i>		
ownloading i	Header		Abort
-	Chill Makers Hand	Chill Base Koos	
Time	Uni Meres Head	CPR LINES734C	^^
Time 18.27:54	30.160000 [301]	22.000000 [5]	î
Time 18.27:54 18.27:49	30.160000 [301] 30.179998 [302]	22.000000 [5] 22.000000 [4]	ĺ
1 me 18.27:54 18:27:49 18:27:44	30.160000 [301] 30.179998 [302] 30.179998 [302]	22 000000 [5] 22 000000 [4] 22 000000 [4]	5
Time 18:27:54 18:27:49 18:27:44 18:27:39	30.160000 [301] 30.179998 [302] 30.179999 [302] 30.179999 [302] 30.179998 [302]	22 000000 [5] 22 000000 [4] 22 000000 [4] 23 000000 [5]	
Time 18:27:54 18:27:49 18:27:44 18:27:39 18:27:39	30.160000 [301] 30.179599 [302] 30.179599 [302] 30.179599 [302] 30.179599 [302]	22 000000 [5] 22 000000 [4] 22 000000 [4] 23 000000 [5] 22 000000 [5] 22 000000 [4]	
1 me 8 27:54 8 27:49 0:27:44 8 27:39 8 27:33 8 27:33 8 27:28	30.160000 [301] 30.179599 [302] 30.179599 [302] 30.179599 [302] 30.179599 [302] 30.179599 [307] 30.20001 [302]	22 00000 [5] 22 00000 [4] 22 00000 [4] 22 00000 [4] 23 00000 [5] 22 00000 [5]	
1 me 8 27:54 8 27:49 0:27:44 8 27:39 8 27:33 8 27:28 8 27:23	30.1 6000 (301) 30.1 6000 (301) 30.1 79698 (302) 30.1 79698 (302) 30.1 79698 (302) 30.1 79698 (302) 30.1 79698 (302) 30.2 00001 (302) 30.2 00001 (302)	22 00000 [5] 22 00000 [4] 22 00000 [4] 23 00000 [4] 22 00000 [4] 22 00000 [5] 20 59558 [4]	

/Click <<Abort>> when you wish to finish.

Example Ch1 reading Pressure in Meters Head and Ch2 reading water Flow in Litres/Sec.

The reading taken is the average over the sampling period specified, so in our example the last value is 30.16m and 22.0l/s over the last 15m. So if you have just

connected your logger, you may have to wait a few minutes for the reading to stabilise. The value in the square brackets [301] & [5] is the raw uncorrected value being measured or counted over 2 seconds.

Note: If the flow readings do not meet your expectations, then check your connections and your calibration factors have all been entered correctly. If you still have incorrect readings, you may have a faulty pulse unit on the meter which will need to be replaced.

Downloading Data from the logger and viewing results

The information that has been recorded by, and stored in, the data logger can

be downloaded directly to a PC and viewed by using Radwin Advanced

Download / Upload / Utilities

Select the type of logger (i.e. Lo Log R) being used and its location (Select from Zone or location) – \checkmark

Select Dow/nlo all recorded da	oad parameter settings and ata
	Advanced Download/Upload/Utilities
	Logger Zone Location Type: Connection: USB Transceiver Number: Baud: Baud: Baud: Baud: Port: COM3
	ownload/Upload Utilities Signal C Enter New Parameters Download Parameter Settings For Last Recording Download Parameter Settings And All Recorded Data C Download Last Number Of Hours Data: C Download Logger Memory From Address:
	DK Cancel

Then select 'OK' >>

This is similar to the procedure used to configure the logger.

After making the above selections, the **Download Data** screen will appear.

