Ferranti

T.R. CELL

A broad band T.R. Cell with two keep-alive electrodes and suitable for pre-pulsing. May be used in branched duplexer or balanced duplexer systems.

PHYSICAL DATA.

Dimensions	See outline drawing overleaf
Waveguide	W.G.16 (0·4" × 0·9").
Primer Terminals ...	C.T.I.
Mounting Position ...	Any.
Max. Waveguide Pressure	30 lbs./Sq. in.

FREQUENCY RANGE ... ... 8500 to 10000 Mc/s.

RATINGS.

Max. Transmitter Line Power ...	200 kW.
Min. Transmitter Line Power	4 kW.
*Max. D.C. Primer Supply Voltage ...	−1500 volts.
*Min. D.C. Primer Supply Voltage ...	−950 volts.
*Max. D.C. Primer Current	185 μA.
*Min. D.C. Primer Current	100 μA.
†Max. Peak P.P. Primer Supply Voltage	−650 volts ± 10%.
†Max. P.P. Primer Current	10 mA.
Ambient Temperature Range (not operating)	−40 to + 100°C.

CHARACTERISTICS.

	Limit.
Low Power Level	
V.S.W.R. (8500–8850 Mc/s.)	1·4
V.S.W.R. (8850–9850 Mc/s.)	1·25
V.S.W.R. (9850–10000 Mc/s.) ...	1·3
§Insertion Loss	1·0 dB.
High Power Level.	
Leakage at 200 kW. peak :–	
Total Leakage Power (unpulsed) ...	100 mW.
Spike Leakage Energy (unpulsed) ...	0·3 ergs/pulse.
Spike Leakage Energy (pulsed) ...	0·1 ergs/pulse.
Primer Breakdown Power	250 mW.
Recovery Time (to −6dB)	3 μsec.
Arc Loss (at 4 kW.)	0·8 dB.
‡Position of Min. V.S.W.	... 0·014 to 0·028 ins.
Primer Characteristics.	
D.C. Primer Operating Voltage	180 to 280 volts.

OPERATING NOTES.

(1) For operation at a line power above 50 kW. a pre T.R. cell is recommended.

(2) A balanced mixer should be used wherever possible.

(3) There are two primer electrodes, one of which is designed to operate as a pulsed electrode and is marked P.P. The other is D.C. primed and is marked D.C.

(4) The leading edge of the pre-pulse must precede the main R.F. pulse by 0·2/μsecs. and should be applied to the pre-pulse electrode through a 50 KΩ resistor which must be immediately adjacent to the pre-pulse terminal.
Pre-pulse Characteristics.
Peak amplitude : 650 V. ± 10%. Duration : 2/μsecs.

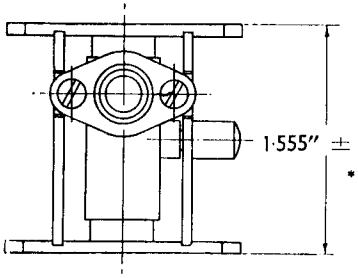
(5) The D.C. Primer Electrode should be supplied from a negative potential Source of 1000 volts D.C. minimum. Suitable resistors should be used to limit the electrode current to between 100 and 185 microamperes At least one megohm must be placed immediately adjacent to the electrode terminal to prevent relaxation oscillations.

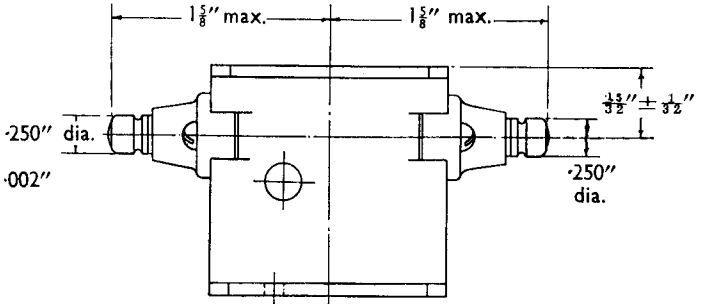
(6) The maximum difference in electrical length between cells is 40°.

*See "Operating Notes" (3) and (5).
†See "Operating Notes" (3) and (4).
§With Primer energised.
‡Measured from input flange face.

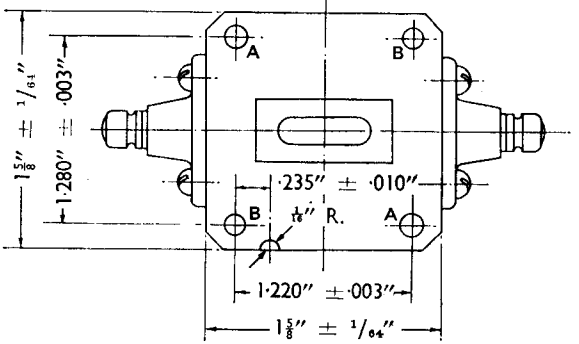
Issue 2
June, 1960

Ferranti





A. 2 holes in each flange: ·170″ dia. ± ·002″ coaxial to each other
B. 2 holes in each flange: ·150″ dia. ± ·002″ coaxial to each other
are positioned as shown and are on 1·768″ ± ·004 P.C.D.



* Flanges are flat and parallel within these limits

Ferranti

WF44

FERRANTI LTD., KINGS CROSS ROAD, DUNDEE.