

- 4 channels
- Indicator LEDs
- NPN or PNP style input for each channel
- NPN style or PNP style

output for each channel

- 1,000 V Isolation
- 72 × 42.4 mm
- DIN-rail mount option

Summary

The Ocean Controls KTA-258 is a 4 channel opto-isolator with the ability to take signals from NPN, PNP, dry-contact and push-pull type sensors and present isolated NPN or PNP-style outputs. Each channel has a switch for selectable input and output configurations.

The card can be used to convert PNP sensors for use with NPN style inputs on a PLC or vice-versa. A 1,000 V isolation barrier between input and output sides prevents ground loops and electrical noise from coupling into your control system.

Specifications

Maximum Input Voltage: 30 V DC

Maximum Input Current: 30 mA cont., 3 A peak

Input Resistance: Approx. 1.3 kΩ

Maximum Output Open Circuit Voltage: 30 V DC

Maximum Output Current: 75 mA

Output Saturation Voltage: 1 V

DC Current Transfer Ratio: ≥ 500 %

Isolation Voltage: 1,000 V (Input side to Output Side)

Turn On Time: 15 μs

Turn Off Time: 30 μs

Wiring

The inputs of the KTA-258 can be wired to NPN and PNP type sensors, dry contacts and push-

pull type outputs. Each channel has a switch that selects the input mode. With the switch in the “NPN” position, connecting the input terminal to ground activates the channel. If any of the inputs are to be used in the NPN configuration the input side must have a positive voltage connected to the “+” terminal.

With the switch in the “PNP” position, connecting the input terminal to positive power activates the channel. If any of the inputs are to be used in the PNP configuration the input side must have a connection from ground to the “-” terminal.

If a combination of NPN and PNP type inputs are used, both “+” and “-” must be connected to the input system V+ and ground.

The following diagrams show how to wire up common sensors and contact types.

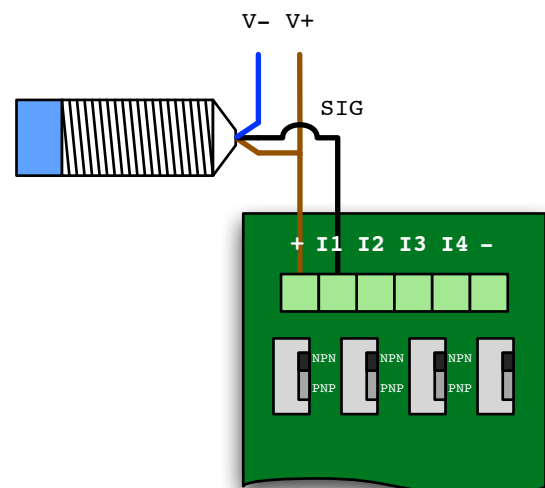


Figure 1 - Wiring an NPN-type sensor

Figure 1 shows the wiring for an NPN-type sensor. The switch for the channel is in the NPN position. The card must be supplied with positive voltage when using NPN-type inputs.

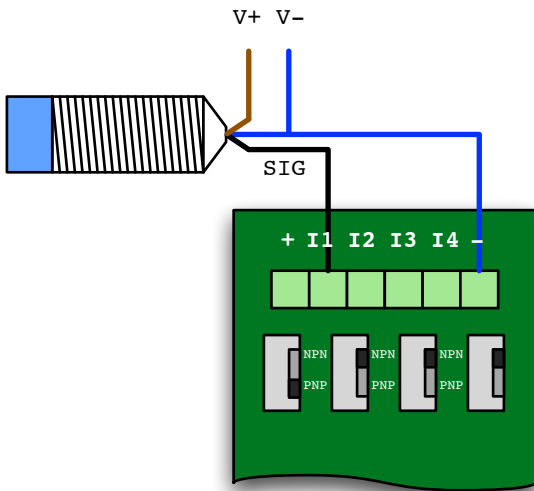


Figure 2 - Wiring a PNP-type sensor

Figure 2 shows the wiring for a PNP-type sensor. The switch for the channel is in the PNP position. The card must be supplied with a negative connection when using PNP-type sensors.

Figure 3 shows the wiring of a dry contact input. This configuration works for relay contacts, pushbuttons and microswitches. The switch is in the NPN position. As with NPN-type sensors, a positive voltage must be supplied to the card.

