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

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 FMCW Radar offers significant advantages over pulsed Radar systems - higher resolution, better signal to noise ratio and better target discrimination.

Compatible with Pulsar's standard controllers, the mmWave 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
- Unaffected by inert gas and vapour
- Unaffected by steam and pressure

Pulsar's Linear Frequency Modulation (LFM) processing gives the mmWave dBR a very strong signal to noise ratio and excellent resolution. mmWave dBR 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 dBR Radar

Technical Information

PHYSICAL	
Model:	dBR16
Dimensions:	86mm diam x 135mm height (3.07in x 5.31in)
Weight:	Nominal 1.1kg (2.4lbs)
Measurement range:	16m (52.5ft)
Frequency:	V-band
Beam angle:	8°
Sensor body material:	PVDF and Valox 357U (non-ATEX version)
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)	-40°C to +80°C (-40°F to +176°F)
APPROVALS	
ATEX:	ATEX version 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:	90mm (3.54in)

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 improvement and reserves the right to amend technical details as necessary

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