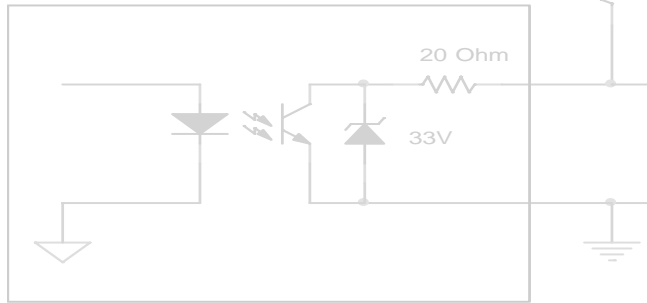


ELMO Digital Output



Application Note: Open Collector Outputs July 2008

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Introduction

Open collector outputs are typically used for signal transmission, alarm and warning notification, control signal output, etc. Although these outputs allow for a great deal of wiring flexibility, care must be taken not to destroy the circuits via incorrect polarity configurations, over-voltage, transients or current overload.

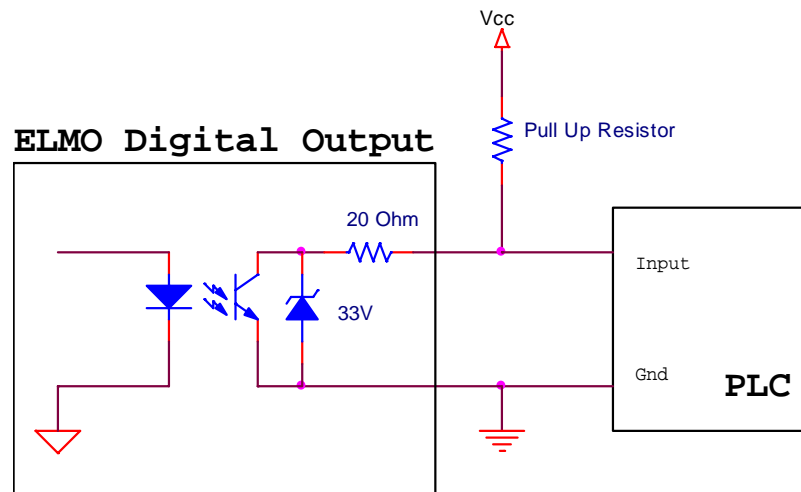
Most instrumentation indicators or control system inputs require a signal voltage of 0 to 5V or 0 to 24V. Therefore, open collector output circuits must be complemented with a pull-up resistor to function properly.

Elmo's Solution

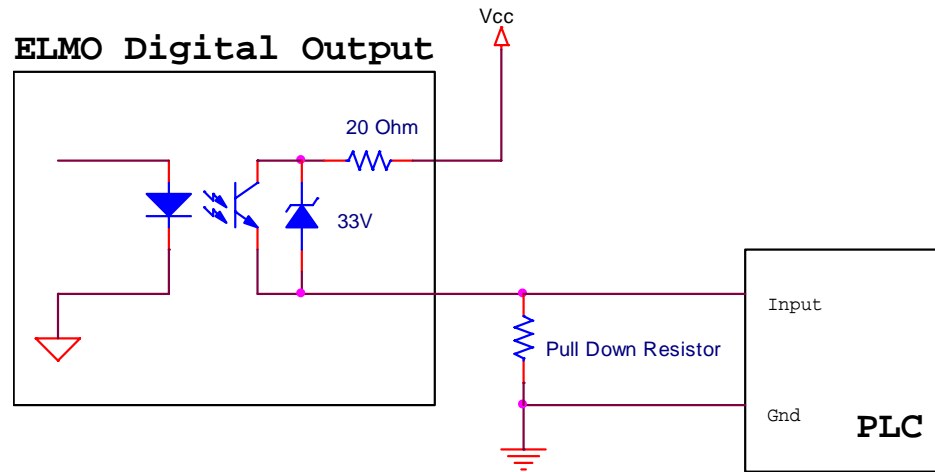
For greater configuration flexibility, [Elmo's Servo Drives digital output](#) is optic isolated from the instrument's power supply. Thus, if required, it can be used in an NPN configuration, as well as in a PNP configuration.

Two sample circuits are included below to present the wiring of the digital output to a programmable logic controller (PLC):

Wiring an NPN Style Output to a PLC



Wiring a PNP Style Output to a PLC



Voltage and Current Limitation

The supply voltage in the optically-coupled output circuit **MUST** be limited to the specified maximum voltage. The use of a quality regulated 5V, 12V or 24V power supply is recommended. In any case, the maximum supply voltage should not exceed 33V.