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VHF/UHF Communication Receiver

990S

General Description The Eddystone Model 990S is a solid-state single-conversion receiver for AM and FM reception in the band 230–870MHz. It can be powered directly from a 12V battery and has an internal power unit for operation from standard 40–60Hz AC supplies. The normal bench-mounting version can be fitted with anti-vibration mounts and is easily adapted for rack installation (990S/RM). A matching panoramic display unit can be supplied when visual signal analysis is an added requirement.*

The complete tuning range is covered in two bands using separate high-performance trough-line tuners feeding a common IF of 36.5MHz. Direct access to the IF channel is possible, permitting use in conjunction with external tuners to extend the frequency coverage. Selectivity and mode switching are combined in a single control which provides band-widths of 1MHz and 6MHz for AM reception, and 1MHz only for FM. Separate IF channels are employed for each mode, the AM channel having an output connection for use with ancillary equipment.

Continuous coverage 230MHz–870MHz

Exceptional stability and sensitivity

Crystal calibrator

Output for panoramic display

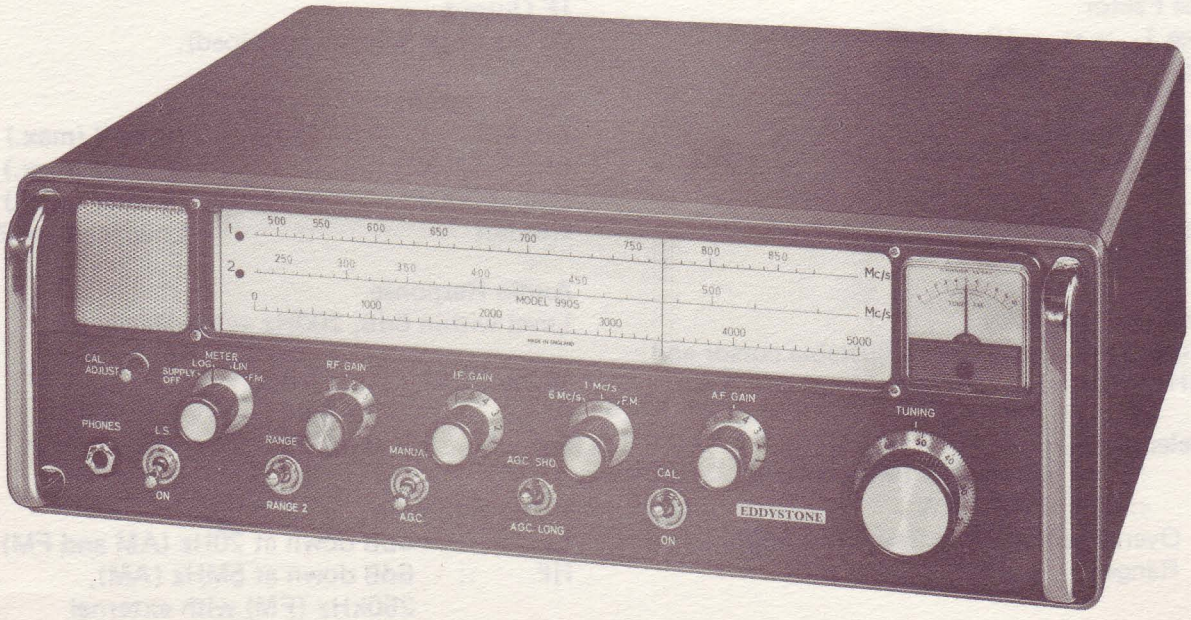
Fixed or mobile operation

All solid-state

Independent AM and FM video outputs are available with provision for simultaneous operation when required. Separate audio amplifiers are utilised for line output and local monitoring, the latter being provided by an internal loudspeaker, external loudspeaker or telephones.

Other standard features include precision gear-driven tuning, built-in 50MHz crystal calibrator and a sensitive panel meter. The latter can be used for relative checks on carrier level (linear or logarithmic scale), and can be switched to serve as a tuning indicator for FM reception.

(*) Separate leaflet available on request.



