DIGITAL TACHOMETER AND PROCESS METER

OMDC-DM8000

OMDC-DM8000

- **Four Devices in One: Tachometer, Counter, Totalizer, and Zero Speed Switch**
- **Selectable Alarm Relay Output**
- **Control Modes are Selectable Between Rate, Time, and Counter**
- **User Inputs Allow for Special Functions: Counter Reset, Counter Gate, and Alarm Display**
- **Non-Volatile Memory for Storage of Custom Settings**
- **Universal AC Input Voltage from 85 to 265 Vac**
- **NEMA 4X Rating**

The OMDC-DM8000 is an economical microprocessor-based digital tachometer system capable of measuring shaft speeds lower than 1 RPM. With an on-board microcomputer coupled with sophisticated internal software and a quartz crystal controlled reference frequency, the OMDC-DM8000 is able to maintain accuracy of ±0.04%, even if the shaft is uneven. The OMDC-DM8000 is field programmable through the easy-to-use frontpanel interface and can be configured to display any desired unit of measure. Large 13 mm (½") 4-digit LED display numbers allow viewing under the most adverse conditions.

The isolated 5 amp form C relay output can be configured for many different alarming conditions. Designed to use a variety of inputs, including the hall-effect solid state OMDC-PU-E Series pick-up, the system delivers trouble free operation at an economical cost. The OMDC-DM8000 offers the same enhanced display options and capabilities featured inour other digital control products, as well as the universal power supply and rugged european-style terminal strip.

The OMDC-DM8000 can be used in process applications for monitoring speeds and rates, or counting discrete input signals. Process applications using counting may be batching, filling, mixing, punching, cutting, drilling, diverting, or alarming. While process applications using speed or rate monitoring may be conveyors, conveyor ovens, material flow, rotational rpm, and testing.

SPECIFICATIONS

ELECTRICAL

Line Input
Voltage: Any voltage from 85 to 265 Vac
Frequency: Any freq from 48 to 62 Hz

Signal Input Frequency Range: 0 to 100,000 pulses per minute (higher frequencies are possible when using internal frequency divisor)

Resolution: From 0.01 RPM

Accuracy: ±0.04% display update every pulse or 0.5 seconds, whichever is longer

Isolated High/Low Alarm Output: 5 A, 230 Vac

Settable Alarm Range: 0 to 9999

Transducer Signal Input: 0 to 5 to 0 to 24 Vdc

Display Range: 0.001 to 99,990

Units of Operation: User programmable, any unit sensor/pickup

Power Supply: 5V @ 50 mA

Isolated Alarm Relay Output Ratings: 240 Vac @ 5A

MECHANICAL

Display Type: LED, red, 4 digit, 13 mm (½") H

Housing Type (With Supplied Gasket in NEMA 4X Panel): NEMA 4X

Connector Style (Pluggable Connector Optional): 12-position 5 mm european-style

Terminal Block Torque Setting: 4.4 in-lb max or 0.5 N-M

Faceplate Material: Polycarbonate with polycarbonate overlay

Housing Material: Aluminum

Dimensions:
Length (Panel Depth): 117.5 mm (4.6")
Width: 115.3 mm (4.5")

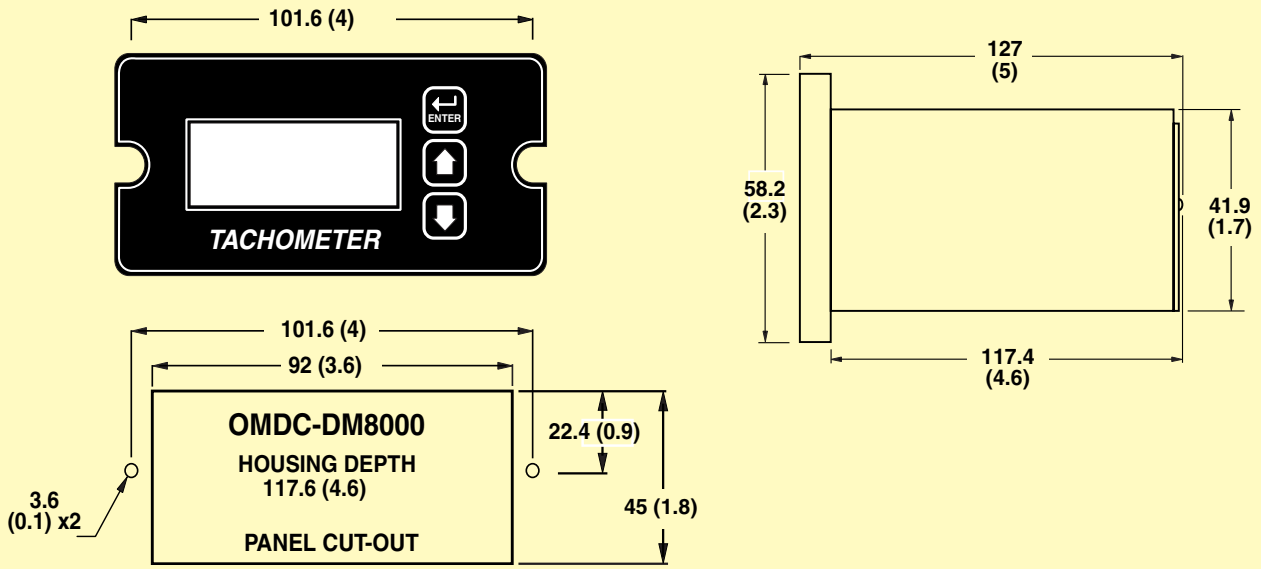
Weight: 382 g (13.5 oz)

