

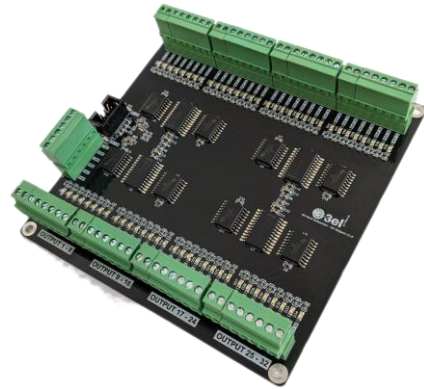
3el 64 Output Extension Card V1.0



64 Out Ext V1.0

Features:

- 64 low side 24V outputs
- I²C addressable
- Compatible with 2x16 IO Card
- Low current consumption
- NI LabView integration



Description:

The 64 Output Extension Card is a compatible peripheral extension for 2x16 IO Card adding 64 low side, 24V digital outputs to the system. The 2x16 IO Card controls this peripheral through I²C interface with a maximum frequency up to 400kHz.

The integrated low side driver outputs can sink up to 500mA individually. Each output channel can be controlled individually for more flexibility in applications.

The circuit comes with a predefined NI LabView VI interface for easy system integration and has a standalone graphical user interface for testing and configuration purposes.

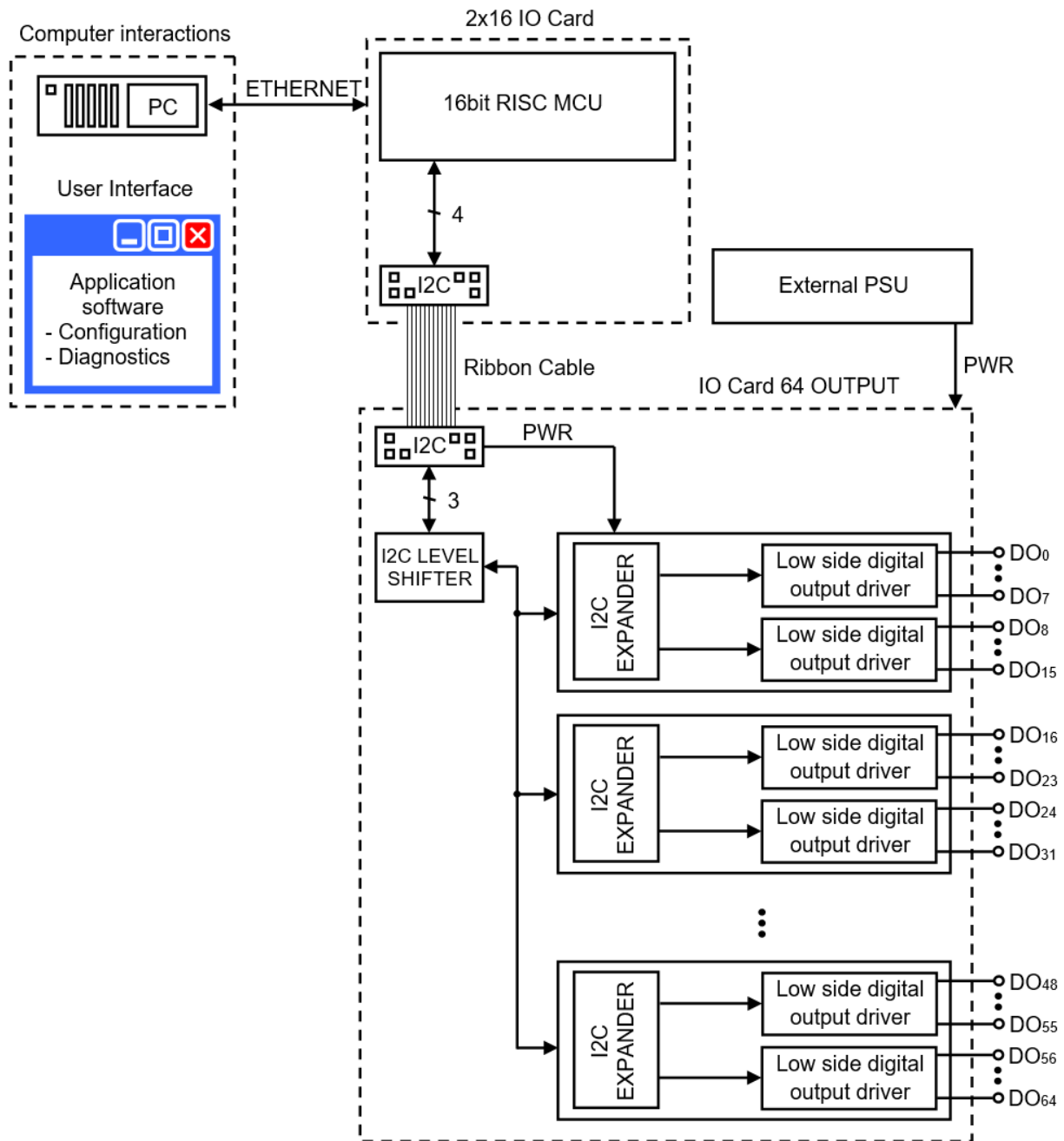
Block schematic:

