

Ref: FAQ030

Version: 1.0

Title – Function sets & Look up tables

Made By: AB\_10/03/14 (Issue 1)

## **Question – Creating Lookup Tables and Function Sets in Radwin**

Example - If you want to convert level or depth to flow you need to create a Function Set and Lookup table within Radwin software. Essentially, we will calculate the flow rates at different depths, use a Lookup table within Radwin to automatically convert the depth to flow rate at varying levels, and Radwin will then substitute the depth measurement into a displayed flow rate. This needs to be done after you have configured a logger.

Note that if you are using SonicSens to measure depth then the SonicSens configuration application Software can be used to output water flow directly (See the SonicSens Manual)

Note that this guide does not show you how to setup/program a logger.



Initially we have a graph showing the depth of water flowing over a known weir –

To convert this to flow the first thing which needs to be created is a Lookup Table.

To do this, open Radwin Setup, then click Options  $\rightarrow$  Item Configuration.

Radcom Setup V4.56		
File Options Start Help		
System Configuration System Configuration - Select	•	
Item Configuration		
Item Configuration - Select	•	
Sensors/Units		
Search Database For Telephone Numb Database Utilities	·· •	



This will open the Locations screen. Click the Lookup Tables button at the top of the screen.



Click on the Tools icon  $\rightarrow$  Create New Lookup Table



This will open the Lookup Table screen. Here you can create your lookup table.

Lookup	Table				×
(Van)	Enter the Lookup Table table must contain at l	es identity and name. E east 2 pairs of data poi	inter pairs of ints. Use the	values for input and ou multiplication values to	utput values. A lookup 🔨 scale the data values 👱
Identity:	0000	Name:			
	Input	Output	_ 🔒	Multiplication Values	
2				Input:	1.000000
3 4				Output:	1.000000
Impo	ert Export	Print			OK Cancel

You can give your Lookup Table an Identity and a Name. You must enter in the Input which Radwin will receive from the logger, and the Output to be displayed on the graph. The lookup table must contain at least two sets of Input/Output values. (Multiplication values can be used to scale the values if required – default is Input 1.0 and output 1.0)



When you enter at least two sets of Input / Output values, then a graph will appear in the centre of the screen showing a graph of the Input vs. the Output values (how the data will be scaled).

For converting level measurement to flow measurement, the values must be converted using the formula for the type of restriction you are using.

Note: The below values have been entered for a Parshall Flume. The more conversion data points which you enter into the Lookup Table, then the more accurate the Output will be.

Looku	o Table				X		
Enter the Lookup Tables identity and name. Enter pairs of values for input and output values. A lookup A table must contain at least 2 pairs of data points. Use the multiplication values to scale the data values							
Identity	0000	Name:	Flow Conversi	on			
1	Lookup Table						
t t	7500						
f	5000						
Ō	2500						
	o <u></u>						
Input	-0.020 (	).480 C	1.980	1.480	1.980 2.480		
	Input	Output	^	- Multiplication V	alues		
1	0	0		T			
2	0.05	21.765379365035		Input:	1.00000		
3	0.1	64.611203177169		Output:	1.000000		
4	0.15	122.10316942289			1		
Imp	oort Export	Print		[	OK Cancel		

When you have finished, click the OK button to close the screen. The Lookup Tables screen will then open, and your Lookup Table will appear in the list. Click on the Function Sets button at the top of the screen.

🖻 Function Sets
Zones/Location 🙀 Function Sets 🙀 Lookup Tables
🗁 C:\radwin\DATA 💼 🗌 🔀 🕅 📰 🗸 🛠 -
C:\radwin\DATA

Click on the Tools icon  $\rightarrow$  Create New Function Set

🖻 Function Sets	
Tones/Locations	a Manager
C:\radwin\DATA	💼   🗙 🖮 📰 • 🕵 •
C:\radwin\DATA	Expand Tree
End Function Sets	Create New Function Set

This will open the Function Set Configuration screen. Here you can create your Function Set.



Configure: Basic Radwin All View Data Cenerator	Elements - are includer	Function sets may be d by selecting the 'Lo n Output   Auto Gene	used to combine cation' button an erate Data   View	data, export da d selecting a loca Data Memo	ta, and create ition. Likewise, Statistics	graphs. Locations existing function
En para deneració	Identity:	Name:		Edit C	bject	pand Fn Elements
	Location	Function Item	Constant Channel		Edit	Delete Name

You can give your Function Set an Identity and a Name. You must select the Location of the logger which you have setup. To do this, click the 'Location' button. This will open the Select Location screen where you can choose the data to apply the Lookup Table to.

🖻 Select Location Element
Zones/Locations
🕹 ANIE : 🛅 🔣 🐜 🖽 🗸 🖈
C:\radwin\Customer Data\101014 - Waterpoint C:\radwin\Customer Data\101014 - Waterpoint

When you click the OK button, the Edit Location Element screen will open. Here you can choose the Lookup Table which you want to apply to the data, by clicking the Apply Lookup Table checkbox, and then selecting by clicking on the arrow in the textbox, you can select the Lookup Table to be used. To exit this screen, click the OK button.

Edit Location Elen	nent	×
Identity		
Location:	ANIELKA	
Operator:	'+'	-
Channel:	\Lambda Channel 01 💌	
View Graph Types -	Display Individual Graphs For This Item	
Apply A Lookup Tab	le To This Element	
Apply Lookup 1	Table 🚮 0000 Flow Conversion	•
	ОК	Cancel



This will show the Location and Lookup Table applied in the Function Set Configuration screen.

Function Set Configuration 0000 : Radwin All						
Configure: Basic	Elements - Function sets may be used to combine data, export data, and create graphs. Locations are included by selecting the 'Location' button and selecting a location. Likewise, existing function	~				
View Data Generator	Elements   Function Output   Auto Generate Data   View Data   Memo   Statistics					
	Identity: 0000 Name: Flow Conversion ANIELKA Expand Fn Elements					
	Add Object					
	Location Function Constant Edit Delete					
	Operator Item Channel Lookup Graph Name					
	1 + 🏋 ANIELKA 🔬 1 🚮 0000 🛄 Dat					
	Save Cancel					

Click the Function Output tab to choose the Sensor Type and the Units, but <u>do not</u> check the 'Apply Lookup Table' checkbox (it was already selected above). Then click 'Save' to exit.

Function Set Configu	uration 0000 : Radwin All	X
Configure: Basic Radwin All View Data Generator	Function Output - A specific Sensor type and unit may be specified for the function output, or default will use the sensor type of the data for first location element. A lookup table may also be Elements Function Output Auto Generate Data View Data Memo Statistics	
	Output       Sensor Type:       Flow       Units:       Litres/Sec       Apply A Lookup Table To The Output       Apply Lookup Table       Im 0000       Flow Conversion	
	Save Cance	el

Click the Cancel button to exit the Function Sets screen. Then open Radwin View. Click File  $\rightarrow$  Open.





Then click on the Function Sets button at the top of the screen. Then select the Function Set which you have just created which will open the graph.

🚔 Function Set Select - Data Time Period	
Data File Data Time Periot Function Sets	
C Function Sets	🛅 🗙 🛅 🖩 - 🛠 -
🖃 🗁 C:\radwin\Customer Data\101014 - Waterpoint	
E E Function Sets	
🖾 0000 : Flow Conversion ANIELKA	



## **Document History:**

Edition	Date of Issue	Modification	Notes
1st	11/03/14	Release	