ENVIRONMENTAL

Operating Temperature Range: -10 to 45°C (15 to 115°F)

Operating Humidity Range: 95%, non-condensing

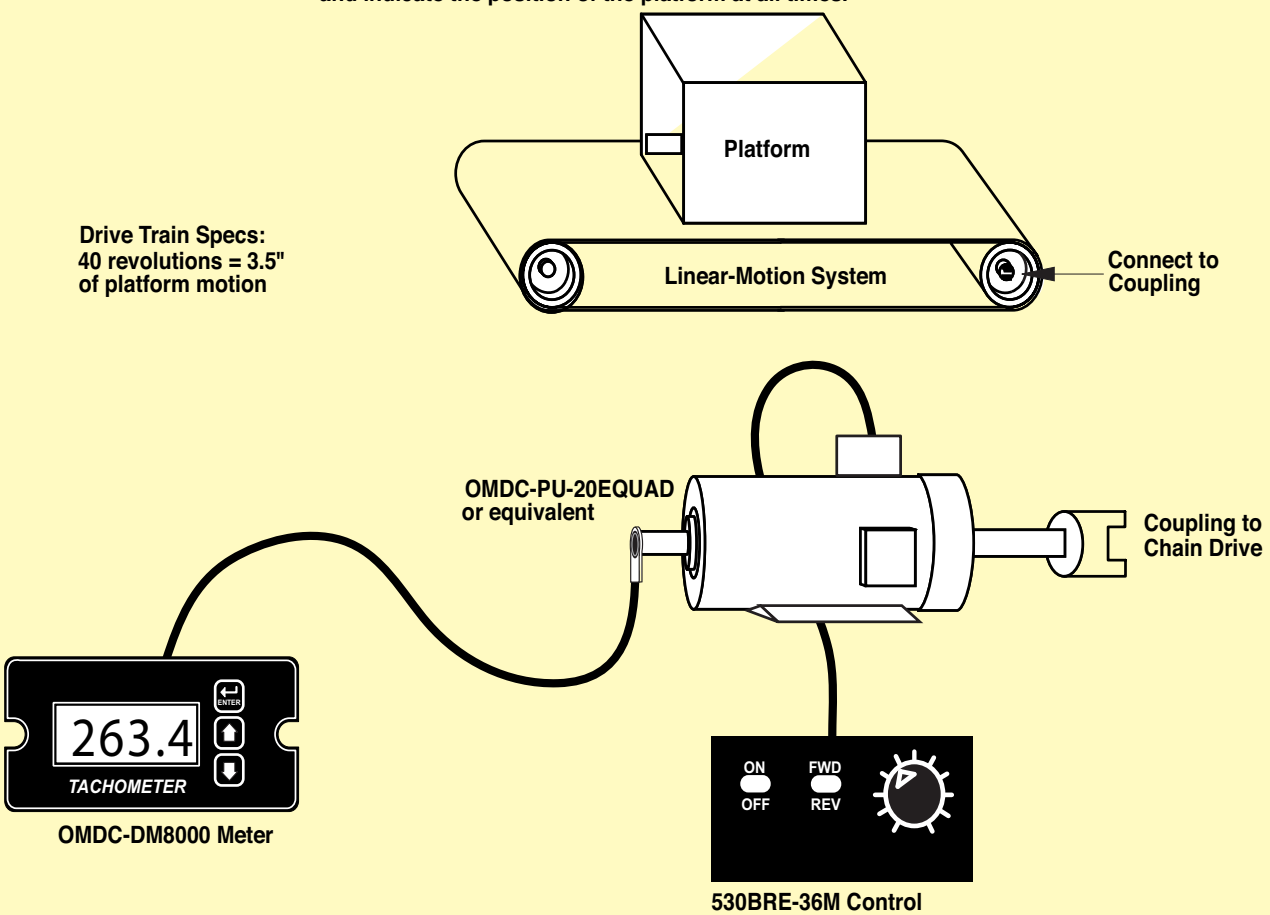
Cut-Out and Mounting Dimensions: mm (in)



