

# DH96 TMP

## Digital Temperature Indicators

### FEATURES



- Measures and displays RTD and Thermocouple sensor readings
- Display in Degrees F, C or K
- Front panel mounting
- Large LED 5 digit display
- Setup configuration via secure, front panel keys
- Min and Max values
- Relay outputs (optional)
- Analog output (optional)
- Modbus RTU communications RS232 or RS-485 (optional)
- Modbus TCP communications (optional)
- Compatible with **PowerStudio Energy Management Software**

### MODULE OPTIONS\*

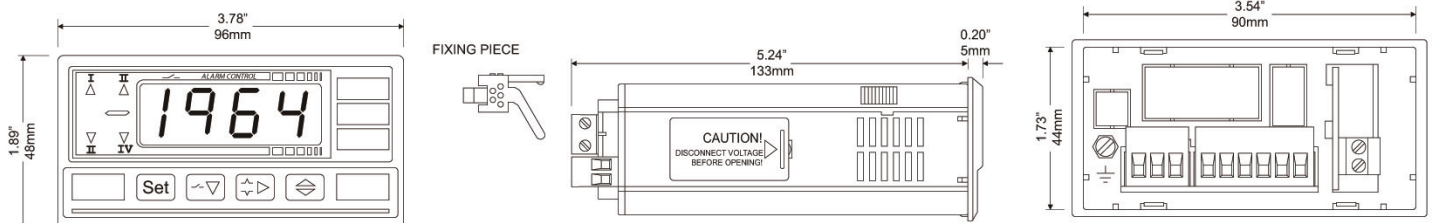
- ✓ 2 x relay outputs
- ✓ 4 x relay outputs
- ✓ 2 x relay outputs & RS-485 or RS-232
- ✓ 4 x relay outputs & RS-485 or RS-232
- ✓ Analog output 0 / 4.. 20mA
- ✓ Analog output 0 / 2.. 10Vdc
- ✓ RS-232 Communications (Modbus)
- ✓ RS-485 Communications (Modbus)
- ✓ Analog output 0 / 4.. 20mA & 2 relays
- ✓ DC Auxiliary power supply
- ✓ Ethernet (Modbus TCP)

\* not all modules compatible with every DH96 model

### OTHER DH96 MODELS

Designator	Description
A	AC Voltmeter <b>or</b> Ammeter
C	DC Voltmeter <b>or</b> Ammeter (fixed ranges)
AV	DC Voltmeter <b>and</b> Ammeter
CPM	DC Power and Energy meter
P	Universal process indicator
FT	Process rate / Totalizer
CT	Chronometer and pulse meter
WG	Ground fault current indicator
SG	Loadcell indicator

### DIMENSIONS



Call Toll Free: 1-877-PQ-SOLNS (1-877-777-6567) or 303-805-5252 email: [info@measurlogic.com](mailto:info@measurlogic.com)

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## SPECIFICATIONS

### Display

7 segment  
5 Digit (.55" - 14mm High)  
Hi-efficiency red color  
Over-range thermocouple or RTD transducer indication:  
"OUT.rG"  
3 Alarm LED's  
Programmable decimal point

### Input Circuit

A/D Converter resolution 16 bit  
Conversion method Sigma-Delta ADC  
Sampling Rate 32.768kHz  
Low Pass Filter type (sin(x)/x)<sup>3</sup>  
50Hz rejection -93dB  
60Hz rejection -74dB

### Thermocouple

Cold junction compensation -40°C to +125°C  
Accuracy 0.1% ± 1 digit  
Algorithm Polynomial coefficients as per NIST IST 90

### Measurement types and range

Type B 250°C to +1800°C  
Type E -200°C to +1000°C  
Type J -210°C to +1200°C  
Type K -200°C to +1372°C  
Type N -200°C to +1300°C  
Type R -50°C to +1768°C  
Type S -50°C to +1768°C  
Type T -200°C to +400°C

### Pt100, Pt200, Pt500, Pt1000

Current excitation 200µA  
Accuracy 0.1% ± 1 digit  
Measurement Range -129°C to +850°C  
Connection type 3 wire  
Algorithm Callendar-Van Dusen  
Standard IEC 751-1983, DIN 43760 (1980)

### Isolation between input, measurement circuit and outputs

Test Voltage 3kV RMS 50Hz for 1 minute  
Pulse test 4kV (1.2/50ms)

### Auxiliary Supply

Rated Voltage 115Vac / 230Vac (-15%, +20%)  
Frequency Range 45 to 65 Hz  
Burden 4VA (without optional card)  
7VA (maximum burden)

### Environmental Conditions

Storage Temperature -40°C to +70°C  
Operating Temperature -10°C to +65°C

### General characteristics

Dimensions 96 x 48 x 138 mm  
Weight 550g  
Case Material Self extinguishing ABS, anthracite grey  
Protection Front panel: IP54  
IP65 with optional front panel cover  
Case: IP20  
Terminals: IP20

### Standards and safety

Safety IEC 601010 / IEC 348 / IEC 664  
EN 50081-2 / EN 50082-2 / IEC 751

### I/O and Communication Options:

#### Relay Characteristics - 1 changeover contact

Rated AC current 8A  
Maximum AC current 10A  
Rated Voltage 250Vac 50/60Hz  
Maximum Voltage (VDE 0435) 440Vac  
Maximum AC resistive load 2000 VA  
Isolation resistance at 500V > 104 MΩ  
Contact coil isolation 6kV ac  
Contact - contact isolation 1kV ac  
Mechanical endurance > 20 x 106 operations  
Electrical endurance > 2 x 106 operations at 5A and 35V

#### Relay Characteristics - 1 single contact

Rated AC current 5A  
Maximum AC current 5A  
Rated Voltage 250Vac 50/60Hz  
Isolation resistance at 500V > 103 MΩ  
Contact coil isolation 2kV ac - 1 minute  
Contact - contact isolation 1kV ac - 1 minute  
Mechanical endurance > 20 x 106 operations  
Electrical endurance > 100 x 103 operations

### Analog Outputs

Resolution 14 bit  
Maximum load impedance for current output 500Ω  
Maximum load impedance for voltage output 500Ω  
Isolation between analog output and aux. 3kV  
Isolation between analog output and input 3kV  
Response time < 100msecs  
Temperature coefficient 100ppm/°C

### Communication (RS-232)

ESD protection up to 10kV  
Overload protection and ground short circuit 30V without damage  
Blocking protection Yes  
Standard EIA RS-232

### Communication (RS-485)

ESD protection up to 2kV  
Overload and short circuit protection Yes  
Connect / disconnect from active system Yes  
Standard EIA RS-485

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