

**Description**

- Operation mode and max sensing range:  
**Thru-beam: 0-70 m**  
**Diffuse proximity: 0-4 m**
- 10-30 V dc and 24 V ac supply voltage
- Manual sensitivity adjustment
- Sensor LED-drive
- Automatic sensor test
- Adjustable on/off time delay
- 1 relay or 1 transistor output
- Switch selectable light or dark function
- Switch selectable long or short range
- Test input
- Power, output, alarm, signal level and master/slave address indicators
- Alarm output
- DIN rail mounting with bus function



The PAB 10 is a 1-channel photoelectric amplifier, which is to be used in conjunction with a set of remote transmitter LT and receiver LR from the series 100, 110 and 120.

This amplifier series offers manual sensitivity adjustment via an integral potentiometer located on the front panel of the amplifier. Output can be selected from either a relay or transistor output, with an adjustable 0-10 sec on/off time delay. Light or dark function and long or short range are switch selectable.

The amplifiers from the PAB 10 A series can be connected together with up to 9 amplifiers from the PAB series via a bus rail connector positioned on the DIN rail, to form a modular master/slave system with up to a total of 28 channels. The bus connection enables communication between

the amplifiers, which allows the channels of all the amplifiers to be multiplexed ensuring that optical cross talk between channels is prevented and allows a common output from the amplifier modules. Both the PAB 10 A and PAB 10 S can share power supply via the bus connection.

The amplifier offers a test input, which is used for either disabling or enabling the transmitting power temporarily for test purposes. The amplifier includes an alarm output, which is used to indicate if the signal level is insufficient or if a sensor is faulty. The sensor LED drive powers the optional monitor LEDs available on the remote sensors – output (LT) and power (LR).

| Technical Data                   |            |  |               |
|----------------------------------|------------|--|---------------|
| Supply voltage                   |            | 10-30 V dc or 24 V ac  |               |
| Voltage tolerance                | ac         | +/- 10 %   |               |
| Current consumption              |            | Max. 1,7 W   |               |
| Output                           | Relay      | 250 V ac / 3 A, 120 V ac / 5A  |               |
|                                  | Transistor | 30 V dc / 100 mA   |               |
| Alarm output                     | Transistor | 30 V dc / 100 mA   |               |
| Power on indicator               |            | Green LED  |               |
| Output indicator                 |            | Yellow LED   |               |
| Signal level indicator           |            | Green LED  |               |
| Alarm indicator                  |            | Red / yellow LED   |               |
| LR sensor failure indicator      |            | Yellow LED   |               |
| LT sensor failure indicator      |            | Red LED  |               |
| Master/slave address indicator   | PAB 10 A   | Green / orange LED   |               |
| Sensor monitor LED drive         |            | Green monitor LED on receiver indicates 'Power ON'<br>Yellow monitor LED on the transmitter indicates 'PAB output activated' |               |
| Hysteresis                       |            | Approx. 35 %   |               |
| Operation frequency              | Relay      | Short range  | 21 Hz         |
|                                  |            | Long range   | 12 Hz         |
|                                  | Transistor | Short range  | 42 Hz         |
|                                  |            | Long range   | 17 Hz         |
| Response time $t_{ON} / t_{OFF}$ | Relay      | Short range  | 27 ms / 20 ms |
|                                  |            | Long range   | 45 ms / 38 ms |
|                                  | Transistor | Short range  | 12 ms / 12 ms |
|                                  |            | Long range   | 30 ms / 30 ms |
| Delay $t_{ON} / t_{OFF}$         |            | 0-10 sec, adjustable   |               |
| Housing material                 |            | Polyamide  |               |

**Environmental Data**

|                        |  |
|------------------------|--|
| Temperature, operation | -10 to +50 °C  |
| Temperature, storage   | -40 to +80 °C  |
| Sealing class          | IP 40  |
| Approvals              | CE  |

