

Manual

Tipping Bucket Flow Gauge

Model 6506

Revision History

File name / Revision	Date	Authors
Previous version BX	2004	RS/ JH
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STARLOG

Tipping Bucket Flow Gauges Models 6506G and 6506H

This data sheet describes the operation of the Tipping Bucket Flow Gauges Models 6506G and 6506H in a STARLOG Data Logging System. These gauges are used for measuring small volumetric flows which exceed the capacity of normal rainfall gauges.

Flow is measured using a Tipping Bucket mechanism inside a stainless steel enclosure. Every time the bucket fills to a certain point it will tip. A flow pipe directs liquid into the enclosure and bucket.

The 6505G is calibrated to measure in 75ml intervals. It can measure up to 2 litres per minute.

The 6505H is calibrated to measure in 125ml intervals. It can measure up to 4 litres per minute.

Typical applications include:

- Monitoring rainfall under a tree canopy.

- Water flow in small creeks.

- Leakage from water storage dams.

1. Installation Notes

To install the tipping bucket rain gauges:

1. Remove the two screws on each end of the instrument.
2. Remove the end panels and the packing material from around the tipping mechanism.
3. Close the end panels and replace the screws.
4. Connect your flow pipe to the black hose fitting on top of the instrument. Crimp the cable with the attached crimp.
5. Position the instrument on the ground in the shade (if possible). Place weights on top of the base to ensure that the instrument is stable.
6. Level the instrument using the bullseye spirit level mounted on top of the enclosure.

1.1. Connecting a Data Logger

The output from the rain gauges is a series of digital pulses which can be recorded by the Data Logger via a counter channel.

The following connections are for Counter channel 0. For other counter channels, refer to the Data Logger hardware supplement.

Wire Colour	PDL		STARLOGGER		MACRO	
	Pin	FTS	Pin	FTS	Pin	FTS
Red (signal)	11	9	11	9	11	1
Black (ground)	23	10	23	10	28	2

When using a Macro Logger, configure the counter channel to 8-bit. See the STARLOG User Manual (No. 6203) for details on configuring a Macro Logger.

Counter Channel Prescale for the channel used should be set to 1 (one).

Using STARLOG Software, an instrument must be created with the following transducer: (for Counter 0).

When setting up the scheme's logging definition, choose the action TOT1 to totalise to 1 byte.

6506G Setup with Version 3 STARLOG Software

Transducer 1			
Description: Flow			
Output:	Count <Hz>		Channel: c0
Min:	0		
Max:	255		
Scale:	Scale $ax + b$		Title: Flow
a:	75		Units: ml
b:	0		Using: ####
Formula:			
		OK	Cancel

With Version 3 Software and 6506G, set Scale A and B settings to 75 and 0.

6506G Setup with Version 2 STARLOG Software

Edit a Transducer	
Transducer Description	Flow
Input Channel	c0 counter 0 (8 bit)
Input Channel Range counts	0 to 255
Transducer Range counts	0 to 255
Transducer Scaling / Formula	0 gain 75 125
Title for Reports	Flow
Units of Result	ml
Using String	####

With Version 2 Software and 6506G, set scaling to 0 gain 75.

6506H Setup with Version 3 STARLOG Software

Transducer 1

Description: Flow

Output: Count <Hz>

Min: 0

Max: 255

Channel: c0

Title: Flow

Units: ml

Using: ####

Scale: Scale ax + b

a: 125

b: 0

Formula:

OK

Cancel

With Version 3 Software and 6506H, set Scale A and B settings to 125 and 0.

6506H Setup with Version 2 STARLOG Software

Edit a Transducer

Transducer Description

Flow

Input Channel

c0 counter 0 (8 bit)

Input Channel Range counts

0 to 255

Transducer Range counts

0 to 255

Transducer Scaling / Formula

0 gain 125

Title for Reports

Flow

Units of Result

ml

Using String

####

With Version 2 Software and 6506H, set scaling to 0 gain 125.