Tinytag Instrumentation
Voltage, Current and Count Input Data Loggers

Tinytag Instrumentation data loggers are a range of voltage, current and count input data loggers that can be used to record the outputs from third-party sensors, enabling users to record properties such as pressure or flow-rate.

This range of data loggers can be factory configured to custom specifications, allowing them to be scaled to show readings appropriate for the sensor they are monitoring.

Physical inputs include voltage over the range 0 to 25V and current from 0 to 25mA (both DC). A count input data logger can also record up to 14,000 counts per logging interval.

These battery powered, portable data loggers are available in two case styles; the rugged and waterproof Plus 2 case and with a display in the splash-proof View 2 range.

All data loggers have a high reading resolution and accuracy, and include a low battery monitor.

Features

- Voltage, current and count input data loggers
- Factory scalable
- High resolution and accuracy
- Low battery monitor
- Waterproof, rugged case (Plus 2)
- Splash-proof case with a display (View 2)
- User-replaceable battery

Popular Applications

Used for monitoring :

- Pressure
- Flow rate
- Rainfall
- People counting

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Features

Total Reading Capacity	Plus 2	View 2
	32,000 readings	30,000 readings

Memory Type	Non-volatile
Trigger Start	Magnetic switch
Delayed Start	Relative / absolute (up to 45 days)
Stop Options	When full
	After n readings
	Never (overwrite oldest data)
Reading Types	Actual, min, max (TGP-4901 actual only)
Logging Interval	1 sec to 10 days
Offload	While stopped or
	When logging in minutes mode (not TGP-4901)
Alarms (not TGP-4901)	2 fully programmable; latch-able

View 2 Loggers Only

Display	4 digits + indicators
Display Refresh Rate	Every 2 seconds

Physical Specification

	Plus 2	View 2
Operational Range*	+40 to +85℃	-30 to +70℃
Case Dimensions**		
Diameter	N/A	60mm / 2.36”
Height	80mm / 3.15"	85mm / 3.35”
Width	59mm / 2.32"	77mm / 3.03”
Depth	34mm / 1.34"	35mm / 1.38”
Weight	110g / 3.9oz	85g / 3oz

*The Operational Range stated above indicates the physical limits to which the unit can be exposed.

**Case dimensions and weight do not include the supplied interface cable.

Both types of data logger have a hanging tab which has a 5mm diameter hole.

Reading Specification

Voltage

TGP-4703 & TV-4703

Reading Range	0 to 2.5V DC
Reading Resolution	0.1mV
Display Resolution	0.1V (TV-4703 only)
Accuracy	0.2% of reading +/- 10mV
Input Impedance	
TGP-4703	40kΩ
TV-4703	150kΩ

TGP-4704 & TV-4704

Reading Range	0 to 25V DC
Reading Resolution	1mV
Display Resolution	0.1V (TV-4704 only)
Accuracy	0.2% of reading +/- 20mV
Input Impedance	
TGP-4704	250kΩ
TV-4704	1MΩ

Current

TGP-4804 & TV-4804

Reading Range	0 to 25mA DC
Reading Resolution	1µA
Display Resolution	0.1mA (TV-4804 only)
Accuracy	0.2% of reading +/- 20µA
Input Impedance	75Ω

Count

TGP-4901

Reading Range	0 to 14,000 counts per logging interval
Maximum Frequency	50 Counts/second
Input Type	Digital or volt-free contact switch

Digital Input

Low Level	-0.3V to +0.3V
High Level	3V to 5V
Min. Pulse Width	150µs
Min. Pulse Separation	10ms
Edge Detection	High-low transition

Contact Input

Type	Normally open (with minimal de-bounce)
Min. Closed Time	150µs
Min. Open Time	10ms
Edge Detection	Open to closed

Calibration

Data loggers are configured to meet Gemini's quoted accuracy specification during their manufacture.

We recommend that the calibration of data loggers should be checked annually against a calibrated reference meter.

