



1-Channel Isolation Module

General Description

The **1-Channel Isolation Module** is an optically isolated input interface based on the **PC817 optocoupler**, providing a selectable input voltage range and an active-low NPN output. Screw terminals are provided for convenient input and output connections. An onboard jumper selects the input range: **3-9 V with the jumper ON or 10-24 V with the jumper OFF**.

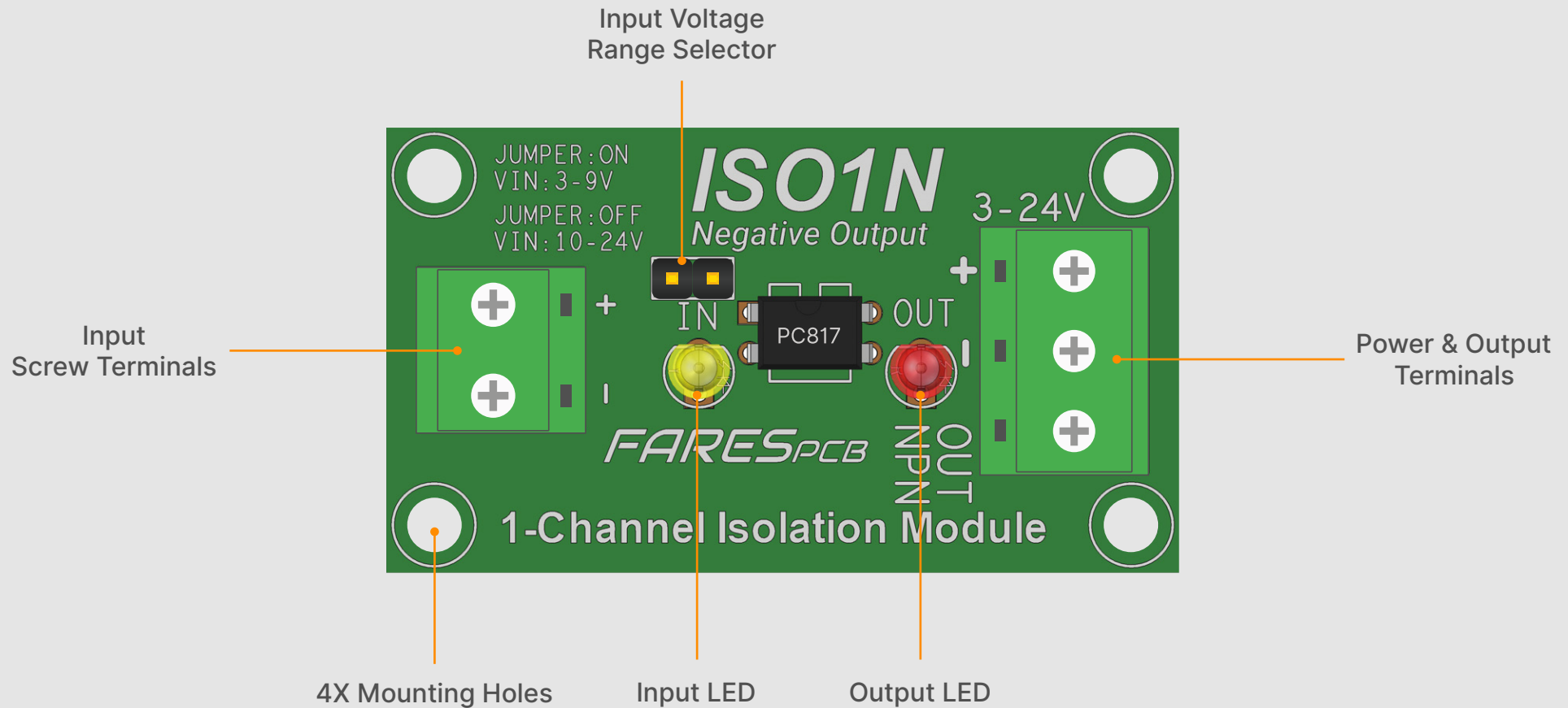
The output stage supports a wide **3-24 V output supply range**, making the module suitable for interfacing control signals between electrically isolated circuits. Dedicated **Yellow and Red LED indicators** provide visual indication of input and output activity, respectively.

Mounting holes are provided for convenient installation, **including DIN-rail mounting applications**.

Features

- **PC817 Optocoupler** for galvanic signal isolation.
- **Selectable input** voltage range:
 - Jumper **ON**: **3-9 V input**.
 - Jumper **OFF**: **10-24 V input**.
- Active-low **NPN output**.
- **3-24 V** output supply range.
- Input and output **screw terminals**.
- LED Indicator:
 - Yellow: Input signal indication.
 - Red: Output status indication.
- Suitable for microcontroller and PLC interfacing.
- PCB mounting holes for DIN-rail installation.
- Dimensions: 49.9 X 28.1mm.

1-Channel Isolation Module Overview



Applications

- PLC digital input/output interfacing.
- Microcontroller signal isolation.
- Industrial control interfaces.
- Sensor and control signal isolation.
- Relay and transistor control interfaces.
- Level conversion between control circuits.
- Automation and instrumentation systems.
- Protection of sensitive control electronics from external signals.

Functional Description

The input circuit accepts a control voltage within the selected input range and drives the internal LED of the PC817 optocoupler. When the input signal is applied, the optocoupler transfers the signal across the isolation barrier without establishing a direct electrical connection between the input and output circuits.

On the output side, the optocoupler drives an **NPN transistor output**. The output is **active-low**, meaning that an asserted input signal causes the NPN transistor to conduct and pull the output toward the output-side ground.

The output-side supply can be within the **3-24 V range**, allowing the module to interface with systems operating at different voltage levels.



For the latest product updates and documentation, visit: www.fares-pcb.com
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