

Photoelectrics Amplifier Type S142B..

CARLO GAVAZZI



- μ -Processor controlled
- Amplifier relay for photoelectric switches
- Automatic or manual emitter power regulation
- Self-diagnostic functions
- Alignment help
- Rated operational voltage:
24 VAC/DC, 24 VAC, 115 VAC or 230 VAC
- Output 8 A/250 VAC SPDT relay and 100 mA NPN
- LED indication: Automatic gain, output, level, emitter or receiver fault



Product Description

μ -Processor controlled amplifier for one set of photoelectric sensors, type MOFTR. Utilising an 11-pin circular plug for easy connection. 8 A SPDT relay output, NPN / PNP transistor output or alarm output. Diagnostics for sensor test during opera-

tion. Alignment help via LED or alternation of alarm output. Level indication for dirt accumulation. Manual or automatic emitter power regulation. Two emitter codes available for high neighbour immunity. ON- or OFF delay adjustable up to 10 sec.

Ordering Key

S142 B RNN 924

Type _____
 Special function _____
 Output type _____
 (R-Relay, N-NPN, P-PNP, T-Test)
 Power supply _____

Type Selection

Function diameter	Ordering no. Supply: 24 VAC/DC	Ordering no. Supply: 24 VAC	Ordering no. Supply: 115 VAC	Ordering no. Supply: 230 VAC
NPN output & Test input	S142 B RNT 924		S142 B RNT 115	S142 B RNT 230
NPN output & Alarm output	S142 B RNN 924¹⁾	S142 B RNN 024¹⁾	S142 B RNN 115¹⁾	S142 B RNN 230¹⁾
PNP out., PNP Alarm & Test	S142 B PPT 924		S142 B PPT 115	S142 B PPT 230

¹⁾ Amplifier replacement for S1421156xxx
 All amplifiers is with ON & OFF delay

Specifications

Rated operational voltage (U_B) Pins 2 & 10	230	195 to 265 VAC, 45 to 65 Hz	Test input (Mute) Emitter Enabled Emitter Disabled I _{max} @ 40 VDC	NPN	> 5.0 VDC
	115	98 to 132 VAC, 45 to 65 Hz		PNP	< V _{CC} - 3 VDC
	024	20.4 to 27.6 VAC, 45 to 65 Hz			> V _{CC} - 5 VDC
	924	20.4 to 27.6 VAC/DC Class 2			1 mA
Rated operational power	AC supply	3.3 VA	Protection output transistor	Reverse polarity, short circuit and transients	
	AC/DC supply	1.6 VA / 1.4 W			
Delay on operate (t_v)		< 300 mS	Supply to sensors		
Outputs				Emitter	Pins 5 & 7 15 V square wave < 450 mA, short circuit protected
Relay Rating (AgCdO)	Resistive loads	AC1	μ (micro gap) 8 A / 250 VAC (2500 VA)	Supply voltage (open loop) Current	10 Ω
		DC1			
	or		2 A 25 VDC (50 W)	Output resistance	Pins 6 & 8
Electrical life (typical)	AC1	> 100.000 operations	> 100.000 operations		
Transistor output data	Output current	(I _e)	< 100 mA @ 40 VDC	Short-circuit current	10 mA
			(max. load capacity 100 nF)		
Voltage drop	(U _d)	< 2,5 VDC @ 100 mA			
Output function			Make or break on DIP-switch		
Relay			SPDT		
Transistor			NPN / PNP, 100 mA, 40 VDC		
Alarm			NPN / PNP, 100 mA, 40 VDC		
			Delay on alarm 10 sec		

Specifications

Emitter power Power	Settings on DIP switch no 4, 50 % or 100 % range	Transistor output	5 Hz min delay
Adjustment Manual Automatic (Auto LED ON)	240° Potentiometer Potentiometer settings to minimum	Response time OFF-ON (t_{ON}) ON-OFF (t_{OFF})	0.1 – 10 s 0.1 – 10 s
Sensing distance	Maximum range indicated on photoelectric switch data- sheets in 100 % settings	Environment Overvoltage category Degree of protection Pollution degree	III (IEC 60664) IP 20 /IEC 60529, 60947-1) 3 (IEC 60664/60664A, 60947-1)
Rated insulation voltage (U_i)	250 VAC	Temperature Operating Storage	-20° to +50°C (-4° to +122°F) -50° to +85°C (-58° to +185°F)
Dielectric voltage	>2.0 KVAC (rms) (contacts / electronics)	Housing material	NORYL SE1, light grey
Rated impulse withstand volt.	4 kV (1.2/50 μ S) (contacts / electronics) (IEC 664)	Weight AC supply AC/DC supply	200 g 125 g
Operating frequency (f) Light / Dark ratio 1:1 Relay output	5 Hz min delay	Approvals CE marking	UL508, UL325, CSA EN12445, EN12453, EN12978

