

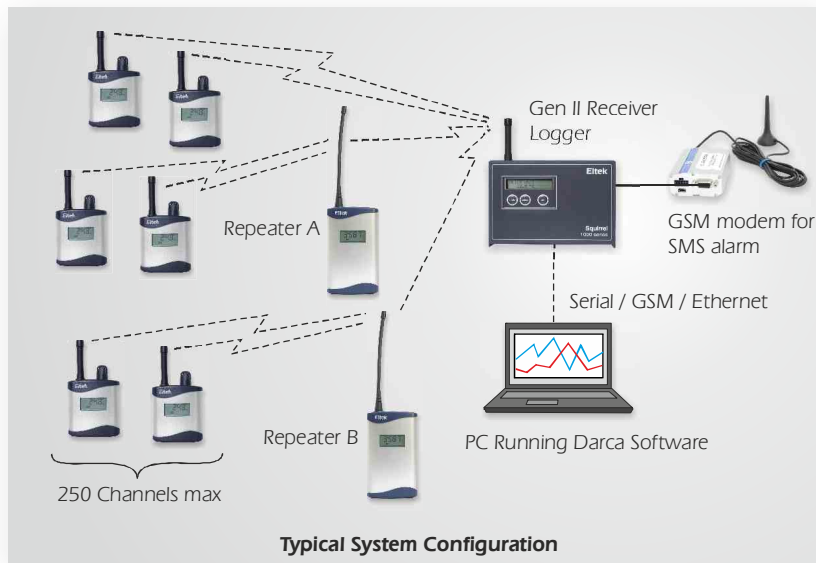
GENII RADIO DATA LOGGING SYSTEMS

Eltek GenII monitoring systems provide data logging and alarm generation for a very wide range of applications. Systems are already installed in museums, laboratories, storage and warehousing facilities, pharmaceutical, production, and domestic premises - just about any environment where accurate and reliable data is essential for monitoring, manufacturing, research or audit purposes.

Eltek
SPECIALIST
DATA LOGGERS

Easy to use customised data loggers

Radio Telemetry offers a cost-effective, flexible and practical alternative to hard-wired data logging systems without forfeiting system reliability or security. The use of telemetry does not restrict the range of sensor types that can be connected or measurement accuracy or metering capability. Licence exempt UHF frequencies are used and sensors can be located almost anywhere. Customised thermal barriers are available for through-process measurement in extreme temperatures.



Radio Telemetry Logging System Features

- UHF
- Wireless connection of sensors
- 12 bit resolution for high accuracy
- 250 channel system capability
- Easy system design and installation
- Flexible configurations for permanent and temporary installations
- Complete turnkey system solution
- Range easily extended by Repeaters
- Options for use in extreme ranges of temperature and physical environments
- Tamperproof indoor or outdoor wall mounting brackets

Transmitter Features

- Available with or without LCD display
- High performance transmitter compliant to EN 300-220
- Transmitters with up to 8 physical inputs
- Transmitters with Mbus/Modbus input to derive up to 12 channels
- Sensors can be integral, external or a combination of both
- Inputs available for Voltage, Current, Temperature, Pulse, Digital or Light
- Program from PC or Receiver Logger
- Battery operation allows flexible and rapid installation
- Powered by standard alkaline batteries
- Up to 5 year battery life (30 minute logging interval)
- Compact size and light weight
- Unobtrusive rugged aluminium customised case and wall bracket



Receiver Logger Features

- Data Logger with integral receiver
- Alarm and GSM text output (RX250AL)
- 24 hour built-in standby battery
- 247K readings expandable to 2M readings
- Dual RS232 serial ports
- Transmitter battery alarm
- Display and keypad for "on line" metering
- Darca setup, graphing and data export software
- Extensive communications options

GENII RX250E / RX250AL RECEIVER / LOGGER

The RX250E/RX250AL Receiver logger is the heart of a GenII logging system. It is not necessary to have a PC permanently connected and the built in battery means data logging is not interrupted if there is a temporary AC mains failure. Multiple RX250ALs can be used for wide area coverage. Alarms (including SMS alarms) come as standard. (To use SMS alarms, a GSM modem is required).

