

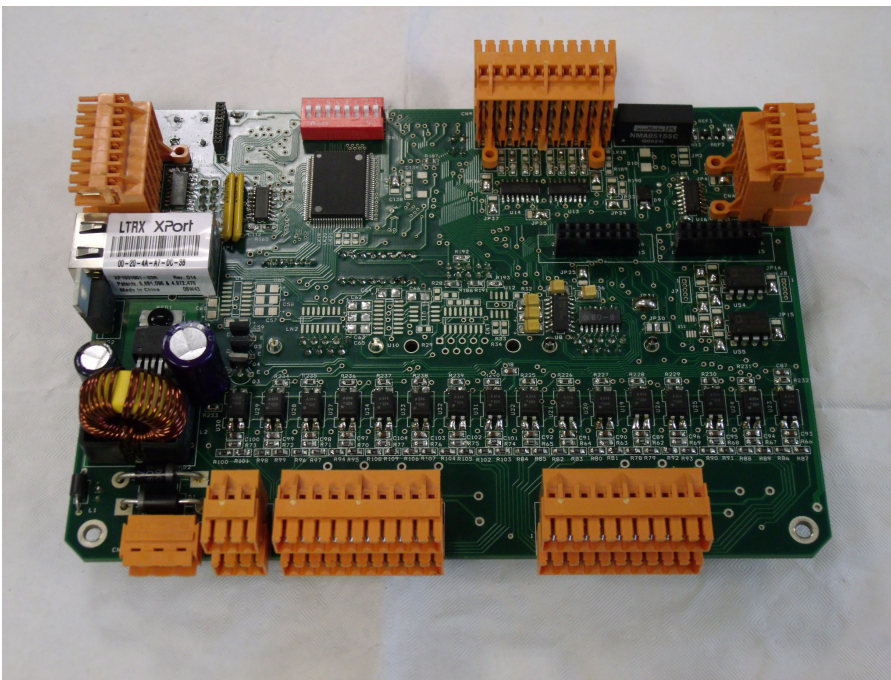
Goodwin Electronics SIO Unit Basic Specification Version 0.2

10th March 2021

Overview

The SIO unit is a development platform and Serial Input/Output device. The designed allows unit to sit on a Memobus network and provide a method of monitoring both analogue and digital inputs and setting digital and analogue outputs. The design also allow for custom firmware versions allowing full control of the hardware to provide bespoke solutions to control applications.

Each PCB can be fitted with 2 microcontrollers, one processor handles the communication operation while the other processor handles I/O and memory processing including flash write operation. The two microcontrollers interface with each other using a high speed parallel interface. Two PCBs can be stacked to increase the amount of IO available which may or may not require additional microcontrollers depending on configuration and application.



General	PCB2393 V1.0 185mm x132mm (PCB 175mm x 126mm)
Supply	24V <175mA not including output load. Outputs max 6A per bank.
Digital Inputs	0, 8, 16, 24 or 32 (factory configured) bi-directional, opto-isolated inputs. Arranged in banks of 8 with a separate common to each bank.
Digital Outputs	0, 8, 16, 24 or 32 (factory configured) outputs. Arranged in banks of 8 with a separate fused common for each bank. Each bank can be factory set to one of the following configurations:

- Non-isolated PNP output option capable of providing 0.5A per bank @ 24VDC.
- Sinking or sourcing opto-isolated output options capable of switching 0.1A per output @ 24VDC.
- Solid state relay output option capable of switching 1A per output @ 60V AC/DC.

Analogue Outputs	0, 1, 2, 3 or 4 +/-10V outputs @ 16bit resolution.
Analogue Inputs	0, 1, 2, 3 or 4 +/-10V inputs @ 10bit resolution.
PG Counter Inputs	0, 1 or 2 channels of full quadrature, A and B phase, 5V differential inputs. Max count frequency 4MHz.
Communications	One port for connection to upper controller, Factory configurable as RS232, RS422/485 or 10/100 Base-T. Protocol is Memobus RTU Slave. Memobus Commands Supported 03h, 08h, 10h, 17h Unit number configurable from 1 to 64, Baud Rate upto 57k6
Status LEDs	2x Main Processor Running or Alarm LEDs + General status LEDs
DIL switches	1x 8 way DIL switch for user configuration
uControllers	M16C M30626FHPFP 62P 16bit 100pin @24MHz 384K+4K Flash Rom 31K Ram
CPLD for encoder	Alltera EPM7128STC100-15
Status	Next version PCB, using new CPUs is currently under consideration
As used for	Proof of Concept motion developments PC501 PC replacement system Remote IO operations with PC interface via ActiveX component