# Inline terminal:
# 8 digital inputs, 24 V DC
# ILT 24 DI8/HD

## Device description




SysMik® GmbH Dresden

This manual is intended to provide support for installation and usage of the device. The information is believed to be accurate and reliable. However, SysMik GmbH Dresden assumes no responsibility for possible mistakes and deviations in the technical specifications. SysMik GmbH Dresden reserves the right to make modifications in the interest of technical progress to improve our modules and software or to correct mistakes.

We are grateful to you for criticism and suggestions. Further information (device description, available software) can be found on our homepage www.sysmik.de. Please ask for latest information.

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# Contents

# 1 Description

**Note:** This device description is only valid in association with the IL SYS INST UM user manual.

Make sure you always use the latest documentation – it can be downloaded at www.sysmik.de.

This terminal is designed for use within an Inline station. It is used to acquire digital signals.

**Features**

- Connections for 8 digital sensors
- Connection of sensors single-wire technology
- Diagnostics and status indicators

# 2 Order information

| Description | Type | Part number | Pcs./Pkt. |
|---|---|---|---|
| Inline digital input terminal; complete with accessories (connector and labeling field); 8 inputs, 24 V DC, single-wire-connection | ILT 24 DI8/HD | 1225-100541-01-0 | 1 |

# 3 Technical data

| General data | |
|---|---|
| Housing dimansions (width x height x depth) | 12,2 mm x 119,8 mm x 71,5 mm |
| Weight | 60 g (incl. connector) |
| Operating mode | Process data mode with one byte |
| Ambient temperature (operation) | -25 °C to +55 °C |
| Ambient temperature (storage / transport) | -25 °C to +85 °C |
| Permissible humidity (operation / storage / transport) | 10 % to 95 %, according to DIN EN 61131-2 |
| Permissible air pressure (operation / storage / transport) | 70 kPa to 106 kPa (up to 3000 m above sea level) |
| Degree oft protection | IP20 |
| Protection class | III, IEC 61140, EN 61140, VDE 0140-1 |
| Transmission speed (Inline local bus) | 500 kBit/s |
| **Connection data (connector)** | |
| Connection method | Spring-cage connection |
| Conductor cross section | 0,08 mm² to 1,5 mm² (sollid / stranded), AWG 28-16 |

| Power consumption | |
|---|---|
| Main circuit supply $U_M$ | 24 V DC |
| Current consumption from $U_M$ | max. 8 A DC |
| Segment supply voltage $U_S$ | 24 V DC (Nomina value) |
| Current consumption from $U_S$ | max. 5,5 mA DC |
| Communications power $U_L$ | 7,5 V DC |
| Current consumption from $U_L$ | max. 30 mA DC |
| Power consumption | max. 0,25 W (at $U_L$) |
| Power loss | max. 0,72 W |

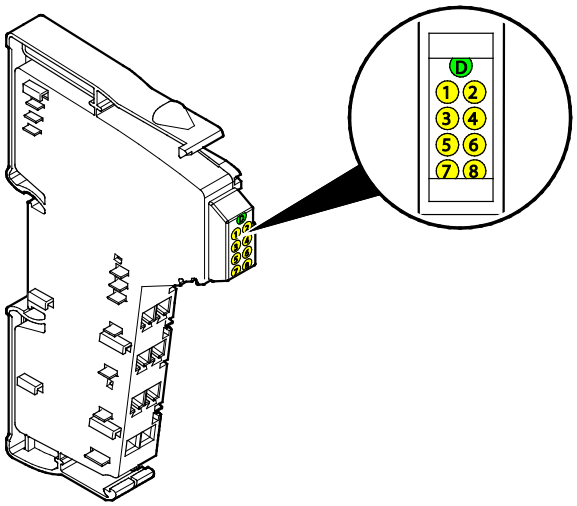
| Digital inputs | |
|---|---|
| Number of inputs | 8 |
| Connection method | Spring-cage connection |
| Connection method | 1-wire |
| Description of the input | EN 61131-2 types 1 and 3 |
| Nominal input voltage | 24 V DC |
| Nominal input current | typ. 2,4 mA |
| Input voltage range "0" signal | -3 V DC ... 5 V DC |
| Input voltage range "1" signal | 11 V DC ... 30 V DC |
| Delay at signal change from 0 to 1 | 1 ms |
| Delay at signal change from 1 to 0 | 1 ms |
| Permissible conductor length to the sensor | 30 m |

| Potenzialtrennung/Isolation der Spannungsbereiche | |
|---|---|
| **Note:** To achieve electrical isolation between the logic level and the I/O area, supply these areas from separate power supply units. Interconnection of the power supply units in the 24 V area is not permitted (see also application description)! | |
| 5 V supply incoming remote bus / 7.5 V supply (bus logic) | 500 V AC, 50 Hz, 1 min. |
| 5 V supply outgoing remote bus / 7.5 V supply (bus logic) | 500 V AC, 50 Hz, 1 min. |
| 7.5 V supply (bus logics) / 24 V supply (I/O) | 500 V AC, 50 Hz, 1 min. |
| 24 V supply (I/O) / functional earth ground | 500 V AC, 50 Hz, 1 min. |

| Approvals |
|---|
| Fort he latest approvals please visit www.sysmik.de. |

# 4 Local diagnostic and status indicators and terminal point assignment

## 4.1 Local diagnostic and status indicators



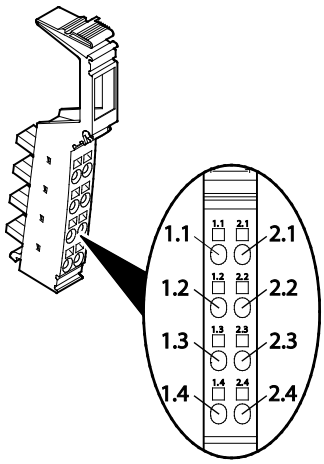

| Des. | Color | Meaning |
|---|---|---|
| **D** | Green | Diagnostics (bus and logic voltage) |
| **1, to 8** | yellow | Status of the inputs |