Common specifications

Number of channels	Up to 250
Number of transmitters	Up to 125
Ambient temperature	-10 to +55°C
Humidity	Up to 95% (non condensing)
Power supply	12V DC at 500mA powered using type MP12U, (input 100-250V AC)
Built-in batteries	6 x AA Ni Mh battery
Backup battery life	Typically 24 hours
Memory	247,000 readings expandable to 2,000,000
Clock accuracy	1 second/day at 20°C
Dimensions	D 60mm x W 180mm x H 120mm
Weight	1Kg inc. batteries
Case material	Scratch resistant Nextel coated ABS
PC/modem interface	RS232C up to 38.4K Baud
Receiver	Crystal controlled
Sensitivity	UHF: -117dBm
Antenna connector	SMA 50 ohm female
Antenna	Quarter wave standard, lightweight dipole optional
Communication options	USB, GSM and Ethernet
Alarm	RX250AL: SMS + 1 contact closure, RX250ALD: SMS + 2 contact closures



GENII RP250GD REPEATER

The RP250GD receives and rebroadcasts signals from GenII transmitters, significantly extending the distance over which a system can operate. Multiple repeaters can be used in a system.

Features

- Contains high performance receiver and transmitter compliant to EN 300-220
- LCD indicates on-air transmitter identity, status and signal strength
- Extends range of transmitters many fold
- Multiple repeaters can be used, enabling difficult sites to be covered easily
- Mains powered with built-in rechargeable batteries to provide up to 48 hours standby in the event of a mains failure.
- Free standing or wall mountable
- Antenna socket permits use of external antenna to improve performance in difficult conditions
- Software is used to configure the repeater, download transmitter activity data and specify transmitter authorisation.

Specification

Ambient temperature:	-10 to +55°C
Humidity:	Up to 95% (non condensing)
Power supply:	12V DC (Type MP12U, 100-250V AC input)
Backup batteries type:	Ni MH pack
Backup battery life:	Typically 24 to 48 hours dependant on activity
Dimensions:	D 41 mm x W 80mm x H 125mm
Weight:	500g inc. batteries
Receiver/Transmitter:	Crystal controlled
Antenna connector:	SMA 50 ohm female



GENII TRANSMITTERS - COMMON SPECIFICATIONS

RF specification	EN300-220	Dimensions (footprint)	78 x 41mm
RF power	10mW	Battery endurance	up to 5 years (interval set to 5 minutes) (less for GL-70 and GS-40 series)
Environment specification:		Transmission interval range	1 sec to 4 hours
Compliant to EN300-220	-10 to +55°C	Indicator (red LED)	transmit active/on/off
Actual	-30 to +65°C	Control switch (concealed)	test mode / hibernate
Humidity	100% non condensing	Antenna socket	SMA
Environmental rating	IP40		

GENII TELEMETRY TRANSMITTERS

Sensors can be located almost anywhere, giving a system which is simple to install and use.

Eltek's telemetry transmitters are designed to complement each other, sharing a common case style, RF specification, battery system and choice of antennas. GD models have a display. For specification details see the table later in this document.

Built-in sensors



1 x Eternal temperature
GC-04, GD-04
Built-in temperature and humidity
GC-10, GD-10
Built-in thermistor temperature
GD-06



Built-in temperature and humidity and input for thermistor temperature
GD-11

Temperature



Thermocouple T / K**
GD-20 / GS-20* series
1 or 4 inputs

Thermistor
GD-30 / GS-30* series
1, 2, 4 or 8 inputs



Platinum resistance sensors
GD-52 / GS-52*
2 inputs

*GS versions are without display. GD versions can be ordered with built in audible and visual alarm.
**Other ranges are available on request.

