

# KC868-A8 V1.7.1

## Verified DS18B20 sensor connector pinout & ESPHome reference

Field-tested October 2026 • KinCony KC868-A8 PCB revision V1.7.1 • Konnected waterproof DS18B20 probes

## Verified six-terminal wiring

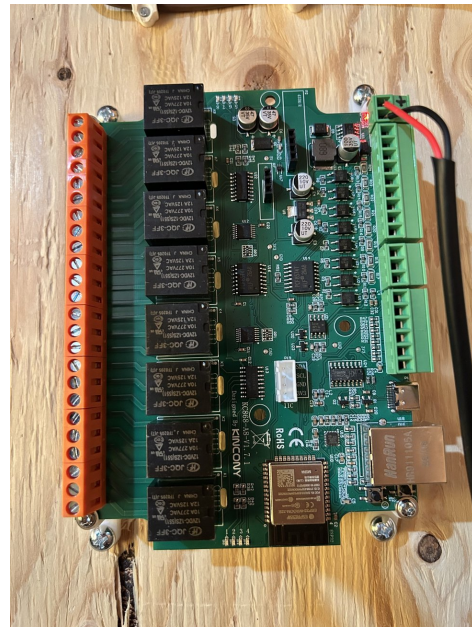
Number terminals starting at the end **nearest the USB-C connector** (terminal 1). Terminal 6 is farthest from USB-C. The numbering refers to the **six-position sensor connector**, not the optically isolated DI1–DI8 inputs.

| Terminal | Signal              | ESP32 pin | Verification                 |
|----------|---------------------|-----------|------------------------------|
| 1        | +3.3 V              | —         | Continuity to PCB 3V3        |
| 2        | S4 temperature data | GPIO33    | DS18B20 read successfully    |
| 3        | S3 temperature data | GPIO32    | DS18B20 read successfully    |
| 4        | S2 temperature data | GPIO13    | DS18B20 read successfully    |
| 5        | S1 temperature data | GPIO14    | DS18B20 read successfully    |
| 6        | Ground (GND)        | —         | Continuity to power negative |

### FARTHEST FROM USB-C

|   |             |
|---|-------------|
| 6 | GND         |
| 5 | S1 / GPIO14 |
| 4 | S2 / GPIO13 |
| 3 | S3 / GPIO32 |
| 2 | S4 / GPIO33 |
| 1 | 3.3 V       |

### USB-C connector side



Board photograph supplied during testing. The diagram is schematic; it is not a scale drawing of the connector.

## Electrical measurements

With board power disconnected, terminal 1 had continuity to the 3V3 test point and terminal 6 to the power-input negative terminal. Each data terminal (2–5) measured approximately **4.7 kΩ** to terminal 1. Powered, disconnected data terminals measured about **3.29 V** relative to ground, consistent with pull-ups to 3.3 V. These measurements alone did not prove the GPIO mapping; successful DS18B20 readings established the four mappings.

## Wiring a DS18B20 probe

For the Konnected probes used during verification: red = +3.3 V (terminal 1), black = ground (terminal 6), and yellow = data (choose terminal 2–5). Share supply and ground among probes. **Confirm wiring for any other sensor brand before applying power.** Disconnect power before moving wires.

## Test method and results

Two DS18B20 probes were available. S1/GPIO14 and S2/GPIO13 were run simultaneously and produced valid readings in ESPHome/Home Assistant. The second probe was then moved to the remaining data terminals, and S3/GPIO32 and S4/GPIO33 each reported valid temperature data with the corresponding OneWire bus. S3 and S4 must be configured as OneWire buses rather than as binary sensors. The eight optically isolated DI inputs use a separate PCF8574 expander.

