



Hoyt Electrical Instrument Works

2000 Series Meters	2-3	Industrial Meters	16-17
2100 Series Meters	4	Industrial Metal Meters	18-19
2700 Series Meters	5	Industrial Ruggedized Meters	20-21
3100 Series Meters	6-7	Edgewise Meters	22-25
3100-2 Series Meters	8	Switchboard Meters	26-28
4000 Series Meters	9	Synchrosopes	29-31
5000 Series Meters	10	Automotive Test Meters	32-33
5000 Combo Series Meters	11	VU Meters	34-38
6000 Series Meters	12	Hour and Time Meters	39-41
250 degree Series Meters	13	Current Shunts	42-43
5% Moving Magnet Meters	14-15	Accessories	44



Hoyt Electrical Instrument Works

Hoyt Electrical Instrument Works Inc. has been manufacturing in Penacook NH since 1904. Adrian H. Hoyt displayed the energy and enthusiasm in his industrial employment and in inventing and since his creation of Hoyt Electrical Instrument Works, Hoyt and its employees have lived by the rule that "Anything worth doing is worth doing well".

At Hoyt Electrical Instrument Works, the rule is honored today as it was by the previous generations. From the Hoyt family members who have owned and actively operated the business since 1904, to the skilled production workers in the plant, Hoyt employees apply their unique skills to the design and manufacture of analog panel meters that meet and exceed industry standards.

Today, Hoyt Electrical Instrument Works is much more than an analog panel manufacturer. While analog meters are still our passion, we have evolved to provide value-added custom solutions that keep the world spinning in the right direction.

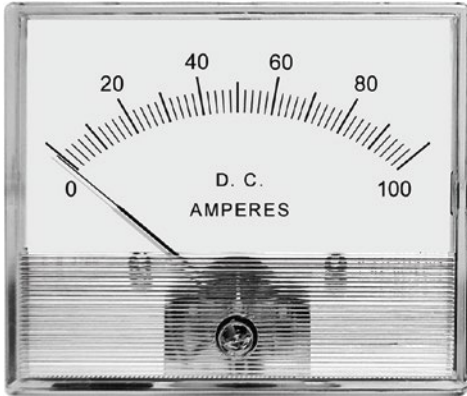
Our Inside Sales Team is always ready to help you with custom options and discuss the best pricing. We also work with Mod-Centers, Representatives and Distributors to reduce lead time and the cost of products.

Anything worth doing is worth doing well!



2000 Series

1-1/2"	2-1/2"	3-1/2"	4-1/2"	6"
2018 DC Moving Coil	2025 DC Moving Coil	2035 DC Moving Coil	2045 DC Moving Coil	2060 DC Moving Coil
2018R AC Rectifier	2026 AC Repulsion	2036 AC Repulsion	2046 AC Repulsion	2061 AC Repulsion



Features

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 accruing 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.

Special Dials are available with the following options:
additional Colors, Scales, Special Legends, Logo and Mirrors.

DC Ranges: Microammeters, Milliammeters, Ammeters, Millivoltmeters and Voltmeters.

AC Ranges: Milliammeters, Ammeters, Voltmeters and Frequency Meters.

Specifications

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 applications; 20% for six hours.
Accuracy:	±2% full scale value.
Resistance:	±15%.
Dials:	100 or 90 degree arc, black lettering on white background.
Pointer:	Knife Edge.
Movement:	Pivot and Jewel, Iron Vane or Taut Band.
Mounting:	Specify (S) Surface mount or (B) Bezel mount.
Case:	Clear acrylic case.
Operating Temperature:	32°F to 104°F (0°C to 40°C).
Storage Temperature:	-4°F to 131°F (-20°C to 55°C).
Meter Approvals:	ANSI C39.1, RoHS, REACH.
Origin:	Made in USA.

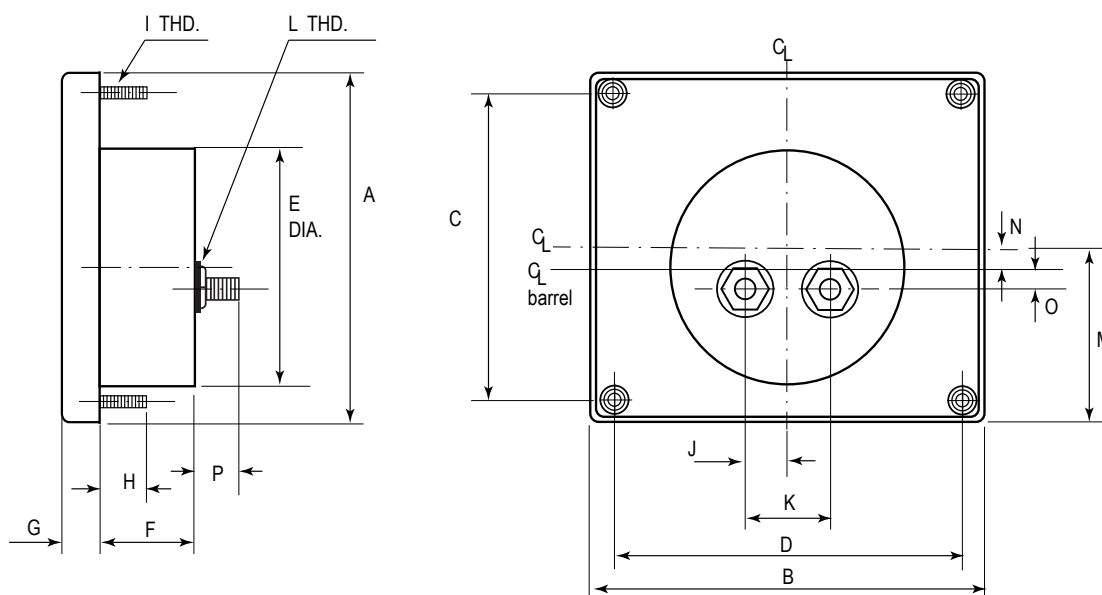
Bezel Mount

Bezels for mounting rectangular custom series models 2018/2018R, 2025/2026, 2035/2036 and 2045/2046 behind the panel are sturdy high impact ABS.

Bezel Part Numbers:
M107081-KIT for 2018/2018R
M207036-KIT for 2025/2026
M207048-KIT for 2035/2036
M207030-KIT for 2045/2046



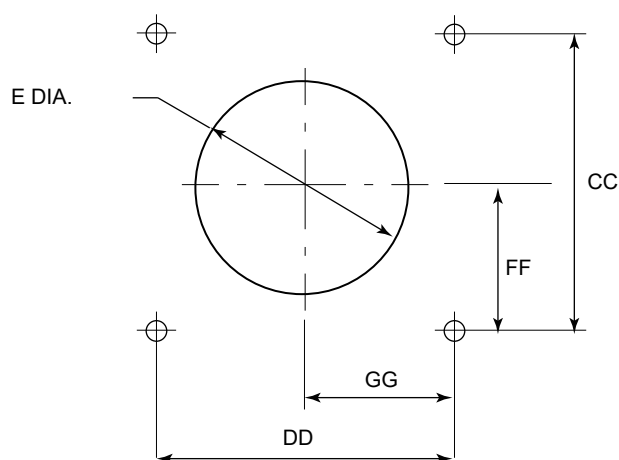
Dimensions



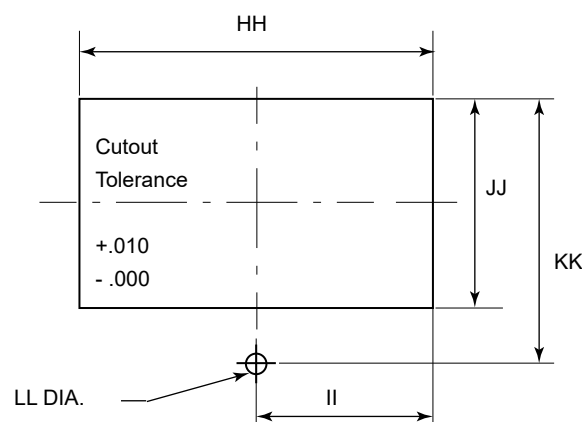
Models	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
2018/22	1.74	1.74	1.31	1.31	1.50	1.22	0.33	0.50	4-48	0.48	0.97	10-32	0.87	0.00	-.22	0.50
2025/26	2.38	2.81	1.88	1.88	2.16	1.22	0.42	0.50	4-48	0.48	0.97	10-32	1.19	0.00	0.00	0.50
2035/36	2.97	3.50	2.25	2.25	2.74	1.10	0.45	0.56	4-48	0.48	0.97	10-32	1.48	0.03	0.25	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

Panel Cutout

Panel Cutout for Barrel



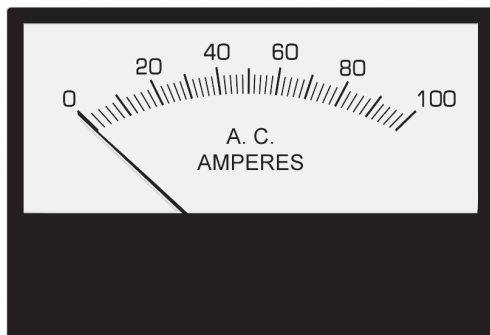
Bezel Panel Cutout



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	-	-	-	-	-

3-1/2"
2135 DC Moving Coil
2136 AC Repulsion

4-1/2"
2145 DC Moving Coil
2146 AC Repulsion



Features

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.

Special Dials are available with the following options:
 Additional Colors, Scales, Special Legends, Logo and Mirrors.

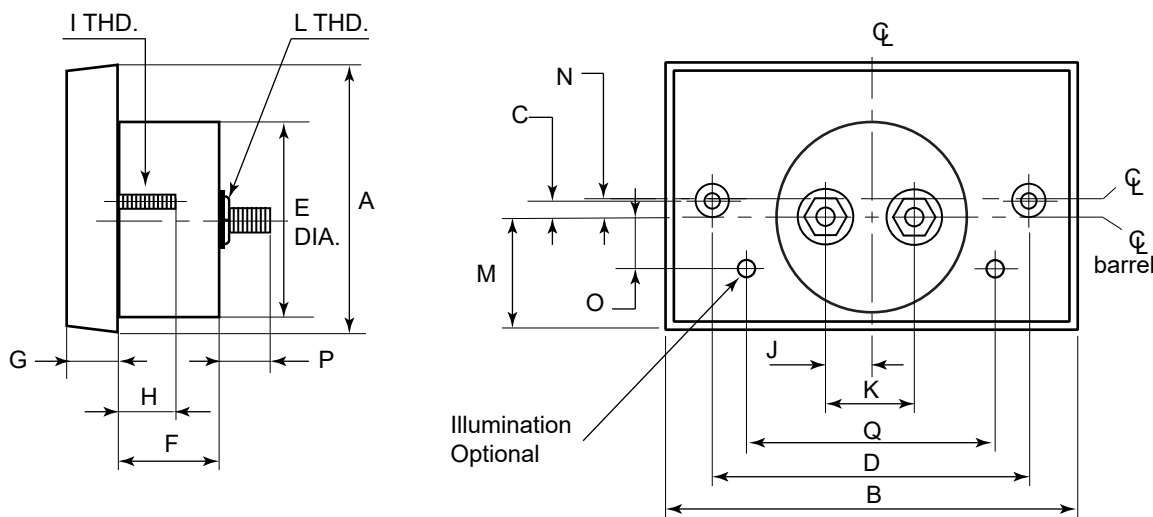
DC Ranges: Microammeters, Milliammeters, Ammeters, Millivoltmeters and Voltmeters.

AC Ranges: Milliammeters, Ammeters, Voltmeters, Frequency Meters, VU meters

Specifications

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 applications; 20% for six hours.
Accuracy:	±2% full scale value.
Resistance:	±15%.
Dials:	100 or 90 degree arc, black lettering on white background.
Pointer:	Knife Edge.
Movement:	Pivot and Jewel, Iron Vane or Taut Band.
Mounting:	Specify (S) Surface mount.
Case:	Non-static phenolic.
Operating Temperature:	32°F to 104°F (0°C to 40°C).
Storage Temperature:	-4°F to 131°F (-20°C to 55°C).
Meter Approvals:	ANSI C39.1, RoHS, REACH.
Origin:	Made in USA.

Dimensions



Models	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
2135/36	2.73	4.04	0.00	2.94	2.16	1.08	0.55	0.66	6-32	0.48	0.97	10-32	1.25	0.12	0.57	0.50	2.46
2145/46	2.96	4.56	0.20	3.50	2.16	1.08	0.55	0.66	6-32	0.48	0.97	10-32	1.25	0.24	0.57	0.50	2.75

3-1/2"

2735 DC Moving Coil

2736 AC Repulsion



Features

Clear plastic meter with polystyrene case. Available in AC or DC inputs. 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.

