ANDERSON-NEGELE

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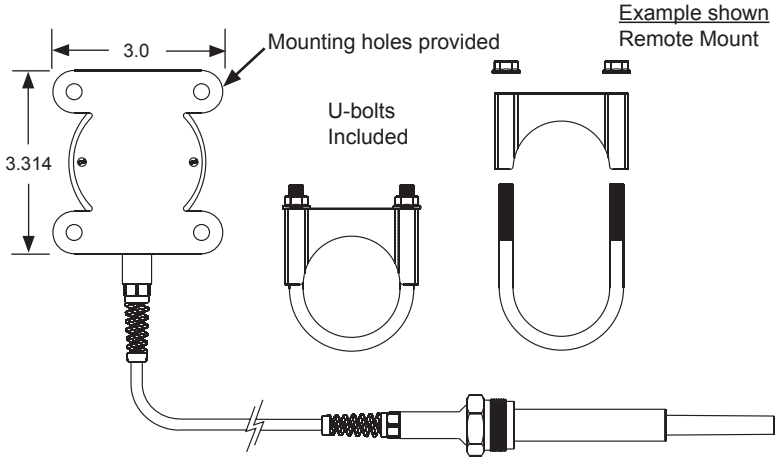
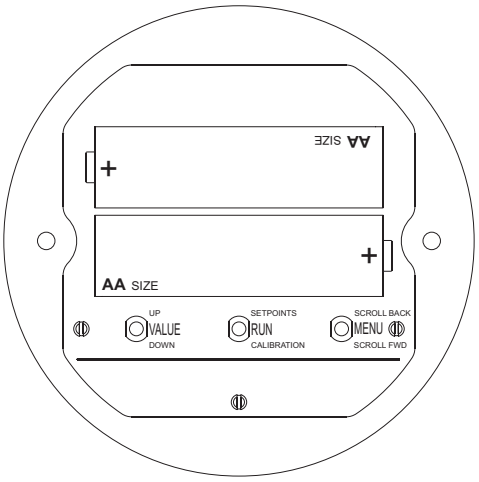
Startup Guide

"DTG" Digital Temperature Gauge
Style FH0, FH1, FH2, or FH5

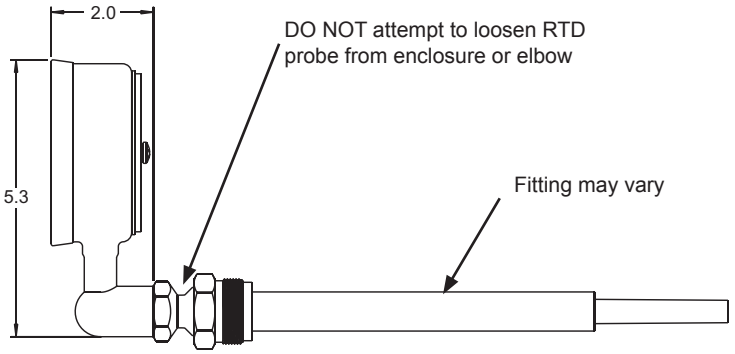
SPECIFICATIONS

Compliance:	3-A, NEMA 4X, IP-66
Product Contact Surface:	Fitting & Probe: 316L SS
Non-Product Contact Surface:	Housing - 304 SS Lens - Polysulfone
Process Temp. Range:	0 to 300°F (-18 to 150°C)
Units:	Deg F and Deg C; field selectable
Resolution:	0.1°F or °C
Accuracy:	+/- .5°F (+/-0.3°C)
Ambient Operating Limits:	40 to 140°F (4.4 to 60°C)
Ambient Temp. Stability:	Better than 0.1°C per 10°C ambient shift
Storage Temp.:	32 to 140°F (0 to 65°C)
Display:	LCD: 4 digit main display, 6 digit secondary; 0.9" high contrast LCD
Error Warning:	LCD flashing
Power:	2 AA Industrial Grade Batteries (Style 0,1,5); Customer supplied 9-30 VDC(Style 2)
Battery Life:	Style 0,1,5: 12 months typical Style 2: external power
Vibration:	10 to 60 Hz, 2g
Warranty:	2 year
Display Update:	3 seconds
Calibration Adjustment:	Via onboard switches; single point offset adjust
Surface Finish:	R_a max = 32 micro inches





NOTE:
Remove back plate to
access Value, Run, and Menu keys used for
programming.



