



RD01-001

First Stage differential pressure regulator

This high integrity first stage pressure regulator is offered by Ultra Electronics Precision Air & Land Systems with combined functions of pressure regulation and relief to protect sensitive critical downstream equipment.

The RD01-001 is designed to meet the demanding environments found on board military fixed wing aircraft. The specifications that this was designed to meet are detailed over. Where testing to prove compliance to these requirements was performed these are marked as "tested".

Ultra's pressure regulators offer stable pressure control across a wide range of inlet pressures up to 414 bar (6,000 psi) and over a wide temperature range.

Should this product not meet your precise requirements, Ultra is able to design a solution to meet your particular technical and installation requirements.



Benefits

- Compact, robust, design eases integration into aerospace and defence applications.

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Specification

■ Media	High purity dry gas
■ Inlet pressure range	3300 - 100 psig (227.5 – 6.89 bar) 4444 psig (maximum relief pressure)
■ Regulated outlet pressure range	30 ± 10 p.s.i. differential
■ Maximum volume flow rate	0 to 24 SL/min @ S.T.P
■ Outlet over pressure relief	70 psig
■ Relief Valve flow	1000 L/min
■ Life	10,000 flying hours (18 years)
■ Standard space envelope	82 mm x 105 mm x 90 mm
■ Estimated mass	TBD Kg

Design

■ Designed to the general requirements of	DEF STAN 00-970
■ Product marking to	DEF STAN 00-10/3 Sect 7
■ Acceleration (operational)	7.0 gn in any direction
■ Acceleration (crash safety)	X:± 25 gn, Y: ± 4 gn, Z: 0 gn
■ Vibration (endurance)	10-1000Hz @ 0.01 g ² /Hz to BS 3G 100 Part 2 Sect 3-3.1 (Tested)
■ Temperature range	Survival: -54°C to +85°C (Tested BS 3G 100 Part 2 Sect 3-3.2) In Flight: -54°C to +45°C (Tested BS 3G 100 Part 2 Sect 3-3.2) On Ground: -35°C to +85°C (Tested BS 3G 100 Part 2 Sect 3-3.2)
■ Altitude & pressure	Operational: Sea level to 10,668 m Survival: Sea level to 15,240 m Altitude variation: 228.6 < Δ < 243.9 m/min
■ Humidity	Operational: sea level from 15°C RH > 95% to 35°C with RH > 95%. Survival: -40°C at 10668 m with RH = 0 to 35°C at sea level with RH > 95% condensing.
■ Corrosion by salt spray	BS 3G 100 Part 2 Section 3 Sub-section 3.8 severity 2 (6 cycles).
■ Mould growth	BS 3G 100 Part 2 Section 3 Sub-section 3.3 (28 day test).
■ Waterproofness – Drip proof	BS 3G 100 Part 2 Section 3 Sub-section 3.11 Grade B.
■ Fluid contamination	Aviation Jet A Fuel, Mineral Based Hydraulic Fluid, Mineral Based Lubricating Oil, Isotropic Alcohol Cleaning Fluid, Trichloroethane Cleaning Fluid, Ethylene Glycol De-Icing Fluid, Flutec PP3 and FC75, Cooling Fluids.
■ Drop	DEF STAN 07-55 (Part 2) Section 1/1 Test A4.
■ Compass safe distance	< 1.25 m for < 1° to method of BS 3G 100 Part 2 Section 2.

Typical installation

■ Dimensions in mm's

