

# Product Guide



Level and Flow Measurement

## IMP Range



# pulsar

## IMP

### IMP Standard 2/3 Wire

The IMP range offers a combined transducer and controller in one self contained unit. Non-contact level measurement of liquids or solids. Has a choice of 2 or 3 wire configuration. Up to 10m range

### IMP I.S.

IMP is also available in I.S. configuration to ATEX and IECEx. 2 wire loop powered easy set up

### IMP Lite

IMP Lite is a lower cost alternative to the standard 2/3 wire version. IMP Lite is 2-wire configuration, includes RJ11 and is not suitable for flammable atmosphere use

### IMP PC Software

**IMP PC** software allows parameter access and echo trace viewing on screen. This easy-to-use software package stores calibration details of each IMP





# IMP:

## Self-contained ultrasonic level measurement without compromise

Pulsar's IMP range is non-contacting ultrasonic level measurement without compromise. Compact, low-profile self contained units with the benefit of digital echo processing specially designed for IMP. Simple programming without affecting the IP rating via the integral keypad or using **IMP PC**, IMP's own PC software that lets you program the unit, view and download echo profiles and parameters.

There is an IMP to suit your application. 3m, 6m and 10m range versions are available and each can be wired for 2 wire or 3 wire operation. 2-wire Intrinsically Safe (I.S.) versions are also available. All IMPs feature LCD displays and digital temperature measurement and compensation. Imp also has 2 relay outputs as standard.

You can use IMP wherever you need reliable non-contacting level measurement: digital echo processing means IMP is perfect for solids or liquids. Sumps, tanks, silos. Anywhere you need a display telling you the level, or an analogue output to interface with your site control system or drive a display.

When used on battery power for intermittent (wake-up) applications, IMP's high speed boot up of circa 3 seconds maximises battery life. For example, if an IMP were switched on every 15 minutes for a 3 second reading, average current is a mere 40 $\mu$ A.

Active and passive (sourcing and sinking) analogue outputs assist with system integration, especially when retro-fitting into older installations.

### Features

- Compact self contained level measurement
- Calibrate without compromising the IP67 rating
- Simple menu led set up
- High power and narrow beam angles



IMP ON A LIQUID LIME TANK



IMP ON CHEMICAL TANK

STANDARD IMP FACE



# IMP Variants:

## Features

- 1.5" universal thread (2" on IMP 10)
- Agitator avoidance as standard
- 200mm deadband on IMP 3
- PVDF Nose option

VARIANTS:	IMP 3	IMP 6	IMP 10
Range:	200mm - 3m (0.65ft-10ft)	300mm - 6m (0.98ft-20ft)	300mm - 10m (0.98ft-33ft)
2 / 3-wire configurable IMP:	11-30 volts dc / 4-key user interface / LCD adjustable backlit display Digital temperature measurement / 2 alarm relays (1A 30V) / IMP PC software download / Digital echo processing.		
2-wire I.S. IMP:	I.S. certificate to ATEX EEx ia IIC T4 and IECEx / 4-20mA loop powered / 4-key user interface / LCD display / Digital temperature measurement / Digital echo processing.		
2-wire IMP Lite:	2-wire configuration only. RJ11 port/ 4 key user interface/LCD display/ Digital temperature measurement/ 4-20mA loop powered/ Digital echo processing/ No flammable atmosphere approval.		

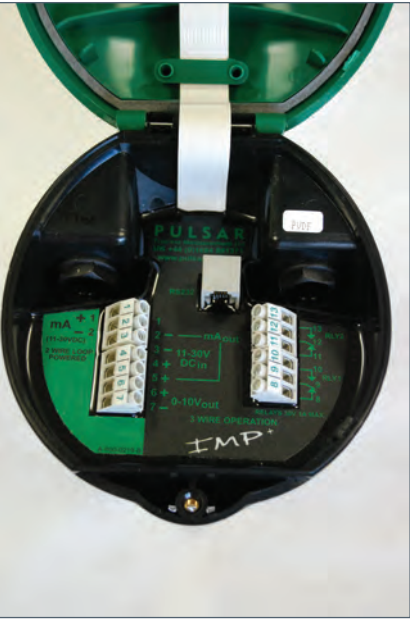


PVDF NOSE CONE OPTION

The full IMP range is available with the wetted parts in PVDF build alternative for corrosive or aggressive applications. The picture below shows a PVDF nose cone on an IMP 6 unit.



