

# Input/Output Box

For sensors and valves



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P 6

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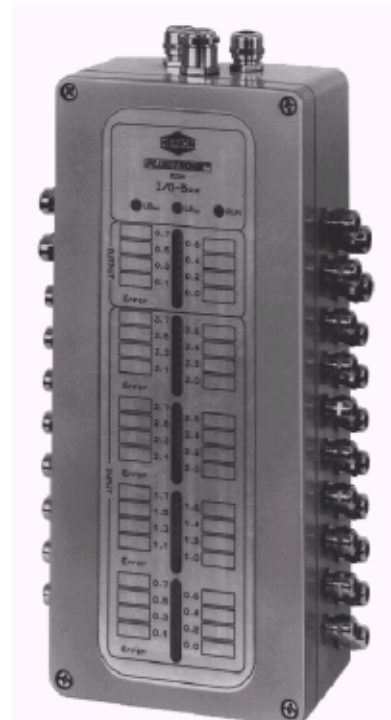
## Description

The I/O boxes are generally installed separately from the bus valve terminal. They are connected to the bus valve terminal by means of a cable with a max. length of 10 m. There is a choice of several versions, e.g.:

- Input box for 8 sensor inputs
- Input box for 16 sensor inputs
- Output box for 8 outputs (valves)
- I/O box for 8 outputs and 16 sensor inputs
- I/O box for 8 outputs and 32 sensor inputs

## Features

- Inputs for direct connection of pnp proximity switches using 3-wire technology
- Outputs, short-circuit-proof:  $I_{max} = 1A$
- Separate power supply for inputs and outputs
- Available in different sizes
- Conduit-thread connection
- LEDs
- Material: Housing of die-cast aluminium
- Degree of protection: IP 65

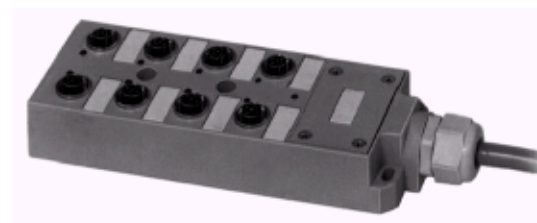


## Description

The module combines the sensor lines via an M12 plug connector. The main-line is connected to the valve terminal via the HERION bus module. The function of the inputs is indicated by LEDs.

## Features

- PBT housing material, not reinforced, V-0 to UL 94
- Temperature range:  $-20$  to  $+55^{\circ}C$
- Rated voltage: 10 to 30 VDC
- Rated current: 1 A
- LEDs: Green (indicating operation)  
Yellow (indicating function)



## Equipment survey

|                                            |                |
|--------------------------------------------|----------------|
| Input/output box                           | Cat. No.       |
| Input box for 8 sensor inputs              | <b>5980209</b> |
| Input box for 16 sensor inputs             | <b>5980212</b> |
| Output box for 8 outputs (valves)          | <b>5980208</b> |
| I/O box for 8 outputs and 16 sensor inputs | <b>5980210</b> |
| I/O box for 8 outputs and 32 sensor inputs | <b>5980211</b> |

## Technical data

|                                                          |                               |
|----------------------------------------------------------|-------------------------------|
| Ambient temperature range                                | 0 ... 50°C                    |
| Degree of protection to DIN 40050 (with connected cable) | IP 65                         |
| Electromagnetic compatibility                            | prEN 50082-2<br>Burst and ESD |

### Power supply for logic and sensorics

|                               |                                |
|-------------------------------|--------------------------------|
| $U_{B(IN)}$                   | 18 ... 32 VDC                  |
| Residual ripple               | 1 Vss max.                     |
| Current consumption, unloaded | 100 mA max.                    |
| Protective function           | Polarity independence          |
| Visual indication             | <sup>1)</sup>                  |
| Connection                    | Conduit-thread connector Pg 11 |

### Power supply for actuators

|                             |                                      |
|-----------------------------|--------------------------------------|
| $U_{B(OUT)}$                | 18 ... 32 VDC                        |
| Residual ripple             | 1 Vss max.                           |
| Power consumption, unloaded | 100 mA                               |
| Protective function         | Polarity independence                |
| Visual indication           | <sup>2)</sup>                        |
| Connection                  | Conduit-thread connector Pg 11       |
| Remote diagnosis            | Failure of power supply $U_{B(OUT)}$ |

