

# Eltek TU1061 - GenII OD17EE customised RH, temp and CO2 battery powered transmitter



OD17EE is a customised transmitter designed for use with EplusE RH/T and CO2 sensors.

Two sockets are provided on the enclosure to accept 1 x RH and temp sensor and 1 x CO2 sensor only. One CO2 sensor and one RH and temperature sensor can be plugged into either socket.

The communications protocol is Modbus RS485.

The unit should be located in a cool dry, non-hostile place and away from risk of water spray. The unit environmental rating is IP40.

The antenna with its magnetic base can be located on the enclosure or extended up to 1.5m away to optimise communications range.

The OD17EE is battery powered using a non rechargeable alkaline battery pack. It is designed for 6 months unattended operation. The battery status should be frequently monitored and exchanged when required using only the pack specified which is available from Eltek Ltd.

### Specification:

Frequency	434.225Mhz
Compliant to	EN300 220-1
Ambient temperatures	-10 to +55 degree C
Humidity	0-90%RH non condensing
RX sensitivity	-110dbm (usable sensitivity -117dbm)
Transmitter power	10mW ERP
Transmitter type	GD17EE
DC input voltage and connector type	5.0 to 7.9VDC
Number of inputs	1 x Modbus RS485
GD17EE connector	1 x 4 way miniature rising cage
Enclosure connector	2 x M12
Sensors that can be connected	1 x EE071 and 1 x EE871 (RH/Temp and CO2 respectively)

### Measuring Range:

Temperature range	-40.0 to 80.0°C	Accuracy	$\pm 0.2^{\circ}\text{C}$ at $20^{\circ}\text{C}$ $\pm 0.4^{\circ}\text{C}$ for $-10$ to $50^{\circ}\text{C}$ $\pm 0.6^{\circ}\text{C}$ for $-40$ to $80^{\circ}\text{C}$
RH range	0.0 to 100.0%RH	Accuracy	$\pm 2\%$ RH (0...90% RH) $\pm 3\%$ RH (90...100% RH)
CO2 range	0-5000ppm	Accuracy	$< \pm 50$ ppm + 3 % from the measured value

**Principle of operation:** The sensor values are sampled and saved in transmitter register at 60 second intervals. The values in the register are despatched at the time of transmission. The actual transmission is at a random point in time within the set transmit interval.

**Preferred transmit interval:** 1 minute for 5 minute logging interval for this application.

**Battery type:** 5 x D cell (12AH) non rechargeable, Alkaline custom pack - Eltek type SP1340  
Method of construction: Welded connection and heat shrink wrap with 200mm tail terminated with Molex Mini Fit socket.



**Battery endurance and replacement:** Endurance is designed to be greater than 6 months at one minute Tx interval. The battery condition can be viewed on the GD17EE LCD or in [Darca Transmitter Setup](#) or on the logger itself using the button panel (go to "Tx battery and reliability" and scroll to the relevant TX serial number). The battery should be considered for imminent replacement when the reading is 4% or one chevron indicated on the LCD. (If the LCD battery gauge flashes the battery may be exhausted). The battery must only be replaced by battery type SP1340 available from Eltek Ltd.



### **Antenna**

The antenna is supplied with a magnetic base. For compact operation the antenna can be parked on the metal bracket affixed to the enclosure and the excess cable neatly stored within the enclosure.

Range can be optimised by mounting the antenna in an alternative position. Gently withdraw the coaxial cable to the antenna, the cable is 1.8m. Do not exert excess pull on the cable or subject it to sharp angles.

