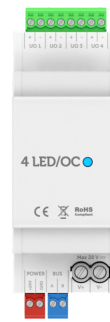


4-Channel LED/OC Module


TapHome 4 LED/OC module for LED strips. 4 channels, max 6 A per channel, 16 A total. RGB/RGBW or Tunable White, 2M DIN rail.



Quick Facts

Dimensions	36 × 59 × 58 mm
Operating temperature	-20 ... 55 °C
IP rating	IP20
Power consumption	0.5 W

Four-channel PWM LED module for constant voltage. Outputs configurable as 4 independent channels, 2 channels for tunable white, or 1 RGBW channel.

Order Code	TH-4LED/OC-DIN-1.0
EAN	 8586022930416

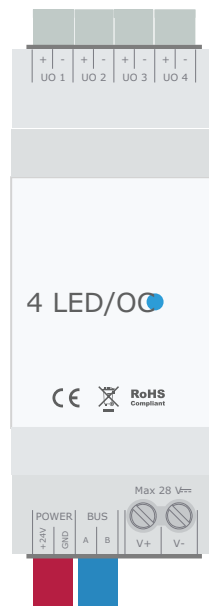
Technical Specifications

ELECTRICAL	
Power supply	24 VDC ±10%
Power consumption (idle)	3 W (all outputs on)
Bus	TapHome Bus
OUTPUTS	
Open collector outputs	4× universal open-collector
Max. current per channel	6 A
Max. voltage per channel	28 V
Max. total load	16 A

Terminal Connectors

Connector	Pins	Wire range	Strip length
● Outputs	UO1+, UO1-, UO2+, UO2-, UO3+, UO3-, UO4+, UO4-	0.14–1.5 mm ² (30–14 AWG)	6.5–7.5 mm
● LED Supply	V+, V-	0.34–4 mm ² (26–10 AWG)	7.2 mm
● Power	+24V, GND	0.14–1.5 mm ² (30–14 AWG)	6.5–7.5 mm
● Bus	Bus A, Bus B	0.14–1.5 mm ² (30–14 AWG)	6.5–7.5 mm

Wiring Diagram



Why Choose 4-Channel LED/OC Module?

- **3 modes in one** – open collector output, LED dimmer or RGB/RGBW
- **Ideal for smaller projects** – 4 powerful channels at a fraction of the cost of a larger module
- **Space saving** – only 2 modules on DIN rail

Features

- 4 LED/OC outputs (open collector) configurable as:
 - Open collector output – digital outputs
 - LED dimmer – works with constant voltage LED lights (e.g., LED strips), frequency adjustable up to 25 kHz (default 587 Hz)
 - Tunable white – 2 dimmed outputs for LED strips with warm and cool white
 - RGB/RGBW – 3 or 4 outputs for full colour spectrum
- Electrical parameters:

- Maximum current: 6 A DC per channel
- Maximum total load: 16 A
- Maximum voltage: 28 V DC per channel
- Recommended cable length between light and module:
 - 30 m for 1.5 mm² cable
 - 45 m for 2.5 mm² cable
- Protection class IP20, operating temperature: -20 °C to +55 °C
- Maximum power dissipation: 3 W
- Power supply: 24 V DC ±10%
- Communication: TapHome Bus (connection to Core unit)
- Terminal type: Screw terminals

✓ **Protection Features:** - **Thermal protection** – overheated output is automatically switched off (each output has its own temperature sensor) - **Short-circuit protection** – electronic protection for all outputs

- Signal terminals (3.50 mm):
 - Wire cross-section: 0.14–1.5 mm² (AWG 30–14)
 - Torque: 0.2–0.25 Nm
 - Strip length: 6.5–7.5 mm
- Power terminals (6.35 mm):
 - Wire cross-section: 0.34–4.0 mm² (AWG 26–10)
 - Torque: 0.5 Nm
 - Strip length: 7.2 mm
- DIN rail mounting, 2 modules. Dimensions: width 36 mm, height 59 mm, depth 60 mm

⚠ **Installation Note:** Long supply cables create voltage spikes (parasitic inductance) that stress the module input. - **Supply cable from source to module:** max. 1–1.5 m at full power - **Output cable to LED:** no limitation - **Post-installation check:** set 95% power, after 30 min. check temperature in service settings – max. 55–60°C - **Installation outside DIN rail:** use a local power supply near the module - **Same phase required:** LED power supply and TapHome power supply (+24V/GND) must be on the same phase

Load Calculation Example

For 24V LED strip with 12 W/m power consumption:

- Current per metre: $12 \text{ W} / 24 \text{ V} = 0.5 \text{ A/m}$
- Maximum strip length per output: $6 \text{ A} / 0.5 \text{ A/m} = 12 \text{ m}$
- For longer strips, use multiple outputs
- For RGB/RGBW strips, divide total power by 3 or 4

Total module capacity: $16 \text{ A} \times 24 \text{ V} = 384 \text{ W}$, corresponding to maximum 32 m of LED strip with 12 W/m power consumption.

Wiring Recommendations

[[wiring-example title="LED Power Connection" correct="/upload/wiring-diagrams/4-led-oc-power-correct.svg" incorrect="/upload/wiring-diagrams/4-led-oc-power-incorrect.svg" %]] The LED power supply must have both V+ and V- connected directly to the module. Do not connect V+ directly to the terminal block – current must flow through the module for protection and dimming to work. [[/wiring-example %]]

[[wiring-example title="Load Distribution at Higher Power (WW)" correct="/upload/wiring-diagrams/4-led-oc-ww-correct.svg" incorrect="/upload/wiring-diagrams/4-led-oc-ww-incorrect.svg" %]] At higher power, distribute the + wire of LED strips among individual UO terminals on the output. This prevents terminal overheating and ensures output protections work correctly. [[/wiring-example %]]

[[wiring-example title="Load Distribution at Higher Power (RGBW)" correct="/upload/wiring-diagrams/4-led-oc-rgbw-correct.svg" incorrect="/upload/wiring-diagrams/4-led-oc-rgbw-incorrect.svg" %]] For RGBW wiring, distribute the common + wire of strips to separate UO+ terminals. Even current distribution extends lifespan and improves protection circuit effectiveness. [[/wiring-example %]]

Comparison with Other Modules

Feature	4 LED/OC	12 LED/OC	4 Dim
Voltage	24 V DC	24 V DC	230 V AC
Channels	4	12	4
Max. current/channel	6 A	4 A	100 VA
Best for	Small LED projects	Large RGBW installations	Traditional bulbs