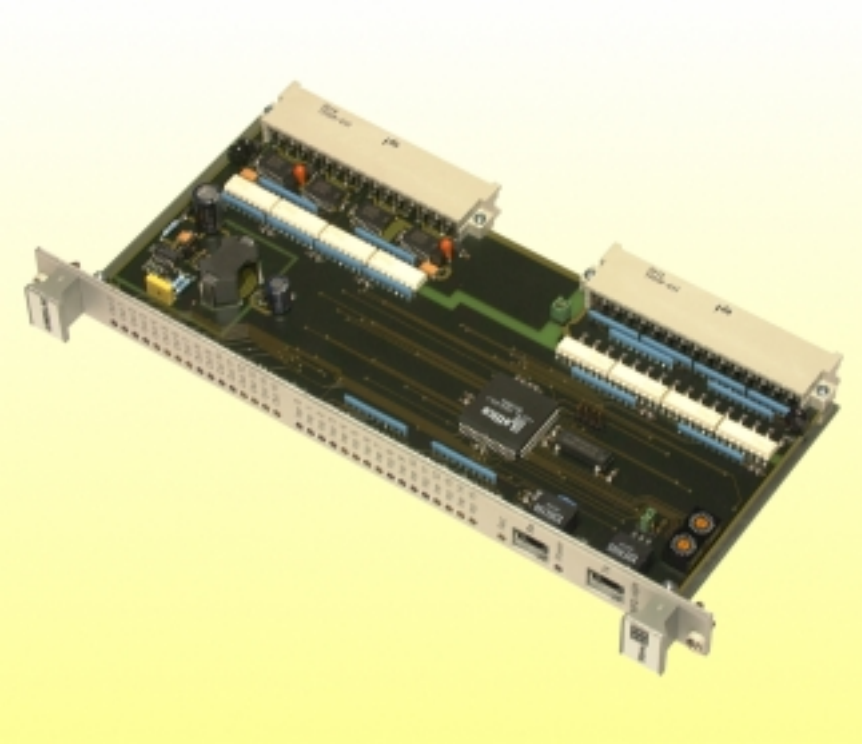
16 In- and Outputs

INFO-16Pr



24V
Inputs
Outputs

Technical Data

Inputs
- 16 inputs
- 24V, 5mA
- Isolated as group
- Maximum 4000 inputs per INFO-Link

Outputs
- 16 outputs
- 24V, max. 2A
- Short-circuit-proof
- Isolated as group. Two separately supplied groups with 8 outputs each
- Maximum 4000 outputs per INFO-Link

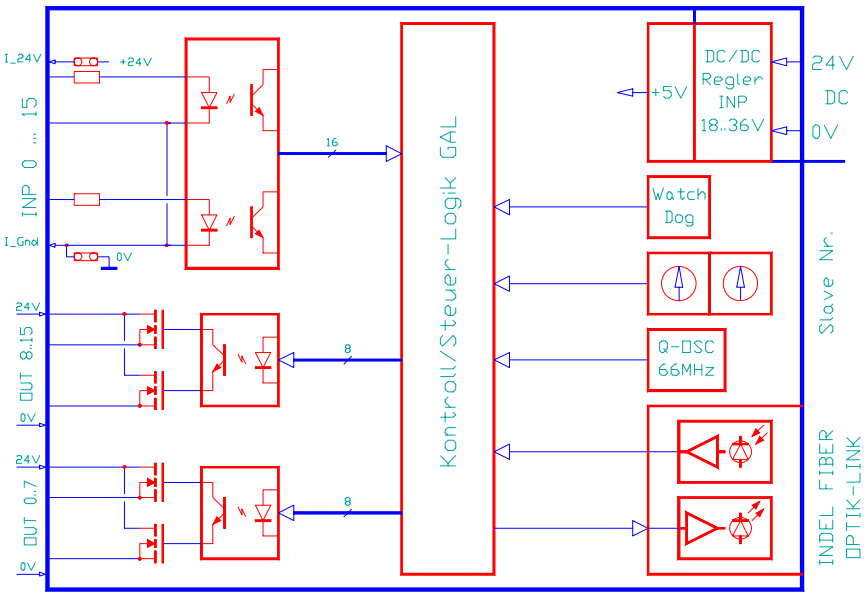
24V power supply
- Power supply for proximity switches

Stepping motor control
- Max. frequency 1kHz

Pulse width modulation
- Shaft speed control by pulse width modulation

Status indication
- User-friendly indication of all inputs and outputs by LEDs.

