DFE DATA SHEET

8512NW

NARROW WEB TENSION TRANSDUCER

DESCRIPTION

The Narrow Web Tension Transducer combines a bearing-mounted idler roll with sensing elements in one package. It measures tension in a moving web of paper, film, foil or other material. Typically, it is used in tension control and display systems in label, tag, or tape printing or processing machines where the machine has only one side frame and the idler rolls are cantilevered.

The transducer is highly accurate because it has sensing elements at each end of the idler roll. This arrangement is functionally the same as wide web tension measuring schemes, using two transducers, which average the tension across the web. Other narrow web transducers are not made this way so they are sensitive to web position, width and tight edges and are very inaccurate.

BENEFITS

- Promotes improved product quality and reduces waste (when used with DFE Tension Controller).
- Does not affect the web. No steering effect or web breakage or length change.
- Measures actual web tension.
- Idler roll is included. Nothing else to install.
- High accuracy.
- Easy to install.
- Wide operating range.
- Two mounting styles, single bolt or four bolt flange.
- Two widths accommodate webs up to 12 inches wide.
- Used with any standard DFE Tension Controller or Indicator.
- Requires very little space in the machine.

DOVER FLEXO ELECTRONICS, INC.

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SPECIFICATIONS

- Excitation ..... 5 volts, D.C.
- Output ..... 500 mVDC, nominal
- Gage resistance ..... 100 ohms, nominal, each gage. Full bridge at each end of idler roll.
- Repeatability ..... ± ½% full span, typical
- Combined linearity and hysteresis ..... ± ½% FS
- Temperature range ..... -10° F to 150° F
- Temperature coefficient ..... .02% per °F, typical
- Deflection ..... .012" max.
- Load range ..... 3 to 80 lbs. of web tension, with 180° wrap angle
- Load direction ..... same direction as electrical connector
- Overload rating ..... 600 lbs. minimum, in load direction, without damage
- Web width ..... Model 9 — 9 inches max. Model 12 — 12 inches max.
- Electrical connector ..... Amphenol MS3102A-14S-6S, 6 pin
- Electrical connections ..... Pin A — Output (-)
  Pin B — 5 VDC (+)
  Pin C — 5 VDC (-)
  Pin D — Output (+)
  Pin E — 5 VDC (-)
  Pin F — 5 VDC (+)
- Orientation ..... the transducer may be installed in any position

SUGGESTED WRAP ANGLE

Normally, provide at least 90° of wrap on the idler roll. When measuring low tension, use a larger wrap angle of up to 180°. In general, low tensions require a large wrap while high tension can be measured satisfactorily with a small wrap angle. A wrap angle of 30° will permit measurement of 308 lbs. of web tension. The following formula can be used to determine maximum tension or wrap angle if one of these values is known:

T = tension (lbs.) B = wrap angle

$$T = \frac{80}{\sin\left(\frac{B}{2}\right)}$$

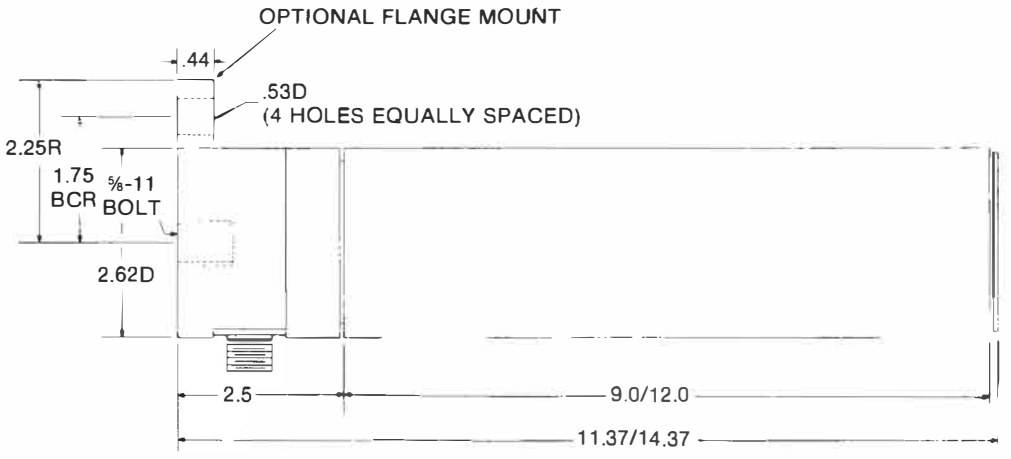
ORDERING BY PART NUMBER

The part number is derived as shown:

example: NW S-9

- NW — Narrow Web Transducer
- S — Mounting Style: S — one bolt; FL — flange
- 9 — Idler Roll Width: 9 — 9 inches; 12 — 12 inches

DIMENSIONS



DIMENSIONS ARE IN INCHES

PUB 120 CPC
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