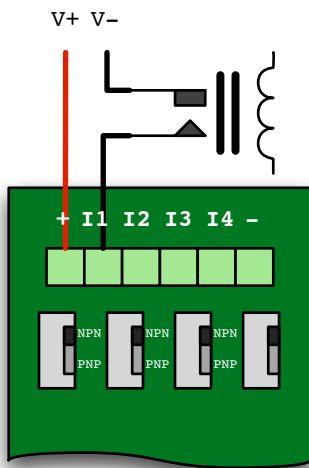


Figure 3 - Wiring a dry contact input

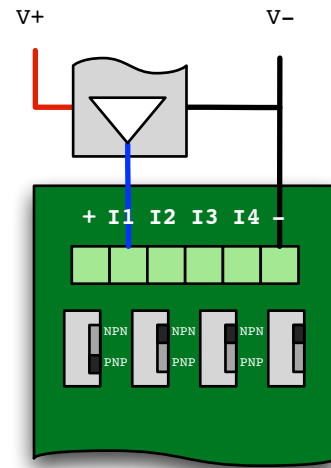


Figure 4 - Wiring a push-pull type sensor

Figure 4 shows the wiring of a push-pull type sensor to the card. This configuration uses the PNP mode. When the input is driven high by the push-pull sensor the channel is activated. This configuration requires the “-” terminal to be connected to the sensor negative.

Outputs can be NPN or PNP style outputs. Figure 5 shows the wiring for PLCs with NPN style inputs. If any of the output channels are set to NPN, the card requires a connection from the “-” terminal to the PLC negative.

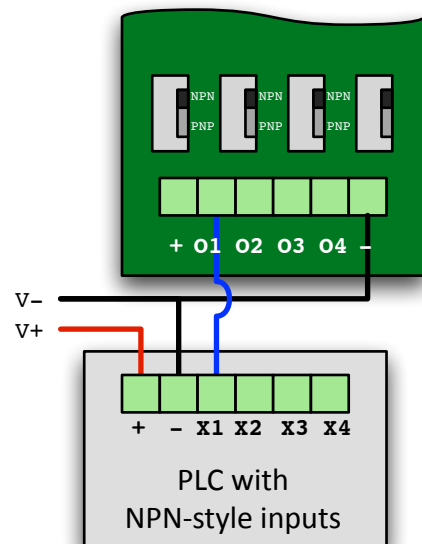


Figure 5 – Connecting the card to a PLC with NPN-style inputs

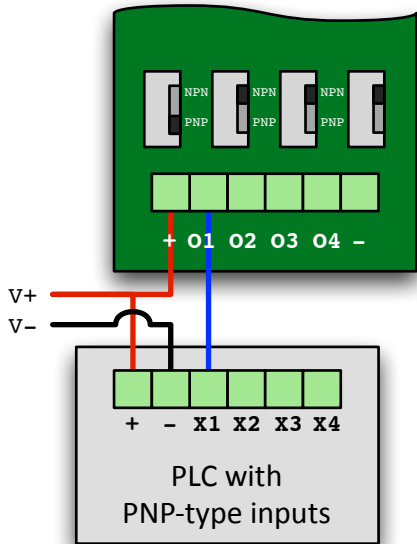


Figure 6 - Connecting the card to a PLC with PNP-style inputs

Figure 6 shows the wiring for PLCs with NPN style inputs. If any of the output channels are set to PNP, the card requires a connection from the “+” terminal to the PLC positive.

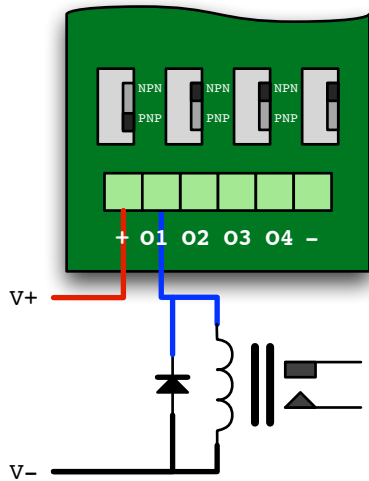


Figure 7 – Wiring a relay in a PNP configuration

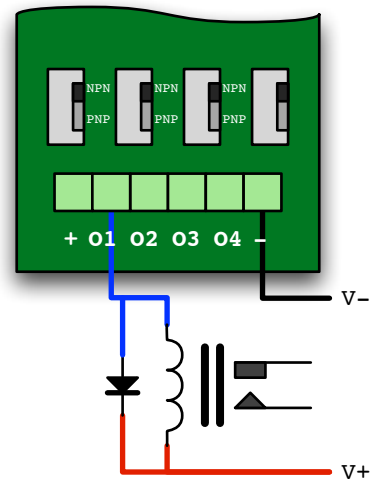


Figure 8 - Wiring a relay in an NPN configuration

Figures 7 and 8 show a relay coil connected to an output in two configurations. In both cases a diode must be installed across the coil of the relay. The relay coil must not draw more than 75 mA.

Selection Guide

The 4 channel opto-isolator is available in a DIN-rail mount version.

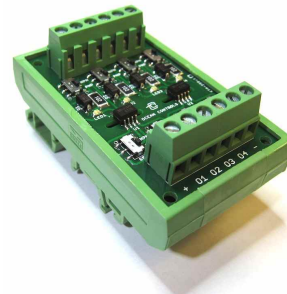


Figure 9 - DIN-rail mount option

- KTA-258
 - Opto-Isolator
 - A: Bare PCB
 - D: DIN Rail Mount