

Digital VOR Localizer



and Station Ident



ACTUAL SIZE
903ID-2 CLOCK MOUNT

FEATURES

Automatic VOR position Orientation
Localizer deviation and centerline
Alphanumeric station identifier
Instant To/From switching
Digital filtering and signal processing

Sunlight readable incandescent display
Automatic Display Dimming
Serial ASCII output of station and radial
OFF flag, "---



The Davtron 903ID/LOC meets the challenge to produce a small, affordable, light weight indicator. This computer based instrument is a compact and effective component, enhancing the navigation system. The DVOR reads digitally the aircraft's radial position from the VOR station. The instantaneous To/From switching capability makes the 903 the easiest and fastest method of obtaining VOR cross checks. The Localizer mode displays course deviation numerically with the equivalent resolution of a 1/2 dot of a CDI. The 903ID takes the Morse Code identifier signal of the VOR station and displays sequentially the station letters on the single alpha-numeric display. The letters are displayed at a clear and readable rate. The 903 indicator can easily be switched to select NAV1 or NAV2 for use. The second toggle switch on the front panel selects either a To or From bearing. The small push button switch is used for calibration during installation. The 903 becomes a signal level meter when the switch is pressed. An external signal level meter is no longer required for installation.

DVOR Operation

The 903 VOR indicator determines the type of signal coming from the NAV receiver and automatically selects either VOR or Localizer operation. NAV1 or NAV2 can be selected for use. The VOR position is displayed directly in degrees. The To/From switch causes the reciprocal radial to be instantly displayed. Unusable signals will be displayed as a row of dashes.

Station Ident

The 903ID detects and interprets the Morse Code identifiers. The letters are displayed sequentially on the single alphanumeric readout at a comfortable, readable rate. The microcomputer waits one Morse Code cycle before displaying the information, determining signal agreement. The computer will process weak signals for the best possible results. When a station is positively identified, the microcomputer stores the information, providing uninterrupted display. If a station is particularly weak or intermittent, the unknown letters of the identifier are displayed as dashed in the sequence. On some stations transmitting ATIS or voice identifiers the Morse code signal may be at such a level that the 903ID can not make a positive identification.

The ident feature resets upon the selection of NAV1 or NAV2 signal input. In some of the new NAV receivers the electronic transfer switching is so fast that the signal dropout never occurs. When this happens the 903ID will wait 35 seconds before transferring to the new station identifier. The 903ID clears the stored identifier when the NAV1, NAV2 toggle switch is used.



Albuquerque Station Identifier



Fly Right >>>



Centerline



<<< Fly Left

Localizer Operation

The Localizer operated similar to the DVOR in that the DVOR displays 360 radial lines around the VOR station. The localizer displays a smaller segment of then lines each side of the runway centerline. Each line is equivalent to a 1/2 dot increment on a standard CDI, the full CDI needle deflection is numerically displayed as "10" on the digital localizer. The digital Localizer displays a single bar next to the number, providing magnitude and direction information. The localizer course centerline is shown as a "triple bar," three horizontal lines illuminated in the center digit of the display.

The digital localizer has twice the deflection capability of the standard CDI, and when course deviation exceeds full CDI needle deflection the single bar moves out of center. The indicator continues reading out numbers up to twenty. The "bar" is considered the needle and the number to either side of the bar indicated the magnitude of course deviation. Correct by flying toward the "bar" (needle).

The Localizer mode in the 903 is intended to use in verifying the station identifiers and checking the aircraft's primary CDI for accuracy, or malfunction. The sensitivity of the 903 does not vary with signal intensity like a CDI needle. The 903 is not recommended for use as the aircraft's primary indicator.

Installation

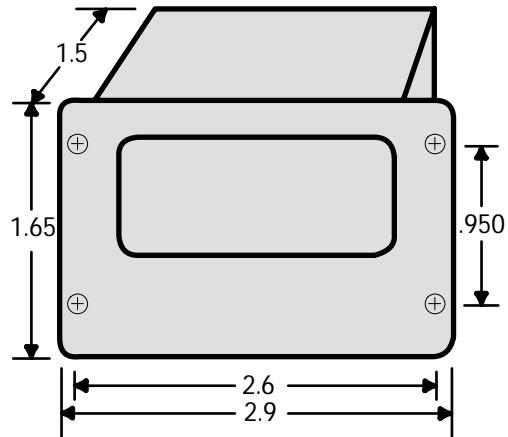
The 903 requires the composite NAV signal from the receiver. The signal may be inverted on some receivers (Narco etc.), causing reversed To/From readings. The 903 provides an invert pin for control of the inverted signal. Grounding the invert pin will correct the situation.

