ACKCIO ANALOGUE NODE

Code : N610



- The Ackcio BEAM-AN Series (S1 and S4) are long-range wireless analogue nodes designed for real-time monitoring of sensors with voltage, current, Wheatstone bridge, or thermistor outputs in geotechnical and structural health applications.
- These nodes form part of Ackcio's robust wireless mesh network, offering secure and reliable transmission of analogue data from remote or hard-to-access sites to the central monitoring system.
- Each node features a 24-bit low-noise differential ADC for high-accuracy signal conversion, supporting both ±10 V and 0–20 mA sensors with auto-calibration and dynamic range adjustment.
- The devices are available in two configurations: BEAM-AN-S1, supporting up to one sensor (2 analogue + 1 thermistor channel), and BEAM-AN-S4, supporting up to four sensors (8 analogue + 4 thermistor channels).
- Built to withstand harsh environmental conditions, the BEAM-AN series features an IP67-rated die-cast aluminium enclosure and a wide operating temperature range from −40 °C to +80 °C.

- The system is powered by long-life internal Li-$SOCl_2$ D-cell batteries, ensuring years of unattended operation, with typical lifetimes up to 36 months depending on sampling frequency and network configuration.
- The nodes communicate through Ackcio's proprietary Ackcio Mesh firmware and are managed via the Ackcio Nimbus Android application for setup, diagnostics, and performance monitoring.
- Advanced data integrity is ensured by AES-128 encryption, supporting up to 50 nodes and 12 mesh hops with transmission ranges up to 5 km (line-of-sight).
- Integrated on-board sensors continuously record internal temperature and barometric pressure for self-diagnostic and compensation functions.
- Optional small or large multipurpose mounting brackets allow flexible installation on walls, structures, or poles in both vertical and horizontal orientations.

TECHNICAL SPECIFICATIONS

- Models: BEAM-AN-S1 (1 sensor), BEAM-AN-S4 (4 sensors)
- Analogue Inputs: 2 / 8 differential + 1 / 4 thermistor channels
- ADC Resolution: 24-bit (22 true bit), auto-calibrated
- Measurement Range (Voltage): ±10 V
- Measurement Range (Current): 0–20 mA
- Resolution (Voltage): 0.0001 V
- Resolution (Current): 0.005 mA
- Accuracy: ±0.05 % FS (Voltage / Current)
- Bridge Measurement Range: 0.1 mV/V resolution, 0.25 % FS accuracy, ≥150 Ω input resistance
- Thermistor Range: −20 °C to +80 °C (3 kΩ sensor)
- Thermistor Resolution: 0.1 °C
- Thermistor Accuracy: ±0.2 °C
- Measurement Rate: 50 samples per second (SPS)
- Warm-up Time: 1 s to 2 min (user-configurable)
- Power Outputs to Sensors: 5 V @ 100 mA, 12 V @ 90 mA, 24 V @ 40 mA (± 5 %)

- Internal Power Source: Li-$SOCl_2$ 3.6 V D-cell battery (S1: × 1, S4: × 2), 19 Ah each
- Typical Current Drain: < 20 µA (idle), < 100 mA (RX), < 300 mA (TX)
- Radio Band: ISM 863–870 MHz / 902–928 MHz
- Transmit Power: Up to 1 W (30 dBm)
- Modulation: 2-GFSK
- Data Rate: 50 kbps
- Network Capacity: Up to 50 nodes, 12 hops
- Range: Up to 5 km (line-of-sight), 1 km (urban), 500 m (subsurface)
- Operating Temperature: −40 °C to +80 °C
- Enclosure: Die-cast aluminium, IP67 rated
- Circuit Protection: Surge (60 V DC breakdown), short-circuit protection, reverse polarity protection, ESD 15 kV
- Interfaces: USB 2.0 Micro B (for setup / OTG), LED status indicators, push-buttons (TEST, RESET, FORMAT)
- Firmware: Ackcio Mesh low-power wireless protocol
- Software: Ackcio Nimbus (Android setup and monitoring app)

ORDERING INFORMATION

Item Name	Item Code
ACKCIO ANALOGUE NODE (1 Channel)	N610X001B
ACKCIO ANALOGUE NODE (4 Channels)	N610X004B

OTHER PHOTOS


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Li-SOCl2
BATTERY
Li-SOCl2
BATTERY