Special Dials are available with the following options:

Additional Colors, Scales, Special Legends, Logo and Mirrors

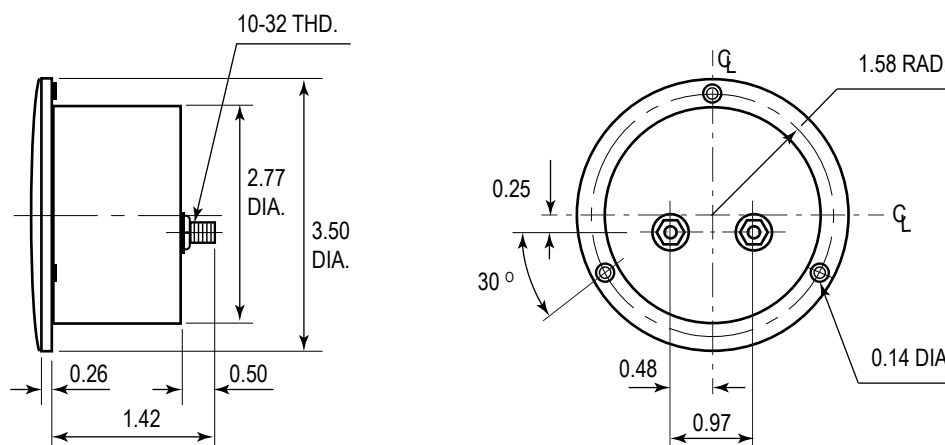
DC Ranges: Microammeters, Milliammeters, Ammeters, Millivoltmeters and Voltmeters.

AC Ranges: Milliammeters, Ammeters and Voltmeters.

Specifications

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 applications; 20% for six hours.
Accuracy:	±2% full scale value.
Resistance:	±15%.
Dials:	100 or 90 degree arc, black lettering on white background.
Pointer:	Knife Edge.
Movement:	Pivot and Jewel, Iron Vane or Taut Band.
Mounting:	Specify (S) Surface mount.
Case:	Clear polystyrene cases standard. Acrylic or high impact polycarbonate case are available in some models.
Operating Temperature:	32°F to 104°F (0°C to 40°C).
Storage Temperature:	-4°F to 131°F (-20°C to 55°C).
Meter Approvals:	ANSI C39.1, RoHS, REACH.
Origin:	Made in USA.

Dimensions



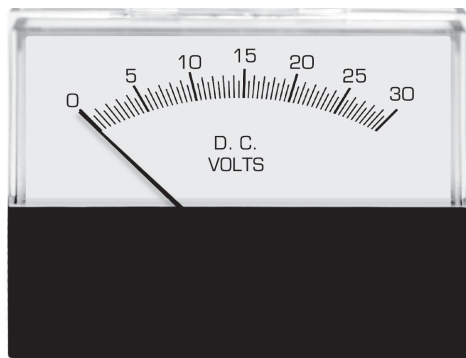
3100 Series

1.5"
3115 DC Moving Coil
3116R AC Rectifier

2.5"
3125 DC Moving Coil
3126 AC Repulsion

3.5"
3135 DC Moving Coil
3136 AC Repulsion

4.5"
3145 DC Moving Coil
3146 AC Repulsion



Features

The 3100 Series consists of a popular industrial styled, high impact plastic case that is available for surface, bezel or window mounting applications. This series of meters is equal in mounting and specifications to similar styled meters of other manufacturers.

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

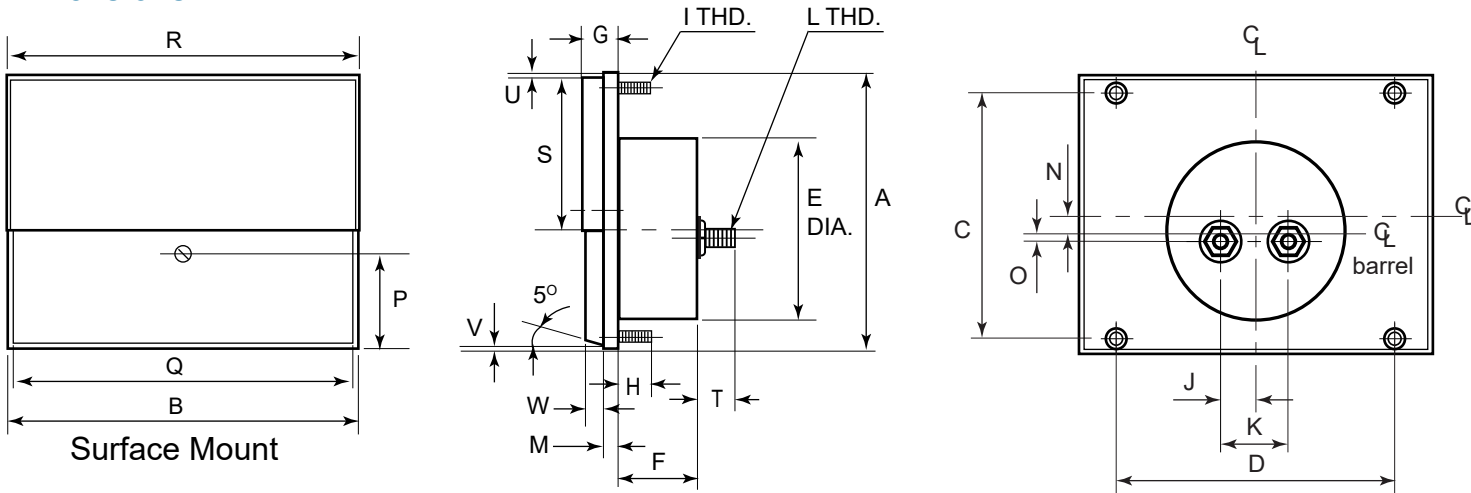
DC Ranges: Microammeters, Milliammeters, Ammeters, Millivoltmeters and Voltmeters.

AC Ranges: Milliammeters, Ammeters, Voltmeters and Frequency Meters.

Specifications

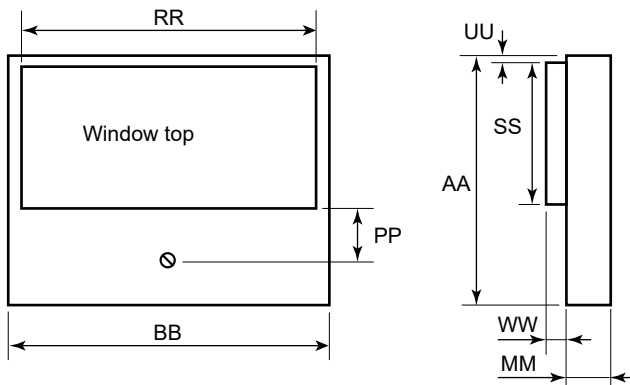
Overload:	Voltmeters (AC and DC): 50% momentary 20% sustained. Ammeters (AC and DC) momentary: 10 times the rated current for 10 consecutive intervals of .5 seconds with a 1 minute interval between successive applications; 20% for six hours.
Accuracy:	±2% full scale value.
Resistance:	±15%.
Dials:	100 or 90 degree arc, black lettering on white background.
Movement:	Pivot and Jewel, Iron Vane or Taut Band.
Mounting:	Specify (S) Surface mount, (B) Bezel mount or (W) Window mount.
Case:	Lexan.
Operating Temperature:	32°F to 104°F (0°C to 40°C).
Storage Temperature:	-4°F to 131°F (-20°C to 55°C).
Meter Approvals:	ANSI C39.1, RoHS, REACH.
Origin:	Made in USA.

Dimensions



Models	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
3115/16R	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	-.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

Dimensions Window Mount

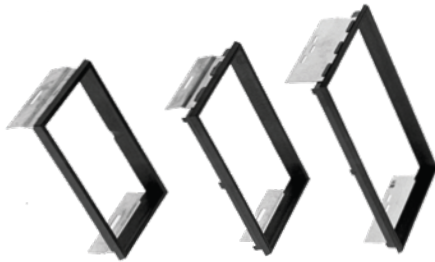


Models	AA	BB	MM	PP	RR	SS	UU	WW
3115/16	1.78	2.24	.28	.54	2.14	.92	.05	.15
3125/26	2.28	3.01	.30	.64	2.89	1.26	.06	.15
3135/36	2.89	3.72	.32	.81	3.58	1.58	.07	.15
3145/46	4.06	5.19	.37	.86	5.00	2.33	.09	.15

Base is the same as the surface top.
See Surface dimensional chart for omitted base dimensions.

Dimensions Bazel and Window Mount

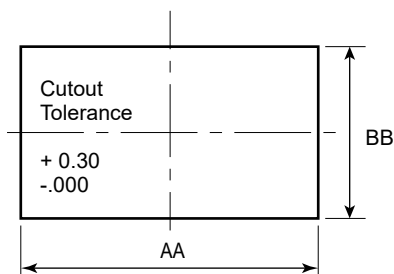
Window Mount. The window mount design is available in sizes 1.5", 2.5", 3.5" and 4.5". This series is industrially styled and universally accepted with maximum dial visibility. The outside edges of the "window" that project through the panel are clear which yields maximum readability.



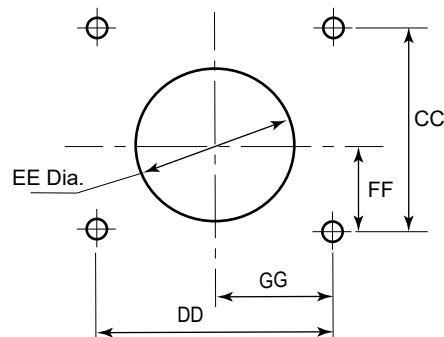
Bezel Mount.

The bezel mount design is available in sizes 2.5", 3.5" and 4.5" 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 for drilling an additional hole. The optional bezel is available for use with the surface case styles and includes necessary mounting hardware.

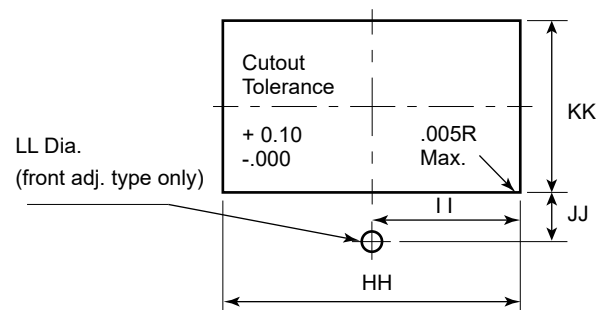
Bezel Panel Cutout



Panel Cutout for Barrel

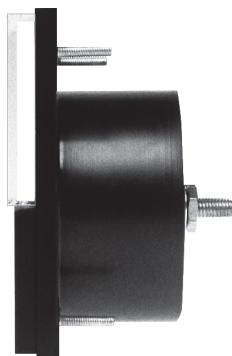


Window Mount



Models	AA	BB	CC	DD	EE	FF	GG	HH	II	JJ	KK	LL
3115/16	-	-	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

3100-2 Series



3.5"

3135-2 DC Moving Coil with 2" Barrel

3136-2 AC Repulsion with 2" Barrel

2" Small Barrell (base diameter) for tight space application.
Viscosity damping to control overshoot & oscillation.

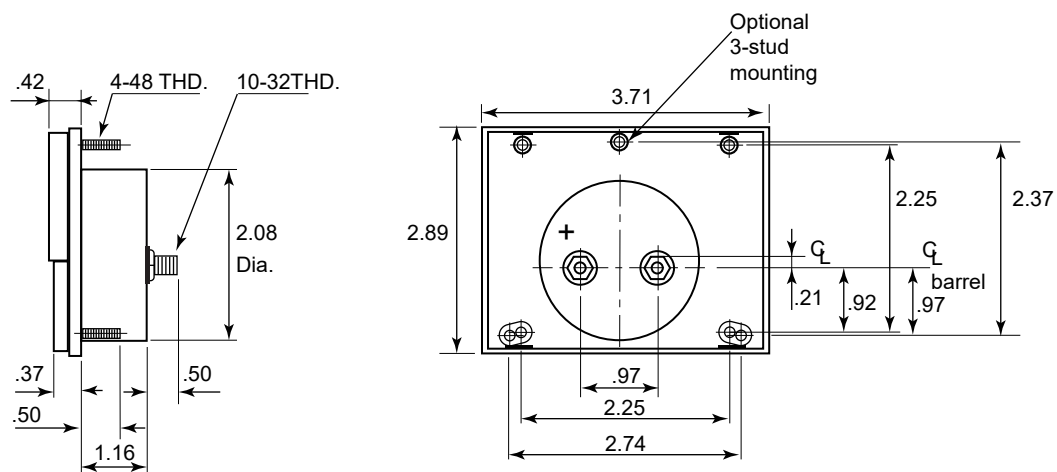
DC Ranges: Microammeters, Milliammeters, Ammeters, Millivoltmeters and Voltmeters.

