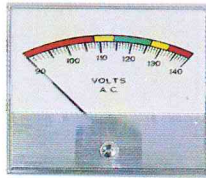


# QUALITY PRODUCTS FROM HOYT



## PANEL METERS • AUTOMOTIVE TEST EQUIPMENT

FOR HUNDREDS OF YEARS, NEW ENGLAND CRAFTSMEN HAVE LIVED BY THE RULE THAT ANYTHING WORTH DOING IS WORTH DOING WELL. AT HOYT, THAT RULE IS HONORED TODAY AS IT WAS IN PREVIOUS GENERATIONS WHO FOUNDED AND FOSTERED A COMPANY EXCLUSIVELY TO MAKING A BETTER LINE OF ANALOG PANEL METERS. FROM THE HOYT FAMILY MEMBERS WHO HAVE MANUFACTURED METERS SINCE 1890 AND HAVE OWNED AND ACTIVELY OPERATED THE BUSINESS SINCE 1904, TO THE SKILLED PRODUCTION WORKERS IN THE PLANT, HOYT PEOPLE APPLY THEIR SPECIAL SKILLS TO THE DESIGN AND MANUFACTURE OF PANEL METERS THAT MEET AND EXCEED INDUSTRY STANDARDS.

PERSONAL PRIDE, YANKEE INGENUITY, AND UNCOMMON COMMITMENT TO TRADITION AND REPUTATION ARE REFLECTED IN EVERY METER THAT LEAVES THE MODERN, 30,000 SQUARE FOOT FACILITY IN PENACOOK, NEW HAMPSHIRE.

THIS CATALOG DESCRIBES THE COMPLETE HOYT LINE OF AMMETERS, MILLIVOLTMETERS, MILLIAMMETERS, VOLTMETERS, VU METERS AND ACCESSORIES. STANDARD HOYT METERS OFFER A CHOICE OF SELF-SHIELDED ACCURING, EXTERNAL MAGNET, 250 DEG. MOVEMENTS OR AC REPULSION MOVEMENTS WITH ACCURACY RANGES OF 1 TO 5% OF FULL SCALE. THE HOYT CUSTOM PRODUCT LINE INCLUDES RECTIFIER TYPE AC METERS, 50-2000 CYCLE CALIBRATED AC METERS AND SUPPRESSED ZERO DC METERS. ALL OF HOYT METERS USED RUGGED PIVOT AND JEWEL MOVEMENTS, TESTED AND PROVEN FOR MANY YEARS IN INDUSTRIAL ENVIRONMENTS. HOYT ALSO OFFERS A WIDE SELECTION OF CASE STYLES, COLORS AND MATERIALS INCLUDING METAL, PHENOLIC, NORYL, POLYSTYRENE, HIGH IMPACT POLYCARBONATE AND ACRYLIC. SPECIAL DIAL COLORS AND LAYOUTS FOR NON-STANDARD RANGE DIALS ALSO AVAILABLE AT EXTRA COST.

Hoyt Meters  
Made in USA

# HOYT

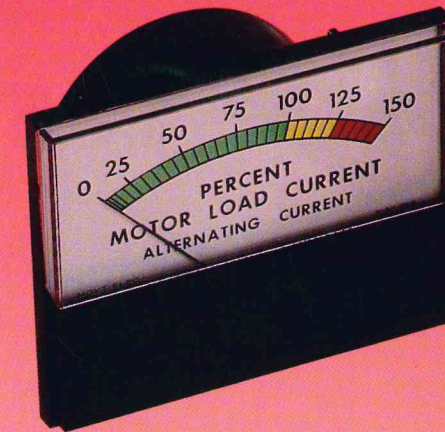
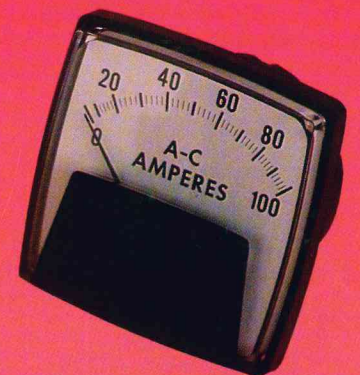
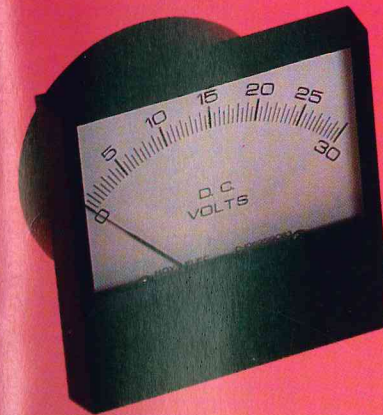
Price and specifications, including colors and materials, are subject to change without notice. Products may be withdrawn at any time at the option of the manufacturer. Catalog dimensions are for reference only. Contact the factory for certified dimension.

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# HOYT

## PANEL METER CATALOG



# HOYT

Since  
1904

MADE IN USA



[WWW.HOYTMETER.COM](http://WWW.HOYTMETER.COM)

**HOYT ELECTRICAL INSTRUMENTS WORKS**, the leading manufacturer of analog panel meters for over 97 years, produces a complete line of the highest quality electrical indicating panel meters available today. The Penacook, N.H. plant was designed specifically for the processing and production of Analog Panel Meters. Our production facilities include dial printing, CAD, tool and die shop, metal stamping, production painting, meter coil winding and assembly.

**QUALITY CONTROL** is the responsibility of each and every production worker and the results reflect the lowest warranty return available.

We specialize in custom instruments. A large majority of our customers purchase Hoyt Panel Meters because their needs are:

- CUSTOM DIALS ● CUSTOM CASES ● CUSTOM RANGES ●
- CUSTOM ELECTRICAL SPECIFICATIONS ●
- CUSTOM ACCURACY ● CUSTOM RESISTANCE AND DAMPING ●

When custom panel meters are required with maximum emphasis on **QUALITY** contact a factory representative who will assist you to properly select the meter for your application.

## PRODUCT INDEX BY PAGE NUMBER

SERIES	DC 2%	DC 5%	AC 2%	VU	FREQUENCY	MOTOR LOAD	SURFACE MOUNT	WINDOW MOUNT	BEZEL MOUNT
1000	11	-	11	11	11,26	11,27	11	-	-
2000	8-9	-	8-9	8-9	8-9,26	8-9,27	8-9	-	8-9
2100	12	-	12	12	12	12,27	12	-	-
3100	4-7	-	4-7	4-7	4-7,26	4-7,27	4-7	4-7	4-7
4000	12	-	12	12	12,26	12,27	12	-	-
5000	14-15	-	14-15	-	14-15,26	14-15,27	14-15	-	-
250	16-17	-	16-17	-	-	-	16-17	-	16-17
EDGEWISE	22-23	-	22-23	22-23	-	-	-	-	22-23
INDUSTRIAL	19-21	-	19-21	19-21	19-21,26	19-21,27	19-21	-	-
MOVING MAGNET	-	24-25	-	-	-	-	24-25	25	25

### DONUT TYPE HIGH CURRENT TRANSFORMERS

These transformers may be used with any 5 AC ampere Hoyt meter. They have a 5 ampere secondary, and are made in primary ranges up to 600 amperes for mounting over the bus bar or high current wire to be measured. Connecting leads are 24" long. Capacity is 2VA insulated to 4500 volts. CT's up to 600 amperes size is 4" in diameter with a 1-1/4" hole; 700 to 1000 amperes have an overall diameter of 4" with 1-3/4" hole.



### DIALS

Special dials are produced in the Hoyt art and printing departments to exact customer specifications. Ten standard Sun-fast colors are offered at an extra charge to cover printing cost only. Special colors are available for an additional charge for ink formulation. All standard dials are lithographed on hard flat aluminum pans with white backgrounds. Artwork is now computer generated for easy changes and better resolution.

Meter Movements can be found on page 13

### VU METERS - VOLUME LEVEL INDICATORS

Hoyt VU meters are for measurement of sound or noise levels including all instances where volume level measurements are to be made. This instrument is essentially a low range rectifier type voltmeter using the D'Arsonval type movement. Hoyt VU meters can be ordered with a type "A" or "B" scale, in a variety of case styles, ranging from 1-1/2", 2-1/2", 3-1/2" 4-1/2" in 2000 and 3100 series meters. Special options available at extra cost include LED for peak measurements and illumination provisions.

## HOYT INFORMATION

### GLOSSARY OF TERMS

**ACCURACY:** Expressed in percent of end scale rating and indicates the maximum deviation to be obtained from the actual input value. The percent is always of end scale value and, if the zero is at a point other than one end of the scale, the sum of the end-scale readings will be the considered the end scale value.

**ANSI C39.1 STANDARD:** American National Standards Institute Inc. Standard C39.1 applies to analog instruments, defining nomenclature, test conditions, and procedures, general construction requirements, mounting dimensions, and performance requirements.

**DAMPING:** Term applied to the characteristics of the pointer movement once electrical energy is applied and specifically to the ability of the pointer to indicate properly, quickly with a minimum amount of overshoot or oscillation before coming to rest.

**REPEATABILITY:** Usually expressed as a percent of full scale, repeatability is the ability of an instrument to read over and over again the same input.

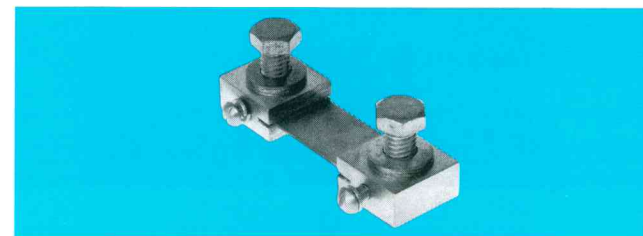
**SELF-SHIELDING:** Inherent in the construction, unaffected by stray magnetic fields.

**TRACKING:** The ability of an instrument to indicate at the division line being checked, when energized by corresponding proportional value of actual end-scale excitation, expressed as a percentage of actual end-scale value.

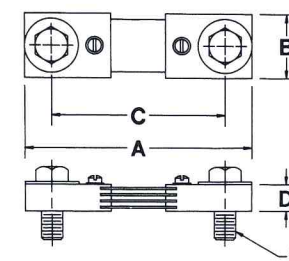
For zero center meters, tracking from each end-scale point to the zero point should be checked independently and expressed as a percentage of the end scale value. For offset zero meters, the larger end-scale value should be used.

### SWITCHBOARD SHUNTS

Hoyt switchboard shunts are adjusted to a 50 millivolt drop. Dimensions shown in the table are for reference only. Certified dimensions will be furnished on request.



RANGE AMPERES	A	B	C	D	E
25	3-1/4	1	2-1/4	1/2	3/8-16X1
30	3-1/4	1	2-1/4	1/2	3/8-16X1
50	3-1/4	1	2-1/4	1/2	3/8-16X1
75	3-1/4	1	2-1/4	1/2	3/8-16X1
100	3-1/4	1	2-1/4	1/2	3/8-16X1
150	3-1/4	1	2-1/4	1/2	3/8-16X1
200	3-1/4	1	2-1/4	1/2	3/8-16X1
300	5-1/4	1-1/4	4	5/8	1/2-13X1-1/4
400	5-1/4	1-1/4	4	5/8	1/2-13X1-1/4
500	5-1/4	1-1/4	4	5/8	1/2-13X1-1/4
600	5-1/4	1-1/2	4	5/8	1/2-13X1-1/4
800	6-1/4	2-1/2	4-1/2	5/8	1/2-13X1-1/4
1,000	6-1/4	2-1/2	4-1/2	5/8	1/2-13X1-1/4

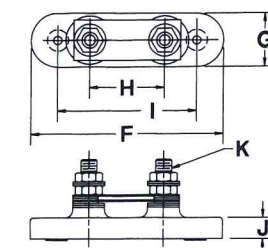


### C-8033 SHUNT

The Hoyt C-8033 Shunt is designed for non electronic applications where extreme accuracy is important. This low cost shunt has an accuracy  $\pm 5\%$  and includes 3ft. leads. Extra heavy terminals allow for easy mounting of heavy cables and are molded into a solid Phenolic base as a support for a mounting block.



RANGE AMPERES	F	G	H	I	J	K
25	4.00	1.25	1.75	3.25	0.5	3/8" - 16 X 1-1/8
30	4.00	1.25	1.75	3.25	0.5	3/8" - 16 X 1-1/8
50	4.00	1.25	1.75	3.25	0.5	3/8" - 16 X 1-1/8
75	4.00	1.25	1.75	3.25	0.5	3/8" - 16 X 1-1/8
100	4.00	1.25	1.75	3.25	0.5	3/8" - 16 X 1-1/8
150	4.00	1.25	1.75	3.25	0.5	3/8" - 16 X 1-1/8
200	4.00	1.25	1.75	3.25	0.5	3/8" - 16 X 1-1/8
300	4.00	1.25	1.75	3.25	0.5	1/2" - 13 X 1-5/8



# Hoyt Model 3100 Series

The 3100 Hoyt panel meter series consists of a popular industrial styled, high impact polycarbonate case that is available for surface, window, or bezel mounting applications in four sizes: 1-1/2", 2-1/2", 3-1/2", and 4-1/2". This series of meters is directly equivalent in mounting and specifications to similar styled meters of other manufacturers.

**SPECIFICATIONS**

**Accuracy:** ±2% full scale value.

**Resistance:** ±15%

**Dials:** 100 degree arc, black lettering on white background. Special dial colors and artwork are available as an option.

