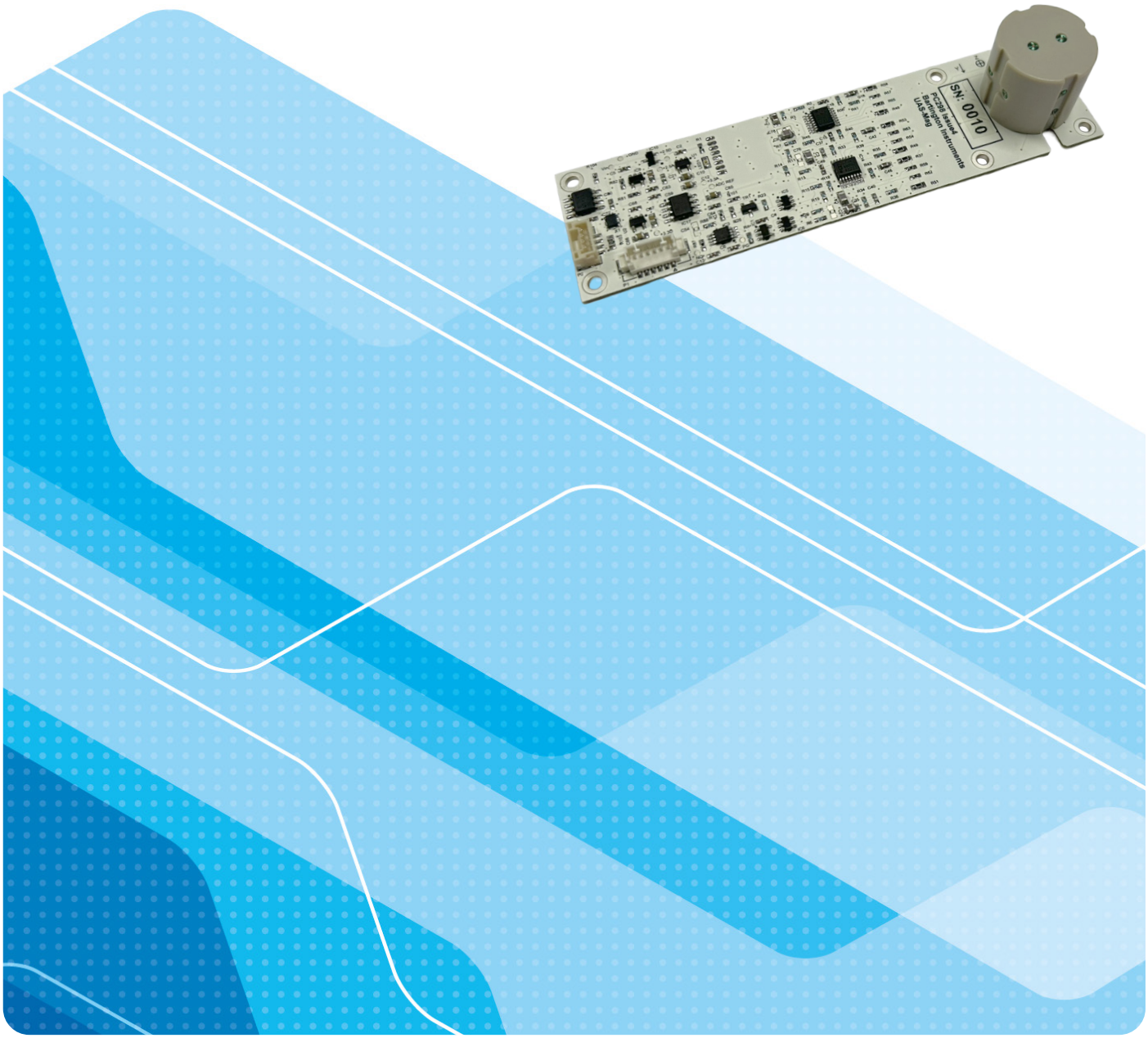
UAS-Mag™

High Performance DroneCAN Magnetometer



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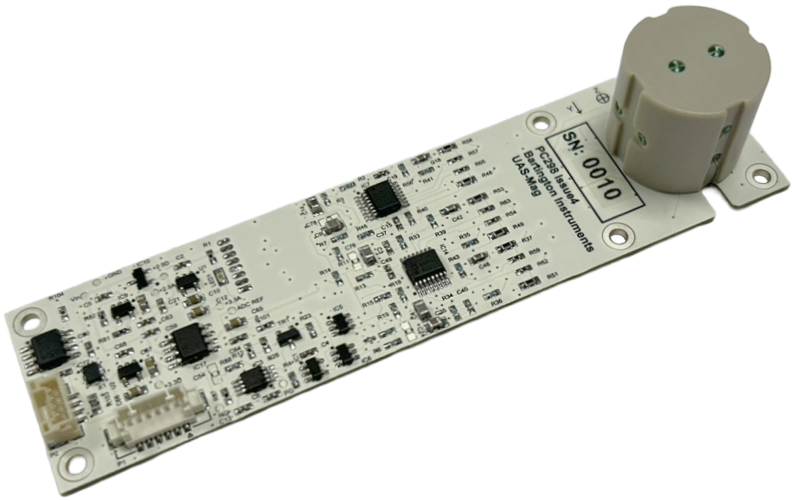
UAS-Mag™ High Performance DroneCAN Magnetometer

A 3-Axis fluxgate magnetic field sensor with a DroneCAN communication interface, for use on UAS platforms.



Features

- Low weight
- Unpackaged for system integration
- DroneCAN (UAVCAN) communication interface
- Adjustable data output rate
- Digital offset adjustment parameters

Typical Applications

- Unmanned aircraft system navigation
- Compassing or payload measurements

Product Identification

Product name	Package	Noise	Range
UAS-Mag™	-U = Unpackaged	No code = standard noise	105 = ±105µT

Example: UAS-Mag-U105 = Unpackaged, standard noise, 105µT range.

Specifications

Performance (Analogue Output)	
Number of Axes	Three, mutually orthogonal (Right Hand XYZ co-ordinate system)
Polarity	+ve output when pointing North
Axis Orientation	X-Axis = +ve forward (Roll) Y-Axis = +ve starboard (Pitch) Z-axis = +ve down (Yaw)
Maximum Measuring Range	±105µT (±1.05 Gauss) ±5µT
Scaling Calibration Error	<±0.5%
Linearity Error	<0.02%
Bandwidth at -3dB	>300Hz
Noise Floor	>10 to ≤40pTrms√Hz @ 1Hz
Zero Field Offset	<±100nT
Perming (Magnetisation Hysteresis)	<2nT (at 1 x Full-scale, when powered)
Orthogonality	<±0.1°
Start-up/Settling time	<150ms
Warm-up drift time	15 minutes