INSIDE OF I.S. IMP (ATEX and IECEx)



INSIDE OF STANDARD 2/3 WIRE IMP



INSIDE OF IMP LITE SHOWING RJ11 PORT

IMP ON A MIXING TANK





# IMP Applications:

## and IMP PC Software

### IMP applications

You can use IMP wherever you need reliable non-contacting level measurement: digital echo processing means IMP is perfect for solids or liquids. Sumps, tanks, silos. Anywhere you need a display telling you the level, or an analogue output to interface with your site control system or drive a display.

When used on battery power for intermittent (wake-up) applications, IMP's high speed boot up of circa 3 seconds maximises battery life. For example, if an IMP were switched on every 15 minutes for a 3-second reading, average current is 40µA (3 seconds "live" @ 12mA averaged over 15 minutes) .

The presence of active and passive (sourcing and sinking) analogue outputs assists with system integration, especially when retrofitting into older installations.

### IMP PC

**IMP PC** is optional software that extends IMP's capabilities, allowing you to:

- **Download, analyse and store echo profiles.**  
A great way to see exactly what is happening in the application. Fine tuning for ultimate performance.
- **Set-up** IMP. All programming parameters are instantly visible in the IMP PC programming screens. Program the IMP unit on a desktop before installation, or clone a number of IMPs to save valuable time.
- **Updates.** Future-proof your IMP! Pulsar's policy of continuous improvement means that we never stop developing our products. IMP PC allows new firmware to be installed into your IMP units without even removing them from the application.
- **Flow measurement.** A flow curve may be added within IMP PC to configure for simple level to flow linearisation



**SPECIALLY DESIGNED  
IMP BRACKET IS ALSO  
AVAILABLE**

### Simple to install

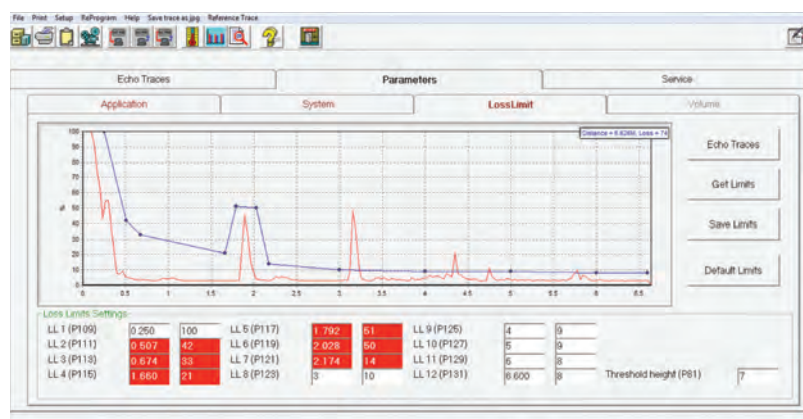
The compact IMP is only 175mm high with a 130mm diameter. Cable glands are provided and IMP can be simply screwed into a 1.5" or 2" universal fitting (a 1.5" to 2" adaptor is available). High transducer power and tight beam angles, together with Pulsar's digital echo processing, makes IMP ideal for many "difficult" applications such as dusty or foamy environments, or where a tank has unavoidable intrusions. The integral display makes programming IMP is extremely straightforward. IMP can be completely set up, without compromising the IP rating, using the integral keypad alone with no need for a PC. Optional IMP PC software makes it easy to fine tune IMP's performance and "clone" any number of IMP units to the same settings if, for example, they are being used on a tank farm. Please note that PC interface is not included on I.S. IMP variants.

