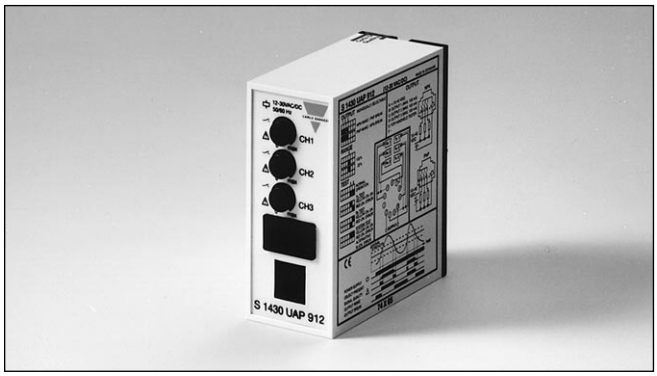
Photoelectrics
Amplifier, µ-Processor Controlled
Type S1430, 3 Inputs/3 Outputs

CARLO GAVAZZI



- **µ-Processor controlled**
- **Amplifier unit for 3 sets of photoelectrics**
- **3 independent outputs**
- **NPN/PNP both NO or NC selectable**
- **Self-diagnostic functions**
- **Alignment failure indication**
- **Multivoltage 12 to 30 VAC/DC**
- **Modulated and synchronized light**
- **Adjustable sensitivity for each channel**
- **LED indications: supply, outputs, signal quality**
- **11-pin plug-in housing**
- **For 115 or 230 VAC use power supplys S1430 PWS115 or S1430 PWS230**

Product Description

µ-Processor controlled amplifier for 3 sets of photoelectric sensors, type MOFTR, MKFTR, MIFTR or MHFTR. Utilising an 11-pin cirkular plug for easy connection, outputs freely selectable for NPN/PNP or NO/NC. Self-diagnostics for system test. Protected against short-circuits, reverse wiring or cross talk from adjecent photoelectrics. Multi-voltage power supply. Sensitivity is individually adjustable for each set of photoelectrics.

Ordering Key

S14 30 UAP 912

Type
Special function
Output type
Power supply

Type Selection

Plug type	Ordering no. Supply: 12 - 30 VAC/DC	Ordering no. Supply: 115 VAC	Ordering no. Supply: 230 VAC
Circular, 11 pins	**S 1430 UAP 912**	**S 1430 PWS 115 Power Supply for S 1430 UAP 912**	**S 1430 PWS 230 Power Supply for S 1430 UAP 912**

Specifications

Rated operational voltage U_B		
pins 2 & 10	DC	10.8 to 33 VDC
	AC	10.8 to 33 VAC, 45 to 65 Hz
Rated operational power		
AC supply		4 VA
DC supply		3 W
Power ON delay (t_v)		< 300 ms
Output function		NPN and PNP switching Make and break function DIP-switch selectable
Output current		
Continuous (I_e)		100 mA per output
Short-time (I)		100 mA max.
Min. load current (I_m)		0.5 mA
OFF-state current (I_r)		Max. 100 µA
Voltage drop (U_d)		≤ 3.5 VDC
Protection, outputs		Reverse polarity, short-circuit, transients
Supply to photoelectric switch		
Emitter		Tx1: Pin 1 Tx2: Pin 9 Tx3: Pin 6 Shield: Pin 11 (common)
Supply voltage (open loop)		7 V square wave
Current		≤ 300 mA short-circuit protected
Output resistance		10 Ω
Receiver		Rx1: Pin 4 Rx2: Pin 7 Rx3: Pin 8 Shield: Pin 5 (common)
Supply voltage (open loop)		5 VDC
Short-circuit current		10 mA
Input resistance		470 Ω
Sensitivity (% of S_n)		• 2 ranges, DIP-switch selectable - low sensitivity (25%) - high sensitivity (100%) • Sensitivity adjustment with 270°: Turn knob on CH 1, 2, 3
Note:		• Maximum range indicated on photoelectric switch data sheet in high sensitivity range only • Operation within low sensitivity range, increases ambient light and crosstalk immunity

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Specifications (cont.)

