DATALOGIC™

PHOTOELECTRIC SENSOR CONTROL UNIT
PSCU SERIES
1.90 sw version

INSTRUCTION MANUAL

CONTROLS

- Input 1 sensitivity adjustment — INPUT 1
- Input 2 sensitivity adjustment — INPUT 2
- Timer adjustment — OUTPUT / DELAY / POWER
- Input 1 status indicator
- Input 2 status indicator
- Output status indicator
- Power supply indicator
- Sensor power supply short-circuit indicator
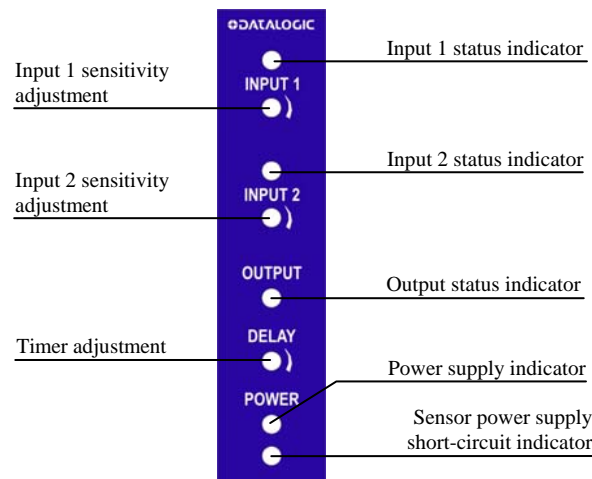
TECHNICAL DATA

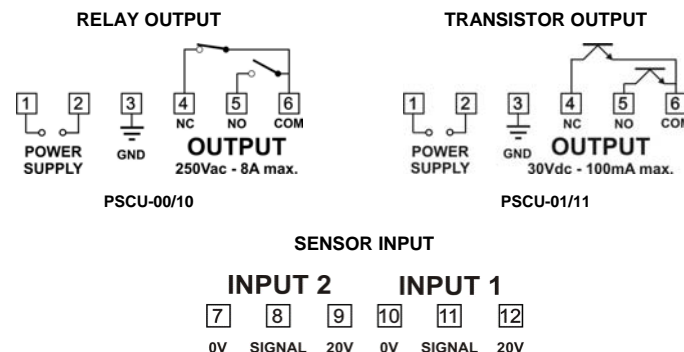|	
Power supply:	24 Vac/Vdc ± 10% (PSCU-0x) / 100 … 240 Vac (PSCU-1x)
Consumption:	2 VA max.
Sensor input:	1 or 2, switch selectable
Sensor signal:	switch selectable: 0…10 Vdc analogue, 100 KΩ impedance ▪ NPN static, PNP, relay, static and relay contact, 10 KΩ impedance.
Sensor power supply:	20 Vdc ±10% 100 mA max (IN1 + IN2); protection with automatic reset in presence of short-circuits (POWER GREEN LED Off and RED LED ON).
Output:	▪ SPDT 250 Vac relay version, 8 A on resistive load (cosΦ=1) ▪ transistor version with PNP/NPN (NO/NC) complementary output, optoisolated; Ion max 100 mA per channel; fold-back protection with automatic reset and short-circuit current < 40 mA.
Response time (*):	▪ 10 ms max relay version ▪ 0.1 ms max. transistor version ▪ outputs deactivated for 400 ms at unit powering ON (*) timer deactivated
Timing functions:	switch selectable, monostable reset, monostable non-reset, delay on rising edge, delay on falling edge, delay on both edges, bistable (without timing).
Timing period:	switch selectable: 0.004...1 s, 0.1…10 s.
Input logic functions:	switch selectable: inversion of single channel, AND, OR, NAND, NOR.
Isolation:	> 2 KVdc/1min input/output/power supply
Rigidness:	> 2 KVac/1min input/output/power supply
Operating temperature:	-10 … +55 °C
Storage temperature:	-20 … +65 °C
Humidity:	35 … 85% rH non condensing.
Vibration resistance:	0.35 mm, 10…55 Hz for every axis (EN60068-2-6)
Shock resistance:	18 ms (30 G) for every axis (EN60068-2-27)
Mechanical protection:	IP20
Terminal block:	screw terminals for cables upto 5 mm².
Dimensions:	120 x 101 x 23 mm.
Weight:	200 g. max.

