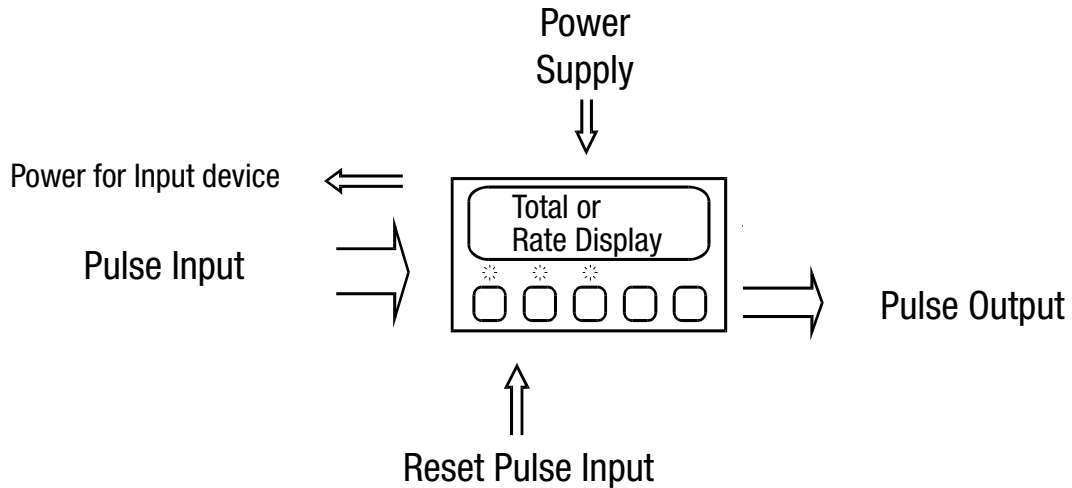


eLINE PDT-D

Operating Instructions



Operation

General

The eLINE PDT-D is a scalable pulse counter/rate indicator for digital pulse signals. It will display either the rate or total according to setup. The other value is displayed when you hold down the **TOTAL/RATE** key.

Checking the Rate/Total

You can set up the eLINE PDT-D to show either total or rate. If the total is normally on display, you can check the rate by holding down the **TOTAL/RATE** key.

Resetting the total

If you press the **RESET** key, the eLINE PDT-D will set the total to zero and clear any total alarms (you can disable this feature during setup for greater security). There is also an external reset input that you can use to clear the total remotely.

Reviewing the setup options

To review the setup (in read only mode) press the **PGM** key. The eLINE PDT-D will show the software version number. Press the **▼** key to see the next setting. The information in review mode is shown in the same order as setup mode (some irrelevant items will be skipped).

There is a 10s timeout during review mode or you can press **PGM** again to return the display to normal operation.

You can review the setup while the instrument is in service - the unit will continue to operate normally.

Setup mode

Changing the setup options

You should only use setup mode if you have to change a setting or calibrate the outputs. The setup mode stops all operation. As soon as you have setup the last parameter, the unit behaves as if it has been switched on with the new settings. This does not mean that the total is reset - you must do this yourself if necessary.

If you want to abandon all the changes you have made, simply remove the security link (or remove the power) before the **5 R u E** message is shown.

To change the instrument setup:

1. Connect the security link (short pins 8 & 12).
2. Press the **PGM** key.

The setup sequence is shown in the table on page two.

Setup options

General

There are two areas of the instrument operation that must be setup on a fully configured eLINE PDT-D. They are:

- Pulse/frequency inputs;
- Display and keypad operation;

Set-up options are also shown for alarms and analogue outputs, you should disable these options.

Software version

The information in this guide refers to versions 1.00 to 1.09.

Model

All eLINE PDT instruments all look identical from the front so this identifies the instrument type.

Input signal type

Sets the input trigger and reset levels to suit the pulse source. The table below gives the threshold values.

For contact closure inputs, the software incorporates debouncing (minimum pulse width 20mS/maximum frequency 10Hz).

