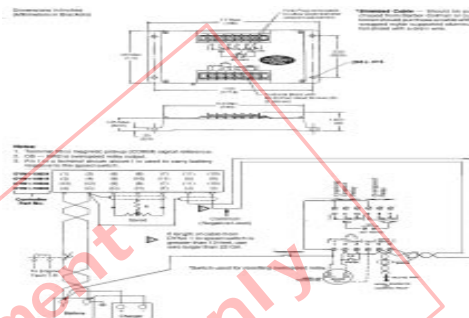




Two Setpoint Electronic Speed Switches: DYNZ-60010, DYNZ-60012, DYNZ-60013

GENERAL

The Barber-Colman two setpoint speed switch normally obtains its input signal from a magnetic pickup which is positioned in proximity to the teeth of a gear on a rotating shaft. The pickup generates an AC signal voltage whose frequency is directly proportional to the rate at which the gear teeth pass by the pole piece. The speed switch converts the input signal voltage in a DC signal which is compared to the preset levels (setpoints) and actuates the relays when the input signal frequency exceeds the preset values.



FEATURES

- Two adjustable switch points with 20 turn potentiometers for fine speed adjustment over a wide range.
- Compact, rugged, low profile enclosure for easy panel or remote mounting.
- Potted for in-field reliability, exposed applications and hostile environments.
- High noise immunity.
- Reverse polarity protection.
- Two units are for 12,24, 32 Vdc operation.
- One unit is for 74 Vdc operation.

AVAILABLE MODELS—PART NUMBER

- DYNZ-60010-000-0-40
- DYNZ-60012-000-0-74
- DYNZ-60013-000-0-40

APPLICATION

- Overspeed Protection Signal
- Underspeed Protection Signal
- Crank Termination Signal
- Generator Field Flashing Signal
- Ignition Signal
- Sequencing Signal
- Tach Signal for Driving Model 40 Tachometer

SPECIFICATIONS

RELAY LOGIC TABLE FOR SPEED SWITCHES

Switch	Power to Unit and Input Signal Frequency below Trip Point	Power to Unit and Input Signal Frequency above Trip Point
DYNZ-60010 SW1 Relay Contacts	De-energized 10 to 12 closed 11 to 12 open	Energized (non-latching) 10 to 12 open 11 to 12 closed
DYNZ-60010 OS-SW2 Relay Contacts	Energized 7 to 9 open 8 to 9 closed	De-energized (latched) 7 to 9 closed 8 to 9 open
DYNZ-60012 SW1 Relay Contacts	De-energized 10 to 12 closed 11 to 12 open	Energized (non-latching) 10 to 12 open 11 to 12 closed
DYNZ-60012 OS-SW2 Relay Contacts	De-energized 7 to 9 closed 8 to 9 open	Energized (non-latching) 7 to 9 open 8 to 9 closed
DYNZ-60013 SW1 Relay Contacts	De-energized 10 to 12 closed 11 to 12 open	Energized (non-latching) 10 to 12 open 11 to 12 closed
DYNZ-60013 OS-SW2 Relay Contacts	De-energized 7 to 9 closed 8 to 9 open	Energized (non-latching) 7 to 9 open 8 to 9 closed



COMMON ELECTRICAL SPECIFICATIONS FOR DYNZ-60010, DYNZ-60012 AND DYNZ-60013

Ambient Operating Temperature

-40 to +185°F (-40 to +85°C).

Maximum Operating Current 0.20 amperes.

Input Signal Voltage: 0.7 Vrms minimum into 33 k ohm load.

Trip Setpoint Adjustable 325 to 10,000 Hz.

SW1: Factory set at 1100 Hz.

SW2: Factory set at 3600 Hz.

Repeatability: +5 Hz or +1 %, whichever is greater.

ELECTRICAL SPECIFICATIONS FOR DYNZ-60010

Power Input 8 to 40 Vdc.

Voltage Transients Withstand 200 volts forward and reverse peaks of 10 milliseconds duration at 5 ohms source input impedance. Withstand 80 volts forward and reverse peaks of 50 milliseconds duration at 50 ohms source input impedance.

Hysteresis

SW1: Crank dropout, non-latching; nominal 165 Hz.

