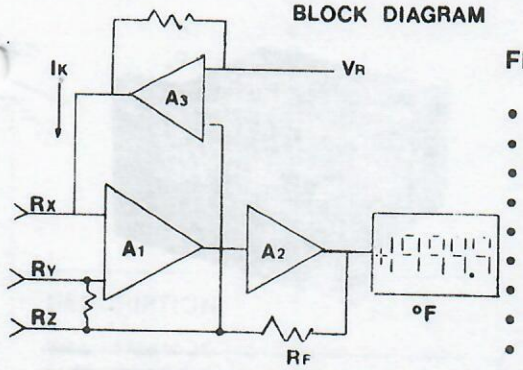
HI-REL ±4½ DIGIT μP COMPATIBLE RTD Temperature Processor DPM

MODEL 609

BLOCK DIAGRAM



FEATURES

- Mux or Parallel "3T" BCD
- Run, Hold, Strobe, Busy and Blank Signals
- Flashing Display for Overrange
- Auto Lead Compensation
- DIN or ASA Calibration
- Auto Detection of Open or Shorted Sensor
- 150 Hour Burn-in Plus 3-100% Tests
- MTBF of 50,000 Hours (calculated)
- Field Failure Rate Below 0.3%

DESCRIPTION

The Platinum RTD is considered the most accurate and sensitive temperature sensing device and it is only logical to use it with a high accuracy and reliability DPM.

Two types of RTD and consequently, amplifiers are available, the 0.00385 OHMS/OHMS/°C DIN Standard and 0.003923 for American Standard. Two internal controls are factory set (offset and span) and two calibrations are available either American Standard or DIN Standard.

Safety. The option board has provisions for detecting open or shorted RTD. This condition will force the display to blink (overrange). The maximum current and voltage supplied to the RTD is 1mA at 6Vdc under normal circumstances. Linearized analog output is available at rear connector and is reference to Analog Common.

SPECIFICATIONS @25°C

Zero ..... Automatic
Sample Rate ..... 3/Sec. Std., Others on Request
Power ..... 5Vdc ±5% @ 300mA

Accuracy and Linearity

Temperature Coefficient ..... ±50 PPM
Total Error ..... ±0.01% ±1 Digit
Including RTD Probe ..... ±0.07% ±1 Digit
Warmup ..... 1 Minute

Outputs

Display ..... LED, Bright Red .5" (13 mm) High
Decimal Point ..... Externally Selectable
Overload ..... Display Flashes
BCD DAta & Control ..... One TTL Load (Inputs & Outputs)
"3T" BCD ..... 10LPTTL (5TTL) Loads

AC Power Supply

Input ..... 115/230 VAC ±10%, 47-400Hz
Output ..... 5Vdc ±5%, 400 mA (2W)

Temperature

Operating ..... 0°C to +60°C
Storage ..... -20°C to +80°C

Performance (RTD Section)

Resistance Lead Compensation .... Automatic to 20 OHM/Lead
Offset and Span ..... Internal Adjustments
Normal Mode Rejection ..... 70dB @60 Hz
Analog Output ..... ±2Vdc @1mA
Common Mode Voltage ..... ±10V to Digital Ground, 1200V to AC Power when P.S. is ordered
Input Type ..... 3 Wire, 100 OHMS @ 0°C Typical
Ambient Temp. Coefficient .. +0.01 Degree/Degree, 10-40°C

Other Specifications same as basic instrument.

TERMINAL DESCRIPTION

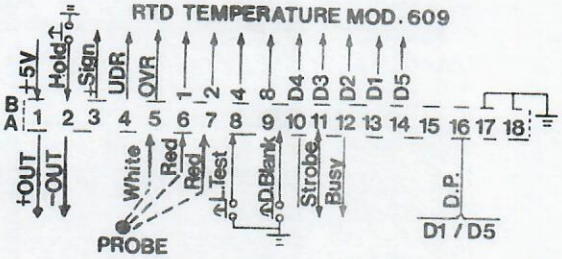
Bottom Row:5A + RTD Input (White), **7A** − RTD Input (Red), **6A** − RTD Input (Compensating Lead Red), connect shield to Pin 17B. 4A External Reference (optional) for Ratiometric, 0.1 to 2V Range; 8A Lamp Test; 9A Display Blank, connect 18B to enable; 11A Strobe, five negative pulses at EOC, one for each D.S. 5us Wide; 12 A Busy, High during Conversion, Low during Auto Zero 10mS Wide; 16A D.P. Connect to appropriate D.S. to light desired D.P.

Top Row: 1B + 5Vdc Input; 2B Reading Hold, Open for normal operation, connect to 18B to hold, a positive pulse over 300nS will command to make one single conversion; 3B Sign, Low for Negative Reading, High for Positive Reading; 4B Underrange, normally Low goes high when reading is less than 9% of F.S. (1800 counts); 5B Overrange, normally low, goes high when reading exceeds 19999 counts (F.S.); 6-9 B 1, 2, 4, 8 BCD Output Positive Logic 1 LPTTL Load mx. (400μA Sink); 10-14B Digit selects, DS1 is LSD, DS5 is MSD 1LPTTL Load max. (400μA Sink); 17 and 18B Digital Ground.

OPTIONS

115/230 Vac. 47-400Hz Internal Power Supply with 1200 Vac Isolation, ±10% Input; 5Vdc ±5% at 400 mA Output. See main frame for connections.

"3 State" Parallel. Buffered BCD (See Model 600 page 10)



External Power Pack. Refer to page 45.

ORDERING INFORMATION

MODEL 609 X X X

Range

0 ... ±2000.0°C DIN
1 ... ±2000.0°C ASA
2 ... ±2000.0°F DIN
3 ... ±2000.0°F ASA

Options

0 ... 5Vdc Power Req'd
1 ... 115 230AC Power
2 ... "3T" BCD & 5V DC
3 ... "3T" BCD & Open Frame
4 ... "3T" BCD & Power Pack

0 ... Standard

Note: These ranges apply to the 609; however, the RTD's available are limited to lower temperatures (see page 43) for RTD's - information and ordering.