

# titan

# PULSITE

INSTRUCTION MANUAL



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## INSTRUCTION MANUAL

### Index

General Information	3
Technical Specification	3
Mounting	4
Operational 'Run' Mode	5
Menu System	6
Programming	7-10
Electrical Connections	10-11



### General Information

Titan flexible Pulsite digital rate and total indicator offering battery or dc power options. These panel or surface mounting digital instruments are designed to be as versatile as possible permitting customisation to suit the application. The Solo is battery powered rate and total only and the Link has multiple options with two transistor input/outputs and a user set analogue output. Programming is simple, on the Solo the front panel keys are used with easy to follow screen prompts. On the Link a USB interface is utilised with the free Pulsite interface software.

- Clear 6 digit LCD display with enunciators
- 8mm high main digits with 2.5mm enunciators
- Simple setting procedure
- Password protected
- Programmable scaling for rate and total
- Programmable time base for rate
- 96 x 48mm 1/8 DIN case panel or surface mount
- Environmentally protected tough polymer housing
- Panel or surface mount
- Replaceable battery
- Front panel programmable
- 5 to 24 V dc power with the battery as backup
- Coil, switch transistor and logic inputs

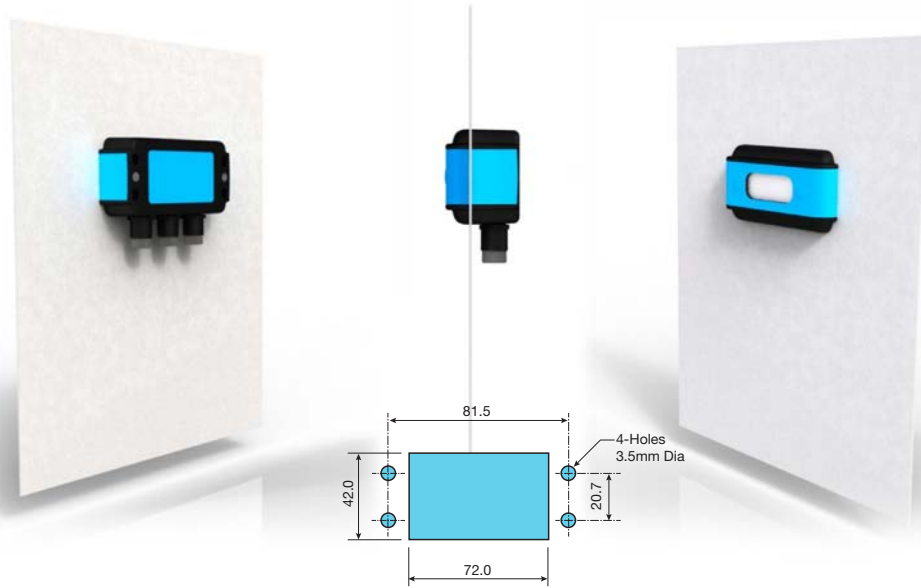


### Technical Specification

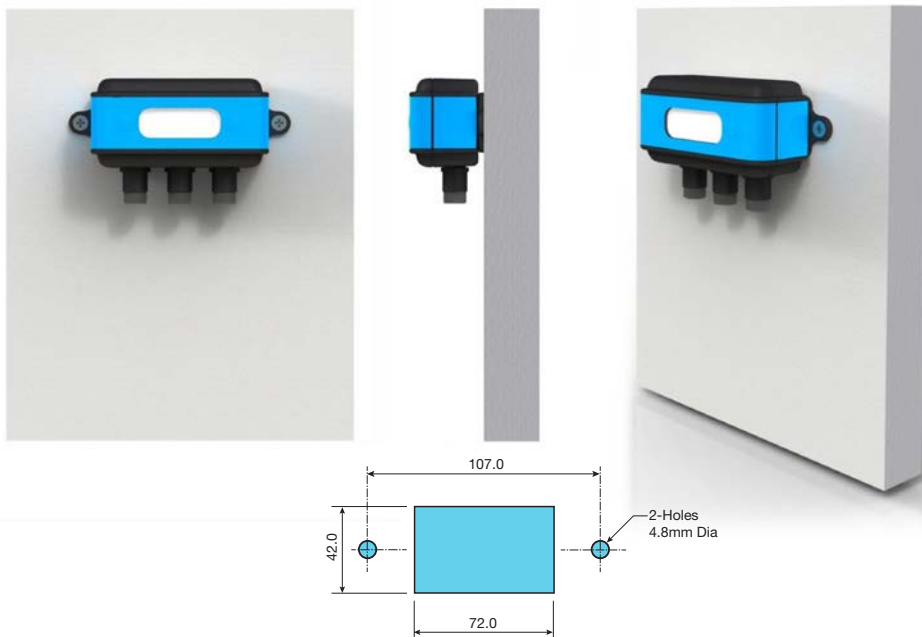
<b>Display</b>	IP64 Enclosure
<b>Enclosure</b>	Tough polymer housing
<b>Display</b>	Trans-reflective LCD display with 6 x 8mm high numerals with 2.5mm enunciators
<b>Power Input</b>	Battery (5 years typical life) 5 – 24V dc
Pulse	2KHz maximum (VIL < 0.5V and VIH > 3V)
Coil	3mv – 24V sine wave, 2KHz max
Transistor	24V max
Contact closure	100Hz
<b>Unit Display</b>	9.99999 to 999999
<b>Enunciators</b>	
Total	No units, Gal, cc, kg, gms & Ltr
Rate	Total units plus flashing -Sec, min & Hr