### **Enclosure mounting**

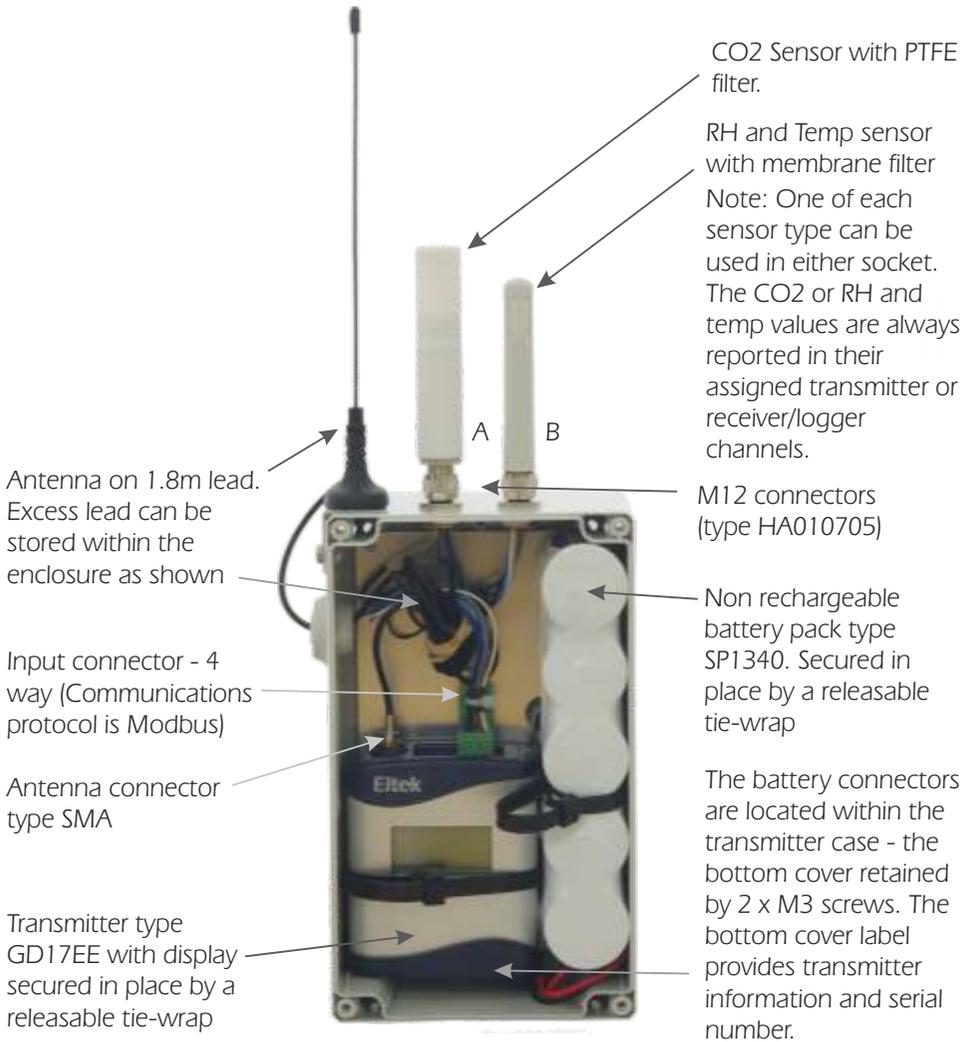
The rugged polycarbonate enclosure can be free standing or wall mounted. Wall fixing hardware is not included. If wall fixing use the 4 holes that can be accessed when the front cover is removed.

### **Enclosure dimensions**

H210mm x W125mm x D88mm (less probes and antenna but inclusive of connectors).  
RH/T probe adds 85mm. CO<sub>2</sub> probe adds 97mm. Antenna adds 190mm.

The enclosure (colour grey) is intended for indoor use only (IP40). The front cover must be securely fitted using the 4 x semi captive screws to ensure the rubber seal is effective.

Gross weight with all probes fitted is 1.5Kg.



**OD17EE comprises**

- Customised polycarbonate enclosure with rubber bung fitted to the left hand side to permit antenna cable plug entry and sockets fitted for RH and temp probes.
- GD17EE transmitter with display.
- Replaceable battery pack and connector, Eltek type SP1340
- Antenna type UHFFlexi/mag/sma with 2m lead
- EplusE EE071 - RH and temperature probe type 1-HTPBx/AN1
- EplusE EE871 - CO2 probe type 1-05C3E/1AN1 (NDIR technology)

## Important notice - connecting sensors and battery!

**The battery must be disconnected when connecting or removing either the CO2 or RH and temperature sensors.**

Please note warning labels inside and on top of the enclosure.

Failure to follow this notice can cause erratic performance!

### Battery replacement

Please note a new battery capacity can be in excess of 12AH capacity. When exchanging the battery please ensure leads are clear of any risk of being trapped and that the polarised connector is fully engaged and stored safely with in the body of the GD17EE transmitter. The battery should be installed in the same position and orientation as the one it replaced.

