



Operator Panel  
Teaching-Box

## Technische Daten

### 24 keys with lamps

- Keys 25 x 25mm
- Integrated lamps

### 4 inputs

- 24VP-channel
- Can be allocated as required, e.g. key-operated switch, door opener

### 4 DIP switches

- Can be allocated as required, for board configuration

### Display activation

- 8-bit parallel with handshake
- 11 inputs 5V TTL
- 11 outputs 5V TTL

### Display activation

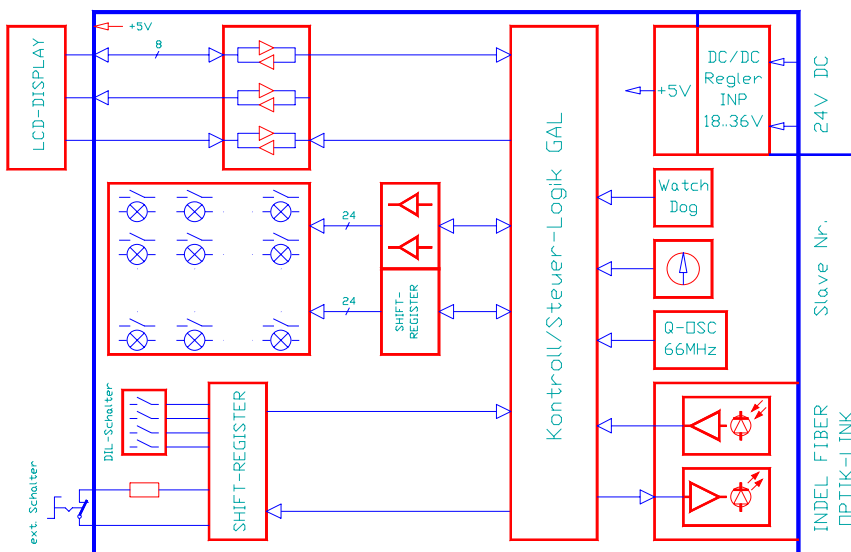
- 5V, 100mA max.

The INFO-TSP board includes a keypad combined with a parallel interface for activating an LCD display.

The operator keypad comprises 24 keys with integrated lamps. In addition, four 24V inputs are available, for example for a key-operated switch, EMERGENCY OFF or door opener. By means of four DIL switches, it is possible

to configure the INFO-TSP as required, e.g. several keypad printed circuit boards with different LCD displays.

The INFO keypad pcb is integrated in the INFO-Link, i.e. as all INFO modules it is provided with the optical interface. The board addresses itself as three consecutive INFO-16p input-output boards; therefore, no special firmware is required.



OrderNo. INFO-TSP 96222

## Mode of Operation

The INFO keypad pcb comprises an operator keypad, an LCD display activation device and configuration switches and inputs that can be allocated as required.

The LCD display is activated through an 8-bit bidirectional, parallel interface with handshake lines (11 inputs, 11 outputs). The handshake and status signals can be configured by the user. Access to the interface is in the bus cycle clock rate (1ms).

The display is supplied by the on-board 5V power supply (max. 100mA).

Four additional inputs, e.g. for key-operated switches, emergency OFF key, door opener or similar items are available. Also available are four DIL switches, which can be used for configuration of the board.

The INFO-TSP board is connected by means of a fiberoptic line to the INFO-Master.

The board occupies 3 consecutive input/output boards (INFO-16p) and therefore does not require any special firmware.

## Mounting

The solderable lamps (L0 ... L23) are inserted in the plug-in places provided and are secured by soldering.

The light red holes are provided for the latch-on switch bases.

The printed circuit board is plugged onto the preassembled switches in the front panel. The individual switches are secured in place by means of a screwdriver (yellow hole).