*\* The battery is a Saft LS14500 or equivalent. It is a 3.6V LiSOCl<sub>2</sub> (Lithium thionyl chloride) AA sized cell. Please dispose of the depleted battery in accordance with local requirements and the manufacturers recommendations.*

## Pulsite Panel Mounting



## Pulsite Wall Mounting



## Pulsite Operational 'Run' Mode



The Pulsite display can display 8 large characters which can display numbers or some text characters. In addition, there is a line of smaller characters that can display units from a pre-defined list. It is important to note that there can be a noticeable lag between button presses and their effect on the display!



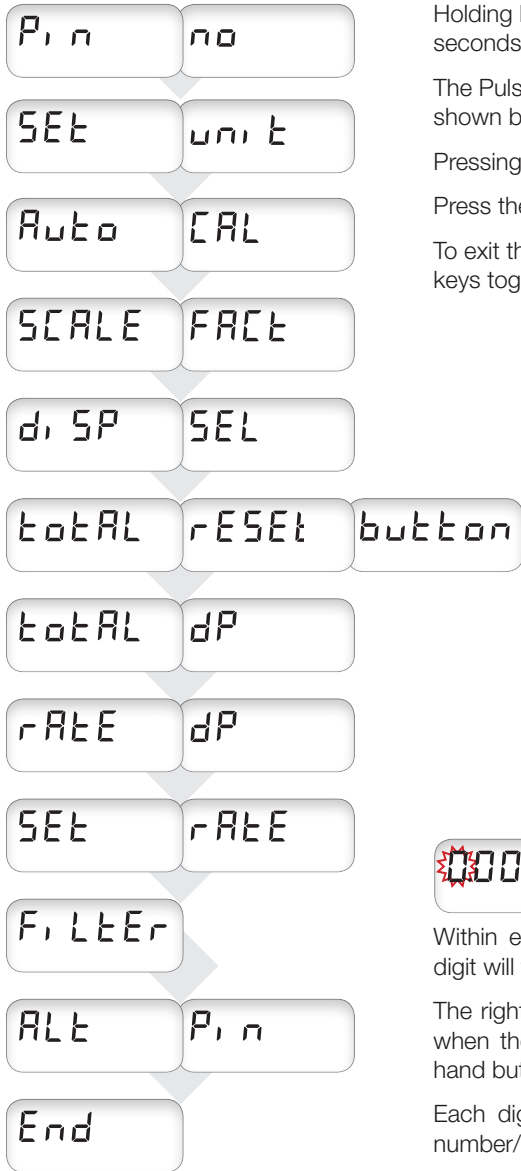
In 'normal' flow measurement mode, either flow rate or total flow can be displayed. If total flow is being displayed, the volume unit will also be visible. If flow rate is being displayed, the volume unit will be visible and also the time element will be flashing.



The left button toggles between flow rate and total flow. The right button resets the count, if selected. Pressing both buttons for a minimum of four seconds enters the menu system.



## Pulsite Menu System



Holding both buttons for a minimum four seconds enters the menu system.

The Pulsite menu system comprises 12 items as shown below.

Pressing the left button cycles to the next menu.