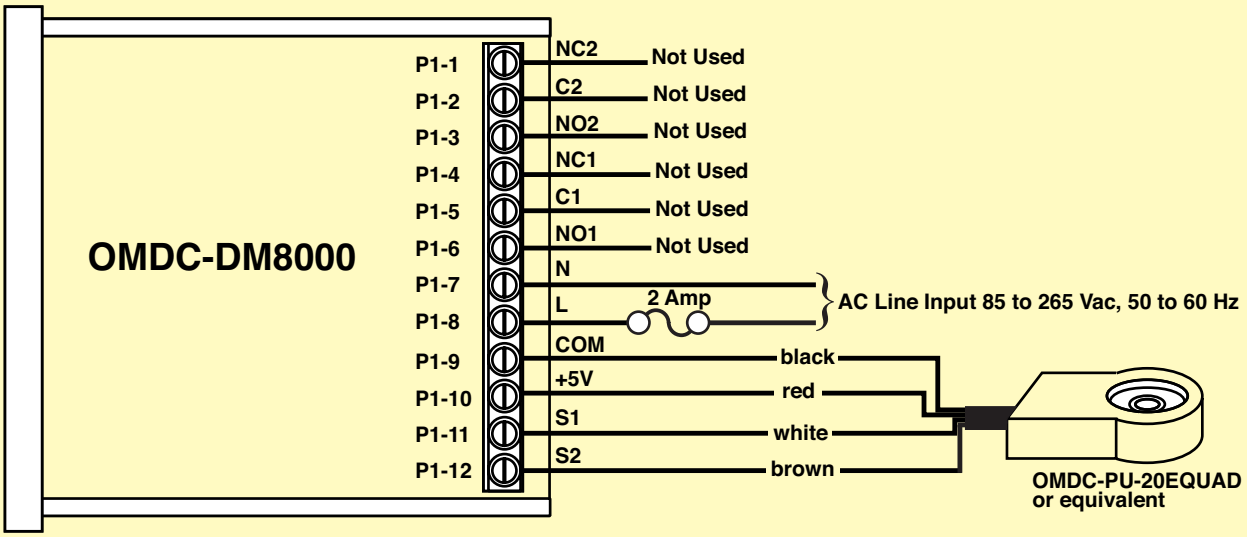
APPLICATIONS

Bi-directional Incremental Position Display

Description:
A system is needed which will track the position of a bi-directional linear-motion platform and allow the user to select a home or zero position. The display should read in inches and indicate the position of the platform at all times.