## Technical data of individual modules

### SM 01 sensor module inputs

|                                 |                                                     |
|---------------------------------|-----------------------------------------------------|
| Supply voltage for sensor       | $\geq U_{B(IN)} - 3.5 \text{ V}$                    |
| Supply current per sensor       | 40 mA max.                                          |
| Number of inputs                | 8, 16, 32                                           |
| Signal level of sensor inputs   | H = 12 ... 32 VDC<br>L = 0 ... 6 VDC                |
| Input current per sensor (24 V) | 6 mA                                                |
| Signal delay                    | 7 ms                                                |
| Protective function             | Short-circuit proof by PTC<br>(I max. approx. 1 A)  |
| Visual display                  | Yellow LED: state<br>Red LED:<br>Cumulative failure |

|                                    |                                                      |
|------------------------------------|------------------------------------------------------|
| Remote diagnosis                   | Cumulative failure due to short-circuit and overload |
| Connection                         | Conduit-thread connector Pg 7 or M12                 |
| <b>TM 01 driver module outputs</b> |                                                      |
| Output voltage of actuators        | $\geq U_{B(OUT)} - 1.5 \text{ V}$                    |
| Output current per actuators       | 1.0 A max.                                           |
| Current load per module            | 8 A max.                                             |
| Number of outputs                  | 8                                                    |
| Output load                        | R or L                                               |
| Protective function                | Short-circuit proof and overload protection          |
| Visual display                     | Yellow LED: Condition<br>Red LED: Cumulative failure |
| Remote diagnosis                   | Cumulative failure due to short-circuit or overload  |
| Connection                         | Conduit-thread connector Pg 9                        |

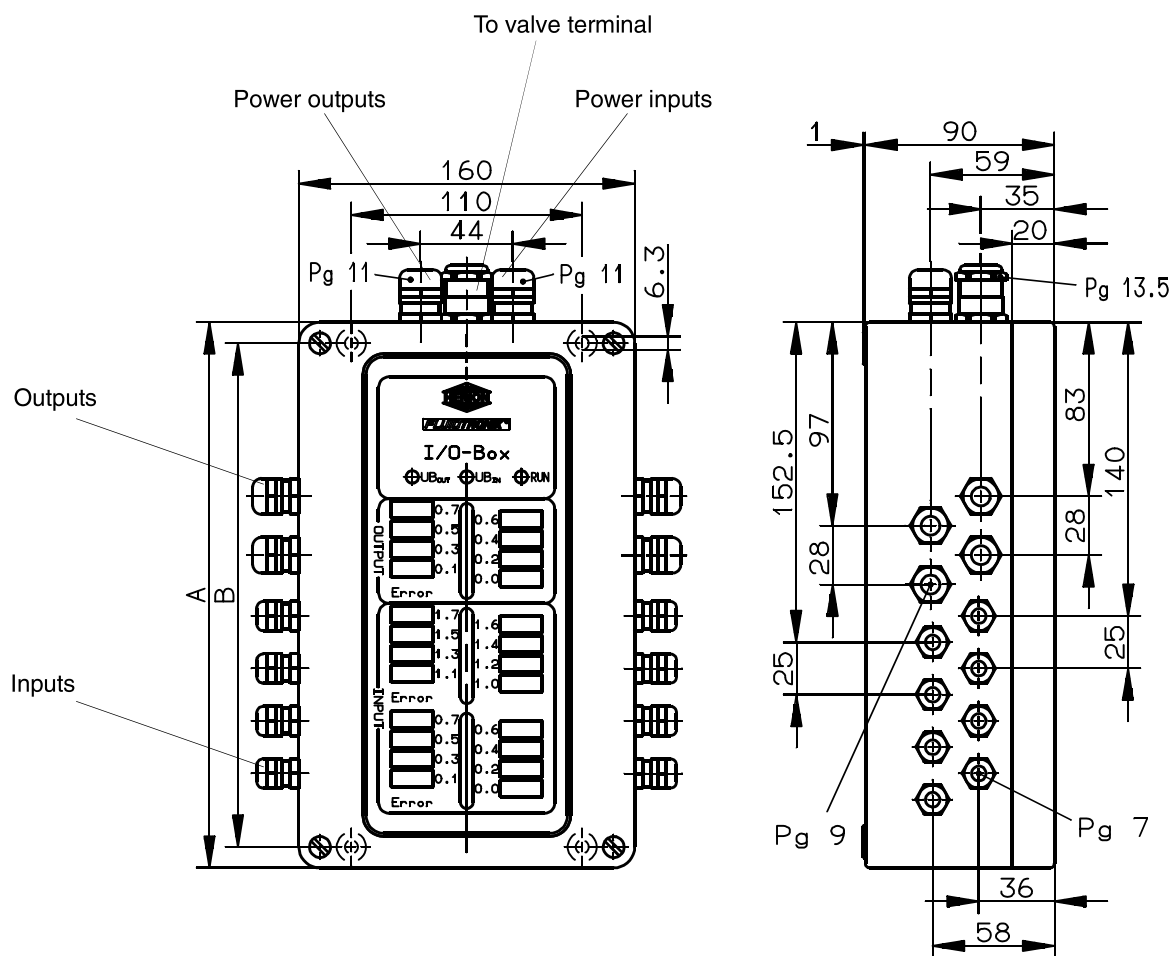
## Technical data for data transmission to E-box