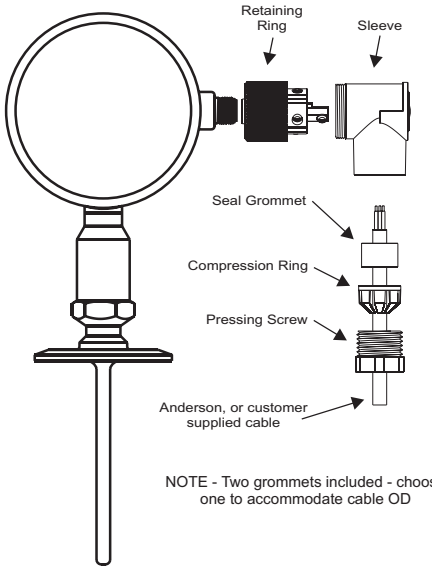
Example shown
Back Mount

Battery Replacement

A three segment battery indicator allows the operator to monitor battery life of the DTG, and plan ahead for a battery change. When a low threshold is reached, the final indicator bar blinks on and off. Internal circuitry regulates battery voltages to ensure all factory specifications are met, even with a decrease in battery voltage. When an unacceptable level is reached, the DTG will shut down. Internal flash memory retains all prior calibration, and only replacement of the batteries is required to resume operation. Units with optional AC switch module do not require batteries.

Full Battery	
Decreased Battery	
Low Battery (blinks between first and second)	

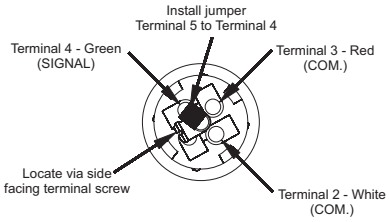
NOTE: When removing batteries, wait a minimum of (2) two minutes before re-installing.



NOTE - Two grommets included - choose one to accommodate cable OD

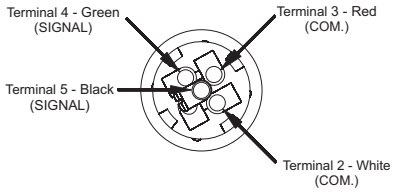
DTG Model "FH1" - Secondary RTD Wiring

Wiring Diagram - 3 WIRE RTD

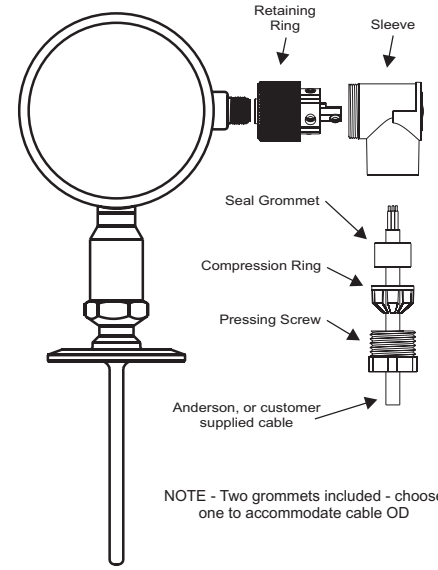


(NOTE: Anderson color codes indicated)

Wiring Diagram - 4 WIRE RTD



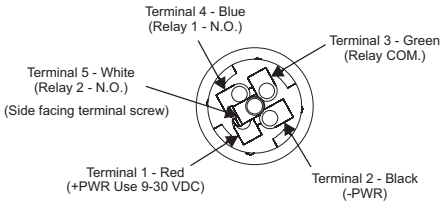
(NOTE: Anderson color codes indicated)



NOTE - Two grommets included - choose one to accommodate cable OD

DTG Model "FH2" - Switch Wiring

Wiring Diagram - Utilizing on-board switching only



(NOTE: Anderson color codes indicated)

