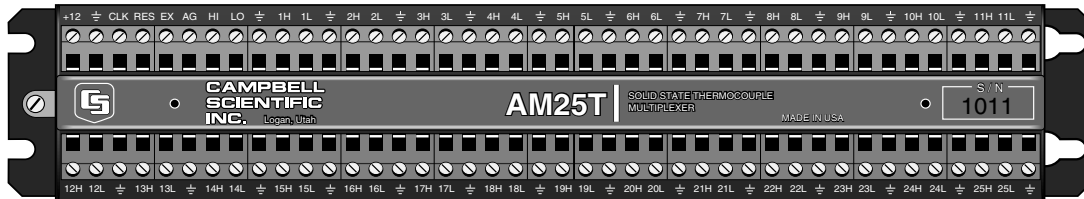


Solid State Multiplexer for Thermocouples¹

Model AM25T

The AM25T sequentially connects up to 25 thermocouples¹ to a differential analog input on a CR800, CR850, CR10X, CR1000, CR3000, CR5000, CR7, or CR9000X datalogger. A PRT attached to the multiplexer's grounding bar provides a temperature reference for the thermocouple measurements. The heat capacity of the grounding bar and an insulated aluminum cover reduce thermal gradients along the length of the multiplexer. Reducing the thermal gradients allow more accurate measurements.



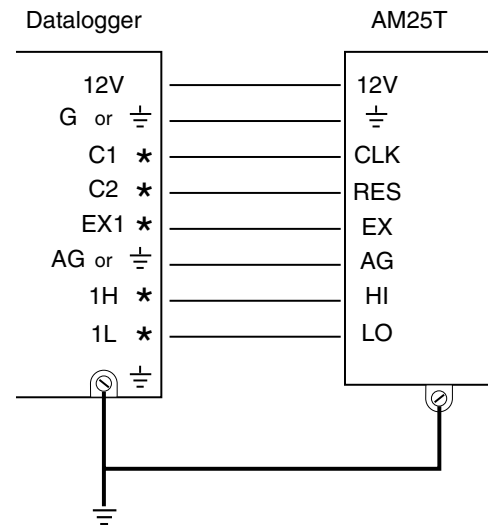
AM25T cover not shown.

Features

- Operating temperature range -40° to +85°C
- Spark gaps protect all inputs
- Panel (reference) temperature measured by a built-in PRT accurate to: ±0.2°C over -25° to +50°C range, ±0.4°C over -40° to +85°C range
- Circuit boards are multi-layered; a metallic, internal ground plane reduces thermal gradients
- Several AM25Ts can be controlled by one datalogger
- Vertical package reduces "footprint" in enclosure
- Can be located up to 500 feet from datalogger

Datalogger Connections

Up to 25 thermocouples are wired into paired terminal sets on the AM25T. The 4-wire reference PRT is measured by the datalogger via the EXcitation, Analog Ground, HI, and LO terminals. Subsequent pulses switch each pair of AM25T terminals into continuity from the thermocouple junction, through the input and HI/LO terminals of the multiplexer, to a differential analog input on the datalogger. The MUXPOWER-L and MUXSIGNAL-L cables, or a similar 8-conductor cable, carry control, power, and measurement signals between the AM25T and the datalogger. A separate 10 to 12 awg single-conductor wire connects AM25T ground to datalogger ground.



*Channel numbers shown are for example only and may vary depending on the application.

Scanning Multiple AM25Ts

Multiple AM25T's can be connected to the datalogger. The dataloggers are then programmed to measure sensors from each multiplexer sequentially.

¹Other low-level voltage output sensors that do not exceed the common mode range of the datalogger can also be measured. The AM25T should NOT be used to measure resistive bridges or configured with a voltage divider between the AM25T and the datalogger; ask about our AM16/32 multiplexer for these applications.

Environmental Enclosures

The AM25T operates in most field conditions but requires a non-condensing environment. Outdoor applications require a weather-resistant enclosure augmented by desiccant; a Campbell Scientific enclosure is recommended. Our ENC12/14 enclosure can house up to two AM25Ts, a CR800, CR850, CR10X, CR1000, or CR3000, and a power supply. The ENC16/18 houses several AM25Ts, a CR800, CR850, CR10X, CR1000, CR3000, or CR5000, and a power supply. These white fiberglass-reinforced polyester enclosures can attach either to a wall with lag bolts or to a 1.25" IPS pipe (1.66" O.D.) with U-bolts. Please note that the ENC10/12 is not deep enough to house the AM25T. Consult the factory for CR7 and CR9000X enclosure options.

Specifications

Electrical

- Power: 9.6 to 16 Vdc (under load), unregulated
- Current drain: 0.5 mA quiescent
1.0 mA active
- Enable levels: <0.9 V inactive
3.5 to 5 V active
- Clock levels: Scan advance occurs on the falling edge of the Clock pulse (from above 3.5 V to below 1.5 V).
- Minimum Clock Pulse Width: Limited by the datalogger
- Initial Resistance: 500 ohms
- Maximum Switching Current: 25 mA
- Approximate time required to measure reference PRT and 25 thermocouples:

	Using 60 Hz rejection	Using Fast integration
CR10X	< 1.0 s	< 0.5 s
CR5000	< 0.9 s	< 0.03 s
CR7	2.2 s	< 1.0 s
CR9000(X)	< 1.0 s	0.20 s

Physical

- Operating Temperature: -40° to +85°C
- Operating humidity: 0 to 95%, non-condensing
- AM25T Dimensions: 9.3" L x 5.2" H x 2" W
23.6 cm x 13.2 cm x 5.1 cm
- Weight/shipping: 2.0 lbs/8.0 lbs
0.9 kg/3.6 kg

