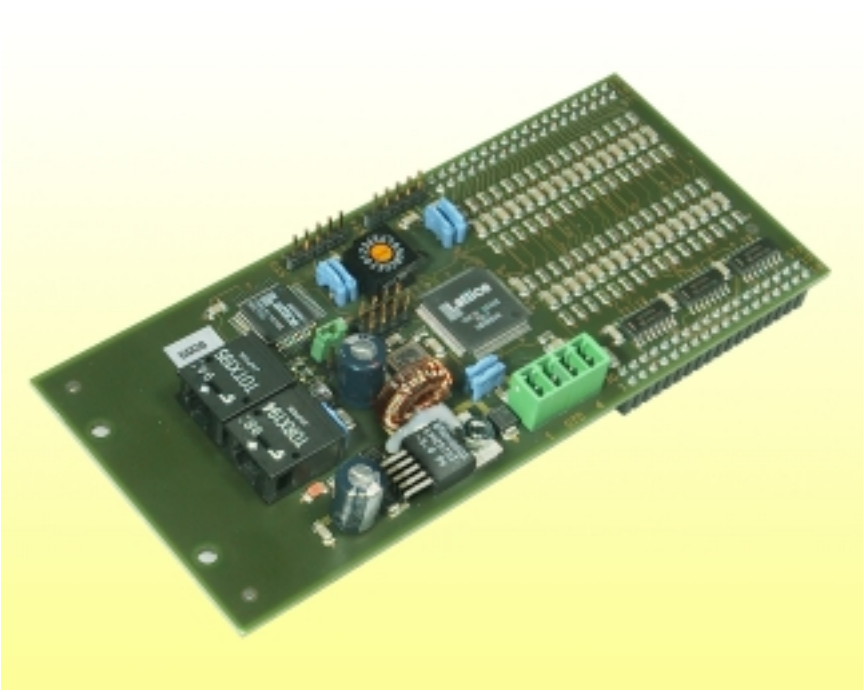
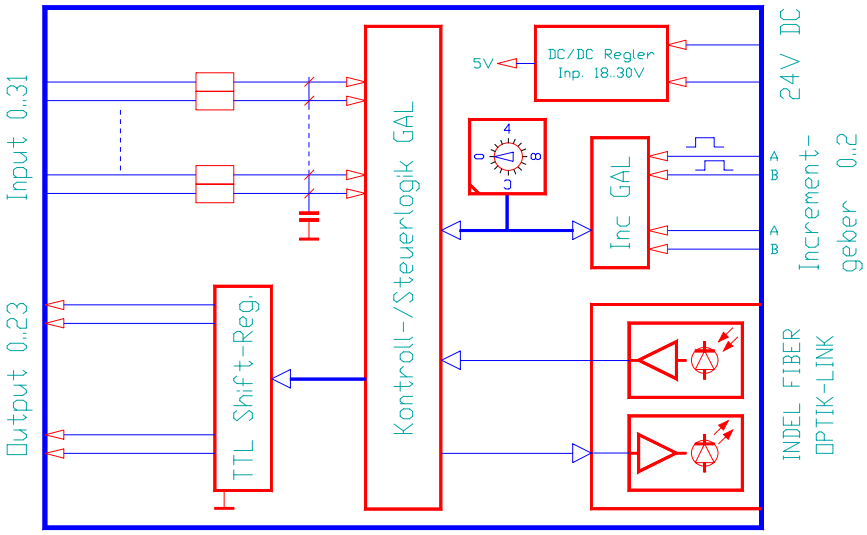
Digital Interface

INFO-DIF



Inputs/Outputs Incremental Encoders

The INFO-DIF is a universally applicable digital I/O module. The board incorporates 32 inputs and 24 outputs. In addition, the board can be provided as required with two incremental encoder evaluators. The module is designed for mounting on a printed circuit board. The version with the incremental encoder evaluator is suitable for links with operator panels or operator consoles with handwheels (e.g. for menu guidance).
The version without an incremental encoder evaluator allows simple and cost-effective INFO-Link interfaces to be implemented with existing devices.



Technical Data

Inputs
- 32 inputs
- 5V, TTL, fmax = 1MHz
- Max. 4,000 inputs per INFO-Link

Outputs
- 24 outputs
- 5V, TTL
- Max. 4'000 outputs per INFO-Link

Incremental encoder
- 2 incremental encoder inputs
- 5V level
- Max. 2.5MHz counting frequency
- Power supply for 2 incremental encoders
- 2 x 200mA max.

Order No.	INFO-DIF	97253-I/O
Order No.	INFO-DIF	97253-Inc

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Rev. 0104

INDEL AG
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INFO-DIF

Digital Interface

Mode of Operation

The INFO-DIF board can cover 32 5V inputs. 24 TTL outputs can be simultaneously activated .

The input In31 is additionally wired to connector 5. This allows, for example, an EMERGENCY STOP signal to be registered, level 5V. (Only for test purposes; the actual emergency stop circuit must be separately implemented.)

The INFO-DIF board can be supplied as required with or without an incremental encoder evaluator.