WIRING DIAGRAM



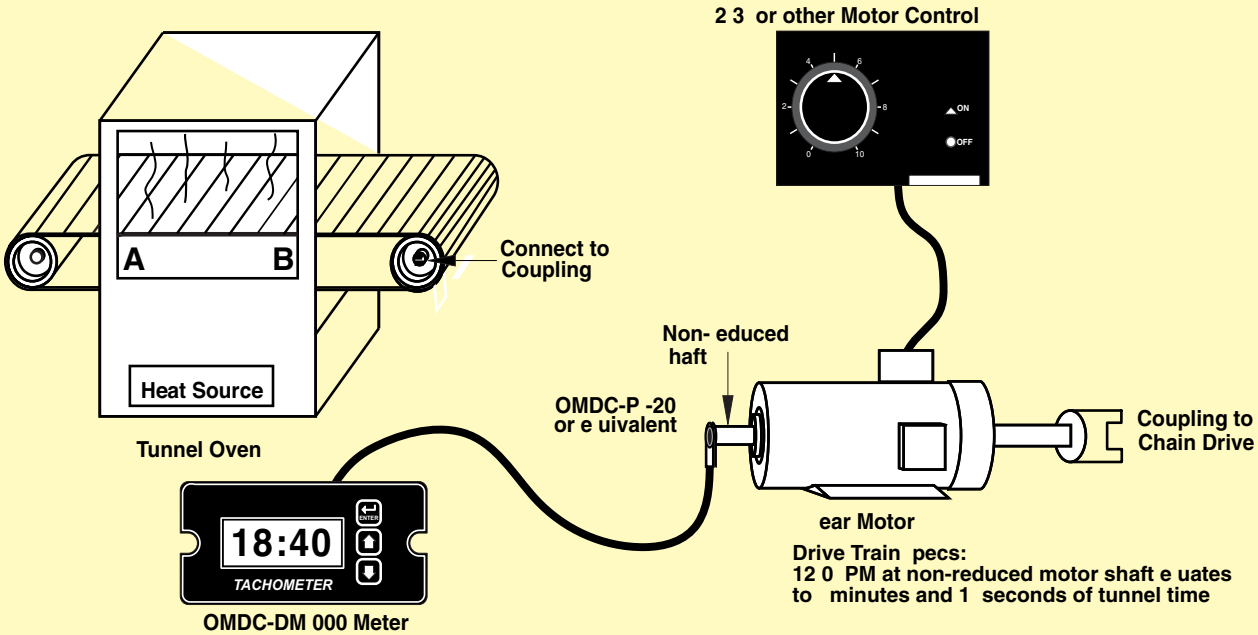
PARAMETER CONFIGURATION

PARAMETER	VALUE	NOTES
10	5	Up/down counter mode
20	35	Because the initial values were 40 revolutions per 3.5" of platform motion, each is multiplied by 10 to give an even number to increase accuracy since the displays can be programmed in whole numbers. Additionally, because of the decimal point position, the display reference is multiplied by 10 to generate the proper display format. Without the second multiplication by 10, the display would only read 3.5" when the driver motor turned 400 revolutions.
21	400	In count mode, the reference RPM is set in revolutions. 400 has been entered here to represent 40 revolutions and the disply reference has also been multiplied by 10 to yeild the whole numbers.
22	10	Pulses per revolution of shaft encoder or pick-up is 10 PPM
25	3	Decimal point position set to XXX.X on display

APPLICATIONS

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 piont B in the application diagram below. A visual indicator should activate if the tunnel time rises above a preset imit 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.



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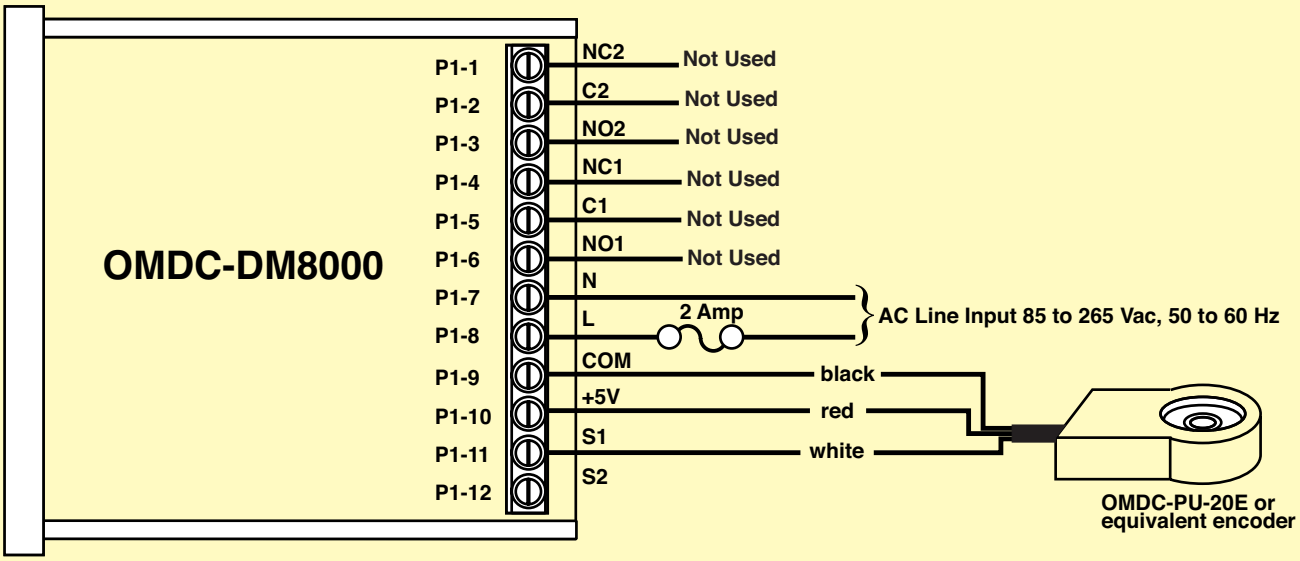

PARAMETER CONFIGURATION

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 = (9minutes *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 pick-up is 1 PPM
24	1	Display filtering/averaging set to 1 second
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

To Order

MODEL NO.	DESCRIPTION
OMDC-DM8000	Digital tachometer with alarm relay output
OMDC-DM8000-R	Digital tachometer with 2 alarm relay outputs

OPTIONAL SPEED SENSORS

MODEL NO.	DESCRIPTION
OMDC-PU-20E	Shaft-mounted NPN pickup sensor, 10 pulses per revolution
OMDC-PU-40E	Shaft-mounted NPN pickup sensor, 20 pulses per revolution
OMDC-PU-20EQUAD	Shaft-mounted NPN quadrature pickup sensor, 10 pulses per revolution

Comes complete with panel-mount hardware and operator's manual.
***Ordering Example: OMDC-DM800,** digital tachometer with alarm relay output.*