Input type	Low voltage inputs		High voltage inputs		Description
	Trigger	Reset	Trigger	Reset	
L0dC	50mV	-50mV	200mV	-400mV	Low level AC signals
H1dC	2.5V	-2.5V	14V	-10V	High level AC signals
L0dC	3.5V	0.5V	20V	-2V	Low level DC signals
H1dC	6V	3V	35V	10V	High level DC signals
C0n	6V	3V	35V	10V	Contact closure

Pulse rate

Set the pulse rate to low if the maximum input frequency is below 1kHz. Otherwise it should be set to high.

Pulse scaling factor

Sets the number of pulses received for a unit change in the total. So, if you have a flowmeter that gives four pulses per litre, you can show the total in litres by setting the pulse scaling factor to four, or in kilolitres by setting the pulse scaling factor to four thousand. You can not set it to more than 10 000 display digits (i.e., ignoring the decimal point).

Total decimal point

The total decimal point position sets the number of decimal places for the total display. Totals are displayed using the full eight digits.

Rate decimal point

Sets the number of decimal places for the rate display. Rates are displayed as five digit numbers.

Rate scaling factor

The rate scaling factor sets the ratio between the total display and the rate display. It must be a power of ten (i.e., 1000,100, ..., 0.01, or 0.001).

Number of samples

The eLINE PDT-D calculates the rate every 260mS. The analogue output and display are then updated from the average over the programmed number of samples. For example, if you set the number of samples to 10, the analogue output and rate display will be updated every 2.6s.Rate timebase

The rate timebase setting sets the timebase for the rate display. It can be set to hours, minutes or seconds.

Show rate or total

Use the display rate/total setting to choose the measurement that will normally be on display.

Enable Reset key

The front panel reset key can be used to reset the total. You can disable this feature (for added security) using this setting.

Alarms disable/enable

The eLINE PDT-D is not fitted with alarm channels so you should disable this option.

Display Intensity

There are fourteen different levels.Setup Sequence

Setting	Display	Description	▼	▲	PGM
S/W Version	uEr 1.01	S/W Version 1.01	-	-	Next
Model	PULSE	Pulse counter: eLINE PDT-D	-	-	Next
Inputs					
Input type	!P=	Introduces the input type	-	-	Next
	L0dC	Low level DC	Toggle	Accept	
	H1dC	High level DC			
	L0dC	Low level AC			
	H1dC	High level AC			
C0n	Contact closure (debounced)				
Input pulse rate	FrEq= L0	Low frequency input (below 1kHz)	Toggle	Accept	
	FrEq= H1	High frequency input (from 1 to 10kHz)			
Pulse scaling factor	PULSE dP= 12345	Pulse scaling factor decimal point Demo display for decimal point selection	-	-	Next Accept
	PULSE SF= 1230	Introduces the pulse scaling factor e.g., 1.230 Pulse = 1 Unit change in total	-	-	Next Accept
Total and rate display settings and scaling					
Total decimal point	tot dP= 12345	Introduces total decimal point Demo, e.g., total shown to one decimal place	-	-	Next Accept
Rate decimal point	tot dP= 12345	Introduces rate decimal point Demo, e.g., rate shown to 3 decimal places	-	-	Next Accept
Rate scaling factor	rRE= SF= 1000	Introduces rate scaling factor e.g., 1000 rate units = 1 total unit	-	-	Next Accept
Rate timebase	rRE SEC	Rate is in units per second	Toggle	Accept	
	rRE min	Rate is in units per minute			
	rRE Hr	Rate is in units per hour			
Number of samples	SAMP= 10	Introduces the number of samples used for rate, e.g., 10	-	-	Next Accept
Show rate or total	d.r=rate d.t=tot	Display normally shows the rate Display normally shows the total	-	-	Next Accept
Reset key enable					
Reset Total Key Enable	En rESY En rESn	RESET key resets count RESET key ignored	-	-	Next Accept
Alarm enable					
Alarms 1 & 2 Select	A12Y A12n	Enable Disable (Select this option)	-	-	Next Accept
Display Intensity	intEn5 = 23456789	Introduces the display intensity Demo display for adjustment	-	-	Next Accept
Save values	SAVE	Instrument is saving the changes to the setup and returning to normal operation	-	-	Next Accept

Installation

Caution: In order to meet product safety requirements, these units must only be installed, by qualified staff, in accordance with the information given in this manual, using the mounting clips and terminal blocks supplied, and all relevant national electrical wiring and safety rules must be followed.

