Using GPIO

The Sargas Reader includes an 8-pin terminal block connector for GPIO access

GPIO Connector on the reader:

- ◆ On Shore OSTOQ08B151 or

- ◆ Phoenix 1881503

Mating Connector

- ◆ On Shore OSTHW08B050 or

- ◆ Phoenix 1881383

This connector is used to support two opto-isolated general purpose inputs and two opto-isolated general purpose outputs. The values of the GPIO lines can be Get and Set using the MercuryAPI. See the respective guide for more details on software control of these signals.

Connector Pinout

From left to right:

Pin	I/O Name	I/O Function
1	+5V Supply	Reader supplied (not isolated) power source
2	V-GPO	Power input for isolated outputs
3	User OUT 1	Isolated output 1 (active pull down to V-)
4	User OUT 0	Isolated output 0 (active pull down to V-)
5	User IN 1	Isolated input 1
6	User IN 0	Isolated input 0
7	ISO-GND	Return for isolated inputs and outputs
8	COM-GND	Reader (not isolated) return

Electrical Specifications

The electrical specifications are as follows:

Pin	Parameter	Description	Min	Max	Unit	Conditions
+5V Supply	IO	Output current		200	mA	
User IN 0-1	VIH	HIGH level input voltage	3	30	V	
User IN 0-1	VIL	LOW level input voltage	0	0.8	V	
User IN 0-1	ILI	Input current		5	mA	24V input
User IN 0-1	VI	Input voltage range	0	30	V	No damage
User OUT 0-1	VOH	Output high voltage		V+*	V	10k pull up
User OUT 0-1	VOL	Output low voltage		(V-)+0.5	V	100mA load
User OUT 0-1	VI	Supply voltage range (V+) - (V-)		30	V	

*User-supplied voltage

Inputs

The two opto-isolated inputs support the following input levels:

V-low (Logic 0) = 0-0.8V

V-high (Logic 1) = 3-30V

5mA max current with 24V input

It is recommended that external devices guarantee a minimum pulse width of at least 100ms.

Outputs

The two opto-isolated outputs support power sourcing, up to +30V with current sink up to 200mA, through an external power supply connected between V-GPO and ISO-GND (pins 2 and 7).

Using the MercuryAPI the output signals (see note under Connector Pinout for enumeration values) can be set as follows:

gpoSet(GPIO_#, 0) sets pin corresponding to GPIO enumeration to Vhigh through 10kohm pull up resistor to V-GPO.

gpoSet(GPIO_#, 1) sets pin corresponding to GPIO enumeration to Vlow through effective short (through isolated FET switch) to ISO-GND.
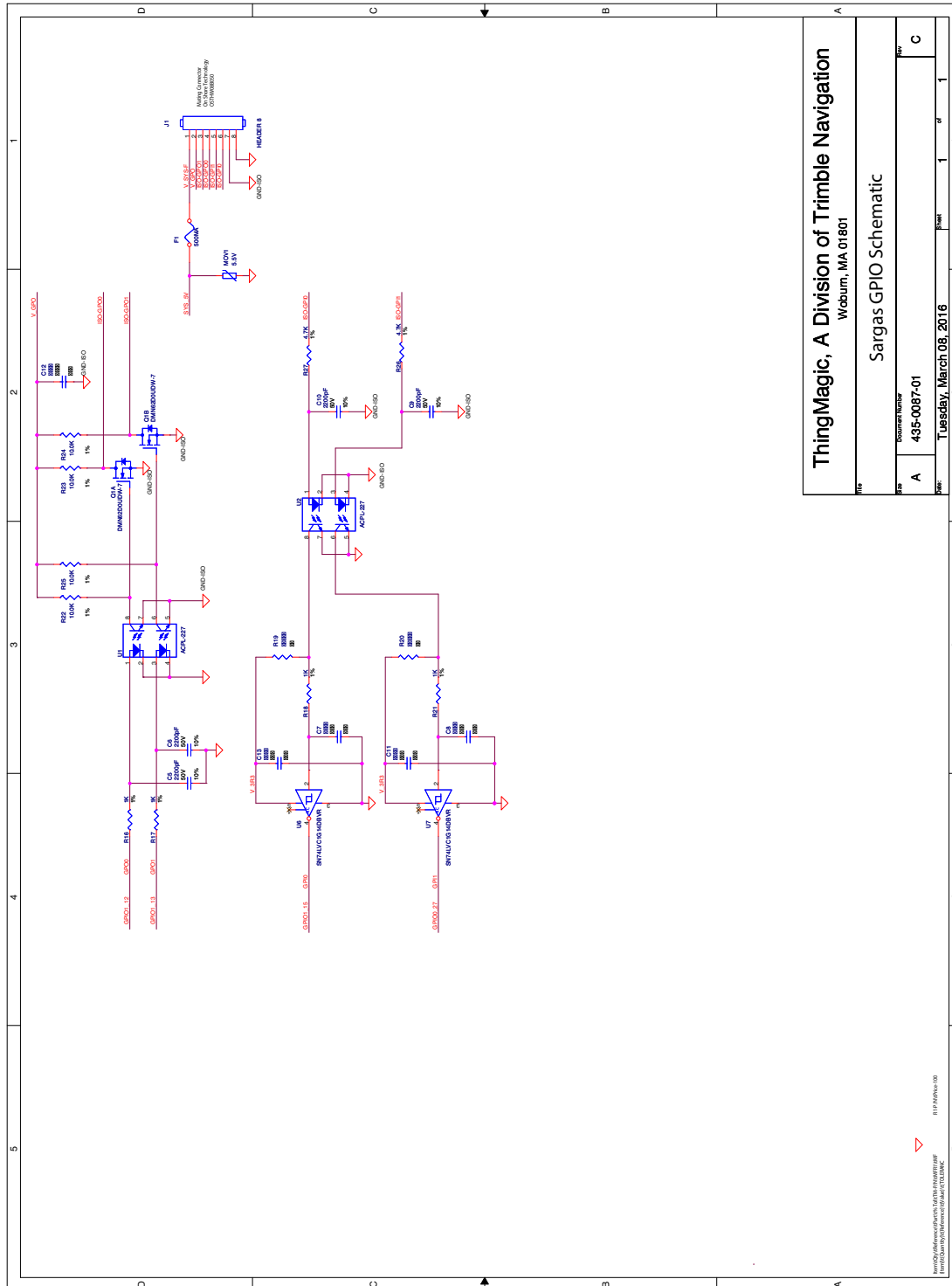
All outputs have an active pull down to ISO-GND.

Note

For non-isolated applications connect grounds together (pin 7 and 8) and V-GPO to Sargas +5V (pins 2 and 1). With this configuration the reader provides the +5V supply and can sink up to 200mA, total.

For convenience, the schematic diagram of the GPIO circuits of the Sargas reader are shown in *Figure 19* so you can more easily determine the external connections that will work for your application.

Figure 19: **Schematic Diagram of GPIO Circuitry**