AC Ranges: Milliammeters, Ammeters and Voltmeters.

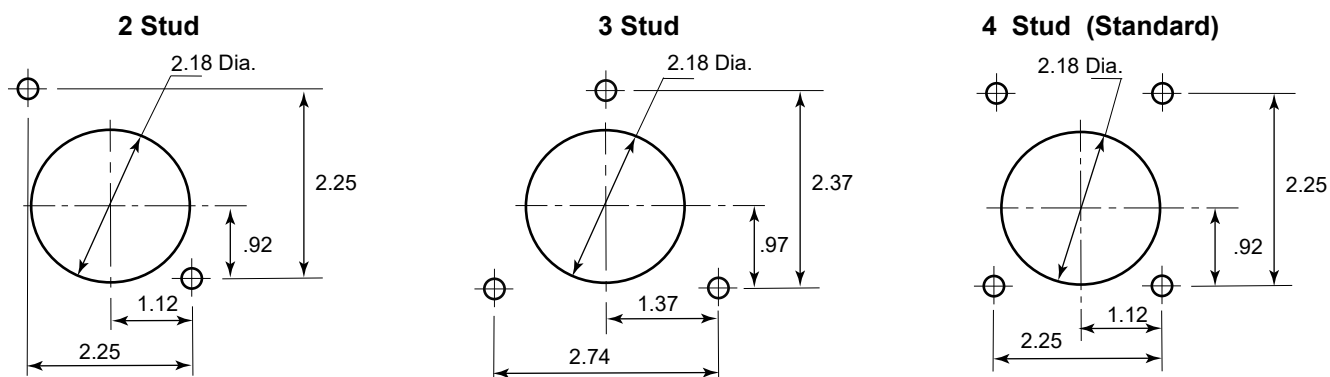
Specifications

- 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 applications; 20% for six hours.
- Accuracy:** 1% & 2% Accuracy available.
- Resistance:** Special ranges and resistances to match your equipment design.
- Dials:** 100 or 90 degree arc, black lettering on white background.
Special dial colors and artwork are available as an option.
- Movement:** Pivot and Jewel, Iron Vane or Taut Band.
- Mounting:** 4 way mounting including 2, 3, 4 holes.
- Case:** High impact plastic case.

Dimensions



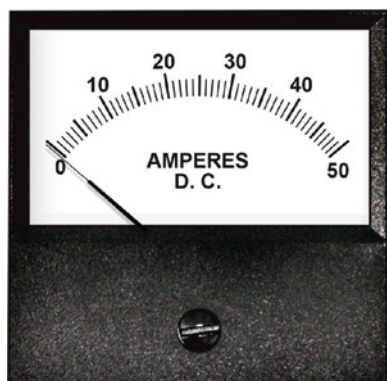
Mounting Stud Options



2.5"
4025 DC Moving Coil
4026 AC Repulsion

3.5"
4035 DC Moving Coil
4036 AC Repulsion

4.5"
4045 DC Moving Coil
4046 AC Repulsion



Features

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.

UL Recognized meters available.

Special Dials are available with the following options:
 Additional Colors, Scales, Special Legends, Logo and Mirrors.

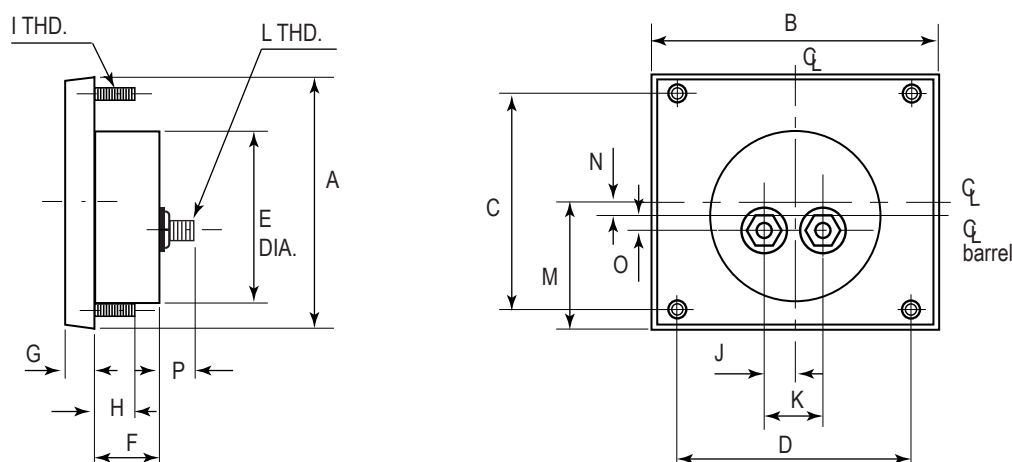
DC Ranges: Microammeters, Milliammeters, Ammeters, Millivoltmeters and Voltmeters.

AC Ranges: Milliammeters, Ammeters, Voltmeters and Frequency Meters.

Specifications

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 applications; 20% for six hours.
Accuracy:	±2% full scale value.
Resistance:	±15%.
Dials:	100 or 90 degree arc, black lettering on white background.
Pointer:	Knife Edge.
Movement:	Pivot and Jewel, Iron Vane or Taut Band.
Mounting:	Specify (S) Surface mount.
Case:	Bakelite.
Operating Temperature:	32°F to 104°F (0°C to 40°C).
Storage Temperature:	-4°F to 131°F (-20°C to 55°C).
Meter Approvals:	ANSI C39.1, RoHS, REACH.
Origin:	Made in USA.

Dimensions



Models	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
4025/26	2.38	2.38	1.88	1.88	2.16	1.11	0.47	0.50	4-48	0.48	0.97	10-32	1.19	0.00	0.00	0.50
4035/36	3.00	3.00	2.25	2.25	2.69	1.12	0.47	0.62	4-48	0.48	0.97	10-32	1.50	0.00	0.25	0.50
4045/46	4.20	4.66	3.56	4.00	2.69	1.12	0.47	0.62	6-32	0.48	0.97	10-32	2.10	0.24	0.25	0.50

5000 Series



1.5"

5015 DC Moving Coil
5016R AC Rectifier

2.5"

5025 DC Moving Coil
5026 AC Repulsion

3.5"

5035 DC Moving Coil
5036 AC Repulsion

Features

Dustproof Lexan® Construction

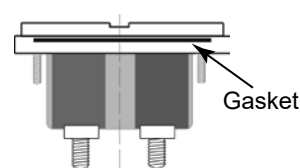
5000 series panel meters feature gasketed construction to seal out dust and other air-suspended damaging particles. Made with UL 94V material. Ideal where impact and strength is required in harsh environments.

DC Ranges: Microammeters, Milliammeters, Ammeters, Millivoltmeters and Voltmeters.

AC Ranges: Milliammeters, Ammeters, Voltmeters and Frequency Meters.

Specifications

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 applications; 20% for six hours.
Accuracy:	±2% full scale value.
Resistance:	±15%.
Dials:	100 or 90 degree arc, black lettering on white background.
Pointer:	Knife Edge.
Movement:	Pivot and Jewel, Iron Vane or Taut Band.
Mounting:	Specify (S) Surface mount.
Case:	ABS
Operating Temperature:	32°F to 104°F (0°C to 40°C).
Storage Temperature:	-4°F to 131°F (-20°C to 55°C).
Meter Approvals:	ANSI C39.1, RoHS, REACH, UL Recognized (upon request).
Origin:	Made in USA.



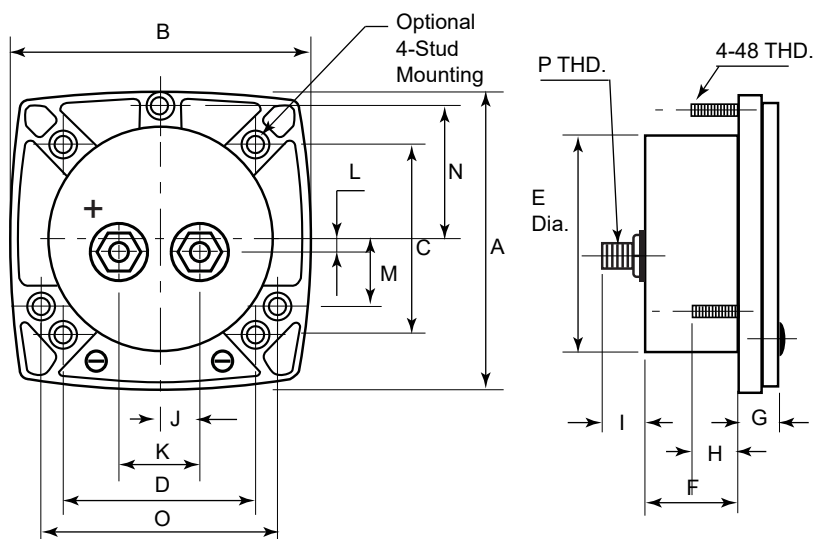
Gasket Sealing Design

Dust resistant construction is a standard feature. This unique sealing design provides exceptional gasket sealing while allowing for quick modification and scale changes while maintaining the integrity of the instrument.
*External panel gasket available.

Dimensions

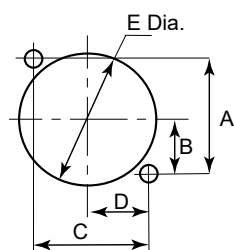
Models	A	B	C	D	E	F	G	H
5015/16R	1.76	1.76	1.31	1.31	1.50	1.08	0.48	0.50
5025/26	2.71	2.71	1.88	1.88	2.08	1.06	0.47	0.50
5035/36	3.50	3.50	2.25	2.25	2.60	1.05	0.50	0.50

Models	I	J	K	L	M	N	O	P
5015/16R	0.50	0.48	0.97	-.22	-	-	-	10-32
5025/26	0.50	0.48	0.97	0.00	0.61	1.22	2.11	1/4-28
5035/36	0.50	0.48	0.97	0.13	0.79	1.58	2.74	1/4-28

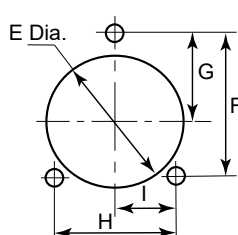


Mounting Stud Options

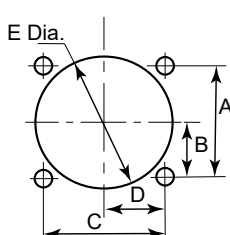
2 Stud



3 Stud (Standard)



4 Stud



Models	A	B	C	D	E	G	G	H	I
5015/16	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



3.5"

5035 Combo DC Moving Coil

5036 Combo AC Repulsion

Features

The Combo Series features the same precision analog meter movement you expect from Hoyt, with the addition of a 3.5 digit, bright red, digital display featuring 0.37" high digits.

For all their innovation, the new Combo Series meters are completely compatible with existing analog-only or digital panel meter- applications.

Large, bright red LED digital displays are available to monitor a wide variety of AC voltage, DC voltage, and frequency ranges.

Hour meters are available in the Combo Series with LCD digital displays.

Signal-and Loop powered

With the addition of what amounts to a digital panel meter (DPM) in an analog panel meter case, questions immediately arise regarding input signal and power supply common, ground, "floating"-, single ended, or differential inputs.

Hoyt resolves these questions too, very simply - the new Combo Series meters are self-powered, 2-wire meters. That means there are only two connections, the "+" and "-" leads of the input signal.

The entire meter, both analog and digital displays, is fully powered by the signal being measured. There are never any grounding or signal- reference questions.

Analog Meter Specification

Accuracy: $\pm 2\%$ of full scale.

Overload: 20% sustained.

Ranges: AC and DC;
many options available.

Digital Meter Specification

General

Digital Display: 0.37"/9.4mm digits; bright red LED.
Sampling Rate: 2.5 readings/second.
Current Consumption: 50mA maximum; range dependen.
Operating Temp.: -25°C to $+60^{\circ}\text{C}$.
Storage Temp.: -40°C to $+75^{\circ}\text{C}$.
Humidity: 0 to 95% (Non-condensing).
Measurement Type:
AC: Half-wave average, rms; calibrated for sinusoidal input.
DC: Standard "+"; Ground "-".