Event / Pulse



Event or state inputs - Volt free or digital
GC-60 (2 inputs)

Pulse inputs - Volt free or digital
GC-62 / GD-67 / GD-68

Voltage and Current



Inputs for voltage or current*
GS-42 / GS-44 / GS-44AVE
2 or 4 Voltage/current inputs with sensor supply

Temperature and humidity



Temperature and humidity
GD-13
input for Eltek RHT10D / E plus
EEE68 / Rotronic HC2-S3 probe
GD-14
As GD-13 plus 2 x thermistor
temperature inputs

Pyranometer



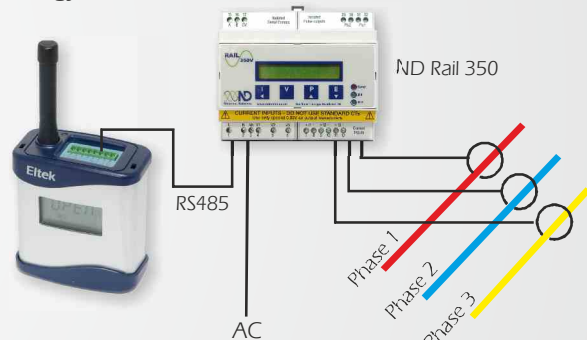
Solar radiation
GS-41A
input for Skye / Kipp & Zonen
pyranometer with calculated
cumulative channel

Versions also available for net
radiometer sensors

Serial input / modbus

Energy monitor
GD-90A / GD-900A
use with energy monitor
e.g. ND Rail 350, Rayleigh,
Sinergy devices

3 x voltage
3 x current
3 x PF (cos φ)



(See brochures TD1097 and TD1107 for full details)

*bi-polar ranges available for use with Hukseflux heat flux plate

Combination Light transmitters



GL-70

Built in ultraviolet and visible light with temperature and humidity

GD-72E

External ultraviolet and visible light with temperature and humidity

GD-72E+LS70 and GL70 Range information

RH and temperature: as GC-10

1 x visible light 0 - 4000 Lux (resolution 0.1 Lux)
0 - 200 kLux (0.01 kLux)

1 x UV light 0 - 5000 mW/m²
0 - 10000 uW/lumen

GD-72E+LS50 Range information

RH and temperature: as GC-10.

1 x visible light 0 - 4000 Lux (resolution 0.1 Lux)
0 - 200 kLux (0.01 kLux)

Voltage / current, RH & temperature

GD-43

- Ideal for use in incubator monitoring
- 1 x Voltage / current input
- 1x RH / temperature probe input for Eltek / E plus E / Rotronic RH/Temp probes
- 1 x Thermistor temperature (-50 to 150°C)



CO₂ plus RH and temperature

All in one air quality monitor

- CO₂ (0 to 5000ppm)
- RH (0 to 100%)
- Temperature (-10 to 65°C)
- All sensors built-in
- Mains operation with built-in rechargeable batteries



Intrinsically safe transmitters

GDEx16

- External RH and temp
- TEX groups IIA and IIB, classes T1, T2, T3 and T4.
- Battery life > 5 years (Lithium primary cell)
- LCD screen displays real time values of RH and temperature
- Approved RH & temperature probe and temperature only probe available



Differential pressure

GD-84

- Built in differential pressure sensor
- Range: -250 to 250 pascal
- Quick connect tube system

GD-81

- Barometric pressure:
800 - 1100 mBar



TMET Weather transmitter

3 Inputs:

- Serial input for Vaisala WXT520 weather or WMT50 weather sensor*
- Voltage input or input for Delta T, Skye Instruments or Kipp and Zonen pyranometer
- Thermistor temperature input



*Windspeed, wind direction, precipitation, barometric pressure, temperature and RH
For further information see brochure TD1083.

RHT10-D Probe

The Eltek RHT10-D is a compact and robust stainless steel, precision humidity and temperature probe. The detachable probe head houses a calibrated sensor.

Designed for use with:
GD-13E, GD-14E, GD-72E,
GD-43E and
Ex version for GDEx16 transmitter.



