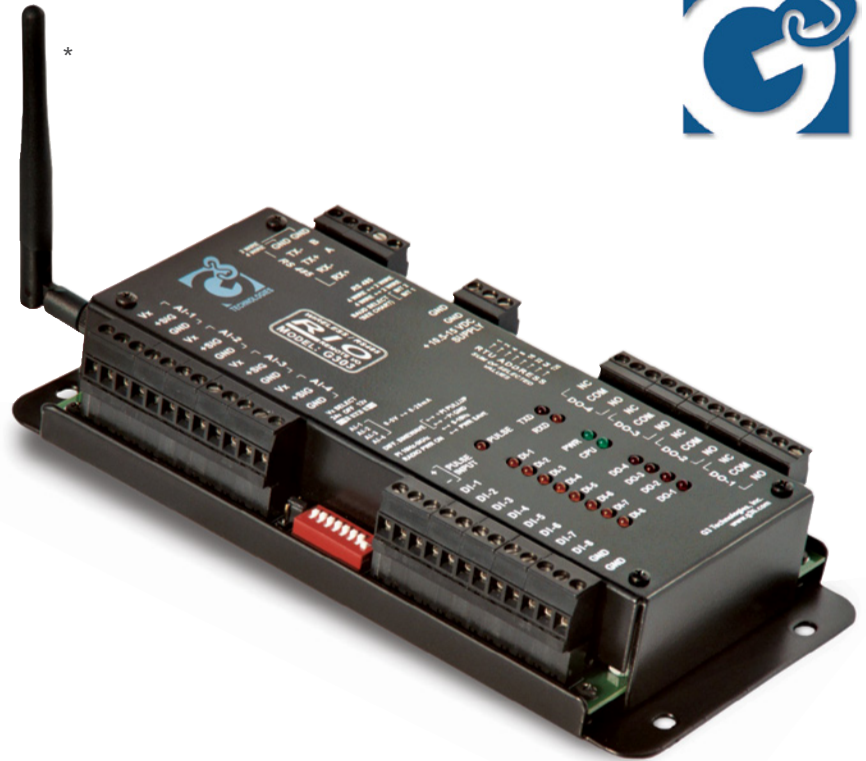


# G303™ RIO



The G303 Remote I/O (RIO) is a robust, economical solution for local and remote I/O requirements in SCADA and Process Control applications.

The G303 packs a powerful array of features particularly suited for many industrial applications. That, along with industry-standard MODBUS Protocol, makes the G303 a sure choice.



## Features

- Integral communication options:
  - Spread-spectrum radio offers convenient and economical wireless data link
  - RS485 for wired multi-drop network or I/O expansion
  - RS232 or FSK modem for VHF/UHF radio systems and other general-purpose applications
- Industry-standard MODBUS communication protocol
- Very low power consumption, suitable for solar applications
- Internal 24v transducer excitation supply
- Self-resetting fuses on supply and analog power circuits
- Attractive mix of precision I/O providing application flexibility
- Surge-suppression on all external connections
- LEDs for I/O and diagnostics
- Packaged for easy mounting and connection

## Applications

- I/O expansion for PC, PLC or RTU process control or SCADA systems
- Wireless I/O for hard-to-reach remote sites
- Well head automation
- Bulk storage facility monitoring and control
- Water, wastewater or petroleum pump station SCADA
- Facility security monitoring
- General SCADA applications



# G303™ RIO Specs



The G303 is a single-board RIO unit offering the following combination of I/O signals and data communications:

- 1 ea. MODBUS serial data port: RS485 plus plug-on option of Spread Spectrum Radio, FSK modem or RS232.
- 8 ea. Digital Inputs (contact closure)
- 4 ea. Analog Inputs, plus internal power supply voltage monitor.
- 4 ea. Digital Outputs (relay contacts)
- 1 ea. Pulse Input (turbine or pulse meter). Totalizer and Rate.

By using wide-spread industry standards (RS485 and MODBUS) for serial data communications, the G303 is easily integrated into many common control/monitoring systems. Since the unit is designed for the simple task of reading inputs as raw integer values and driving outputs using pre-defined MODBUS functions, it requires no configuration. It can be treated as "another MODBUS end-device".

The G303 is also a low-power and environmentally tolerant device, making it suitable for Solar powered applications and outside installations. It is packaged for panel or DIN rail mounting, but is optionally available as a stand-alone Nema 4 rated package ready for field installation.

