

DATA SHEET FOR SQUIRREL MODELS 1209 AND 1259

CHANNELS AND RANGES

Squirrel models 1209 and 1259 have thirteen input channels.

Each channel can be set to any of the ranges available for that channel, or not set.

CHANNEL NO	INPUT TYPE	AVAILABLE RANGES	PART OF RANGE	ON DISPLAY	RESOLUTION IN MEMORY	
1 - 4	Temperature, (U, Y or S thermistor)	-50 to +150°C (U) (set as 1:150°C) -58 to +302°F (U) (set as 1:302°F)	-50 to -40°C	0.2°C		
			-40 to -25°C	0.1°C		
			-25 to +105°C	0.05°C		
			+105 to +130°C	0.1°C		
		-50 to +150°C (Y) (set as 2:150°C) -58 to +302°F (Y) (set as 2:302°F)	+130 to +150°C	0.2°C		
			-58 to -40°F	0.4°F	0.36°F	
			-40 to -10°F	0.2°F	0.18°F	
			-10 to +220°F	0.1°F	0.09°F	
		-30 to +125°C (S) (set as 3:125°C) -22 to +257°F (S) (set as 3:257°F)	+220 to +265°F	0.2°F	0.18°F	
			+265 to +302°F	0.4°F	0.36°F	
			-30 to -15°C	0.4°C		
			-15 to 0°C	0.2°C		
			0 to +25°C	0.1°C		
			+25 to +115°C	0.05°C		
			+115 to +125°C	0.1°C		
			-22 to +5°F	0.8°F	0.72°F	
			+5 to +32°F	0.4°F	0.36°F	
			+32 to +77°F	0.2°F	0.18°F	
5 - 8	DC Voltage	-20 to +20V -2 to +2V -200 to +200 mV -20 to +20mV		10mV		
				1mV		
				100uV		
				10uV		
	OR DC Current	-20 to +20mA -2 to +2mA 4 to 20mA (displayed as 0-100%)		10uA		
				1uA		
				0.05%		
	9 - 10	Humidity (type L or H humidity probe)	0 to 100%		0.1% r.h.	
	11,12	Pulse rate OR Pulse count	0 to 62.5kHz		1Hz	
			0 to 62,500 0 to 625,000 0 to 6,250,000		1	
					10	
13	Digital OR State	0 to 255		1		
				0 or 1		
		0 or 1 (set as H1010)		0 or 1		

Minimum record or scan interval depends on the number of analogue channels set to log (pulse and state/digital channels do not affect the minimum interval).

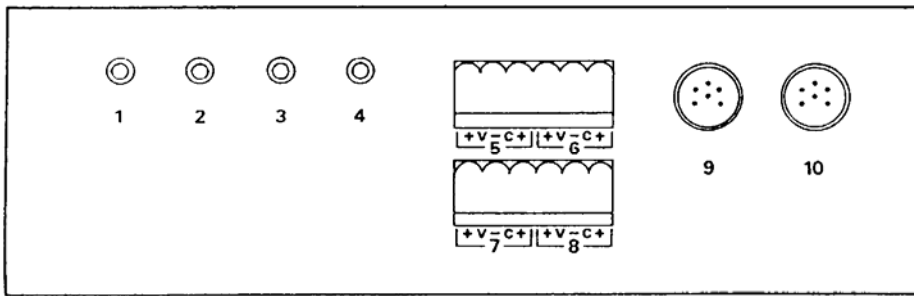
No of analogue channels set to log	Minimum interval (scan or record)
1 to 6	1 sec
7 to 10	2 secs

MEASURING INPUT TYPES AND DETAILS

Channels 1 to 4	Grant type U, Y or S thermistor probes. At 25°C, the thermistor bead inside them has a resistance of 2,000 Ohms (U), 2,252 Ohms (Y) or 20,000 Ohms (S).
Channels 5 to 8	Voltage - 1 Megohm input impedance. Current - 10 Ohm input impedance.
Channels 9 and 10	Grant type L or H humidity probes. Type L is similar to Vaisala HMP31, type H to Lee-Integer CH121. Each probe is also fitted as standard with a Grant type U thermistor sensor. The thermistor sensor of the humidity probe plugged into channel 9 is automatically connected to channel 3 unless a separate thermistor probe is plugged into channel 3. Similarly the thermistor associated with channel 10 is connected to channel 4. Check correct thermistor type is selected for channels 3 and 4.
Channels 11 and 12	Voltage pulses must have low level below 0.5V d.c., high level between 4 and 20V d.c. Minimum pulse length 8us, minimum interval between pulses 8us (maximum frequency 62.5kHz). Contact closures can also be counted if terminals S and - are linked to connect debounce circuits. Minimum closure 5ms, minimum interval between closures 5ms (maximum frequency 100Hz).
Channel 13	Voltage. Low level (stored as 0) must be below 0.8V d.c., high level (stored as 1) between 2 and 6V d.c. The Squirrel is CMOS and TTL compatible with each input held high (through a 1 Megohm resistor) to the internal regulated 5V supply. Contact closures can also be used. Contact closed is stored as 0, open as 1.

