

# Photoelectrics Amplifier, $\mu$ -Processor Controlled Type S1430 UAP, 3 Inputs/3 Transistor Outputs

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- $\mu$ -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 supplies from SS120-series

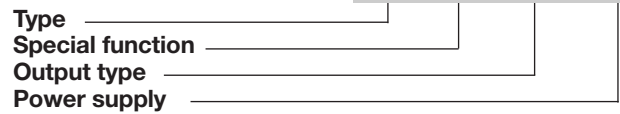
## Product Description

$\mu$ -Processor controlled amplifier for 3 sets of photoelectric sensors, type MOFTR, MKFTR, MIFTR or MHFTR. Utilising an 11-pin circular 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 adjacent photoelectrics. Multi-voltage power supply. Sensitivity is individually adjustable for each set of photoelectrics.

## Ordering Key

**S14 30 UAP 912**



## Type Selection

Plug type	Ordering no. Supply: 12 - 30 VAC/DC
Circular, 11 pins	<b>S 1430 UAP 912</b>

## Specifications

<b>Rated operational voltage (<math>U_B</math>)</b> pins 2 & 10	DC AC	10.8 to 33 VDC 10.8 to 33 VAC, 45 to 65 Hz	<b>Supply to photoelectric switch</b> (cont.)	
<b>Rated operational power</b> AC supply DC supply		4 VA 3 W	<b>Receiver</b>	Rx1: Pin 4 Rx2: Pin 7 Rx3: Pin 8 Shield: Pin 5 (common)
<b>Power ON delay (<math>t_v</math>)</b>		< 300 ms	Supply voltage (open loop)	5 VDC
<b>Output function</b>		NPN and PNP switching Make and break function DIP-Switch selectable	Short-circuit current	10 mA
<b>Output current</b> Continuous ( $I_e$ ) Short-time (I)		100 mA per output 100 mA max.	Input resistance	470 $\Omega$
<b>Min. load current (<math>I_m</math>)</b>		0.5 mA	<b>Sensitivity</b> (% of $S_n$ )	<ul style="list-style-type: none"> <li>• 2 ranges, DIP-Switch selectable - low sensitivity (25%) - high sensitivity (100%)</li> <li>• Sensitivity adjustment with 270°: Turn knob on CH 1, 2, 3</li> <li>• Maximum range indicated on photoelectric switch data sheet in high sensitivity range only</li> <li>• Operation within low sensitivity range, increases ambient light and crosstalk immunity</li> </ul>
<b>OFF-state current (<math>I_r</math>)</b>		Max. 100 $\mu$ A	Note:	
<b>Voltage drop (<math>U_d</math>)</b>		$\leq$ 3.5 VDC	<b>Operating frequency (f)</b> Light/dark ratio 1:1	16 Hz
<b>Protection, outputs</b>		Reverse polarity, short-circuit, transients		
<b>Supply to photoelectric switch</b> <b>Emitter</b>		Tx1: Pin 1 Tx2: Pin 9 Tx3: Pin 6 Shield: Pin 11 (common)		
Supply voltage (open loop)		7 V square wave		
Current		$\leq$ 300 mA short-circuit protected		
Output resistance		10 $\Omega$		



## Specifications (cont.)

<b>Response time</b> OFF-ON (t <sub>ON</sub> ) ON-OFF (t <sub>OFF</sub> )	20 ms 20 ms
<b>Indication</b> Supply ON Output ON Signal quality	LED, green LED, yellow LED, red
<b>Environment</b> Overvoltage category Degree of protection Pollution degree	III (IEC 60664) IP 20 (IEC 60529, 60947-1) 3 (IEC 60664/60664A, 60947-1)
<b>Temperature</b> Operating Storage	-20° to +50°C (-4° to +122°F) -50° to +85°C (-58° to 185°F)
<b>Weight</b>	150 g
<b>Approvals</b> <b>CE-marking</b>	CSA Yes

## Truth Table

	Make switching			Break switching		
	Yes	No	No	Yes	No	No
Object present	Yes	No	No	Yes	No	No
Dirt on lenses, misaligned or sensitivity too low	--	No	Yes <sup>1)</sup>	--	No	Yes <sup>1)</sup>
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

<sup>1)</sup> 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.

