Manual for SmInterfaceOpto

Description of application note

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1   Overview

The electrical interface of the Simplex Motion motors is not robust enough for industrial interfacing with long signal lines and disturbances. To overcome this, an interface board is designed as an accessory for cases that require industrial robustness. This document describes how to use this board.

2   Description

The board supports 4 channels of digital signals, where each can be selected to be a digital input or output as seen from the Simplex Motion motor unit.
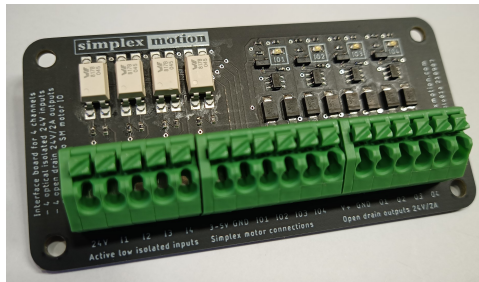

2.1   Inputs

The inputs are optically isolated and active low. They need a supply voltage, typically 12 or 24V that is common for all 4 inputs.
The inputs are active with an input voltage < 5V, and inactive at > 10V.

2.2   Outputs

The outputs are open drain and can only sink current, and thus requires an external pull-up resistor of typically 1kOhm. The outputs are capable of max 30V and 1A current. Each output also has a recirculation diode to handle inductive loads and PWM control, but this requires the user to connect a supply voltage used on the output side.
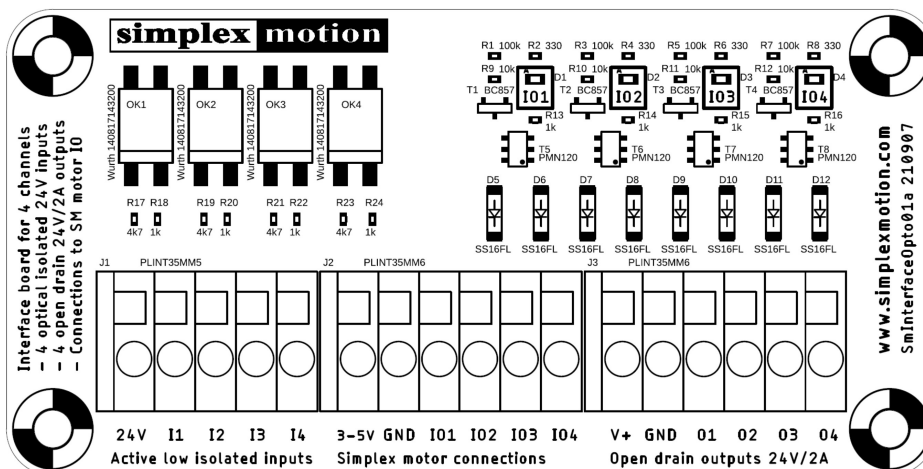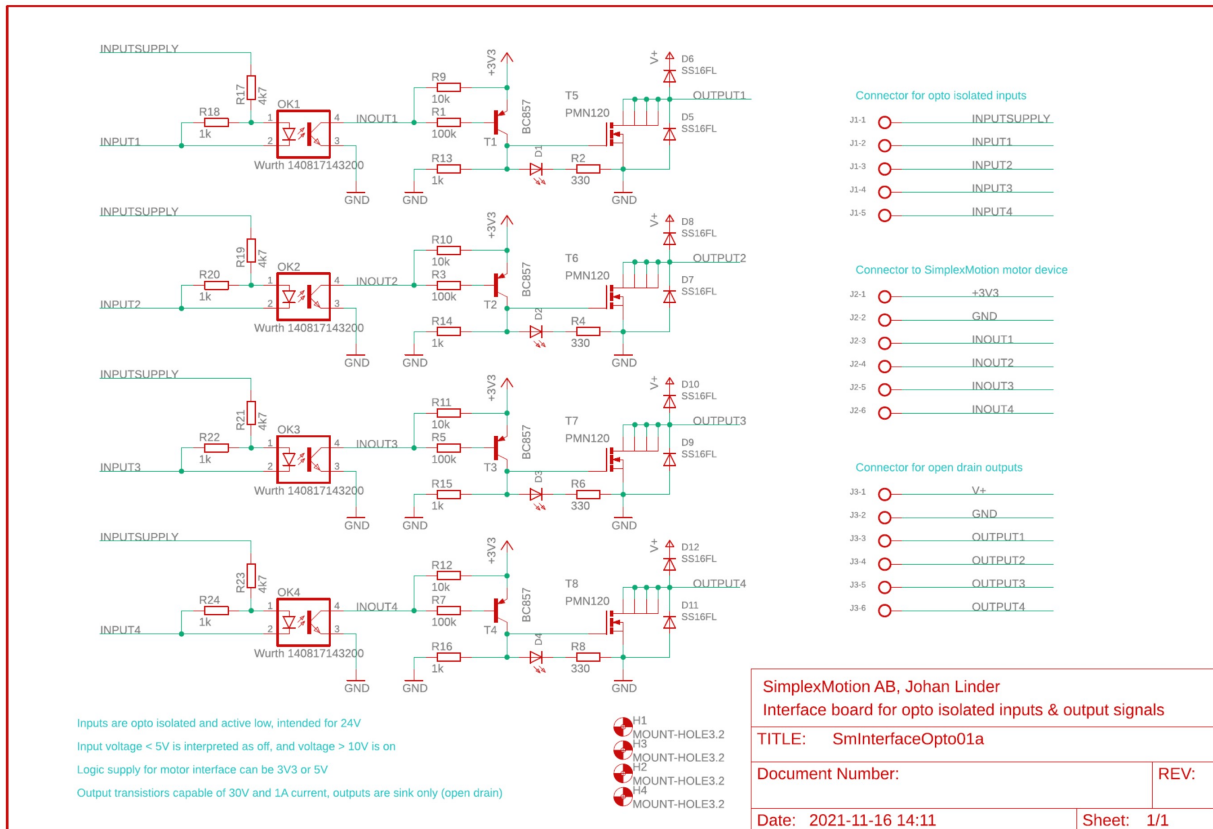
3 Connections

The connections points are described below:

Signal	Description
24V	Supply voltage to input optocouplers.
I1	Isolated input 1.
I2	Isolated input 2.
I3	Isolated input 3.
I4	Isolated input 4.
3-5V	Logic supply from SimplexMotion motor.
GND	Ground connection to SimplexMotion motor.
IO1	Connection to IN1OUT1 of SimplexMotion motor.
IO2	Connection to IN2OUT2 of SimplexMotion motor.
IO3	Connection to IN3OUT3 of SimplexMotion motor.
IO4	Connection to IN4OUT4 of SimplexMotion motor.
V+	Supply for output current recirculation
GND	Ground connection for outputs
O1	Output driver 1, active low open drain output.
O2	Output driver 2, active low open drain output.
O3	Output driver 3, active low open drain output.
O4	Output driver 4, active low open drain output.