

Product Data	
Electrical Data	
Supply voltage	10-30 V dc / 24V ac or 90-240 V ac
Power consumption	Max. 3.6 VA
Output: relay	250 VAC / 3 A, 120 VAC / 5 A
Output: transistor	PNP/NPN 30 V dc / 100 mA
Alarm output	PNP/NPN 30 V dc / 100 mA
Environmental Data	
Temperature, operation	-10 to +50 °C
Sealing class	IP 40
Approvals	

Applicable Remote Sensors & Sensing Ranges		
Remote Sensor Series	Sensing Range	
	PAB 20 & PAB 30 (2 and 3 channels multiplexed)	PAB 10 (1 channel)
100	12 m	18 m
110	27 m	40 m
120	47 m	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 is sufficient and beam is unbroken
Output	Yellow light when output is activated
LT/LR error	Red light for light transmitter error (disconnection or shorted)
	Yellow light for light receiver error (disconnection or shorted)
	Yellow and red light flashes for insufficient signal level (for instance caused by contamination on sensors)

Connection

Wiring Diagrams
 Please, refer to figure n°2.

- Connection Steps**
- 1 Check the power supply complies with electrical data.
 - 2 Make sure power is off. The amplifiers can be powered using the terminal D3 and D4 or through the bus connector, for instance, using a PPB power supply or from another amplifier with the terminals D 3 and D 4 already connected (powered).
 - 3 Mount the amplifiers in the DIN rail. And connect all wires to the terminals according to wiring diagrams.
 - 4 Select the mode of operation. Switch power on.

Notes:
 - The PNP output can optionally be supplied connecting + to terminal E4 and connecting - to the terminals E3 on PAB 10 and F4 on PAB 20 and PAB 30.
 - **The amplifiers model X08 (ac version) cannot power other units through the bus.**

Adjustments

Selectors				
Short / Long range	<input type="checkbox"/>	Short range	<input type="checkbox"/>	Long range
Light / Dark operated	<input type="checkbox"/>	Light operated	<input type="checkbox"/>	Dark operated
Common / Individual (Only in PAB 20 & PAB 30)	<input type="checkbox"/>	Common output	<input type="checkbox"/>	Individual outputs

Output Logic				
Detection (thru beam)	Output mode	Relay Output	Transistor Output	Output indicator
	Dark operated		Closed	On
	Light operated		Open	Off

	Dark operated		Open	Off
	Light operated		Closed	On

Sensitivity Adjustment

The 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.

Chose 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 correct. If the output do 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 flashes simultaneously with red and yellow light
 - 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 LT/LR error indicator flashes simultaneously with red and yellow light. Check the following:
- Alignment of sensors
 - Transmitter and receiver sensors are within sensing range
 - Sensor heads are not excessively contaminated

Available Models

Models	Output	N° of channels	Common output
PAB 10 S	00x Relay	1	N/A
	10x NPN		
	20x PNP		
PAB 20 S	00x Relay	2 (Multiplexed)	Yes
	10x NPN		
	20x PNP		
PAB 30 S	00x Relay	3 (Multiplexed)	Yes
	10x NPN		
	20x PNP		

Test Input

The transmitter is disabled if the test input is connected to the internal ground (A3). 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 voltage of D1 is high if the amplifier does not indicate errors and low if it indicates an error. The indicated errors are: LT/LR error and insufficient signal level. In the case of insufficient signal level the alarm output is flashing.

Turning off a channel

On the PAB's amplifiers is possible to turn off its channels. This is done by turning the sensitivity potentiometer fully anti clock wise. The channel will then be completely ignored by the PAB.