STANDARD CONFIGURATION

Inputs (IN1 and IN2):	analogue 0…10Vdc.
Input number:	2.
Input logic function:	AND
Timer function:	passing (no timing).
Timing period:	0.004…1 s (if activated)

CONNECTIONS

RELAY OUTPUT

1	2	3	4 NC	5 NO	6 COM
POWER SUPPLY		GND		OUTPUT 250Vac - 8A max.	

PSCU-00/10

TRANSISTOR OUTPUT

1	2	3	4 NC	5 NO	6 COM
POWER SUPPLY		GND		OUTPUT 30Vdc - 100mA max.	

PSCU-01/11

SENSOR INPUT

| INPUT 2			INPUT 1		
7	8	9	10	11	12
0V	SIGNAL	20V	0V	SIGNAL	20V

Power supply:
Do not power directly with power lines and avoid installation near electric motors or other electromagnetic interference sources.

Sensor input:
Connection of sensors powered by PSCU: use terminals as above indicated. Different sensors can be used.

Terminal grounded:
Strong electromagnetics interference can compromise the correct functioning of the device. In these conditions the ground connection of the device is necessary.
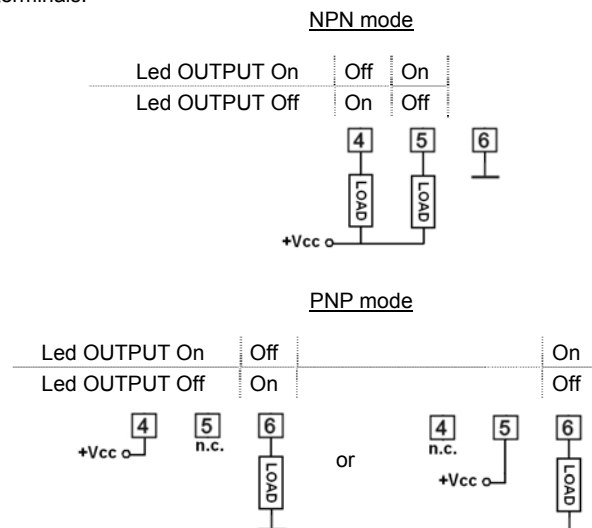Connection of sensors with external power supply:

NPN or analogue sensors 0…10V, relay — PNP sensors
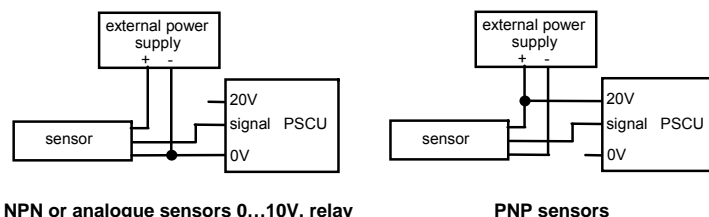
WARNING!
Different sensors cannot be used with an external power supply.

Relay output:
the maximum current through the contacts decreases according to the power factor in case of inductive loads.

Transistor output:
the outputs are floating, overload protected for relay control or solid state (SSR), suitable for high loads. The two NC and NO channels are independent and operate in antivalent mode.
When the output is high, OUTPUT LED ON, the transistor saturation voltage is present on the 5/6 terminals, interdiction voltage is present on the 4/6 terminals:

NPN mode

Led OUTPUT On	Off	On
Led OUTPUT Off	On	Off

Terminals: 4 | 5 | 6, LOAD LOAD, +Vcc

PNP mode

Led OUTPUT On	Off		On
Led OUTPUT Off	On		Off

Terminals: 4 | 5 n.c. | 6 LOAD, +Vcc or 4 n.c. | 5 | 6 LOAD, +Vcc

PRODUCT CONFIGURATION

NUMBER OF SENSORS
Effect the configuration with the device turned off and sensors deactivated.