A traceable certificate of calibration can be supplied with a data logger for an additional charge either at the point of purchase, or if it is returned for a Service Calibration.

Connections

All loggers are supplied with an input cable. If a sensor already has a cable fitted, plugs are available separately to make up a connection. Connection details for both can be found below:

All Loggers Except TGP-4901

These loggers are supplied with a CAB-3239 Tinytag Voltage/Current Input Lead (1.5m cable length).

A 5-pin plug, ACS-9703, is available separately.

Connection information for both is as follows:

CAB-3239	Pin	Function
Red	A	Do not connect
Green	B	Do not connect
White	C	Sense Line
Black	D	Common/0V
Yellow	E	Signal Input

The Sense line is a signal line that changes state when a reading is taken.

The line goes from 0v to +3.3V, for approximately 50ms, whilst a reading is being taken (the line goes back to 0V when the reading cycle is complete).

The line has an impedance of 10kΩ.

The Sense line does not need to be connected for the data logger to record correctly.

When connecting the logger to a PC for offloading data or using the current reading feature in the Tinytag Explorer software, the logger input must not be connected to a mains powered device or a ground loop could be created resulting in erroneous readings/damage to the unit.

TGP-4901

This logger is supplied with a CAB-3246 Tinytag Count Input Lead (1.5m cable length).

A 2-pin plug, ACS-9700, is available separately.

Connection information for both is as follows:

CAB-3246	Pin	Function
Blue	A	Common/0V
Red	B	Signal Input

Warranty

Data loggers and accessories are covered by a manufacturing defects warranty of 12 months from the date of purchase. Items returned under warranty will be repaired or replaced at the manufacturer's discretion. This warranty does not cover mishandling, modification or battery replacement and is subject to our standard Terms and Conditions of Sale, a copy of which can be found at **www.tinytag.info**.

Approvals

Gemini Data Loggers (UK) Ltd. operates a Business Management System which conforms to ISO 9001 and ISO 14001.

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Notes

The battery fitted in this product is a single cell containing less that 1g of lithium and meets the requirements of the UN Manual of Tests and Criteria, Part III, Subsection 38.3.

Recommended Battery Types	SAFT LS14250, Tekcell SBAA02P or Eve ER14250

The logger will operate with other ½AA 3.6V Lithium batteries but performance cannot be guaranteed.

Replacement Interval	Every two years (Plus 2) Annually (View 2)

Before replacing the battery in a data logger it must be stopped.

After removing an old battery from a logger, wait five minutes before inserting the new one.

Data stored on a logger will be retained after a battery is replaced.

If used at low temperatures data loggers should be allowed to warm to room temperature before they are opened to avoid condensation forming inside the unit.

The clarity of the display on a View 2 data logger may change at the extremes of its temperature range.

The current reading feature in Tinytag Explorer will show a TGP-4901's battery status, but counts will not increment.

Trigger Start

The trigger start option allows a unit to be set up as required and then started at a later time with a magnet.

The position of the unit's trigger start switch is indicated by the • • • label on the back of a Plus logger, or above the logger's display on a View logger.

When the "Wait until trigger event" option is selected in the Tinytag Explorer software, the green LED on a Plus logger will flash once every eight seconds, indicating that the unit is waiting to log. When a magnet passed over the • • • label, the green LED will light briefly to indicate that the unit has been activated. Once activated, the green LED will flash every four seconds to indicate that the logger is recording. On a View logger, a logger that is waiting for a trigger start will show a "trig" message on its display and once activated will then show normal readings.

Required and Related Products

To use this data logger you will also require the following piece of software:

SWCD-0040: Tinytag Explorer software

and a

CAB-0007-USB: Tinytag Ultra/Plus/View USB Download Cable

These can be supplied together in a pack, part number SWPK-7-USB.

Further Related Products

SER-9500: Tinytag Data Logger Service Kit
ACS-6000: Trigger Start Magnet