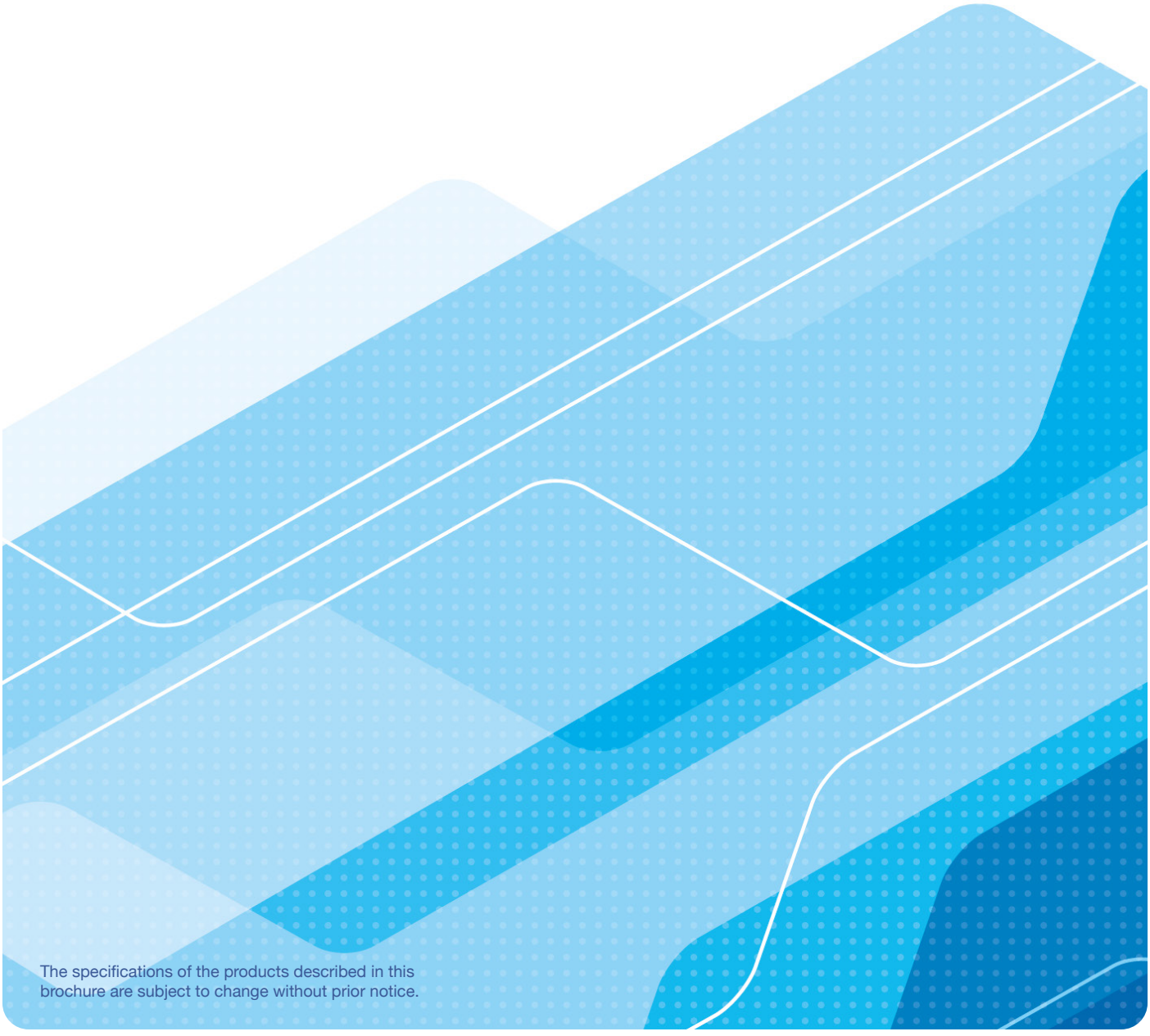
Performance (Digital CAN Output)	
Number of Axes	Three, mutually orthogonal (Right Hand XYZ co-ordinate system)
Polarity	+ve output when pointing North
Axis Orientation	X-Axis = +ve forward (Roll) Y-Axis = +ve starboard (Pitch) Z-axis = +ve down (Yaw)
Maximum Measuring Range	±105µT (±1.05 Gauss) ±5µT
Scaling Calibration Error	<±0.5%
Linearity Error	<0.02% (least squares fit)
Noise Floor	>10 to ≤40pTrms√Hz @ 1Hz
Zero Field Offset	<±100nT
Orthogonality	<±0.1°
Start-up/Settling time	<150ms
Warm-up drift time	15 minutes
Output Data Rate	1 to 200 samples/second on all 3 axes simultaneously (selectable) (50smps default)
Communication Protocol	DroneCAN v1
DroneCAN Data Type	MagneticFieldStrength MagneticFieldStrength2 MagneticFieldStrengthF32 (Bartington custom message)

Environmental	
Operating temperature range	-40°C to +85°C
Storage temperature range	-40°C to +85°C
Compliance	BS EN 61326 & RoHS

Mechanical	
Enclosure	Unpackaged – no enclosure
Dimensions	110 x 29 x 24mm
Weight	25g
Connector	JST-GH-4P
Solder	Unleaded Solder
Mounting Arrangements	6 x Ø2.65mm thru' holes

Electrical	
Supply Voltage	+4.5V to +15V DC
Current Consumption	60mA typical @5V
Analog Output Scaling	3V balanced differential (0.15 – 3.15V) / 100µT
ADC	AD7767BRUZ-2 (24-bit)
ADC sample rate	1MHz
ADC output rate	31.25kSPS

Other Information	
Military Control List Classification	Not controlled
ITAR components	No ITAR components to be used in the product



The specifications of the products described in this brochure are subject to change without prior notice.

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