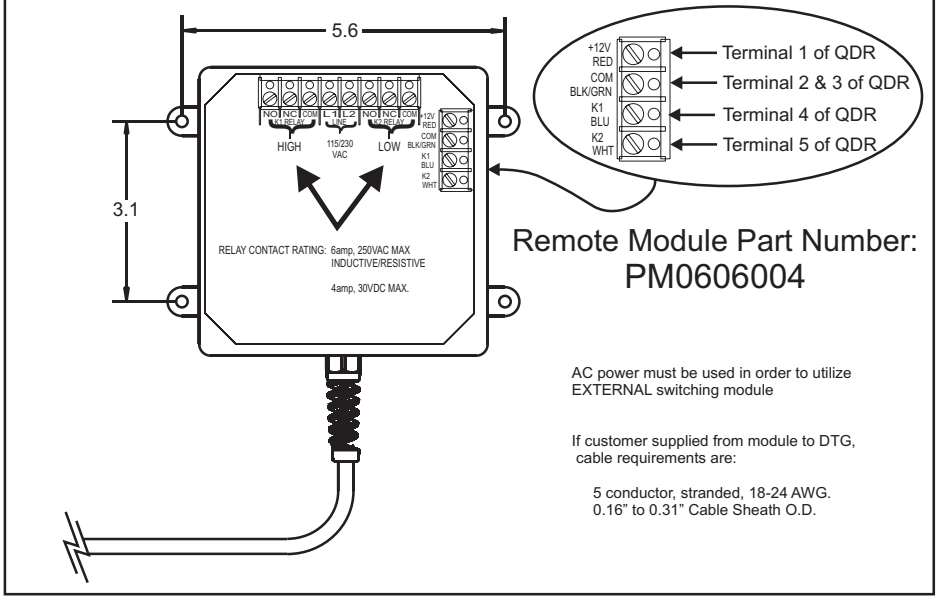
External DC supply must be used in order to utilize on-board switching

9-30 VDC, 250 mA typical external power required to energize relays

N.O. Relay contacts rated for 1 amp max @ 24 VDC

If customer supplied, cable requirements are:
5 conductor, stranded, 18-24 AWG.
0.16" to 0.31" Cable Sheath O.D.

Wiring Diagram - Utilizing "Optional" external AC powered switch module



Remote Module Part Number: PM0606004

AC power must be used in order to utilize EXTERNAL switching module

If customer supplied from module to DTG, cable requirements are:

5 conductor, stranded, 18-24 AWG.
0.16" to 0.31" Cable Sheath O.D.

Change Offset Value

The “Offset Value” function is used to apply a linear offset factor to the device. If your DTG shows a repeatable discrepancy (less than 1 degree) throughout the test range, this function may be used to remove the differential.

Example: Reference reads 32.0°F and DTG reads 32.3°F
Reference reads 150.0°F and DTG reads 150.3°F
Reference reads 212.0°F and DTG reads 212.3°F

“Offset Value” of “-0.3°F” programmed will remove discrepancy

CAUTION: Be sure to use only an NIST traceable reference thermometer that is known accurate, and within it’s specified calibration period.

1.	Flip **Run** switch to the down position.	
2.	Press **Menu** switch up and release once to go to *Offset* screen.	
3.	Use **Value** switch to set *Offset* from 0.0 to +/-5.0.	
4.	Flip **Run** switch to the middle position.	

Restore Factory Settings

The “Restore Factory Settings” function will return the DTG to the factory shipped calibration.

1.	Flip **Run** switch to the down position.	
2.	Press **Menu** switch down and release once to go to *Unit* screen.	
3.	Press **Menu** switch down and release once to go to *Dampening Factor* screen.	
4.	Press **Menu** switch down and release once to go to *Decimal Position* screen.	
5.	Press **Menu** switch down and release once to go to *Factory Reset* screen.	
6.	Hold **Value** switch up for 5 seconds to restore factory settings.	
7.	Flip **Run** switch to middle position.	

Change Unit of Measure

The DTG may be programmed to read in either Degrees F or Degrees C. When changing from one mode to another, any “User Calibration” points are converted automatically to their respective unit of measure – no additional programming is required.

1.	Flip **Run** switch to the down position.	
2.	Press **Menu** switch down and release once to go to *Unit* screen.	
3.	Use **Value** switch to alternate between °F and °C.	
4.	Flip **Run** switch to the middle position.	

Change Decimal Position

The DTG is capable of displaying to the nearest WHOLE DEGREE, or with the addition of a decimal point, to the NEAREST TENTH degree. Modifying this parameter requires no additional programming changes to “User Calibration” points.

1.	Flip **Run** switch to the down position.	
2.	Press **Menu** switch down and release once to go to *Unit* screen.	
3.	Press **Menu** switch down and release once to go to *Dampening Factor* screen.	
4.	Press **Menu** switch down and release once to go to *Decimal Position* screen.	
5.	Use **Value** switch to alternate select decimal position.	
6.	Flip **Run** switch to middle position.	

