

**Product Data**

Electrical Data	
Supply voltage	15-30 V dc / 24V ac
Power consumption	Max. 2,5 W
Output: relay	250 VAC / 3 A, 120 VAC / 5 A
Output: transistor	PNP/NPN 30 V dc / 60 mA
Alarm output	12-30 V dc / 10 mA

Environmental Data	
Temperature, operation	-10 to +50 °C
Sealing class	IP 40
Approvals	CE

Applicable Remote Sensors & Sensing Ranges	
Series LT/LR	Sensing Range
100	18 m
110	40 m
120	70 m

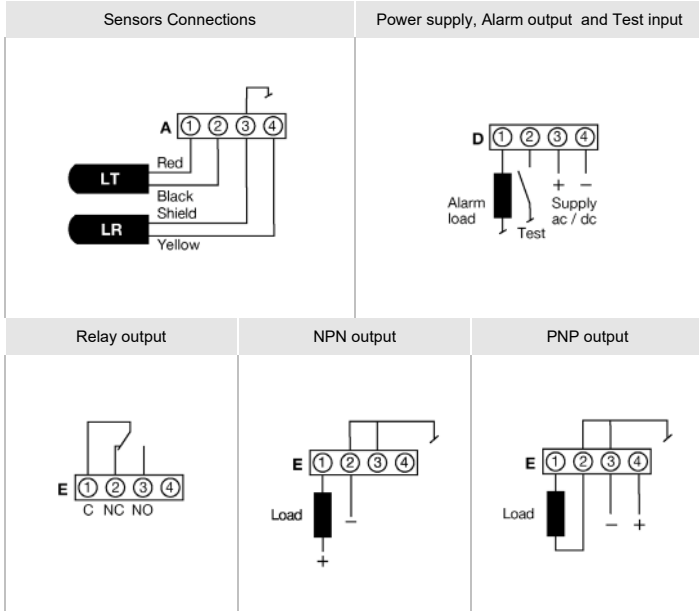
**Comments:**  
The range is reduced to 30 % in short range mode.

**Illustration**  
Please, refer to figure n° 1.

Indicators	
Power On	Green light when power is on
Signal OK	Green light when signal level is sufficient and light beam is unbroken
Output	Yellow light when output is activated
LT error	Red light flashes for light transmitter error (disconnection or shorted)
LR error	Red light flashes for light receiver error (disconnection or shorted)

**Connection**

**Wiring Diagrams**



Notice that the terminals can be pulled out as plugs.

**Connection Steps**

- 1 Check the power supply complies with electrical data.
- 2 Make sure power is off. Mount the amplifiers in the DIN rail.
- 3 Connect all wires to the terminals according to wiring diagrams.
- 4 Switch power on.

**Notes:**  
- The PNP output is supplied by connecting + to terminal E4.  
- The NPN output can optionally be supplied connecting + to the load and- to terminal E2 or E3.

**Bus Connection**

Up to 10 amplifiers can be supplied by one PPB power supply. Connect the amplifiers and the PPB power supply on the DIN rail using the special bus connectors.  
**Do not connect** wires for power supply to the amplifiers **only** to the PPB. The PPB will supply the amplifier through the bus.

**Adjustments**

Selectors			
Long/short range	<input type="radio"/> Long range	<input type="radio"/> Short range	
Light/dark operated	<input type="radio"/> Dark operated (NC)	<input type="radio"/> Light operated (NO)	

**Output Logic**

Detection (thru beam)	Output mode	Relay Output	Transistor output	Output indicator
Object present	Dark operated		Closed	On
	Light operated		Open	Off
Object absent	Dark operated		Open	Off
	Light operated		Closed	On

**Sensitivity Adjustment**

Sensitivity can be adjusted in two large steps with long/ short range selector or continuously with the potentiometer. Maximum sensitivity and long range can be used for most applications and is advised for applications with contaminated environments e.g. dirt, water and dust. Choose long range and increase the sensitivity to maximum by turning the potentiometer to full clockwise position.

More accurate sensitivity adjustment may be required in applications where objects to be detected are small or translucent. Proceed with the following steps:

- 1 Make sure there is no object present between remote transmitter and receiver sensors.
  - 2 Select long or short range according to application.
  - 3 Increase sensitivity slowly from minimum (full anti clockwise) until the yellow output indicator changes. Increase a little further until the green Signal OK indicator is on.
  - 4 Select target object with smallest dimensions and most translucent surface.
  - 5 Place target object between remote transmitter and receiver sensors. If the output changes, the sensitivity is adjusted correctly. If the output does not change proceed to step 6.
  - 6 Remove the object and decrease the sensitivity by turning the potentiometer counter clockwise until the green Signal OK indicator is off and the LT/LR error indicator are constantly on.
  - 7 Place target object between remote transmitter and receiver sensors. If the output changes the sensitivity is adjusted to suit the target but the adjustment is very delicate and not advisable, please contact your vendor for further information.
- If the signal level is low, the green LED (signal status) will go off. In general, it is recommended to increase the sensitivity till the LED goes on and to check the following:
- Check alignment of sensors
  - Check transmitter and receiver sensors are within sensing range
  - Check sensor heads are not excessively contaminated

