



GATOR BUDGET PARALLEL WIRELESS IRRIGATION CONTROL SYSTEM

The Gator Budget Parallel wireless irrigation control system can be interfaced with most standard irrigation controllers on the market. The Gator system can be either newly installed or retrofitted to any existing irrigation system. Whichever irrigation controller is used, it would simply be linked to the Gator radio transmitter via one or more interface input module/s. The interface input module/s will convert the outputs normally generated by the irrigation controller to control: valves, pumps and other devices, into a unique radio signal which will be broadcast via a Gator radio transmitter. Our Gator radio field switching modules will recognise the coded radio signal and activate or deactivate the attached device/s such as irrigation valves, pumps, filters etc.

The Gator Budget Parallel wireless irrigation control system is ideal for medium sized agricultural units; sports fields; shopping malls; residential complexes as well as applications within the nursery / tunnel crop industries.

Two options of interface input modules are available to accommodate both conventional 24VAC output irrigation controllers as well as DC pulse output irrigation controllers:

Gator Parallel Budget AC system for controllers with a 24VAC output

AC interface input modules are available to support up to 16 independent irrigation outputs. Up to 4 AC input modules can be daisy chained to increase system output capabilities to a maximum of 64 outputs.

Gator Parallel Budget DC system for controllers with a 6-20VDC pulse output

DC interface pulse input modules are available to support up to 8 independent irrigation outputs. Up to 4 AC input modules can be daisy chained to increase system output capabilities to a maximum of 32 outputs.

MAIN FEATURES

- Wireless control of irrigation valves, pumps, filters etc making it simple to fit any new or to retrofit any previously hard wired irrigation control systems
- Allows for modular system expansion as, and when, the budget allows
- Robust tried and tested radio switching modules with 1 to 4 outputs that make use of 12VDC latching relays and solenoids and powered by long lasting Lithium batteries
- An Eco-Friendly system using minimal copper wiring

GENERAL OVERVIEW

The Gator Budget Parallel wireless control system converts the output signal of any conventional irrigation controller that makes use of 24VAC or DC pulse type outputs into a wireless signal that can be passed over the air to control and switch the various devices such as valves, pumps, filters etc. within an irrigation system.



GATOR BUDGET PARALLEL WIRELESS IRRIGATION CONTROL SYSTEM

Hardware at the irrigation controllers location -

Gator 24VAC or DC pulse input module/s are interfaced with a hardwired connection to the outputs of any standard irrigation controller. The input module/s are in turn connected to a Gator radio transmitter via a cat 5 type cable. The Gator radio transmitter is programmed with its own unique system ID and is fitted within a waterproof enclosure which is mounted on an externally positioned antenna pole in free air.

A dipole antenna is fitted on the same antenna pole just above the transmitter unit and interconnected with a short antenna cable.

Hardware required in the field at the location of the valves, pumps, filters etc -

Gator G series radio switching modules capable of controlling from 1 to 4 independent outputs (devices) are installed in the field at a location close to the devices that are to be controlled by the system. The Gator G series radio switching module makes use of DC latching solenoids or relays to control hydraulic devices such as valves and electrical devices such as pumps. Each radio module is programmed to match the transmitters system ID as well as with its own series of output numbers.

How the system works -

When the irrigation systems controller activates or deactivates an output which is interfaced to the Gator Budget Parallel wireless control system, the input module/s convert the signal into a protocol which is broadcast over the air via the Gator radio transmitter unit. In the field, the Gator G series radio switching modules are continuously listening to the transmitted signal which carries the matching system ID and an instruction to activate or deactivate one or more of the output/s under the control of each of the G series radios installed in the field.



MASTER MODULE



G8RTXDATA



G8RTXMOUNT



G8RTX & G8ROMNI



G8RRX4S4S

MODELS	CODE
16 Station AC Master Module	G8R16AC
16 Station AC Expansion Module	G8R16ACEXT
8 Station DC Master Module	G8R8DC
8 Station DC Expansion Module	G8R8DCEXT
1MTS CAT 5E Outdoor Data Cable	G8RTXDATA
Budget Parallel Transmitter	G8RTX
Omni Directional Aerial	G8ROMNI
Short Range Stubby Aerial	G8RSTUBBY
Post Mounting Bracket	G8RTXMOUNT

MODELS	CODE
2 Station Receiver - 0 Coils	G8RRX2S0S
4 Station Receiver - 0 Coils	G8RRX4S0S
2 Station Receiver - 1 x 3 Way DC Coil	G8RRX2S1S
2 Station Receiver - 2 x 3 Way DC Coils	G8RRX2S2S
4 Station Receiver - 3 x 3 Way DC Coils	G8RRX4S3S
4 Station Receiver - 4 x 3 Way DC Coils	G8RRX4S4S
2 Station Receiver - 1 x DC Latching Relay	G8RRX2S1R
2 Station Potted Receiver	G8RRX2SP
4 Station Potted Receiver	G8RRX4SP

CONTROLLERS_Gator RBPS_V1.05-20

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GATOR PERSISTENT POINT TO POINT

RADIO SYSTEM

The **Gator Point to Point Radio Module** allows for the remote switching of up to two independent input / output (I/O) channels. The Transmitter is equipped with two digital inputs which can be connected to any switching device such as simple switch, electrical contactor / relay, float switch etc. When an input is triggered on the transmitter it will broadcast a radio signal containing the input status.

