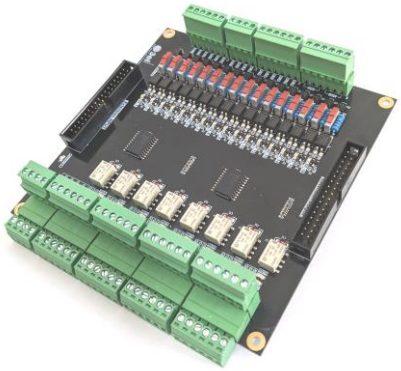
3el 2x16 IO Card Extension V1.0

16 IO Ext V1.0

Features:

- 16 digital inputs
- overvoltage protection on inputs
- optically isolated input circuits
- 16 RELAY outputs
- Compatible with 2x16 IO Card
- Low current consumption
- NI LabView integration



Description:

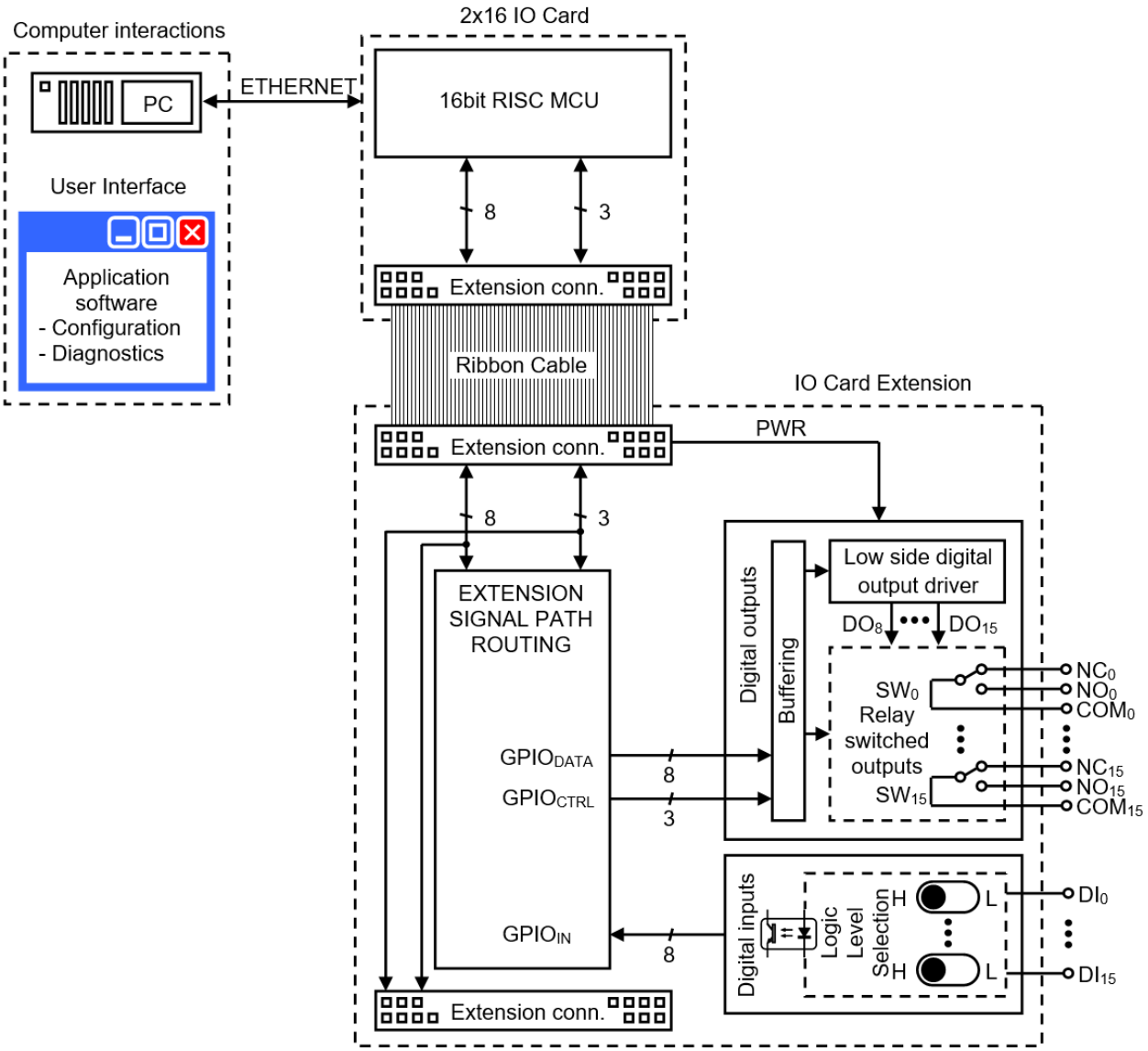
The IO Card Extension is a compatible peripheral extension used together with 2x16 IO Card unit for industrial automation featuring 16 digital inputs and 16 relay outputs. The 2x16 IO Card controls its peripheral through the *Extension Input* connector. There is also the possibility to daisy chain a second extension card through the *Extension Output* connector.

