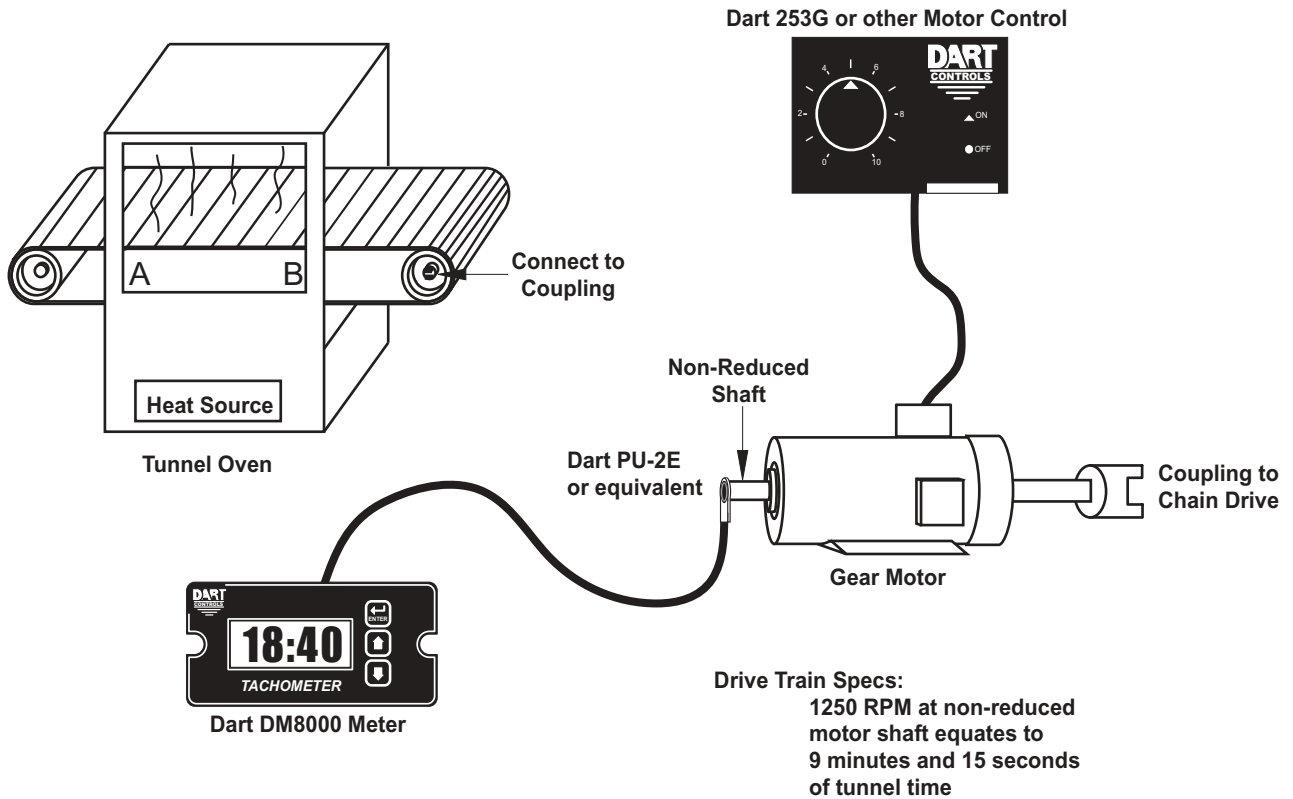# Conveyor Oven Time Monitor with Over-Heating Alarm
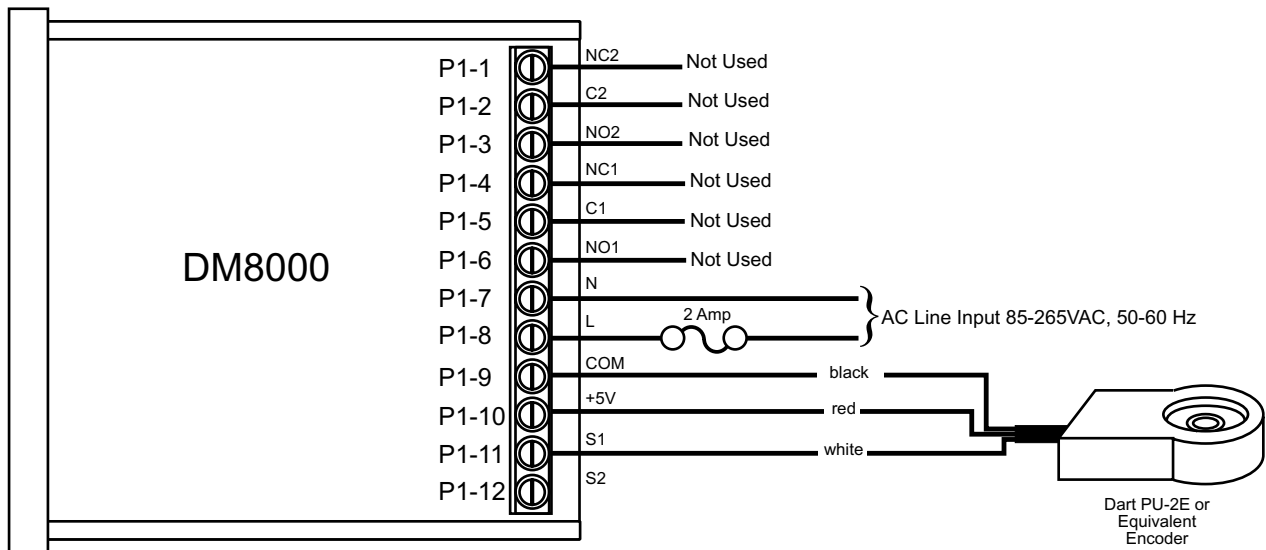
Description:

An oven monitor displaying the "tunnel" time in minutes and seconds. The tunnel time is defined as the time it takes for the heated object on the conveyor to travel from point A to point B in the application diagram below. A visual indicator should activate if the tunnel time rises above a preset limit of 22 minutes and 30 seconds which could cause overheating of the processed material. The indicator should automatically reset when the tunnel time returns to the normal operating range. For ease of use, the display should be averaged over a period of 1 second.

Application Diagram:

Dart 253G or other Motor Control

Connect to Coupling

Non-Reduced Shaft

Dart PU-2E or equivalent

Coupling to Chain Drive

Gear Motor

Tunnel Oven

Heat Source

A   B

18:40
TACHOMETER

Dart DM8000 Meter

Drive Train Specs:
   1250 RPM at non-reduced
   motor shaft equates to
   9 minutes and 15 seconds
   of tunnel time

Wiring Diagram:

DM8000		
P1-1	NC2	Not Used
P1-2	C2	Not Used
P1-3	NO2	Not Used
P1-4	NC1	Not Used
P1-5	C1	Not Used
P1-6	NO1	Not Used
P1-7	N	
P1-8	L	2 Amp — AC Line Input 85-265VAC, 50-60 Hz
P1-9	COM	black
P1-10	+5V	red
P1-11	S1	white
P1-12	S2	

Dart PU-2E or Equivalent Encoder

Parameter Configuration:

Parameter	Value	Notes
10	2	Time Mode Setting
20	555	Display should indicate 9:15 (555) when motor at Reference RPM, parameter 21. In time mode, all display values are entered in total number of seconds. For example, 555 = (9 minutes * 60 seconds-per-minute) + 15 seconds.
21	1250	This is the RPM at which the Display Reference, parameter 20, should be displayed.
22	1	Pulses per revolution of shaft encoder or pickup is 1 PPM
24	1	Display filtering / averaging set to 1 seconds
40	4	Alarm active when display value is above upper limit
41	1	Constant alarm output with automatic reset
43	1	Flash display when alarm output is active
48	1350	Upper limit setting for 22 minutes and 30 seconds. In time mode, all limits are entered in total number of seconds. For example, 1350 = (22 minutes * 60 seconds-per-minute) + 30 seconds.