



Net Radiation is an important quantity governing evapotranspiration from surfaces and vegetation.

Net radiometer is a thermopile sensor head which is exposed to both the downward and the upward fluxes of radiation. The thermopile produces millivolt output proportional to the net flux of radiation energy.

If the net flux is downwards, a positive signal is produced, whereas if the net flux is upwards the signal is negative.

- Desiccant tube incorporated to prevent condensation.
- Fitted with bubble leveler.
- Sheilded from wind and rain with thin domes.



Technical Specifications

Measuring range	-0.5 to +1(kW.m-2)
Error	5% at 20°C
Spectral Range	0.25-60 μm
Operating Temp	-40 to +60°C
Sensitivity	100 mV per (kW.m-2)
Field of view	180° upper and lower sensor

Data Logger

Channel	4 Differential 2 Counter
Data storage	600,000 data sets
Power	Internal power 9v alkaline External 12 V 7Ah battery
Recording rate	1sec to 24 hours.
Output port	RS232/USB port.

Delta LINK 3.0 provides full GPI status display, programme editor with detailed context-sensitive help, data downloading and chart/table display, real time sensor readings, integrated script Editor and programme simulator.

- 6 Channel Data Logger
- 4 Channel Differential
- 2 Counter Channel
- 6,00,000 Data Sets Storage Capacity.
- RS232- USB Data Output.
- Inbuilt Sensor Library
- User Friendly Software and Programming.



Delta-T Devices Ltd

130 Low Road, Burwell, Cambridge CB25 0EJ, England
Tel: +44 (0) 1638 742922
sales@delta-t.co.uk www.delta-t.co.uk



GP1 Specifications

		Typical at +20°C	Max -20°C to +60°C	Notes
Differential Voltage Channels	Voltage accuracy	± (0.3mV+0.01% reading)	± (1.6mV+0.05% reading)	over full -0.2V to +2.7V voltage range
	Soil moisture accuracy	±0.06%vol (±0.0006 m ³ .m ⁻³)	±0.3%vol (±0.003 m ³ .m ⁻³)	with ML2 or SM200 (0 to 60%vol) [1]
	Resolution / input noise	±0.1mV		effective resolution of readings (typical)
	Input voltage range	-0.2V to +2.7V		exceeds 0 to 2.5V range
	Input voltage limits	-2.8V to +3.6V [2]		IN+ and IN- terminals relative to GND
Bridge Sensors	Accuracy	± (0.1mV+0.06% reading)	± (0.2mV+0.08% reading)	requires GP-PBA-X50 adapter board
Temperature Channels	Temperature accuracy	±0.07°C	±0.1°C [3]	10K thermistor measuring -20 to +60°C [4]
	Resistance accuracy	±0.2% reading (max ±0.3%)	±0.5% reading (2K to 20K)	2K to 100KΩ
Event Counters	Event counter (Event6)	< 50Hz, contact closure or pulse/logic inputs		logic low input < 1V, logic high input > 1.9V, maximum ±14V on Event inputs 5 and 6
	Fast counter (Event5)	< 33kHz, pulse/logic. <100Hz, contact closure		
Power	Internal battery life	1 year typical		9V alkaline PP3 battery [5]
	External power	11 to 24V DC		power via external M8 connector
	Switched sensor power	up to 120mA		switched battery voltage (5 to 9V)
	Switched +5V reference	5V ±0.2%	5V ±1.6%	switched +5V for sensors, up to 50mA
Relay Channel	1 x relay	SPST, < 30V DC or < 24V AC, 1A resettable fuse		separate ON / OFF conditions adjustable ON duty cycle
Data Recording	Logging frequency	1 second to 24 hour		user configurable logging frequency
	Sensor warm-up	multiples of 1 second		user configurable sensor warm-up times
	Internal flash memory	> 600,000 readings, typical		non-volatile flash memory
	Communications	RS232 (115 kbaud)		comms via external M8 connector
Physical	Environmental	waterproof, buriable (to 0.5m) IP67		4 cable glands, connector & case
	Size and weight	140 x 105 x 45mm, 280g		including battery
	Temperature	-20 to +60°C [5]		contact Delta-T for applications requiring extended temperature ranges

[1] GP1 accuracy, not including sensor errors

[2] Common Mode Rejection > 66dB (78dB typical)

[3] GP1 at 30°C or below for -20 to 0°C reading

[4] 10K thermistor error contributes typically 0.1 or 0.2°C

[5] When logging 2 x SM200s and 2 x 10k thermistors hourly

Ordering Information

Data Logger type GP1 including DeltaLINK-PC software and RS232 cable.

Optional accessories:

Mounting Kit type GP1-MP1 stainless steel mounting plate with fittings for up to 51mm diameter tube or post.

Expansion Lid type GP1-LID2 provides 4 more cable glands.

External Power Cable type GP1-EPC1 for external powering from a 12 to 24V DC source.

Precision Bridge Adapter Board type GP-PBA-X50 converts an input voltage channel to read tensiometers or other precision bridge sensors; 1 or 2 may be fitted to a GP1.

Pocket DeltaLINK type PDLK1-SW Windows Mobile software for configuring the GP1 from a compatible PDA.

Other Loggers and Systems

All Delta-T loggers can be supplied with a range of **modem, solar power** and **networking** options.

The **DL2e** can take readings from up to 62 input channels for larger or more complex logging applications.

The **DL6** provides 6 analogue inputs and is ideal for logging a PR2/4 or PR2/6 Profile Probe.

The **WS-GP1** Weather Station is a compact and portable package featuring the GP1 and 6 standard weather sensors.

For these or other products, please request additional data sheets or see the Delta-T web site.



Delta-T Devices Ltd

130 Low Road, Burwell, Cambridge, CB25 0EJ, UK

Tel: +44 1638 742922 sales@delta-t.co.uk www.delta-t.co.uk

GP1-DS-5.doc Oct 2009