AC Voltage

Input Voltage Range: 85 to 600VRMS available.
Input Frequency Range: 47 to 63Hz; 350-450Hz.
Input Overload Protection: 300VRMS (Overvoltage category II).
Accuracy: $\pm 1\text{V}$ typical; $\pm 2\text{V}$ maximum.
Resolution: 1V.

AC Amperes

Input Current Range: 0 to 2000AAC.
Power: 85 to 264V.
Accuracy: ± 1 Amp.
Resolution: 0.1 Amps, 0-500 A;
1.0 Amps, 1000-2000 A AC

AC Frequency

Input Voltage Range: 85 to 140VAC; 170 to 264VAC.
Input Frequency Range: 47 to 99Hz; 350 to 450Hz.
Input Overload Protection: 200VRMS, maximum for 120V;
300VRMS, maximum for 240V.
Sample Rate: 4 readings/second.
Accuracy: $\pm 0.1\text{Hz}$; -25°C to $+60^{\circ}\text{C}$.
Display: 0.4"/10.1mm bright red LED.

DC Voltage

Input Voltage Range: 2 to 6VDC; 4.5 to 19.99VDC.
18 to 50VDC; 30 to 264VDC.
Accuracy: $\pm 0.5\%$ to $\pm 3.3\%$, range dependent.
Resolution: 0.5% to 3.3%, range dependent.

DC Amperes

Source Voltage: 5VDC minimum.
Input Voltage Range: 0 to 50mVDC; 0 to 100mVDC.
Accuracy: $\pm 1\%$.
Resolution: 1 count.
Shunts: External; 50 or 100mVDC compatible;
Field adjustable.
Scaling: Application-cpecific.

Hour Meter

Input Voltage Range: 4.5 to 19VDC; 9 to 60VDC.
36 to 185VDC; 75 to 270VAC.
Accuracy: $\pm 0.1\%$ Hours, ± 1 count.
Resolution: 0.1 Hour.
Non-Volatile Memory: -40°C to $+89^{\circ}\text{C}$; SAE.
Display: 5mm; 6 digits (99,999.9 Hours).
Digital Display: 0.37"/9.4mm digits; bright red LED.
Sampling Rate: 2.5 readings/second.

4-20MA Current Loop

Input Range: 4mADC minimum; 20mADC maximum.
Voltage Drop: 5VDC.
Accuracy: $\pm 0.05\%$, ± 1 count.
Resolution: 0.01mA minimum; scale dependent.
Zero: Field adjustable.
Gain: Field adjustable.
Scale: Between 0 to 1999; DIP selectable.



4.5"

6045 MR DC Analog Meter Relay

6046 MR AC Analog Rectified Meter Relay

Features

Wide variety of control, alarm, and limit use.

Calibration unaffected by steel panel mounting.

Infrared LED/photo transistor. LED relay status indicators.

0-2 / 0-20 second time delay STD.

5-A 120/220V relay contact, double pole-double throw.

Stable electronic switching circuit does not use lamps, photocells, inductors, capacitors.

Isolated input signal.

Control function continues if the indicator becomes damaged.

Custom dials multi-color, gradient color, photos, and logos - as you wish.

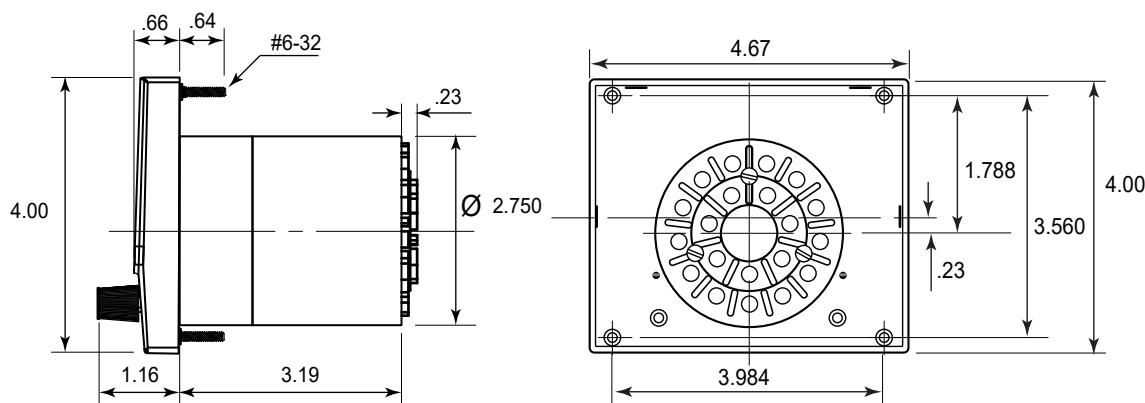
Specifications

Accuracy	DC: $\pm 2\%$ of full scale. AC: $\pm 3\%$ of full scale.
Movement Suspension	Core Type, Self-shielding. Taut Band.
Tracking	$\pm 3\%$.
Repeatability	Within 0.5% of full scale.
Shielding	Calibration unaffected by magnetic panel mounting.
Dial	Sharp, clear, flattened arc.
Case	Lexan.
Pointer	Black, Tubular.
Control Point	Single - high limit, 0-100% of arc.
Adjustments	Double - high limit 5-100% of arc, low limit 0-95% of arc, adjustable to within 4° of each other.
Switching	Within 2% of indication.
Auto / Manual Reset	Latching function enabled independently for each relay removing jumpers on terminal block. Add and replace with a normal open pushbutton switch.
Contacts/ Output Relay	DPDT relay contacts for each control point, each set contacts rated at 5amps, 20/240VAC resistive.
Power Options	• 70-170VAC, 50-400Hz / 70-170VDC. • 8-32 VDC.
Operating temperature	+41°F to 122°F (5°C to 50°C).

Applications

- Liquid level control.
- Load shedding.
- Power factor correction.
- High & Low alarms.
- Shutdown.
- Frequency monitoring.
- Temperature indication and control.

Dimensions



Meter Relay Configurator

Model	Relay	Time Delay	Reset	Aux Power	Input	Scale
6045 MR	H = High HL = High/Low L = Low	0 = 0-2 Sec 2 = 0-20 Sec	A = Auto C = Manual NC O = Manual NC	A = 100-132VAC D = 8-32VDC	1M ADC 150 VDC 300 VDC 50M VDC 100M VDC	Specify
6046 MR	H = High HL = High/Low L = Low	0 = 0-2 Sec 2 = 0-20 Sec	A = Auto C = Manual NC O = Manual NO	A = 100-132VAC D = 8-32VDC	150 VDC 300 VDC 5 AAC	Specify

2"
250-20
DC Moving Coil

3"
250-30
DC Moving Coil

3.320"
250-320
DC Moving Coil

3.375"
250-375
DC Moving Coil

4.5"
250-45
DC Moving Coil



Features

250 Degree meters utilize a highly damped, spring loaded pivot and jewel movement; mechanically interlocked, negating the use of adhesives and develops a very high torque. Electrical damping to control overshoot and oscillation. Available with or without illumination. Special ranges and resistances to match your equipment design.

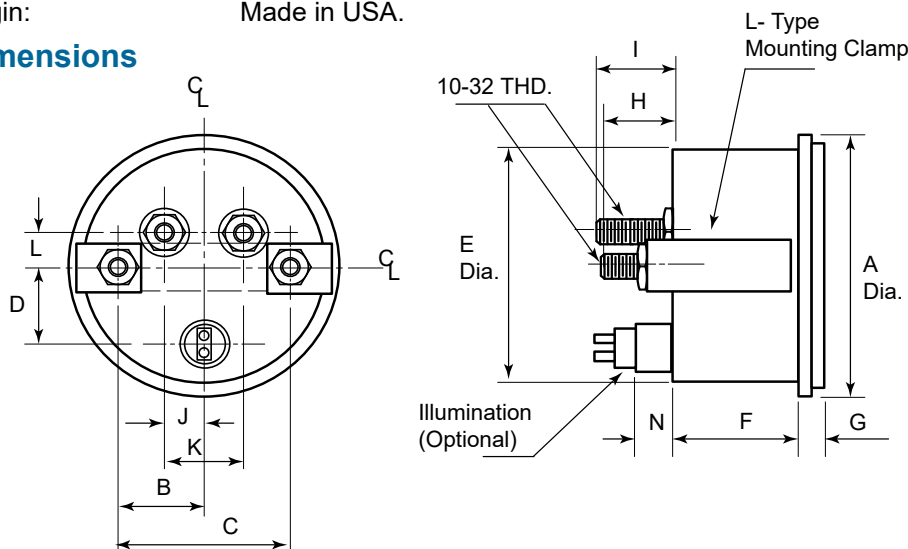
Special Dials are available with the following options:
Additional Colors, Scales, Special Legends, Logo and Mirrors.

DC Ranges: Microammeters, Milliammeters, Ammeters, Millivoltmeters, Voltmeters, Pyrometers and Custom gauges.

Specifications

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 applications 20% for six hours.
Accuracy:	±2% full scale value.
Resistance:	±10%.
Dials:	250 degree pointer deflection DC.
Pointer:	Airplane.
Movement:	Pivot and Jewel.
Mounting:	Surface mount.
Case:	Brass case. Available in Chrome or Black Bezels.
Operating Temperature:	32°F to 104°F (0°C to 40°C).
Storage Temperature:	-4°F to 131°F (-20°C to 55°C).
Meter Approvals:	ANSI C39.1, RoHS, REACH.
Origin:	Made in USA.

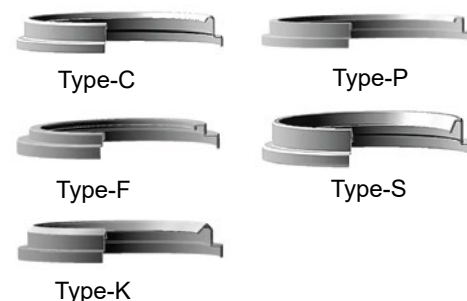
Dimensions



Applications

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

Bezels Available



Models	C	F	K	P	S
250-20	-	X	O	-	X
250-30	X	O	-	X	X
250-375	-	-	-	O	-

O - Standard Top (Black)
X - Special Top
Optional materials and Finish available (extra cost).

Models	A	B	C	D	E	F	G	H	I	J	K	L	M	N
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
250-320	3.80	1.31	2.62	1.12	3.32	1.63	0.38	0.78	0.94	0.48	0.97	0.65	"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
250-45	4.50	1.47	2.94	1.38	3.75	1.80	0.09	0.50	0.94	0.48	0.97	0.63	"L"	0.00

5% Moving Magnet Meters

Features

The 5% Moving Magnet Meters are especially suited for applications requiring high durability at low cost. They feature rugged steel backs, U-clamp for mounting and fade proof metal dials. Available with or without illumination.

Special Dials are available with the following options: Additional Colors, Scales, Special Legends, Logo and Mirrors..

DC Ranges: Microammeters, Milliammeters, Ammeters, Millivoltmeters and Voltmeters.

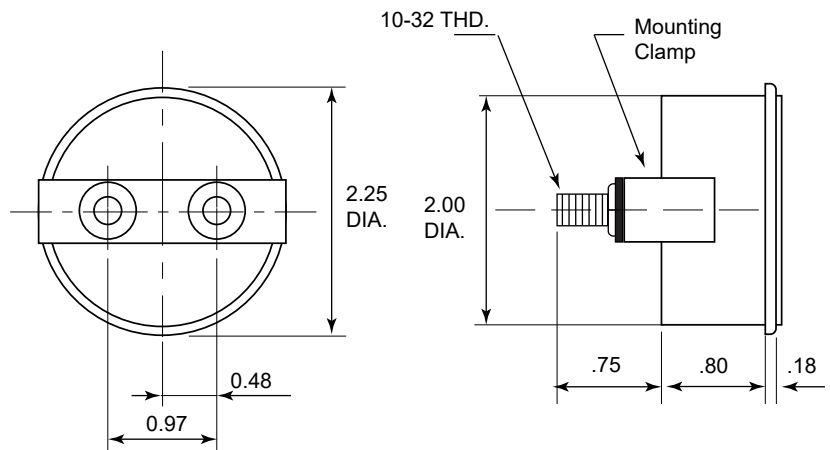
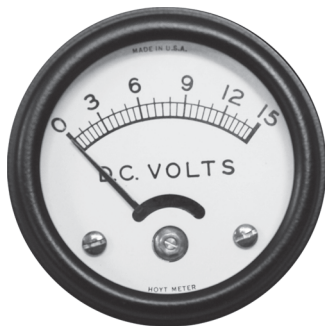
AC Ranges: Milliammeters, Ammeters and Voltmeters.