Specifications

Diagnostic

If a fault occurs on either the emitter or receiver the Alarm LED and output will turn ON.

Emitter fault

During normal operation the receiver is monitored for faults.

If the wires are short-circuited the "Code A, Yellow LED" flashes at a rate of 2 Hz.

If the wires are broken the "Code A, Yellow LED" flashes at a rate of 4 Hz.

Receiver fault

During normal operation the emitter is monitored for faults.

If the wires are short-circuited the "Code B, Green LED" flashes at a rate of 2 Hz.

If the wires are broken the "Code B, Green LED" flashes at a rate of 4 Hz.

Alignment

If the alignment DIP switch is set the Yellow Signal LED Flashes according to the signal quality.

Low frequency means weak signal.

Steady indication means maximum signal. On long distance it is not possible to get a steady signal but the alignment is optimal when the led flashes with the highest frequency.

On short distance the emitter power can be reduced using the potentiometer and then get better readings in the alignment LED.

The ALARM output will follow the Signal LED in align-

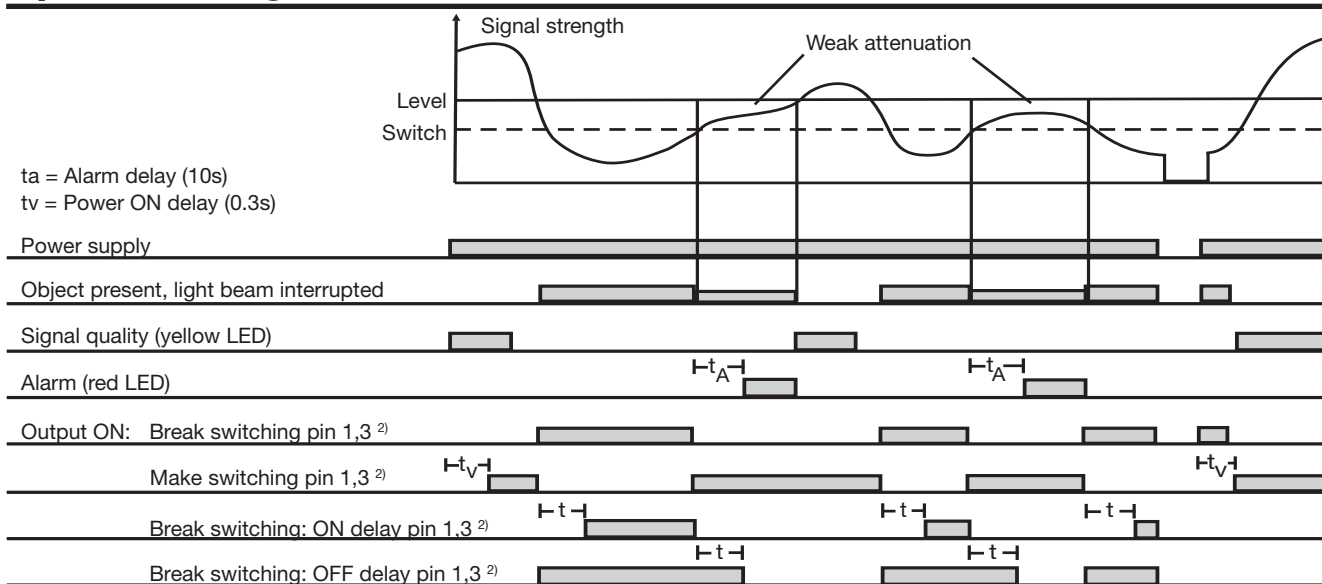
ment mode, so a Sensor tester (optional) can be connected to serve as a remote induction during alignment of the sensors.

NB! In alignment mode the output is off.

