

8 TECHNICAL SPECIFICATIONS

8.1 Analog Data

8.1.1 Method

Σ - Δ converter

8.1.2 Measurement interval

Programmable in 1s steps - min 1s

N.B. : All channels are measured within the same second

8.1.3 Time Base

X-tal reference

Uncertainty 20ppm at 20°C

Stability 50ppm (-20°C to +60°C)

8.1.4 Inputs

8,16 or 24 **differential** inputs.

Impedance: Min 400 k Ω .

Oversvoltage protection: 30V continuous.

Higher voltages may damage the inputs

N.B.: current inputs are shunted by 51 Ω

8.1.5 Ranges

Preset: 0-20mA, +/-10V, +/-1000mV, +/-100mV **or** +/-50 mV
Temperatures: 50mV thermo emf
Thermoelectric voltages are linearized and cold junction compensated

Switchable: Four Voltage Ranges per Channel
+/- 10V
+/- 1000mV
+/- 100mV
+/- 50 mV

One Current Range
0 - 20 mA

Each channel has a switchable 51Ω shunt for the 20mA range. It is connected across the input by using the on-board switch (see 5.2).

NOTE: Max. allowed current through shunt is 80mA

8.1.6 Divisions

Min 25000 divisions

8.1.7 Resolution

(Examples)

Range	Resolution (approx.)
10V	0.4mV
1000mV	40μV
100mV	4μV
50mV	2μV
20mA	800nA

Thermoelectric voltage, 50mV FSR: (Examples)

Thermocouple J	:	0.1°C
Thermocouple K	:	0.1°C
Thermocouple T	:	0.1°C
Thermocouple S	:	0.3°C
Thermocouple E	:	0.1°C

8.1.8 Uncertainty

(at 23°C +/-5°C)

	Ranges	(ppm of reading + divs.)
Voltage	10V	: +/- (100ppm+2divs.)
	1000mV	: +/- (200ppm+2divs.)
	100mV	: +/- (300ppm+2divs.)
	50mV	: +/- (400ppm+2divs.)
	20mA	: +/- (300ppm+2divs.)
Current		
Noise		+/-1 bit
Temp. co.		50ppm/°C
T/C linearization error		+/-0.1°C
Cold Junction		+/-0.5°C

8.1.9 Common Mode

Common mode range: : min +/-5V at 10V FSR
: min +/-10V other ranges
CMR : min 80dB

8.2 Storage Memory

Sizes : 0k Bytes (only for on-line recordings)
64k Bytes (optional)
64k +512k Bytes (optional)
64k + 1024k Bytes (optional)

8.3 Computer communication

Data is transferred in a serial form to and from the computer.
The serial standard conforms to a subset of RS-232.

Format: 8 bit ASCII
1 start bit
8 data bits
1 stop bit
19200 baud

8.4 Commands

See "Command Manual"

8.5 Power

Voltage: 12 - 15 VDC
Operating current: Max 400 mA (charging + operating)
Charging current: Max 200 mA (initial)
Max 60 mA (trickle)

8.5.1 Rechargeable Batteries

Charging time: Min 40 hours with supplied mains adapter.
Should be continuously (trickle-)charged.
Capacity: Min 2 hours of operation with fully charged
accumulators

8.5.2 Charger/Mains Adapter

Voltage: 12 - 15VDC
Current: Min 500 mA

8.6 Mechanical specifications

Width:	165mm
Length:	315mm
Height:	62 or 88mm (depending on model)
Weigh:	1.7 - 2.5kg (depending on model)

8.7 Environmental conditions

Min operating temp	-20°C
Max operating temp	+50°C
Min storage temp	-30°C
Max storage temp	+55°C
Max rel. humidity	80% non-condensing