

# Multifunction radar display specifications

## Physical

- Size: 6.242" (w) x 4.815" (h) x 8.378" (panel depth)
- Weight: approximately 7.5 pounds

## Display

- Color active matrix liquid crystal display
- Viewing angle (Normal to Cover Glass):  
Typical Contrast Ratio 30:1  
Horizontal: +/- 45°  
Vertical: + 20° above, - 10° below
- Active viewing area: 5.08" H x 3.81" V, 6.3" diagonal
- Brightness: 0.1 to > 200 FL
- Pixel configuration: 1024 x 768 color groups (>200 pix/in.)
- Dimming ratio 2000:1 Typical, min. 256 dimming steps

## Power

- Power supply: 28 VDC or 115 VAC, 400 Hz
- Power consumption: 40W (typical)
- Lighting: 0-5 VAC, 0-5 VDC or 0-28 VDC

## Built-in test (BIT)

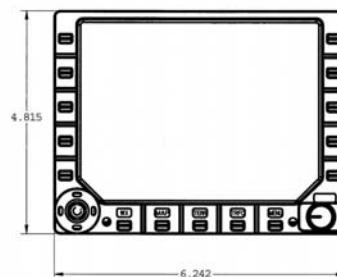
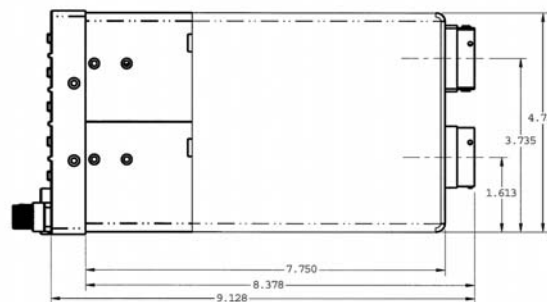
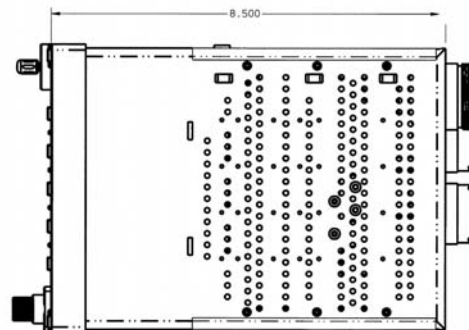
- Power-up
- Run-time

## Options

- Alternate interfaces and functionality
- Custom functions & soft-keys
- Fully definable checklist

## Certification (anticipated)

- FAA-TSO: C63c, C92c, C110a, C113c, C118, C119b
- Software: RTCA DO-178B, Level B