Locate the instrument in an area that is free from dust, moisture and corrosive gases (pollution degree II or better). Do not cover the ventilation holes at the side of the case.

Power Supply Requirements

eLINE PDT-D displays must be used with a suitable mains Power Supply, ratings are as follows:

Voltage Range	Nominal Voltage	Power	Frequency
100 – 132 Vac	110 Vac	6 VA	47-63 Hz
200 – 264 Vac	240 Vac	6 VA	47-63 Hz
21.6 – 26.4 Vdc*	24 Vdc	6 W (at 24 V dc)	-

Input connections

The input circuit has programmable trigger levels according to the 'Input type' setting.

For NAMUR sensors, 3-wire NPN sensors, 3-wire PNP sensors, NPN open collector (O/C) outputs and PNP open collector (O/C) outputs set the input type to "High Level DC" (**H I d C**).

For voltage-free contact inputs use 'Contact closure' (**C o n**). The minimum contact closure time is 20mS and the maximum frequency is 10Hz.

For voltage pulses (including TTL/CMOS logic) select a suitable input type using the trigger/reset voltage table.

Input voltages over 45Vdc

If the input voltage is above 45Vdc connect the internal high voltage select jumper before applying the signal (maximum voltage is 250Vdc).

Digital pulse output

The basic model eLINE PDT-D has a retransmit pulse output, which gives a single pulse every time the total increases by one unit. The pulse width is a constant 32msec and the minimum off time is 32 msec. The output is an isolated, NPN, open collector transistor type and can switch a maximum of 50Vdc or a current up to 200 mA.

Reset pulse input

Accepts a volt-free contact closure, or a shorting link, between pins 7 and 12. The contact must be closed for at least 100 mS.

Connections

For effective protection from electromagnetic noise, all signal cables must be shielded, or located on conductive trays or in conduits.

Strip wires to 7mm from the ends. Use a suitable ferrule for multistranded wires (do not solder).

Pin	Signal	
1	Neutral / -	Power supply
2	Live / +	
3	-	Not Used
4	-	
5	0V	Pulse output
6	Pulse	
7	Reset count	Short to 12 to reset
8	Security	Short to 12 for setup mode
9	Pull Up/Down	Inputs
10	Input - / 0V	
11	Input +	
12	+12Vdc (out)	

Input signals

The eLINE PDT-D input circuits are rated category II (suitable for measurements performed on the low voltage installation). They may safely be floating with respect to local ground (i.e., subject to common mode voltages) up to 250Vdc.

Symbols

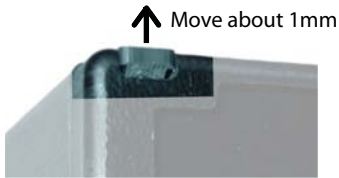
The instrument labels use symbols in accordance with IEC61010-1: - Consult documentation; - Direct Current; - Double Insulated.

Input type	Low voltage inputs		High voltage inputs		Description
	Trigger	Reset	Trigger	Reset	
L O R C	50mV	-50mV	200mV	-400mV	Low level AC signals
H I R C	2.5V	-2.5V	14V	-10V	High level AC signals
L O d C	3.5V	0.5V	20V	-2V	Low level DC signals
H I d C	6V	3V	35V	10V	High level DC signals
C o n	6V	3V	35V	10V	Contact closure