**Movement:** Spring loaded pivot and jewel movement that assures maximum torque and reliability.

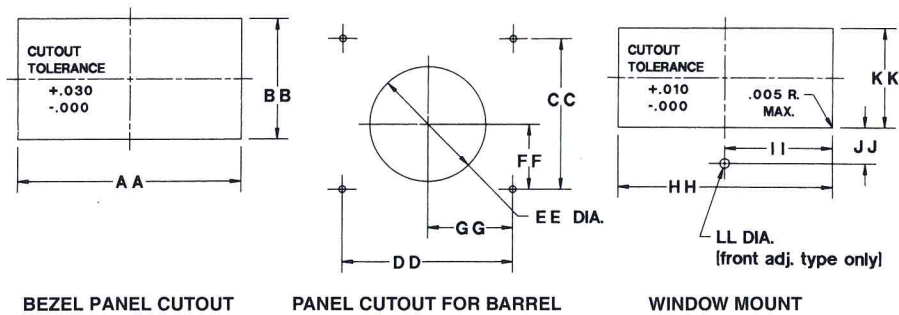
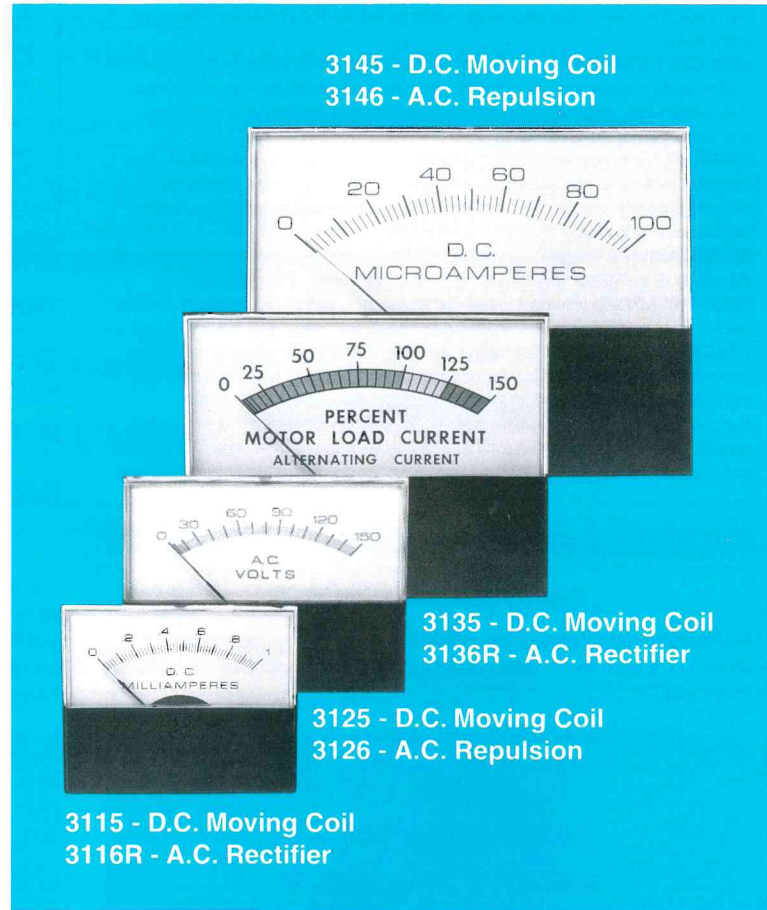
**D.C. Ranges:** Microammeters, Milliammeters, Ammeters, Millivoltmeters and Voltmeters.

**A.C. Ranges:** Milliammeters, Ammeters, and Voltmeters.

**Mounting:** Specify (HS) Surface mount, (HW) Window mount or (HB) Bezel mount.

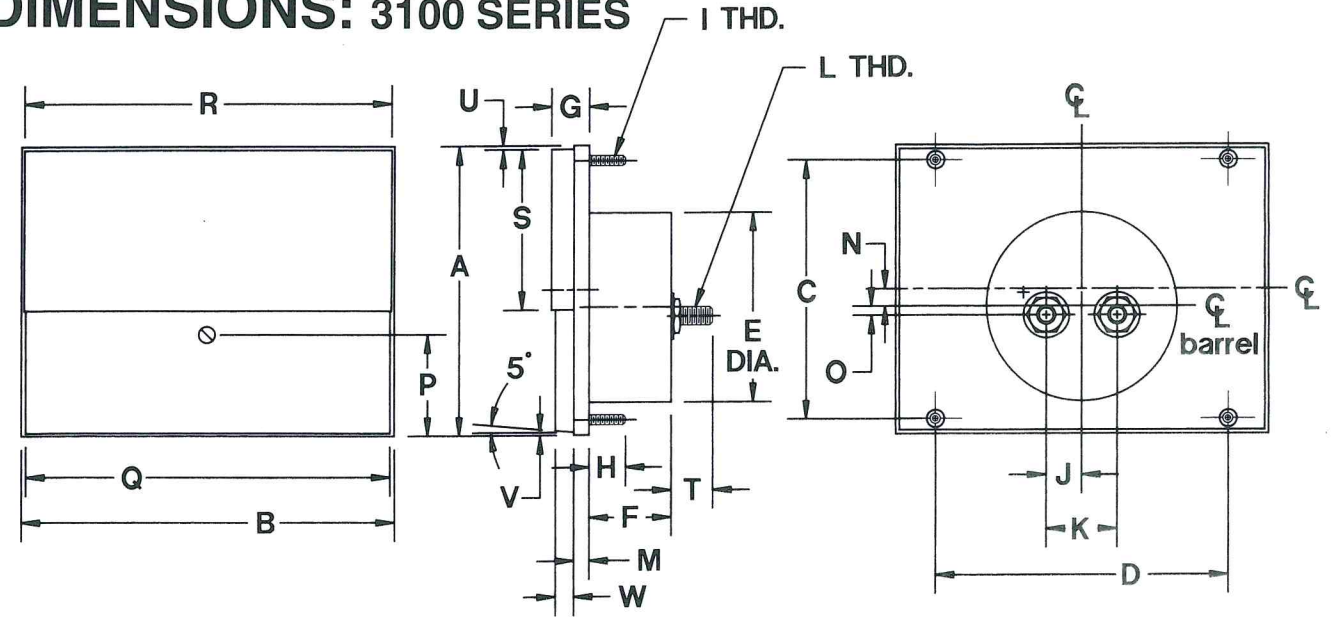
**Standard Options:** Optional colors available on lower front cover, mirror dials, acrylic case materials, suppressed zero ranges, VU meters.

**UL Recognized meters available, add -UL** (Example 3135-UL, 0-1 MADC)



MODELS	AA	BB	CC	DD	EE	FF	GG	HH	II	JJ	KK	LL
3115-22	—	—	1.310	1.310	1.590	0.660	0.660	2.150	1.075	0.535	0.935	0.265
3125/26	3.000	1.600	1.880	1.880	2.180	0.940	0.940	2.900	1.450	0.630	1.270	0.265
3135/36	3.720	2.160	2.250	2.250	2.720	1.120	1.120	3.590	1.795	0.804	1.590	0.265
3145/46	5.120	2.840	3.560	4.000	2.720	1.540	2.000	5.010	2.505	0.856	2.340	0.228

**DIMENSIONS: 3100 SERIES**

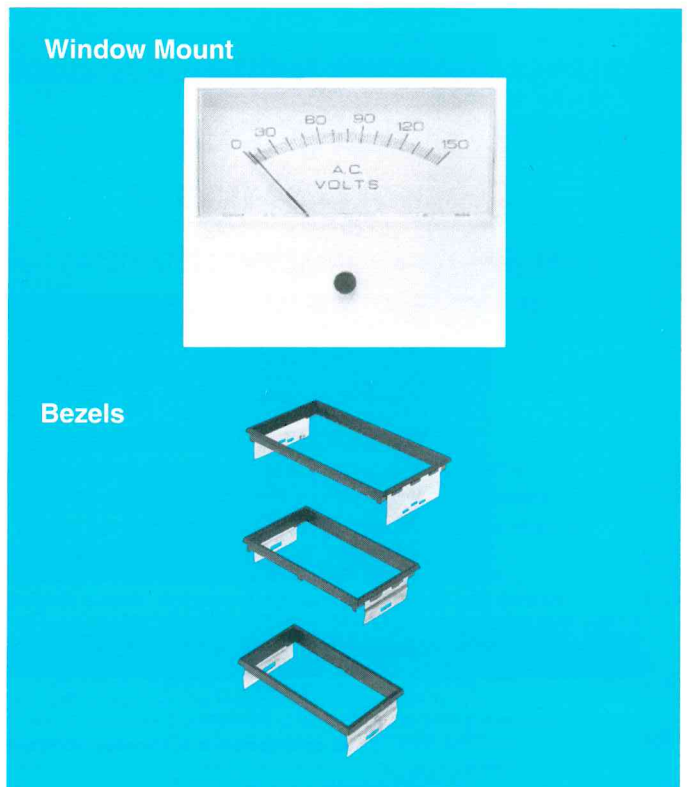


MODELS	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
3115-22	1.78	2.24	1.31	1.31	1.50	1.22	0.34	0.50	4-48	0.48	0.97	10-32	0.14	0.03	-0.22	0.66	2.14	2.16	0.88	0.50	0.04	0.04	0.16
3125/26	2.29	2.99	1.88	1.88	2.08	1.16	0.40	0.50	4-48	0.48	0.97	10-32	0.16	0.00	0.00	0.86	2.89	2.91	1.23	0.50	0.06	0.04	0.19
3135/36	2.89	3.70	2.25	2.25	2.60	1.16	0.42	0.50	4-48	0.48	0.97	10-32	0.18	0.00	0.12	0.96	3.59	3.62	1.55	0.50	0.06	0.04	0.19
3145/46	3.98	5.10	3.56	4.00	2.60	1.13	0.52	0.50	6-32	0.48	0.97	10-32	0.21	0.24	0.12	1.39	4.98	5.02	2.21	0.50	0.05	0.04	0.25

## Hoyt Window (HW) & Bezel (HB) Series

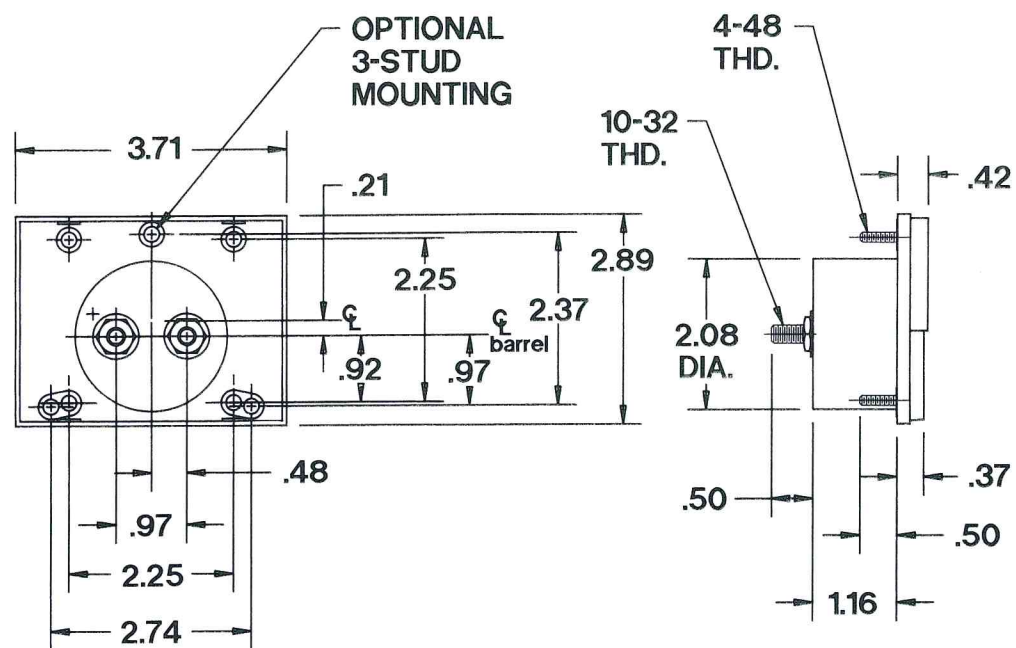
**Window Mount** The window mount design is available in sizes (1-1/2", 2-1/2", 3-1/2", and 4-1/2"). This series is industrially styled and universally accepted with maximum dial visibility. The outside edges of the "window" that project through the panel are clear which yields maximum readability. All specifications and options are identical to those on previous page.

**Bezel Mount** The Hoyt bezels are available in sizes (2-1/2", 3-1/2", and 4-1/2") and offer a custom look to the panel surface. The bezel is molded from high strength plastic material which protects the meter from damage. This design features the zero adjuster within the window envelope therefore negating the requirement for drilling an additional hole. The optional bezel is available for use with the surface case styles and includes necessary mounting hardware.



# HOYT 3135/36-2 SERIES

## DIMENSIONS:



Our policy is one of continuous development and we reserve the right to supply products different in design and appearance from those described.

As development is continuous, we reserve the right to alter specifications without notice.

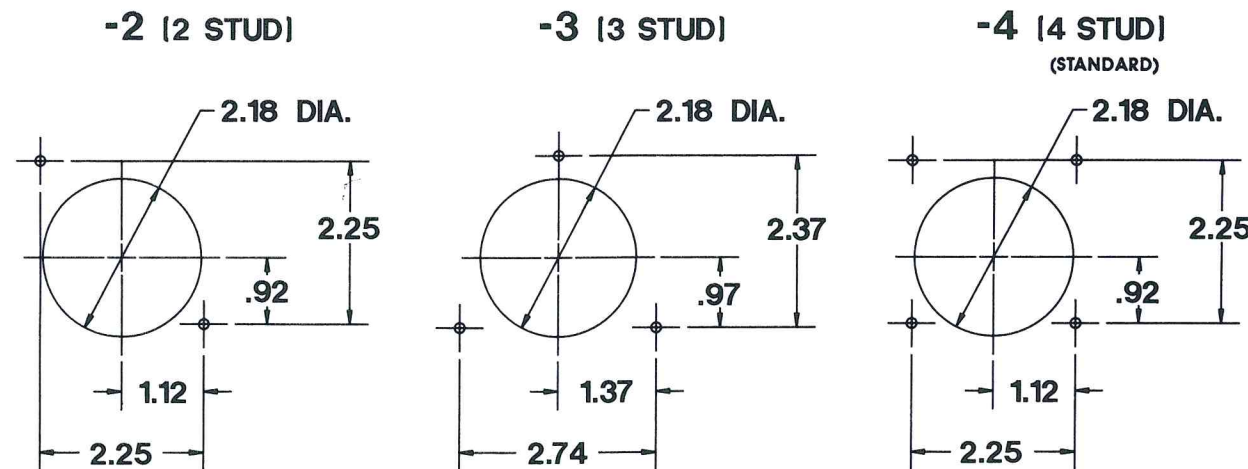
# HOYT 3135/36-2 SERIES

## HOYT 3135/36-2 SERIES OFFERS THESE ADVANTAGES...

- SMALL BARRELL FOR TIGHT SPACE APPLICATION
- VISCOSITY DAMPING TO CONTROL OVERSHOOT & OSCILLATION
- OPTIONAL CUSTOM DIALS WITH YOUR NAME, LOGO, ETC.
- AC IRON VANE REPULSION MOVEMENT
- SPECIAL RANGES AND RESISTANCES TO MATCH YOUR EQUIPMENT DESIGN
- 4 WAY MOUNTING INCLUDING 2, 3, 4 HOLES
- PIVOT & JEWEL MOVEMENT
- HIGH IMPACT PLASTIC CASE
- COLOR FAST METAL DIALS
- DC MOVING COIL MOVEMENT
- 1 YEAR LIMITED WARRANTY
- 1% & 2% ACCURACY AVAILABLE

## MOUNTING IN YOUR PRESENT PANEL OPENING...

### STUD MOUNTING OPTIONS



## METER TYPES AVAILABLE...

**DC** MICROAMMETERS  
MILLIAMMETERS  
AMMETERS  
MILLIVOLTMETERS  
VOLTMETERS

**AC** RECTIFIER TYPE VOLTMETERS  
AMMETERS  
VOLTMETERS  
FREQUENCY METERS



## SPECIFICATIONS:

#10 TERMINALS STANDARD, 1/4-28 AVAILABLE  
90 DEGREE POINTER DEFLECTION AC  
100 DEGREE POINTER DEFLECTION DC

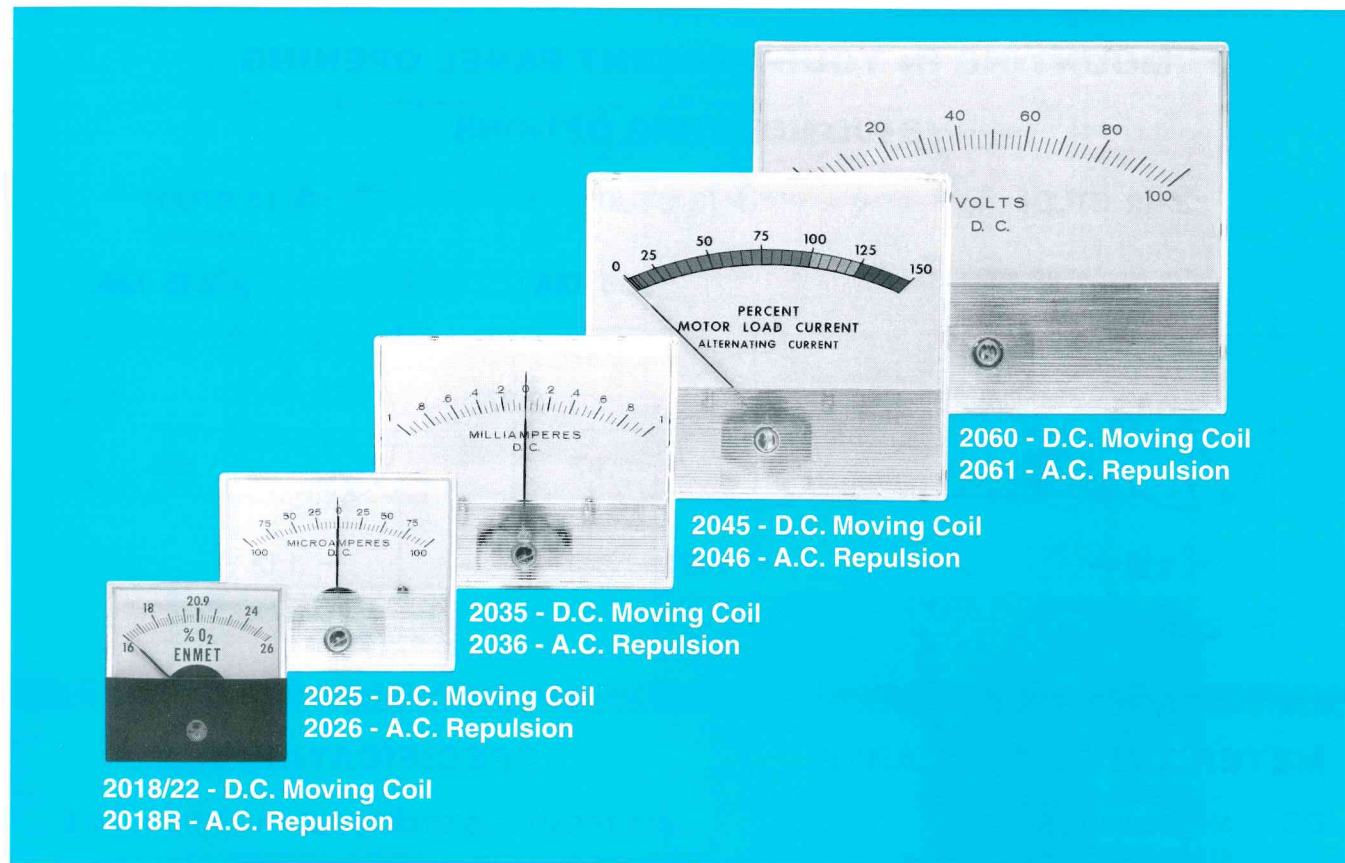
### HOW TO ORDER...

1. To order the Hoyt 3135/36-2 series meter, use the appropriate ranges from the price sheet. AC Meters require part number 3136-2-\_\_\_ and DC Meters require part number 3135-2-\_\_\_
2. Decide which mounting option is required and add to - \_\_\_
3. Add range and scale from price list as examples below.

**EXAMPLE:**  
3136-2-4,0-5AAC,100AAC (5 AAC Meter with 4 stud mounting)  
(100 AAC Dial)

## Hoyt Model 2000 Series Panel / Bezel Mount Meters

These attractively styled meters are produced in five sizes from 1-1/2" to 6". All models have long, flat arc scales and knife edge pointers for excellent readability. Most 1-1/2" to 6" meters are supplied with the self shielded Accuring movements. The standard AC repulsion movement is also available in 2-1/2" to 6" meter cases. Features for the 2000 series include matching AC and DC models, bezel or surface mounting, and choice of standard colors on the lower front cover at additional cost. Standard ranges for this series of meters, both AC and DC, are listed on the Hoyt price sheet and include DC Microamps, Milliamps, Millivolts, Volts, and Amps; AC Milliamps, Amps and Volts. Special dials are available at additional cost with the following options: additional colors, special legends, logos and mirrors.



### Bezel Mount Meters

Bezels for mounting rectangular custom series models 2018, 2025/26, 2035/36, and 2045/46 behind the panel are sturdy, die cast metal, semi-gloss black. Bezel mount meters may be ordered with optional quick mount positive locking tabs. This series has clear polystyrene cases standard, but acrylic or high impact polycarbonate case are available at extra cost.

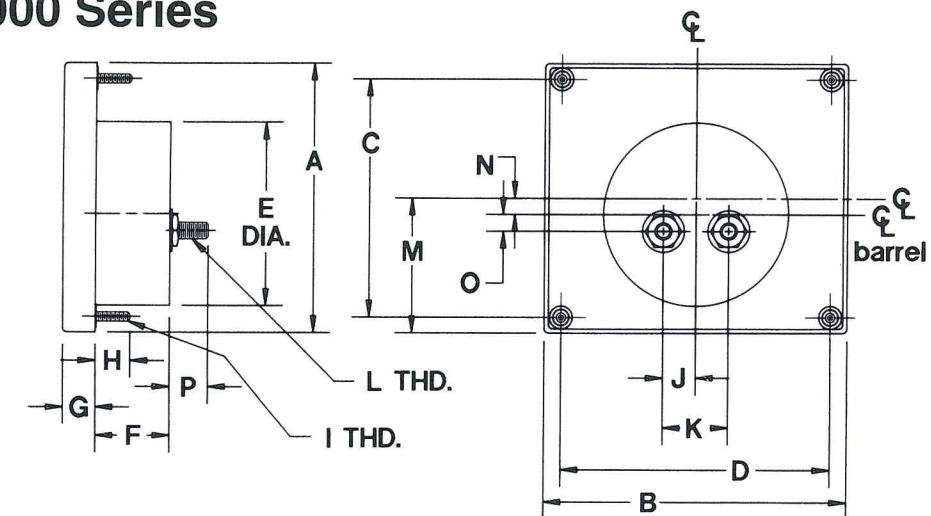


### 2000 SERIES BEZELS

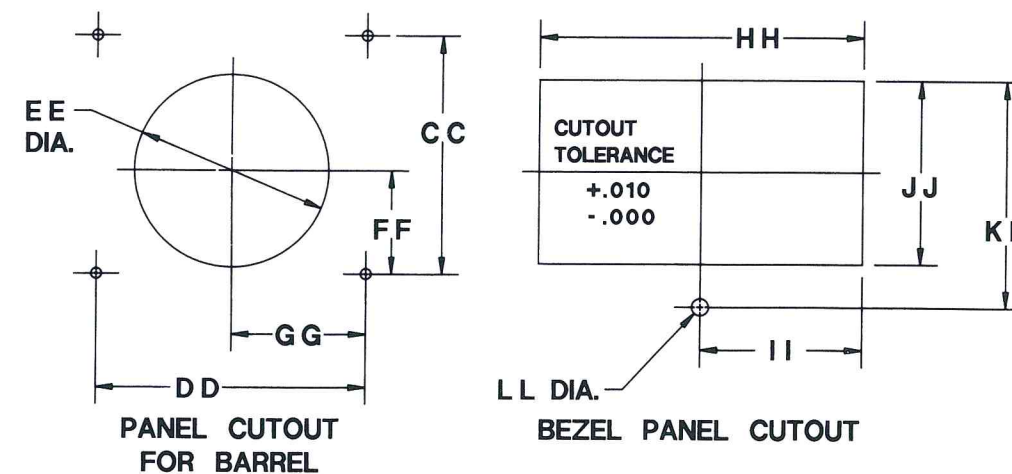
#### BEZEL PART NUMBERS

- C-7052 (overall size 2" x 1-3/16") for 2018
- C-7036 (overall size 3-1/8" x 1-23/32") for 2025/26
- C-7048 (overall size 3-7/8" x 2-9/32") for 2035/36
- C-7030 (overall size 4-31/32" x 2-29/32") for 2045/46

## Model 2000 Series



MODELS	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
2018-22/18R	1.74	1.74	1.31	1.31	1.50	1.22	0.33	0.50	4-48	0.48	0.97	10-32	0.87	0.00	-0.22	0.50
2025/26	2.38	2.81	1.88	1.88	2.16	1.12	0.42	0.50	4-48	0.48	0.97	10-32	1.19	0.00	0.00	0.50
2035/36	2.97	3.50	2.25	2.25	2.74	1.10	0.45	0.56	4-48	0.48	0.97	10-32	1.48	0.03	0.25	0.50
2045/46	4.03	4.50	3.56	4.00	2.75	1.10	0.48	0.62	6-32	0.48	0.97	10-32	2.02	0.24	0.25	0.50
2060/61	4.49	5.72	3.00	5.25	2.75	1.09	0.51	0.66	6-32	0.48	0.97	10-32	2.24	0.65	0.06	0.50

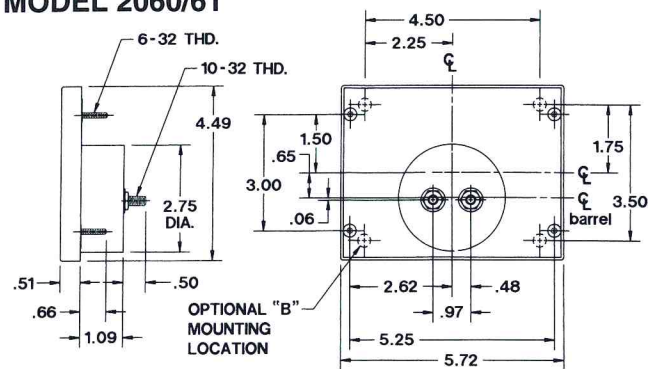


MODELS	CC	DD	EE	FF	GG	HH	II	JJ	KK	LL
2018-22	1.31	1.31	1.60	0.66	0.66	1.91	0.95	1.12	1.48	0.20
2025/26	1.88	1.88	2.26	0.94	0.94	3.00	1.50	1.61	2.06	0.25
2035/36	2.25	2.25	2.84	1.12	1.12	3.73	1.86	2.17	2.63	0.25
2045/46	3.56	4.00	2.88	1.54	2.00	4.82	2.41	2.76	3.40	0.25
2060/61	3.00	5.25	2.88	0.85	2.62	-	-	-	-	-

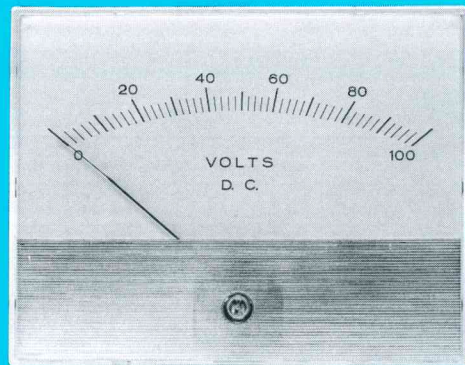
## Hoyt 6" Rectangular Clear Plastic Meters

Hoyt's complete selection of 6" meters features long, sweeping scales and knife edge pointers for applications where ease of reading is essential. Models 2260/61 and 2360/61 are standard with acrylic cases for high resistance to chemicals and hydrocarbons. The 2260, which has a projected front, may be window mounted from behind the panel. The 2060/61 are standard with polystyrene cases. All meters in this series are available with painted lower front for an additional charge, and are available with D'Arsonval moving coil, AC repulsion or VU meter movements.

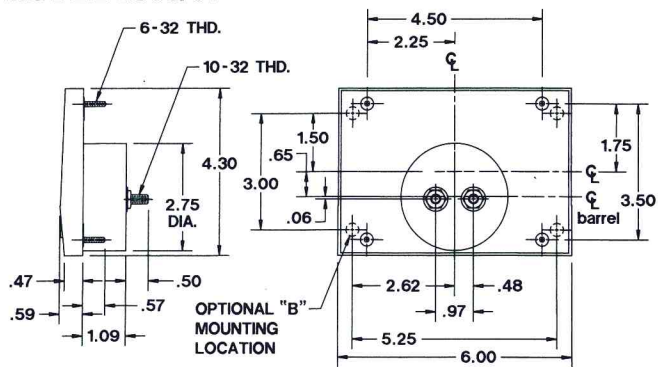
### MODEL 2060/61



2060 - D.C. Moving Coil  
2061 - A.C. Repulsion



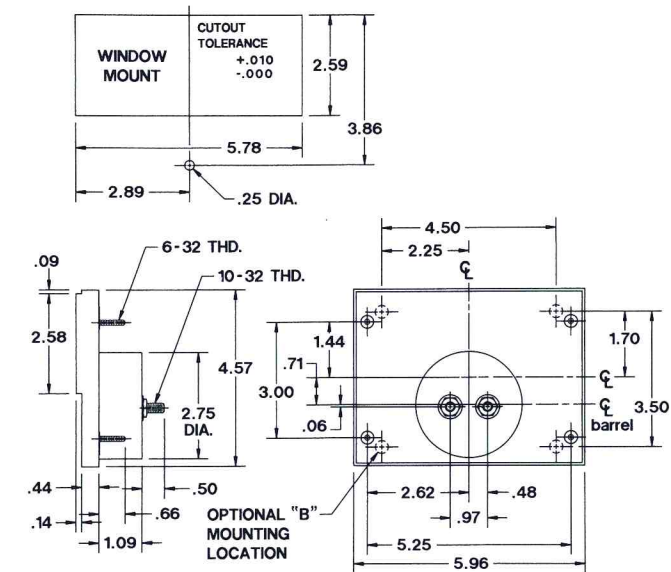
### MODEL 2360/61



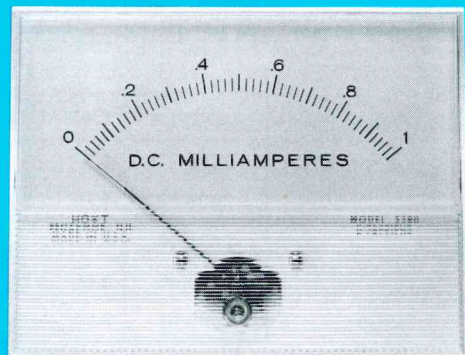
2360 - D.C. Moving Coil  
2361 - A.C. Repulsion



### MODEL 2260/61



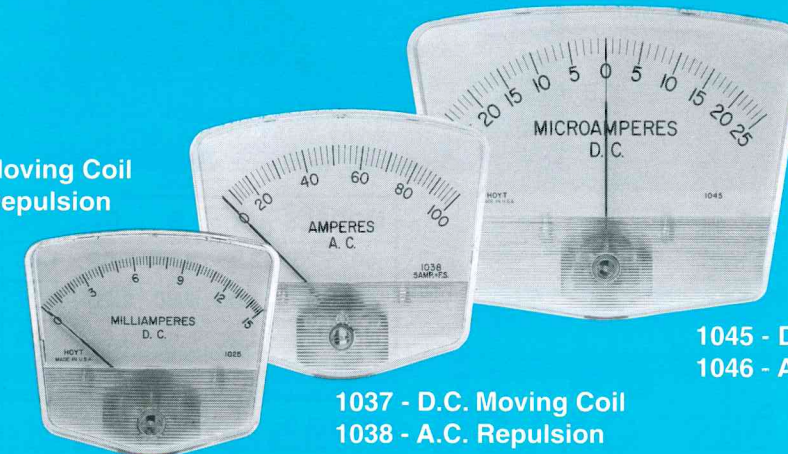
2260 - D.C. Moving Coil  
2261 - A.C. Repulsion



## Hoyt 1000 Series Plastic Panel Meters

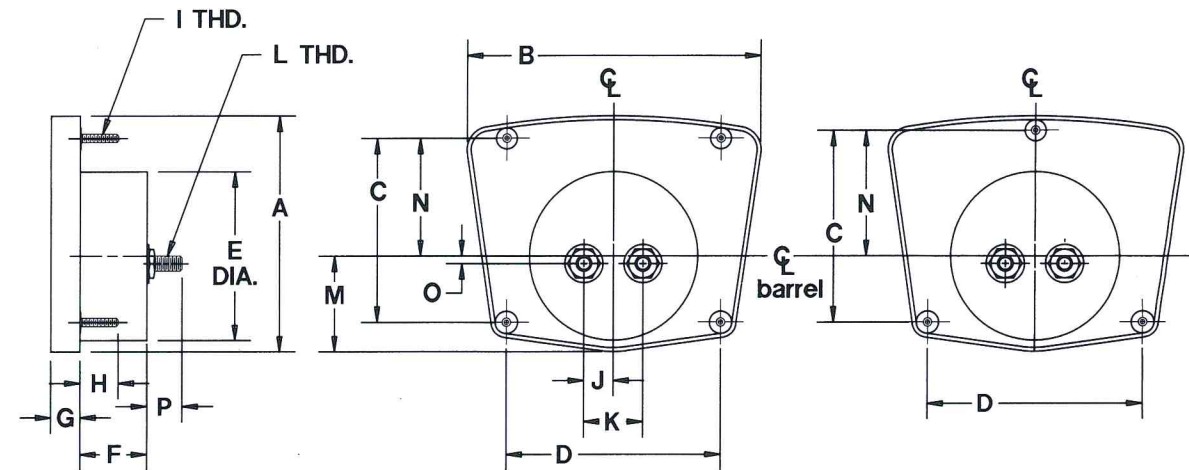
Offered in three sizes from 2-1/2" to 4-1/2", this popular line features long easy-to-read dials. The clear plastic case fronts come with a molded-in, ribbed lower section to conceal movement. All four sizes are produced as matching AC or DC meters. Most DC meters are supplied with 100 degree movements and knife edge pointers. Mirror scales and color in the ribbed portion of the case can be provided in quantity orders at additional cost.

1025 - D.C. Moving Coil  
1026 - A.C. Repulsion



1045 - D.C. Moving Coil  
1046 - A.C. Repulsion

1037 - D.C. Moving Coil  
1038 - A.C. Repulsion



4 STUD MOUNTING  
1045/46

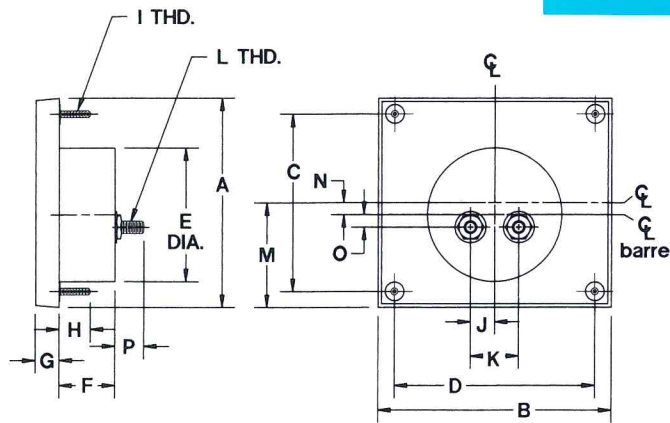
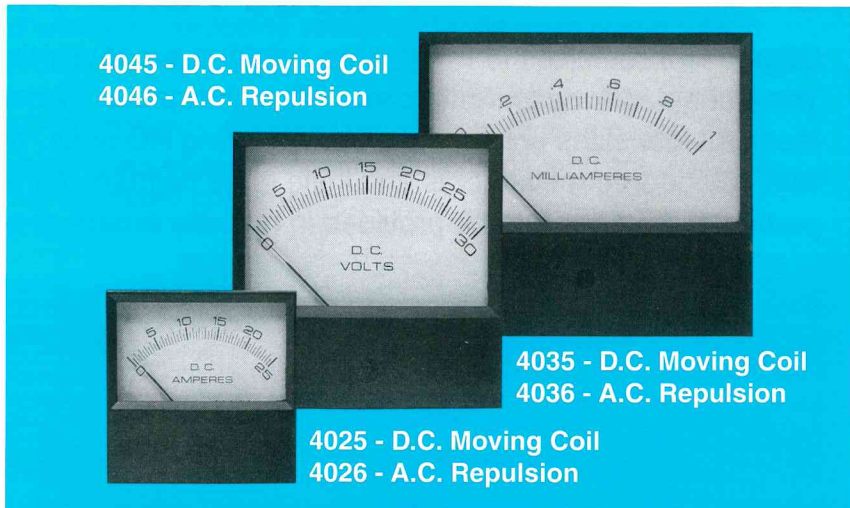
3 STUD MOUNTING  
1025/26 & 1037/38

MODELS	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1025/26	2.60	2.88	1.83	2.11	2.16	1.12	0.44	0.62	4-48	0.48	0.97	10-32	1.18	1.22	0.00	0.50
1037/38	3.24	3.62	2.37	2.73	2.75	1.12	0.44	0.62	4-48	0.48	0.97	10-32	1.46	1.58	0.12	.050
1045/46	3.85	4.81	3.00	3.50	2.75	1.11	0.48	0.62	6-32	0.48	0.97	10-32	1.56	1.92	0.12	.050

## Hoyt 4000 Series Phenolic and Glass Meters

Handsomely styled to meet the most demanding appearance requirements, this series conforms to the standards for 2-1/2", 3-1/2", 4-1/2" 4 hole mounting to provide for interchanging with other similar size meters. These are high quality instruments, available in AC and DC models including D'Arsonval 2% accuracy DC, AC repulsion and rectifier type movements.

NOTE: UL RECOGNIZED VERSION AVAILABLE. TO ORDER ADD -UL TO MODEL.



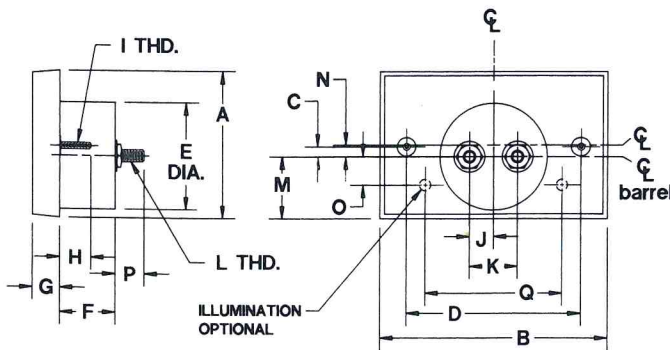
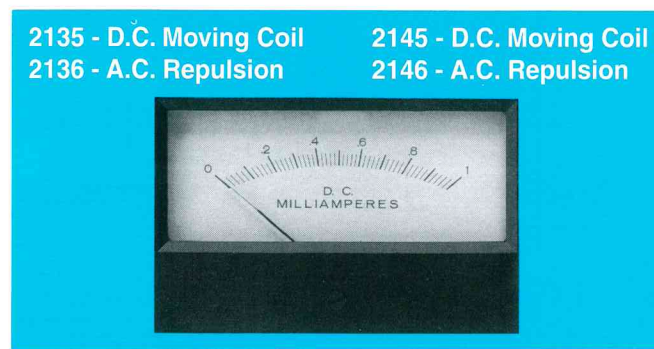
MODELS	A	B	C	D	E	F	G	H
4025/26	2.38	2.38	1.88	1.88	2.16	1.11	0.47	0.50
4035/36	3.00	3.00	2.25	2.25	2.69	1.12	0.47	0.62
4045/46	4.20	4.66	3.56	4.00	2.69	1.12	0.47	0.62

MODELS	I	J	K	L	M	N	O	P
4025/26	4-48	0.48	0.97	10-32	1.19	0.00	0.00	0.50
4035/36	4-48	0.48	0.97	10-32	1.50	0.00	0.25	0.50
4045/46	6-62	0.48	0.97	10-32	2.10	0.24	0.25	0.50

## Hoyt 2100 Series Low Profile Phenolic Meters

The low profile series of non-static phenolic and glass meters is especially suited for applications where plastic meters are unsuitable or where low, rectangular styling is a must. This series features a clean, uncluttered scale for excellent readability, smooth satin finish front and fast, two stud mounting. While shielded Accuring movement is standard in most ranges, these meters can be ordered with any Hoyt movement. Matching AC versions are available as are rectifiers and VU models.



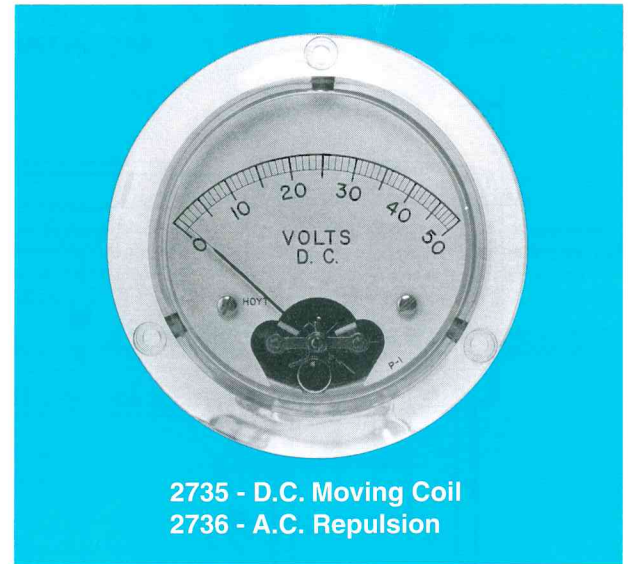
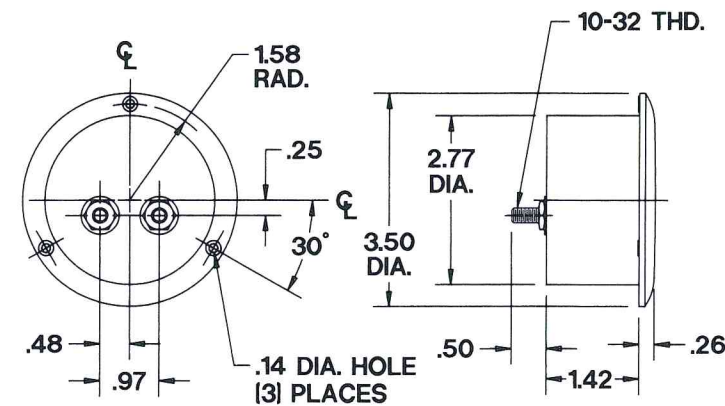
MODELS	A	B	C	D	E	F	G	H
2135/36	2.73	4.01	0.00	2.94	2.16	1.08	0.55	0.66
2145/46	2.96	4.56	0.20	3.50	2.16	1.08	0.55	0.66

MODELS	I	J	K	L	M	N	O	P	Q
2135/36	6-32	0.48	0.97	10-32	1.25	0.12	0.57	0.50	2.46
2145/46	6-32	0.48	0.97	10-32	1.25	0.24	0.57	0.50	2.75

## Hoyt 3-1/2" Clear Plastic 2735/36 Meters

Model 2735/36, clear plastic meter with polycarbonate cover is available in AC or DC. This unique case style yields maximum visibility and dust proof seal on the panel surface. Three hole mounting on the meter front allows for easy panel mounting.



2735 - D.C. Moving Coil  
2736 - A.C. Repulsion

## Hoyt Meter Movements DC / AC / 250 Degrees

### METER MOVEMENTS Self-Shielded Accu-Ring

Now standard in all series of panel meters. This completely self-shielded pivot and jewel high torque movement is constructed with high density sintered iron ring and pole piece which provides the best possible flux distribution through the entire 100 degree swing of the coil. This unique feature coupled with the strong Alnico V Bar magnet offers exceptionally high torque with minimum lag for fast response and quick, accurate readings, spring-loaded jewels are standard for use in rugged applications. Virtually any damping and electrical specifications can be met with a wide variety of bar magnets. Other features include all those listed for the #17 external magnet movement. Hoyt Accu-Ring movement is standard in all newer panel meter cases. The #22 movement is smaller, less powerful version of the #19 movement. Accuracy of 2% is standard. 1% accuracy is available in most ranges.

### EXTERNAL MAGNET #17

These movements, accurate within 2% are built on the D'Arsonval principal according to the best methods of meter manufacture. Features include Alnico V Magnets for high torque movement, soft iron pole pieces electronically bonded to the magnetic system for long life, microscopically inspected and selected jeweled bearings, hardened pivots specially cemented and baked to short-proof anodized coil forms for trouble free life. Strong tubular pointers-either lance or knife edge types, ceramic pointer stops, hair springs for quick response and good damping are incorporated into all our movements. Spring loaded jewels are standard with sapphire jewels available as an option.

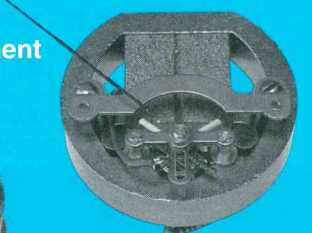
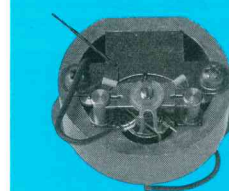
### AC REPULSION

Hoyt AC repulsion movements are made with an accuracy of 2%. Jeweled bearings, insulated or Bakelite zero adjusters, Hoyt cross arm balance, special constructed viscous damping and choice of lance or knife edge pointers. The Hoyt AC Movements are manufactured with brass movement support to match the moving element. This feature enables the Hoyt AC meter to maintain accurate readings over a wider temperature range. The AC meters can be used with corresponding size DC instruments where matching meters are wanted.

### 250 DEGREE

The Hoyt patented 250 degree meter movement is a self-shielded pivot and spring loaded jewel meter. Built for rugged industrial applications and shock resistant, this movement incorporates precision aligned, mechanically interlocked construction with very high torque. The movement is good down to 200 microamps with ample resistance. Airplane or knife edge pointers are available in different lengths to accommodate a variety of case styles and sizes.

#19 D.C. Movement



#22 D.C. Movement

250 D.C. Movement



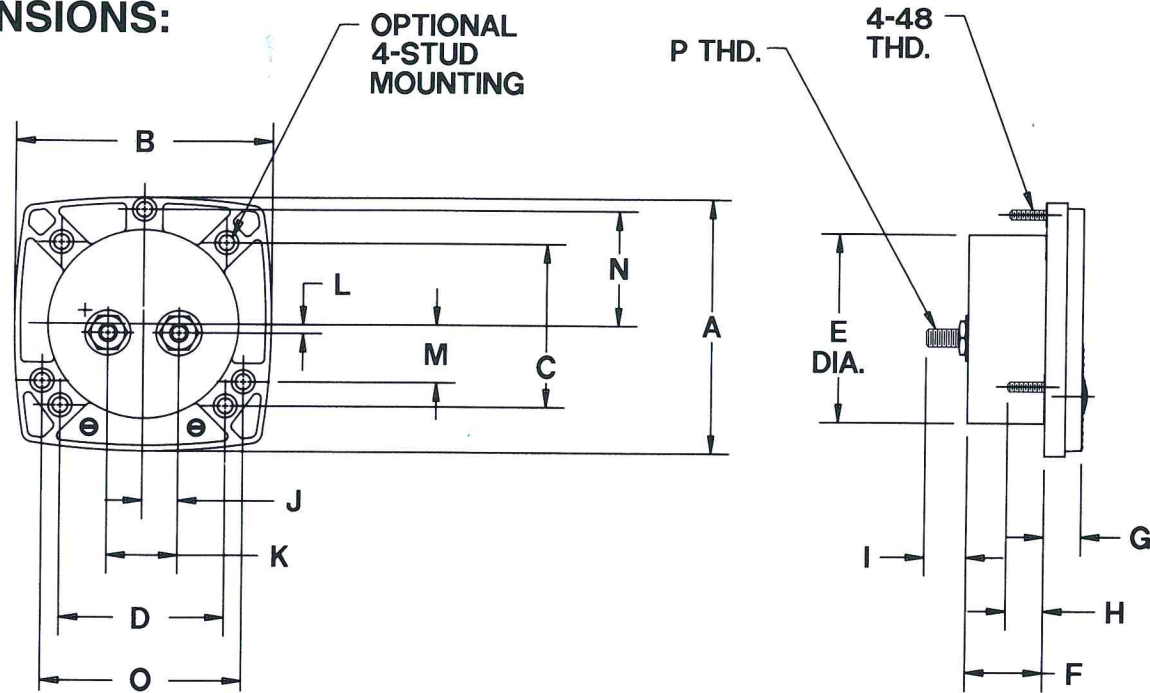
A.C. Movement

#17 External Magnet



# 5000 Series

## DIMENSIONS:



MODELS	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
5015/16R	1.76	1.76	1.31	1.31	1.50	1.08	0.48	0.50	0.50	0.48	0.97	-0.22	-	-	-	10-32
5025/26	2.71	2.71	1.88	1.88	2.08	1.06	0.47	0.50	0.50	0.48	0.97	0.00	0.61	1.22	2.11	1/4-28
5035/36	3.50	3.50	2.25	2.25	2.60	1.05	0.50	0.50	0.50	0.48	0.97	0.13	0.79	1.58	2.74	1/4-28

5015 - D.C. Moving Coil  
5016R - A.C. Repulsion

5025 - D.C. Moving Coil  
5026 - A.C. Repulsion

5035 - D.C. Moving Coil  
5036 - A.C. Repulsion

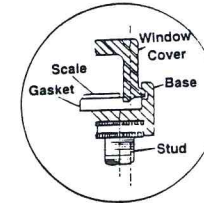
Our policy is one of continuous development and we reserve the right to supply products different in design and appearance from those described.

As development is continuous, we reserve the right to alter specifications without notice.

# HOYT 5000 Series

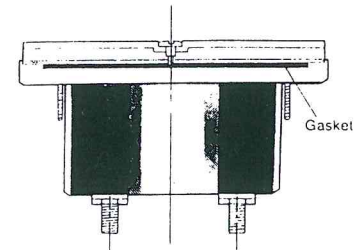
MADE IN USA

## HOYT 5000 Series Offers These Advantages...



### Gasket Sealing Design. A New Industry Standard

Dust resistant construction is manufactured as a standard feature in the 5000 Series panel instruments. This unique sealing design provides exceptional gasket sealing while allowing for quick modification and scale changes while maintaining the integrity of the instrument.

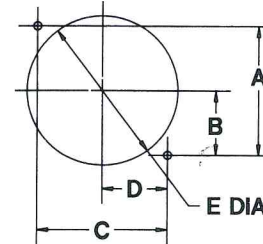


### Dustproof Lexan® Construction

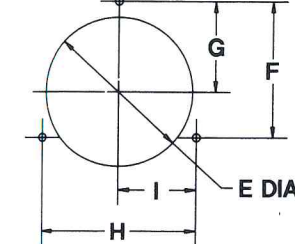
5000 series panel meters feature gasketed construction to seal out dust and other air-suspended damaging particles. The 5000 series is made with UL 94V material. Ideal where impact and strength is required in harsh environments.

## Mounting In Your Present Panel Opening...

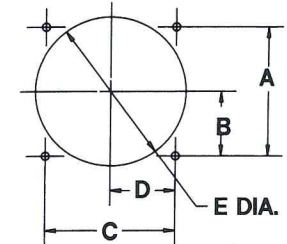
-2 (2 STUD)



-3 (3 STUD)  
(STANDARD)



-4 (4 STUD)



MODELS	A	B	C	D	E	F	G	H	I
5015/16R	1.31	0.66	1.31	0.66	1.59	-	-	-	-
5025/26	1.88	0.94	1.88	0.94	2.18	1.83	1.22	2.11	1.06
5035/36	2.25	1.12	2.25	1.12	2.66	2.37	1.58	2.74	1.37

The mounting studs on the 5000 series can be ordered to fit your existing panel openings at no extra cost. The 5000 series cases are interchangeable with a wide variety of competitive instruments. Optional stud placement configurations are shown above. This built-in interchangeability eliminates the need for drawing changes, setups, and redrilling of panels...and it solves your instrument placement problems.



## Recognized meters available

### METER TYPES AVAILABLE

**DC** Microammeters  
Milliammeters  
Ammeters  
Millivoltmeters  
Voltmeters  
Pyrometers  
Hourmeters

**AC** Frequency Meters - Pointer type  
Iron Vane or Rectifier type  
Voltmeters  
Ammeters  
Hourmeters

### ANSI Specifications:

All meters meet ANSI Specifications C39.1

### Overload:

Voltmeters (AC and DC) - 50% momentary  
20% sustained. Ammeters (AC and DC)  
momentary: 10 times the rated current for 10  
consecutive intervals of .5 seconds with a 1  
minute interval between successive applica-  
tions; 20% for six hours.

### Scale Data:

90 degree rotation.

### Insulation Level:

All meters 2600 V RMS

### Accuracy: All DC and AC: ±2% of full scale

AC rectifier type ±3% of full scale (with 60 HZ sine wave at 250°C). When standard 60 HZ iron vane ammeters are used at the extreme limits of 25 or 400 HZ, additional error (approx. .75%) may be experienced. Expanded scale voltmeters ±2% of full scale value.

### How To Order...

To order the Hoyt 5000 panel meters use the appropriate ranges from the price sheet. AC meters require part numbers 5026 or 5036 DC Part numbers 5025 or 5035.

#### Ordering Examples:

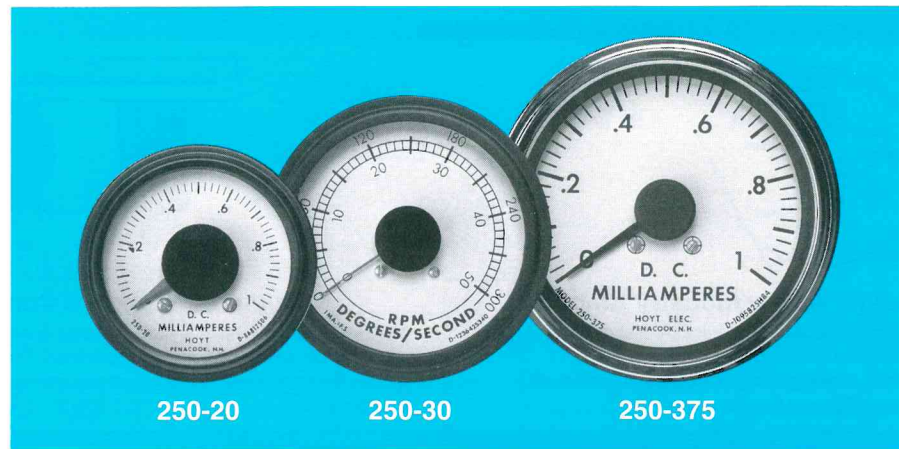
- 2-1/2", 300 VDC Voltmeter, zero left  
Example: 5025, 0-300 VDC
- 3-1/2", 300 AAC Ammeter, zero left  
Example: 5036, 5 AAC, 300 AAC

#### NOTE:

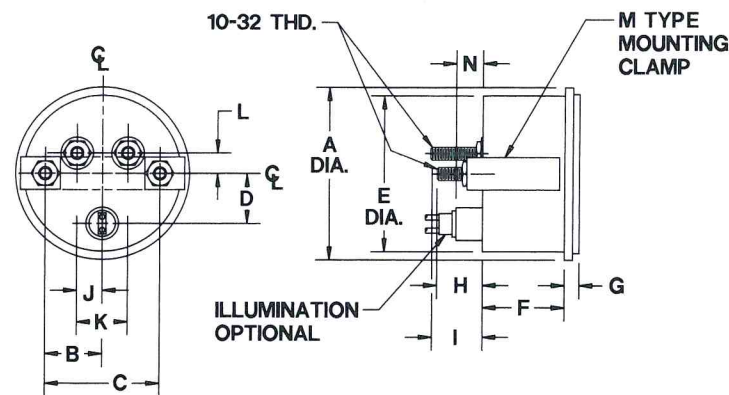
Severe Duty meters are available to meet UL 1437 requirements. To order add "-UL" after catalog number.



250 Degree Series MADE IN USA



DIMENSIONS:



MODELS	A	B	C	D	E	F	G	H	I	J	K	L	M	N
17/3-605	2.29	0.48	0.97	-0.56	2.05	1.32	0.26	0.00	1.00	0.48	0.97	0.00	"U"	0.51
250-20	2.29	0.48	0.97	-0.56	2.05	1.51	0.26	0.00	1.00	0.48	0.97	0.00	"U"	0.51
250-30	3.32	1.09	2.18	1.03	3.00	1.65	0.28	0.78	0.94	0.48	0.97	0.63	"L"	0.00
250-375	3.80	1.31	2.62	1.12	3.36	1.63	0.38	0.78	0.94	0.48	0.97	0.65	"L"	0.00

The Hoyt patented 250° meters utilize a highly damped, spring loaded pivot & jewel movement; mechanically interlocked, negating the use of adhesives and develops very high torque. The meters are desirable for the following applications:

- Emergency Vehicles • Pressure and Flow
- Speed (RPM) • Marine Instrumentation
- Pyrometers • Diesel and Gas Instrumentation

Our policy is one of continuous development and we reserve the right to supply products different in design and appearance from those described as development is continuous, we reserve the right to alter specifications without notice.

MADE IN USA

HOYT 250-20 / 30 / 375 Series

HOYT 250 Degree Series Offers These Advantages...

- SPECIAL RANGES AND RESISTANCES TO MATCH YOUR EQUIPMENT DESIGN
- ELECTRICAL DAMPING TO CONTROL OVERSHOOT & OSCILLATION
- OPTIONAL CUSTOM DIALS WITH YOUR NAME, LOGO, ETC.
- LONG 250 DEGREE POINTER SWING
- PIVOT & JEWEL MOVEMENT
- 1 YEAR LIMITED WARRANTY
- HIGH IMPACT METAL CASE
- COLOR FAST METAL DIALS
- DC MOVING COIL MOVEMENT
- 1% & 2% ACCURACY AVAILABLE
- THREE SIZES AVAILABLE FOR YOUR APPLICATION
- NOW AVAILABLE WITH OR WITHOUT ILLUMINATION
- AVAILABLE WITH CHROME OR BLACK BEZELS

SPECIFICATIONS

#10 TERMINALS STANDARD, 1/4-28 AVAILABLE  
 250 DEGREE POINTER DEFLECTION DC  
 IRON CASE STANDARD  
 BRASS CASE AVAILABLE (EXTRA COST)

METER TYPES AVAILABLE

- DC MICROAMMETERS
- MILLIAMMETERS
- AMMETERS
- MILLIVOLTMETERS
- VOLTMETERS
- PYROMETERS
- CUSTOM GAUGES

Bezels Available



HOW TO ORDER...

- To order the Hoyt 250 degree series meter, use the appropriate ranges from the price sheet. Select part number 250-20 for 2" meters, select part number 250-30 for 3" meters, 250-375 for 3-3/8" meter.
  - Decide which bezel option is required and add to - \_\_\_\_.
  - Add range and scale from price list as examples below.
- EXAMPLE:  
 250-375, CHROME, 4-20 MADDC SPECIAL dial D-1292325

TOP AVAILABILITY CHART

MODELS	C	F	S	P	L	K	W	V
17/3-605 (90°)	-	O	X	-	X	X	X	Z
250-20	-	X	X	-	X	O	X	Z
250-30	X	O	X	X	X	-	-	-
570-3 (90°)	X	O	X	X	X	-	-	-
250-375	-	-	-	O	-	-	-	-

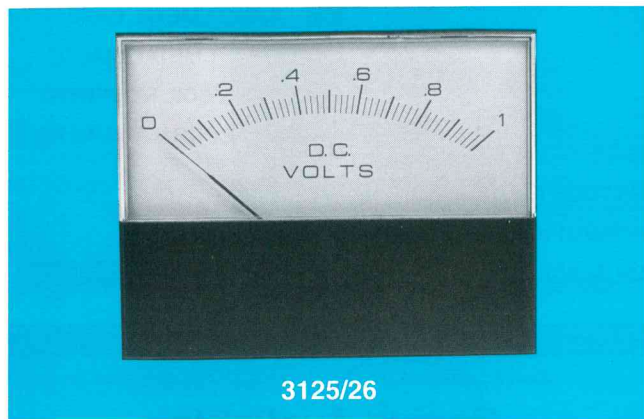
O = STANDARD TOPS (BLACK)  
 X = SPECIAL TOPS (EXTRA COST)  
 Z = REQUIRES SPECIAL BASE (EXTRA COST)  
 OPTIONAL MATERIALS AND FINISH AVAILABLE (EXTRA COST)

MARINE INSTRUMENTS

MADE IN USA

MODEL 3125/3126 2-1/2" Surface or Window mount Voltmeters and Ammeters are available to fit your ship to shore panel needs.

Available in both AC and DC. These easy to read 2% accuracy meters enhance your panels with the HOYT QUALITY.



3125/26

These meters will directly replace your existing meter with the panel cutouts found on page 4.

MODEL 825-826R Series meters are available in both AC or DC Voltmeters and Ammeters with 5% Accuracy and the ease of "U"-Clamp mounting in your existing 2-1/4" cutout.



825/26

Dimension can be found on page 24.

MODEL 250-20, -30, -375 2", 3", 3-3/8" 250° Brass cased meters, 2% Accuracy are available as gauges for your instrumentation needs. These custom meters are available as Voltmeters and Ammeters and Special Gauges for pressure and temperatures.



250-20

250-30

Dimension can be found on page 16. Custom bezels and dials available to fit your applications

**HOYT** Marine Instruments are designed for the extremes of MARINE ENVIRONMENTS

Hoyt Industrial Panel Meters  
Round and Rectangular / Phenolic and Metal

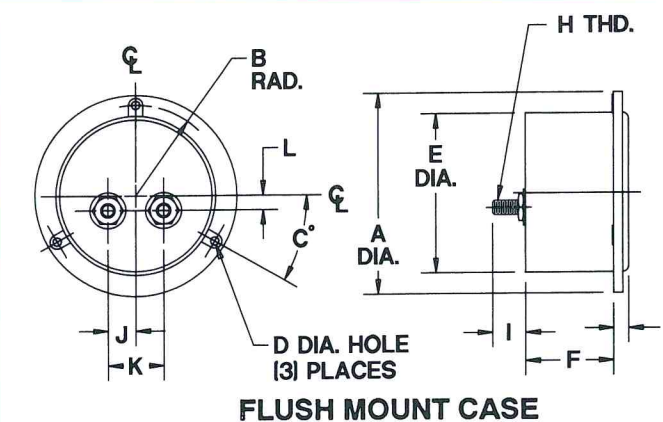
This series was designed to meet industrial requirements and for other applications where rugged metal or phenolic cases with glass fronts provide long service under adverse conditions. Round models ranging in size from 2-1/2" to 4-1/2" are produced in either the ±2% of full scale AC repulsion or DC Moving Coil version. AC ranges are standard up to 50 amperes self contained and 600 AC volts. Ranges down 10 milliamperes AC are also standard.

Both round and square models come in DC ranges from 20 microamperes to 50 millivolts to 750 volts DC. High current ammeter ranges with external shunt are available, as are special or non-standard ranges. The industrial meters shown here and on the following pages represent the many case styles and options in this series. For exact specifications and certified dimensions, please contact the factory.

PHENOLIC

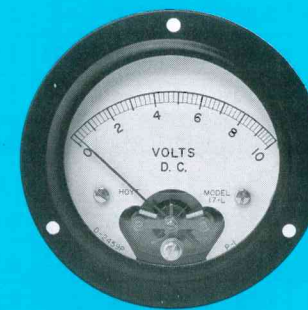


17/3 - D.C. Moving Coil    582 - D.C. Moving Coil  
552 - A.C. Repulsion    584 - A.C. Repulsion



MODELS	A	B	C	D	E	F	G	H	I	J	K	L
17-3 / 552	2.69	1.22	30	0.12	2.20	1.38	0.20	10-32	0.50	0.48	0.97	0.00
582 / 584	3.50	1.58	30	0.14	2.75	1.39	0.26	10-32	0.50	0.48	0.97	0.25
17-L / 560	3.22	1.44	30	0.14	2.50	1.44	0.12	10-32	0.50	0.48	0.97	0.12
574 / 617	4.50	2.06	30	0.14	3.75	1.45	0.09	10-32	0.50	0.48	0.97	0.69

METAL



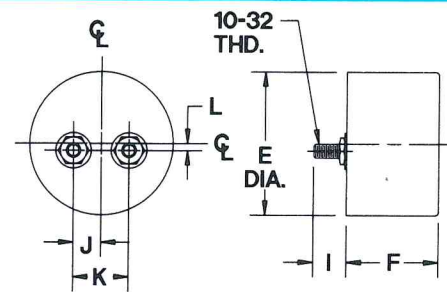
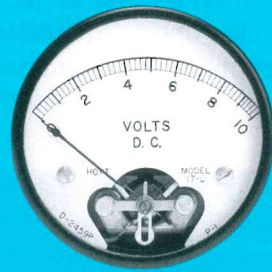
17/L - D.C. Moving Coil  
560 - A.C. Repulsion



574 - D.C. Moving Coil  
617 - A.C. Repulsion

Industrial Metal Cases

- 17/3 - D.C. Moving Coil
- 552 - A.C. Repulsion
- 17/L - D.C. Moving Coil
- 560 - A.C. Repulsion
- 574 - D.C. Moving Coil
- 617 - A.C. Repulsion

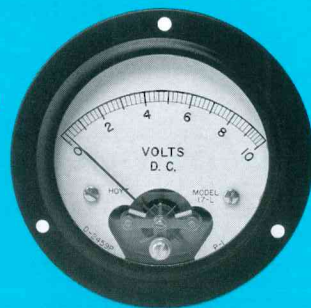


MODELS	E	F	I	J	K	L
17-3 / 552	2.05	1.43	0.50	0.48	0.97	0.00
17-L / 560	2.50	1.72	0.50	0.48	0.97	0.12
574 / 617	3.75	1.58	0.50	0.48	0.97	0.69

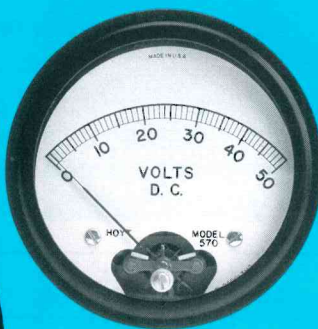
STRAIGHT SIDE CASE



- 17/L - D.C. Moving Coil
- 560 - A.C. Repulsion

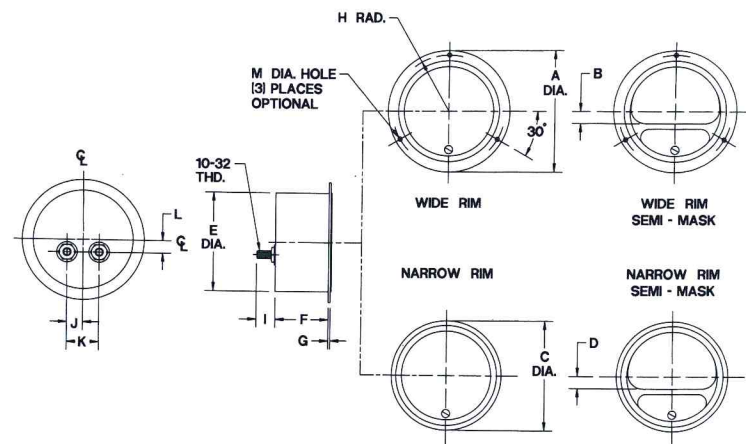


- 17/3 - D.C. Moving Coil
- 552 - A.C. Repulsion



- 570 - D.C. Moving Coil
- 580 - A.C. Repulsion
- 574 - D.C. Moving Coil
- 617 - A.C. Repulsion

WIDE & NARROW FLUSH MOUNTED SEMI-MASKED CASES



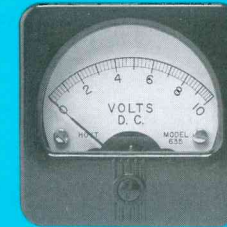
MODELS	A	B	C	D	E	F	G
17-3 / 552	2.55	0.29	2.29	0.29	2.06	1.33	0.10
17-L / 560	3.22	-	2.81	-	2.50	1.44	0.12
570 / 580	3.66	0.37	3.31	0.37	3.00	1.59	0.11
574 / 617	4.50	-	-	-	3.75	1.39	0.16

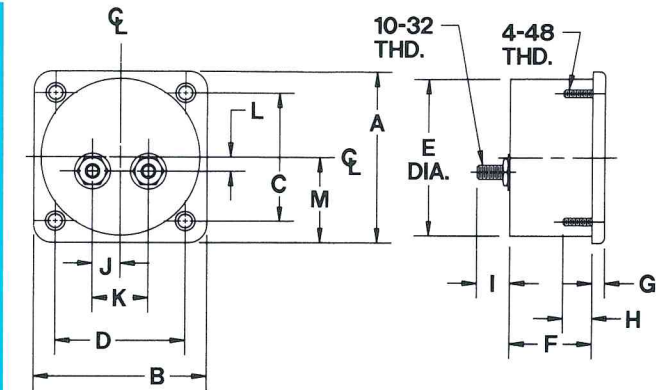
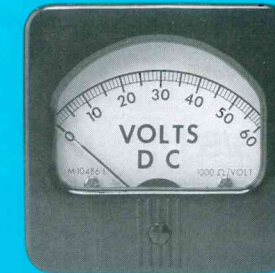
MODELS	H	I	J	K	L	M
17-3 / 552	1.16	0.50	0.48	0.97	0.00	0.12
17-L / 560	1.44	0.50	0.48	0.97	0.12	0.14
570 / 580	1.69	0.50	0.48	0.97	0.39	0.13
574 / 617	2.06	0.50	0.48	0.97	0.69	0.14

Industrial Panel Meters - Phenolic

- 635 - D.C. Moving Coil
- 636 - A.C. Repulsion

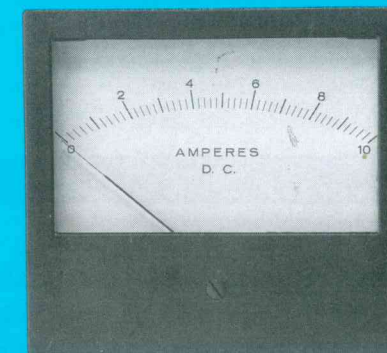


- 597 - D.C. Moving Coil
- 598 - A.C. Repulsion

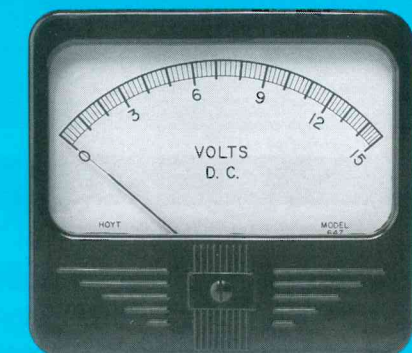


2-1/2 & 3"

MODELS	A	B	C	D	E	F	G	H	I	J	K	L	M
635 / 636	2.38	2.38	1.88	1.88	2.20	1.40	0.20	0.55	0.50	0.48	0.97	0.00	1.19
597 / 598	3.00	3.00	2.25	2.25	2.75	1.42	0.22	0.50	0.50	0.48	0.97	0.25	1.50

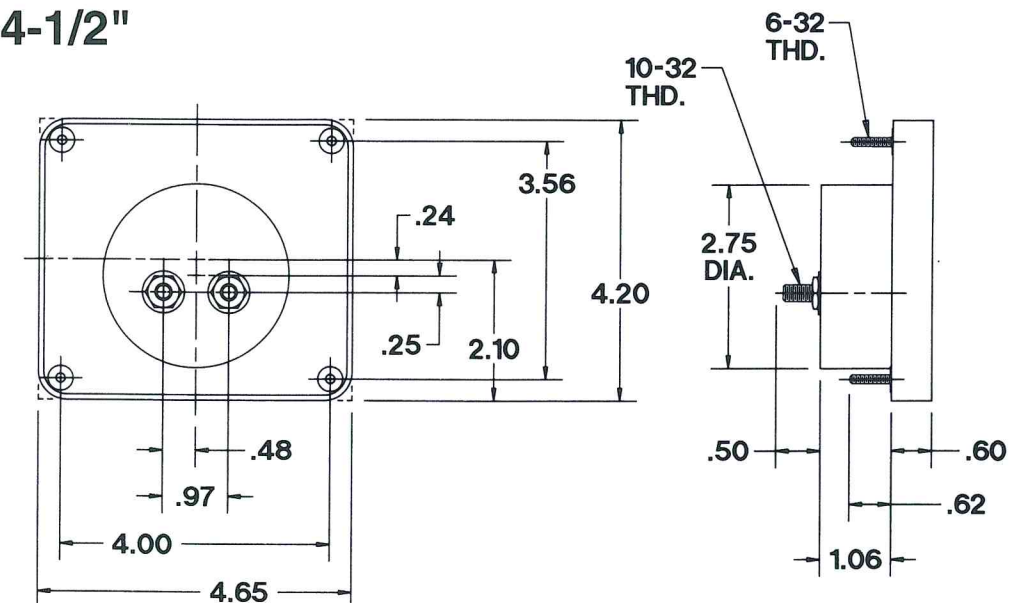


- 680 - D.C. Moving Coil
- 681 - A.C. Repulsion



- 647 - D.C. Moving Coil
- 648 - A.C. Repulsion

4-1/2"

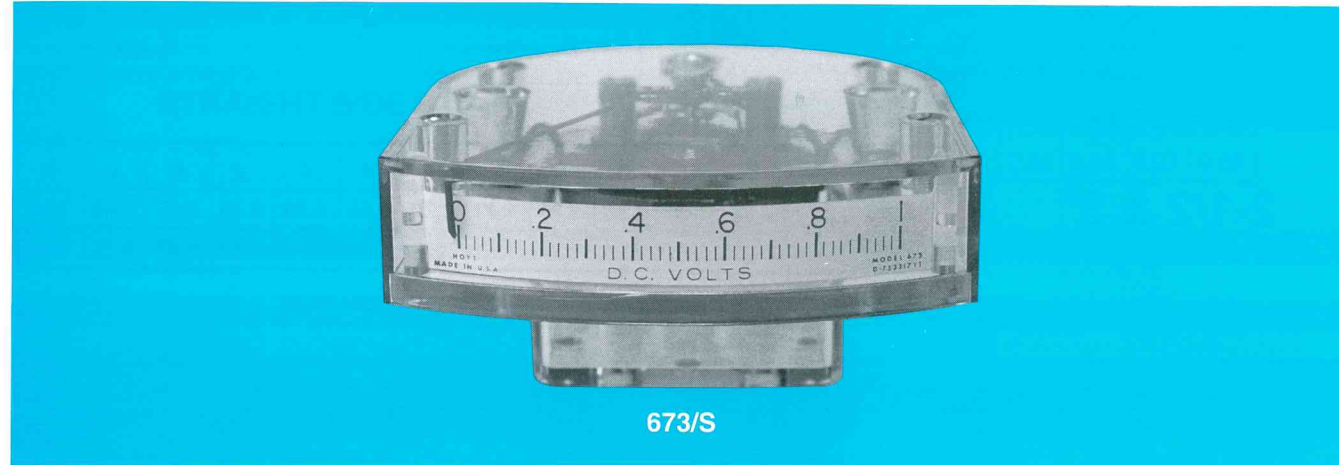


## Hoyt 2-1/2" Edgewise Meters

Hoyt edgewise meters have high visibility scales and straightforward design that make them especially suited to small, limited space, rack mounted power supplies and allied equipment. Supplied bezel and mounting hardware enable quick, trouble-free installation.

Model 673/S has a small projection required to enclose the D'Arsonvale movement. It is also available in DC ranges and in AC rectifier and VU models.

MODEL 673/S



673/S

Model 685 2-1/2" edgewise has been designed without any barrel projection and is fully shielded to allow vertical or horizontal stacking without interaction between movements or other external magnetic fields. The specially engineered, rugged D'Arsonval movement with high torque-to-weight ratio provides excellent response and damping characteristics. The 685 is offered in DC, AC rectifier-type and VU meter versions. The 685 can be ordered in single, dual, or triple stack versions.

Please specify when ordering as 685-1, 685-2, 685-3.

MODEL 685



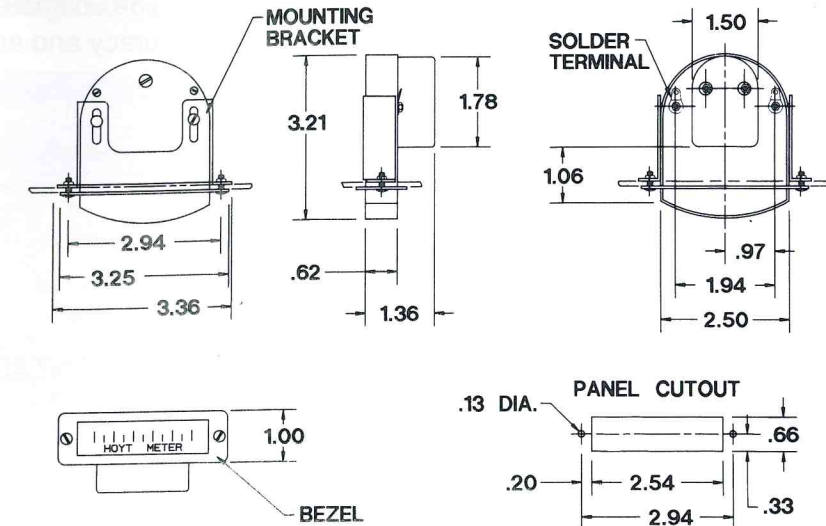
685-1

685-2

685-3

## Hoyt 2-1/2" Edgewise Meters

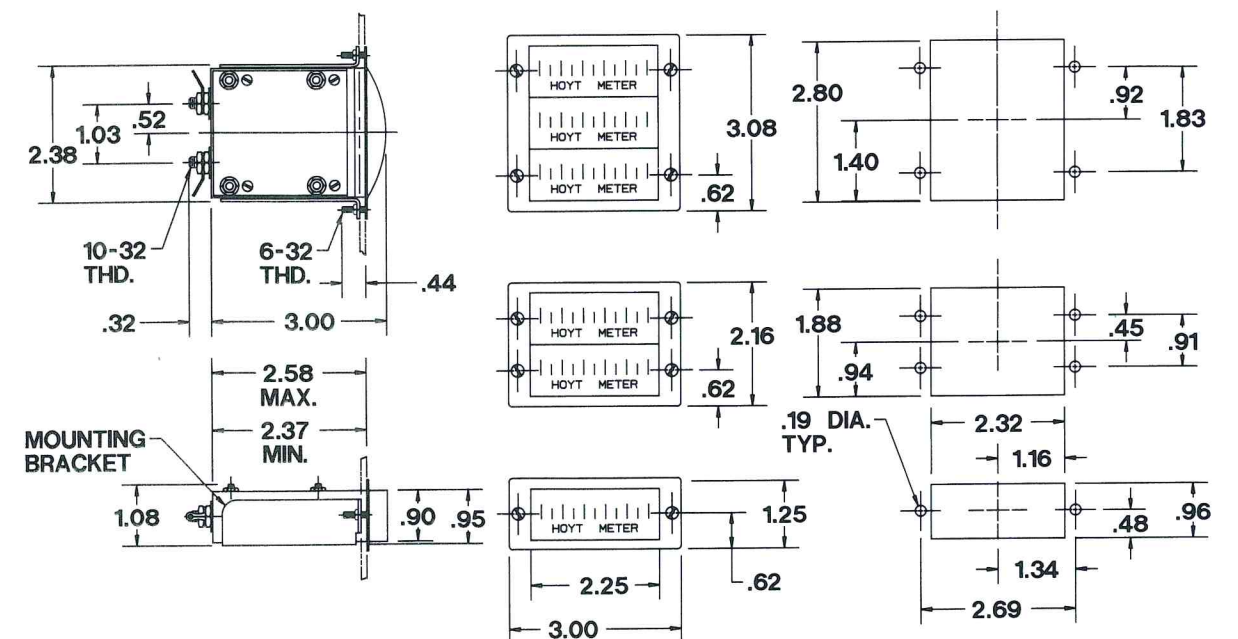
### DIMENSIONS: MODEL 673/S



### DIMENSIONS: MODEL 685

Bezel Units 1, 2, & 3

PANEL CUTOUT

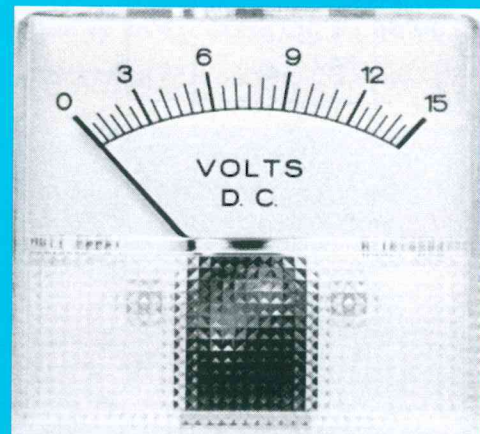
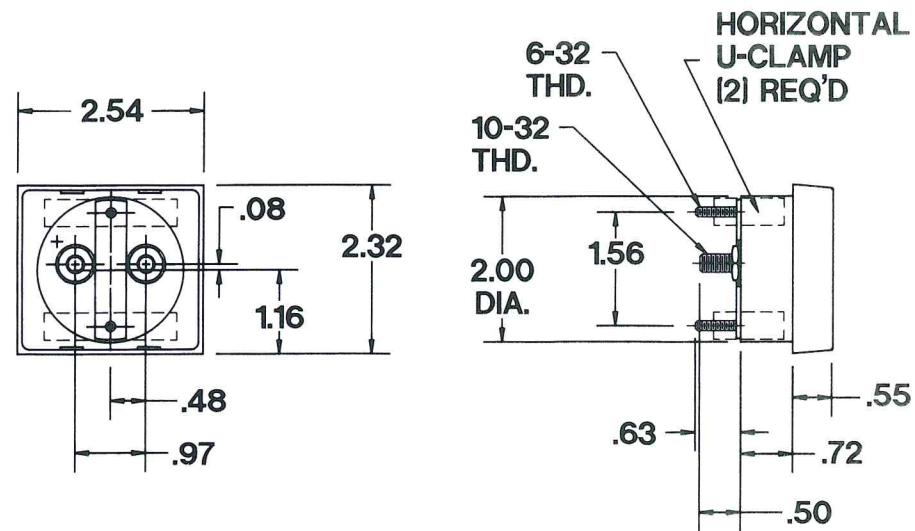


825/26 Series

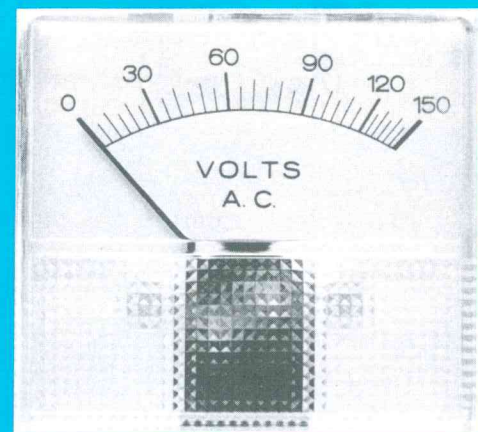
These meters are especially suited for applications requiring high durability at low cost. They feature rugged plastic backs, dual U-clamps for mounting, fade proof lithographed metal dials, and static-free polystyrene fronts. This series comes in a wide variety of ranges to meet customer specifications. Current ranges up to 50 amps self-contained are available for intermittent use. Voltage ranges start as low as 50 millivolts. Ranges up to 300 volts DC are available. AC rectifier type voltmeters and AC ammeters are also available in quantity orders. These meters feature 5% accuracy and are calibrated for aluminum panels. Please specify if steel panel will be used.

**Specifications:** Scale arc length 1.830"  
 #10 Terminals standard, 1/4-28 Available  
 75 degree pointer swing (DC) only, AC varies  
 Panel opening 2-1/16" round hole

**DIMENSIONS:**



825 - D.C. Moving Magnet

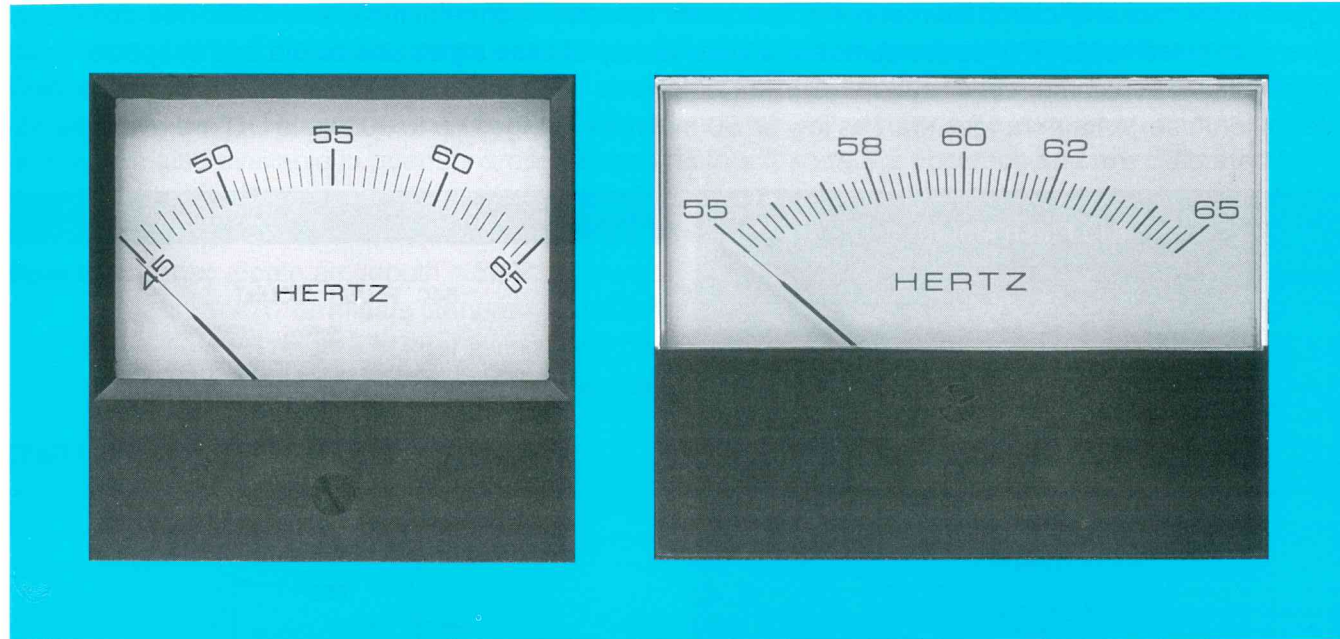


826 - A.C. Repulsion

Hoyt 5% Moving Magnet Meters

These meters are especially suited for applications requiring high durability at low cost. They feature rugged steel backs, U-clamp for mounting, fade proof lithographed metal dials, and static-free polystyrene or glass fronts. This series comes in a wide variety of case styles and colors and in special ranges to meet customer specifications. Current ranges up to 50 amps self-contained are available for intermittent use. Voltage ranges start as low as 50 millivolts. Ranges up to 300 volts DC are available.

## AC FREQUENCY METERS



The Hoyt AC Frequency meters available in 2-1/2", 3-1/2", & 4-1/2" models utilize the high torque bar-ring pivot and jewel mechanism with a solid-state frequency network that yields  $\pm 2\%$  accuracy of the span. The unit was designed to be less susceptible to errors caused by waveform distortion. All frequency meters are self contained with zero and span adjustments accessible for final adjustments.

AC Frequency meters are designed to match Hoyt ammeters and voltmeters. Seven different case styles are available in: Acrylic, Phenolic, Polystyrene or high impact Polycarbonate. Case styles are available for surface, bezel, or window mounting.

**NOTE:** Special ranges and voltages available upon request.

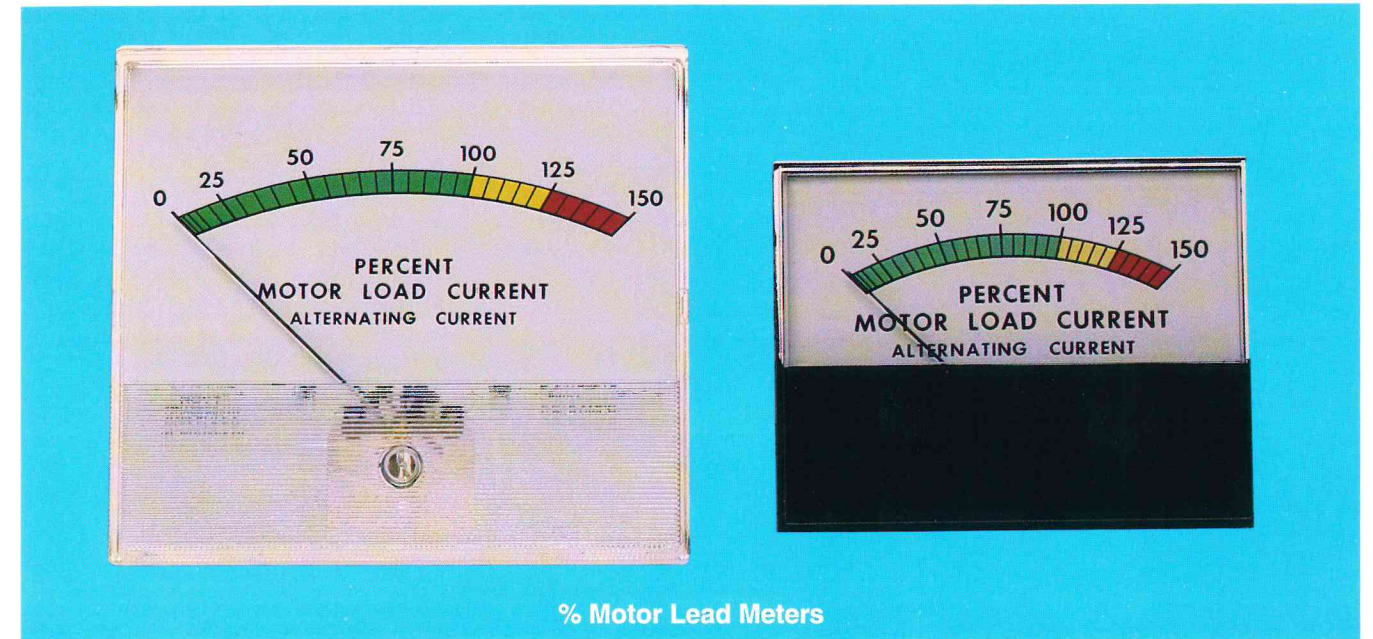
**\* UL RECOGNIZED METERS AVAILABLE**

### Size and Model

2-1/2"	3-1/2"	4-1/2"
1026	1038	1046
2026	2036	2046
3126	3136	3146
4026	4036	4046
5026	5036	-
552	584	-

RANGES
45-55 HZ
45-65 HZ
55-65 HZ
360-440 HZ SPECIAL
120 OR 240 VAC

## PERCENT MOTOR LOAD METERS



% Motor Load Meters

Hoyt Percent Motor Load Meters provide a visual analog display of AC motor load while in operation. Meter scale illustrates percent load from 0-150%. Color bands indicate the segment as follows:

Green: 0-100%  
 Yellow: 100-125%  
 Red: 125-150%

Accuracy  $\pm 2\%$  Full Scale

AC load meters can be utilized with all AC motors of any horsepower, voltage, frequency or phase. Application of these meters can prevent overloading and motor burn-out, optimize operating load conditions or indicate the need for maintenance or replacement. Highly damped movements are used which delay full scale pointer excursion, to avoid meter overload due to in-rush (starting) current.

**NOTE: UL RECOGNIZED METERS AVAILABLE**  
 please consult factory on availability.

### Size and Model

2-1/2"	3-1/2"	4-1/2"
1026	1038	1046
2026	2036	2046
3126	3136	3146
4026	4036	4046
5026	5036	-
552	584	-
636	598	648
	2136	2146

(ALL 5 AMP AC RATING)

REFER TO MODEL SERIES FOR DIMENSIONAL CHARACTERISTICS AND DEFINITION OF CASE STYLE.