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.

The digital inputs are overvoltage protected and features selectable input logic. In accordance of the application requirements, they can be individually selected as active HIGH or LOW inputs. Then the digital signal is optically coupled before entering the buffer circuit.

Block schematic:

- Low latency output control signal propagation
- Buffered data path for output drivers
- Protection and voltage range selector block on analog input lines
- Protection and logic level selection on digital input lines
- Prioritized and latched input stages for digital input lines
- Additional data and control lines for extension cards
- Needs 2x16 IO Card for control connected to the extension board by a 34-pole ribbon cable
- Powered by 2x16 IO Card, no need for external power supply



Applications:

- various input monitoring and read-back
- low current actuators control
- external relays control
- 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:	10mA [Standby] 82mA [All outputs ON]
Current consumption 5V:	5mA [Standby] 18mA [All inputs ON]
Current consumption 3.3V:	19mA

Relay outputs:

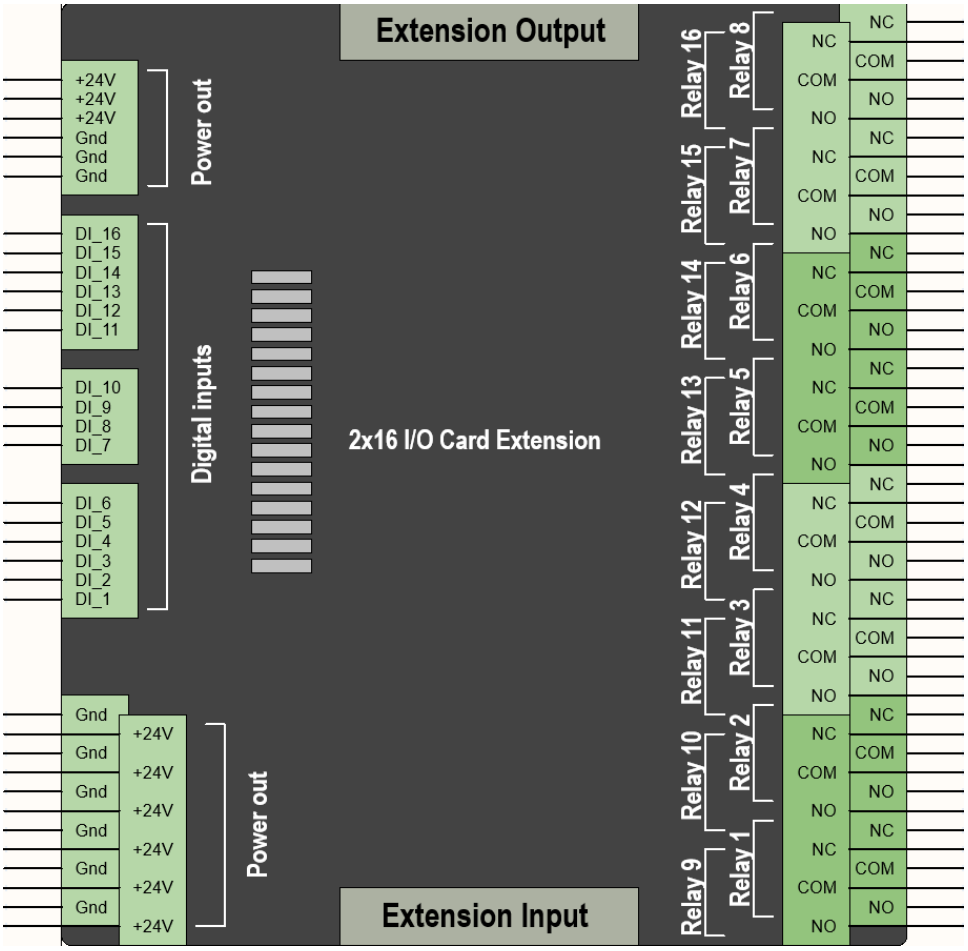
Maximum switching voltage:	125VAC or 60VDC
Rated current:	1000mA

