

# Eltek TU1045 - GenII GD93A M-Bus transmitter configured for use with Landis and Gyr T230 heatmeter(s)



The GD93A transmitter with M-Bus interface is part of the Eltek GenII family of transmitters.

When used with the Landis+Gyr T230 heatmeter (V11), the GD93A provides precise heatmeter and additional values. The combination offers significantly higher resolution than other instruments making the combination ideal for study and research purposes. Up to 3 x T230 heatmeters can be connected to the GD93A simultaneously.

The system comprises:

- GD93A transmitter
- Up to 3 x Landis+Gyr T230 heatmeters

Landis+Gyr products should be sourced from your approved regional distributor who can support and honour the standard Landis+Gyr warranty

The GD93A has 1 x M-Bus input configured uniquely for up to three T230 heatmeters.

Parameters measured are:

- Power (watt hours)
- Flow temperature (°C)
- Return temperature (°C)
- Volume (litres)

## GD93A channel assignment

Channels can be presented at the RX250AL together with those from any other GenII transmitter and can be reordered during TX Setup or when configuring the RX250AL. Channels can only be renamed when configuring the RX250AL with Darca software. Note: RX250AL channels are numbers 1 through 247. GD93A channels are labelled A through L.

<b>GD93A Channel</b>	<b>Mbus Meter address</b>	<b>Measured property</b>	<b>Range Type</b>	<b>Resolution</b>
A	1	Power	Pulse count	1Wh
B	1	Flow temp	Temp 0.0 -100.0°C	0.1°C
C	1	Return temp	Temp 0.0 -100.0°C	0.1°C
D	1	Volume (litres)	Pulse Count	1L
E	2	Power	Pulse count	1Wh
F	2	Flow temp	Temp 0.0 -100.0°C	0.1°C
G	2	Return temp	Temp 0.0 -100.0°C	0.1°C
H	2	Volume (litres)	Pulse Count	1L
I	3	Power	Pulse Count	1Wh
J	3	Flow temp	Temp 0.0 -100.0°C	0.1°C
K	3	Return temp	Temp 0.0 -100.0°C	0.1°C
L	3	Volume (litres)	Pulse Count	1L

## Method of operation

GD93A reads the values from all connected T230 meters at the point of transmission. The transmission itself is at a random point within the set TX interval. The default TX interval is preset to 3 minutes but can be adjusted if required.

## Battery endurance

The GD93A is installed with a 4 x AA battery pack. Nominal capacity is 2.6Ah. With one T230 connected the battery endurance is approximately 7.5 weeks. For extended periods of unattended operation, connect an external battery pack to the external 9VDC supply connector (see page 4).

A suitable battery pack from Eltek is type SP1196. This 9V pack comprises 6 x welded D cells and has a nominal capacity of 15Ah, assuring greater than one year of operation (when used in conjunction with the standard internal battery pack). This is based on a transmission interval of 60 seconds. SP1196 is available as a spare from Eltek Ltd and should be stored at approximately 25°C.



SP1196  
Spare battery pack  
105 x 122 x 36mm

## Indicators and concealed push switch

The 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 GD93A being configured or not configured:

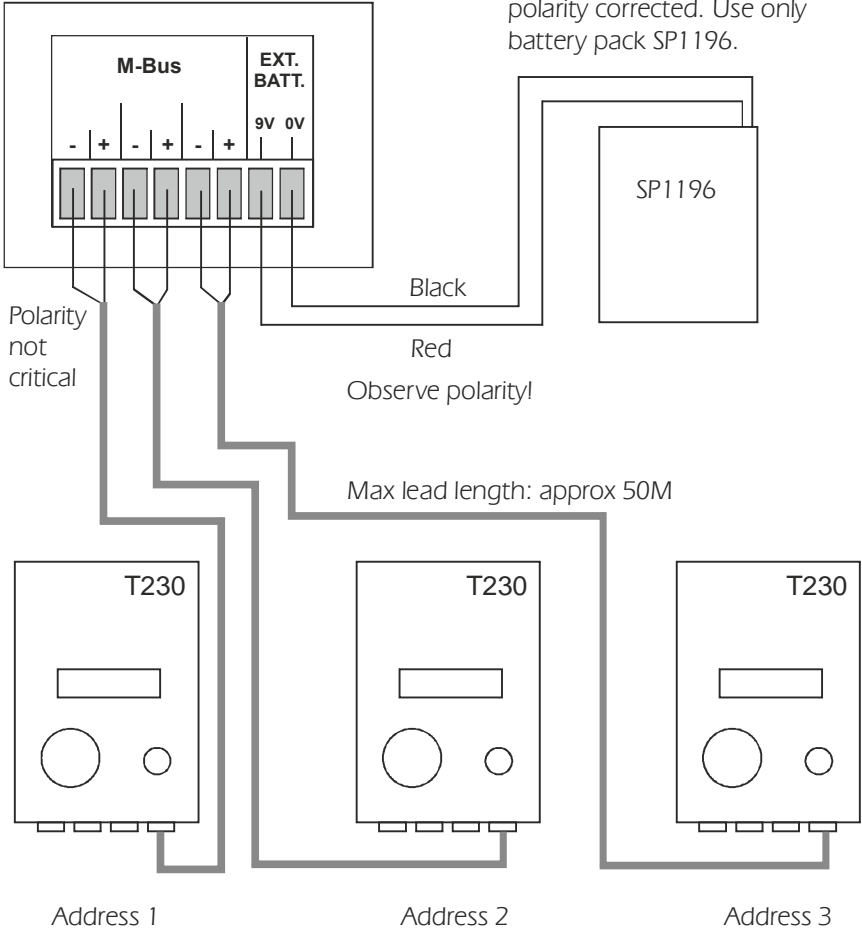
GD93A condition	LED	Note	LCD
GD93A not configured	"Blink" every 8 seconds		Battery gauge displayed only
GD93A configured	Short flash at time of a transmission	A transmission occurs at a random time within the set TX interval	See Display below

## LCD

The LCD includes a battery condition gauge active at all times:  (Battery gauge will flash if battery discharge imminent). Only configured channels are displayed. The LCD scrolls through the configured channel values.

