

Frequently Asked Questions

Title: Discretes - How do Discretes Work

Date: 22 Oct 2015

Card/Board/Module: M4KDiscrete module, other cards with Discrete I/O

Operating System: all

Question:

How do the Discretes work (on module M4KDiscrete, or other cards that have any number of Discretes) ?

Answer:

An **INPUT** Discrete

- Will register a 1 when a TTL/Avionics voltage is applied
- Will register a 0 when GND is applied
- If it is left floating/OPEN, then
 - (a) If the discrete input is pulled up to a TTL/Avionics voltage (either internally or externally by the user), then the discrete will register a value of 1
 - (b) If the Discrete input is not pulled up to any voltage, then the Discrete will register a value of 0

All **OUTPUT** Discretes should be pulled up (either factory installed internally, or externally by the user) to the desired TTL/Avionics voltage.

- When an output Discrete is set to 0, the line will be pulled to GND
- When an output Discrete is set to 1, the line will be left floating and will be pulled up to the pull up voltage on the line.
- If the output discrete is not pulled up the line will be left floating - this is not recommended !

Voltage Levels:

TTL:

digital 0: 0 to +0.8 volts

digital 1: +2 to +5 volts

Avionics:

digital 0: 0 to +3.5 volts

digital 1: +7.5 to +32 volts

The INPUT discrete channel must be configured according to the voltage level chosen.