

## Installation and Operation Instructions S20IS-PDE Siren



### Product Description



Redtronic's S20IS-PDE is an intelligent, user-friendly siren and speaker system. The S20IS-PDE utilises improved technology from our current popular S20IS-PDE system to enable it to meet KBA approval. The S20IS-PDE is innovatively designed to be a durable and flexible product in one, offering IP69K water and dust resistant protection with its resin sealed inbuilt siren and durable nylon assembly to ensure a fit-and-forget longevity installation. Each S20IS-PDE contains a 20-watt neodymium speaker and a 20-watt digital siren offering the same presence as a 100w alternative product, meeting KBA approval requirement of 110dB at 3.5m distance and includes multiple triggers. The S20IS-PDE is a market leading combination product that is premium of nature but is also affordable and comes with a 2-year warranty.

Part Number	Voltage	Amps	Decibel Output	Warranty
S20IS-PDE	11-16VDC and 20-30VDC	2.4	110dB at 3.5m (single unit)	2 years

### Technical Information



Voltage Range	11-16 VDC and 20-30 VDC (operation_ 9.5VDC de-power (voltage sense)
Decibel Output	110dB at 3.5m (single unit)
Amps / Current Peak Max	2.4amps each (4.8amps in total)
IP Rating	IP69K protection against dust and water ingress
Approval	KBA
Compliant	EMC R10
Impedance	4ohm
Switch functions	Latching
Programmable inputs	3 trip options +Ve or -Ve
Synchronisation	Yes, with other S20IS-PDE Redtronic products
Material	Durable nylon assembly with inbuilt resin sealed siren
Dimensions	Length 200mm (7.87") x Width 140mm (5.51") x Depth 46mm (1.81")
Warranty	2 years

## Cable Connections

Standby mode

Function	Cable Colour	Description
Ground -ve	<b>Black Wire</b>	Ground / 0V (high current stud connector)
V+	<b>Red Wire</b>	Power in, positive (high current stud connector)
Trigger 1	<b>Brown Wire</b>	Tone 1 (city)
Trigger 2	<b>Blue Wire</b>	Tone 2 (country)
Trigger 3	<b>Green Wire</b>	Tone 3 (compressor)
Synchronisation	<b>Yellow Wire</b>	Sync in / out
Configure / Night	<b>Grey Wire</b>	Dual function – use to configure device and for ‘night mode’ (Night mode is not a KBA standard and is used for workshop test only)
Monitor	<b>White Wire</b>	A positive output to indicate that the siren is working. Will drive up to 50mA at nominal supply voltage.

## Power Specification

S20IS-PDE sirens are manufactured to operate within the voltage range of 11-16VDC & 20-30VDC. Please note no operation outside these limits – do not power between 16-20VDC.

### **Supply voltage**

11-16VDC / 20-30VDC DC - Full power  
10-11VDC - possible reduced sound output  
9.5VDC - siren shuts down

### **Supply Current**

Up to 2.4A (per unit) when operational  
Approximately 10mA (per unit) when inactive

### **Protection**

Under voltage trip: 9.5Volts nominal  
Overcurrent trip: 4 Amps supply current  
approx. auto-resetting

### **Internal Controller**

There are three programmable inputs (TRIGGER T1-T3) available to programme to selectable tone options. These can be set in +Ve or -Ve operational polarity depending on the switch input required.


## Monitor Output


The monitor output activates when the Siren is outputting a sound of more than 4watts. Detected faults, such as loss of communication to the siren driver board, will prevent the signal from activating. Any detected fault will cause the LED internal to the speaker housing to flash and the monitor output will deactivate. The monitor output wire (white) can be connected to an external LED signal, buzzer or computer to monitor speaker output compliance. This is a positive output that will drive up to 50mA at nominal voltage supply. Please do not put a heavy load to this wire connection. When there is non-compliance to the standard, the signal will deactivate.