Specifications

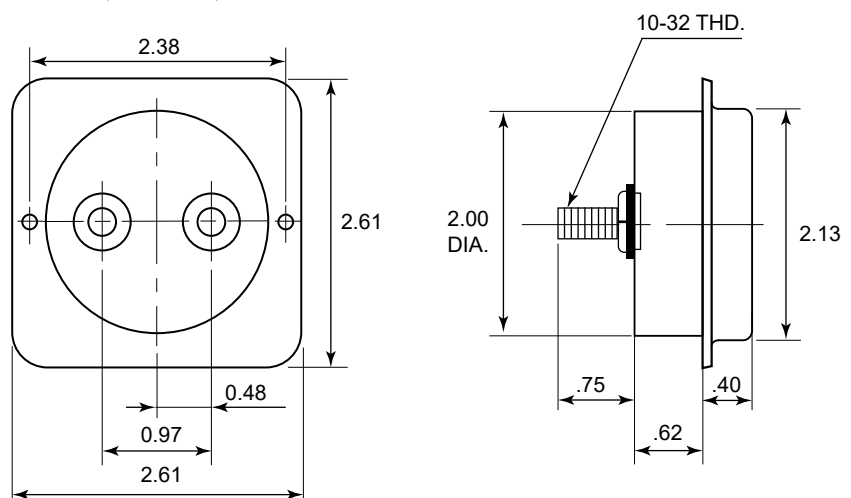
Overload:	Voltmeters (AC and DC): 50% momentary 20% sustained. Ammeters (AC and DC) momentary: 10 times the rated current for 10 consecutive intervals of .5 seconds with a 1 minute interval between successive applications; 20% for six hours.
Accuracy:	±5% full scale value.
Resistance:	±10%.
Dials:	56 degree arc, black lettering on white background.
Pointer:	Knife Edge.
Movement:	Moving Magnet.
Mounting:	Surface Mount U-Clamp. For 795 Meter - Surface Mount U-Clamp, optional bezel.
Case:	Lexan, Polystyrene, Steel.
Operating Temperature:	32°F to 104°F (0°C to 40°C).
Storage Temperature:	-4°F to 131°F (-20°C to 55°C).
Relative Humidity:	20% to 80%RH (Nominal Use).
Meter Approvals:	ANSI C39.1, NEMA4, RoHS, REACH.
Origin:	Made in USA.

Dimensions

2" 640 DC Moving Coil



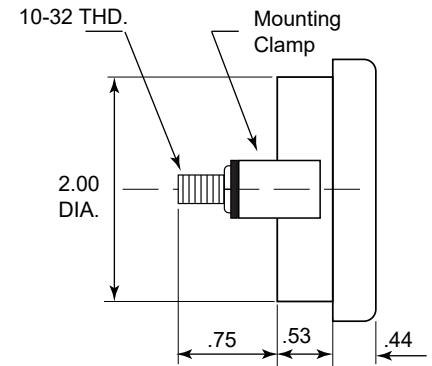
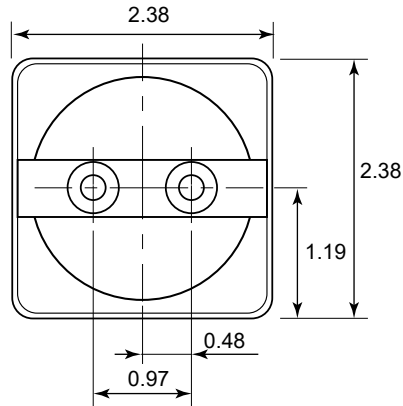
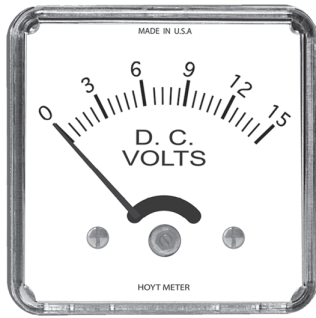
2.5" 693 DC Moving Coil



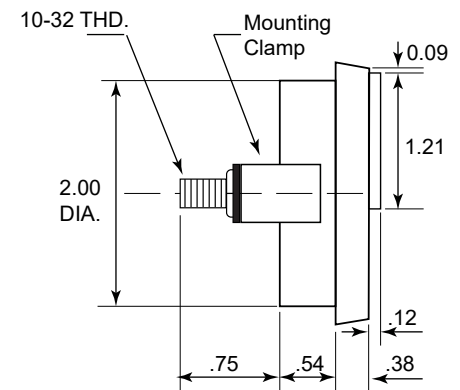
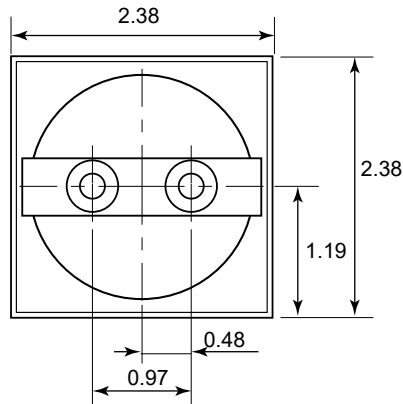
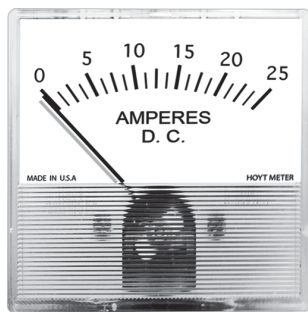
5% Moving Magnet Meters

Dimensions

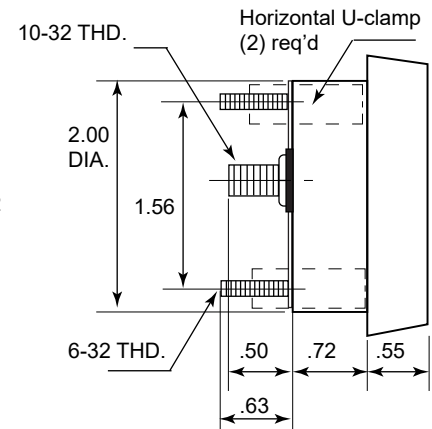
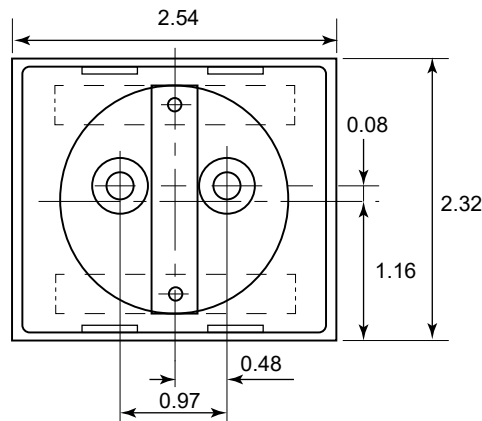
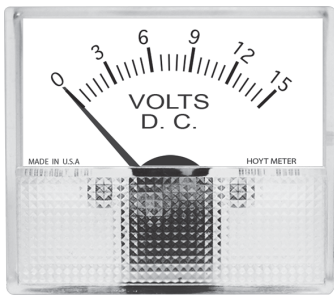
2.5" 793M DC Moving Coil



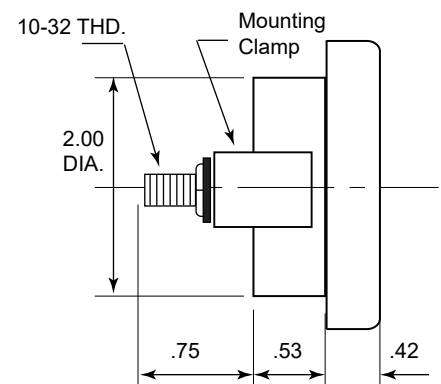
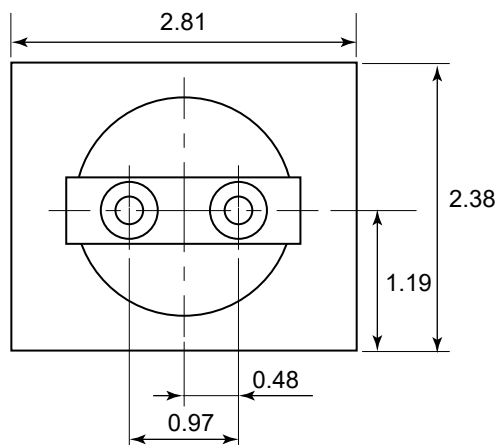
2.5" 799 DC Moving Coil



2.5" 825 DC Moving Coil 826R AC Rectifier



2.5" 795 DC Moving Coil



Industrial Meters

Features

Industrial Series was designed to meet industrial requirements and for other applications where cases with glass fronts provide long service under adverse conditions.

High current ammeter ranges with external shunt are available, as are special or non-standard ranges.

Special Dials are available with the following options: Additional Colors, Scales, Special Legends, Logo and Mirrors.

Available with or without illumination.

DC Ranges: Microammeters, Milliammeters, Ammeters, Millivoltmeters, Voltmeters,

AC Ranges: Milliammeters, Ammeters and Voltmeters.

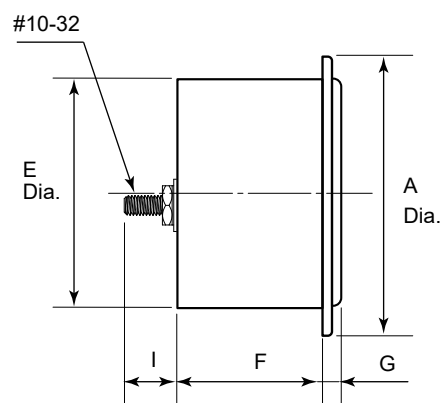
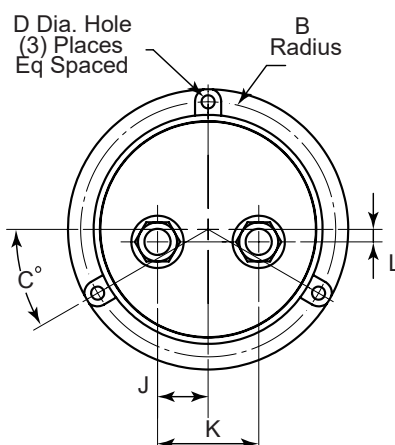
Specifications

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 applications; 20% for six hours.
Accuracy:	±2% full scale value.
Resistance:	±10%.
Dials:	100 degree arc, black lettering on white background.
Pointer:	Knife Edge.
Movement:	Pivot and Jewel, Iron Vane or Taut Band.
Mounting:	Specify (F) Flush or (S) Surface Mount.
Case:	Phenolic and ABC.
Operating Temperature:	32°F to 104°F (0°C to 40°C).
Storage Temperature:	-4°F to 131°F (-20°C to 55°C).
Meter Approvals:	ANSI C39.1, RoHS, REACH.
Origin:	Made in USA.

Dimensions

2.5"
17/3 DC Moving Coil
552 AC Repulsion

3.5"
582 DC Moving Coil
584 AC Repulsion

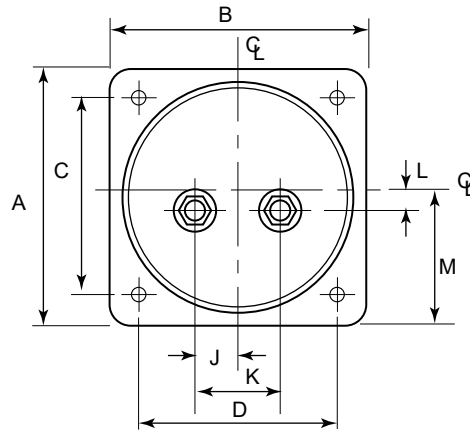


Models	A	B	C	D	E	F	G	H	I	J	K	L
17/3 / 552	2.69	1.22	30	0.12	2.20	1.38	0.20	10-32	0.50	0.48	0.97	0.00
582 / 584	3.50	1.58	30	0.14	2.75	1.39	0.26	10-32	0.50	0.48	0.97	0.25

