



# IDRATEK

INTELLIGENT AUTOMATION

## **DCS-W01 12-24Vdc Switch + 1x Potentiometric Analogue Input**

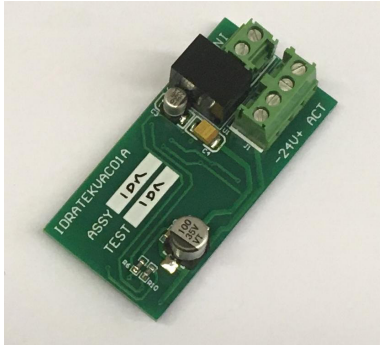
**(suitable for 24V valve actuator control)**

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The DCS-W01 is a WiFi enabled DC switching module designed to fit into a UK style electrical ‘architrave’ box (see picture below). It’s main intended purpose is to allow control of commonly available 24V electric valve actuators, thus enabling the implementation of batteryless multi-zoned heating configurations. The module also features a thermistor input connection which can also be used as a valve actuator feedback input (for example to detect whether the valve has actually opened in the case of 4 wire actuators). The module communicates with Cortex and other IDRANet modules via the IDRANet Over The Air (IOTA) protocol. It also supports MQTT and basic API communication routes. **Note: An external 24Vdc supply is required in order to provide power for the module and the connected actuator.**



#### Radio

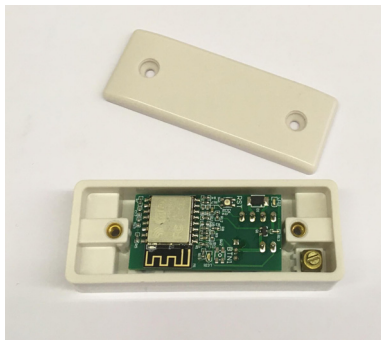
- WiFi IEEE 802.11 b/g/n 2412 - 2484MHz (2.4GHz band) FCC/CE
- Sensitivity: up to -90dBm
- Transmit power: up to 16dBm nom.
- WEP/WPA-PSK/WPA2-PSK
- Station and Access Point operating modes

#### Physical

- 1 x Actuator power state indicator LED
- 1 x General status indicator LED
- 1 x Analogue (potentiometric) thermistor input. 8 bit value transmitted - typically translating to 0.4C resolution.
- 1 x MOSFET switched Output (up to 1A @ 24Vdc\*)

#### Functional

- Multiple WiFi communication methods: IOTA Over UDP (to Cortex), IOTA over MQTT, basic URL API
- All input and output states can be interrogated at any time
- Highly flexible static output state modification
- Module start-up output states are user programmable
- Powerful programmable dynamic output functions include:
  - Single shot: Delay, activity time, post activity state
  - Toggle: Period, duration
  - PWM: Mark, space, duty cycle
- All Input devices can provide independent event triggers with mode programmable trigger gating
- Each event trigger can generate a pre-defined response and/or several user programmable responses.
- Over the air reprogrammable firmware



Example of module in an architrave box (not supplied)

#### Electrical

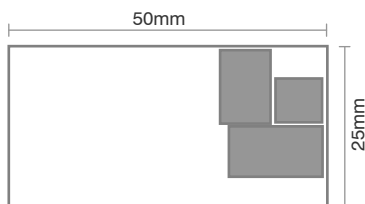
- Requires external 24Vdc supply
- \* Power input is reverse polarity protected but the output is not short circuit protected. Relies on short circuit protection in the 24V supply (a common feature), which must not exceed 1A. Alternatively a 1A inline fuse may be used.
- Current consumption @24Vdc:
  - Module electronics: ~20mA
  - Actuator: Typically 250mA at start -> 125mA at steady state (when energised)
- Analogue input: Potentiometric, balanced against onboard 10k resistor. Suits commonly available 10k@25C type probes.

#### Environmental

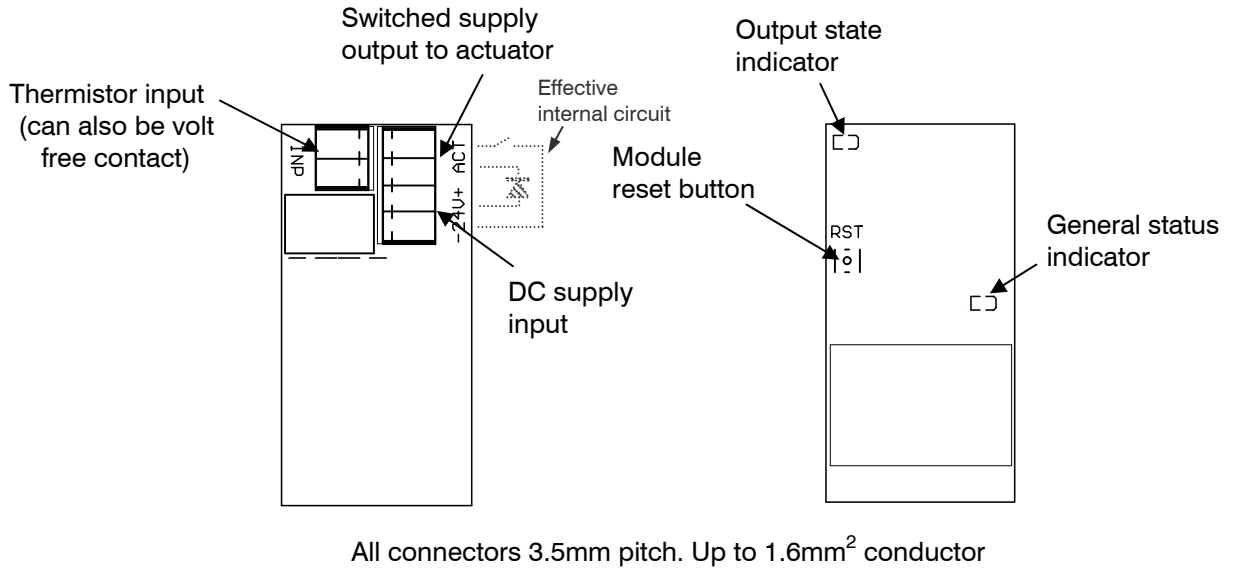
- Operating temperature -10°C to +40°C
- Operating humidity 5% to 95% (non-condensing)

#### Mechanical

- Designed to fit UK standard architrave box
- Input connections via 3.5mm pitch terminal block, conductors up to 1.5mm<sup>2</sup>



Module Connections



Example connectivity

