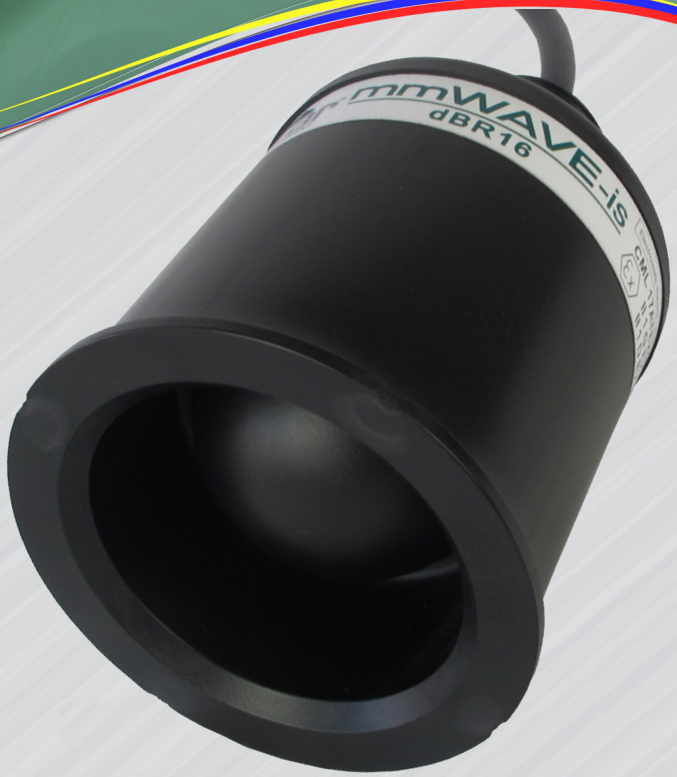
Technical Update

mmWAVE RADAR

FMCW RADAR dBR sensor for non-contacting level and volume measurement



Features

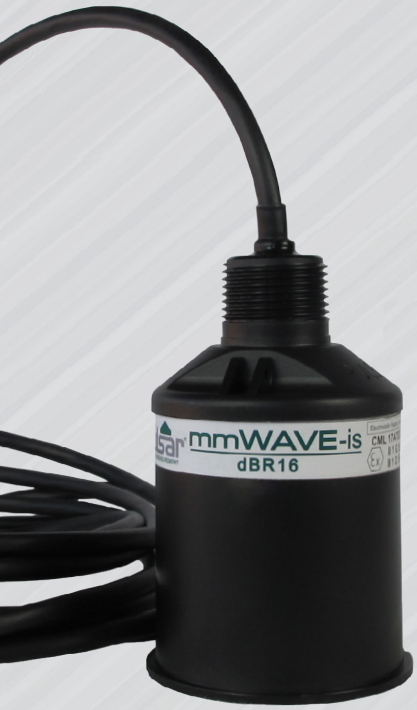
- **Non-contacting**
- **FMCW RADAR**
- **Compatible/retrofittable with standard Pulsar controllers featuring patented DATEM echo processing**
- **Cost effective**
- **Accurate and repeatable**
- **Narrow beam angle**
- **Compact and easy to fit**
- **IP68**
- **ATEX approved**

For the first time, users of Pulsar's industry-leading non-contacting level measurement systems have the option of choosing either ultrasonic or non-contacting FMCW RADAR for level, volume, flow and pump control applications. mmWAVE RADAR offers significant advantages over pulsed RADAR systems - higher resolution, better signal to noise ratio and better target discrimination.

Compatible with Pulsar's standard controller, the mmWAVE RADAR dBR sensor benefits from Pulsar's unique DATEM echo processing software.

Key advantages of mmWAVE RADAR:

- Penetrates non-metallic containers
- Unaffected by fog, haze, mist or rain
- Unaffected by ambient temperature
- Unaffacted by inert gas and vapour
- Unaffected by steam and pressure



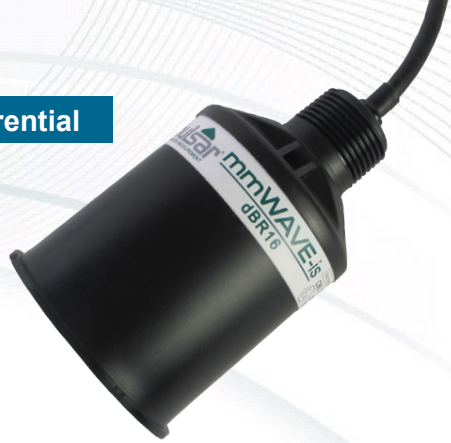
Pulsar's Linear Frequency Modulation (LFM) processing gives the mmWAVE dBR RADAR a very strong signal to noise ratio and excellent resolution. mmWAVE dBR RADAR is IP68 and certified for external installations and offers class-leading performance in accuracy and repeatability with a short blanking distance. Compact size allows installation in cluttered or confined spaces.

pulsar®
PROCESS MEASUREMENT

Level | Volume | Flow | Pump Control | Differential

mmWAVE RADAR

Technical Information



PHYSICAL	
Model:	dBR16
Dimensions:	90mm dia x 130mm height (3.54in x 5.11in)
Weight:	Nominal 1.1kg (2.4lbs)
Measurement range:	16m (52.5ft)
Frequency:	V-band
Beam angle:	8º
Sensor body material:	Valox 357U
Cable lengths:	Standard: 5m, 10m, 20m or 30m (16.4ft, 32.8ft, 65.6ft or 98.4ft) Optional: up to 150m (492ft) in 10m (32.8ft) increments
Maximum separation:	500m (1640ft)
Mounting connection:	1" BSP or NPT
ENVIRONMENTAL	
Enclosure protection:	IP68/NEMA 6P
Max. and min. temperature (electronics):	-20ºC to +80ºC (-40ºF to +176ºF)
Process pressure:	-1 to +4 bar (-14.5 to 58 psi)
APPROVALS	
ATEX:	ATEX Zone 0 (Ex ia) approved. Ex II 1 G Ex ia IIC T4 Ga Ta = -20ºC to +80ºC, Ex II 1 D Ex ia IIIC T135ºC Da Ta =-20ºC to +80ºC. ATEX Zones 1 & 2 (Ex mb) pending.
CE approvals:	Complies with EN61326-1:2013 for emissions and immunity Complies with EN302-729:2016 for radar emissions and immunity
PERFORMANCE	
Accuracy:	±2mm (0.08in)
Repeatability:	±1mm (0.04in)
Resolution:	±1mm (0.04in)
Near blanking distance:	77mm (3.03in) from the drip shield

UK CERTIFICATIONS

ISO 9001 Registered Company sira CERTIFICATION UKAS MANAGEMENT SYSTEMS 011
CERTIFICATE NUMBER: 950136-1

ISO 14001 Registered Company sira CERTIFICATION UKAS MANAGEMENT SYSTEMS 011
CERTIFICATE NUMBER: 072570-1

Pulsar Process Measurement Limited operates a policy of constant development and improvment and reserves the right to amend technical details as necessary

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