After a moment the available LoLog R's in the vicinity will be listed by their Serial numbers

	Down	load Data		×
Select a logge	er from the list to configure.			
Identity:	Name:	Number:	Signal	FW
		00225952	87%	01.04
I				
		OK		Abort

Highlight the logger Serial number you wish to download and double click on it -

	Downl	oad Data		×
Select a logge	r from the list to configure.			
Identity:	Name:	Number:	Signal	FW
		00225952	88%	01.04
		OK	1	Abort

The logger will start downloading -



At the next screen add a comment to the data if required and select 'Save'

	Downloaded Data
_ Identity	
Zone:	_00
Location:	_00
	Change Identity
Filename:	0001001
Comment:	
	Transducers Parameters
	Save Cancel

The data will be saved to the Radwin Database location for that logger and a graph of the data will appear as follows.

Graph and Data Table Manipulation

The graph and data table can be manipulated to display information for either channel. The type of graph and the format of the displayed data can be altered either by using the drop-down menu, the toolbars or by right clicking on the mouse.

(i)

Note - An easy-to-use Help Menu is opened by default and contains all the necessary information to operate the software.



Selecting the Input Channel Data to be viewed

The graph and table will display the data stored for each channel. If the logger has a single input, the data for that channel will be displayed. If the logger has two inputs the information for the either channel can be selected by either:

Using the drop-down menu on the toolbar, clicking on the 'Cycle Through Graphs' icon

or right clicking on the mouse and selecting the required channel from the **Graph Select** option -



Changing the Information in the Data Table

The information that is displayed in the data table below the graph can be changed to show Cursor Values, Tabular Data, Data Summary or Graph Statistics. The cursor values option displays the value for each graph, while the other options display the values for the selected channel. The information in the table can be opened in .CSV or .TXT file format. The required information can be selected by either:

Selecting the option from the **Data Options** tab on the main menu, or by clicking on the Toolbar to display the options for the Table Data



The data format options are summarised in the table below -

Cursor Values	Displays graph data values for each graph in the tabular data table below the graph as the cursor is moved across the graph.
Tabular Data	Displays tabular data for the current graph in the tabular data table. The value at the cursors position is highlighted in the table as the cursor is moved across the graph.
Data Summary	Displays a daily summary for the current graph in the tabular data table. The day of the cursors position is highlighted in the table as the cursor is moved across the graph.
Graph Statistics	Displays Statistics for the current graph in the tabular data table. The statistics are for the currently visible time span of the graph.
Open CSV File (MS Excel)	Writes the contents of the tabular data table to a temporary CSV file that is automatically opened using the default CSV file viewer - normally MS Excel.
Open TXT File	Writes the contents of the tabular data table to a temporary TXT, file that is automatically opened using the default TXT file viewer.

Changing the Graph Style

The operator can change the style of the graph, view the graph from different axes, remove a graph from the display, or copy and export the graphs to be viewed by other programs. These options can be selected by either:

Clicking on the **Graph Options** tab on the main menu, clicking on the **Zoom** toolbar icons $\mathcal{A} \mathcal{A} \mathcal{A} \mathcal{A} \mathcal{A}$, or right clicking on the mouse and selecting the required **Graph Type** or **Zoom** option -



By right clicking on the mouse and selecting **Cursor Position** from the menu, the data value (*Day, Date, Time and recorded value*) will be displayed for the position of the cursor in the current graph.

A summary of the options is shown in the table below-

ZOOM OPTIONS		
Zoom Time Region	Puts the graph in Zoom X axis mode. Left click the graph once to specify the start point, and again to specify the end point.	
Zoom Y Axis Region	Puts the graph in Zoom Y axis mode. Left click the graph once to specify the start point, and again to specify the end point.	
Zoom Y Axis Region and Time Region	Puts the graph in Zoom XY axis mode. Left click the graph once to specify the start point, and again to specify the end point.	
Zoom Out	Zooms out to the previous zoom level	
Zoom Full	Displays the graph full size removing all zoom levels.	
GRAPH OPTIONS		
Points	Displays graphs as single data points.	
Line	Displays graphs with data points as joined lines.	
Filled Line	Same as Line but fills the area under the graph.	
3D Line	Same as Line but with a 3D effect.	

