

ADVANTAGE TECHNICAL SPECIFICATION

Advantage is a light weight, compact and water sealed hand held reader. This reader can be used as a water meter installation tool. Also this reader can be used to read and store water meter encoder data up to five readings. This reader is capable of reading ProRead and Sensus encoders. The reader includes 2 PCBs, a inductive probe, a 2x16 LCD display, a charging jack and two key pads. The unit will be in sleep mode until the REVIEW or READ key is pressed. The unit goes to sleep mode after 4 minutes if no activities are detected. An inductive probe is attached at the front of the reader to read the encoder data. A belt clip is included at the back of the unit to attach it with the belt.

MPU Board

Central processing unit is a low power Philips micro controller 87L51FC. The micro controller includes 256x8 RAM and 16kx8 ROM. The micro controller is run by a 19.2 MHz crystal. There are two additional chips on the MPU board, 256x8 RAM and 256x8 EEPROM. The display is run by -9 volts which is being generated in the board.

The RF transmitter is a HX2001 manufactured by RFM. This a 914.0 MHz, AM hybrid transmitter. Operating frequency is 913.850 to 914.200 MHz. The RF out power at the 50 ohm load is -3 to +2 dBm. Modulation timing on time 3 to 100 micro seconds and turn off time 3 to 30 micro seconds. Operating voltage 2 to 3.8 VDC. See attached details for more specification.

I/O Board

The I/O board is used to generate 12 volt clocks for the encoder power and 5 volt for the buzzer. The encoder signals are filtered and amplified in this board before the signal goes to the MPU board for processing. A low voltage detection circuit is used to shut down the unit once the voltage goes below 3.1 volts.

Inductive Probe

An inductive probe is used to power the encoder via a loosely coupled transformer(inductive coil). During an encoder read the reader supplies 1200 Hz to 19.2 kHz signal to the encoder via inductive couple transformer. The returned data from the encoder is synchronized with the incoming clock.

Keypad

Two key pads are on the display to activate the reading and review the stored data. The unit scans the keypad every 100 msec. Unit can be waken by pressing any of the two keys, READ or REVIEW.

Battery

A 3.6 volts rechargeable battery is used to power the unit. The battery can be charged using a 120 volts charger rated at 85ma, 4.8 volts.

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