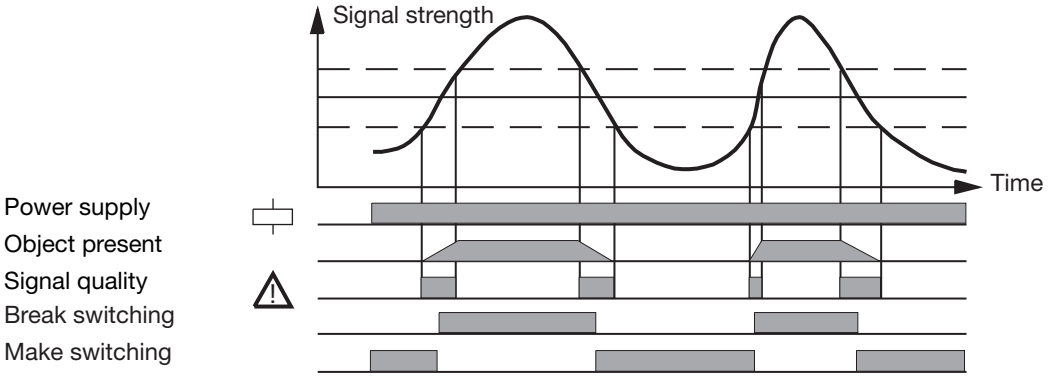
Operating frequency (f)	
Light/dark ratio 1:1	16 Hz
Response time	
OFF-ON (t_{ON})	20 ms
ON-OFF (t_{OFF})	20 ms
Indication	
Supply ON	LED, green
Output ON	LED, yellow
Signal quality	LED, red
Environment	
Overvoltage category	III (IEC 664)
Degree of protection	IP 20 (IEC 529, 947-1)
Pollution degree	3 (IEC 664/664A, 947-1)
Temperature	
Operating	-20° to +50°C (-4° to +122°F)
Storage	-50° to +85°C (-58° to 185°F)
Weight	150 g

Truth Table

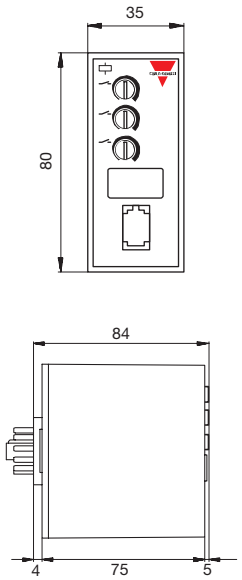
	Make switching			Break switching		
Object present	Yes	No	No	Yes	No	No
Dirt on lenses, misaligned or sensitivity too low	--	No	Yes[1)]	--	No	Yes[1)]
Output LED yellow	OFF	ON	ON	OFF	ON	ON
Level LED red	OFF	OFF	ON or flashing	OFF	OFF	ON or flashing
Output NPN/PNP	OFF	ON	ON	ON	OFF	OFF

[1)] Under normal operating conditions, the red level indication LED has to be OFF. The level indication LED will turn on shortly each time an object enters or exits the sensing zone, even if the photoelectric switch is correctly installed and adjusted.

Operation Diagram



Dimensions



DIP-switch (located behind cover):

1: PNP/NPN CH 1 output
2: PNP/NPN CH 2 output
3: PNP/NPN CH 3 output
4: Low sensitivity (25%) / high sensitivity (100%)
5: Test button, transmitters are transmitting, no short, wired correctly
6: Test button, receivers are receiving, no short, wired correctly
5+6 together: System test (transmitter and receiver)

sw 1, 2, 3:
- PNP make/NPN break
- NPN make/PNP break

sw 4:
- Range 25%
- Range 100%, normal operation

sw 5:
- Transmitter test
- Normal operation

sw 6:
- Receiver test
- Normal operation

sw 5+6:
- System test
- Normal operation

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Procedure for Test Functions (Dip-switch Selection)

Transmitter test
(pin 5 in the up position)
When pin 5 is placed in the up position all yellow and red LED's on the front of the unit will flash simultaneously. Once the test is completed (approx. 3 scans) and a wiring fault is detected, such as reverse polarity or short-circuit, the transmitter that has the fault condition will be indicated by the red LED being continuously ON. If a fault condition is not existing then only the yellow LED will be ON. If a fault exists, correct the fault condition and then repeat the test, this will ensure proper wiring has been done. Always reset **pin 5** for normal operation of system when testing completed.

