

SDI12 Depth User Manual

Wiring.

Unit is provided with 3m SDI-12 cable, the cable is soldered to the main pcb within the sensor enclosure and if it is to be extended that should be done with an external waterproof enclosure or connectors.

The standard 3 wire SDI-12 connection is used

Red wire	+12VDC (14V Max)
Yellow wire	SDI-12 data
Green wire	Supply and data ground
Current	10mA max



Mounting.

The unit can be mounted using the top hat bracket with a hole for the sensor head to protrude through or using a top plate with a hole in it and the centre screw passed through the plate.

The ultrasonic beam is approximately a 30 deg cone extending down from the sensor so avoid using in a location where objects at the edge of the cone can reflect an echo back to the sensor.



Mount the sensor so it is perpendicular to the level being measured. It is possible to narrow the beam by placing a 32mm conduit fitting over the sensor head, in this case the perpendicular requirement becomes much more important.

SDI-12 Communication.

The sensor uses a very limited version of the SDI-12 standard. Other functions will be added later as required but currently it has a very minimal version of SDI-12

The unit is shipped with address 0 configured. It is possible to change this using an SDI-12 communication device.

If the device is powered up each time a reading is taken (suggested preference as it saves power and resets the unit each time), then leave 4 seconds between applying power and attempting to send a command.

Protocol provided, 'a' is the sensor address.

1. a! Identify command. Response is 13NRIELECTSDIDEP1.0001

2. aM! Measure command. Response is 0013 ie 3 values ready in 1 sec
3. aD! Send data command. Response is 3 values in floating point format
 - Flight time of the ultrasonic signal in milliseconds, one way
 - Temperature measured within the unit as degC, this is used to temperature compensate the sensor. Accuracy is about +/- 1.0 degrees
 - Distance in metres to the reflective surface to 3 decimal places, accuracy is +/- 5mm with a constant offset of about 30mm. The offset should be determined for each installation if this is important.
4. aAc! Change sensor address where c is the new address.