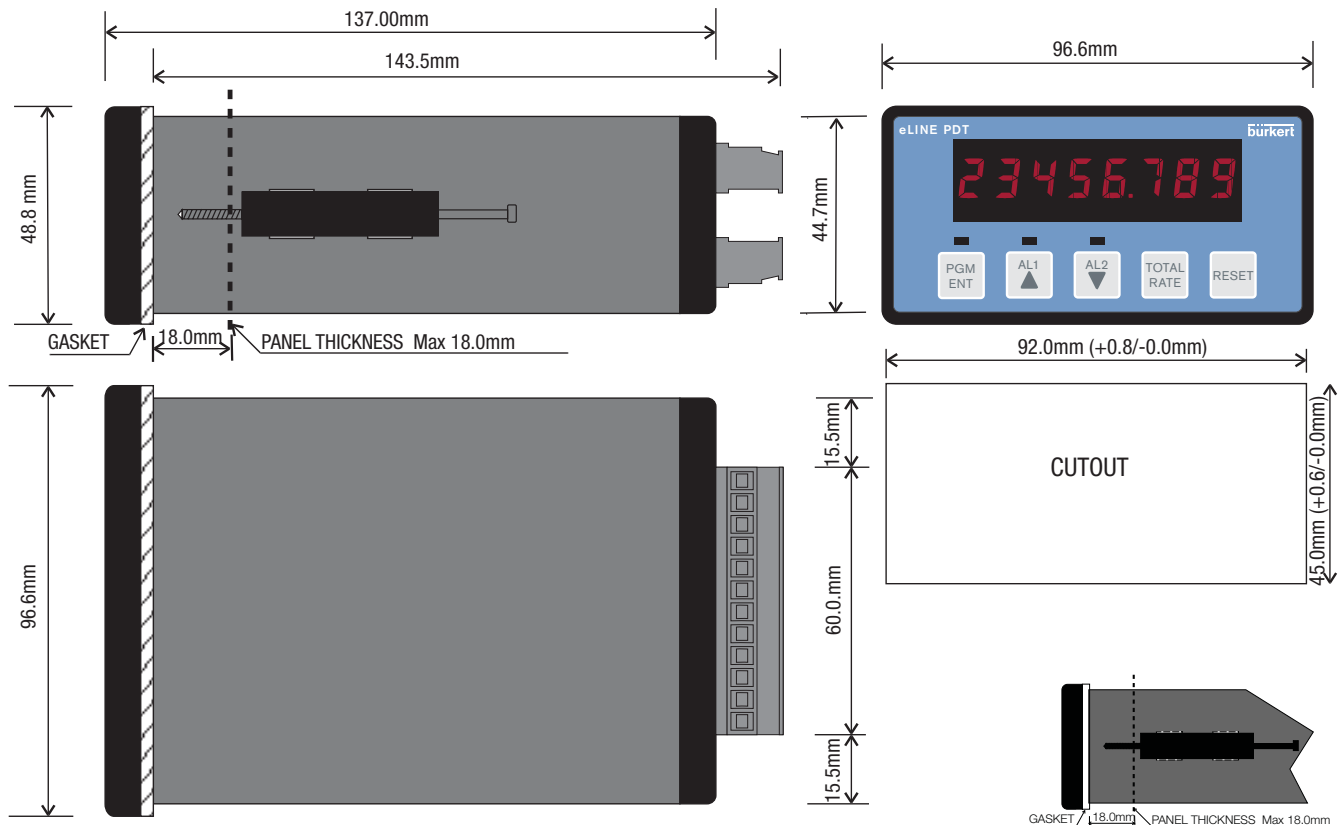
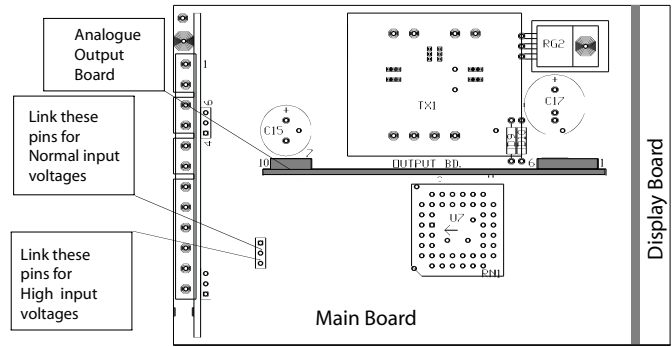
Modifications

High/Low voltage input selection

1. Gently remove the backplate (it is held in place by four lugs).
2. Slide the electronics from the housing.
3. Change the High/Low voltage jumper to the required setting (see diagram right).
4. Look inside the housing and note that there are connectors that mate with the display board.
5. Slide the electronics gently back into the case. Carefully moving the board until the keypad connectors engage with the display board.
6. Replace the backplate.



1. Gently move lug out a fraction with a screwdriver to release the backplate.
2. Pull the backplate back slightly to keep lug from clicking back into place.
3. Repeat with each lug until backplate comes loose.



Find more information online at www.burkert.com.au or contact our sales support team on 1300 888 868.