

Specifications for Wireless Network of SG-ELECTRODE Sensors

Measured Parameters

- **Specific gravity**
Range: 1.050 to 1.350
Resolution: 0.001
Accuracy: ± 0.015 at 1.300
 ± 0.025 at 1.080
Result standardised to 20 °C
- **Voltage**
Range: 1.5 to 4.9 volts
Resolution: 0.01 volts
Accuracy: ± 0.03 volts
- **Temperature**
Range: -10 to 99 °C
Resolution: 0.1 °C
Accuracy: ± 0.5 °C

Dimensions

- SG-ELECTRODE case: 115x65x40 mm (polycarbonate)
- Central control unit case: 115x90x55 mm (sealed die-cast aluminium)
- SG-ELECTRODE probe: 14.5 mm diameter, any required length available between 110 and 250 mm.
- Universal battery cell connector: protruding parts, 3 cm high x 3.5 cm diameter

Operating Conditions

- Suitable for use in sulfuric acid /water solutions:
50 to 95 wt % water
- 5 to 50 °C
- Equilibration time 5-10 minutes after insertion into cell
- Operating voltage 1.5 to 4.9 V

Safety Features

- Low voltage operation, power derived from single lead-acid battery cell under test (min. 1.5V)
- Low current consumption, (< 25 mA)
- Reverse voltage protection
- 80 ma ceramic fuse protection
- Triple 5.6 V zener diode voltage clamps on input voltage
- All non-metallic sensor externals (metallic battery terminal clips)
- Acid resistant materials
- SG-ELECTRODE transceiver unit sealed against dust and liquid to IP 65
- Resin-encapsulated electronics
- Designed to meet AS2380.7 "Electrical Equipment for Explosive Atmospheres: Intrinsic Safety"

Network System

- 16 sensors polled in any user defined combination
- Software selectable data collection and plotting parameters
- Central control unit powered by 4 x 1.5V standard C size cells
- Central control and monitoring software suitable for Palm OS PDA with minimum 8 MB memory (Palm m130 or Tungsten supplied as standard)
- Palm PDA powered by rechargeable battery and serial cradle with mains 110-240V AC

Maintenance

- Check condition of batteries in control unit at weekly intervals (observe low battery warning light)
- Backup Palm PDA software and data by HotSync at regular intervals
- Check calibration of SG sensors every 12 months

Wireless Data Transmission

- Standard transmitter and receiver frequency 433 MHz (options available)
- Data communication interval selectable between 7 seconds and 30 minutes
- 30-60 m range indoors
- 50-100 m line-of-sight range outdoors (typical)
- Power output < 8 mW
- Complies with Australian Radio Communications (Low Interference Potential Devices) Class License
- 17 cm 1/4 wave whip-style rubber-covered antenna on each sensor unit
- 35 cm 1/2 wave 2dB gain whip-style rubber-covered antenna with 3.5 m coaxial extension cable on central control unit