**Available Types**

| Model    | Connection                | Time Delay             | Bus Function                                | Supply Voltage | 10-30 V dc / 24 V ac |
|----------|---------------------------|------------------------|---|----------------|----------------------|
|          |                           |                        |   | Output         | Order Reference      |
| PAB 10 A | Removable screw terminals | On/Off delay 0-10 sec. | Master/Slave communication and Power supply | Relay          | <b>PAB 10 A 009</b>  |
|          |                           |                        |   | NPN            | <b>PAB 10 A 109</b>  |
|          |                           |                        |   | PNP            | <b>PAB 10 A 209</b>  |
| PAB 10 S |                           |                        | Power supply                                | Relay          | <b>PAB 10 S 009</b>  |
|          |                           |                        |   | NPN            | <b>PAB 10 S 109</b>  |
|          |                           |                        |   | PNP            | <b>PAB 10 S 209</b>  |

Note: Remote sensors and bus rail connector to be ordered separately.

**Applicable Remote Sensors and Ranges**

| Series | Amplifier Model | Mode        | Thru-beam   |            | Diffuse Proximity |            |
|--------|-----------------|-------------|-------------|------------|-------------------|------------|
|        |                 |             | Short range | Long range | Short range       | Long range |
| 100    | PAB 10 A/S      | Single      | 6 m         | 18 m       | 0,5 m             | 1,1 m      |
|        | PAB 10 A        | Bus Modular | 4 m         | 12 m       | 0,4 m             | 0,8 m      |
| 110    | PAB 10 A/S      | Single      | 13 m        | 40 m       | 0,9 m             | 2,7 m      |
|        | PAB 10 A        | Bus Modular | 9 m         | 27 m       | 0,7 m             | 1,7 m      |
| 120    | PAB 10 A/S      | Single      | 23 m        | 70 m       | 1,7 m             | 4,0 m      |
|        | PAB 10 A        | Bus Modular | 16 m        | 47 m       | 1,2 m             | 2,6 m      |

