

# The **DEETER** Group®

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### Wireless Sensor System Router



A Router may be added to a Deeter Wireless Sensor System in order to significantly increase the radio range and to improve communications reliability.

The basic wireless sensor system comprises of a Deeter Base Station and a single remote sensor node (either a Sender or LVCS-RF). The range of the base station can be more than 1km, subject to environmental factors, and greater distances can be attained with the use of a Deeter Wireless Router. The router enables you to overcome this by extending the range of the overall wireless system.

The Wireless Router should be placed midway between the remote sensor and Base Station. It may be better to place the Router off to one side of the direct line between these two devices when there are obstructions in the direct path. The communication link quality will be improved increasing reliability. Up to four Routers may be used in a single system, with data messages passing in several hops between the remote sensor node and the Base Station. This will enable the system to transmit over an even larger range, multiplying the range four times.

If multiple Routers are used then the network builds the best route between the Base Station and remote sensor node when the system is started. If communications are interrupted, perhaps as a result of an obstructing object moving into the signal path then the network rebuilds the routing table after a short delay.

The Router must be permanently powered ready to relay messages. Any message sent by the Base Station to a sleeping battery powered remote sensor node will wait at the last Router until the device awakes and polls for data.

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### Wireless Sensor System

### Router

Wireless communication uses the internationally recognized IEEE 802.15.4 protocol in the 2.4GHz ISM radio band. This allows users to install approved devices without needing to obtain a site licence.

The Router is housed in a sturdy ABS enclosure with an external antenna. Power is supplied from a 5Vdc mains wall adapter through a cable gland. An optional extension lead and bracket kit is available for mounting the antenna remotely in an elevated position more favourable to wireless communication.

#### Specifications

<b>Antenna</b>	Fully weather-proof	<b>External power supply</b>	5V DC
<b>Antenna Extension Cable (Note 1)</b>	3m length	<b>FCC Part 15 compliant</b>	YES
<b>Antenna Gain</b>	2.2dBi	<b>Frequency Channels</b>	11 to 26
<b>Antenna type</b>	Half-wave dipole	<b>Operating Temperature</b>	-20°C to +70°C
<b>CE Mark</b>	Yes	<b>Receiver sensitivity</b>	-96dBm
<b>Communications protocol</b>	IEEE 802.15.4	<b>Radio Frequency</b>	2.4GHz ISM band
<b>Dimensions (mm)</b>	Height = 160 (216 inc. antenna) Depth = 62 (118 inc. antenna) Width = 120 (inc Antenna) Antenna Height = 96	<b>Transmit power (Note 2)</b>	6dBm
<b>Enclosure</b>	IP64		

#### Notes

- 1) Optional feature.
- 2) Conforms to European ETSI Limits.

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#### Ordering Information

Description	Ordering Code
Wireless Router RE02	DE012-0193
Antenna extension cable and mounting kit	DE012-0123

**All electrical equipment should be installed by a qualified/certified electrician.**

The Deeter Group follows a policy of continual development of its products and reserves the right to change specifications and/or features without notice.

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