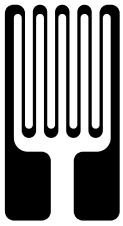
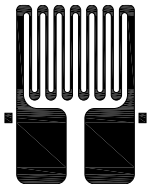
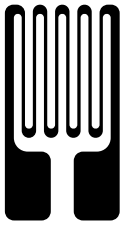
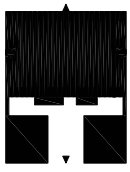
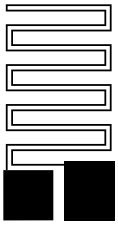
Bondable Resistors for Transducers – Selection Chart

GAGE PATTERN AND DESIGNATION Matrix is shown at actual size. Insert Desired S-T-C No. in Spaces Marked XX. See Note 1	RESISTANCE IN OHMS	DIMENSIONS			
		PATTERN		MATRIX	
		Length	Width	Length	Width
 		**N2B-A02, N2T-LT02**			
N2B-TR-A02-00150	15	0.24	0.13	0.30	0.19
N2B-TR-A02-00175	17.5	6.1	3.3	7.6	4.8
N2B-TR-A02-00200	20	**N2B-A06**			
N2B-TR-A02-00250	25	0.19	0.13	0.24	0.18
N2B-TR-A02-00300	30	4.8	3.3	6.1	4.6
N2B-TR-A02-00400	40	**N2T-LT10**			
N2B-TR-A02-00600	60	0.08	0.07	0.09	0.07
N2B-TR-A02-00650	65	2.1	1.8	2.5	1.9
N2B-TR-A02-00700	70				
 					
N2B-TR-A06-00150	15				
N2B-TR-A06-00175	17.5				
N2B-TR-A06-00200	20				
N2B-TR-A06-00250	25				
N2B-TR-A06-00300	30				
N2B-TR-A06-00400	40				
N2B-TR-A06-00600	60				
N2B-TR-A06-00650	65				
N2B-TR-A06-00700	70				
 					
N2T-TR-LT02-00100	10				
N2T-TR-LT02-00125	12.5				
N2T-TR-LT02-00150	15				
N2T-TR-LT02-00200	20				
N2T-TR-LT02-00225	22.5				
N2T-TR-LT02-00300	30				
N2T-TR-LT02-00400	40				
N2T-TR-LT02-00450	45				
N2T-TR-LT02-00500	50				
N2T-TR-LT02-00600	60				
N2T-TR-LT02-00720	72				
N2T-TR-LT02-00800	80				
N2T-TR-LT02-00900	90				
 					
N2T-TR-LT10-00100	10				
N2T-TR-LT10-00125	12.5				
N2T-TR-LT10-00150	15				
N2T-TR-LT10-00200	20				
N2T-TR-LT10-00225	22.5				
N2T-TR-LT10-00300	30				
N2T-TR-LT10-00400	40				
N2T-TR-LT10-00450	45				
N2T-TR-LT10-00500	50				
N2T-TR-LT10-00600	60				
N2T-TR-LT10-00720	72				
N2T-TR-LT10-00800	80				
N2T-TR-LT10-00900	90				
 		0.25	0.13	0.33	0.18
N2A-XX-B31-01250	125	6.4	3.3	8.4	4.6
EA-XX-B31-02500	250				
N2A-XX-B32-01000	100				
EA-XX-B32-02000	200				
N2A-XX-B34-00700	70				
EA-XX-B34-01400	140				
N2T-TR-B32-00160	16				
N2T-TR-B32-00300	30				
N2T-TR-B34-00110	11				
N2T-TR-B34-00220	22				

N2B Balco resistors are available in our A02 and A06 sizes. N2T Nickel resistors are available in our LT02 and LT10 sizes. The standard resistance values for each are as shown. Custom resistance values are available for a small set-up charge and 500-piece minimum order.

Resistance tolerance is ±1% at +75°F [+24°C].
Recommended Uses:
- span-shift-versus-temperature compensation
- temperature sensing

A02 and A06 Construction
These resistors are made of Balco alloy, and normally manufactured and stocked in unencapsulated form, but can be supplied with a thin layer of polyimide film covering the grid. Solder tabs are left exposed for simplified lead connections. To include this feature add OPTION E2 to the resistor designation.

Examples: N2B-TR-A06-00200/E2.
Resistance tolerance on Option E2 versions is ±1.5% at +75°F [+ 24°C].

Note: The A02 resistor is no longer offered in Nickel.

LT02 and LT10 Construction
These resistors are made of high-purity Nickel. They are manufactured and stocked with E3 encapsulation as standard. Solder tabs are left exposed for leadwire connections.

Example: N2T-TR-LT02-00300/E3.
Resistance tolerance remains ±1% at +75°F [+ 24°C].