Press the right button to adjust the menu item.

To exit the programming at any time press both keys together for 4 seconds.



Within each menu item, the currently selected digit will flash.

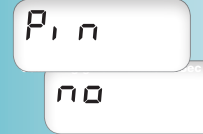
The right hand button increments the selection, when the required selection is reached the left hand button moves the flashing digit to the right.

Each digit or location can be cycled until the number/unit you require is reached.

Holding the left hand button for 3 seconds then enters the number/unit chosen and advances the program.

To exit the programming at any time press both keys together for 4 seconds.

## Programming the Pulsite



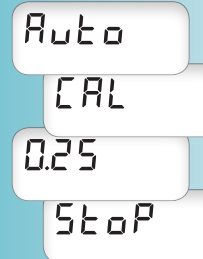
### PIN No.

If both buttons are pressed together for four seconds the meter enters program mode and a request is made to enter a PIN. The display flashes between the two words "Pin" and "no". If no PIN has been entered a press of the left key will advance the system to the next menu item. The default PIN is 0000.



### Set Unit

With the display flashing between the two words "Set" and "unit", pressing the right button will display a flashing unit. Each press of the right button will advance the displayed unit through a cycle of: Gal – cc – kg – gms – Ltr – blank (no units). When the required unit is flashing, a four second press of the left button will lock-in that unit and advance to the next menu item.



### Auto Calibration

With the display flashing between the two words "Auto" and "Cal", the user can self calibrate the indicator by passing a pre-determined amount through the flowmeter. The electronics records the number of pulses received, calculates the pulses per "unit" as the 'K' factor and enters it in the "SCALE FACT" section later in the menu system. This number may be edited later if required. Any "unit" may be used, grams, cc, litres etc. This "unit" is used for both total & rate displays. The right hand key enters the volume selection routine & increments the required amount of liquid through pre-set values, 0.1 0.25 0.5 1.0 5.0 10 & 20. Before this program is continued the flowmeter must be primed and ready to discharge the pre-set amount. The larger the amount the more accurate the calibration. When the left hand key is pressed the internal counter counts the number of pulses received until the counter is stopped. The display shows "run" until no further pulses are received or the left button pressed (e.g. against a measuring cylinder) and then it shows "stop" to show the count is completed. Pressing the left key advances to the next menu item.



## Programming the Pulsite

SCALE

FACT

### Scale Factor

The scale factor is the number of pulses for a given unit of liquid. It is best to calibrate the meter in the actual running conditions. If "Auto cal" has been used before, the 'K' factor that the electronics calculated will be displayed. The right hand key begins the entry mode, it then cycles the number and the left hand key moves to the next digit. Holding the left key for 3 seconds advances to the next menu item.

000000 000000

DISP

SEL

### Display Selection

This function permits the user to select the display function, three options are available. When the right key is pressed the display changes to the previously selected option. Further presses of the key cycle through the options, flow rate only "rate", totaliser only "total" and switchable between rate and total "both" using the left hand key in the run mode. The right button cycles the options and the left button advances the program to the next menu item.

rate total both

total

RESET

button

### Display Selection

If either "total" or "both" mode is selected in the "disp sel" section of the program the user has the option to disable the totaliser reset button. "Yes" means the reset button works, "no" disables it. Pressing the right hand button the display shows the previously selected state, either yes or no. Pressing the right hand key changes the display, the left hand key acknowledges the choice and advances the program. Changing the choice from no to yes will not reset the counter until the right hand key is pressed in run mode.

YES NO

## Programming the Pulsite

total

DP

### Total Decimal Point

This sets the number of decimal places for the totaliser. The display shows a row of zeros with a decimal point. Pressing the right button moves the decimal point. When the required decimal places is shown, holding the left key for 3 seconds advances to the next menu item.

0.000000 0.000000 0.000000 0.000000

rate

DP

### Rate Decimal Point

This sets the number of decimal places required for the flow rate indicator. The display shows a row of zeros with a decimal point. Pressing the right button moves the decimal point. When the required decimal places is shown, holding the left key for 3 seconds advances to the next menu item.

0.000000 0.000000 0.000000 0.000000

SET

rate

### Set Rate

"Rate" is the time base used for flow rate display, e.g. unit volume per second, per minute or per hour. The right key enters the mode and cycles between the options "Sec", "min" and "Hr". Holding the left key enters the option and advances to the next menu item.