Temperature:

Range: -40 to +85°C
Resolution: 0.1°C
Accuracy: ±0.4°C (+5 to +40°C)
±1.0°C (-20 to +80°C)

Relative Humidity:

Range: 0 to 100%
Resolution: 0.1%
Accuracy: ±2% (10 to 90%Rh)
±4% (0 to 100%Rh)

Resistance



Resistance
GS-34 (4 inputs, 0-100K max range)

Resistance - lower range
GS-34R100 (4 inputs, 0-100R)

Air Velocity



GS-41AV

- 1 x rolling averaged value
- 1 x calculated minimum value
- 1 x calculated maximum value
- 1 x instantaneous value



Flood



GC-60F
• 2 x state inputs for flood sensing cables

Domestic Gas Meter



GC-62EX
• 2 x pulse inputs for connection to domestic gas meter

Mbus connectivity



GD-93A
• Inputs for up to 3 x Landis+Gyr T230 heatmeters
• Measure:
 • Power (watt hours)
 • Flow temperature (°C)
 • Return temperature (°C)
 • Volume (litres)

Thermistor with visual and audible alarms



GD-32ALS/GD-34ALS
• Inputs for 2 or 4 thermistor probes
• Visual and audible alarms

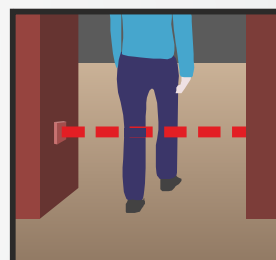
Energy monitoring with CTs



GD-40A
• 8 Voltage/current inputs with averaging - exclusively for use with SxD current transducer (see TD1102)



People Counting



GC-62
• Inputs for up to 2 Velleman PEM7D photoelectric sensors

GENII TELEMETRY TRANSMITTERS

Models	Sensors	Range	Resolution	Accuracy
GC-04/GD-04	1 x external thermistor temperature	-40 to +70°C	0.1°C 0.2°C 0.3°C 0.4°C	±0.2°C (-15 to +40°C) ±0.4°C (-29 to +65°C) ±0.6°C (-36 to +70°C) ±0.8°C (-40 to -36°C)
GC-06/GD-06	built-in thermistor temperature	As GC-04		
GC-10/GD-10	built-in temperature (digital sensor)	-30 to 65°C	0.1°C	±0.4°C (+5 to +40°C) ±1.0°C (-20 to +65°C) ±1.5°C (-30°C)
	built-in RH	0-100%	0.1%	±2% (10 to 90%RH) ±4% (0 to 100%RH)
GD-11	built-in temperature and RH external thermistor temperature	As GC-10 As GC-04		
GD-13E	external RH (RHT10D)	0-100%	0.1%	±2% (10 to 90%RH) ±4% (0 to 100%RH)
	external temperature (RHT10D)	-40 to +120°C	0.1°C	±0.4°C (+5 to +40°C) ±1.0°C (-20 to +80°C)
GD-13G	external RH (Rotronic HC2-S3)	0-100%		±1.5% rh at 23°C
	external temperature (Rotronic HC2-S3)	-40 to +85 °C		±0.3K at 23°C
GD-13J/GC-13Jcf	external RH (EplusE EE68)	0-100%		± 2% (10 to 90%RH) ± 3% (0 to 100%RH)
	external temperature (EplusE EE68)	-40 to 80°C		0.6°C (0 to +40°C) 1.0°C (-40 to +80°C)
GD-14E	external RH (RHT10D)	As GS-13E		
	external temperature (RHT10D)	As GS-13E		
	2 x external thermistor temperature	As GC-04		
GD-14G	external RH (Rotronic HC2-S3)	As GD-13G		
	external temperature (Rotronic HC2-S3)	As GD-13G		
	2 x external thermistor temperature	As GD-14E		
GD-14J	external RH (EplusE EE68)	As GD-13J		
	external temperature (EplusE EE68)	As GD-13J		
	2 x external thermistor temperature	As GD-14E		
GS-21/GD-21	1 x external T or K type thermocouple temperature	-200 to 200°C	0.1°C / 0.2°C	±0.3°C
GS-24/GD-24	4 x external T or K type thermocouple temperature / state			
GD-21AL/24AL	As GD-21/GD-24 with audible and visual alarm.			
GD-24HV	4 x external T or K type thermocouple temperature			
GD-24H	4 x external K type thermocouple temperature	-200 to 1200°C	0.5°C	±2.0°C
GD-24R	4 x external R type thermocouple temperature	-200 to 2000°C		
GS-31/GD-31	1 x external thermistor temperature	-50 to 150°C	0.05°C (-5 to +75°C)	±0.1°C (-5 to +75°C)
GS-32/GD-32	2 x external thermistor temperature		0.1°C (-25 to +100°C)	±0.2°C (-25 to +100°C)
GS-34/GD-34	4 x external thermistor temperature / state inputs		0.2°C (-40 to +125°C)	±0.4°C (-40 to +125°C)
GS-38/GD-38	8 x external thermistor temperature / state inputs			
GD-32-AL/34AL	As GD-32 and GD-34 with audible and visual alert			
GS-34R	4 x resistance	0-1K 0-10K 0-100K		±4R ±10R (1 to 10K) ±1K (10 to 50K) ±4K (50 to 100K)
GS-34R100	4 x resistance	0-100R		
GD-40A	4 x voltage inputs with averaging for NDMeter CTs	0-6VDC only		

