



## PULSAR IMP SELF CONTAINED ULTRASONIC LEVEL MEASUREMENT

Item code: IMP

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.

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.

### FEATURES:

- Compact self contained level measurement.
- Calibrate without compromising the IP67 rating.
- Simple menu led set up.
- High power and narrow beam angles.
- 1.5" universal thread (2" on IMP 10).
- Agitator avoidance as standard.
- 200mm deadband on IMP 3.
- PVDF Nose option.

When used on battery power for intermittent (wakeup) 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 40µA.

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



Inside of IMP Lite  
showing RJ11 Port



Inside of Standard 2/3  
wire IMP



Inside of I.S. IMP  
(ATEX and IECEx)



Standard IMP Face



## IMP VARIANTS:

Variants	IMP3	IMP6	IMP10
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.		

## IMP APPLICATIONS:

You can use IMP wherever you need reliable noncontacting 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 (wakeup) 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

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## TECHNICAL SPECIFICATION:

### 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

	IMP3	IMP6	IMP10
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.

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## INSTALLATION:

- 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.



IMP Controlling Screen Height



IMP Controlling Gate Height



IMP Monitoring in a CSO Chamber

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