## Setting the Trigger Polarity


### Trigger Polarity (Trigger 1-3 +Ve or -Ve setting)

The S20IS-PDE siren has '3' trigger wires which can be set to 2 options for polarity depending on your switch requirement. This may be a +Ve or -Ve trip. As default the unit is set to a +Ve trip. Note: Each Trigger can be set to a different polarity if required. If you require a negative trip follow this setup procedure:

 T1: Trigger 1 **brown** wire

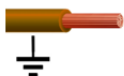
 T2: Trigger 2 **blue** wire

 T3: Trigger 3 **green** wire


 Ensure no power is applied to the unit (*Red & Black wire*)

 Apply the **white** (*monitor*) wire to **+Ve** permanently

 Now apply power to the unit (*Red & Black wire*). This will put the unit into 'low volume setup mode' and will produce **4 BEEPS**

 Select the trigger input you wish to designate polarity to. In this case, we are setting T1 **brown** wire. Apply to **-Ve Ground**

The speaker will 'BEEP' to confirm input is set to **-Ve** polarity

 Remove the **brown** wire from ground

 Remove the **white** (*monitor*) wire from **+Ve**

The unit is now set with T1 as **-Ve ground** trigger

Repeat on inputs T2 and T3 if desired

To return to +Ve trigger, simply reverse the operation by reversing the above action in the same format.

### Synchronisation

The Sync input/output is used to synchronise S20IS-PDE siren products exclusively with other Redtronic S20IS-PDE siren products. The Sync wire (yellow) should be connected only to other Redtronic S20IS-PDE products that are required to run in sequence with each other.

- Do not apply the yellow wire to +Ve supply in any circumstance.
- Do not apply the yellow wire to any other Redtronic products as this will invalidate warranty (such as 'warning lights').

## Diagnostic LED

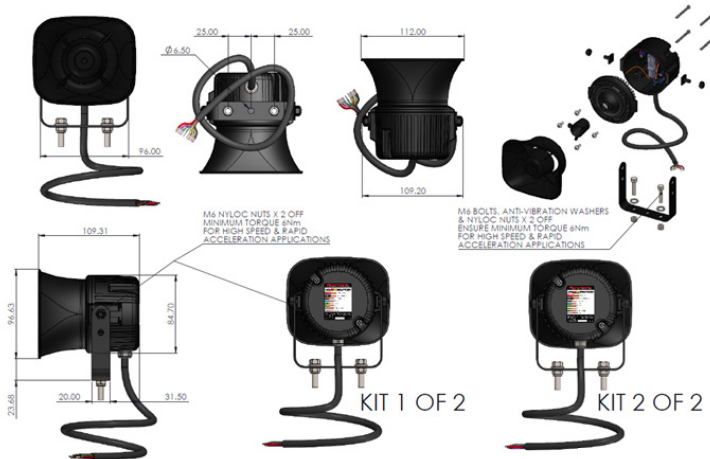
Within the siren (not visible externally) there is an LED inbuilt which indicates supply on and normal siren operation. If a fault condition exists, a repetitive sequence of flashes indicates the nature of the fault as follows: -

- Constantly lit – normal operation;
- 1 flash – speaker not connected/weak or volume low;
- 2 flashes – overload detected;
- 4 flashes – under voltage power supply detected;
- 8 flashes – over temperature;

Other combinations may occur: e.g., 6 flashes = 4+2 = under voltage/overload. Fault codes are reset when siren or PA is activated, as appropriate. Note: Opening the siren may invalidate warranty. Please contact the factory if there are any issues with lack of functionality on the siren.

## Installation Diagram

Warning. Do not install this product in locations that may block the vehicle heating fans/vents. Failure to follow this instruction may cause harm to the product and vehicle.



## Warranty and Liability

Redtronic warrants that on the date of purchase, this product will conform to Redtronic specifications for this product (which are available from Redtronic upon request). This product benefits from a 2-year warranty from the date of purchase.

## Restore Factory Settings

Software does not currently support restore function.