SW2: Overspeed, latching; 100% of setpoint.

Relay Contact Rating 10 amperes at 30 Vdc resistive.

Overspeed Response Time With the overspeed set at 4140 Hz and a steady input frequency of 3600 Hz, then switching the input frequency to 5000 Hz must result in the overspeed relay operating in 90 milliseconds or less.

ELECTRICAL SPECIFICATIONS FOR DYNZ-60012

Power Input 59 to 88 Vdc.

Voltage Transients Withstand 200 volts forward and reverse peaks of 10 milliseconds duration at 50 ohms source input impedance. Withstand 80 volts forward and reverse peaks of 50 milliseconds duration at 50 ohms source input impedance.

Hysteresis

SW1: Crank dropout, non-latching; nominal 165 Hz.

SW2: Overspeed, non-latching; 0% of setpoint.

Relay Contact Rating 0.75 amperes at 88 Vdc resistive.

Overspeed Response Time With the overspeed set at 4140 Hz and a steady input frequency of 3600 Hz, then switching the input frequency to 5000 Hz must result in the overspeed relay operating in 75 milliseconds or less.

ELECTRICAL SPECIFICATIONS FOR DYNZ-60013

Power Input 8 to 40 Vdc.

Voltage Transients Withstand 200 volts forward and reverse peaks of 10 milliseconds duration at 50 ohms source input impedance. Withstand 80 volts forward and reverse peaks of 50 milliseconds duration at 50 ohms source input impedance.

Hysteresis

SW1: Crank dropout, non-latching; nominal 165 Hz.

SW2: Overspeed, non-latching; 0% of setpoint.

Relay Contact Rating 10.0 amperes at 30 Vdc resistive.

Overspeed Response Time With the overspeed set at 4140 Hz and a steady input frequency of 3600 Hz, then switching the input frequency to 5000 Hz must result in the overspeed relay operating in 75 milliseconds or less.

MECHANICAL / ENVIRONMENTAL

Case Has nickel plated terminals. Humidity and salt spray resistant. Potted for water protection.

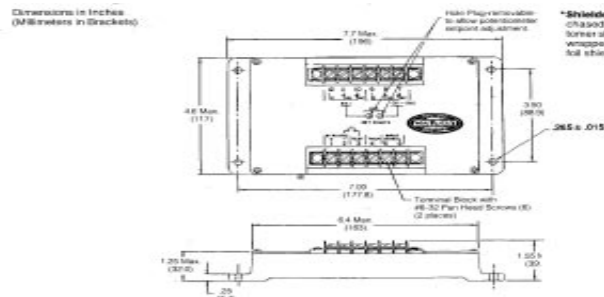
Vibration 5.0 G's from 20 to 500 Hz.

Shock 4 foot drop test.

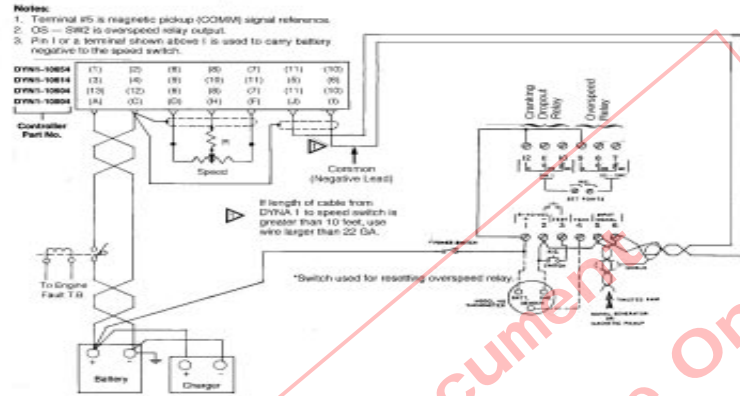
MOUNTING INSTRUCTIONS

Four mounting holes are provided on the case as shown in Figure 1. Although the unit can withstand the normal vibration levels and temperature excursions encountered, it is a good practice to mount the unit in a location where these effects are minimized. The unit should be attached to the mounting plate with 10-32 screws.