WHOLE DEGREE display will ROUND DOWN to previous whole number.
Example: Process = 181.9 °F Display = 181°F

Change Dampening Factor

The “Dampening Factor” is used as a means to slow down the reaction rate of the unit. Under most circumstances, this value should be set to “0.” If a process has very erratic temperature shifts, and the display fluctuates, introduction of a small dampening factor may smooth display.

1.	Flip **Run** switch to the down position.	
2.	Press **Menu** switch down and release once to go to *Unit* screen.	
3.	Press **Menu** switch down and release once to go to *Dampening Factor* screen.	
4.	Use **Value** switch to set *Dampening Factor* from 0.0 to 10.0.	
5.	Flip **Run** switch to middle position.	

Change Alarm 1 Setpoint

The DTG has alarm capability to signal with flashing text when a temperature is too high or too low.

1.	Flip **Run** switch to the up position.	
2.	Use the **Value** switch to set the Setpoint.	
3.	The value of Alarm 1 Setpoint is saved after the **Run** switch is returned to the middle position.	

Change Alarm 2 Setpoint

The DTG has alarm capability to signal with flashing text when a temperature is too high or too low.

1.	Flip **Run** switch to the up position.	
2.	Press the **Menu** switch down and release once to go to *Alarm 1 Action* screen.	
3.	Press the **Menu** switch down and release once to go to *Alarm 1 Hysteresis* screen.	
4.	Press the **Menu** switch down and release once to go to *Alarm 2 Setpoint* screen.	
5.	Use the **Value** switch to set the Setpoint.	
6.	The value of Alarm 2 Setpoint is saved after the **Run** switch is returned to the middle position.	

Change Alarm 2 Action

The “Alarm Action” can be set to HI to activate alarm if temperature goes above a max temp, LO if temperature goes below a min temp, or OFF.

1.	Flip **Run** switch to the up position.	
2.	Press the **Menu** switch down and release once to go to *Alarm 1 Action* screen.	
3.	Press the **Menu** switch down and release once to go to *Alarm 1 Hysteresis* screen.	
4.	Press the **Menu** switch down and release once to go to *Alarm 2 Setpoint* screen.	
5.	Press the **Menu** switch down and release once to go to *Alarm 2 Action* screen.	
6.	Use the **Value** switch to set the Action to either HI, LO or OFF.	
7.	The value of Alarm 2 Action is saved after the **Run** switch is returned to the middle position.	

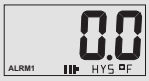
Change Alarm 1 Action

The “Alarm Action” can be set to HI to activate alarm if temperature goes above a max temp, LO if temperature goes below a min temp, or OFF.

1.	Flip **Run** switch to the up position.	
2.	Press the **Menu** switch down and release once to go to *Alarm 1 Action* screen.	
3.	Use the **Value** switch to set the Action to either HI, LO or OFF.	
4.	The value of Alarm 1 Action is saved after the **Run** switch is returned to the middle position.	

Change Alarm 1 Hysteresis

The “Hysteresis” function delays the alarm by a set value. Example: Alarm is set to a HI value of 76. The hysteresis value is set to 2. Alarm will activate when temp reaches 78.

1.	Flip **Run** switch to the up position.	
2.	Press the **Menu** switch down and release once to go to *Alarm 1 Action* screen.	
3.	Press the **Menu** switch down and release once to go to *Alarm 1 Hysteresis* screen.	
4.	Use the **Value** switch to set the Hysteresis.	
5.	The value of Alarm 1 Hysteresis is saved after the **Run** switch is returned to the middle position.	

Change Alarm 2 Hysteresis

The “Hysteresis” function delays the alarm by a set value. Example: Alarm is set to a HI value of 76. The hysteresis value is set to 2. Alarm will activate when temp reaches 78.

1.	Flip **Run** switch to the up position.	
2.	Press the **Menu** switch down and release once to go to *Alarm 1 Action* screen.	
3.	Press the **Menu** switch down and release once to go to *Alarm 1 Hysteresis* screen.	
4.	Press the **Menu** switch down and release once to go to *Alarm 2 Setpoint* screen.	
5.	Press the **Menu** switch down and release once to go to *Alarm 2 Action* screen.	
6.	Press the **Menu** switch down and release once to go to *Alarm 2 Hysteresis* screen.	
7.	Use the **Value** switch to set the Hysteresis.	
8.	The value of Alarm 2 Hysteresis is saved after the **Run** switch is returned to the middle position.	