|                              |                                                                                     |
|------------------------------|-------------------------------------------------------------------------------------|
| Line length                  | 10 m max.                                                                           |
| Recommended line             | Li2YCY 8 x 0.25                                                                     |
| Cycle times of data transfer |                                                                                     |
| – 8 outputs/32 inputs        | 3.0 ms                                                                              |
| – 8 outputs/16 inputs        | 2.1 ms                                                                              |
| – 8 outputs or 8 inputs      | 1.2 ms                                                                              |
| Protective function          | RESET of outputs in case of cable break, electrical isolation of data line to E-box |
| Visual display               | Green LED: Data transmission active (RUN)                                           |
| Remote diagnosis             | Cumulative failure due to cable break                                               |
| Connection                   | Conduit-thread connector Pg 13.5                                                    |

<sup>1)</sup> Green LED  $U_{B(IN)}$

<sup>2)</sup> Green LED  $U_{B(OUT)}$

## Dimensional drawing [mm]



## Dimensional table [mm]

| Input/output box                           | A   | B   | Cat. No.       |
|--------------------------------------------|-----|-----|----------------|
| Input box for 8 sensor inputs              | 160 | 140 | <b>5980209</b> |
| Input box for 16 sensor inputs             | 260 | 240 | <b>5980212</b> |
| Output box for 8 outputs (valves)          | 160 | 140 | <b>5980208</b> |
| I/O box for 8 outputs and 16 sensor inputs | 260 | 240 | <b>5980210</b> |
| I/O box for 8 outputs and 32 sensor inputs | 360 | 340 | <b>5980211</b> |

Input box for 8 inputs

Cat. No. 0795836

Technical data

|                      |                                                    |
|----------------------|----------------------------------------------------|
| Degree of protection | IP 67 to DIN 40050 in plugged-in and screwed state |
|----------------------|----------------------------------------------------|

Material data

|                        |                                |
|------------------------|--------------------------------|
| Material and housing   | PBT not reinforced V0 to UL 94 |
| Temperature range      | -20 ... +50 °C                 |
| Contact pins/apertures | CuZn, galvanized NiAu          |

Mechanical data

|                           |         |
|---------------------------|---------|
| Plug in cycles            | 50 s    |
| Pulling force per contact | > 0.4 N |

Ratings in accordance with VDE

|               |               |
|---------------|---------------|
| Rated voltage | 10 ... 30 VDC |
| Rated current | 1 A           |

LEDs

|      |                                                            |
|------|------------------------------------------------------------|
| LEDs | Green = Operational display<br>Yellow = Functional display |
|------|------------------------------------------------------------|

Dimensional drawing [mm]