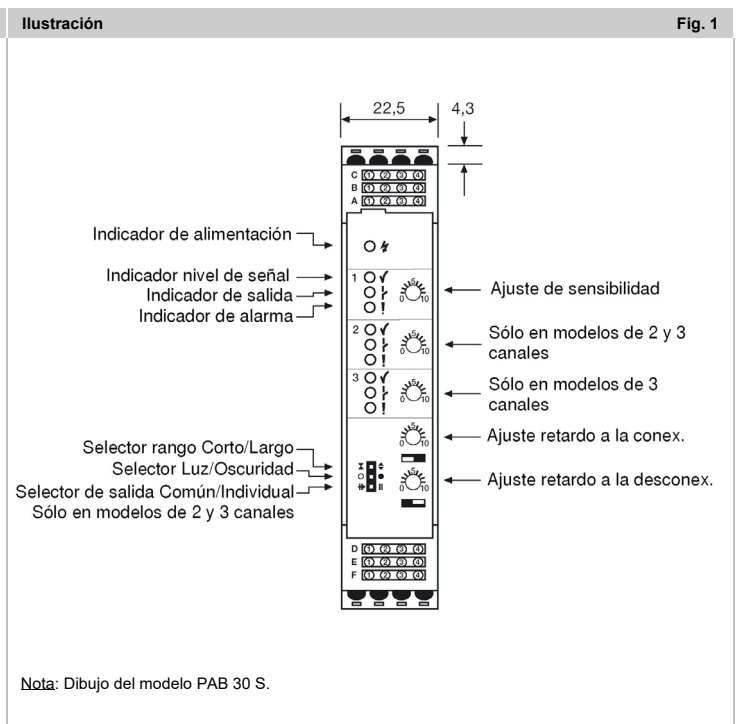
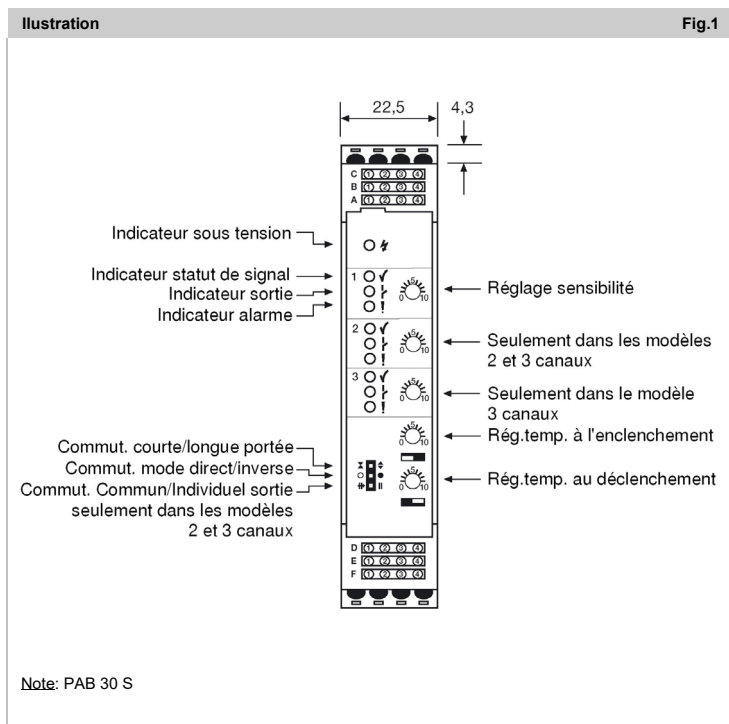
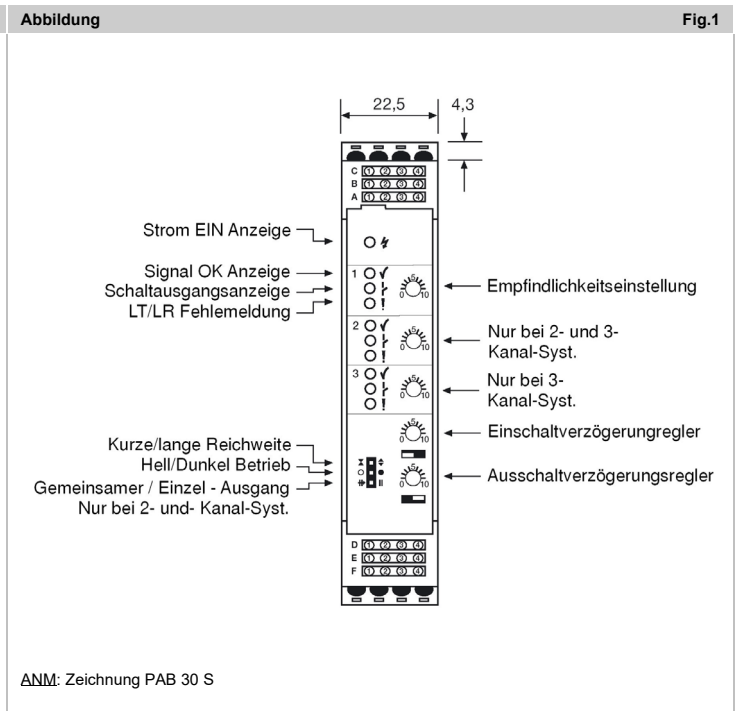
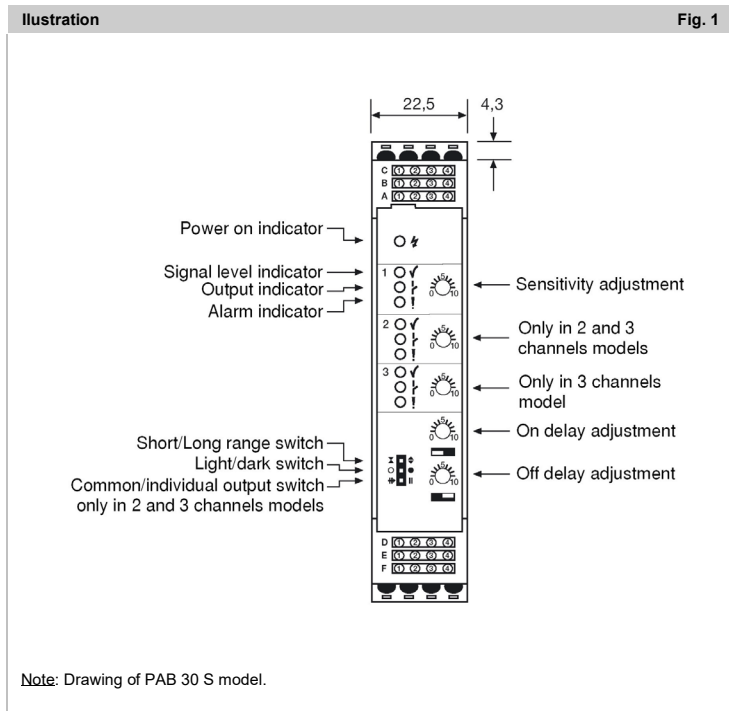
On the 2 and 3 channels model, if one channel (on PAB 20) or two channels (on PAB 30) are turned off, the PAB will function as a 1 channel amplifier. Consequently the PAB will be non-multiplexed and have sensing range accordingly.

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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Connections			
PAB 10			
Sensors Connections	Relay output (PAB 10 S 00x)	NPN output (PAB 10 S 10x)	PNP output (PAB 10 S 20x)
PAB 20			
Sensors	Relay output (PAB 20 S 00x)	NPN output (PAB 20 S 10x)	PNP output (PAB 20 S 20x)
PAB 30			
Sensors	Relay output (PAB 30 S 00x)	NPN output (PAB 30 S 10x)	PNP output (PAB 30 S 20x)