

Q-Series Res-Lok™ Duplexers

Description

Sinclair Q circuit Res-Lok™ duplexers consist of 3 or 4" square Res-Lok™ coupled cavities with rotatable coupling loops to optimize VSWR (Return Loss) without removal or replacement of the loops. Operating at separations from 0.5 to 3.0 MHz with moderate insertion loss and isolation values from 75 to 85 dB is achieved.

The duplexers can be either horizontally or vertically installed into a standard 19" rack or cabinet and are furnished with adjustable mounting brackets. Special mounting brackets can be furnished for 24" rack or cabinets.

General Information

These duplexers are shipped factory tuned to transmit and receive specifications as requested by the customer. No further adjustments are required unless a change is required in frequencies, insertion loss, or isolation settings.

Typical models and electrical specifications are listed for reference only. Other models and specifications are available from Sinclair through the website, catalog, or by contacting Sinclair Sales or Engineering departments.

The cavity interconnect cables consist of a one piece harness assembly and are factory fabricated to specific lengths depending upon frequencies. These cable types or lengths should not be altered in the field without first consulting with Sinclair for any precautions that should be taken.

Q-Circuit Res-Lok Duplexers

Electrical Specifications

Frequency Range MHz

Frequency Separation

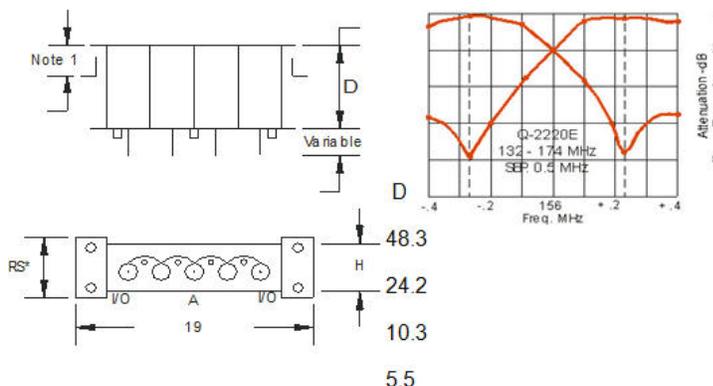
Insertion Loss dB (Tx/Rx to Ant.)

Isolation dB (Tx noise suppression at Rx, Rx isolation at Tx)

Maximum input VSWR

Input Power Watts

Q-1220E	Q-2220E	Q-3220E	Q-4220E
66-88	132-174	406-512	806-960
0.2 min	0.5 min	0.8 min	45 min
1.8 max	1.5 max	0.8 max	1.0 max
65 min	70 min	75 min	80 min
	1.5:1 (ref. to 50 Ohms)		
350 max	350 max	350 max	150 max



MODEL	Dimension – inches	
	H	RS*
Q-1220E	4.17	5.25
Q-2220E	4.17	5.25
Q-3220E	4.17	5.25
Q-4220E	4.17	5.25

RS* - Vertical Rack Space Required

Note 1: Mounting brackets are adjustable FR to RR

Tuning Instructions

Retuning instructions are furnished for the purpose of re-adjustment in the event of minor frequency changes which may be required in the associated duplexers in the field.

The cavities associated with each duplexer are equipped with adjustable coupling loops and attached variable capacitors to facilitate insertion loss and selectivity changes without removal or replacement of the loops. The loops are locked into place with three holding screws and have been preset at the factory upon delivery, to the customer's specified frequencies.

Each duplexer is furnished with a one piece cable harness of critical lengths and types according to the frequency band and should not be altered.

Tuning Procedure

1. Loosen the tuning rod lock nuts
2. Set the frequency to be passed into the high pass terminal and detect it at the antenna terminal with the low pass terminal terminated with 50 Ohms. Adjust the high pass tuning rods for maximum signal.
3. Set the frequency to be passed into the low pass terminal and detect it at the antenna terminal with the high pass terminal terminated with 50 Ohms. Adjust the low pass tuning rods for maximum signal.
4. Set the frequency to be rejected into the high pass terminal and detect at the low pass terminal. Adjust the capacitors at the high pass cavities for minimum signal.
5. Set the frequency to be rejected into the low pass terminal and detect at the high pass terminal. Adjust the capacitors at the low pass cavities for minimum signal.
6. Repeat steps 2-5, and then tighten the tuning rod lock nuts securely into position. Finally check that both high and low are tuned to the new frequencies and VSWR (return loss) is 1.5:1 or greater at both frequencies.

1. Main Line Tee Connector
2. Coupling loop with 3 holding screws
3. Variable capacitor
4. Resonant cavity body
5. Sliding tuning rod
6. Tuning rod lock nut