One or more Gator G5 radio receiver modules can be installed at the device location/s to be remotely controlled. Each Gator G5 radio receiver can handle up to 2 outputs corresponding to the inputs on the transmitter. On receipt of the broadcast signal from the transmitter the G5 receiver module will activate or de-activate the corresponding output thus switching the remote device on or off.

Useful in many irrigation and water automation applications such as -

- Starting and stopping of remotely located primary/booster pumps
- Opening and closing of remotely located supply valves
- Remote control of valves in applications such as reservoir filling

MAIN FEATURES

- Supports 2 I/O channels per transmitter, with a range of up to 2 kilometres line of sight with standard antenna.
- Used for starting / stopping of pumps, valves or similar applications.
- The transmitter module requires a 12VDC power source which can be powered from AC mains using a small power supply (with or without battery backup) or a solar (PV) power supply for areas where there is no grid power.
- The receiver module is powered by a long life Lithium battery omitting the need for any external power source. The receiver module makes use of magnetic latch relays (for electrical control) or magnetic latch solenoids (for hydraulic control).
- Multiple receiver modules can be installed in the system to activate their outputs simultaneously. For example if output 1 is triggered on the transmitter this will be broadcast and received by numerous receivers which will all switch simultaneously.



CONTROLLERS_Gator PtoP_V1.10-20

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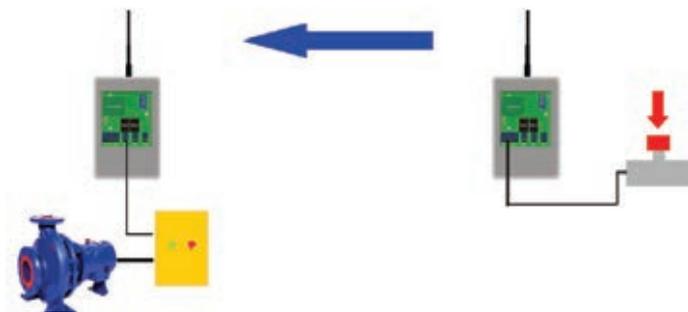
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GATOR PERSISTENT POINT TO POINT RADIO SYSTEM

WIRELESS PUMP START WITH SWITCH



Wireless remote control of pumps and valves that can be achieved automatically using an irrigation controller or manually using a simple switch. Up to two pumps / valves can be remotely controlled from the same transmitter module. Up to two pumps / valves can also be controlled from a common receiver module or split between two receiver modules.

WIRELESS PUMP START WITH FLOAT



Wireless remote control of pumps and valves making use of a float switch (or similar device) suspended in a reservoir / tank allowing the activation or de-activation of the pump / valve based on the water level. In instances where AC power is unavailable at the transmitter it is possible to provide a solar (PV) power source with battery backup functionality.



GATOR BI-DIRECTIONAL POINT TO POINT RADIO SYSTEM

Gator Bi-Directional Point to Point Radio Modules are independent modules that can be wirelessly linked to perform the switching of remote devices or over the air transmission of flow meter pulses.

Useful in many irrigation and water automation applications such as -

- Starting and stopping of primary/booster pumps
- The filling of tanks from borehole pumps for stock watering or domestic consumption
- Remote switching of pumps from a centre pivot irrigation system thus reducing the need for travelling between the pump and pivot and preventing the need to lay extra control cables between these points.
- Over the air transfer of flow meter pulses to allow for the reading of remotely located flow meter/s

MAIN FEATURES

- Point to point transmission range of up to 2 kilometres line of sight with suitable antenna.
- Up to two inputs and two outputs per module allowing modules to be set as a receiver or as a transmitter offering bi-directional communications.
- The units can be set up to operate in either a switching mode or pulsing mode depending on the applications requirements. A single unit can have one input set in switching mode and another in pulse mode or both in switch mode or both in pulse mode.
- Switching mode will be used for starting / stopping of pumps, valves or similar applications.
- Pulse mode will be used for transmitting readings from remote flow meters to a central control point.
- Units require a 12VDC power source which can be powered from AC mains using a small power supply (with or without battery backup) or a solar (PV) power supply for areas where there is no grid power.