- 2x16 IO Card for control connected to the extension board by a 6-pole ribbon cable
- 24V external, primary power source
- I²C 5V to 3.3V level shifter circuit
- Four groups of latched IO expander
- Optically isolated input signals
- Protection and logic level selection on digital input lines
- Prioritized and latched input stages for digital input lines
- Low latency input control signal propagation

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Applications:

- various output control schemes
- safety circuit automation
- equipment security
- general system automation circuit control



Electrical characteristics:

Nominal supply voltage:	24V, 5V, 3.3V
High voltage outputs:	50V
Operating temperature range:	-40°C ... 70°C
Current consumption 24V:	0.5mA [Standby] 51mA [All outputs ON]
Current consumption 5V:	0.5mA [Standby] 65mA [All outputs ON]
Current consumption 3.3V:	0.1mA [Standby] 1mA [communicating]

Low side outputs:

Nominal switching voltage:	24V
Absolute maxim rated voltage:	50V
Rated current:	500mA

Basic requirements before use:

- the extension board should be mounted on four, 6mm (minimum) tall standoffs ensuring optimal distance from any conductive or electrically sensitive surface and the circuit PCB;
- the extension board should be powered from an external, primary 24VDC power supply;
- the 5Vdc, 3.3Vdc power supply and the I2C connection should be provided through a custom made 2.54mm pitch, 6 pin, flat ribbon cable;
- usually, the extension board is powered and controlled from the 2x16 IO Card board.

