CAMPBELL SCIENTIFIC
WHEN MEASUREMENTS MATTER

AL200

ALERT2 Encoder, Modulator, and Sensor Interface

ALERT2 Ready

Improved accuracy and performance for flood warning systems

Overview

The AL200 is an ALERT2 encoder and modulator that supports ALERT2 and ALERT-concentration services. It meets the ALERT2 standards maintained by National Hydrologic Warning Council (NHWC) and ALERT Users Group (AUG). ALERT2 improves the accuracy and performance of flood warning systems and software, by providing you with faster data transfer, forward error correction, and a TDMA architecture.

With integrated sensor inputs, the AL200 allows you to create a minimal ALERT2 transmitter/station, decreasing the cost of a typical flood warning system. Combining the AL200 with a Campbell Scientific datalogger provides enhanced sensor support, user-defined logic and control, and datalogging capabilities.

Note: Portions of the AL200 embedded code were developed and copyrighted by Blue Water Design LLC and are used under license.

Benefits and Features

- Easily configurable with graphical, point-and-click software
- Integrated sensor inputs for greatly reduced station cost
- Onboard measurement of supply voltage, clock/GPS quality
- Event or schedule driven reports for battery, clock, tipping bucket, voltage, current, SDI-12, high/low state
- Screw terminals for power, radio, and sensors for easy cabling
- Easy access test features for transmission, radio power, and alignment

Detailed Description

Channels Available and Their Functions

- P1: Tipping Bucket / Switch Closure Count Accumulator
- SE1: Single-ended Analog Input, millivolt or milliamp
- C1: Digital for limited SDI-12 or High/Low State
- SW12: Switched power for powering sensors
- G: Ground

ALERT2 Reporting

When used standalone, the AL200 can generate time and event driven reports for Battery, Clock Status, Tipping Bucket, Analog Input (mV or mA), Digital (SDI-12 or High/Low State).

Specifications

Power Connector	Two-wire, 0.15-in. pitch removable terminal (reverse polarity protected)
Power Requirements	9 to 18 Vdc
Configuration	Device Configuration Utility over USB (settable modulation levels using Device Configuration Utility)
LED	GPS, Serial, Radio (RS-232 and CS I/O share serial activity LED.)
CS I/O Port	SDC 7, 8,10, or 11 (multiplexed with on-board sensor interface)
RS-232 Port	DCE
USB Port	Micro-B
Temperature Range	-40° to +60°C
Communication Rate	› 1200 to 57,600 bps (RS-232 DCE Port) › 9600 to 460.8 kbps (CS I/O Port)
Current Drain	› 1.5 mA (@ 12 Vdc when idle) › 40 mA (@ 12 Vdc during GPS fix) › 35 mA (@12 Vdc during transmit)
Timekeeping Setting via GPS	±1 µs
Drift	±0.17 s/day (without GPS sync, 40°C temperature change)
Analog Input (SE1) Sensor Interface	0 to 5 Vdc (16-bit ADC; millivolt or 4 to 20 mA selectable)
Protocols Supported	ALERT1 and ALERT2
SMA Connector	Active GPS antenna
Test Button	Test transmit and tone
Dimensions	16 x 7.7 x 2.2 cm (6.3 x 3.0 x 0.9 in.)

Sensor Interface

Channels Available	Switch closure (P1), single-ended analog (SE1), limited SDI-12 (C1), switched 12 V, ground
Analog input (SE1)	0 to 5 Vdc, 16-bit Adc (millivolt or 4 to 20 mA selectable)

Radio Interface

Channels Available	TX, PTT, switched battery, ground
RCFSK Modulation	100 to 1000 mV, ±50 mV (software selectable)

Standards

Compliance	RoHS and CE
Product Standard	EN 61326-1:2013
Test Standards	› IEC 61000-4-2, Electrostatic Discharge Immunity › IEC 61000-4-3, Radiated RF Immunity › IEC 61000-4-4, Electrical Fast Transients Immunity › IEC 61000-4-5, Surge Immunity › IEC 61000-4-6, Conducted RF Immunity › CIPSR 11, Class B Emission