EZRackPLC™ Force Inputs/Outputs (Great Troubleshooting Tool)

EZRack PLC CPU supports true Forcing of I/O and internal memory elements. Discrete I/O can be forced to either an ON or OFF state. Analog I/O points can be forced to constant values.

The forcing of numeric and bit memory elements simply means the CPU sets the element to the forced value and does not permit any additional update to the memory element as long as it is forced.

What is Forcing I/O?

The ability to Force I/O allows you to troubleshoot particular sections of your ladder program by "forcing" a state, in the case of a discrete I/O, or value, in an analog I/O, to make sure you are getting the expected result.

In order to comprehend the benefit of Forcing I/O, one must first distinguish the difference between the physical I/O of a PLC, called the "field side", and the internal status of that physical I/O within the ladder program, called the "logic side". In regular operation of a PLC, the status of the physical inputs is copied to the logic side at the top of the PLC scan, and the logic side of the outputs is copied to the fields side at the bottom of each scan. Forcing I/O interrupts the normal processing of the inputs and outputs. Instead, when an I/O is forced, the "logic side" is set to the forced value, and any change in the physical I/O is ignored, and any attempt to change the value or state in the logic is also ignored until the force is released.