Graph options – (cont)		
Bar	Each data point is displayed as a bar.	
3D Bar	Same as Bar but with a 3D effect.	
Remove Graph	Removes the current graph - indicated as the top most graph title above the graph	
Remove All Graphs	Removes all displayed graphs.	
Export Data	Allows an export format to be selected and exports the data to a file.	
Copy Graph To Clipboard	Puts a copy of the graph on the clipboard so it may be pasted into other application as an image.	

Flow Input

Lolog R 4 Pin Milspec Connector

Pin No.	Title	Description	Typical Radcom flow input cable colour
А		Not connected	Red
В	Flow	Flow input signal (pulses)	Blue
С	GND (0V)	Ground (0 volts)	Green
D	Direction	Pulse Direction input signal 0V = -VE direction	Yellow

Digital Flow Input Circuit



MilliAmp Input

Pin No.	Title	Description	Typical Radcom Milliamp cable colours
А			
В	+VE signal	Positive mA input signal	Blue
С			
D	-VE signal	Negative mA input signal	Yellow

4 Pin MilliAmp Milspec Connector

MilliAmp Input Circuit



Technical Specs

LoLog R

		Uni- or Bi- directional pulse/status
	Digital	Reed Switch contact closure type or equivalent sensors including Kent LRP & PU10 pulse heads, Aquamag / Magmaster
		Up to 64 pulses per second
Sensor Input		Internal or External pressure Transducer
Options	Analogue	0-20bar / 0-200 metres head / 0-300 psig standard (other ranges available). Please note that the logger is calibrated to 10 bar as standard. 20 bar calibration must be specified at time of order if required. <0.2% FSD accuracy supplied as standard. <0.1% FSD accuracy available as optional enhancement if required. Please specify at order.
		4-20mA from isolated sensor
Capacity	Memory	Standard recording up to 262000 readings . Optional at point of order up to 1 Million readings. Can be configured to stop recording when the memory is full (block Mode) or overwrite oldest data when the memory is full (cyclic mode)
	Frequency	Sample periods In 1 second increments from 1 to 60 seconds Then 1 minute increments from 1 to 60 minutes Then 1 hour increments from 1 to 24 hours
Logging	Logger ID	Up to 7 alphanumeric characters
Features	Site ID	Up to 127 alphanumeric characters
	Clock	On board 24 hour real time clock with date facility
	Logging Modes	Count and Event (PIT) logging modes Bi- directional capability
Communication	Radio	High speed remote radio download using optional USB Receiver. Typical range up to 100m Line of sight
	Dimensions	72D x 91W x 141H mm (3.0"D x 3.5"W x 5.5"H)
	Construction	Rugged plastic enclosure
Dhysical	Weight	470g (1.0lb)
FIIYSILdI	Operating Temp	'-20 to +70 deg C (-5 to +160deg F)
	Ingress protection	IP68
	Power	Lithium Ion battery - operational for 5 years under typical operating conditions

Order codes -



Order code for USB Radio receiver is part number 553-002

Appendix – Additional Information

Troubleshooting

Error	Possible Cause
'Time-out error' or 'No response from logger' whilst attempting	Is the USB Receiver plugged securely into a comms port on the PC?
communications between Lo Log R and PC	Is the USB Receiver correctly located in radio range of the the LoLog R?
	Is the software port setting correct?
	Have you selected the correct logger type (LoLog R)
Download or Upload seems	Is the USB Receiver plugged securely into the PC?
unreliable	Are there any 'background' programs loaded and running on your PC which could interfere with serial communications?
	If your PC is connected to a network it may help to temporarily disable the connection.
Logger records zero data	Check connections for ingress of water or trapped moisture.
	Check sensor for correct operation.
	Check sensor lead for damage
When downloaded, flow rate readings from the logger are unexpectedly negative.	The meter/sensor combination is producing an output frequency that is too high. If possible, reduce the logger sample period or change the sensor to one with a lower resolution.

Installation checklist

Before you leave site, review the following items to be sure that the installation is going to be a good one.