Version without incremental encoder
The version without any incremental encoder evaluator occupies two consecutive spaces of an INFO-16p board in the DualPort-RAM. The address of the first board can be set with the address selection switches from 0 ... 127.
As standard, the INFO-DIF I/O is not provided with a power supply unit.

Version with incremental encoder
The version with an incremental encoder evaluator also occupies two consecutive places in the DP-RAM of an INFO-16p board. The address can be set by means of the rotary switch S2 from 0 ... 7.
In addition, the INFO-DIF occupies the place of two axes of an INFO-4kp board (axis 0, 1 or 2,3) for the incremental encoder evaluation.

Connector Allocations

Connector 5
4-pin
Phönix MC1.5

1	I	+24V
2	I	GND
3	I	In31
4	I	GND

Connector 4
5-pin edge connector
single-row

Connector 3
5-pin edge connector
single-row

1	I	GND
2	I	-
3	I	CH A
4	I	+5V
5	I	CH B

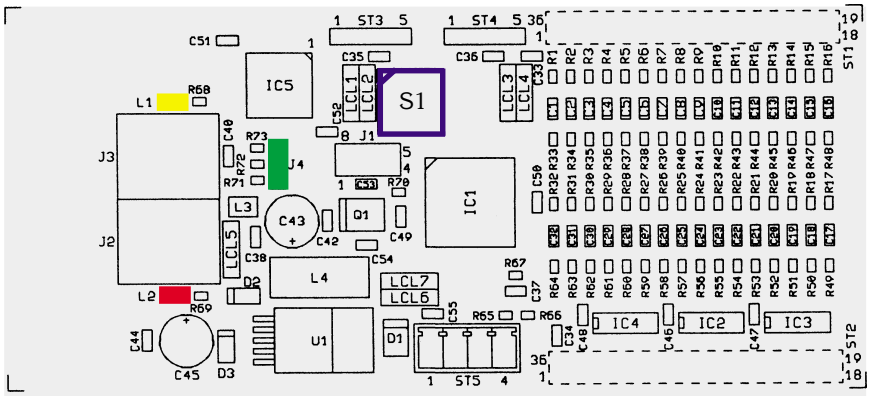
Connector 2
36-pin edge connector
double-row

1		+5V		+5V		36
2		+5V		+5V	I	35
3		+5V		+5V		34
4	O	Out0		Out23	O	33
5	O	Out1		Out22	O	32
6	O	Out2		Out21	O	31
7	O	Out3		Out20	O	30
8	O	Out4		Out19	O	29
9	O	Out5		Out18	O	28
10	O	Out6		Out17	O	27
11	O	Out7		Out16	O	26
12	O	Out8		Out15	O	25
13	O	Out9		Out14	O	24
14	O	Out10		Out13	O	23
15	O	Out11		Out12	O	22
16	O	Gnd		Gnd	O	21
17	O	Gnd		Gnd	O	20
18	O	Gnd		Gnd	O	19

Connector 1
36-pin edge connector
double-row

1	I	+5V		+5V		36
2	I	In0		In31	I	35
3	I	In1		In30	I	34
4	I	In2		In29	I	33
5	I	In3		In28	I	32
6	I	In4		In27	I	31
7	I	In5		In26	I	30
8	I	In6		In25	I	29
9	I	In7		In24	I	28
10	I	In8		In23	I	27
11	I	In9		In22	I	26
12	I	In10		In21	I	25
13	I	In11		In20	I	24
14	I	In12		In19	I	23
15	I	In13		In18	I	22
16	I	In14		In17	I	21
17	I	In15		In16	I	20
18	I	Gnd		Gnd	I	19

Assembly



Addressing INFO-DIF I/O (blue)

The INFO-DIF occupies two I/O board places in the INFO-DualPort RAM.

S1	Board	I/Os
0	0,1	0 ... 31
...		
F	30, 31	480 ... 511

Addressing INFO-DIF Inc (blue)

The board occupies two I/O board places and two axes (for incremental encoder evaluation) in the DualPort RAM.

S1	I/O board	I/Os	4kp board	Axes
0	0,1	0 ... 31	0	0 ,1
1	2,3	32 ... 63	0	2,3
2	4,5	64 ... 95	1	4,5
...				
6	12,13	192 ... 223	3	12,13
7	14,15	224 ...255	3	14,15
...				

LEDs on receiver module

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

Transmit power jumper (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

Specifications

Specifications

Power supply

- Voltage: +18...34V
  Current: ___mA max.
- No electrical isolation

Climatic conditions

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

Increment inputs

- Requires A,B tracks
- 4-fold resolution
- Input frequency max. 2.5MHz
- Counter: 14-bit
- Software-based expansion to 64-bit floating point path measurement
- Level: 5V

Power supply outputs

- 5V +10%,-5%, 600mA max.

Inputs

- 32 inputs
- 5V, 5mA
- Switching threshold: 2V
- No electrical isolation

Ausgänge

- 24 P-channel FET outputs
- Continuous load: 5V, 250mA
- R_{on} = 1.3Ω
- U_{onmax} = 45V
- No electrical isolation

Mounting

- Printed circuit board mounting
- Dimensions:
  80 x 100 x 7mm (WxDxH)

Customized modifications are available as needed.