## ESPHome full example (Ethernet, eight relays, eight DI inputs, four DS18B20 buses)

This is a genericized version of the field-tested configuration. Replace the API encryption key placeholder with your **own** key. Do not publish your real key. Example names are application-specific; adapt as needed.

```
esphome:
  name: kc868-a8-boiler-outlets
  friendly_name: KC868-A8-Boiler outlets

esp32:
  variant: esp32
  framework:
    type: esp-idf

logger:

api:
  encryption:
    key: "REPLACE_WITH_YOUR_OWN_BASE64_API_KEY"

ota:
  - platform: esphome

ethernet:
  type: LAN8720
  mdc_pin: GPIO23
  mdio_pin: GPIO18
  clk:
    pin: GPIO17
    mode: CLK_OUT
  phy_addr: 0

i2c:
  sda: GPIO4
  scl: GPIO5
  scan: true
  id: bus_a

pcf8574:
  - id: pcf8574_hub_out_1
    address: 0x24
  - id: pcf8574_hub_in_1
    address: 0x22

switch:
  - platform: gpio
    name: "Boiler Outlet 1"
    pin:
      pcf8574: pcf8574_hub_out_1
      number: 0
      mode: OUTPUT
      inverted: true
  - platform: gpio
    name: "Boiler Outlet 2"
    pin:
      pcf8574: pcf8574_hub_out_1
```

```

    number: 1
    mode: OUTPUT
    inverted: true
- platform: gpio
  name: "Boiler Outlet 3"
  pin:
    pcf8574: pcf8574_hub_out_1
    number: 2
    mode: OUTPUT
    inverted: true
- platform: gpio
  name: "Boiler Outlet 4"
  pin:
    pcf8574: pcf8574_hub_out_1
    number: 3
    mode: OUTPUT
    inverted: true
- platform: gpio
  name: "Boiler Outlet 5"
  pin:
    pcf8574: pcf8574_hub_out_1
    number: 4
    mode: OUTPUT
    inverted: true
- platform: gpio
  name: "Boiler Outlet 6"
  pin:
    pcf8574: pcf8574_hub_out_1
    number: 5
    mode: OUTPUT
    inverted: true
- platform: gpio
  name: "Boiler Outlet 7"
  pin:
    pcf8574: pcf8574_hub_out_1
    number: 6
    mode: OUTPUT
    inverted: true
- platform: gpio
  name: "Boiler Outlet 8"
  pin:
    pcf8574: pcf8574_hub_out_1
    number: 7
    mode: OUTPUT
    inverted: true

```

#### binary\_sensor:

```

- platform: gpio
  name: "Boiler Input 1"
  pin:
    pcf8574: pcf8574_hub_in_1
    number: 0
    mode: INPUT
    inverted: true
- platform: gpio
  name: "Boiler Input 2"
  pin:
    pcf8574: pcf8574_hub_in_1
    number: 1
    mode: INPUT
    inverted: true
- platform: gpio
  name: "Boiler Input 3"
  pin:
    pcf8574: pcf8574_hub_in_1
    number: 2
    mode: INPUT
    inverted: true
- platform: gpio
  name: "Boiler Input 4"
  pin:
    pcf8574: pcf8574_hub_in_1
    number: 3

```

```

    mode: INPUT
    inverted: true
- platform: gpio
  name: "Boiler Input 5"
  pin:
    pcf8574: pcf8574_hub_in_1
    number: 4
    mode: INPUT
    inverted: true
- platform: gpio
  name: "Boiler Input 6"
  pin:
    pcf8574: pcf8574_hub_in_1
    number: 5
    mode: INPUT
    inverted: true
- platform: gpio
  name: "Boiler Input 7"
  pin:
    pcf8574: pcf8574_hub_in_1
    number: 6
    mode: INPUT
    inverted: true
- platform: gpio
  name: "Boiler Input 8"
  pin:
    pcf8574: pcf8574_hub_in_1
    number: 7
    mode: INPUT
    inverted: true

one_wire:
- platform: gpio
  pin: GPIO14
  id: boiler_temp_bus_1
- platform: gpio
  pin: GPIO13
  id: boiler_temp_bus_2
- platform: gpio
  pin: GPIO32
  id: boiler_temp_bus_3
- platform: gpio
  pin: GPIO33
  id: boiler_temp_bus_4

sensor:
- platform: dallas_temp
  one_wire_id: boiler_temp_bus_1
  name: "Boiler Temperature 1"
  update_interval: 10s
- platform: dallas_temp
  one_wire_id: boiler_temp_bus_2
  name: "Boiler Temperature 2"
  update_interval: 10s
- platform: dallas_temp
  one_wire_id: boiler_temp_bus_3
  name: "Boiler Temperature 3"
  update_interval: 10s
- platform: dallas_temp
  one_wire_id: boiler_temp_bus_4
  name: "Boiler Temperature 4"
  update_interval: 10s

```

## Publication notes

Verified only for PCB revision **V1.7.1**. Other KC868-A8 revisions may differ. The 4.7 kΩ measurements are evidence of pull-up resistance, not a guarantee of circuit topology. DS18B20 sensors were tested one at a time on S3 and S4; four probes connected simultaneously were not independently demonstrated in this test. Users should validate their own board before powering sensors.

Suggested forum title: **KC868-A8 V1.7.1 – confirmed S1–S4 sensor connector terminal pinout and ESPHome example**