Please do not use the battery for any other purpose than for powering the GD17EE transmitter.

Please dispose of the exhausted battery in a responsible manner and to an authorised disposal facility. Exhausted batteries can be returned to Eltek for safe disposal if preferred.

### GD17EE configuration

The transmitter should be configured following the instructions detailed in the Operating Instructions (manual reference TM1035GB) provided with the receiver/logger (RX250AL).

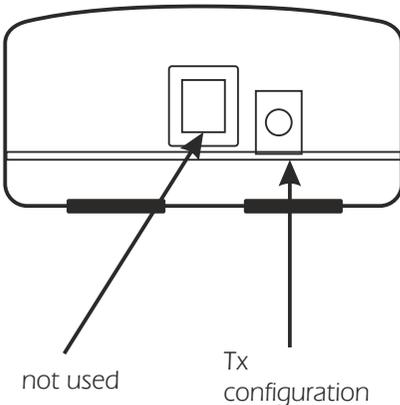
### GD17EE channel assignments

- A Tempertaure
- B Humidity
- C CO2

### Note:

For this application the standard logger interval to transmitter interval of 6:1 should be ignored.

The preferred ratio is 5 :1 to ensure the specified battery endurance. The logger interval must be 5 minutes



## Indicators and concealed push switch

A push switch is located behind a small access hole located at the rear of the transmitter. To activate the switch a small screwdriver or unfurled paper clip can be used.

(When initially powered the transmitter is displayed for 5 seconds)

Red LED cadence due to activation of the concealed push switch:

Function	Activate switch for	LED cadence	LCD
Tx disable	5 seconds	5 x fast flashes	After 5 seconds displays OFF
Tx enable (when configured)	5 seconds	1 continuous 5 sec flash	After 5 seconds displays sensor information
Test transmissions approximately every 5 sec for 2 minutes.	2 second	Short flash at time of transmission	No change

Red LED (D5) due to GD17EE being configured or not configured:

GD17EE condition	LED	Note	LCD
GD17EE not configured	"Blink" every 8 seconds		Battery gauge displayed only
GD17EE configured	Short flash at time of a transmission	A transmission occurs at a random time within the set TX interval	See Display below

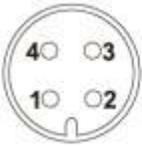
## LCD

The LCD includes a battery condition gauge active at all times: 

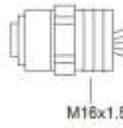
Only configured channels are displayed. The LCD scrolls through the configured channel values.

Note: If the GD17EE is to be stored, the GD17EE should be disabled (put into hibernate mode, i.e. TX disable mode) to prevent unnecessary battery drain and possible loss of settings. . Press the concealed push for 5 seconds. The LCD will now read OFF. Full disconnection of the battery is preferred

# Sensor connections



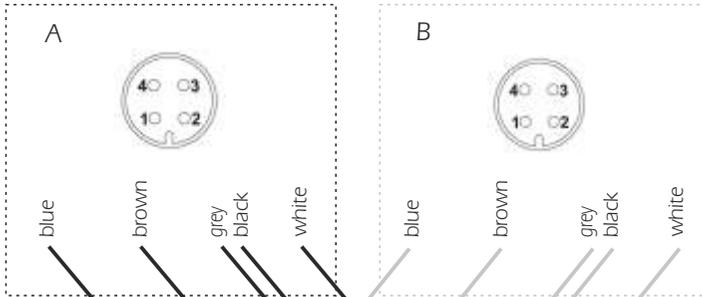
- 1...+UB
- 2...B-RS485 (= Data-)
- 3...A-RS485 (= Data+)
- 4...GND



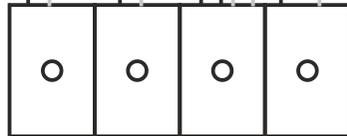
- brown...+UB
- white...B-RS485 (= Data-)
- blue...A-RS485 (= Data+)
- black...GND
- grey...shielding

CO2

RH and temp



- blue
- brown
- grey
- black
- white
- blue
- brown
- grey
- black
- white



- 485A
- ground
- power
- 485B

GD17EE Top label