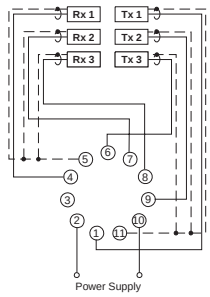
Receiver test
(pin 6 in the up position)
When pin 6 is placed in the up position all yellow and red LED's on the front of the unit will flash simultaneously. Once the test is completed (approx. 3 scans) and a wiring fault is detected, such as reverse polarity or short-circuit, the receiver that has the fault condition will be indicated by the red LED being continuously ON. If a fault condition is not existing then only the yellow LED will be ON. If a fault exists, correct the fault condition and then repeat the test, this will ensure proper wiring has been done. Always reset **pin 6** for normal operation of system when testing completed.

Function test
(pin 5 and 6 in the up position)
When pin 5 and 6 are both placed in the up position (simultaneously) the yellow and red LED's on the front of the housing will begin to flash simultaneously and then the LED's will cycle from channel 1 to channel 2 and then to channel 3. Once the complete system scan is done the indication of the system condition will be displayed (see below). System test will continue until pins 5 and 6 are reset.

LED Indication

Yellow LED ON Red LED OFF	**System Test OK**
Yellow LED ON Red LED ON	**Tx's and Rx's mismatched, e.g. Rx3 seeing Tx1**
Yellow LED OFF Red LED ON	**Alignment error or beam obstructed by object**

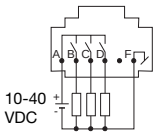
Wiring Diagrams



ON sockets
1: Transmitter 1
2: Supply (+ VDC)
3: No connection
4: Receiver 1
5: GND (Receivers)
6: Transmitter 3
7: Receiver 2
8: Receiver 3
9: Transmitter 2
10: Supply (- VDC)
11: GND (Transmitters)

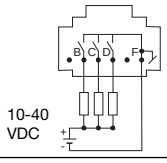
Output
A: + (10-40 VDC)
B: Output 1 (max. 100 mA)
C: Output 2 (max. 100 mA)
D: Output 3 (max. 100 mA)
E: For handheld tester
F: - DC

PNP

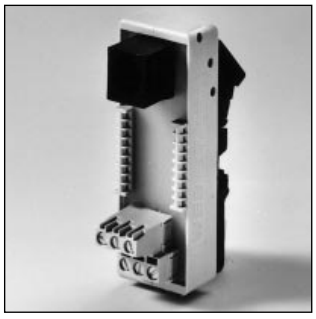


Wire colour coding
white
black
red
green
yellow
blue

NPN



Interface



6IODC
DIN-rail interface
(DIN EN 50 035, EN 50 022)

Power Supply

S 1430 PWS ....
Power supply for 12 VDC/1 A

Accessories

- 11 pole circular socket	S111, S111A, S411, ZPD11
- Socket cover for S111	BB1
- Socket cover for S411	BB4
- Holding down spring	HF
- Mounting rack	SM13
- Front panel mounting bezel	FRS2
- Connection cable (2 plugs) 2 x 6/6 modular plugs	2 x 6/6 mod. 2.0 m
- Power supply for 115 VAC	S 1430 PWS 115
- Power supply for 230 VAC	S 1430 PWS 230
- DIN-rail interface	6IODC

Delivery Contents

• Output connection cable	1 x 6/6 mod. 1.0 m
• Amplifier	S 1430 UAP 912
• DIN-rail interface	6IODC
• Screw driver	
• **Packaging:** cardboard box	