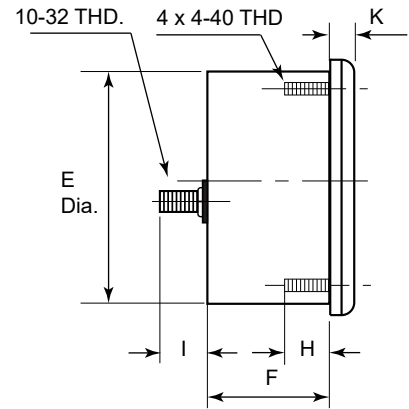
Dimensions



2.5"
635 DC Moving Coil
636 AC Repulsion

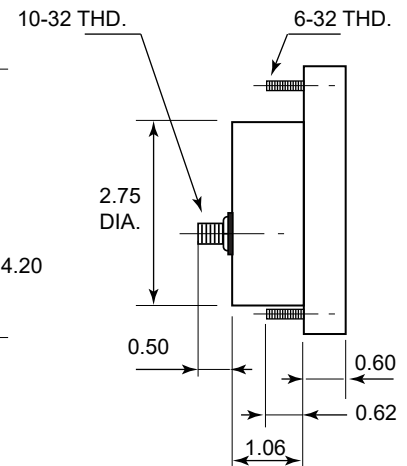
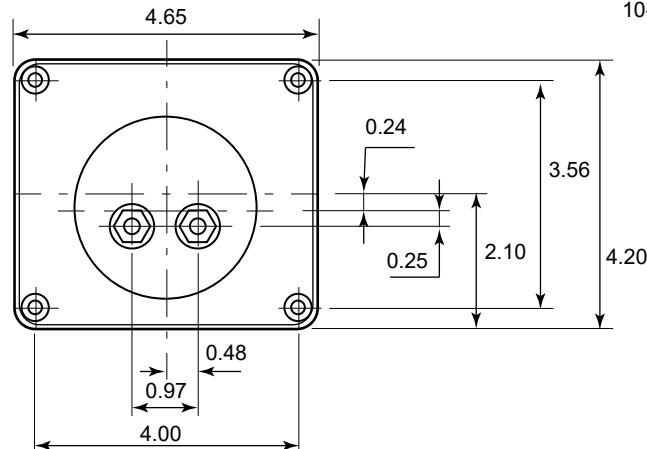
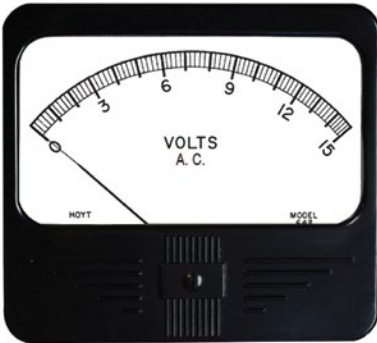


3"
597 DC Moving Coil
598 AC Repulsion

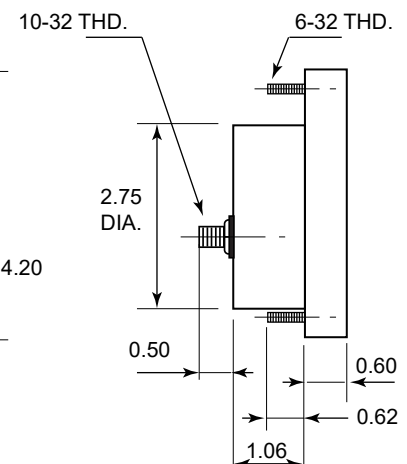
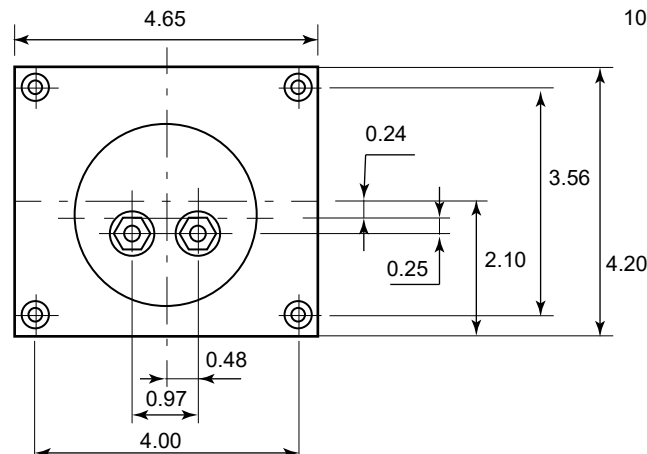
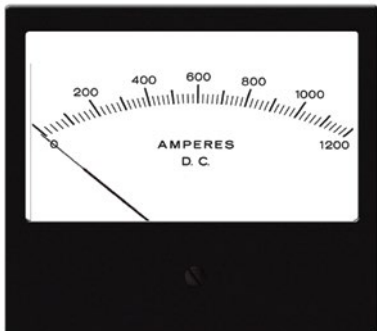


Models	A	B	C	D	E	F	G	H	I	J	K	L	M
635/636	2.38	2.38	1.88	1.88	2.20	1.40	0.20	0.55	0.50	0.48	0.97	0.00	1.19
597/598	3.00	3.00	2.25	2.25	2.75	1.42	0.22	0.50	0.50	0.48	0.97	0.25	1.50

4.5" **647 DC Moving Coil**
4.5" **648 AC Repulsion**



4.5"
680 DC Moving Coil
681 AC Repulsion



Industrial Metal Meters

3"
17/L DC Moving Coil
560 AC Repulsion

3.5"
570 DC Moving Coil
580 AC Repulsion

4.5"
574 DC Moving Coil
617 AC Repulsion

Features

Industrial Metal Series was designed to meet industrial requirements where rugged metal cases with glass fronts provide long service under adverse conditions.

Metal cased Panel Meters are resistant to extreme shock, vibration, temperature, environmental contamination, and humidity.

Special Dials are available with the following options: Additional Colors, Scales, Special Legends, Logo and Mirrors.

High current ammeter ranges with external shunt are available, as are special or non-standard ranges.

DC Ranges: Microammeters, Milliammeters, Ammeters, Millivoltmeters, Voltmeters.

AC Ranges: Milliammeters, Ammeters and Voltmeters

Specifications

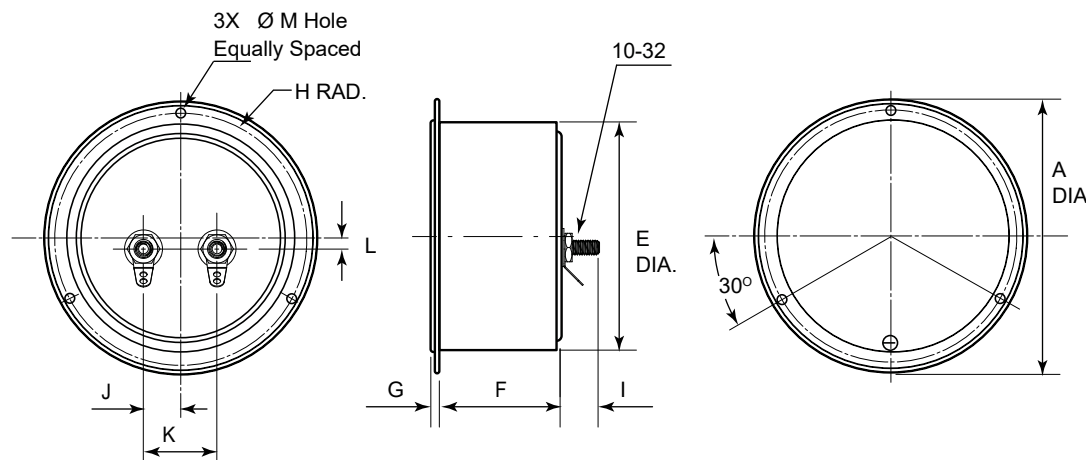
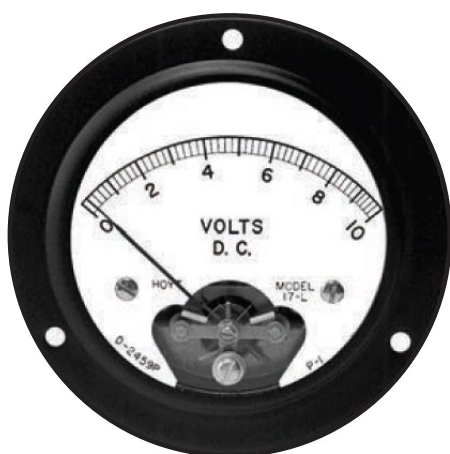
Overload:	Voltmeters (AC and DC): 50% momentary 20% sustained. Ammeters (AC and DC) momentary: 10 times the rated current for 10 consecutive intervals of .5 seconds with a 1 minute interval between successive applications; 20% for six hours.
Accuracy:	±2% full scale value.
Resistance:	±10%.
Dials:	100 degree arc, black lettering on white background.
Pointer:	Knife Edge.
Movement:	Pivot and Jewel, Iron Vane or Taut Band.
Mounting:	Surface mount.
Case:	Metal.
Operating Temperature:	32°F to 104°F (0°C to 40°C).
Storage Temperature:	-4°F to 131°F (-20°C to 55°C).
Meter Approvals:	ANSI C39.1, RoHS, REACH.
Origin:	Made in USA.

Dimensions

Wide Rim Metal

Models: **17/L, 560, 570, 580, 574, 617**

(option code: WR)



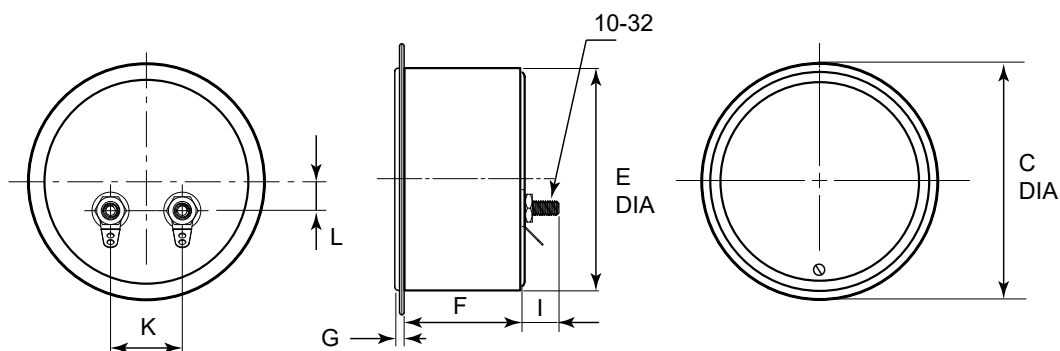
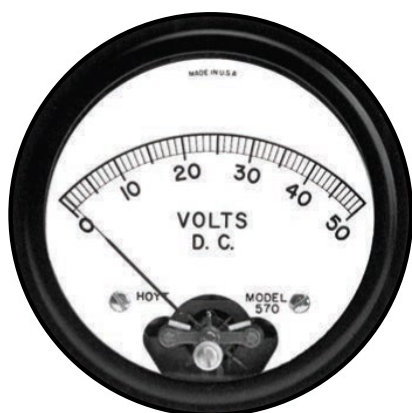
Models	A	E	F	G	H	I	J	K	L	M
17/L / 560	3.22	2.50	1.44	0.12	1.14	0.50	0.48	0.97	0.12	0.14
570 / 580	3.66	3.00	1.59	0.11	1.69	0.50	0.48	0.97	0.39	0.13
574 / 617	4.50	3.75	1.39	0.16	2.06	0.50	0.48	0.97	0.69	0.14

Dimensions

Narrow Rim Metal

Models: 17/L, 560, 570, 580

(option code: NR)



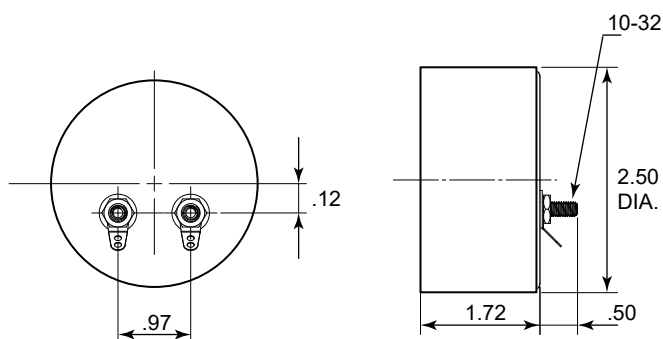
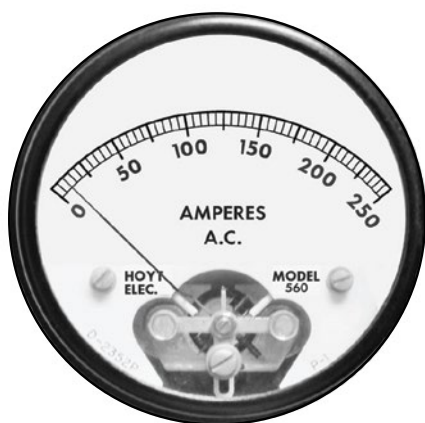
NOTE: Use U-Clamp to mount

Models	C	E	F	G	H	I	J	K	L
17/L / 560	2.81	2.50	1.44	0.12	1.14	0.50	0.48	0.97	0.12
570 / 580	3.31	3.00	1.59	0.11	1.69	0.50	0.48	0.97	0.39

Straight side Metal Case

Models: 17/L, 560

(option code: SS)



Metal Case options



Wide Rim Metal



Narrow Rim Metal



Straight side
Metal Case
with semi-mask

Models	Wide Rim	Narrow Rim	Straight side metal case
17/L / 560	X	X	X
570 / 580	X	X	
574 / 617	X		

Industrial Ruggedized Meters

Features

Industrial Ruggedized Series was designed to meet industrial requirements where rugged metal cases with glass fronts provide long service under adverse conditions.