**Fig. 1: Local status and diagnostic indicators**

## 4.2 Functional identification

Light blue

## 4.3 Terminal point assignment




| Terminal point | Assignment |
|---|---|
| **1.1 / 2.1** | Signal input (IN 1 / IN 2) |
| **1.2 / 2.2** | Signal input (IN 3 / IN 4) |
| **1.3 / 2.3** | Signal input (IN 5 / IN 6) |
| **1.4 / 2.4** | Signal input (IN 7 / IN 8) |

**Fig. 2: Terminal point assignment**

# 5 Internal circuit

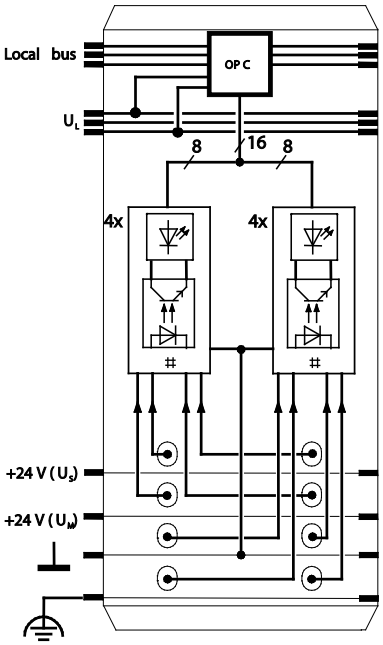
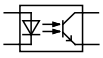



Fig. 3: Internal wiring of the terminal points

Key:


Protocol chip
(Bus logic inclusive voltage conditioning)

LED



Optocoupler

Digital input

**Note:** Explanation for other used symbols is provided in the IL SYS INST UM E manual.

# 6 Connection notes and examples

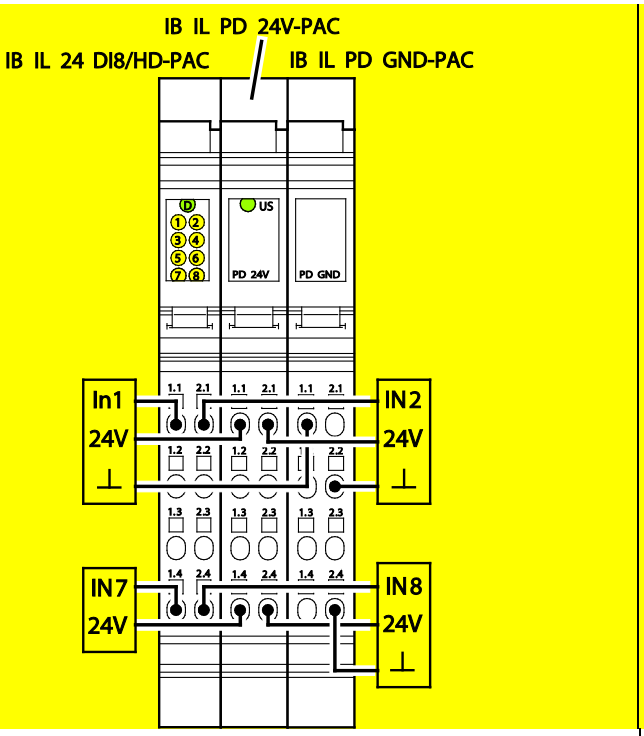



Fig. 4: Typical connection of sensors when terminals for potential distribution are used

The sensors can also be connected via external busbars. Ensure that the sensors and $U_S$ are supplied from the same voltage supply!

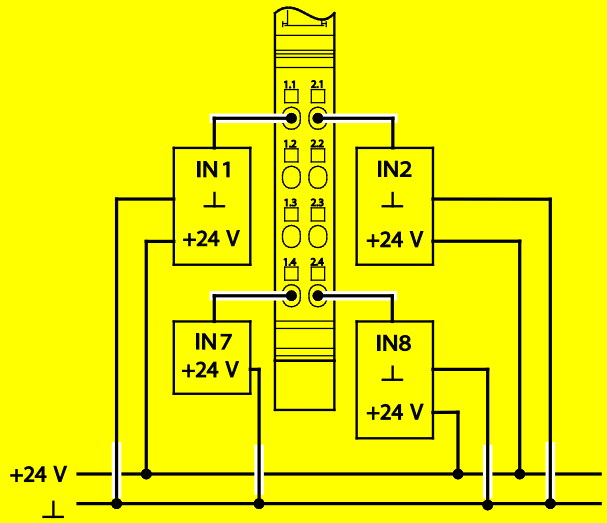



Fig. 5: Typical connection of sensors when using external busbars

**ATTENTION: Malfunction!**

The sensors and $U_S$ must be supplied from the same voltage supply.