

Precision Fixed Terminations

GENERAL INFORMATION



Fixed Terminations

A precision fixed termination (or load) consists of an immovable, (fixed) termination which, when mated to the end of a transmission line or cable, absorbs nearly all of the signal energy traveling toward it. An ideal “matched” condition exists when a termination with an impedance value of Z_0 , is connected to the end of a transmission line or cable that also has a characteristic impedance of Z_0 . Such an ideal “matched” condition (one with no mismatch between the termination and its mated line or cable) is critical if a voltage standing wave ratio (VSWR) of 1.0:1 is to be achieved in a system with a 50 or 75 ohm impedance value. Simply put, the more closely the 1.0:1 ratio is approached, the more accurate the measurements that can be made from a system.

Maury precision fixed terminations are designed to exacting specifications and are as close to the ideal impedance as it is mechanically possible to make them. The following pages provide detailed information about the various types of precision fixed terminations offered by Maury. Most are normally sold as components of Maury VNA calibration kits, but may also be purchased separately as replacement parts or spares.

Precision Fixed Terminations Available Models

Model	Sex	Connector Type	Frequency Range (GHz)	VSWR	Power Rating
7831A1	Female	1.85mm	DC — 1.0	1.02	0.5 watt CW 0.25 kW peak
7831B1	Male		1.0 — 10.0 10.0 — 26.5 26.5 — 67.0	1.07 1.10 1.20	
7931A2	Female	2.4mm	DC — 4.0	1.02	0.5 watt CW 0.25 kW peak
7931B2	Male		4.0 — 50.0	1.16	
8775A4	Female	2.92mm	DC — 4.0	1.02	0.5 watt CW 0.25 kW peak
8775B4	Male		4.0 — 40.0	1.12	
8031A6	Female	3.5mm	DC — 2.0	1.025	0.5 watt CW 0.25 kW peak
8031B6	Male		2.0 — 18.0 18.0 — 26.5	1.045 1.085	
2610F1	—	7mm	DC — 2.0 2.0 — 8.0 8.0 — 18.0	1.02 1.03 1.06	1 watt CW 1 kW peak
2510E2	Female	Type N	DC — 2.0	1.025	1 watt CW 1 kW peak
2510F2	Male		2.0 — 4.0 4.0 — 18.0	1.04 1.065	
8583A1	Female	BNC 75Ω	DC — 2.0	1.02	1 watt CW
8583B1	Male		2.0 — 4.0 4.0 — 12.0	1.04 1.10	
351A2	Female	BNC 50Ω	DC — 2.0	1.04	2 watt CW 1 kW peak
351B2	Male		2.0 — 4.0 4.0 — 10.0	1.10 1.20	
332E	Female	TNC	DC — 4.0	1.06	1 watt CW 1 kW peak
332F	Male		4.0 — 12.0 12.0 — 18.0	1.10 1.15	

Precision Fixed Terminations

WAVEGUIDE (301 SERIES)

Features

- > Low VSWR
- > 2.6 to 50 GHz
- > Moderate Power Handling

Description

The 301 series low power waveguide fixed terminations are precision, low VSWR terminations suited to a wide variety of general purpose and precision laboratory applications. They can be used for full band one-port calibration and full two-port, isolation calibration.

Waveguide Flange Description

The waveguide flanges used on these terminations are Maury Precision Flanges (MPF) in rectangular, or round configurations. MPF flanges have precision indexing holes and removable indexing pins for excellent measurement repeatability. The millimeter waveguide

flanges in the WR22 and smaller sizes are of a unique Maury-pioneered design featuring a raised outer rim to prevent the flanges from cocking during connection. These flanges will mate with corresponding UG ()/U flanges. (See page 136 for flange details.)

Available Models

MODEL	FREQUENCY RANGE (GHz)			VSWR (Maximum)	EIA WR NUMBER	EQUIVALENT FLANGE	POWER RATING		LENGTH	
							AVE. (W)	PEAK (kW)	inches	(cm)
S301A	2.60	—	3.95	1.025	284	UG584/U	5.0	2.0	10.4	(26.4)
E301F	3.30	—	4.90	1.020	229	CPR229F	5.0	2.0	7.4	(18.8)
G301	3.95	—	5.85	1.020	187	UG149A/U	5.0	2.0	6.4	(16.3)
F301C	4.90	—	7.05	1.020	159	CPR159F	3.0	1.0	5.8	(14.7)
C301	5.85	—	8.20	1.020	137	UG344/U	2.5	1.0	5.2	(13.2)
H301A	7.05	—	10.00	1.015	112	UG51/U	2.0	1.0	5.0	(12.7)
X301A	8.20	—	12.40	1.015	90	UG39/U	1.0	1.0	5.0	(12.7)
M301A	10.00	—	15.00	1.020	75	MPF75	1.0	1.0	5.0	(12.7)
P301A	12.40	—	18.00	1.020	62	UG419/U	1.0	1.0	4.0	(10.2)
N301	15.00	—	22.00	1.025	51	MPF51	0.5	0.2	3.1	(7.9)
K301	18.00	—	26.50	1.025	42	UG595/U	0.5	0.2	2.8	(7.1)
Q301A	22.00	—	33.00	1.025	34	UG1530/U	0.5	0.2	4.25	(10.8)
U301	26.50	—	40.00	1.025	28	UG599/U	0.5	0.2	2.2	(5.6)
J301A	33.00	—	50.00	1.040	22	UG383 ¹	0.5	0.1	1.6	(4.1)

¹ Units are supplied with Maury precision flanges (MPF) which mate with the UG flanges shown.