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, 5VDC and 3.3VDC power supply through the *Extension Input* connector with a custom made 1.27mm pitch, 34 pin, flat ribbon cable.
- Usually, the extension board is powered and controlled from the 2x16 IO Card board

Board schematic symbol and pinout:

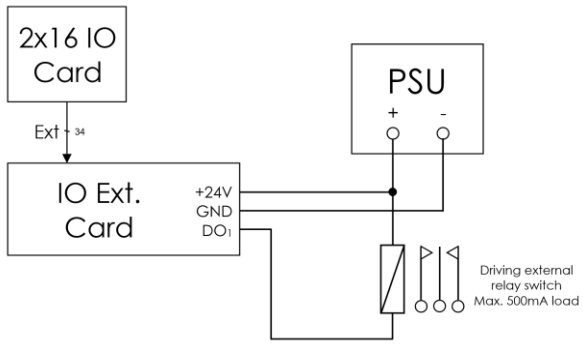
For CAD software integration the extension board has a predefined schematic symbol containing the pinout following the physical connector arrangement of the real board. The schematic symbol shows the layout of the main components and the connectors available.

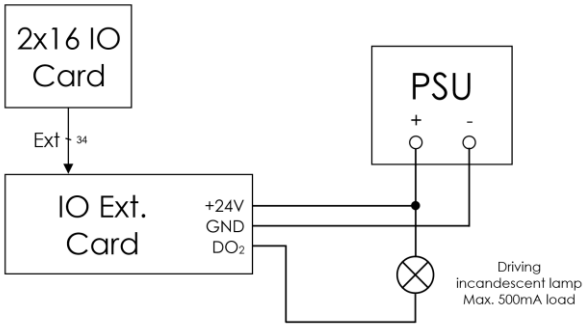


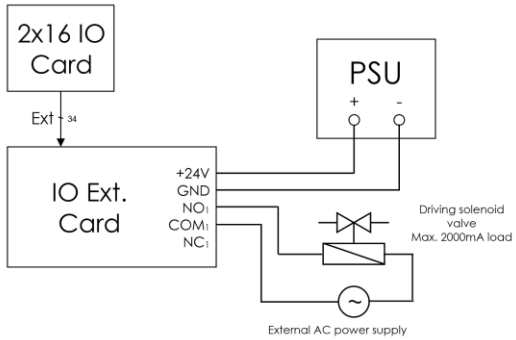
Schematic examples:

The electrical wiring diagram shows application examples for input and output configuration.

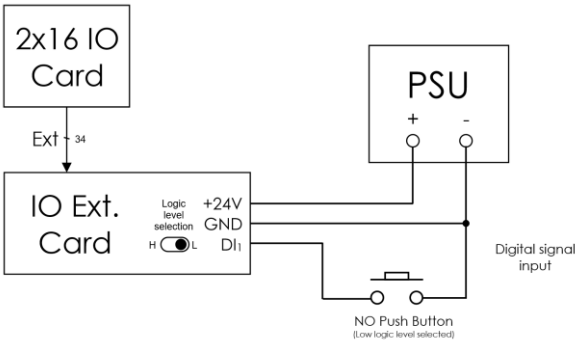
- Output configuration

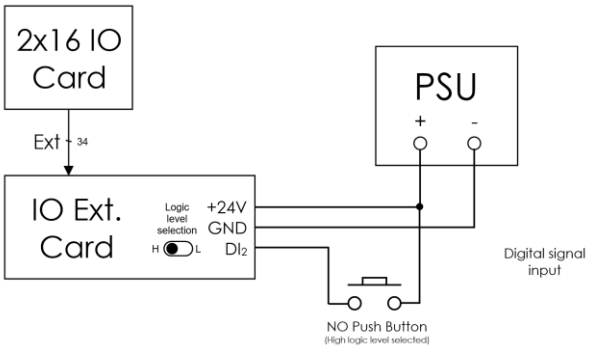






- Input configuration





Mechanical drawings: