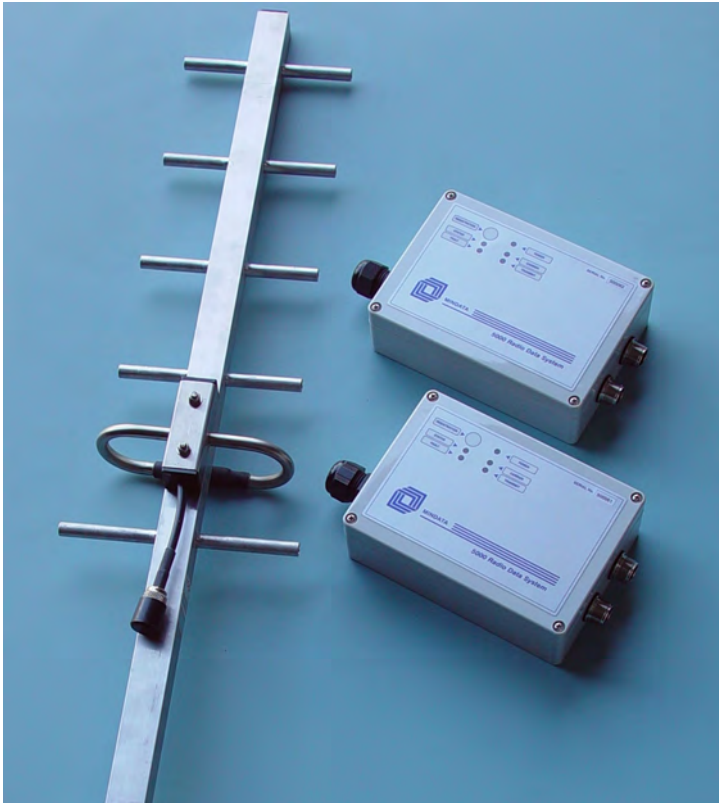


# SDI-12 data radio modem model 5000

## Features

- transmit SDI-12 data over long distances
- SDI-12 to RS232 conversion at base station
- full sensor accuracy and resolution transmitted
- low power, compact and modular design



## Applications

- Wide Area Networking (WAN) for SDI-12 base monitoring systems
- River and Irrigation & water resource monitoring
- Water quality data networks
- Pollution & Flood Warning Systems
- Meteorological monitoring
- Oceanographic & coastal networks

The ES&S 5000 SDI-12 Data Radio Modem allows you to expand your SDI-12 based monitoring system beyond the cable length limitations (typically 60 meters maximum). Two 5000 modules are required to form a data link between an SDI-12 recorder and up to 32 individual sensor addresses. Radios used within the 5000 operated in either the 900MHz

or 450MHz bands. In the 450MHz band, an unlicensed channel is available. Radio transmit power must be set to 100mW for unlicensed operation. Transmit power up to 5W can be set for point-to-point, or point-to-multipoint systems.

Each 5000 module is housed in an attractive polycarbonate enclosure that is sealed to IP67 and NEMA 4X standards, thus making it suitable for mounting outside. Weather proof connections for power, SDI-12 data and antenna are provided for interface to sensors and recorders. The "base" station module can be configured to output RS232 if desired, thus converting SDI-12 to RS232 data.



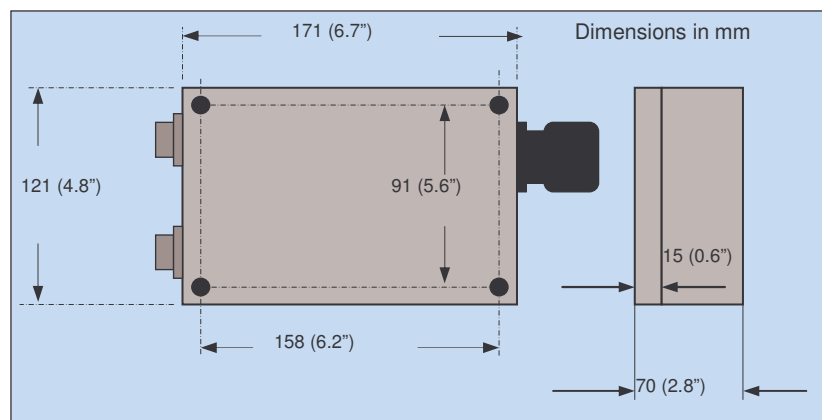
# Technical Specifications

<b>Sensor Interface</b>	Three wire SDI-12 interface. 5000 provides up to 1A sensor power.	<b>Recorder Interface</b>	Two or three wire SDI-12 interface. 5000 can be supplied with external power if recorder is not capable of 2A (peak) supply.
<b>Radio Module</b>	UHF-900MHZ band, frequency is determined during licensing VHF-450MHz band, frequency is determined during licensing if Tx>100mW. Unlicensed band available for Tx<=100mW.	<b>Transfer Rate</b>	1200 bps (7 data, 1 stop, even parity) Resolution is 16bit (depends on sensors)
<b>Measurement Time</b>	3 seconds minimum—if sensor measurement time is 0 seconds	<b>Communication</b>	Base: SDI-12 data or RS232C data Remote: SDI-12 data
<b>Power Supply</b>	9-15 Volts DC unregulated. 75mA receive, 2A (peak) transmit	<b>Surge Protection</b>	Supply is reverse polarity and surge protected. Data line is surge protected.
<b>Enclosure</b>	IP67 rated moulded polycarbonate plastic.	<b>Front Panel</b>	Registration button and power / communication indicator LEDs
<b>Weight</b>	0.75 kg without antenna, battery		

# Operating Principle

Effectively, the 5000 system replaces a cable link between SDI-12 sensors and recorder. Each sensor is "registered" at the base end where addresses, sensor IDs and measurement times are stored in non volatile memory. When the recorder requires a sensor reading, data is returned from the registration table (base unit). The base unit will automatically add 3 seconds to

all registered measurement times. When a remote sensor reading is required, the base module will handle all communications necessary to get a current reading back within the measurement time. The SDI-12 recorder will therefore communicate to sensors as if they were directly connected.



## Environmental Systems & Services Pty Ltd.

8 River Street, Richmond, VIC, 3121 Australia

PO Box 939, Hawthorn, VIC, 3122 Australia

Telephone: + 61 3 8420 8999

Facsimile: + 61 3 8420 8900

Email: [environmental@esands.com](mailto:environmental@esands.com)

Web: [www.esands.com](http://www.esands.com)