

MODEL G301 REMOTE I/O (RIO)

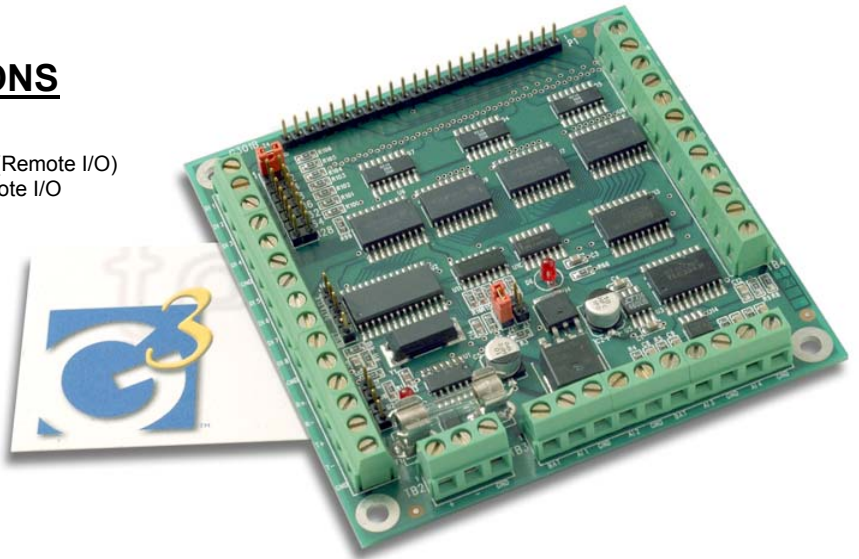
FOR SCADA & PROCESS CONTROL I/O EXPANSION (AND VAREC TANK GAUGE MONITOR)

TECHNICAL SPECIFICATIONS

INTRODUCTION

G3 Technologies, Inc. offers the Model G301 RIO (Remote I/O) board as a low cost solution for expanded and remote I/O requirements in SCADA and Process Control applications. The G301 uses standard RS485 with Modbus protocol. It is especially suited for applications requiring low power and/or environmental tolerance, SOLAR applications included, and makes a great local or remote "Data Concentrator" for PLC systems.

The G301 board is also designed to install directly into a VAREC Series 1650 or 1750 Tank Gauge encoding head (or compatible unit) with direct connection to the Gray Code signal. It also supports the additional analog and digital I/O requirements for a typical Tank Monitoring application.



FEATURES

- RS485 / Modbus slave, 8 bit address jumpers
- I/O: 24 DI, 8 DO, 4+1 AI (see below).
- Power Input: 10-30Vdc, approx. 20mA
- Operating temperature: -40 to 80 degrees C.
- IEC 1000-4 surge protection
- Capable of limited control or data conversion routines

APPLICATIONS

- VAREC Tank Gauge monitoring, internal install
- I/O Data Concentrator for PLC based systems
- Discrete I/O for stand-alone PC based controllers
- General purpose SCADA applications (remote monitoring and control) & low end RTU.
- Solar powered systems

G301 RTU BOARD - TECHNICAL SPECIFICATIONS:

PHYSICAL:	
PC BOARD	3.8" x 3.8" x 0.6" overall, multi-layer PCB, SMT components
MOUNTING	Panel mount: #6 screw holes 4 corners, 3.4" x 3.4" pattern
FIELD WIRE CONNECTIONS	Power, Serial Data port, Analog Inputs, Digital Outputs, and 8 ea. Digital Inputs are terminated using fixed screw terminals, 0.2" spacing. Pluggable screw terminals optional. Remaining Digital Inputs (16 ea.) are on a single row 24 position pin header.
POWER:	
POWER SOURCE	12 or 24 volt battery typical, or DC power supply. 5x20mm Fuse on-board
INPUT VOLTAGE	10 to 30 volts DC normal operation
INPUT CURRENT	Approx. 20 mA w/o Digital Outputs active
DISCRETE I/O:	
DIGITAL INPUTS (DI)	24 total. 16 on pin header (for Varec gray code, or general use) and 8 ea. on screw terminals. Contact closure to P.S. Common (Gnd). Inputs are active low and are non-latching. Active input draws 0.5mA.
DIGITAL OUTPUTS (DO)	8 ea. FET sink (open Drain) drivers. Rated for 1 amp continuous per channel. Total current drain limited by 2 amp on-board fuse.
ANALOG INPUTS (AI)	5 ea. single-ended 0-5 volt inputs. 12 bit resolution. Overall accuracy of 0.1% FS. Over-voltage tolerance of +/-30VDC. AI 1-4 are on screw terminals along with power supply voltage for transducer excitation. AI 5 is used internally to monitor 0-30 volt DC power input.
SERIAL COMMUNICATIONS:	
HOST PORT	RS485 (multi-drop) 2 wire or 4 wire. Async 8N1. Baud rate selection with two hardware jumpers (4 choices) up to 56K. Baud rate choices defined by software version.
CORE SYSTEM:	
MICROPROCESSOR	MicroChip PIC18F876 processor, 18MHz, memory internal
FLASH MEMORY	8KB internal, in-circuit programmable (1x5 pin header)
DIAGNOSTICS	Power Input LED, and Transmit Data (Tx) LED. Watchdog timer implemented in software.
SOFTWARE	Custom, multiple versions (see software definition in User Documentation)
MISCELLANEOUS:	
RTU ADDRESSING	8 bit, hardware strapped
OPERATING TEMPERATURE	-40 to 80 degrees C. with 5% to 95% non-condensing humidity
TRANSIENT PROTECTION	All power, serial port and I/O connections meet or exceed minimum standards for ESD, EFT, and Surge withstand per the international IEC 1000-4 standards
CERTIFICATIONS	FCC Part 15 (pending)

For more information contact **G3 Technologies, Inc.** at info@g3ti.com or sales@g3ti.com, or call 913-947-7205.