

AC/DC CP 120_2 J1962 VOLTAGE PROBE



Electrical Characteristics

Voltage Measurement

Voltage Range	: + 12V to 30V
Voltage Accuracy	: $\pm 0.5\%$ of reading $\pm 5\text{mV}$
Voltage Resolution	: 0.457763671 mV per bit
Sample Rate.....	: 120 samples/second of Voltage channel
Operating Temperature Range.....	: 0 to + 50 °C at < 80% R.H
Storage Temperature	: - 20 °C to + 85 °C
Power Supply	: +6V to 30V via external lead into Bluetooth box
Current Consumption	: $\pm 120\text{ mA}$ max

Interface

Type	: 802.15 – 2.4 GHz Communication (Bluetooth)
Maximum Radiated Power	: 4 dBm
Working Range.....	: 20m Maximum
Connection.....	: Plugs in to J1962/OBD inside vehicle

Output Data Structure

Transmission Protocol	: RS 232 via Bluetooth
Data Format.....	: 9600 Bd, 8 Data, 1 Stop, No Parity
Maximum samples per second	: 120 = 8.33ms / Sample

CP120_2_J1962 VOLTAGE PROBE_160308_01

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The nominal output from the analogue section provides a ± 1.2 volt proportional output. This translates to an operational range of ± 120 A. The analogue current output is converted to a digital format using a 23 bit + 1 sign bit Delta-Sigma ADC. This is then converted to binary data and transmitted as an 8 character packet.

Data				Check Sum		<cr>	<LF>
'0'	'0'	'0'	'0'	'0'	'0'	<cr>	<LF>

Differential Voltage Input	Digital Output (HEX)
+ Full Scale	7FFFh (0000 up to 7FFF)
Zero	0000h
- Full Scale	8000h (FFFF down to 8000)

Hex Value Transmitted	Output Current (A)
7FFF	120.03
6AAA	100.02
0AAA	10.00
0000	0.00
FFFF	0.00
F556	-10.00
9556	-100.02
8000	-120.03

The probe is controlled through a set of commands sent via the serial link

Command	Function
'E'	Current Enable
'V'	Voltage Enable
'D'	Disable Output

Note: Current value fixed at 12.345A to maintain compatibility

Safety Standards

BS EN 61010-1: 2010
BS EN 61010-2-032: 20012

EMC Standard

BS EN 61326-2-2:2006

30V max output with respect to earth.

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