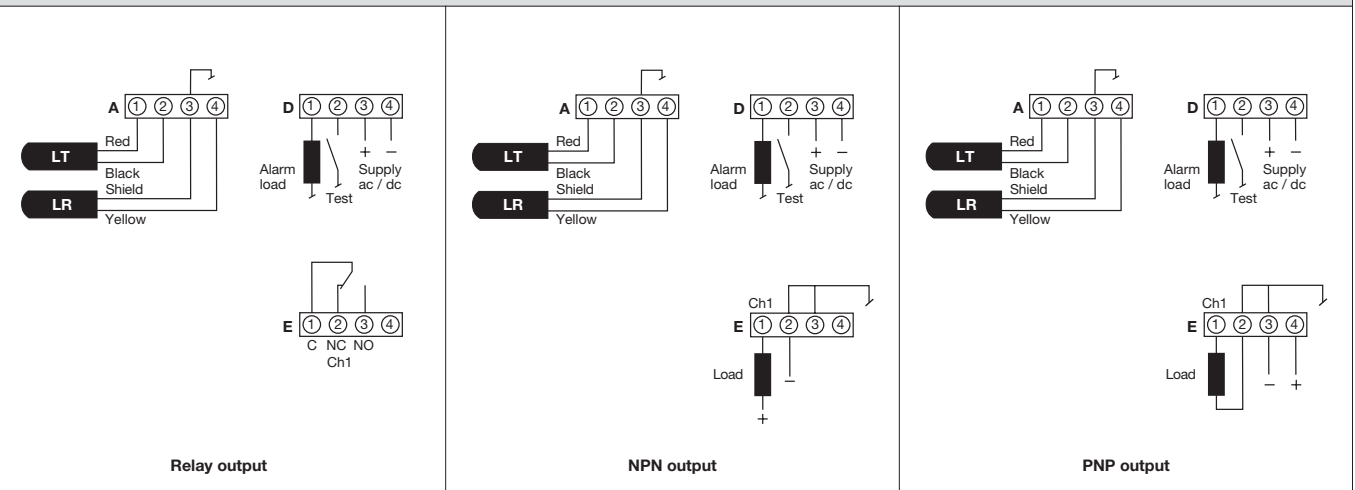
**Response Times in Bus Connection**

**PAB 10 A**

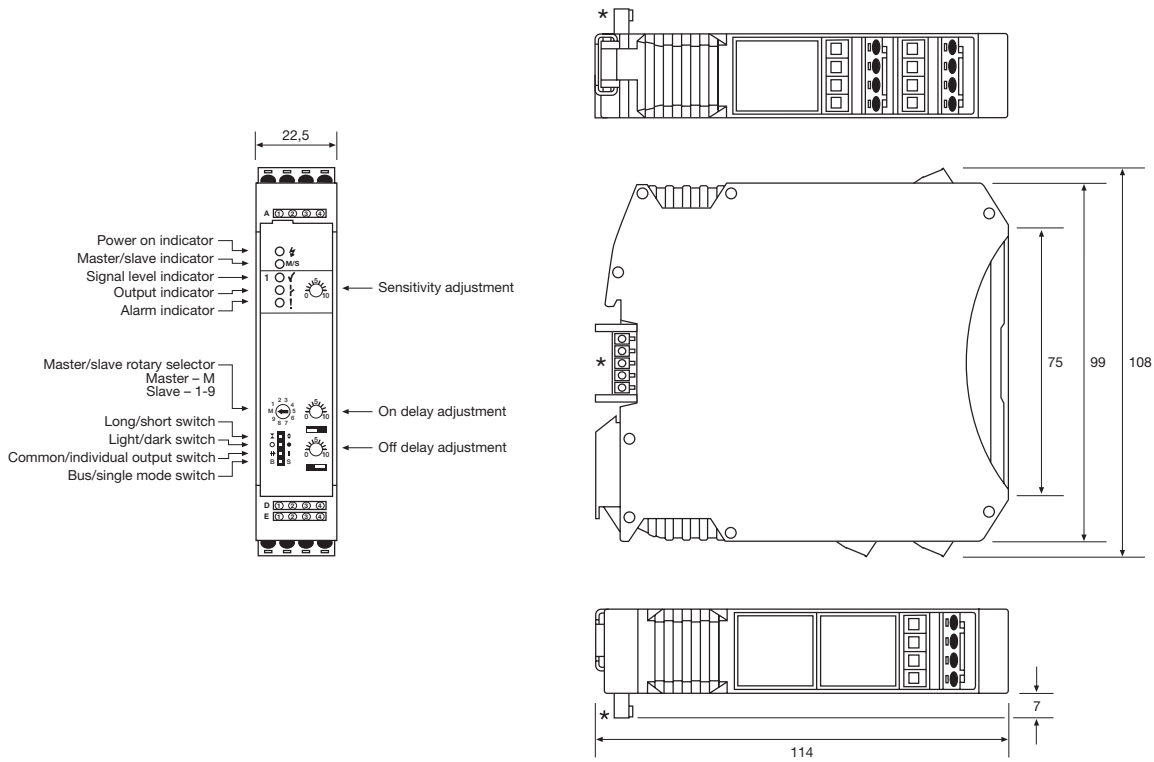
| Response time | $t_{ON}$            | Relay   |  | Transistor                    |                                |
|---------------|---------------------|---|--|-------------------------------|--------------------------------|
|               |                     | Short range                                   | Long range                                     | Short range                   | Long range                     |
|               |                     | $6 \text{ ms} \times (N + 1) + 15 \text{ ms}$ | $15 \text{ ms} \times (N + 1) + 15 \text{ ms}$ | $6 \text{ ms} \times (N + 1)$ | $15 \text{ ms} \times (N + 1)$ |
| Response time | $t_{OFF}$           | $6 \text{ ms} \times (N + 1) + 8 \text{ ms}$  | $15 \text{ ms} \times (N + 1) + 8 \text{ ms}$  | $6 \text{ ms} \times (N + 1)$ | $15 \text{ ms} \times (N + 1)$ |
|               | Operation frequency | $83 \text{ Hz} / (N + 2,9)$                   | $33 \text{ Hz} / (N + 1,8)$                    | $83 \text{ Hz} / (N + 1)$     | $33 \text{ Hz} / (N + 1)$      |

Note: "N" is equal to the total number of channels connected in the bus connection.