## Connector Allocations

1		GND	I	D7	2
3	I	D6	I	D5	4
5	I	D4	I	D3	6
7	I	D2	I	D1	8
9	I	D0	I	Vin	10
11	I	AckIn	I	StrIn	12
13		+5V		GND	14
15	O	StrO	O	AckO	16
17	O	Vout	O	D0	18
19	O	D1	O	D2	20
21	O	D3	O	D4	22
23	O	D5	O	D6	24
25	O	D7		GND	26

### Connector ST 1

Header straight 26p  
DIN 41651

1	I	+24V
2	I	+24V
3	I	GND
4	I	GND

### Terminal KL1

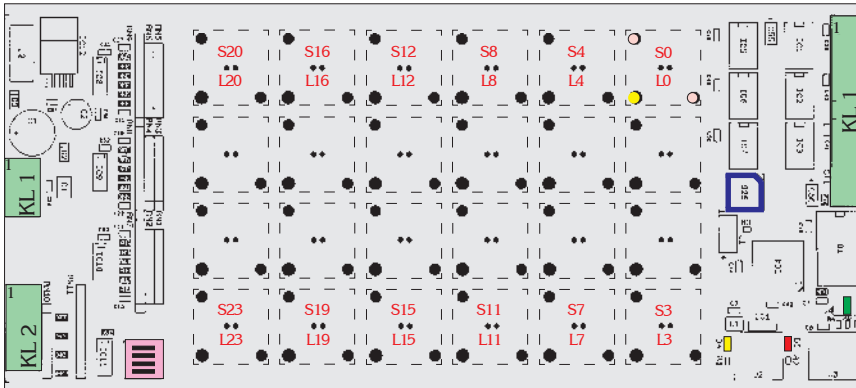
Phoenix MC1,5

1	I	In1
2	I	In2
3	I	In3
4	I	In3
5	O	+24V
6	O	+24V

### Terminal KL2

Phoenix MC1,5

## Assembly



### Addressing (blue)

S25	Board	Input/output
0	0	0 ... 47
...	...	...
F	15	960 ... 1007

### Transmit power jumpers (green)

The jumpers influence the illumination intensity of the emitting LED and thereby the segment length of the fiberoptic cable to the next board.

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

### LEDs on receiver module

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

### Keys, lamps

The products used are Schlegel command devices of the Quartron series with a grid dimension of 25x25mm or equivalent products. The following individual components are required for a complete, operational key:

- Short-stroke pushbutton, type QXD,
- Contact maker, type GTPS
- Lamp cap, type T25F KL
- Lamp socket, type LP5
- Incandescent lamps, 18 ... 36V/max. 100mA; e.g. type T5,5K 24V,50mA

Customized modifications are available as needed.

## Specifications

### Power supply

+18 ... 36V, 180mA max,  
plus lamp power

### Climatic conditions

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

### I/O allocation

The INFO-TSP board occupies three consecutive I/O boards. The basic address can be set by means of the rotary switch in steps of 4. Address 0 means board 0..3, address 1 means 4..7, etc.

For the inputs and outputs, the following allocations apply:

Board 0:	In 0..15	S 0..15
	Out 0..15	L 0..15
Board 1:	In 16..23	S 16..23
	In 24..27	DIL-Switch
	In 28..31	Ext. Inp 0..3
	Out 16..23	L 16..23
Board 2:	In 32..39	Din 0..7
	Out 32..39	Dout 0..7
	In 40	VIn
	Out 40	VOut
	In 41	AckIn
	Out 41	AckOut
	In 42	StrIn
	Out 42	StrOut

### Inputs

- 4 additional inputs P-channel
- 24V/5mA
- Switching threshold: 10V

### Parallel interface

- 5V, TTL

## Connections

## Connection Example

### Board power supply

For the board power supply, a 3-phase rectifier without electrolytic capacitor will suffice. But in order to prevent interference, an electrolytic capacitor of 4,700... 10,000µF is recommended. The 24V power supply must pass through a line filter.