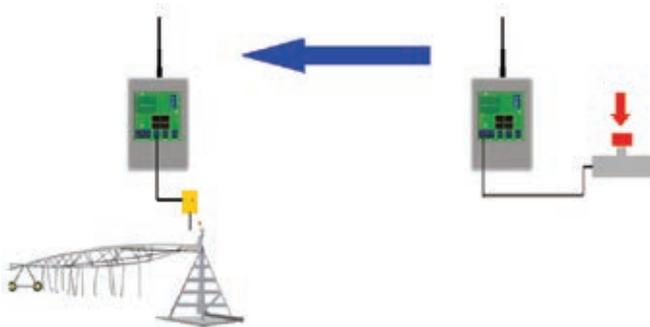
GATOR BI-DIRECTIONAL POINT TO POINT RADIO SYSTEM

WIRELESS WATER METER PULSE TRANSMISSION



Wireless over the air transfer of flow meter pulses allowing for the remote reading of flow meters by a computer / counter system or similar device. Up to a maximum of two flow meters can be linked to a single transmitter module. Up to two flow meters can be linked to a receiver module or split between two receiver modules.

WIRELESS PUMP START WITH FLOAT



Wireless remote control of pumps and valves associated with Center Pivot irrigation systems. Pumps can be started from the pivots center or the pivot's main valve can be controlled from the pump station (one or the other). The system can be connected so as to shut down pumps and valves should the pivot go into a fault mode.



GATOR G5 SERIES

RADIO MODULE

The Gator G Series Radio Module is a decoder module which is capable of activating or deactivating any device using low power radio signals. This module can independently switch from one to four outputs controlling hydraulic devices such as valves and electrical devices such as pumps.

Gator radio modules have been designed to consume minimal power and use long-life lithium batteries as their source of energy thereby omitting the need for other methods of externally supplied power such as mains power or complicated solar equipment with charging circuitry.

Radio controlled irrigation systems offer several advantages over conventional hard wire controlled systems:

- Damage to equipment by lightning strikes and voltage surges is less likely to occur
- Installation of control systems is cheaper and simpler
- Maintenance is cheaper as locating and repairing of faulty wiring is omitted
- Less vandalism and theft of infield wires and equipment
- Systems are modular and can be expanded with minimal disruption

HOW THE SYSTEM WORKS

The Gator radio module is programmed with a system output number and unique system address using a hand held programmer (HHP).

Control devices such as relays and solenoid valves are linked to the Gator radio module.

Coded data is transmitted from a central control system. This data contains information as to which outputs within the system are to “on” or “off”.

During normal operation, the Gator radio module is continually scanning the airwaves for a signal that coincides with its unique system address and system output number.

On receipt of a signal the Gator radio module will activate or deactivate the devices it controls dependent on the instruction transmitted from the control system.



MODELS	CODE
2 Station Receiver - 1 x 3 Way DC Coil	G8RRX2S1S
2 Station Receiver - 2 x 3 Way DC Coils	G8RRX2S2S
4 Station Receiver - 3 x 3 Way DC Coils	G8RRX4S3S
4 Station Receiver - 4 x 3 Way DC Coils	G8RRX4S4S
2 Station Receiver - 1 x DC Latching Relay	G8RRX2S1R

MODELS	CODE
2 Station Receiver - 0 Coils	G8RRX2S0S
4 Station Receiver - 0 Coils	G8RRX4S0S
2 Station Potted Receiver	G8RRX2SP
4 Station Potted Receiver	G8RRX4SP

Images are a guide only and may not represent final product

CONTROLLERS_G5RX_V1.05-20

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PRODUCT SPECIFICATION

CONTROLLERS

GATOR G5 SERIES

RADIO MODULE

TYPICAL CONTROL SYSTEM LAYOUT

Using your existing AC or DC irrigation controller, hardwire from your station outputs to the Gator Master Module input terminals and then use data cable to connect to transmitter.



Irrigation Controller
AC or DC



Master Module



G8RTX + G8ROMNI



GATOR RADIO RECEIVERS LOCATED AT THE POSITION OF THE DEVICE/S TO BE CONTROLLED

Note: we would always recommend that a site survey be conducted to ensure a good signal strength to all receiver locations.

UNIT FEATURES



1. Integrated antennae omitting the need for an external antennae
2. IP65 enclosure rating manufactured from UV stabilized material with electronics fully waterproofed
3. Integrated mounting point
4. Every unit has its own unique serial number
5. Power and programming cables protected within battery housing
6. Quick connect valve wiring connection point (optional wire loom available on request)
7. Power "On" and Data "Receive" LED's available during initial setup period
8. Device makes use of the RN2903 RF module using 915MHz band width and wireless LoRa® technology

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