The INFO-16Pr board belongs to the digital I/O modules. As all modules, it is served once per millisecond, i.e. each input and output in the machine/plant is refreshed every ms.
The power supply of the outputs is divided into groups of 8. This allows various stop functions to be implemented. When the output power supply is switched off, the inputs can still be read in.
The board is also suitable for controlling low-speed stepping motors up to 2kHz or pulse width modulated DC motors.



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Rev. 0004

INDEL AG
INDUSTRIELLE ELEKTRONIK

INFO-16Pr

16 In- and Outputs

Function

The INFO-16Pr board allows 16 inductive or ohmic loads such as relays, valves, various motors and other users with up to 2A continuous load to be controlled. At the same time, 16 input signals from p-channels are registered.

The inputs are divided into one, the outputs into two groups. This allows stop functions according to EN60204-1 to be implemented. The input and output groups are electrically isolated from the board logics.

The states of all inputs and outputs are indicated by LEDs. Per input, three connections are available (24V, 0V, INP), and per output two connections (OUT, 0V). This allows direct wiring of the sensors and users.

Up to maximum 250 INFO-16Pr boards can be connected with the INFO-Link to the PC master. A total of 4000 inputs and outputs! Serial transmission is so fast that a board is served every 4 µs. In other words, in one millisecond all 250 INFO-16Pr boards are addressed.

In the event of power-off of the computer or of a rupture of the optical fiber, a watchdog will immediately switch off all outputs.

Connector allocations

Connector 1
90° angled
DIN 41612, Type F-48
2.8mm pins

	d			b		z
2	O	OUT- 0	O	O_GND	I	K_24V
4	O	OUT- 1	O	O_GND	I	K_Gnd
6	O	OUT- 2	O	O_GND	I	O_24V
8	O	OUT- 3	O	O_GND	I	O_24V
10	O	OUT- 4	O	O_GND	I	O_GND
12	O	OUT- 5	O	O_GND	I	O_GND
14	O	OUT- 6	O	O_GND	I	O_GND
16	O	OUT- 7	O	O_GND	I	O_GND
18	O	OUT- 8	O	O_GND	I	O_GND
20	O	OUT- 9	O	O_GND	I	O_GND
22	O	OUT- 10	O	O_GND	I	O_GND
24	O	OUT- 11	O	O_GND	I	O_GND
26	O	OUT- 12	O	O_GND	I	O_24V
28	O	OUT- 13	O	O_GND	I	O_24V
30	O	OUT- 14	O	O_GND		
32	O	OUT- 15	O	O_GND		

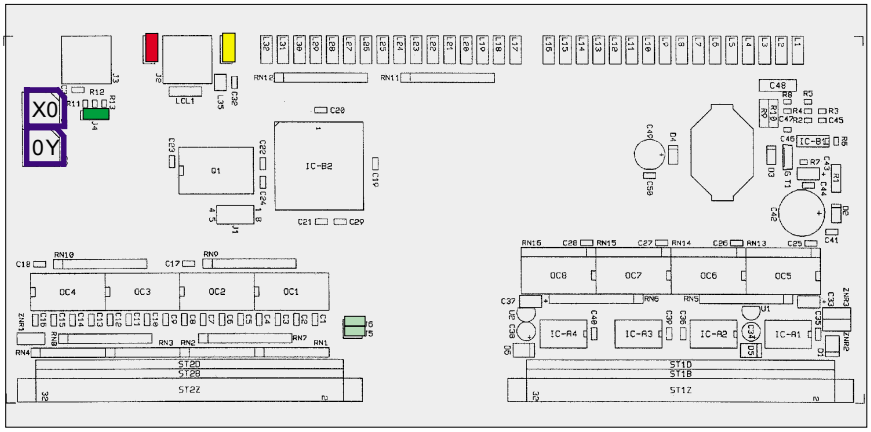
Connector 2
90° angled
DIN 41612, Type F-48
2.8mm pins