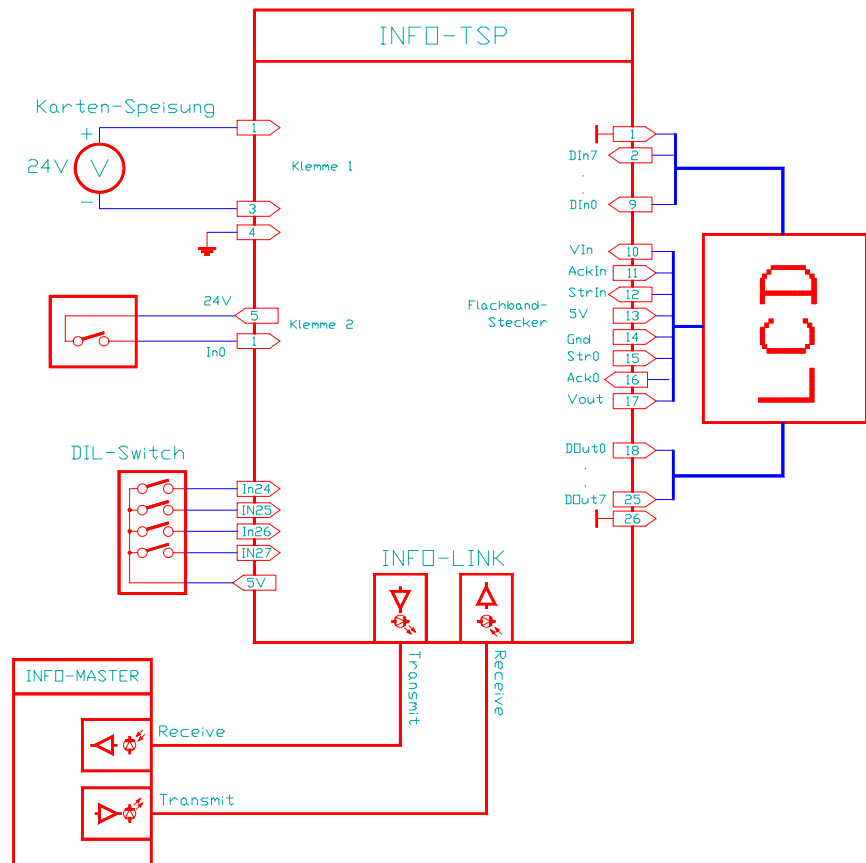
### Shielded lines

The additional inputs on terminal 2 do not require any shielding. They are provided for functions inside the control cabinet.

### Grounding

The 0V pin of the supply voltage (terminal 1 pin 4) must be grounded just next to the keypad pcb with a max. 3cm long ground conductor.

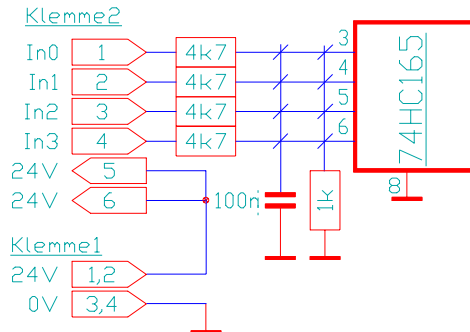
See also INDEL Wiring Guidelines and INDEL Design Guidelines.



## Interfaces

## Wiring

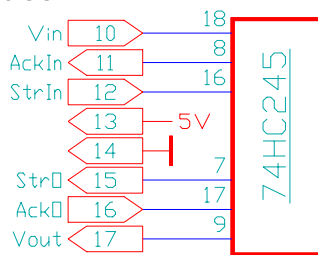
### Inputs



### Inputs

Wiring of the additional inputs.  
The supply voltage, e.g. for non-contacting limit switches, varies with the board power supply between + 18 ... 36V.

### Parallel interface



### Parallel interface

Wiring of the parallel interface.