

# ROAD SIGNAL OUTPUT RSO 4



## INTRODUCTION

RSO 4 is a 4-channel AC output unit primarily designed for control of traffic light signals (heads) in traffic control systems: intersections, tunnels, toll stations, parking sites, construction sites etc. Supported are all types of common traffic heads (semaphores): standard light bulbs (up to 200W), halogen lamps with transformers and LED traffic lights (with currents as low as 5 mA).

Each output is independently monitored for voltage and current. The voltage range is up to 290V AC with resolution 0.1 V. The current measurement range is up to 1A with 1 mA resolution. Both measurements can be used for safe and accurate determination of various failure modes of traffic signal (bulb failure, output failure, foreign voltage...).

A powerful micro controller inside RSO 4 unit is used for communication with CAN and RS-485 bus. An open and fully documented protocol is implemented for EN50556-compliant safe use in road traffic signal systems. Alternatively, Modbus RTU or similar may be implemented as option.

Up to 24 modules (with 96 outputs) may be controlled on a single RS-485 channel. There is no inherent limitation on a number of communication channels which can be used in system.

The module is EN 50556 certified for safe use in road traffic signal systems.

RSO 4 has built-in standalone special variants, such as flashing unit in master-slave configuration with fault indication.

The module may also be used as a general purpose AC output unit with current and voltage measurement for various low-current applications, such as low power motor drives, lightning, home automation controllers, machine automation controllers, etc.



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## APPLICATIONS

- Traffic controllers
- Tunnel automation controllers
- Toll station lane controllers
- Parking lot and garage controllers
- Intelligent traffic systems (ITS)
- Flashing unit in master-slave configuration
- Motor control
- Lightning control

## FEATURES

- Certified for EN 50556 (Traffic Control Systems)
- 4 isolated traffic light output channels (1 signal head + auxiliary output)
- Voltage & current measurement for each channel
- Dimming support
- RS-485 / optional CAN communication
- 1500 V isolation for control system
- Standard DIN rail form
- 2 connectors on cold side for daisy chaining
- Low cost
- RoHS compliant

## SPECIFICATIONS

### Communication

Interface	RS-485
Baud rate	9600 - 115.200 bps
Protocol	OpenRSO, Modbus RTU (optional)
Address selection	0 .. 99 (2 rotary decimal switches)

### Outputs

Number of channels	4
Voltage measurement	0 - 290V AC (50Hz), 5%
Current measurement	0 - 1 A 5%, 2A 10%
Power measurement	0 - 290 W, 5%
Output type	solid-state
Current capability (per module)	2A sustained, 2.5A max.
Current capability (per output)	0.5A sustained if all outputs are simultaneously active

### HOT side (AC interface)

Voltage measurement	0 - 290V AC (50Hz), 5%
Fuse protection	Yes, 2.5 A

### COLD side (controller interface)

Voltage	24V DC, regulated
Power consumption	2.5 W max.
Digital inputs	2 (FAIL and SYNC)
Digital outputs	1 (SYNC)
LED indicators	4 (red, yellow, green, blue)
Isolation to hot side	1000 V

### Mechanical

Dimensions	
Installation	DIN rail mounting
Moving parts	none (ex. screw terminals)

### Environment

Operating temperature	-25 .. +75°C
Humidity	5 .. 95% non-condensing

### COLD connector pinout

1	+24V
2	GND
3	RS-485 B
4	RS-485 A
5	CAN L
6	CAN H
7	FAIL*
8	SYNC*

### HOT connector pinout

1	L
2	N
3	Out R
4	Out Y
5	Out G
6	Out AUX



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