## Procedure for Test Functions (Dip-Switch Selection)

### Transmitter test

(switch 5 in the up position)

When switch 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 **switch 5** for normal operation of system when testing completed.

### Receiver test

(switch 6 in the up position)

When switch 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 **switch 6** for normal operation of system when testing completed.

### Function test

(switch 5 and 6 in the up position)

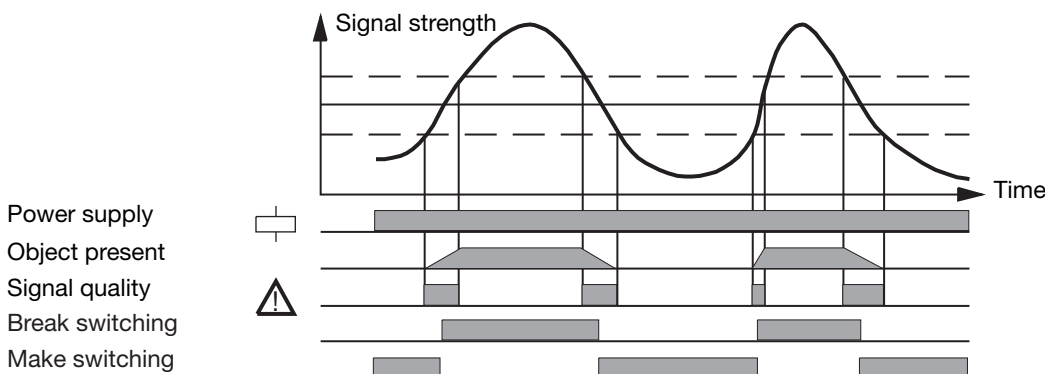
When switch 5 and 6 are both placed in the up position (simultaneously) the yellow and red LED's on the front of the housing will begin to flash simultaneously and then the LED's

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 switch 5 and 6 are reset.

### LED Indication

— Yellow LED ON △ Red LED OFF	} <b>System Test OK</b>
— Yellow LED ON △ Red LED ON	} <b>Tx's and Rx's mismatched, e.g. Rx3 seeing Tx1</b>
— Yellow LED OFF △ Red LED ON	} <b>Alignment error or beam obstructed by object</b>

## 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:	sw 4:
<input type="checkbox"/> PNP make/NPN break	<input type="checkbox"/> Range 25%
<input type="checkbox"/> NPN make/PNP break	<input type="checkbox"/> Range 100%, normal operation
sw 5:	sw 6:
<input type="checkbox"/> Transmitter test	<input type="checkbox"/> Receiver test
<input type="checkbox"/> Normal operation	<input type="checkbox"/> Normal operation
sw 5+6:	
<input type="checkbox"/> System test	
<input type="checkbox"/> Normal operation	

## 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

**Wire colour coding**

white  
 black  
 red  
 green  
 yellow  
 blue

**PNP**

**NPN**

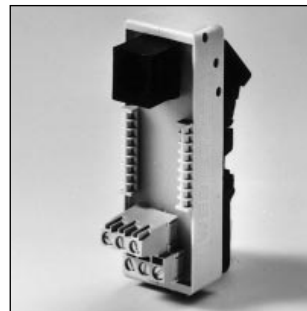
## Accessories

- |                                |                          |
|--------------------------------|--------------------------|
| - 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          | 2.0 m, 6 wires two plugs |
| - Power supply for 115/230 VAC | SS120-series             |
| - DIN-rail interface           | 6IODC                    |

## Delivery Contents

- Output connection cable 1 m, 6 wires one plug
- Output connection cable 0.2 m, 6 wires two plugs
- Amplifier S 1430 UAP 912
- DIN-rail interface 6IODC
- Screw driver
- **Packaging:** Cardboard box

## Interface



**6IODC**  
 DIN-rail interface  
 (DIN EN 50 035, EN 50 022)  
 output from plug to screw terminals