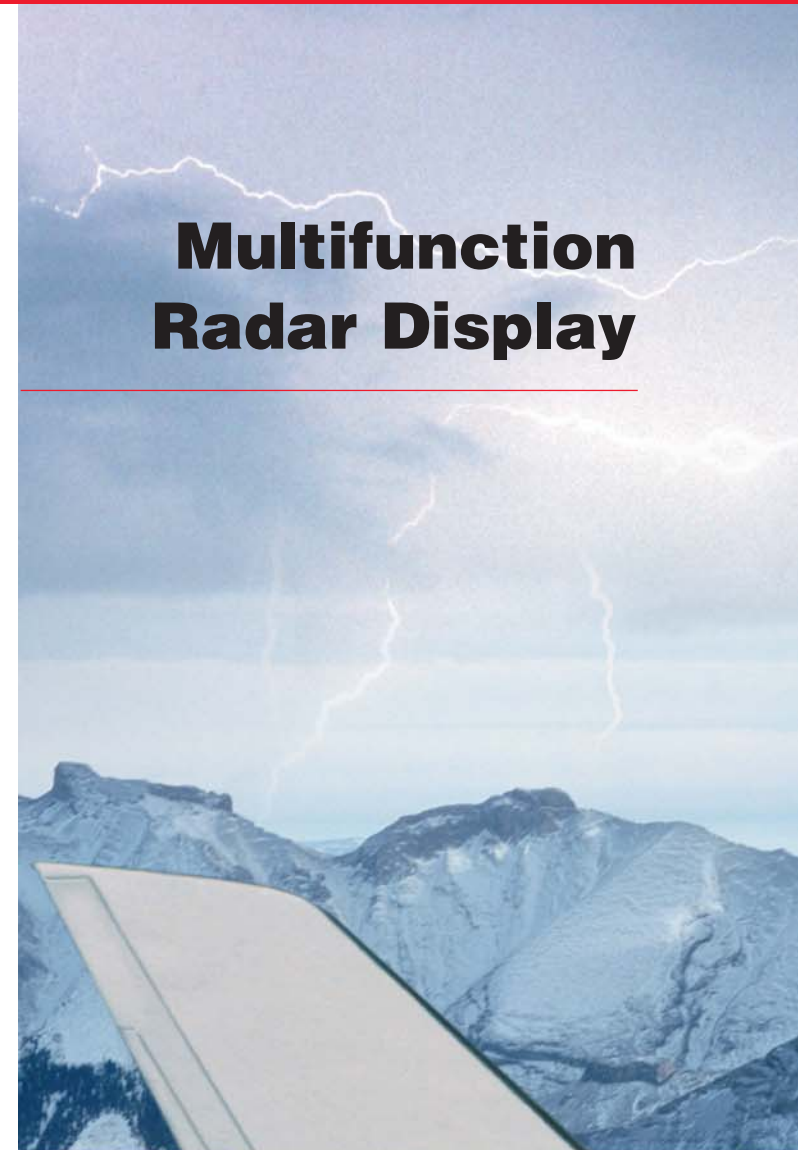
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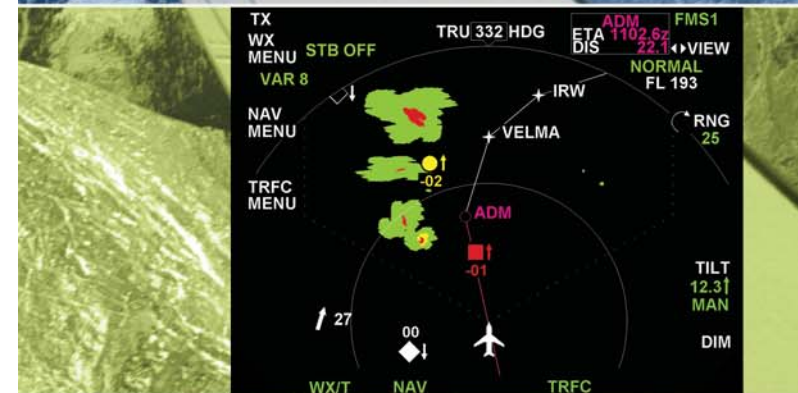
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# Multifunction Radar Display





## Designed for easy operation

Our display combines high-reliability, high-resolution and logical controls. The five hard control keys give you one-touch toggling between the primary functions. The soft key menus provide the ability to input data and quickly update the display with a variety of operator-selected tools. The encoder control knob adjusts the display's backlight brightness for optimal viewing. The encoder is also used to input tilt angle, gain values, and range selection for weather radar. Use the joystick input to easily edit the FMS NAV waypoints to update your course.

## Designed for growth and reliability

Honeywell's new MFRD is designed to work with the avionics you have today, and, is so versatile that it is easily updated to work with the avionics of tomorrow. With the coming changes in communication, navigation, surveillance/air traffic management (CNS/ATM), this MFRD prepares your airplane for the new world of free-flight. Simply put, our MFRD is tough, reliable and easy to upgrade. Designed and produced using Six-Sigma standards, the MFRD is a display that simply works - period. Now that's multitasking, in the best sense of the word.

## A Multifunction radar display for a multisystem world.

You already know that traffic, terrain, navigation, and weather radar displays come at the push of a button, and can be displayed on a single screen. That's what a multifunction display is all about. But how about an upgrade for your airplane? With Honeywell's open architecture, you get all the benefits of a multifunction radar display compatible with practically any system (or combination of systems) you have in place today, and with the ones you'll install tomorrow. Plus, with the multifunction radar display's (MFRD) high reliability, one display for multiple systems will save you both time and money.

Our new MFRD combines the display of weather radar, traffic, terrain, and navigation maps and other data into a single 6.242" x 4.815" space-saving multifunction instrument. Designed to work with various weather radar systems, traffic collision avoidance systems, enhanced ground proximity warning systems, flight management systems and navigation systems, the MFRD provides an upgrade path to additional systems while conserving valuable instrument panel space. With greater than 200 dots per inch, the Honeywell MFRD is the highest resolution display of its size in the industry. This powerful new display will change the way you look at instruments.



