Dual LPV/VNAV-CONVERTER

Designed for either single or dual FMS/GPS installation

The LPV-Converter resolves the arising problem with the LPV/VNAV-approach that appears, when an aircraft is equipped with an EFIS system (e.g. Honeywell SP25000 in Cessna 525 or Thales system in EC135/145) and a SBAS capable (WAAS/EGNOS) FMS/GPS with an ARINC429 interface.

In ILS mode, the EFIS system expects ARINC429 localizer deviation, glideslope deviation and ILS energizer information. If a LPV/VNAV approach is active, the LPV/VNAV-Converter switches the ARINC GPS output from the Garmin unit into the NAV input of the EFIS system. The LPV/VNAV-Converter extracts ARINC429 data and the DME compliant data from any SBAS capable FMS/GPS datastream and fits additional labels into the generated modified datastream to the EFIS system.

Due to the missing glideslope feature of the EFIS, the LPV/VNAV -Converter simulates an approach signal like an ILS (LOC/GS) to drive the autopilot during a GPS approach with LNAV/LPV capability. While the ILS mode is active, the EFIS system expects ARINC429 labels (localizer deviation, glideslope deviation and ILS energizer information). In case of a SBAS (LNAV/LPV) capable GPS approach will be executed, the “Approach Active Discrete” enables the LPV/VNAV-Converter to supply the EFIS system AP-NAV-Input with ILS comparable GPS approach data. At the same time, the LPV/VNAV -Converter switches the DME information into GPS distance, speed and time information, shown on the EFIS display.

Approvals and environmental category:

- RTCA DO-160G
  (D2)BBB[S(B3)]XYXFSZBAR(ZC)YM(A333X)XXAC
- RTCA DO-254, DAL B
- RTCA DO-178, DAL C

Mechanical characteristics:

- Weight: < 1 kg (35.27 oz)
- Dimension: 180 mm x 130 mm x 40 mm (7.09 in x 5.12 in x 1.57 in)
- Mounting: 4 ea. M3 screws
- Cooling: No cooling required

Electrical characteristics:

- Input voltage: 18.0 VDC to 32.2 VDC
- Max. current consumption: < 0.3 A

Signal input:

ARINC429 inputs:
- VOR/ILS and GPS from FMS/GPS
- DME (distance/speed/time) from ARINC429 capable DME system

Digital input:
- DME information from Bendix King serial bus capable DME system

Discrete inputs (active low):
- GPS_ANNUNCIATE from Garmin GTN6xx/7xx unit
- ILS/GPS APPROACH_ANNUNCIATE from Garmin GTN6xx/7xx unit
- GTN_SELECTED from FMS select switch
- Test input
**System overview:**

**Signal output:**
- **ARINC 429 outputs:**
  - ARINC_ILS_OUT to the EFIS system
  - ARINC_GPS_OUT to the EFIS system
  - DME (distance/speed/time) for ARINC429 DME systems

- **Digital output:**
  - DME information for Bendix King serial bus capable DME system

- **Discrete output (active low):**
  - Output for an optional fail indicator

**Recommended annunciator: Avionik Straubing MFI02/LPV**

The MFI02/LPV is an ARINC429 to discrete signal converter with embedded annunciator display. Converting an ARINC429 signal to discrete outputs is simple with the software-free MFI02/LPV signal converter annunciator. The MFI02 can be used anywhere and is prepared for customized annunciator application as stand alone display even without LPV/VNAV -Converter.

**Signal input:**
- 2 ea. ARINC429
- 7 ea. Discrete (active high or active low)