High current ammeter ranges with external shunt are available, as are special or non-standard ranges.

They are dustproof and waterproof, meeting NEMA4 and ANSI C39.1 specifications and performance standards.

Special Dials are available with the following options: Additional Colors, Scales, Special Legends, Logo and Mirrors.

Available with or without illumination..

DC Ranges: Microammeters, Milliammeters, Ammeters, Millivoltmeters and Voltmeters.

AC Ranges: Milliammeters, Ammeters and Voltmeters.

2.5"
17/3MM DC Moving Coil
552MM AC Repulsion

3.5"
6351 DC Moving Coil
6352 AC Repulsion

Specifications

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 applications; 20% for six hours.

±2% full scale value.

Accuracy:

Resistance:

±20%.

Dials:

90 and 100 degree arc, black lettering on white background.

Pointer:

Knife Edge.

Movement:

Pivot and Jewel, Iron Vane or Taut Band.

Mounting:

Surface mount.

Case:

Brass with Sealing Gaskets.

Operating Temperature: -50°F to 150°F (-45.5°C to 65.5°C).

Relative Humidity: 20% to 80%RH (Nominal Use).

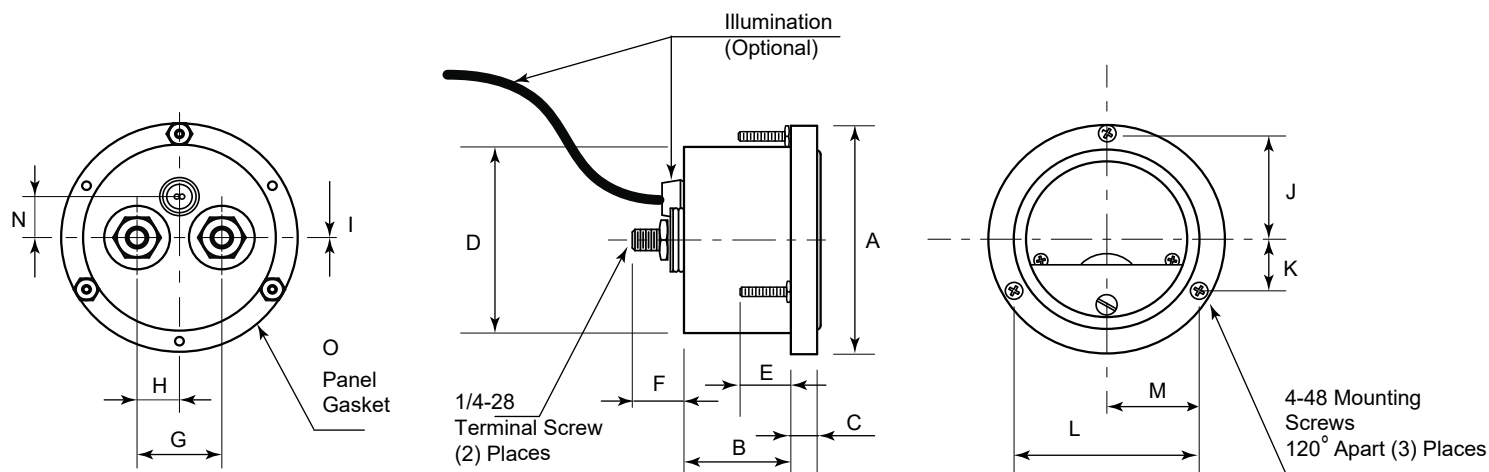
Meter Approvals: ANSI C39.1, NEMA4, RoHS, REACH.

Origin:

Made in USA.

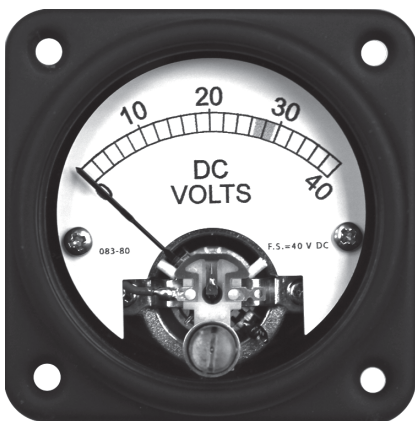


Dimensions



Models	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
17/3MM / 552MM	2.70	1.22	.29	2.20	.58	.59	.97	.48	0.00	1.83	.61	2.113	1.056	.484	N/A
6351 / 6352	3.53	1.12	.38	2.50	.58	.84	.97	.48	+.25	1.58	.79	2.73	1.36	.800	3.65

2.5" 635MM AC / DC

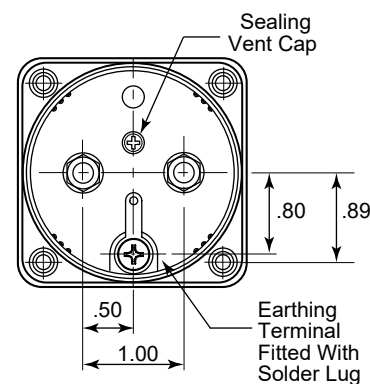
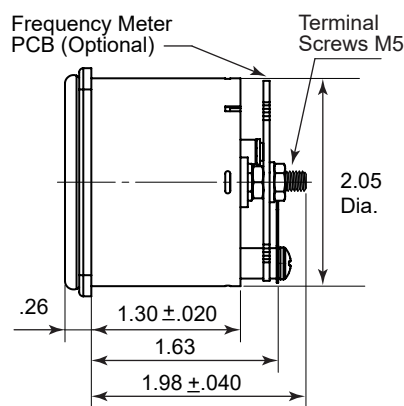
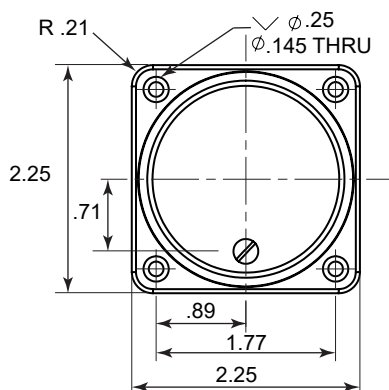


Specifications

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 applications; 20% for six hours.
Accuracy:	±2% full scale value.
Resistance:	±20%.
Dials:	100 degree arc, black lettering on white background.
Pointer:	Knife Edge.
Movement:	Pivot and Jewel, Taut band or Iron Vane.
Mounting:	Surface mount.
Case:	Mild steel case, glass lens, ruggedized and gasket sealed.
Operating Temperature:	-50°F to 150°F (-45.5°C to 65.5°C).
Meter Approvals:	ANSI C39.1, NEMA4, RoHS, REACH.
Origin:	Made in USA.

Dimensions

Recommended
Panel Cut-out:
Ø 2.125".



3.5" 582MM DC Moving Coil 584MM AC Repulsion

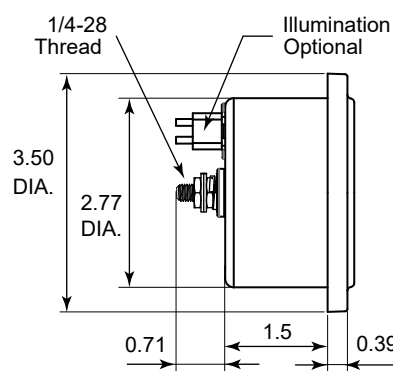
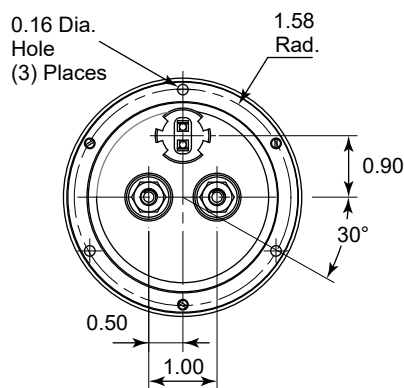


Specifications

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 applications; 20% for six hours.
Accuracy:	±2% full scale value.
Resistance:	±20%.
Dials:	90 degree arc, black lettering on white background.
Pointer:	Knife Edge.
Movement:	Pivot and Jewel, Taut band or Iron Vane.
Mounting:	Surface mount.
Case:	Steel case.
Operating Temperature:	-55°F to 158°F (-48°C to 70°C).
Meter Approvals:	ANSI C39.1, NEMA4, RoHS, REACH.
Origin:	Made in USA.

Dimensions

Recommended
Panel Cut-out:
Ø 2-13/16".

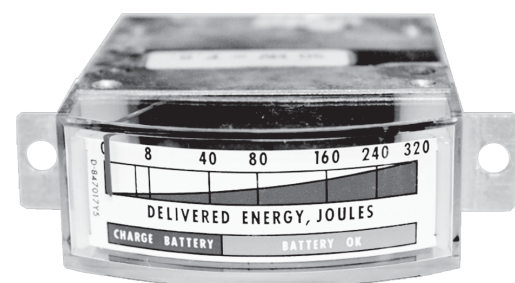


2.5" 685 DC

2.5" 685R AC

Features

The 685 Series Edgewise Analog Meters have 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. Can be ordered in single, dual, or triple stack versions. Supplied bezel and mounting hardware enable quick, trouble-free installation. Special resistance, accuracy, pointers and ranges available.



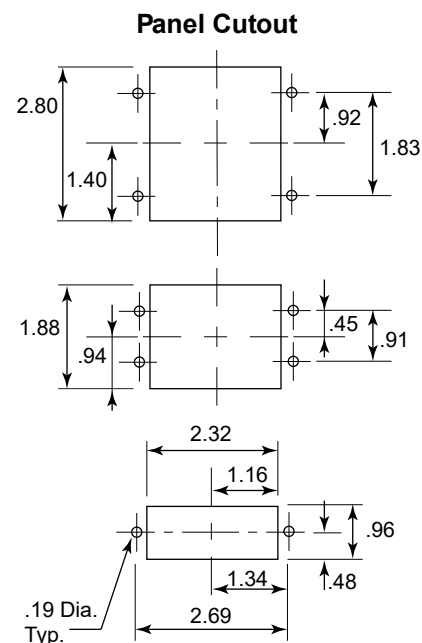
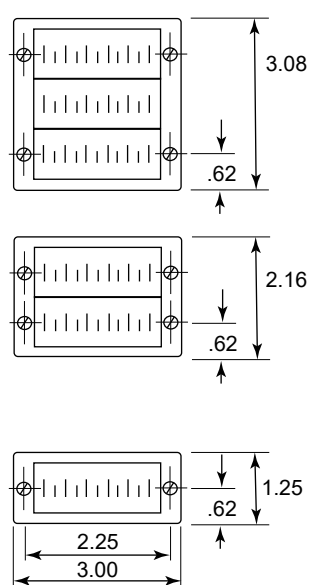
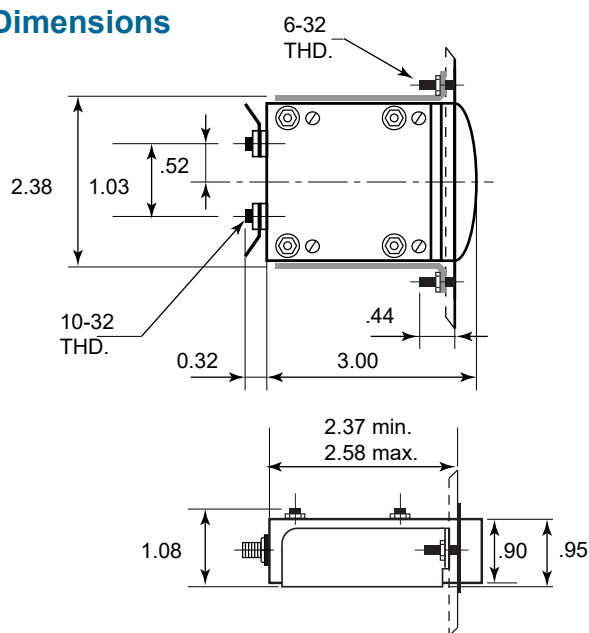
DC Ranges: Microammeters, Milliammeters, Ammeters, Millivoltmeters and Voltmeters.

AC Ranges: Milliammeters, Ammeters and Voltmeters.