Models	Sensors	Range	Resolution	Accuracy
GS-41Acf	1 x external pyranometer (e.g. Skye SKS1110 or Kipp and Zonen CMP3)	0-1500W/m2	3.75µV	
	1 x calculated average value	0-1500W/m2		
	1 x calculated cumulative (Integrated) value	0-65,000 Wh		
GS-41AV	1 x external air velocity (EplusE EE66/576) rolling average value			
	1 x calculated minimum			
	1 x calculated maximum			
	1 x instantaneous value (last value measured)			
GS-42	2 x external voltage or current	0-100mV		
GS-44	4 x external voltage or current	0-1V DC	0.25mV	±0.5mV
GS-44AVE	As GS-44 but with averaging function	0-10V DC	2.50mV	±5mV
		0-20mA DC	~5uA	20uA
		4-20mA DC	0.05%	0.1%
GD-43E	1 x external RH and temperature (RHT10D)	as GS-13E		
	1 x voltage / current	as GS-42		
	1 x external thermistor temperature	as GS-31		
GD-43G	1 x external RH and temperature (Rotronic HC2-S3)	as GS-13G		
	1 x voltage / current	as GS-42		
	1 x external thermistor temperature	as GS-31		
GD-43J	1 x external RH and temperature (EplusE EE68)	as GD-13J		
	1 x voltage / current	as GS-42		
	1 x external thermistor temperature	as GS-31		
GD-43JScf	1 x external RH and temperature (EplusE EE68)	as GD-13J	0.1%	±30uV
	1 x voltage / current for pyranometer	0-30mV		
	1 x external thermistor temperature	as GS-31		
GD-47 / GW47	1 x built-in RH and temperature	as GD-10	3%	±50ppm
	1 x built-in CO2	0-5000ppm		
	1 x built-in 12VDC supply monitor			
GS-52/GD-52	2 x 2 or 4 wire Pt100 temperature	-100 to 200°C	0.1°C	±0.3°C
GS-52H	2 x 2 or 4 wire Pt100 temperature	0 to 300°C	0.1°C	±0.3°C
GC-60	2 x state indications			
GC-60F	2 x state indications for flood sensors only			
GC-60Y	As GC-60 with mark/space ration of event during TX interval			
GC-62EX	2 x pulse inputs for connection to domestic gas meter			
GC-62/GC-62a	2 x pulse inputs (/a inverted input)			
GD-67	7 x pulse inputs			
GD-68/GD-68a	8 x pulse inputs (/a inverted input)			
GL-70	1 x built-in temperature and RH	As GC-10	0.1Lux 0.01KLux	
	1 x visible light	0-4,000 Lux		
		0-200 KLux		
	1 x UV light	0-5000 mW/m² 0-10,000 µW/Lumen		
GD-72E	1 x external temperature and RH	As GD13E		
	1 x external visible light (LS50 or LS70)	As GL-70		
	1 x external ultraviolet (LS70 only)	As GL-70		
GD-81	1 x built-in barometric pressure	800-1100mBar	0.0122mBar/bit +/-1% FSS	
GD-84	1 x built-in differential air pressure	-250 to +250 Pascal	0.1 Pa	±3Pascal
GD-90A	1 x RS485 modbus input for NDRail350V energy meter	Up to 12 values		
GD-900A	As GD-90A but can connect to up to 6 NDRail350V meters			
GD-93A	1 x MBUS input for 3 x landis and gyr T230 heatmeter			
TMET	1 x u type thermistor input	As GD-31	0.025%	0.1%
	1 x voltage input for use with external device e.g. solarimeter	0-50mV		
	1 x serial input for connection to Vaisala WXT520 or WMT50			

