



## Operating Manual S0086 Temperature Controlled Switch - Din Rail

### OVERVIEW

The S0086 is a temperature controlled switch, housed in a convenient DIN rail housing. It has two independent temperature sensor circuits, each with programmable upper and lower temperature limits. There are four closing contact outputs (voltage free), one for each of the upper and lower limits. These outputs each have a normally open and normally closed contact, which changes state when the associated temperature limit has been reached. Both sensors have adjustable hysteresis on each of the upper and lower limits. This is used to eliminate small temperature deviations causing the outputs to switch back and forth. The outputs can also be manually switched "ON" or "OFF" via the front control buttons.



### FEATURES

- Two temperature sensor inputs
- One DS18B20-PAR sensor supplied
- sensors up to 200m away
- Upper and lower temp limits
- Closing contact outputs
- User adjustable hysteresis
- Temp. range -49°C to 155°C
- 12V or 24V DC operation
- Manual operation of outputs
- Supplied with 24V DC plugpack

### SENSORS

The S 0086 comes with an DS18B20-PAR Programmable Digital Thermometer as standard (Altronics part number Z 7282). This can be connected to either of the two sensors as per the pintout diagram as shown in fig 1 (Note: The Bottom View). If a second sensor is required another DS18B20-PAR or Waterproof DS18B20 Temperature Probe (Altronics Z 6386) can be fitted. These sensors can be wired to up to 200 metres away.

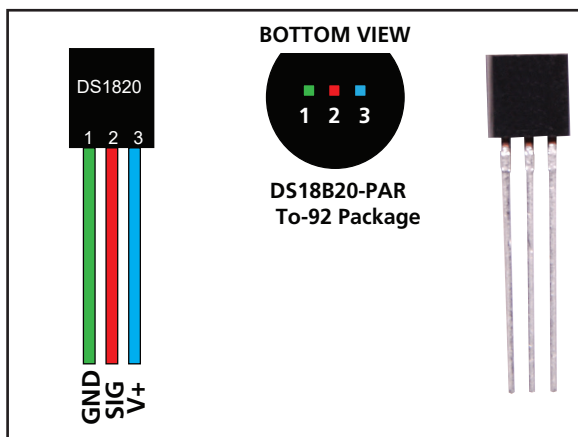


Fig 1. DS18B20-PAR (Altronics Z 7282)



Fig 2. DS18B20 (Altronics Z 6386)

# Redback® S 0086 Temperature Controlled Switch - Din Rail

## CONNECTIONS

Figure 3 shows the layout of the S0086.