Weather Radar Mode



Navigation / Map Mode



Terrain Mode



Traffic Mode

## Environmental Specifications

Temperature & altitude:	DO-160D, Ch. 4, Cat. A1; -20°C to +55°C operation, short term operation (1/2 Hour) @ +70°C; -55°C to +85°C ground survival; Max Altitude 15,000 feet
Temperature variation:	DO-160D, Ch. 5, Cat. B; -20°C to +70°C, 5°C/min. change rate; short term operation (1/2 Hour) @ +70°C
Humidity:	DO-160D, Ch. 6, Cat. A; 48 hrs. 95% RH, 38-50°C non-operating
Operational shock/crash safety:	DO-160D, Ch. 7, Cat. B; Operational: 6g peak, 11 ms; Crash Safety: 20g peak, 11 ms; Sustained Levels per 7.3.2
Vibration:	DO-160D, Ch. 8, Cat. S (fixed wing) & U (helicopter) sinusoidal & random
Magnetic effect:	DO-160D, Ch. 15, Cat. Z, 14.4 A/m, < 0.3m
Power input:	DO-160D, Ch. 16, Cat. E (AC), 100-122 VRMS normal; Cat. Z(DC), 22-30.3 VDC normal
Voltage spike:	DO-160D, Ch. 17, Cat. A, 600V, 10 μS
Conducted susceptibility:	DO-160D, Ch. 18, Cat. E(AC), 5.75 VAC, 750-15,000 Hz; Cat. Z(DC) 0.2-1.4 VRMS, 0.01-150 kHz
Induced susceptibility:	DO-160D, Ch. 19, Cat. A, Transients: 600 V p-p 0.2-10 μS rate, 0.05-1ms duration; Mag Fields: Equipment: 20 A RMS @400 Hz
Radio frequency susceptibility:	DO-160D, Ch. 20, Cat. U, Conducted: 30-100 ma, 10 Hz-400 MHz; Radiated: 20 V/M, 100 MHz to 8 GHz
Radio frequency emissions:	DO-160D, Ch. 21, Cat. M, CE: 73-40 dBμA, 0.15 to 30 MHz cable, 53-20 dBμA, 0.15-30 MHz power lines; RE: 40-35 dBμV/M, 2-25 MHz, 35-73 dBμV/m, 25-600 MHz & per DO-173: 73 dBμV/m from 6-10 GHz
Lightning-induced:	DO-160D, Ch. 22, Cat. A3 & E3. Pin injection Level 3, Waveform 3 (600v/24a) & Waveform 4 (300v/60a) (ARINC 429 inputs only); Cable Bundle Tests Level 3-Waveform 1 (300v/600a) & Waveform 3 (600v/120a)
Electrostatic discharge:	DO-160D, Ch. 25, Cat. A, 15,000 V, 10 pulses
Lightning - Multiple Stroke & Burst:	ED-84/SAE-AE4L-97-4, Table 5-3 for MS & 5-4 for MB, MS: 14 pulses within 1.5 sec.; MB: 3 bursts of 20 consecutive pulses
Insulation resistance:	≥20 megohms b/w all circuits & case; ≥100megohms between integral lighting circuit & case w/ lamps installed.
Dielectric strength:	AS 8034, 5.24, Minimum of 200VDC for 5 sec. shall not be less than 5 megohms
Electrical Bonding:	DC resistance from the case to the connector to be ≤50 milliohms
X-Ray Radiation:	AS 8034, 5.20, Radiated energy measured at 5cm from the display surface shall not exceed 0.1 milliroentgen per hour in accordance with TEPC publication no. 64D.
UV Radiation:	AS 8034, 5.21, UV Radiation ≤0.05 E-6 w/cm <sup>2</sup> from 200-315 nm & ≤0.05 E-3 w/cm <sup>2</sup> from 315-400nm.
Thermal Shock:	AS 8034, 5.23, Operate at high operating temp. until stable; move to low operating temp. until stable (≤ 1 hour)

Specifications subject to change without notice at the discretion of the manufacturer.