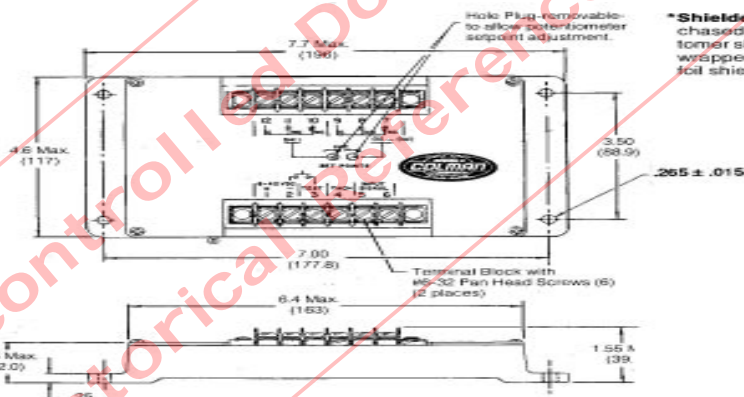
Dimensions in Inches
(Millimeters in Brackets)



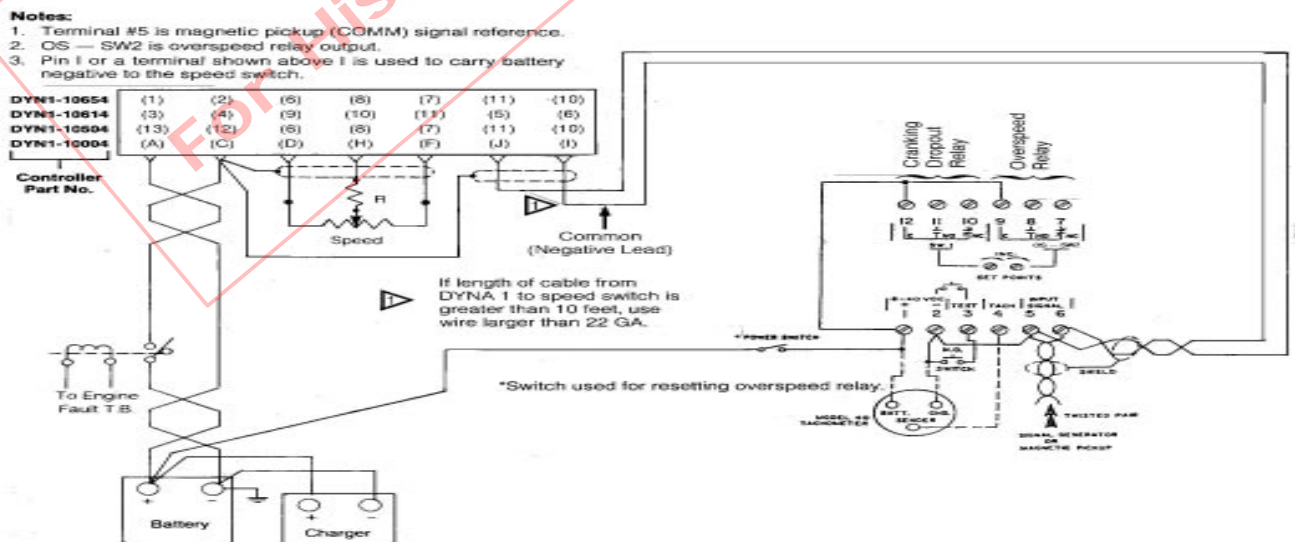
*Shielded Cable — Should be purchased from Barber-Colman or customer should purchase a cable with a wrapped mylar supported aluminum foil shield with a drain wire.



Dimensions in Inches
(Millimeters in Brackets)



*Shielded Cable — Should be purchased from Barber-Colman or customer should purchase a cable with a wrapped mylar supported aluminum foil shield with a drain wire.



TYPICAL CONNECTION DIAGRAM

CAUTION

As a safety measure, the engine should be equipped with an independent overspeed shutdown device in the event of failure which may render the governor inoperative.

NOTE

Barber-Colman believes that all information provided herein is correct and reliable and reserves the right to update at any time. Barber-Colman does not assume any responsibility for its use unless otherwise expressly undertaken.

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For Historical Reference Only

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