General Description *continued*

Operationally, the receiver is equally suited to fixed or mobile installations in many varied applications including point-to-point communication, off-air monitoring, noise measurement, interference checking and aerial analysis. Other uses include normal laboratory work in all spheres of communications and certain specialised applications in the fields of meteorology and radio astronomy.

GENERAL SPECIFICATION

Frequency Coverage
Range 1 :: :: 470MHz – 870MHz
Range 2 :: :: 230MHz – 510MHz

Intermediate Frequency
36.5MHz

Reception Modes
AM and FM

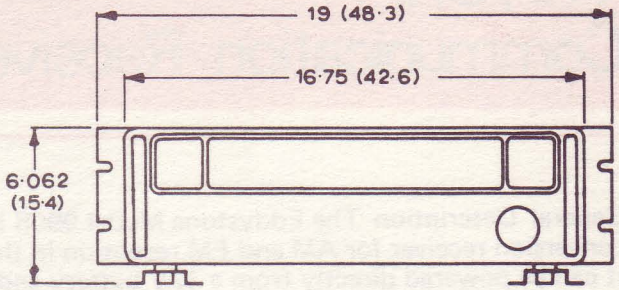
Aerial Input
75Ω (unbalanced)

Power Supply
AC : 100/130V or 200/260V (40–60Hz). Consumption 12VA.
DC : 12V direct (negative earth). Consumption 0.3–0.5A.

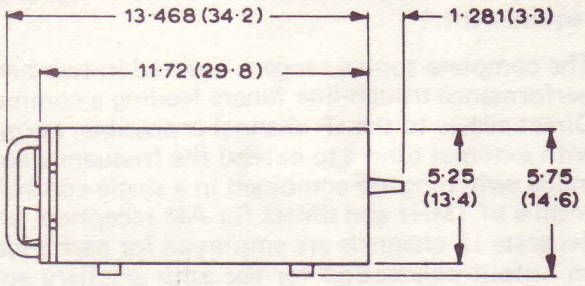
Controls
Tuning, Range, Mode/Selectivity, RF and IF Attenuators (3dB and 6dB steps), AF Gain, Manual/AGC, AGC (Long/Short), Supply/Meter Switch, L.S. On/Off, Calibrator, Cursor Adjuster. Line Level, Video Link and Meter Zero controls at rear.

Weight
9.87kg (21.75 lb.)

Dimensions *(rack-mounting, bench-mounting and bench-mounting with shock-mount.)*



All dimensions in inches. Centimetres in brackets



Reference Numbers
CIVIL AVIATION REF. 10D/CA/4967
NATO STOCK No. 5820/99/199/2528

TYPICAL PERFORMANCE*

Sensitivity (1MHz B/W)
AM < 5μV } 30% mod at 1kHz, 50mW
FM < 4μV } O/P, 10dB S/N

Noise Factor
Range 1 :: :: 10 – 16dB
Range 2 :: :: 8 – 12dB

Spurious Responses
> 50dB down

Frequency Stability
1 part in 10^5/°C

Calibration Accuracy
1% (greater accuracy with adjustable cursor and 50MHz markers)

IF Selectivity
AM :: 6MHz and 1MHz B/W
FM :: 1MHz B/W
NB Overall selectivity is limited to 4.5/5MHz on Range 2

Deviation Acceptance
Up to ± 250kHz

AGC Characteristic
⩾ 15dB change in output for increase of 70dB above 10μV.

IF Output
Of the order 50mV (75Ω load).

Audio Output

Int. L.S.	::	150mW (max.)
Ext. L.S. (3Ω)	::	500mW (max.)
Line (600Ω)	::	10mW (max.)
Headset	::	Low/medium-Z

Audio Response
Level within 6dB, 200Hz – 10kHz

Video Output (1kΩ load)
AM :: 1V P-P
FM :: 0.5V P-P

Video Response
LF :: 6dB down at 20Hz (AM and FM)
HF :: 6dB down at 5MHz (AM), 250kHz (FM) with external loading of 250pF

(*) Not to be interpreted as a Test Specification.