**Wiring Diagrams**

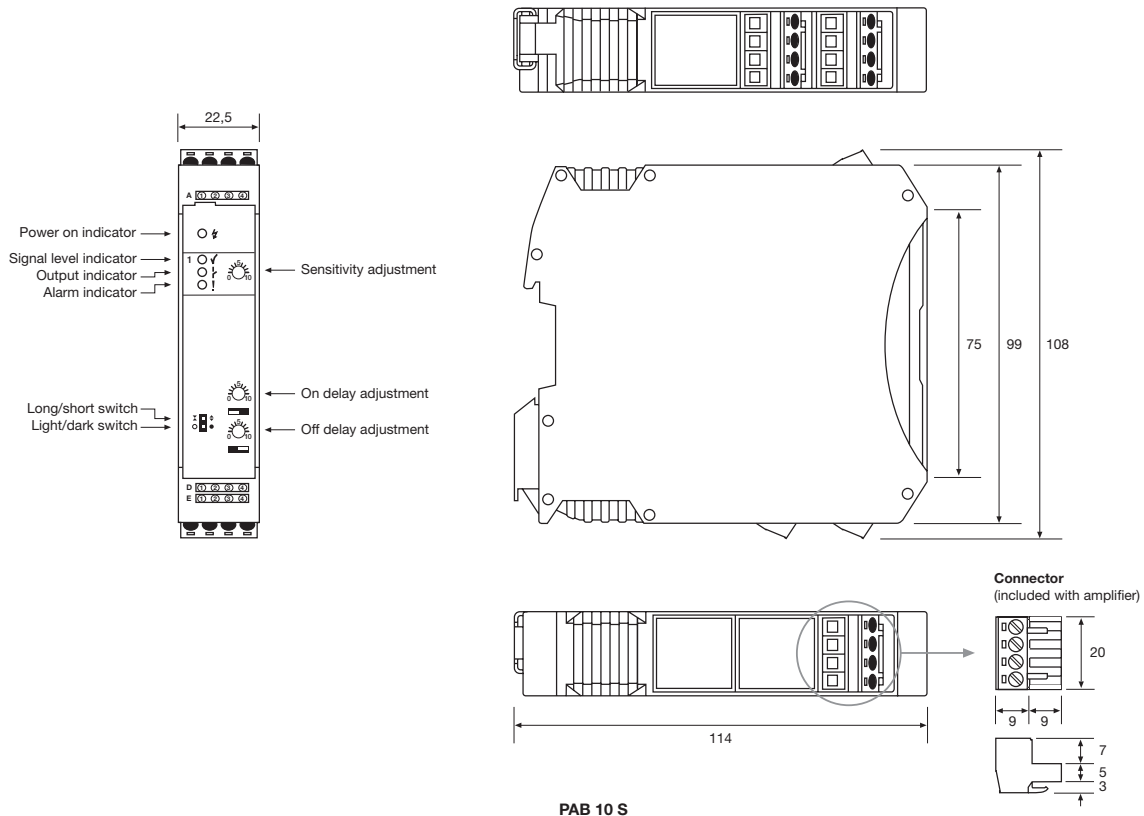


Dimensions and Descriptions



PAB 10 A

\* Shown with Bus Rail Connector 22.5 connected in position (to be ordered separately)



PAB 10 S

(Units in mm)

Telco reserves the right to change specifications without notice.