## Connecting the GD93A to the T230(s):

GD93A Top panel

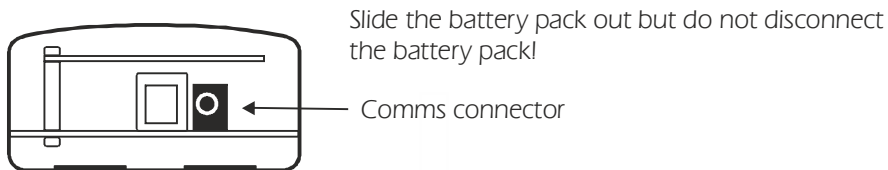


## GD93A configuration using Darca software

Refer to the Quick start guide (ref TU1008) supplied with the RX250AL or download from <http://www.eltekdataloggers.co.uk/literature.shtml>

First connect the LCTX3 to the “Comms” socket):

To access the Comms connector, remove the two screws securing the case bottom to reveal the Comms connector. (Note GD93A cannot be configured by the logger only).



Open Darca and navigate to the **Transmitter Channel to Squirrel Channel Assignments** window:

**Transmitter: Tx-19837**

Sensor-On time (s): 0      Set Sensor On Time

User Preferred Tx Int: 00:00:20      -> Set Log Int & Preferred Tx Int

Tx Interval: 00:01:00      Set Tx Interval

Match

Total transmitter channels: 12  
 Used transmitter Channels: 12  
 Free transmitter Channels: 0  
 Battery Level (%): 100

**Channel:**      Current Squirrel Start Channel: 14      Update Channel Allocation

Tx Chan:	Range:	Sq Chan:				
A	Pulse Count (0 to 65000 w/h )	3	Set Channel	Delete Channel	Meter	Edit EU Range
B	Unknown (0.0 to 100.0 °C )	4	Set Channel	Delete Channel	Meter	
C	Unknown (0.0 to 100.0 °C )	5	Set Channel	Delete Channel	Meter	
D	Pulse Count (0 to 65000 l )	6	Set Channel	Delete Channel	Meter	Edit EU Range
E	Pulse Count (0 to 65000 w/h )	7	Set Channel	Delete Channel	Meter	Edit EU Range
F	Unknown (0.0 to 100.0 °C )	8	Set Channel	Delete Channel	Meter	
G	Unknown (0.0 to 100.0 °C )	9	Set Channel	Delete Channel	Meter	
H	Pulse Count (0 to 65000 l )	10	Set Channel	Delete Channel	Meter	Edit EU Range
I	Pulse Count (0 to 65000 w/h )	11	Set Channel	Delete Channel	Meter	Edit EU Range
J	Unknown (0.0 to 100.0 °C )	12	Set Channel	Delete Channel	Meter	
K	Unknown (0.0 to 100.0 °C )	13	Set Channel	Delete Channel	Meter	
L	Pulse Count (0 to 65000 l )	14	Set Channel	Delete Channel	Meter	Edit EU Range

- For Tx channels A to L, select only the channel range from the drop down as shown above and click on Set Channel. DO NOT ATTEMPT to use the “Edit EU Range” box.

Important note about **Battery Level %**

- This displays the external battery level if connected. **6** to **9.6VDC** is displayed as 0 to 100%.
- If the external battery is running low, responsibility will be handed over to the internal battery for powering the unit. The internal battery has limited endurance and should be changed when the battery level reads 1%. The battery gauge on the transmitter display will be flashing if this situation occurs, indicating battery replacement is immediately required.
- The refresh button must be pressed twice with a 1 second interval between presses after changing the battery to show the new battery status.
- When no external battery is connected, the internal battery is displayed as 0 to 19%.

## Battery replacement

If no battery is available for more than 3 seconds during battery replacement, the display on the transmitter will show the following power-on routine when a battery is connected:

- All segments active (2 secs)
- Firmware version number (2 secs)
- Serial number (2 secs)
- Normal operation

## GD93A specification

Frequency:	Default is 434.225Mhz (other frequencies are available)
Tx compliance:	To EN300 220 -1
Tx output power:	10mW ERP
Useable Tx interval:	typically 10 seconds to 15 minutes
On air duration:	approximately 400mS
Environment:	Indoor only, rated IP40
Temperature Range:	-10 to +55°C compliant to EN300 220-1, operational -30 to +60°C
Humidity:	95% non condensing
Size:	85 x 78 x 42mm (excluding 75mm antenna)
Weight:	250g
Connection strip:	8 x miniature pitch rising cage connector (included)
Antenna:	Supplied compressed spring, L=75mm, Gain -3db
Antenna connector:	SMA
Fixing:	WBG wall fixing bracket (optional)
Battery type:	Internal 4 x LR6 AA alkaline battery cassette
Battery endurance:	see page 3