Code A or B

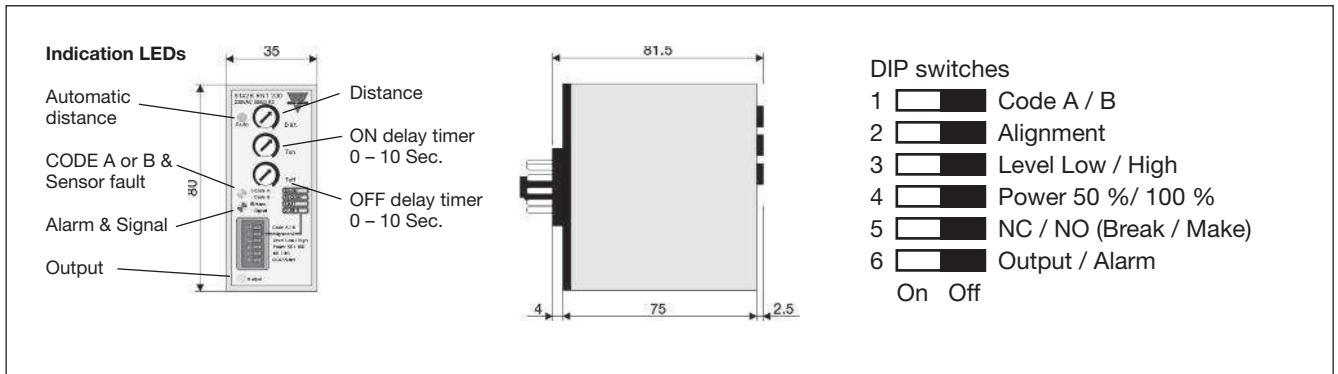
When two sensor pairs are mounted close to each other it is recommended to select one set to Code A and the other to Code B to avoid crosstalk.

Operation Diagram

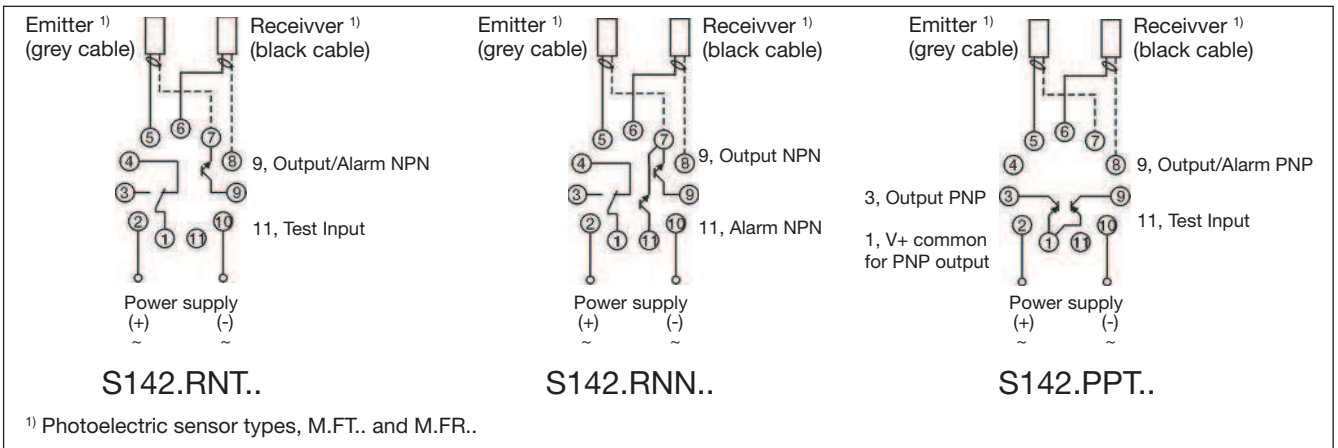


²⁾ Switching function selected by DIP-switch, inverted function on pin 1, 4

Dimensions



Wiring Diagram



Connection to sortester

Connection to sortester ST-03 for alignment

	Sortester		
	-	Signal	+
RNT Pin no.	10	9	
RNN Pin no.	10	11	
PPT Pin no.		9	2

Accessories

- 11 pole circular socket ZPD11
- Holding down spring HF
- Mounting rack SM13
- Front panel mounting bezel FRS2

Delivery Contents

- Amplifier
- **Packaging:** Carton box