



# TECHNICAL NOTE    TNDA19

## **Title: Sinking and Sourcing Types of Inputs**

### **Product(s): Red Lion Counters**

All Red Lion Controls counters and rate meters accept either a digital sinking or sourcing inputs. Many accept both. If the meter is equipped to accept both it will have a DIP switch that allows either sinking or sourcing inputs to be selected. From the factory, these products are set up for sinking inputs, which is compatible with all Red Lion sensors.

In the sinking position, the input is internally pulled up to a specific voltage level and is looking for a sensor or input device to take that voltage low or to the meter common. In the sourcing position, the input is pulled down to the meter common and is looking for a sensor or input device to take the meter input to a specific voltage. The minimum high and maximum low voltage levels that must be present in order to switch the input is dependent on the type of meter being used. Consult the product data sheet or instruction manual for actual switching levels. <http://www.redlion.net/Support/Literature.html>

The best way to determine whether the input is sinking or sourcing is simple. If the input to the meter is a dry contact or switch closure, the input is sinking. If the input to the meter is a voltage then the input is sourcing. It will not hurt the meter if this is set up wrong, the input simply will not switch. If the meter does not work with the input device, try moving the sink/source DIP switch to the opposite position.

There are two Red Lion product series that do not have sink/source dip switches. The CUB series of counters only operate with sinking types of inputs. If a sourcing type of input is being used, a pull down resistor (between the meter input and common) must be used to bring the input voltage level down below the maximum low switching point. The Ditak series rate indicators only operate with sourcing types of inputs. If a sinking type of input is being used, a pull up resistor (between the meter input and excitation voltage) must be used to pull the input voltage level above the minimum high switching point.