Connections

Board power supply

For the board power supply, a 3-phase rectifier without electrolytic capacitor will suffice. But to prevent interference, an electrolytic capacitor of 4,700 ... 10,000µF is recommended.

Shielded lines

If the incremental encoders are installed outside the control cabinet, or if the cable is longer than 1m, it is essential to install them with shielded lines. The shield must be connected at both ends (connect to housing).
Possibly, a bonding conductor will have to be installed.

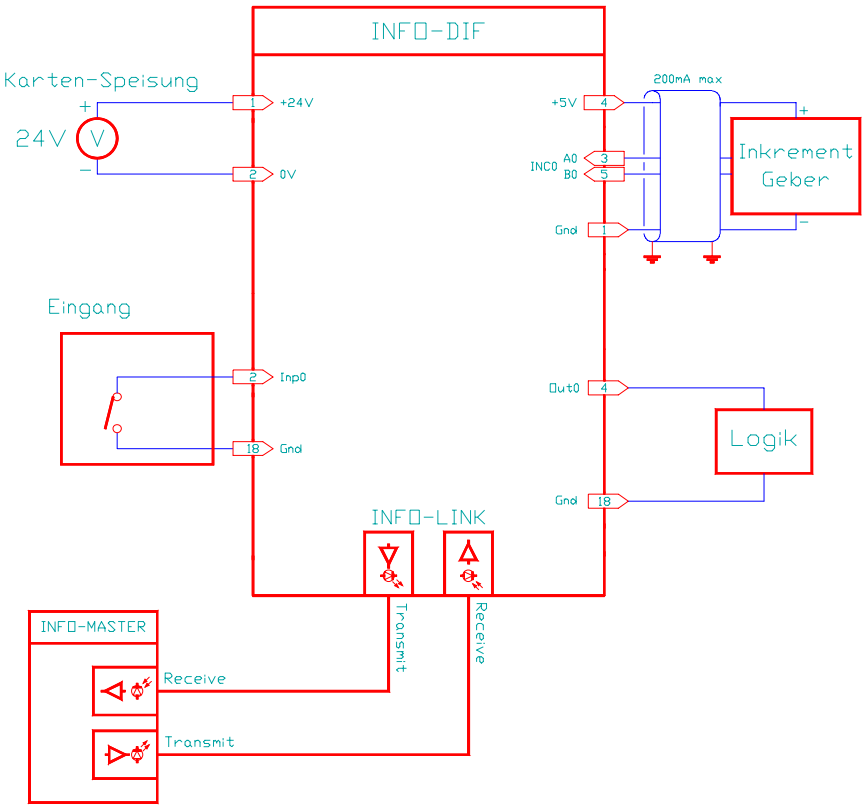
Digital inputs and outputs

The digital inputs and outputs are designed for operation inside the control cabinet and for a maximum length of 1m. If these conditions cannot be satisfied, the manufacturer recommends the use of shielded lines.

Power supply of the encoders

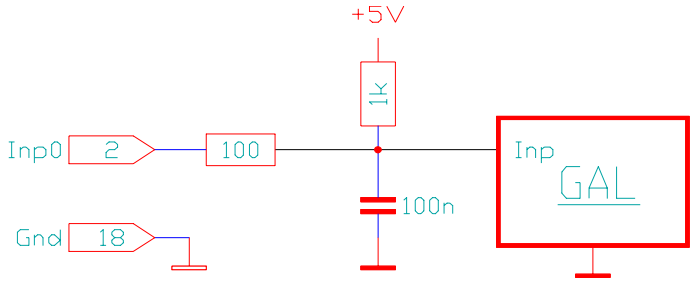
The DC/DC converter on the board also ensures the +5V power supply to the incremental encoder. A special power supply is therefore not needed for these encoders.

Connection Example

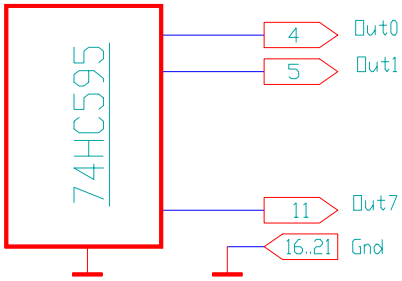


Interfaces

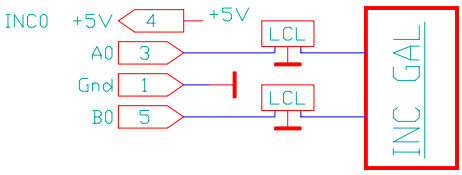
Digital inputs



Digital outputs



Incremental encoder inputs



Wiring

Inputs

The inputs are designed as standard for 5V signals with TTL level.

Outputs

The outputs supply a TTL signal.

Incremental encoder inputs

The incremental encoder inputs are operated with 5V signals. The 5V power supply for the incremental encoders is provided on the board: I_{max} = 200 mA per incremental encoder.

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