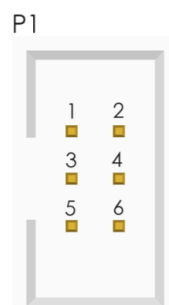
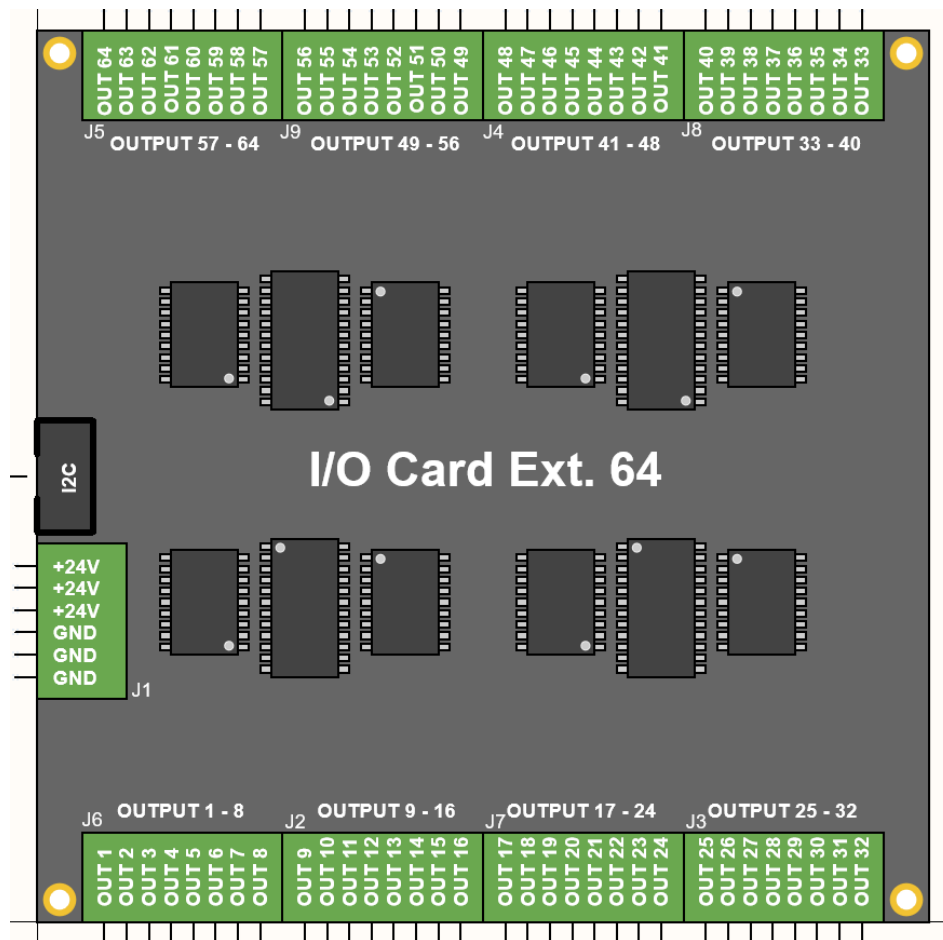
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Board schematic symbol and pinout:

For CAD software integration the extension board has a predefined schematic symbol containing the pinout following the physical connector arrangement of the real board. The schematic symbol shows the layout of the main components and the connectors available.



I²C connector pinout

- 1 – 5V input
- 2 – 3.3V input
- 3 – SDA (3.3V signal level)
- 4 – SCL (3.3V signal level)
- 5 – GND
- 6 – GND

Note: I²C Pullups are not present on the extension board! Recommended value on the master board is 2.2k.

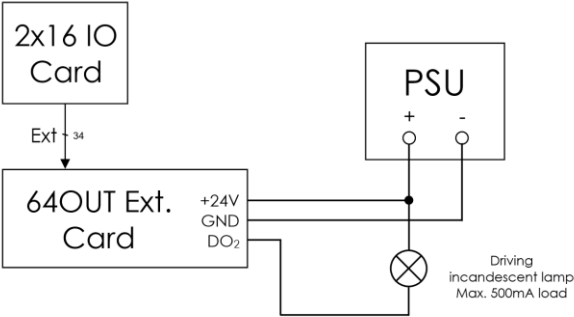
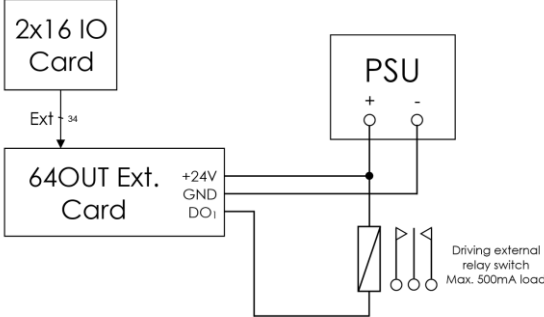
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Schematic examples:

The electrical wiring diagram shows application examples for output configuration.



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Mechanical drawings:

