

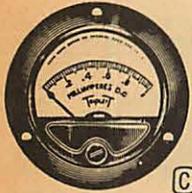


Panel Meters

GENERAL PANEL METER INFORMATION (ACCURACY WITHIN ±2%)

DC meters are d'Arsonval type with linear scales; extra-light moving coil; Bar Ring magnet. AC meters are moving iron vane type, air damped, with light moving parts. All have jewel bearings; specially treated pivots; white enameled dials; molded zero adjusters; ceramic pointer stops; molded case and base. **M Series:** Same but longer scales; self-shielded and 3-way terminals on DC meters. **G Series:** Flexible and interchangeable design with optional mounting bezel. Large dial area for multiple scales. Natural aluminum insert panel with special inserts available.

Mounting Bezels For G Series—For panels up to 1/8" thick. **Meter and Bezel Size:** 2.5", 3.09" x 1.69"; 3.5", 3.83" x 2.27"; 4.5", 4.92" x 2.85". Net Ea. \$1.50



Model	Nom. Size	Fig.	Scale Length	Flange Size, Inches, W. x H.	Body Size, In. Dia. x Depth†
220-G DC	2 1/2"	A	2.536"	2.77 x 2.39	2 1/2" x 1 1/2"
230-G AC	2 1/2"	A	2.155"	2.77 x 2.39	2 1/2" x 1 1/2"
240-G RF	2 1/2"	A	2.536"	2.77 x 2.39	2 1/2" x 1 1/2"
220-M DC	2 1/2"	B	2.5"	2 1/2" sq.	2 1/2" x 1 1/2"
230-M AC	2 1/2"	B	2.179"	2 1/2" sq.	2 1/2" x 1 1/2"
240-M RF	2 1/2"	B	2.5"	2 1/2" sq.	2 1/2" x 1 1/2"
221-T AC	2 1/2"	C	1.76"	2 1/2" dia.	2 1/2" x 1 1/2"
231-S AC	2 1/2"	C	1.58"	2 1/2" dia.	2 1/2" x 1 1/2"
241-T RF	2 1/2"	C	1.76"	2 1/2" dia.	2 1/2" x 1 1/2"
227-PL DC	2 1/2"	†	1.92"	2 1/2" x 2 3/4"	2 1/2" x 1 1/2"
237-PL AC	2 1/2"	†	1.92"	2 1/2" x 2 3/4"	2 1/2" x 1 1/2"
227-T DC	2 1/2"	†	1.76"	2 1/2" sq.	2 1/2" x 1"
237-S AC	2 1/2"	†	1.58"	2 1/2" sq.	2 1/2" x 1 1/2"
247-T RF	2 1/2"	†	1.76"	2 1/2" sq.	2 1/2" x 1"
320-G DC	3 1/2"	A	3.163"	3.50 x 2.99	2 3/4" x 1 1/2"
330-G AC	3 1/2"	A	2.688"	3.50 x 2.99	2 3/4" x 1 1/2"
340-G RF	3 1/2"	A	3.163"	3.50 x 2.99	2 3/4" x 1 1/2"
320-M DC	3 1/2"	B	3.34"	3 1/2" sq.	2 3/4" x 1 1/2"
330-M AC	3 1/2"	B	2.921"	3 1/2" sq.	2 3/4" x 1 1/2"
340-M RF	3 1/2"	B	3.34"	3 1/2" sq.	2 3/4" x 1 1/2"
321-T DC	3 1/2"	C	2.49"	3 1/2" dia.	2 3/4" x 1 1/2"
331-S AC	3 1/2"	C	2.22"	3 1/2" dia.	2 3/4" x 1 1/2"
341-T RF	3 1/2"	C	2.49"	3 1/2" dia.	2 3/4" x 1 1/2"
327-PL DC	3 1/2"	†	3.11"	3 3/8" x 3 1/4"	2 3/4" x 1 1/2"
337-PL AC	3 1/2"	†	2.65"	3 3/8" x 3 1/4"	2 3/4" x 1 1/2"
347-PL RF	3 1/2"	†	3.11"	3 3/8" x 3 1/4"	2 3/4" x 1 1/2"
327-T DC	3 1/2"	†	2.49"	3 sq.	2 3/4" x 1 1/2"
337-S AC	3 1/2"	†	2.22"	3 sq.	2 3/4" x 1 1/2"
347-T RF	3 1/2"	†	2.49"	3 sq.	2 3/4" x 1 1/2"
420 DC	4 1/2"	*	4.04"	4 3/8" x 4 3/8"	2 3/4" x 1 1/2"
430 AC	4 1/2"	*	3.6"	4 3/8" x 4 3/8"	2 3/4" x 1 1/2"
440 RF	4 1/2"	*	4.04"	4 3/8" x 4 3/8"	2 3/4" x 1 1/2"
420-G DC	4 1/2"	A	4.035"	4.55 x 4.068	2 3/4" x 1 1/2"
430-G AC	4 1/2"	A	3.430"	4.55 x 4.068	2 3/4" x 1 1/2"
440-G RF	4 1/2"	A	4.035"	4.55 x 4.068	2 3/4" x 1 1/2"
420-M DC	4 1/2"	B	4.5"	4 3/4" x 4 3/4"	2 3/4" x 1 1/2"
430-M AC	4 1/2"	B	3.964"	4 3/4" x 4 3/4"	2 3/4" x 1 1/2"
440-M RF	4 1/2"	B	4.5"	4 3/4" x 4 3/4"	2 3/4" x 1 1/2"
420-PL DC	4 1/2"	†	4.14"	4 3/8" x 4 3/8"	2 3/4" x 1 1/2"
430-PL AC	4 1/2"	†	3.6"	4 3/8" x 4 3/8"	2 3/4" x 1 1/2"
440-PL RF	4 1/2"	†	4.14"	4 3/8" x 4 3/8"	2 3/4" x 1 1/2"

*Similar to Fig. D. †Terminals project 1/8"-3/8" back of case except: G series, 1/2"-11/16"; M series, stud type terminals 11/16" lg. ‡Similar to Fig. A.

DC VOLTMETERS (1000 OHMS/VOLT)

Film type resistors.

2.5" MODELS 220, 221 AND 227

Range	Scale Div.	Net Each, Lots of		
		1-9	10-24	25-49
0-10	50	\$11.80	\$10.62	\$10.03
0-15	75 (30)†	11.80	10.62	10.03
0-25	50	11.80	10.62	10.03
0-50	50	11.80	10.62	10.03
0-100	50	11.80	10.62	10.03
0-150	75 (30)†	11.80	10.62	10.03
0-200	40	11.80	10.62	10.03
0-250	50	11.80	10.62	10.03
0-300	60 (30)†	11.80	10.62	10.03
0-500*	50	14.10	12.69	11.99
0-750*	75 (30)†	14.60	13.14	12.40
0-1000*	50	14.90	13.41	12.67
0-2000*	40	15.50	13.95	13.18
0-3000*	60 (30)†	16.20	14.58	13.77
0-4000*	40	16.50	14.85	14.03
0-5000*	50	16.80	15.12	14.28

3.5" MODELS 320, 321 AND 327

Range	Scale Div.	Net Each, Lots of		
		1-9	10-24	25-49
0-10	50	\$12.30	\$11.07	\$10.46
0-15	75	12.30	11.07	10.46
0-25	50	12.30	11.07	10.46
0-50	50	12.30	11.07	10.46
0-100	50	12.30	11.07	10.46
0-150	75	12.30	11.07	10.46
0-200	40	12.30	11.07	10.46
0-250	50	12.30	11.07	10.46
0-300	60	12.30	11.07	10.46
0-500	50	13.00	11.70	11.05
0-750	75	13.00	11.70	11.05
0-1000*	50	15.50	13.95	13.18
0-2000*	40	16.20	14.58	13.77
0-3000*	60	16.80	15.12	14.28
0-4000*	40	17.20	15.48	14.62
0-5000*	50	17.50	15.75	14.88

4.5" MODEL 420

Range	Scale Div.	Net Each, Lots of		
		1-9	10-24	25-49
0-10	50	\$13.50	\$12.15	\$11.48
0-15	75	13.50	12.15	11.48
0-25	50	13.50	12.15	11.48
0-50	50	13.50	12.15	11.48
0-100	50	13.50	12.15	11.48
0-150	75	13.50	12.15	11.48
0-200	40	13.50	12.15	11.48
0-250	50	13.50	12.15	11.48
0-300	60	13.50	12.15	11.48
0-500	50	14.20	12.78	12.07
0-750	75	14.20	12.78	12.07
0-1000*	50	16.70	15.03	14.20
0-2000*	40	17.40	15.66	14.79
0-3000*	60	18.00	16.20	15.30
0-4000*	40	18.40	16.56	15.64
0-5000*	50	18.70	16.83	15.90

*Supplied with external resistors. †Scale div. for 221-T and 227-T in parentheses.

Wire-wound resistors.

2.5" MODELS 220, 221 AND 227

Range	Scale Div.	Net Each, Lots of		
		1-9	10-24	25-49
0-1	50	\$11.80	\$10.62	\$10.03
0-3	60 (30)*	11.80	10.62	10.03
0-5	50	11.80	10.62	10.03

3.5" MODELS 320, 321 AND 327

Range	Scale Div.	Net Each, Lots of		
		1-9	10-24	25-49
0-1	50	\$12.30	\$11.07	\$10.46
0-3	60	12.30	11.07	10.46
0-5	50	12.30	11.07	10.46

4.5" MODEL 420

Range	Scale Div.	Net Each, Lots of		
		1-9	10-24	25-49
0-1	50	\$13.50	\$12.15	\$11.48
0-3	60	13.50	12.15	11.48
0-5	50	13.50	12.15	11.48

*Scale divisions for 221-T and 227-T in parentheses.

DC MICROAMMETERS

Lower torque microammeters are for use in horizontal positions only.

2.5" MODELS 220, 221 AND 227

Range	Resist. Ohms	Net Each, Lots of		
		1-9	10-24	25-49
0-20	5600	\$19.40	\$17.46	\$16.49
0-50	2000	16.40	14.76	13.94
0-100	825	14.30	12.87	12.16
0-200	360	12.20	10.98	10.37
0-500	156	11.70	10.53	9.95
50-0-50	825	14.30	12.87	12.16
100-0-100	360	12.20	10.98	10.37
500-0-500	55	10.90	9.81	9.27

3.5" MODELS 320, 321 AND 327

Range	Resist. Ohms	Net Each, Lots of		
		1-9	10-24	25-49
0-20	5600	\$20.10	\$18.09	\$17.09
0-50	2000	17.10	15.39	14.54
0-100	825	15.00	13.50	12.75
0-200	360	12.90	11.61	10.97
0-500	156	12.40	11.16	10.54
50-0-50	825	15.00	13.50	12.75
100-0-100	360	12.90	11.61	10.97
500-0-500	55	11.60	10.44	9.86

4.5" MODEL 420

Range	Resist. Ohms	Net Each, Lots of		
		1-9	10-24	25-49
0-20	5600	\$21.30	\$19.17	\$18.11
0-50	2000	18.30	16.47	15.56
0-100	825	16.20	14.58	13.77
0-200	360	14.10	12.69	11.99
0-500	156	13.60	12.24	11.56
50-0-50	825	16.20	14.58	13.77
100-0-100	360	14.10	12.69	11.99
500-0-500	55	12.80	11.52	10.88

DC MILLIVOLTMETERS

2.5" MODELS 220, 221 AND 227

Range	Approx. Resist.	Net Each, Lots of		
		1-9	10-24	25-49
0-50	6.3	\$10.90	\$ 9.81	\$ 9.27
0-100	12.5	10.90	9.81	9.27
0-150	20	10.90	9.81	9.27

3.5" MODELS 320, 321 AND 327

Range	Approx. Resist.	Net Each, Lots of		
		1-9	10-24	25-49
0-50	6.3	\$11.60	\$10.44	\$ 9.86
0-100	12.5	11.60	10.44	9.86
0-150	20	11.60	10.44	9.86

4.5" MODEL 420

Range	Approx. Resist.	Net Each, Lots of		
		1-9	10-24	25-49
0-50	6.3	\$12.80	\$11.52	\$10.88
0-100	12.5	12.80	11.52	10.88
0-150	20	12.80	11.52	10.88

SELF-CONTAINED DC AMMETERS

2.5" MODELS 220, 221 AND 227

Range	Scale Div.	Net Each, Lots of		
		1-9	10-24	25-49
0-1	50	\$11.30	\$10.17	\$ 9.61
0-3	60 (30)†	11.30	10.17	9.61
0-5	50	11.80	10.62	10.03
0-10	50	11.80	10.62	10.03
0-15	75 (30)†	11.80	10.62	10.03
0-25	50	11.80	10.62	10.03
0-30*	60 (30)†	11.80	10.62	10.03
0-50*	50	11.80	10.62	10.03

3.5" MODELS 320, 321 AND 327

Range	Scale Div.	Net Each, Lots of		
		1-9	10-24	25-49
0-1	50	\$12.00	\$10.80	\$10.20
0-3	60	12.00	10.80	10.20
0-5	50	12.30	11.07	10.46
0-10	50	12.30	11.07	10.46
0-15	75	12.30	11.07	10.46
0-25	50	12.30	11.07	10

TRIPLET Panel Meters

DC MILLIAMMETERS

Ranges above 10 milliamperes are shunted and have a drop of approximately 100 millivolts. Special resistances to order. Double-range milliammeters available on special order, prices on request.

2.5" MODELS 220, 221 AND 227

Range	Approx. Resist.	Net Each, Lots of		
		1-9	10-24	25-49
0-1	55	\$10.90	\$ 9.81	\$ 9.27
0-1.5	30	10.90	9.81	9.27
0-3	14	10.90	9.81	9.27
0-5	8.5	10.90	9.81	9.27
0-10	3.1	10.90	9.81	9.27
0-15	6.6	10.90	9.81	9.27
0-25	4	11.30	10.17	9.61
0-50	2	11.30	10.17	9.61
0-75	1.3	11.30	10.17	9.61
0-100	1	11.30	10.17	9.61
0-150	0.6	11.30	10.17	9.61
0-200	0.5	11.30	10.17	9.61
0-250	0.4	11.30	10.17	9.61
0-300	0.33	11.30	10.17	9.61
0-400	0.25	11.30	10.17	9.61
0-500	0.2	11.30	10.17	9.61
0-750	0.13	11.30	10.17	9.61
0-1000	0.1	11.30	10.17	9.61

3.5" MODELS 320, 321 AND 327

Range	Approx. Resist.	Net Each, Lots of		
		1-9	10-24	25-49
0-1	55	\$11.60	\$10.44	\$ 9.86
0-1.5	30	11.60	10.44	9.86
0-3	14	11.60	10.44	9.86
0-5	8.5	11.60	10.44	9.86
0-10	3.1	11.60	10.44	9.86
0-15	6.6	11.60	10.44	9.86
0-25	4	12.00	10.80	10.20
0-50	2	12.00	10.80	10.20
0-75	1.3	12.00	10.80	10.20
0-100	1	12.00	10.80	10.20
0-150	0.6	12.00	10.80	10.20
0-200	0.5	12.00	10.80	10.20
0-250	0.4	12.00	10.80	10.20
0-300	0.33	12.00	10.80	10.20
0-400	0.25	12.00	10.80	10.20
0-500	0.2	12.00	10.80	10.20
0-750	0.13	12.00	10.80	10.20
0-1000	0.1	12.00	10.80	10.20

4.5" MODEL 420

Range	Approx. Resist.	Net Each, Lots of		
		1-9	10-24	25-49
0-1	55	\$12.80	\$11.52	\$10.88
0-1.5	30	12.80	11.52	10.88
0-3	14	12.80	11.52	10.88
0-5	8.5	12.80	11.52	10.88
0-10	3.1	12.80	11.52	10.88
0-15	6.6	12.80	11.52	10.88
0-25	4	13.20	11.88	11.22
0-50	2	13.20	11.88	11.22
0-75	1.3	13.20	11.88	11.22
0-100	1	13.20	11.88	11.22
0-150	0.6	13.20	11.88	11.22
0-200	0.5	13.20	11.88	11.22
0-250	0.4	13.20	11.88	11.22
0-300	0.33	13.20	11.88	11.22
0-400	0.25	13.20	11.88	11.22
0-500	0.2	13.20	11.88	11.22
0-750	0.13	13.20	11.88	11.22
0-1000	0.1	13.20	11.88	11.22

THERMO AMMETERS (RF)

Internal couples normally furnished. If external are required, specify on order adding \$6.10 to price shown below. External couples only less meter, w/leads. Net Each.....\$7.30

2.5" MODELS 240, 241 AND 247

Range	Approx. Resist.	Net Each, Lots of		
		1-9	10-24	25-49
0-.5	.93	\$12.10	\$10.89	\$10.29
0-1	.35	12.10	10.89	10.29
0-1.5	.21	12.10	10.89	10.29
0-2.5	.13	12.10	10.89	10.29
0-5	.06	12.10	10.89	10.29
0-10	.03	12.10	10.89	10.29

3.5" MODELS 340, 341 AND 347

Range	Approx. Resist.	Net Each, Lots of		
		1-9	10-24	25-49
0-.5	.93	\$12.80	\$11.52	\$10.88
0-1	.35	12.80	11.52	10.88
0-1.5	.21	12.80	11.52	10.88
0-2.5	.13	12.80	11.52	10.88
0-5	.06	12.80	11.52	10.88
0-10	.03	12.80	11.52	10.88

4.5" MODEL 440

Range	Approx. Resist.	Net Each, Lots of		
		1-9	10-24	25-49
0-.5	.93	\$14.00	\$12.60	\$11.90
0-1	.35	14.00	12.60	11.90
0-1.5	.21	14.00	12.60	11.90
0-2.5	.13	14.00	12.60	11.90
0-5	.06	14.00	12.60	11.90
0-10	.03	14.00	12.60	11.90

AC VOLTMETERS

Self-contained. For use on frequencies from 25 to 133 cycles. Double-range voltmeters are available on special order, prices on request.

2.5" MODELS 230, 231 AND 237

Range	Ohms/Volt	Net Each, Lots of		
		1-9	10-24	25-49
0-1.5	1.33	\$11.40	\$10.26	\$ 9.69
0-3	3.33	11.40	10.26	9.69
0-5	4	11.40	10.26	9.69
0-10	10	11.40	10.26	9.69
0-15	16	11.40	10.26	9.69
0-25	20	11.40	10.26	9.69
0-50	50	11.40	10.26	9.69
0-100	91	11.40	10.26	9.69
0-150	125	12.50	11.25	10.63
0-250	144	13.10	11.79	11.14
0-300	144	13.60	12.24	11.56
0-500*	125	17.70	15.93	15.05
0-750*	125	20.50	18.45	17.43
0-1000*	125	22.10	19.89	18.79

3.5" MODELS 330, 331 AND 337

Range	Ohms/Volt	Net Each, Lots of		
		1-9	10-24	25-49
0-1.5	1.33	\$12.10	\$10.89	\$10.29
0-3	3.33	12.10	10.89	10.29
0-5	4	12.10	10.89	10.29
0-10	10	12.10	10.89	10.29
0-15	16	12.10	10.89	10.29
0-25	20	12.10	10.89	10.29
0-50	50	12.10	10.89	10.29
0-100	91	12.10	10.89	10.29
0-150	125	13.20	11.88	11.22
0-250	144	13.80	12.42	11.73
0-300	144	14.30	12.87	12.16
0-500*	125	18.40	16.56	15.64
0-750*	125	21.20	19.08	18.02
0-1000*	125	22.80	20.52	19.38

4.5" MODEL 430

Range	Ohms/Volt	Net Each, Lots of		
		1-9	10-24	25-49
0-1.5	1.33	\$12.80	\$11.52	\$10.88
0-3	3.33	12.80	11.52	10.88
0-5	4	12.80	11.52	10.88
0-10	10	12.80	11.52	10.88
0-15	16	12.80	11.52	10.88
0-25	20	12.80	11.52	10.88
0-50	50	12.80	11.52	10.88
0-100	91	12.80	11.52	10.88
0-150	125	13.90	12.51	11.82
0-250	144	14.40	12.96	12.24
0-300	144	15.00	13.50	12.75
0-500*	125	19.10	17.19	16.24
0-750*	125	21.90	19.71	18.62
0-1000*	125	23.50	21.15	19.98

*Supplied with external resistor boxes.

AC MILLIAMMETERS

For use on frequencies from 25 to 500 cycles.

2.5" MODELS 230, 231 AND 237

Range	Approx. Resist.	Net Each, Lots of		
		1-9	10-24	25-49
0-10	3800	\$11.40	\$10.26	\$ 9.69
0-15	1600	11.40	10.26	9.69
0-25	460	11.40	10.26	9.69
0-50	115	11.40	10.26	9.69
0-100	35	11.40	10.26	9.69
0-200	12	11.40	10.26	9.69
0-250	3.8	11.40	10.26	9.69
0-500	1.2	11.40	10.26	9.69

3.5" MODELS 330, 331 AND 337

Range	Approx. Resist.	Net Each, Lots of		
		1-9	10-24	25-49
0-10	3800	\$12.10	\$10.89	\$10.29
0-15	1600	12.10	10.89	10.29
0-25	460	12.10	10.89	10.29
0-50	115	12.10	10.89	10.29
0-100	35	12.10	10.89	10.29
0-200	12	12.10	10.89	10.29
0-250	3.8	12.10	10.89	10.29
0-500	1.2	12.10	10.89	10.29

4.5" MODEL 430

Range	Approx. Resist.	Net Each, Lots of		
		1-9	10-24	25-49
0-10	3800	\$12.80	\$11.52	\$10.88
0-15	1600	12.80	11.52	10.88
0-25	460	12.80	11.52	10.88
0-50	115	12.80	11.52	10.88
0-100	35	12.80	11.52	10.88
0-200	12	12.80	11.52	10.88
0-250	3.8	12.80	11.52	10.88
0-500	1.2	12.80	11.52	10.88

AC AMMETERS

Self-contained. For use on frequencies from 25 to 500 cycles. For ranges above 75 (above 50 on 2" models), use current transformers, with 5 amps secondary (60-133 cycles). Add Do-Nut transformer price to price of 0-5 ammeter.

AC AMMETERS (CONT'D)

Do-Nut Transformers—Pri. amp range: 75, 100, 200, 250, 300, 400. Net Ea. \$11.60
500, 600 amps. Net Each..... 15.20
750, 1000 amps. Net Each..... 21.20
1200 amps. Net Each..... 31.50

2.5" MODELS 230, 231 AND 237

Range	Approx. Resist.	Net Each, Lots of		
		1-9	10-24	25-49
0-1	.29	\$11.40	\$10.26	\$ 9.69
0-2	.19	11.40	10.26	9.69
0-3	.03	11.40	10.26	9.69
0-5	.015	11.40	10.26	9.69
0-10	.005	11.40	10.26	9.69
0-15	.002	11.40	10.26	9.69
0-25	.001	11.40	10.26	9.69
0-30	.001	11.40	10.26	9.69
0-50	.0005	11.40	10.26	9.69

3.5" MODELS 330, 331 AND 337

Range	Approx. Resist.	Net Each, Lots of		
		1-9	10-24	25-49
0-1	.29	\$12.10	\$10.89	\$10.29
0-2	.19	12.10	10.89	10.29
0-3	.03	12.10	10.89	10.29
0-5	.015	12.10	10.89	10.29
0-10	.005	12.10	10.89	10.29
0-15	.002	12.10	10.89	10.29
0-25	.001	12.10	10.89	10.29
0-30	.001	12.10	10.89	10.29
0-50	.0005	12.10	10.89	10.29
0-75*	.0003	13.30	11.97	11.31

4.5" MODEL 430

Range	Approx. Resist.	Net Each, Lots of		
		1-9	10-24	25-49
0-1	.29	\$12.80	\$11.52	\$10.88
0-2	.19	12.80	11.52	10.88
0-3	.03	12.80	11.52	10.88
0-5	.015	12.80	11.52	10.88
0-10	.005	12.80	11.52	10.88
0-15	.002	12.80	11.52	10.88
0-25	.001	12.80	11.52	10.88
0-30	.001	12.80	11.52	10.88
0-50	.0005	12.80	11.52	10.88
0-75*	.0003	14.50	13.05	12.3