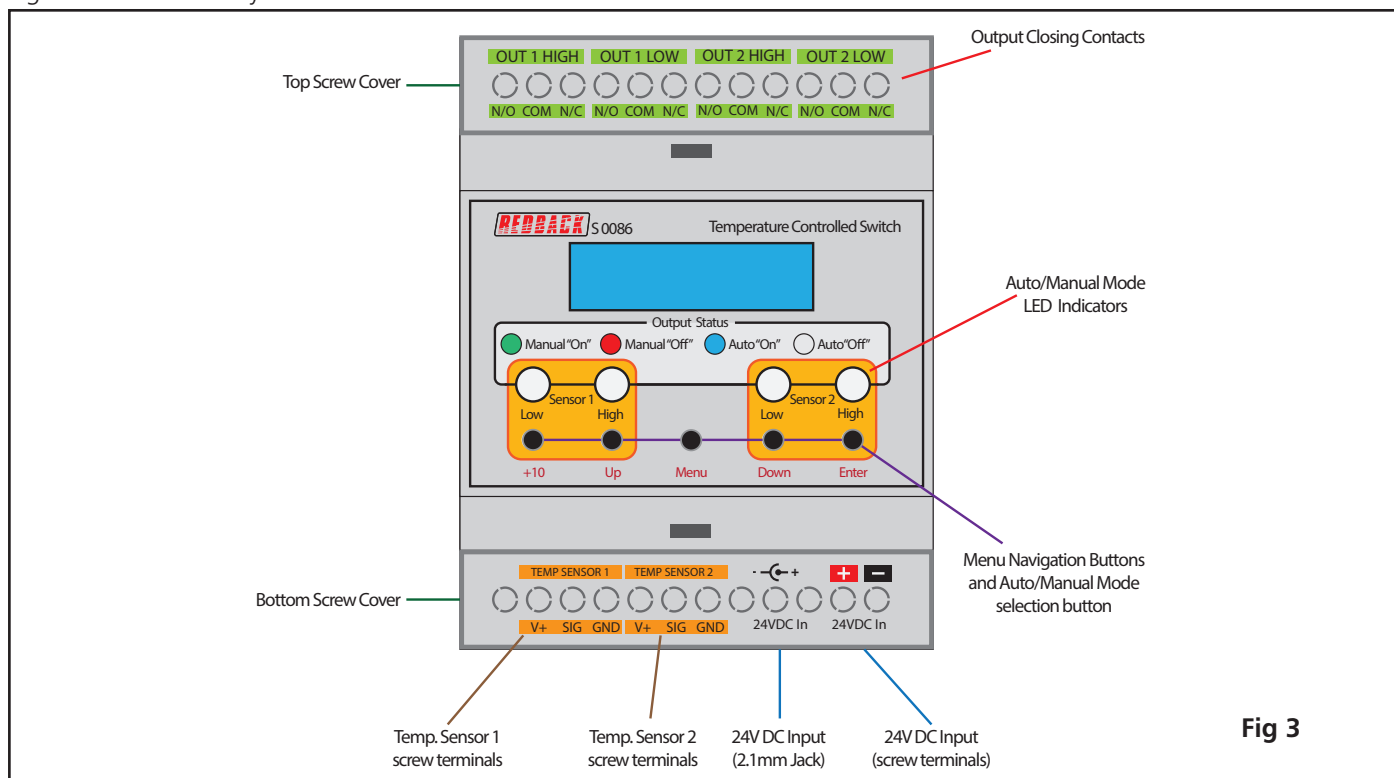


Fig 3

**POWER:** The unit can be powered by 12V or 24V DC, although a 24V DC plugpack is supplied. Connection can be made via the 2.1mm DC jack or screw terminals. These two inputs are connected in parallel inside the unit, so either could be used as an input, while the other could be used as a 24V DC output to power another device.

**SENSORS:** The temperature sensors are connected to the V+, SIG and GND terminals, following the sensor connection details shown in figures 1 and 2.

**OUTPUTS:** The output terminals are voltage free, closing contacts, with a set of normally closed and normally open terminals for each "HIGH" or "LOW" sensor condition.

## OPERATION

**MANUAL MODE:** The Low and High temperature limits for both sensors can be set to be either manually "ON" or "OFF", simply by pressing the buttons below the corresponding LED. For instance to set the sensor 1 "LOW" output to "ON" press the button labelled "+10". To turn the output "OFF" press the "+10" button again and then once again to return the output back to auto mode. The output status is indicated by either a green or red LED in manual mode or blue or unlit LED in auto mode.

**AUTO MODE:** The upper (HIGH) and lower (LOW) limits for both sensors are set by the user. Press the "MENU" button to enter the programming mode. To exit programming mode press the "MENU" button.

Once in the programming mode simply follow the on screen prompts to set the upper and lower temperature limits and hysteresis temperature values. Navigate by using the "+10", "Up", "Down" and "Enter" buttons.

NOTE: The +10 button can be used to increase or decrease the temp values by 10°C. Hold the +10 button and then press the up or down button, to make temperature changes.

NOTE: When setting the hysteresis temperature values, the value will be a negative value for the upper temperature limits, and a positive value for the lower temperature limits. E.g. Sensor 1 has an upper limit set to 50°C and the hysteresis value is set to -5°C. In this case when the temperature exceeds 50°C, the "OUT 1 HIGH" output will become active. It will stay active until the temperature drops below the hysteresis value of -5°C, i.e. 45°C. The hysteresis value is required to eliminate the outputs switching ON and OFF as the temperature hovers around the upper or lower limits.