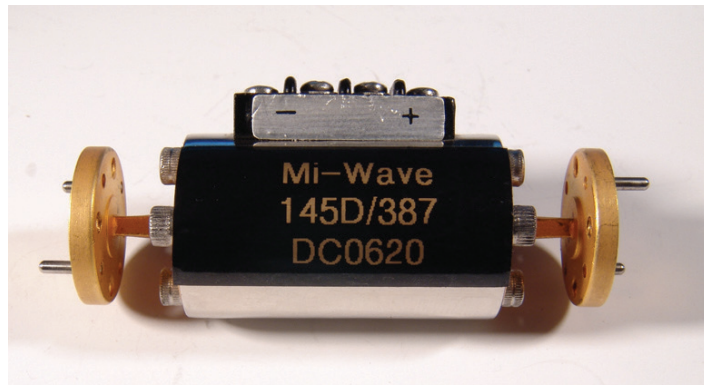


Description

Mi-Wave's 145 series polarization switch is a TE₁₁ mode device with both the input and output in circular waveguide. It is equipped with a standard pin-aligned circular flange similar to most of Mi-Wave's standard 200 series antenna components.

Typical units are continuously adjustable over ±90° of rotation. Please note that the rotation in Faraday rotators is frequency sensitive. The instantaneous bandwidth of these devices is limited to approximately 1% of the center frequency for a fixed drive current value.

- *Low VSWR*
- *Low Insertion Loss*
- *Faraday Rotation Devices*
- *Low Cross-polarization components*



Applications

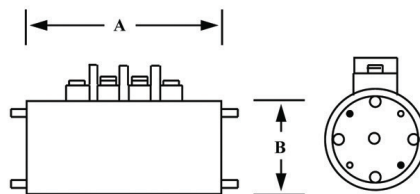
Used primarily in conjunction with the antenna product line, the 145 series polarization switch provides a means of remote controlled polarization change. These switches can be used to align polarization between satellite and ground station communication when the satellite polarization is unknown. They are also useful in the test and measurement of circular TE₁₁ mode components where axial ratio and ellipticity must be calculated.

Circular waveguide components usually have different frequency bands than the rectangular waveguide components. Therefore, it is usually incorrect to refer to the common rectangular waveguide letter designations when specifying circular waveguide.

For the ease of describing electrical specifications, it is convenient to group components in the standard rectangular waveguide frequency bands. Please refer to the circular waveguide chart for actual waveguide sizes. Appendix J

Ordering Information

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TECHNICAL SPECIFICATIONS							
Model No.	145A	145B	145U	145V	145E	145W	145F
Frequency Band (GHz)	26.5–40	33–50	40–60	50–70	60–90	75–110	90–140
Insertion Loss (dB) ¹	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Cross Polarization (dB)	20	20	20	20	20	20	20
VSWR Max. ²	1.25	1.25	1.25	1.25	1.30	1.30	1.30
Average Power (Watts)	12.0	8.0	3.0	3.0	2.0	1.5	1.0
Peak Power (kW)	4.0	2.5	1.0	1.0	0.7	0.5	0.3
Band Width (GHz) ¹	2	2	2	3	3	3	3
Coil Resistance (Ohms)	12	12	12	5	5	5	3
Coil Inductance (mH)	4	4	4	2	2	2	1.5
Switching Speed (usec)	5–10	5–10	5–10	2–5	2–5	2–5	2–5
Current Drive (mA)	0–250						

Dimensional Specifications				
Model No.	A		B	
	in.	mm	in.	mm
145-550	3.25	82.6	1.75	44.5
145-396	3.00	76.2	1.25	31.8
145-328	2.50	63.5	1.25	31.8
145-281	2.50	63.5	1.25	31.8
145-250	2.50	63.5	1.25	31.8
145-219	2.50	63.5	1.25	31.8
145-188	2.50	63.5	1.25	31.8
145-172 Upon Request....			
145-165	1.69	42.9	0.88	22.4
145-141 Upon Request....			
145-125	1.69	42.9	0.88	22.4
145-110	1.69	42.9	0.88	22.4
145-094	1.69	42.9	0.88	22.4
145-082 Upon Request....			
145-075	Upon Request			
145-067	1.50	38.1	0.88	22.4
145-059	Upon Request			

1. Insertion loss and cross-polarization figures are shown for instantaneous bandwidths of approximately 1%. Drive current must be adjusted over the full RF bandwidth.
 2. VSWR was measured using two Mi-Wave series 284 transitions.