- □ Have you calibrated and zeroed your pressure transducer?
- □ Have you run an instantaneous value to confirm data quality?
- □ Have you run the Radwin Wizard and set all calibration factors?
- □ Have you sealed any joins in the pulser cable?
- □ Have you recorded all your site information, serial nos, photos, etc?
- □ Have you closed all open chambers and recorded any damage?
- □ Have you left all wiring tidy and safe not tied to ladders?
- □ Have you removed all your installation tools?
- □ Have you recorded the location and serial number of the logger?

Pulsers

There are many different types of pulse cable in use for connecting to meters. Below is a selection of pulse types and wiring configurations that may be useful. The variations are changing all the time so if your particular meter is not shown below, please contact your meter supplier for connection details.

Picture	Pulse Cable	Alternatives	HWM Cable		
and the second s	Red			Blue	
	Blue			Green	
	Red	Brown		Blue	
	Black	White		Green	
	Red	Brown		Blue	
	Black	White		Green	
	Red	Brown	Red	Blue	
	Black	White	Blue	Green	
- Office P	White			Blue	
	Brown			Green	
	Yellow			Yellow	
	Brown				
	White				
0	Brown			Blue	
	White			Green	
(O)	Blue			Blue	
	Green			Green	
	Red	Brown		Blue	
	Black	White		Green	
	Red	Yellow		Blue	
	Black	Black		Green	
		White		Yellow	

Meters & Pulse Value Guide

There are many different varieties of meters in use. Below is a selection of water meters with their appropriate pulse calibration factors that may assist in setup. If your particular meter is not shown below, please contact your meter supplier for pulse factor details.

Meter Type	Pulse Switch	Image	Litre per Pulse for logger		
PSM			Meter register with 4 RED digits cal = 0.5		
PSM	e la		Meter register with:- 2 RED digits cal = 50 3 RED digits cal = 5		
MSM Black			1		
MSM Grey	B		1		
Scocam Schlumberg	4		See label On screen for pulse value		
Sappell	5		1		
Sensus HRI A3	- Care		1		
Actaris			See table 1		

Helix 4000 Up to 100mm	7		Fitted at position:- 0.01 Cal = 10 0.1 Cal = 100 1 Cal = 1000	
Helix 4000 Above 150mm	7	10	Fitted at position:- 0.01 Cal = 10 0.1 Cal = 100 1 Cal = 1000	
Helix 3000 Up to 100mm	PD10 Or LRP		10	
Helix 3000 Above 150mm	PD10 Or LRP		100	
Helix 2000 Up to 100mm	PD10 Or LRP		10	
Helix 2000 Above 150mm	PD10 Or LRP		100	
Helix 2000 Master 40mm	PD10 Or LRP	to Statement for the	1	
Helix 2000 Master 50,80 &100	PD10 Or LRP	to strand to to	10	
<u>Actaris</u> Flostar-M		P	See table 1	
<u>Actaris</u> <u>Woltex</u>		1	See table 1	

All pulse values contained in the table below are expressed in litres/pulse. Where an Emitter-S is necessary, the pulse value indicated on the register label should be used.								
			Cyble k factor					
			2.5	10	25	100	1000	
Meter type	Size(s) (mm)							
Aquadis	15, 20, 25, 30, 40	1	2.5	10	25	100	1000	
	65	10	25	100	250	1000	10000	
Flostar-M	All	10	25	100	250	1000	10000	
Woltex	50, 65, 80, 100, 125	10	25	100	250	1000	10000	
	150, 200, 250, 300	100	250	1000	2500	10000	100000	
	400, 500	1000	2500	10000	25000	100000	1000000	
Isoflo Combination (Main)	50, 65, 80, 100	10	25	100	250	1000	10000	
	150	100	250	1000	2500	10000	100000	
Isoflo Combination (Bypass)	All	1	2.5	10	25	100	1000	

Meters used in conjunction with Cyble pulse units:-

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MAN-549-0006 - [LoLog R - Installation User Guide]

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