<b>SERIAL COMMUNICATIONS:</b>	
Data Comm Port	Comm port supports MODBUS RTU slave mode protocol, 8N1 byte structure, with DIP switch selected baud rates of 600, 1200, 9600, 19.2K. Integrated options are: <ul style="list-style-type: none"> <li>• 900MHz or 2.4GHz spread-spectrum radio (9600 or 19.2K baud) along with 2 or 4 wire RS485 expansion. *Antennas are sold separate.</li> <li>• FSK modem for interface to audio input radios</li> <li>• RS232 for wired or third-party-radio networks.</li> <li>• RS485 wired multi-drop network</li> </ul>
<b>DISCRETE I/O:</b>	
Digital Inputs (DI)	8 ea. digital inputs on screw terminals. Contact closure to Power Common (GND). Inputs are active low. Contact wetting current 5mA. Digital Inputs readable both as non-latching for realtime indication and 30 sec. hold for stretched short-duration events (minimum input 2mS).
Digital Outputs (DO)	4 ea. relay outputs. Form C contacts at screw terminals, 4000V contact-to-coil isolation, contacts rated 10A @ 30 VDC and 240VAC resistive, B300 and Q300 pilot duty.
Analog Inputs (AI)	<ul style="list-style-type: none"> <li>• 4 ea. single-ended Analog Inputs 1-5 VDC (0-5V) or 4-20 mA (0-20 mA); 12 bit resolution; Overall accuracy +/- 0.25%; Input filter &lt;1000Hz; Over-voltage tolerance +/-24V</li> <li>• On-board +24V DC/DC converter for transducer power (Vx). Available at screw terminal with each AI. Current limited by 100 mA self-resetting fuse. Jumper selection for Vx of +12V (supply voltage) or +24V.</li> </ul>
Meter Pulse Input Total/Rate	<ul style="list-style-type: none"> <li>• 1 ea. meter pulse input; 16 bit hardware register; MODBUS readable registers for both totalized counts and pulse rate in Hz.</li> <li>• DIP switch configuration for 3 types of meter signals <ol style="list-style-type: none"> <li>1. Sine-wave, turbine meter with inductive pick-up: Differential input with 20K ohm input impedance; Input sensitivity 80 mV p/p @ 10Hz and 2.0 V p/p @ 2.5 KHz</li> <li>2. DC pulse, TTL or open-collector transistor: Single-ended, 0-5V or 0-12V; On-board pull-up for O.C. transistor; Switching approx 20% of Vcc; 1.5 KHz (symmetrical) freq. range</li> <li>3. Dry contact input: 1.2 mA wetting current; 0-60Hz (symmetrical) freq. range; Contact debounce 7 ms</li> </ol> </li> </ul>
<b>POWER:</b>	
Supply Voltage	10.5 to 16.0 VDC, self-resetting 1A fuse
Voltage Monitor	An internal analog channel (AI-5) monitors supply voltage 0-16 VDC.
Transducer Power	Jumper selected 12V or 24 VDC transducer power, self-resetting 100 mA fuse.
Current Draw (typical @ 12Vdc)	Base unit 15 mA; Each energized DO relay 12 mA; Optional low-power SS radio rec. 25 mA, xmit 65 mA, 1W radio rec. 40mA, xmit 340mA. Optional RS232 or FSK Modem 15mA. Total current draw is sum of internal loads & any external loads being supplied. Max rating =600mA@12Vdc
<b>CORE SYSTEM:</b>	
Microprocessor	Microchip PIC18F876 processor, 3.6864 MHz, memory internal
Flash Memory	8KB internal, in-circuit programmable
Software	Standard code is non-configurable. Contact G3 Technologies for availability of custom versions for a variety of applications.
<b>DIAGNOSTICS:</b>	
LEDs/Software	LEDs for Digital I/O, Power, RXD, TXD, & CPU status. Software watch-dog timer, G3 VUE available for PC to exercise unit via serial port.
<b>MISCELLANEOUS:</b>	
RTU Address	8 bit MODBUS address, DIP switches
Operating Temp	-40 to 80 degrees C., 5-95% relative humidity, non-condensing.
Surge Protection	All power, serial port and I/O connections meet or exceed minimum standards for EDS, EFT and surge withstand per the international IEC 1000-4 standards.
Certification	FCC Part 15 Class A; CSA C/US Class I, Div 2, Groups A,B,C,D; Temp code T3C
<b>PHYSICAL:</b>	
Dimensions	8.4L x 4.2W x 1.6H
Enclosure	Powder coated aluminum, non-rated. Access of some DIP Switches require cover removal to meet Class I, Div 2.
Field Wire Connections	All wire connections are pluggable screw terminals, 0.2" spacing.
Mounting	2.4 x 7.75 mounting hole pattern for flat panel mount, or optional TS-35 DIN Rail mount.