CUSTOM HIGH VOLTAGE PROBES
FOR DEDICATED LOCATION PULSE MEASUREMENTS

Output risetime depends on housing construction around these resistors.
When used in the proper/optimum housing, the assembly has <100ps risetime (τ).

These high voltage resistors were built for specific applications such as coaxial lines, strip lines, and balanced lines in different dielectric media such as water, vacuum, nitrogen, SF6, and fluorine gas. We design housings for use with these resistors to meet customer specifications.

If you have a need for a high voltage probe we can design a specific resistor and housing to fit your requirements.

Examples:

Model	Maximum peak voltage	Resistance	@ pulse width ns	Risetime of resistive output ps	Terminals
VP1E3-20-1E3	20,000	1000 Ω	1 μs	**	8-32 female thread ***
VP5E2-28-8R2	28,000	500 Ω	800	**	HNB female *
VP2E3-35-1R2N	35,000	2000 Ω	100	**	N female
VP2E3-35-1R2H	35,000	2000 Ω	100	**	HNB female *

* Our type HN (HNB) connectors are specially designed to obtain minimum reflection coefficient for fast risetimes. For best pulse response, our Model 401-HNB male or Model 402-HNB female cable connector for RG214/U coax, available on page 48, should be used for interconnection. Cable assemblies are available on page 53.

** The output risetime will be dependent on the housing.

*** Consult factory for optimum installation assistance for your application. Custom connector mounted probes can usually be designed for specific measurement requirements.

DISCLAIMER: These resistors were designed for special uses in special housings; **these resistors are not hand held voltage probes.**

HIGH VOLTAGE PULSE
MATCHED RESISTIVE POWER DIVIDER

Barth High Voltage Resistive Power Dividers are matched impedance coaxial devices for use primarily in pulsed 50 ohm systems, or where occasional transients would damage ordinary units. These units are ideal for use in nuclear and high energy experiments. These dividers feature input and output impedance very close to 50 ohms. Extensive testing during manufacturing insures very high reliability for single-shot experiments. A voltage coefficient of the resistive film of less than .0001%/V allows low voltage calibration of most systems.

ADVANTAGES OVER STANDARD RF POWER DIVIDERS

- Withstands High Voltage Pulses
- Input/Output impedance held very close to nominal
- High Reliability
- Low Voltage Coefficient
- Low Reflection Coefficient
- Pulse Power Rated

MATCHED RESISTIVE POWER DIVIDER MODEL COMPARISON

Model	# of output ports	Voltage ratio dB	Maximum peak voltage	@ pulse width ns	Input reflection coefficient at 100ps τ	Risetime through unit ps	Connectors
151-xxx	2	6.0	2,500	400	< 4%	< 40	*
251-xxx	2	6.0	5,000	400	< 4%	< 40	*
280-GLP	3	9.5	5,000	400	< 2%	< 50	GR 874 locking
2642-MMFP	2	6.0	1,000	400	< 1%	< 35	SMA female/SMA male
2642-MFP	2	6.0	1,000	400	< 1%	< 35	SMA female
2702-BFP	2	6.0	2,500	250	< 5%	< 65	BNC female
2703-BFP	3	9.5	2,500	250	< 5%	< 65	BNC female
2704-BFP	4	12.0	2,500	250	< 5%	< 65	BNC female
2705-BFP	5	14.0	2,500	250	< 5%	< 65	BNC female
2706-BFP	6	15.6	2,500	250	< 5%	< 65	BNC female
2746-NFMF	6	15.6	4,000	100	< 4%	< 45	N female/SMA female
2812-NFP	2	6.0	2,500	250	< 2%	< 50	N female
2813-NFP	3	9.5	2,500	250	< 2%	< 50	N female
2814-NFP	4	12.0	2,500	250	< 2%	< 50	N female
2815-NFP	5	14.0	2,500	250	< 2%	< 50	N female
2816-NFP	6	15.6	2,500	250	< 2%	< 50	N female
281x-NMFP	**	**	2,500	250	< 2%	< 50	N male/N female
281x-HFNFP	**	**	5,000	100	< 2%	< 50	HN female/N female
281x-UNFP	**	**	10,000	25	< 3%	< 50	UHLC/N female
2825-NFP	5	14.0	4,000	100	< 2%	< 75	N female
2828-NFP	8	18.1	4,000	100	< 2%	< 65	N female
2830-NFP	10	20.0	4,000	100	< 2%	< 70	N female
2832-NFP	12	21.6	4,000	100	< 2%	< 75	N female

* Any male or female (GR, N, HNB) can be supplied. Units with N connectors are limited to 4kV.
** Refer to similar - NFP model above for # of Output Ports, and Voltage Ratio.

HIGH VOLTAGE PULSE
MATCHED RESISTIVE POWER DIVIDER

MODEL 151-XXX

Model 151-NFP

DESCRIPTION

High Voltage 2 Way Matched Power Divider (3 resistors)

SPECIFICATIONS

Voltage Ratio:		2.0/1Vr (6dB)
Maximum Input:		2.5kV, 400ns FWHM Pulse
Peak Input Power:		125kW at rated pulse width
Average Input Power:		2W maximum
Impedance:		50 Ω ± .25 Ω
Reflection-TDR:		< 4% to a 100ps risetime step function
Risetime through Unit:		< 40ps
Bandwidth:		DC to 9GHz
Voltage Coefficient:		< 1% at rated voltage
Connectors:	151-GP	GR 874 Non locking
	151-GLP	GR 874 Locking
	151-NMP	N male
	151-NFP	N female
Dimensions:		4" long x 2.5" wide x 1" high
Weight:		Approx. 1/2 lb.

- XXX Connector identifier, see connector list heading above for our standard (stocked) configurations. Call for connector configurations not shown.

HIGH VOLTAGE PULSE
MATCHED RESISTIVE POWER DIVIDER

MODEL 251-XXX

Model 251-NFP

DESCRIPTION

High Voltage 2 Way Matched Power Divider (3 resistors)

SPECIFICATIONS

Voltage Ratio:		2.0/1 Vr (6dB)
Maximum Input:		5kV, 400ns FWHM Pulse**
Peak Input Power:		500kW at rated pulse width
Average Input Power:		2W maximum
Impedance:		50 Ω
Reflection-TDR:		< 4% to a loop risetime step function
Risetime through Unit:		< 40ps
Bandwidth:		DC to 9GHz
Voltage Coefficient:		< 1% at rated voltage
Connectors:	251- GP	GR 874 non-locking
	251- GLP	GR 874 locking
	251- NMP	N male **
	251- NFP	N female **
	251- HMP	HNB male *
	251- HFP	HNB female *
Dimensions:		4" long x 2.5" wide x 1” high
Weight:		Approx. 1/2 lb.

-XXX Connector identifier, see connector list heading above for our standard (stocked) configurations. Call for connector configurations not shown.

NOTE: * Our type HN (HNB) connectors are specially designed to obtain minimum reflection coefficient for fast risetimes. For best pulse response, our model 401-HNB male or 402-HNB female cable connector for RG214/U coax should be used for interconnection.

**** Units with N connectors are limited to 4kV rating.