B Pattern resistors are bifilar adjustable types. The practical range of adjustment is from R_{MAX} to 0.15 R_{MAX}, where R_{MAX} is nominal resistance prior to adjustment (see Resistor Adjustment Instructions).

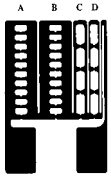
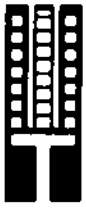
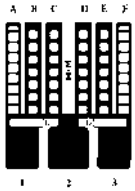
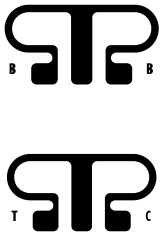
Recommended Uses:
- span set (EA, N2A)
- span-shift-versus-temperature compensation (N2T)

Note 1: All products shown are RoHS compliant.

Bondable Resistor Patterns

MICRO MEASUREMENTS
A VPG Brand

Bondable Resistors for Transducers – Selection Chart

GAGE PATTERN AND DESIGNATION Actual size shown on right Insert Desired S-T-C No. in Spaces Marked XX. See Note 1	RESISTANCE IN OHMS		DIMENSIONS			
			PATTERN		MATRIX	
	Before Cut	After Cut	Length	Width	Length	Width
			0.30	0.20	0.34	0.23
			7.6	5.1	8.6	5.9
 N2B-TR-C11-00050 N2B-TR-C12-00100 N2B-TR-C12-00200 N2B-TR-C13-00400 N2B-TR-C13-00800	5 10 20 40 80	12 24 48 96 192	**C Pattern** grid and adjustable ladder resistors are available in various nominal resistances adjustable to 240% of the initial value. Nominal cutting steps: 4 at 20%; 4 at 10%; and 20 at 1% (see Resistor Adjustment Instructions). Recommended Uses: • span-shift-versus-temperature compensation			
			0.35	0.14	0.41	0.20
			8.9	3.6	10.4	5.1
 N2F-TR-D01-00005 N2B-TR-D01-00060 N2A-XX-D01-00180 EA-XX-D01-00360 N2K-XX-D01-00500/DP N2K-XX-D01-00750/DP	0.5 6 18 36 50 75		The **D Pattern** adjustable ladder resistor is a small, single-network pattern available in various alloys and resistances (see Resistor Adjustment Instructions). Resistances listed are nominal fully cut values. Recommended Uses: • zero-shift compensation (N2F) • span-shift-versus-temperature compensation (N2B) • span set (EA, N2A, and N2K)			
			0.35	0.30	0.41	0.36
			8.9	7.6	10.4	9.1
 N2F-TR-E01-00005 N2A-XX-E01-00060 N2A-XX-E01-00180 EA-XX-E01-00360 N2K-XX-E01-00500/DP N2K-XX-E01-00750/DP	0.5 6 18 36 50 75		**E Pattern** adjustable ladder resistors are similar to the D Pattern but incorporate two adjustable networks on one matrix to provide the differential adjustment capability often required in bridge balance and zero-shift compensation (see Resistor Adjustment Instructions). Resistances listed are nominal fully cut values per network. Recommended Uses: • zero-shift compensation (N2F) • bridge balance (EA, N2A, and N2K)			
			0.15	0.29	0.21	3.5
			3.8	7.4	5.3	8.9
 N2A-XX-H21-00025 N2A-XX-H21-00060 N2B-TR-H22-00010	2.5 6.0 1.0		**H Pattern** resistors are adjusted upward in resistance value by rubbing the foil loops with a hand-held or electric pencil eraser. The H21 patterns, produced in constantan alloy, are used for bridge-balance adjustment. (2.5-ohm resistors are typically employed in 350-ohm bridges, and 6.0 ohm in 1000-ohm bridges.) The H22, produced in Balco alloy, is used for bridge zero-versus-temperature adjustment (see Resistor Adjustment Instructions). Resistance values are nominal. Recommended Uses: • bridge balance (H21) • bridge zero-shift compensation (H22)			

RESISTANCE WIRE

While wire does not track the temperature of the strain gages as closely as bondable resistors, there are instances where bondable resistors cannot be used due to limited mounting space. Micro-Measurements stocks two types of resistance wire alloys.

CATALOG NO./ WIRE ALLOY	QTY PER SPOOL	RESISTANCE PER FT (M) NOMINAL	TCR [–10° TO +50°C]	INSULATION	TEMPERATURE RANGE
137-HWN/Manganin	200 ft [61m]	14Ω (46Ω)	± 0.0011%/°F [± 0.002%/°C]	Enamel	+15° to +120°F [–10° to +50°C] (up to +175°F [+80°C] if proper aging is done)
142-JWN/Balco	500 ft [152m]	19Ω (62Ω)	+0.25%/°F [+0.45%/°C]	Enamel	–15° to +300°F [–10° to +150°C]

NOTE 1: All products are RoHS compliant.

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