**Potentiometers**

Sensitivity	Range adjustment
On delay	Delay on activation of output can be adjusted between 0 s and 10 s
Off delay	Delay on de-activation of output can be adjusted between 0 s and 10 s

**Test Input**

The transmitter is disabled if the test input is connected to the internal ground . Make sure no object is present in the detection area, between remote transmitter and receiver sensor, when test is activated. When the transmitter is disabled, a change in output will occur.

**Alarm output**

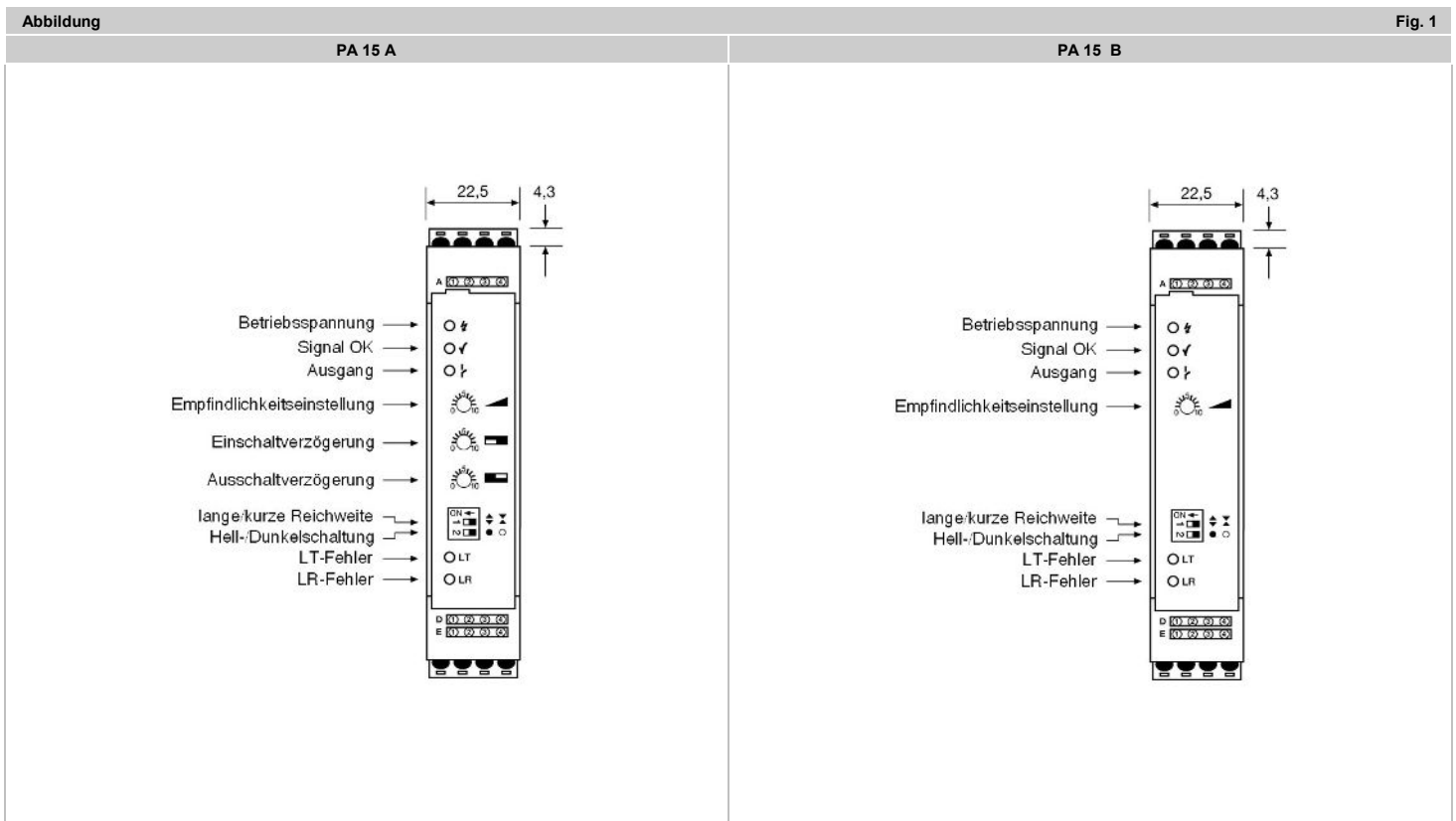
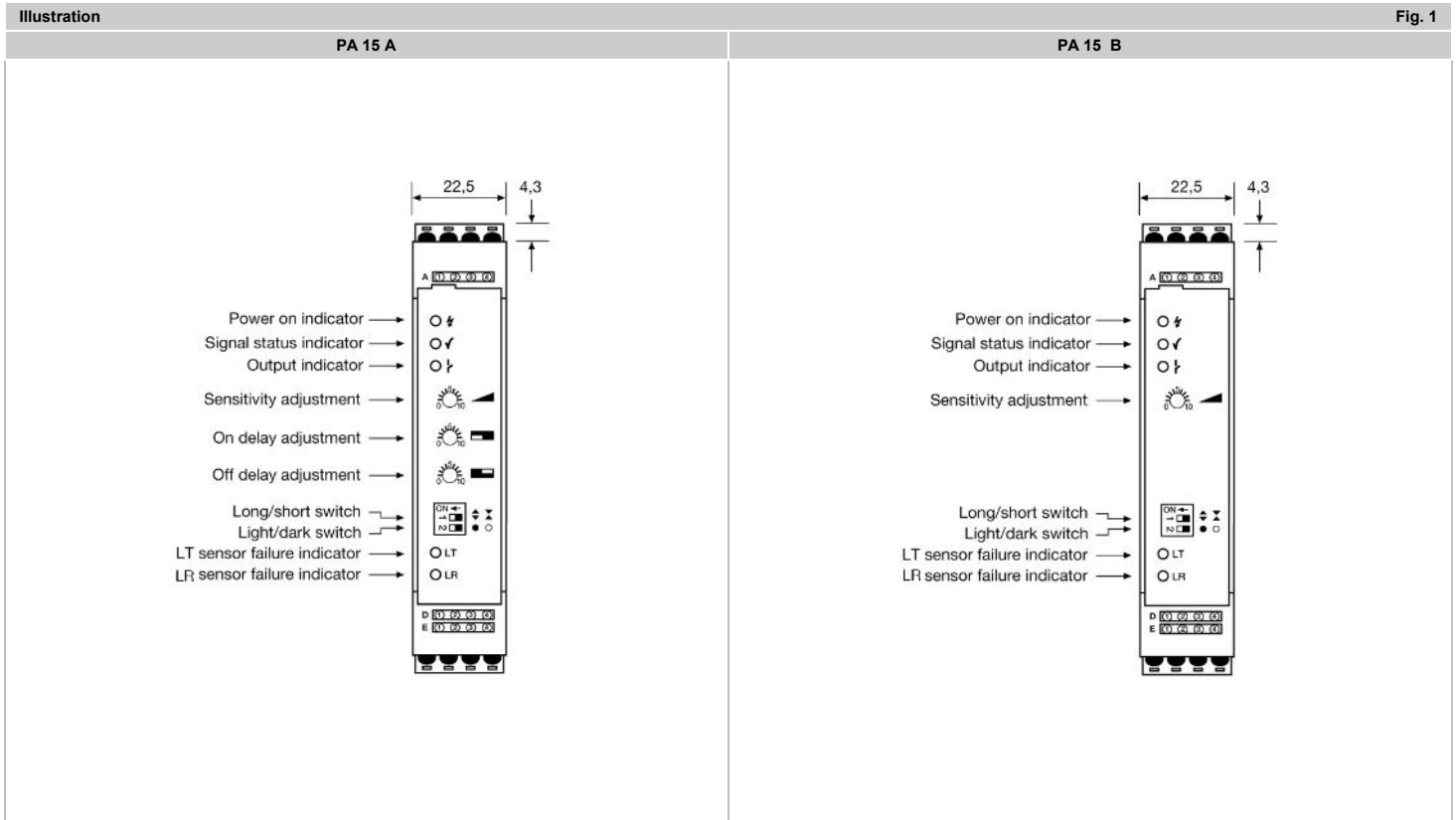
The alarm output of D1 is ON (high for PNP and relay output types and low for NPN output type) if the amplifier does not indicate errors and OFF if it indicates an error. The indicated errors are:  
- LT/LR error, the alarm output is flashing ON/OFF  
- Insufficient signal level, the alarm output is OFF.

**Time Delay Adjustment**

The on delay enables output signal to only activate if an object in the detection area is present for the adjusted time period. The off delay enables output signal to remain activated for the adjusted time period. The time delay is adjustable between 0-10 s.



**Warning**  
This device is not to be used for Personnel Protection in Machine Guarding Safety applications. This device does not include the self-checking redundant circuitry necessary to allow its use in personnel machine guarding stand-alone safety applications.



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