AL522
CONFIGURABLE MULTIFUNCTION DISPLAY

OVERVIEW

The AL522 Configurable Multifunction Display provides an adaptable display of test data in aircraft instrument panels by combining a bright, high contrast TFT LCD display with a programmable data processing unit. The AL522 allows the user to program the desired page and gauge configurations via a RS-232 connection to a PC prior to flight. During the flight the user can select from up top six preconfigured pages of up to 6 gauges per page. The gauges can be driven via an analog voltage or by raw values received via the RS-232 port. The RS-232 port can also be used in flight to draw the text messages, boxes or lines on the currently used screen. The AL522 also provides max and max/min hold functions and the programmable range arcs are available in up to six different colors. After one series of flight tests are completed, the display can be reprogrammed to support the next set, eliminating the need to buy unique, specialized displays per mission. The unit was designed to be mounted under the glare shield on a hinged bracket so that it can stowed away when not in use.

FEATURES

- User programmable LCD based display
  - Bright, high contrast display
  - 6 Pages of Displays
  - Up to 6 gauges per display
- Stores six display pages in non-volatile memory
- Accepts 8 analog signal inputs (0V to 5V DC corresponds to 0 to Full Scale Indicators)
- Accepts 4 Serial RS232 digital data value inputs on Serial Interface
- Widely separated keys for operation control (optimized for gloved finger operation)
  - Display Page Select, Bug, Dim/Brite, and Tracking/Totalizer reset
- Serial RS-232 programming interface
- Operates on 18-36 VDC power, <500mA in basic configuration

SPECIFICATIONS

MECHANICAL

- 8.2 inches L x 5.4 inches H x 1.415 inches D (208.28 mm L x 137.16mm H x 35.95mm D)
- Weighs less than 3 pounds (1.36kg)
- Connectors :
  Power Input and Signal : Glenair Low Profile Micro D Metal Shell
  Part # - MLDM1L-37-P-4-K-5-12P

ENVIRONMENTAL

- Temperature: -30°C to 70°C operating
- Humidity: 95% non-condensing
- Altitude: 0 to 70,000 feet
- Orientation: Unit is capable of operating when mounted in any orientation

ELECTRICAL

- Power
  - Input Voltage: +18VDC to 36VDC
  - Power Consumption: 15 watts maximum total
    Basic unit, no option Modules: TYP <7 Watts
    Ethernet Option Module adds: TYP < 3 Watts
  - Power Interruption: Resumes operation within 15 seconds of reapplication of power.
  - EMI MIL-STD-461C Design Goal
- Signal Inputs
  - 8 Analog Signals
    0 to +5VDC (Arc, Bar & Tether Gauges)
    10k input termination
    1,000 samples per second, programmable Averaging interval
  - 2 sets of 2 line digital discrete inputs. 5 volt TTL signal levels. (Totalizer Gauge)
    Min pulse width ->100ns
    Max frequency-5Hz (Limited due to de-bounce requirements of 125ms)
  - 1 RS232 8N1 format, 9600, 57600, or 115200 baud
    Also used to implement Pre-Flight Setup

DISPLAY CHARACTERISTICS

- Any gauge except Totalizer can be driven by any Analog Signal Input
- Display control: Six (6) set-up configurations (pages), selected by pushbuttons
- Update Rate: 50 frames per second
- Sunlight Readable (Luminance up to 800 cd/m^2)
- Resolution: 480(h) x 640(v) pixels (Viewed in portrait orientation)
- Number of Colors: 8 colors provided for tracking lines display page
- Contrast Ratio: 600:1 typical
- Viewing Angle: >60°
- Rugged LED-based backlight

GAUGE TYPES

- 320° Arc (1x & 2x sizes)
- Half Arc (160°, left and right side) (1x & 2x sizes)
- Horizontal & Vertical Bars (1x & 2x sizes)
- Accumulator/Counter: Count-Up or Count-Down (1x size only)
- Tether hover (X-Y plot of 2 inputs with 3rd input shown as digital value) (1x size only)
- (Additional gauges upon request, consult factory)