	d			b		z
2	I	INP - 0	I	I_24V	I	I_GND
4	I	INP - 1	I	I_24V	I	I_GND
6	I	INP - 2	I	I_24V	I	I_GND
8	I	INP - 3	I	I_24V	I	I_GND
10	I	INP - 4	I	I_24V	I	I_GND
12	I	INP - 5	I	I_24V	I	I_GND
14	I	INP - 6	I	I_24V	I	I_GND
16	I	INP - 7	I	I_24V	I	I_GND
18	I	INP - 8	I	I_24V	I	I_GND
20	I	INP - 9	I	I_24V	I	I_GND
22	I	INP - 10	I	I_24V	I	I_GND
24	I	INP - 11	I	I_24V	I	I_GND
26	I	INP - 12	I	I_24V	I	I_GND
28	I	INP - 13	I	I_24V	I	I_GND
30	I	INP - 14	I	I_24V	I	I_GND
32	I	INP - 15	I	I_24V	I	I_GND

16 In- and Outputs

INFO-16Pr

Assembly



Addressing (blue)

S1 (X0)	S2 (0Y)	Board
0	0	0
...	...	...
F0	0F	255

LEDs on front panel

All inputs and outputs are through the front panel and are labeled there.

LEDs on receiver module

LED-red = +5V supply
LED-yellow = INFO-Link receiver signal OK

Jumper (green)

The jumper influences the light intensity of the emitting LED and thereby the segment length of the fiber cable up to the next board.

Segment length	Jumper position
0 ... 10m	no jumper
8 ... 30m	>10
20 ... 50m	>30

Jumper (light green)

If the sensors are to be supplied by the +24V board power supply (pin 2, 4z), the jumpers J5,J6 must be fitted. If the sensor supply is from an external source, it can be supplied anywhere to pins 2 ... 32b and 2 ... 32d (connector 2).

Specifications

Power supply

+18 ... 36V, 280mA max.
(all I/Os active)

Climatic conditions

- Ambient temperature:
  Storage: -20...+80°C
  Operation: 0 ... +45°C
- Board temperature:
  Operation: 0...+70 °C
- Relative air humidity
  No condensation: 95%

Inputs

- 16 p-channel inputs (switch must pull to plus)
- Isolated as a group
- 24V, 5mA
- Switching threshold: 10V

24V supply

- Power supply for proximity switches 24V, max. 2A

Outputs

- 16 p-channel FET outputs
- 24V, 1A continuous power (all outputs)
- Max. 2A per output (every other output)
- Short-circuit-proof, thermal cutout of output stage
- Isolated as a group, two separately supplied groups with 8 outputs each.
- R_{on} = 110mΩ
- Power dissipation: P=1.8W/board (16x1A)

Installation

- Connector DIN 41612, Type F-48
- Installation in 19" chassis
- Dimensions: 234 x 100 x 20 mm (LxWxD)
- 6HE x 4TE

Customer-specific modifications are available at any time.

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Connections

Board power supply

INDEL assemblies can be supplied from an EMC-compliant power supply unit or from a simple (3-phase) transformer rectifier circuit with an electrolytic capacitor of minimum 4700uF. The 24V supply must be through a line filter.