GENII RADIO DATA LOGGING SYSTEMS

Eltek Support

Eltek's Technical help line is there to assist from project conception to completion and beyond. A three year warranty is standard. Visit www.eltekdataloggers.co.uk for full details on our products together with the latest updates, downloads and applications.

Technical Specifications

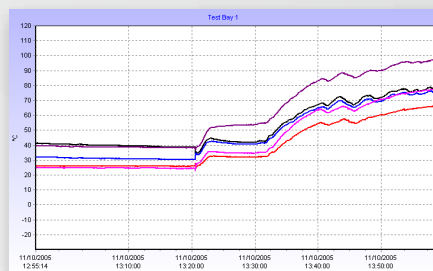
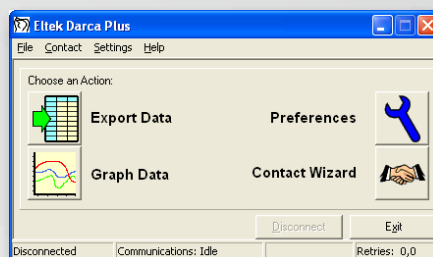
Common Features	GenII radio data logging system	Accessories	
UHF* Frequency	434.225MHz (Europe and countries where applicable)	External antenna	Light weight dipole
Compliant to Range	EN 300-220 200 - > 1000 metres dependent upon environment. Contact Eltek for more details.	WBG	Wall bracket for added security and difficult surfaces

*Other UHF frequencies available including VHF and 900MHz - please contact Eltek.

Software

Darca Plus

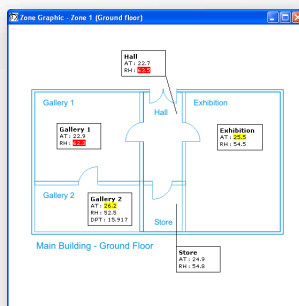
- System set-up
- Data analysis
- Connection to data logger via PC serial port
- Remote connection via modem - land line or GSM
- Export to popular spreadsheets
- Intuitive use and Wizard for first time users
- Real time metering
- Real time graphing
- Graph display options include: 3D, zooming, custom axes, statistics including threshold
- Insert text/comments at points of interest on graph
- "Shed" scheduling utility
- Settings can be password protected
- Transmitter low battery warning and voltage display
- Set up transmitters from Darca
- SMS messaging using GSM modem



Darca Heritage

Darca Heritage has been designed specifically for conservation monitoring on a user-definable 'site', with sensors being referred to according to their physical location. It provides tools for updating site data automatically and analysing it either graphically or statistically.

- Physical 'Zoning' of site
- Automated data collection
- Data stored in central repository and viewed across a network
- Multi-user system with varying levels of user access control
- Report feature to print and store graphed data for a particular location and time period
- Set safe limits for statistical analysis
- User formulae creation for calculated parameters



Scan architectural floorplans in and view data on 'Zone Graphic'

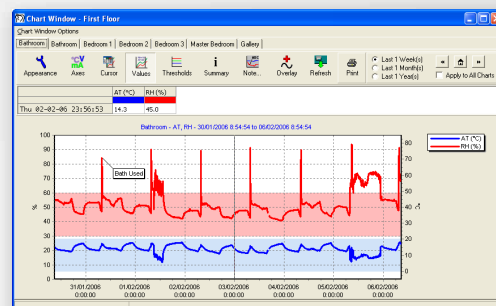


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Guarantee Equipment manufactured by Eltek is guaranteed against faulty materials or workmanship for three years. For repairs carried out under guarantee, no charge is made for labour, materials or return carriage.



Eltek

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