INPUT AND OUTPUT CONNECTIONS - Squirrel models 1209 and 1259

Inputs on top of Squirrel

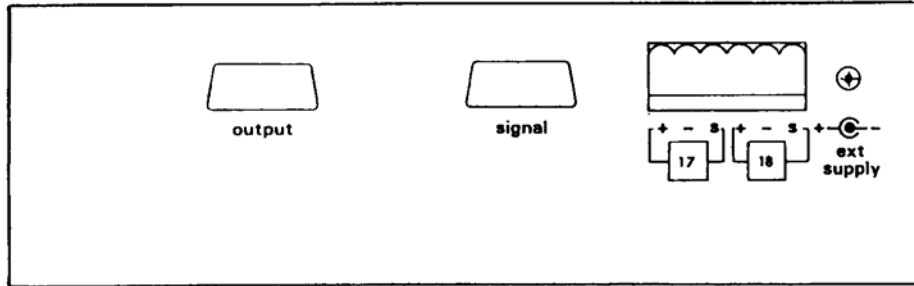


Temperature - LEMO locking sockets

Voltage/Current - Male sockets for black 6-way plug-in female terminal blocks (3 ways per channel). NEVER CONNECT A VOLTAGE BETWEEN C+ AND -, OR BETWEEN V+ AND - WHEN SET TO A CURRENT RANGE.

Humidity 6-pin DIN sockets

Inputs and outputs on base of Squirrel



15-way female D connector (screw locking on 1250s)

15-way male D connector (screw locking on 1250s)

Pulse count/rate - Male sockets for orange 6-way plug-in female terminal blocks (3 ways per channel) Connect hi to +, lo to -. Connect S to - when counting contact closures.

Male socket for standard power supply plug

1200 Series Squirrel Output connector pins

- Pin 1 Common - Squirrel ground
- " 2 Data Strobe
- " 3 Data bit 1
- " 4 " 2
- " 5 " 3
- " 6 " 4
- " 7 " 5
- " 8 " 6
- " 9 " 7
- " 10 " 8
- " 11 Busy
- " 12 Sensor switch-on
- " 13 RS232 In } Computer
- " 14 RS232 Out } Connections
- " 15 Acknowledge - Printer Connection

1250 Series Squirrel Output connector pins

- Pin 1 Common - Squirrel ground
- " 2
- " 3
- " 4
- " 5
- " 6 DO NOT USE
- " 7
- " 8
- " 9
- " 10
- " 11 Activate Remote operation
- " 12 Sensor switch-on
- " 13 RS232 In } Computer/Modem
- " 14 RS232 Out } Connections
- " 15 DO NOT USE

1200/1250 Series Squirrel Signal connector pins

- Pin 1 Event/Digital data bit 1 (hi)
- " 2 " 2 (hi)
- " 3 " 3 (hi)
- " 4 " 4 (hi)
- " 5 " 5 (hi)
- " 6 " 6 (hi)
- " 7 " 7 (hi)
- " 8 " 8 (hi)
- " 9 Common - Squirrel ground (and Event/Digital lo)
- " 10 1Hz clock pulse input
- " 11 1 Hz clock pulse output
- " 12 External Reading Link
- " 13 External Reading Trigger Input
- " 14 Latched Alarm Output
- " 15 Non-latched Alarm Output

SIGNAL INPUT/OUTPUT DETAILS

- External trigger input Voltage levels: START - less than 0.5V d.c. STOP - 4 to 6V d.c.
Contact closures: START - contacts closed STOP - contacts open
- Alarm outputs Internal contacts close when any channel is in an alarm state. One pair of contacts opens when all channels are no longer in alarm state, the other is latched to remain closed until reset. Contacts can pass up to 50mA from external source of up to 25V d.c.
- Sensor switch-on output Internal contacts close 5 seconds before each set of readings is taken in interval and averaging modes, and continuously while in function 2 (meter). Contacts remain closed until final reading of the set is taken. They can pass up to 50mA from an external source of up to 25V d.c.
- Printer output 1200 Series: Centronics type
Please note - 1250 Series Squirrels have no direct output to printer
- Computer communications RS232, baud rate 300, 600, 1200, 2400, 4800, 9600 (1200 Series also 19200)

Grant Instruments is committed to a continuous programme of improvement and therefore reserves the right to change specifications without notice.

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