Screened lines

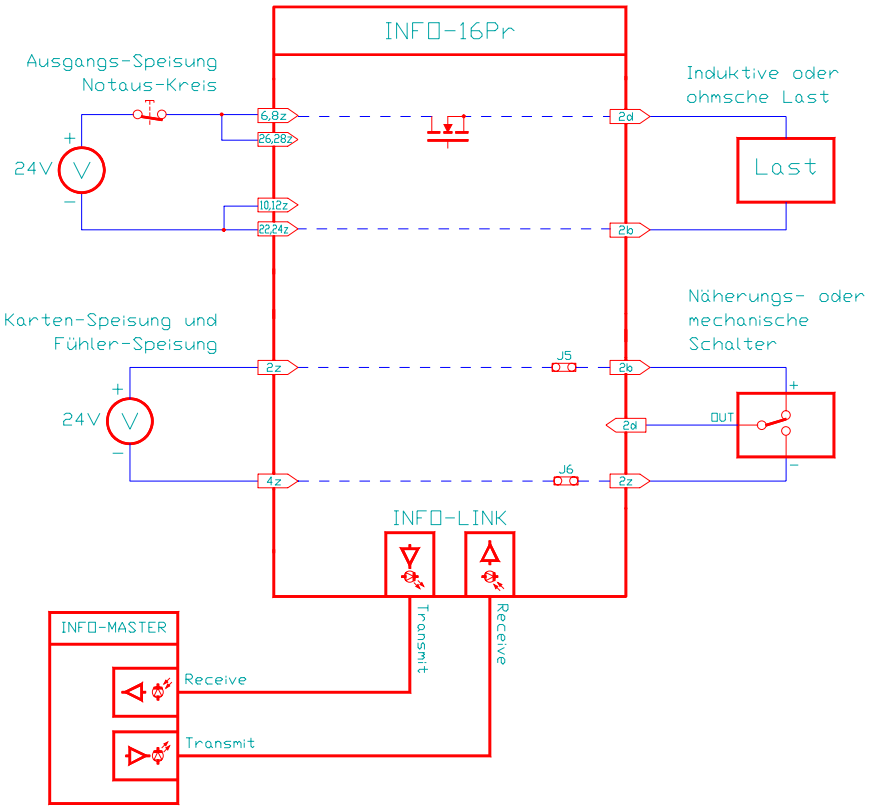
All lines from and to the INFO-16Pr board can be installed without screening.

Grounding

The 16Pr board is grounded at the front panel. Take care to ensure that the rack housing is connected in a conductive manner with the control cabinet. This is best achieved using chromatized assembly bars to discharge interference.

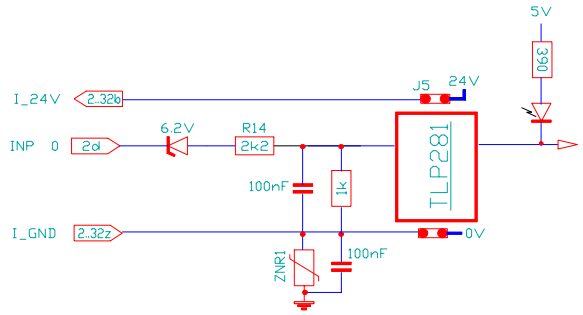
See also INDEL wiring guidelines and INDEL design guidelines.

Connection Example

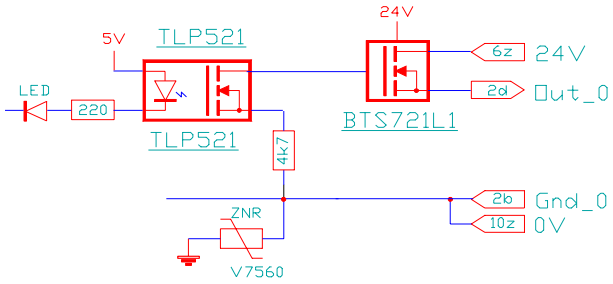


Interfaces

Inputs



Outputs



Wiring

Inputs

Connection of input
Inp-0 connector 2.
The supply voltage for, say, contactless limit switches varies with the board supply between +18 ... 36V.

Outputs

Connection of outputs
Out-0 connector 1