Configuration switch
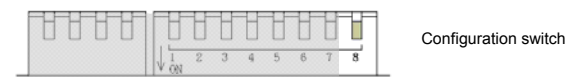
n° sens	Switch sector 8
1	ON
2	OFF

In the single sensor mode the INPUT 1 is used. The INPUT 2 is deactivated, the INPUT 2 LED is off and the sensitivity trimmer INPUT 2 is not used.

SENSOR TYPE
Effect the configuration with the device turned off and the sensors deactivated. Please refer to the INPUT 1 column, in the single sensor mode.

Configuration switch
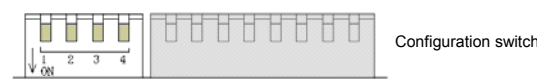
		Switch sector			
		1	2	3	4
INPUT 1	NPN, relay	X	X	OFF	ON
	PNP	X	X	ON	OFF
	analog. 0…10V	X	X	OFF	OFF
INPUT 2	NPN, relay	OFF	ON	X	X
	PNP	ON	OFF	X	X
	analog. 0…10V	OFF	OFF	X	X

' X ' = indifferent

LOGIC OPERATIONS BETWEEN THE INPUTS

Configuration switch

Logic operation	INPUT1	INPUT2	Switch sector		
			4	5	6
AND	DIRECT	DIRECT	OFF	OFF	OFF
AND	INVERSE	DIRECT	OFF	OFF	ON
AND	DIRECT	INVERSE	OFF	ON	OFF
NAND	DIRECT	DIRECT	ON	OFF	OFF
NOR	INVERSE	INVERSE	OFF	ON	ON
OR	INVERSE	DIRECT	ON	OFF	ON
OR	DIRECT	INVERSE	ON	ON	OFF
OR	INVERSE	INVERSE	ON	ON	ON

THE INPUT 1 and INPUT 2 LEDs indicate the input status AFTER the sensitivity adjustment effected with SENS trimmer and direct/inverse setting, and BEFORE the logic operation.

TIMING TYPES

Configuration switch
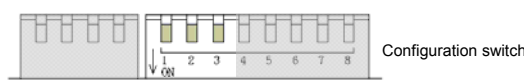
Type	Switch sector		
	1	2	3
Mode 0	OFF	OFF	OFF
Mode 1	ON	OFF	OFF
Mode 2	OFF	ON	OFF
Mode 3	ON	ON	OFF
Mode 4	OFF	OFF	ON
Mode 5	ON	OFF	ON
mode 6	OFF	ON	ON

mode 0	Passing output =input
mode 1	One-shot single pulse retriggered on rising edge
mode 2	One-shot single pulse non-retriggered
mode 3	ON-Delay retriggered– immediate turn off
mode 4	OFF-Delay retriggered– immediate powering
mode 5	ON/OFF-Delay retriggered
mode 6	Toggle switching on rising edge (*)

in = signal after logic operations on inputs
out = output condition signalled by the OUT LED
T = delay time set with DELAY trimmer.
(*) in mode 6, T is blanking time towards switchings.

TIMING SCALE

Configuration switch
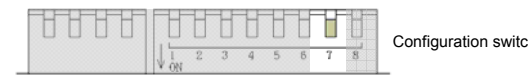
scale	switch sector 7
0.004…1 sec	OFF
0.1…10 sec	ON

In mode 6, the scale is fixed to 0.004…1 s.

DIMENSIONS

mm

100.8 / 69.3 / 34.65 / 34.65 / 2.54 / 22.5 / 11.25 / 8.14 / 4 / PITCH 5.08x14 / 1.6 / 17 / 22.5 / 12.5 / 10 / 4 / 1.5 / 9.5 / 1.6 / 87.2 / 77 / 66 / 120 / 104 / 52 / 50.2 / 52 / 38.1 / 13.9 / 69.3 / 72 / 17