

Flex Tech Note # 2

Flex GPIO Ports

The Flex has 4 GPIO ports. It is important to note that these are different from dry contact closures and do not have the same functionality.

The GPIO ports can be configured as Inputs or Outputs. As an Input, a voltage of 2.4 VDC to 24 VDC will read as a 1 while a voltage below +1.0 VDC will read as a 0.

When interfaced to TTL or CMOS logic, the Flex inputs are directly compatible. When interfaced to an “open collector” type output or normally open contact closure that is active high, make sure that it is at least 2.4VDC and does not exceed 24VDC when “on”. Additionally, if using an “open collector” type output that “leaks” more than 0.1 mA, a pull-down resistor may be required to keep the Flex input below the 1.0 VDC when the source is “off”

If you are interfacing to an “open collector” or normally open contact closure that is active low, attach a “pull-up” resistor of 1K to 10K ohms between your GPIO pin and the V+ input of the Flex. This will hold the pin high until your trigger pulls it low.

When operating as an output, the GPIO pin is a current limited, open collector output. When “off”, the output will “leak” about 0.3 mA to ground if connected to a positive voltage. When “on” it can sink 100 mA to ground, with a saturation voltage of approximately 2.4 volts. This makes the output ideal for driving relay coils, but it may or may not drive devices intended to operate from TTL or dry contact closures. You will need to know the trigger threshold of the device to be sure that it is compatible with the GPIO ports on the Flex.

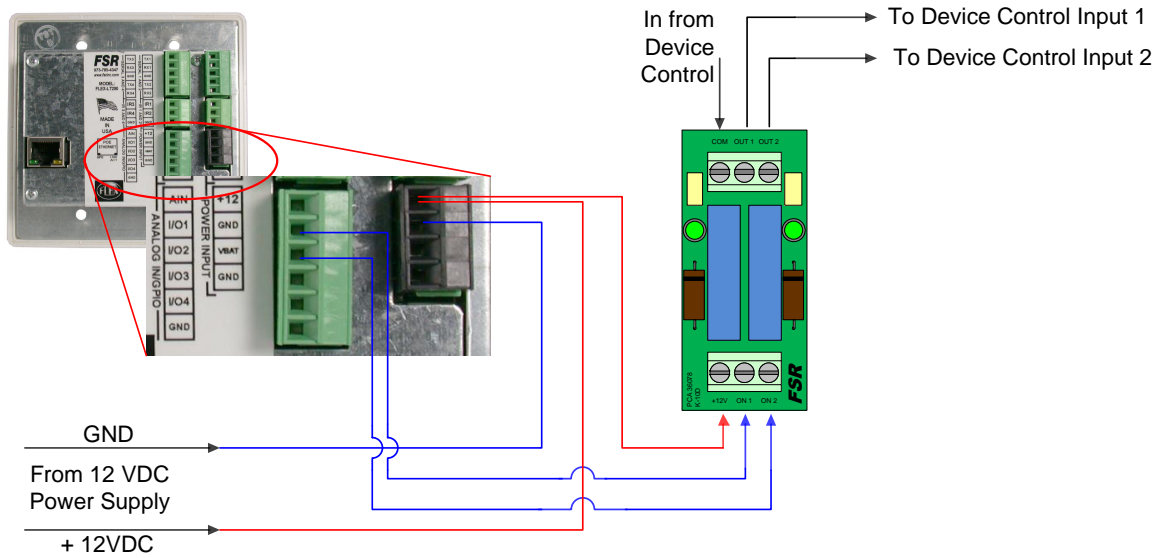
If you are unsure or if your device’s trigger voltage is below +2.4VDC or your device requires a “dry” contact closure, you should interface your device through an IT-R4S serial relay module, the K-10D relay module or one of the other K Series relay modules. The IT-R4S will interface to the Flex via one of the serial ports while the relay module will interface through the GPIO ports.

The IT-R4S has a serial pass-through port to allow another device to be connected to it. This allows 2 devices to share 1 serial port on the Flex.

The next page contains wiring diagrams for the K-10D when the Flex is using normal power and when it is running with PoE.

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Flex Running with Normal Power (12VDC Wall Wart)



Flex Running with PoE