### I.S.IMP Features

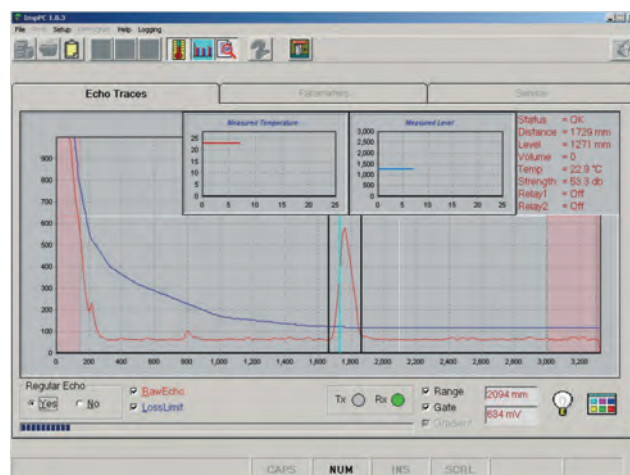
- High Specification I.S. version
- Up to 10m range available

### IMP Lite Features

- 2-wire configuration
- RJ11 Port
- Up to 10m range available



**IMP PC DIAGNOSTICS**



**IMP PC ECHO TRACE**

## Technical Specification: IMP

PHYSICAL:			
Dimensions:	175mm (6.89in) overall height x 130mm (5.12in) diameter		
Cable entry:	2 off 16mm (0.63in) cable glands 3.5 - 10mm (0.14-0.39in) cable dia.		
Mounting:	1.5" (3m (10ft) and 6m (20ft) range versions), 2" (10m version) universal thread - suits BSP and NPT, parallel and tapered		
Weight:	approximately 1Kg (2.2lbs)		
ENVIRONMENTAL:			
Temp range (process):	-40°C - +85°C (-40°F to +185°F) (-40°C - +80°C (-40°F to +176°F) for I.S. version)		
Temp range (ambient):	-20°C - +65°C (-4°F to +149°F)		
IP Rating:	IP67		
VARIANTS:	IMP 3	IMP 6	IMP 10
Beam angle (-3dB half power):	<10° inclusive	<10° inclusive	<10° inclusive
Operating frequency:	125kHz	75kHz	41kHz
Measurement range:	0.2m-3m (0.66ft-10ft)	0.3m-6m (0.98ft-20ft)	0.3m-10m (0.98ft-33ft)
PERFORMANCE:			
Digital echo processing:			
Input voltage range:	11 - 30V (17 - 28V for I.S. version), 3.5 - 22mA		
Accuracy:	± 0.25% or 6mm (0.24in) (whichever is greater)		
Resolution:	± 0.1% or 2mm (0.08in) (whichever is greater)		
4-20mA outputs:	resolution 5µA (both active and passive outputs)		
Temperature compensation:	via internal temperature sensor (±0.5°C accuracy) Level and volume conversion are installed allowing linearisation for tank shapes		
IMP MAY BE WIRED AS EITHER 2-WIRE OR 3-WIRE, GIVING THE FEATURES BELOW:			
2-wire configuration:	RS232 (RJ11 port) connection for diagnostics and software updates		
	4 digit LCD display		
	4 button keypad for parameter entry		
	Power consumption: 3.5 - 22mA		
	Passive 4-20mA output		
3-wire configuration (additional to 2-wire):	Backlit LCD display		
	0-10V analogue output		
	2 relays: single pole two way, 1A 30VDC/AC		
	Power consumption with relays energised <60mA (less 12mA/relay not energised)		
	Active and passive 4-20mA outputs		
2-wire I.S. version:	Intrinsically safe to ATEX EEx ia IIC T4 and IECEx. NB: I.S. IMP is identified by black cap to housing instead of green. Does not include RS232 interface.		
IMP Lite version:	11-30V supply, 3.5 - 22mA output, has RS232 (RJ11 port), 2-wire configuration, no flammable atmosphere approval		
PC interface IMP PC:	All parameters can be accessed and changed through IMP PC software. Echo traces may be viewed on screen. NB: IMP I.S. does not offer this feature.		



IMP CONTROLLING SCREEN HEIGHT



IMP CONTROLLING GATE HEIGHT



IMP MONITORING IN A CSO CHAMBER



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Pulsar operates a policy of constant development and improvement and reserves the right to amend technical details as necessary.



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