/min /Hr /Sec

Filter

### Filter

This option permits the user to alter the degree of filtration on the display. The right button cycles between 'none - F1 - F2 - F3 - F4 - F5'. This does not affect the totaliser, just the amount the display "jitters" during normal operation and its response to step changes in flow rate. The right button cycles the options and the left button advances the program to the next menu item.

none F1 F3 F5

## Programming the Pulsite

Alt

Pin

### Alter PIN

This gives the option of changing the PIN. The left key by-passes this option. If the right key is pressed the existing PIN will be displayed.. The currently selected digit will flash. The right hand button increments the selection. When the required selection is reached the left hand button moves the flashing digit to the right. Each digit can be cycled until the number you require is reached. Holding the left key enters the option and advances to the next menu item.



End

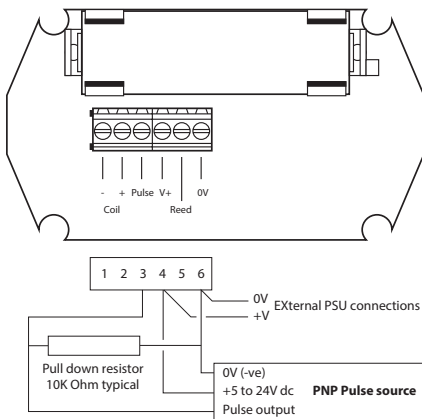
### Set Unit

The word "End" shows for approximately 2 seconds before the unit exits the menu system and returns to the "run" mode.

## Electrical Connections

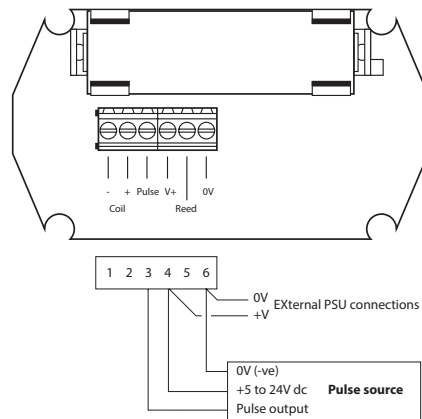
### -PNP transistor -

This input would require external power.



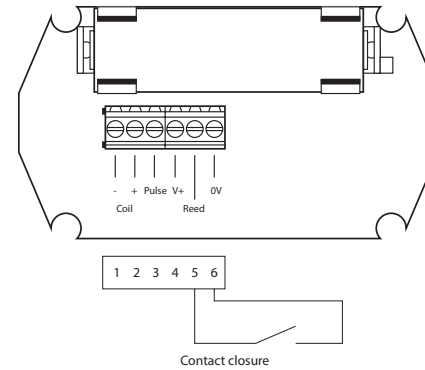
### -Logic level & TTL interface. 2KHz

Max. External power not essential but recommended.



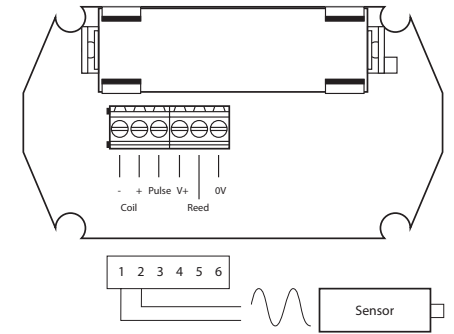
## Electrical Connections

**Input type - Reed switch or contact closure.** Maximum frequency 100 Hz.



### -Magnetic pick-up.

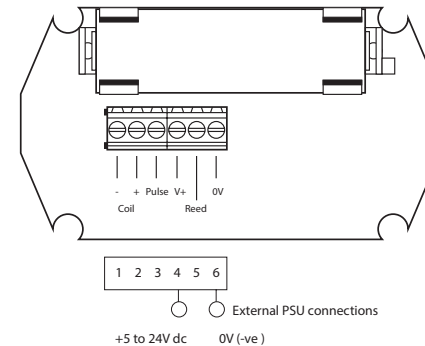
3mV to 24V peak to peak sine wave. 2KHz max.



## Electrical Connections

### External power -

Installations with contact closure or magnetic pick-ups can also operate with external power. For powered sensors external power should always be used.



### -NPN pulse i.e. Hall effect sensor.

2KHz. Max. This input would require external power.