For optimum performance and accuracy the 903 should be adjusted to accept the NAV output at an appropriate voltage level. Different NAV receivers have different signal voltage outputs. To make the adjustment the 903 provides a small button between the two toggle switches. Pressing the button changes the 903 into a signal level voltmeter. While pressing the button, simultaneously turn the adjustment pot on the back of the unit labeled for NAV1 or NAV2, to increase or decrease the voltage level. Set the input level for each receiver for a reading between 70 and 100. The "OFF" flag will appear earlier for degrading signals when the level is set to a lower number. A strong signal or station should be used when setting the input voltage level.

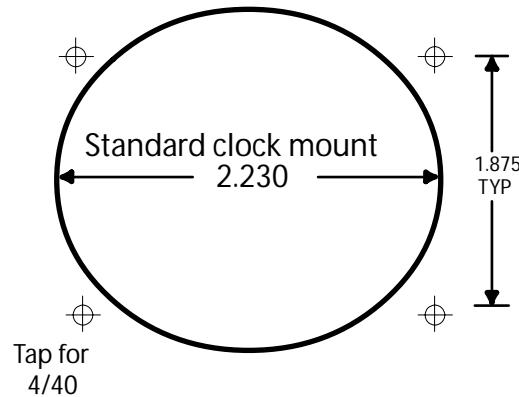
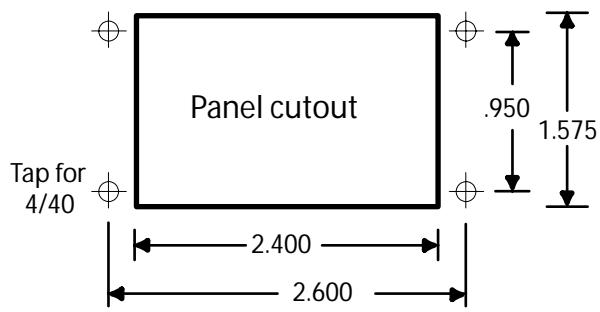
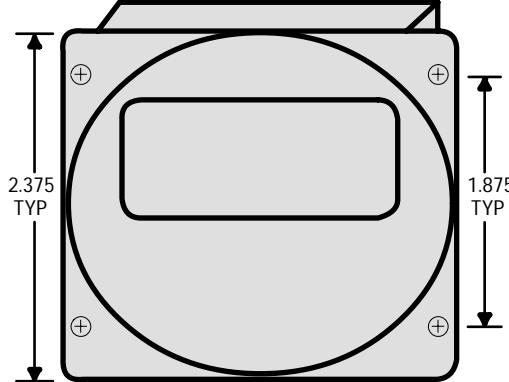
The input voltage level must be set before calibration of the VOR or Localizer readings. The VOR and Localizer adjustment pots are marked on the back panel and labeled for NAV1 or NAV2 signals. VOR calibration may be made on any VOR radial. Localizer calibration should be made using the course centerline signal. Centerline calibration should agree with the aircraft's primary CDI. An accurate and strong signal source should always be used when making adjustments.

Mechanical

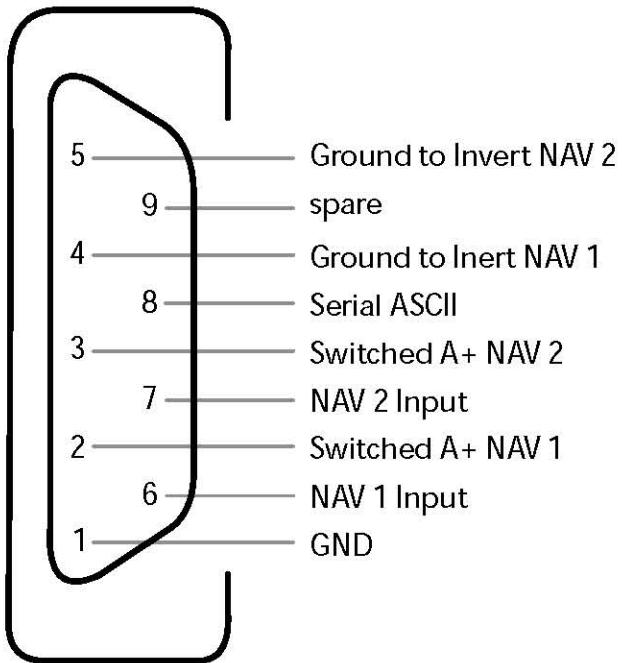
903-1D Panel Mount



903ID-2 Clock Mount



Electrical



Specifications

14 or 28 Volt operation
Input signal 0.35 to 10 Volts
Supply current 0.3 Amperes
Operating temperature range -20C to +55C
DVOR accuracy +/- 2 degrees
Weight 6 oz.
Warranty 1 year.