Specifications

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 applications; 20% for six hours.
Accuracy:	±2% full scale value.
Resistance:	±15%.
Dials:	Black lettering on white background.
Pointer:	Knife Edge.
Movement:	Pivot and Jewel.
Mounting:	Panel Mount with Bezel (Horizontal/Vertical).
Case:	Lexan.
Operating Temperature:	32°F to 104°F (0°C to 40°C).
Storage Temperature:	-4°F to 131°F (-20°C to 55°C).
Relative Humidity:	20% to 80%RH (Nominal Use).
Meter Approvals:	ANSI C39.1.
Origin:	Made in USA.

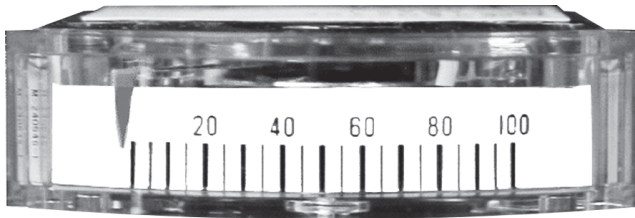
Dimensions



Bezel Mount Kit

for the 685-1 (Single), 685-2 (Dual Stack), 685-3 (Triple Stack) has a cold rolled steel finish in black.





2.5"
TEM-42E DC
TEM-45E DC

Features

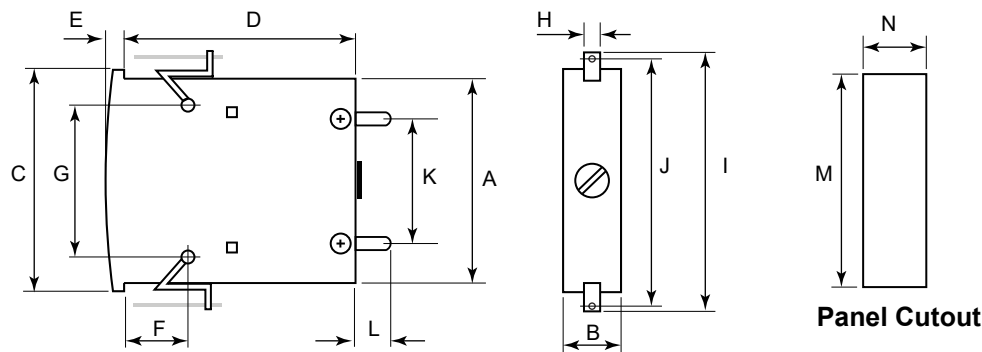
The TEM Series compact Edgewise Panel Meters have been designed without any barrel projection. They require a minimum of panel space and have an attractive appearance. Available in DC only, this unique D'Arsonal mechanism provides 2% accuracy with either vertical or horizontal mounting. Special resistance, accuracy, pointers and ranges available.

DC Ranges: Microammeters, Milliammeters, Ammeters, Millivoltmeters and Voltmeters.

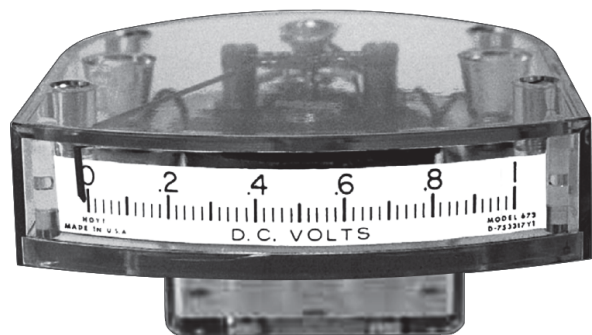
Specifications

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 applications; 20% for six hours.
Accuracy:	±2% full scale value.
Resistance:	±15%.
Dials:	Black lettering on white background.
Pointer:	Knife Edge.
Movement:	Pivot and Jewel.
Mounting:	Panel Mount with Bezel (Horizontal/Vertical).
Case:	Lexan.
Operating Temperature:	32°F to 104°F (0°C to 40°C).
Storage Temperature:	-4°F to 131°F (-20°C to 55°C).
Relative Humidity:	20% to 80%RH (Nominal Use).
Meter Approvals:	ANSI C39.1.

Dimensions



Models	A	B	C	D	E	F	G	H	I	J	K	L	M	N
TEM-42E	1.68	0.51	1.81	1.91	0.35	0.35	1.42	0.28	2.28	2.05	1.10	0.39max	+0.005, -0.001, 1.72	+0.005, -0.001, .55
TEM-45E	1.77	0.50	1.93	2.20	0.24	0.51	1.46	0.24	2.36	2.13	1.10	0.39max	+0.005, -0.001, 1.81	+0.005, -0.001, .54



2.5" 673/S DC

Features

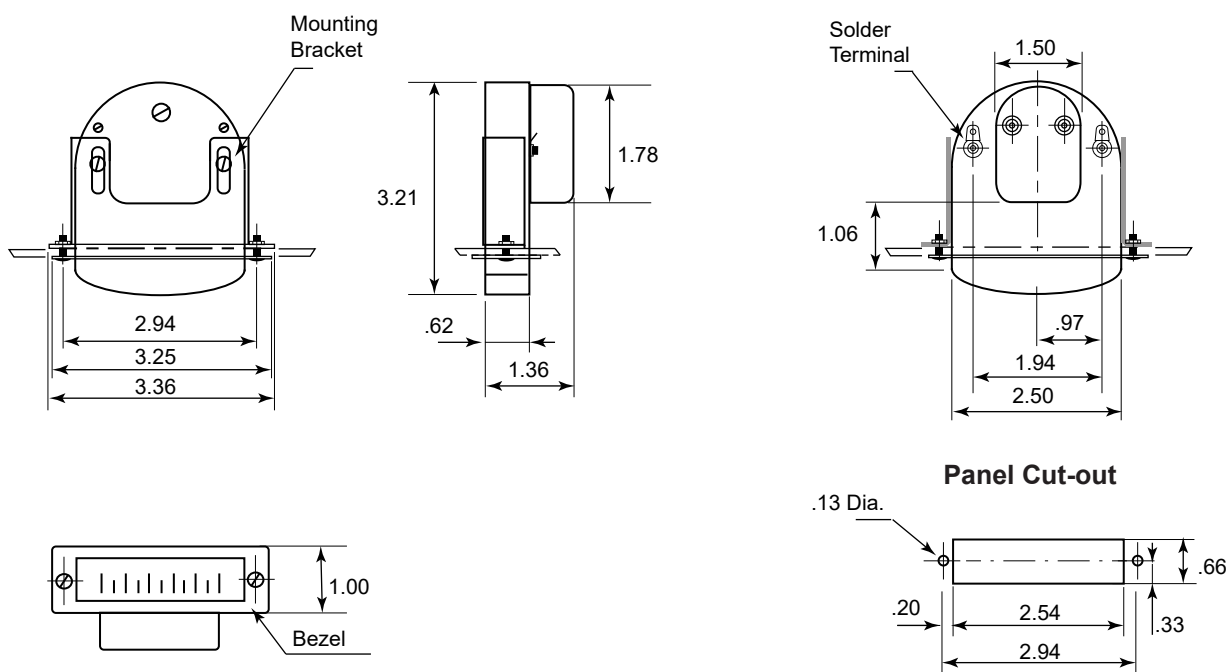
Hoyt 673/S meters have high visibility scales and straightforward design that make them especially suited to small, limited space, rack mounted power supplies and allied equipment. 673/S have a small projection required to enclose the D'Arsonvale movement. Supplied bezel and mounting hardware enable quick, trouble-free installation. Special resistance, accuracy, pointers and ranges available.

DC Ranges: Microammeters, Milliammeters, Ammeters, Millivoltmeters and Voltmeters.

Specifications

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 applications; 20% for six hours.
Accuracy:	±2% full scale value.
Resistance:	±15%.
Dials:	Black lettering on white background.
Pointer:	Knife Edge.
Movement:	Pivot and Jewel.
Mounting:	Panel Mount with Bezel (Horizontal/Vertical).
Case:	Lexan.
Operating Temperature:	32°F to 104°F (0°C to 40°C).
Storage Temperature:	-4°F to 131°F (-20°C to 55°C).
Relative Humidity:	20% to 80%RH (Nominal Use).
Meter Approvals:	ANSI C39.1.
Origin:	Made in USA.

Dimensions



1.5" H6286 DC



Features

Hoyt H6286 meters have high visibility scales and straightforward design that make them especially suited to small, limited space. Available with horizontal or vertical scales. Bezel and mounting hardware is Included with meter. Special resistance, accuracy, pointers and ranges available.

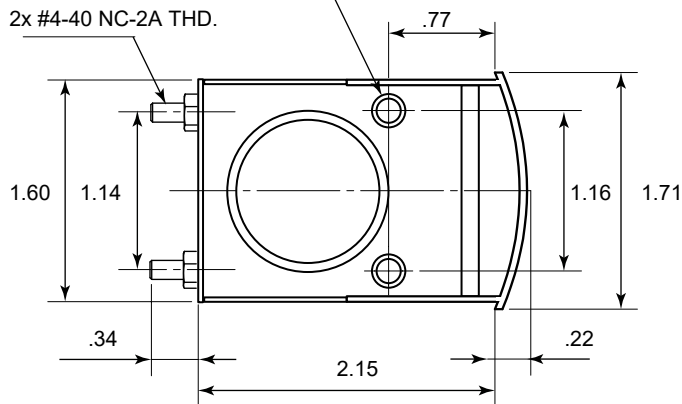
DC Ranges: Microammeters, Milliammeters, Ammeters, Millivoltmeters and Voltmeters.

Specifications

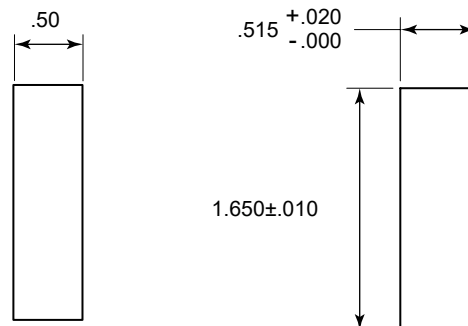
Overload:	Voltmeters (AC and DC): 50% momentary 20% sustained. Ammeters (AC and DC) momentary: 10 times the rated current for 10 consecutive intervals of .5 seconds with a 1 minute interval between successive applications; 20% for six hours.
Accuracy:	±2% full scale value.
Resistance:	±15%.
Dials:	Black lettering on white background.
Pointer:	Red Lance.
Movement:	Taut Band.
Mounting:	Panel Mount.
Case:	Lexan.
Operating Temperature:	32°F to 104°F (0°C to 40°C).
Storage Temperature:	-4°F to 131°F (-20°C to 55°C).
Relative Humidity:	20% to 80%RH (Nominal Use).
Meter Approvals:	ANSI C39.1.

Dimensions

Through holes for stacked instruments
To be bolted together Ø.14 Thru



Panel Cut Out



Switchboard Meters

HLS-80, HLS-110 Analog Switchboard Meters

Easy to read: long-scales and pointer-indications can easily be read from a distance.

Specifications

Full Scale Deflection: 250°.
Accuracy: Class 1.5.
Scale Length: for HLS-80: 5.5in (140mm); for HLS-110: 7.2in (183mm).
Case and Composition: Acrylic resin cover, plastic body and terminal, Four studs mounting.
Color: White scale plate, black terminal plate, black meter body.
Pointer: Sword-type in black color.

AC/DC Ammeters



For ranges higher than 5A AC,
use external Current Transformer with a 5A AC Ammeter.

For ranges higher than 20A DC,
use external shunt with a 50mV DC Ammeter.



DC Ammeter Moving Coil Type		AC Ammeter				
Direct connection Internal resistance 500Ω	Connection to shunt Burden: 50mV	Direct connection		Connection CT		
Measuring range	Measuring range	Measuring range	Extended range	CT ratio	Measuring range	Extended range
0-1mA	0-1A	0-1A	0-X-2X	10/5	0-10A	0-X-2X
0-1.5mA	0-15A	0-3A	0-1-2A	15/5	0-15A	0-10-20A
0-2mA	0-7.5A	0-5A	0-3-6A	20/5	0-20A	0-15-30A
0-3mA	0-20A	0-10A	0-5-10A	25/5	0-25A	0-20-40A
0-5mA	0-10A	0-15A	0-10-20A	30/5	0-30A	0-25-50A
0-7.5mA		0-20A	0-X-3X	40/5	0-40A	0-30-60A
0-10mA			0-1-3A	50/5	0-50A	0-40-80A
0-15mA			0-3-9A	60/5	0-60A	0-50-100A
0-20mA			0-5-15A	75/5	0-75A	0-60-120A
0-30mA				80/5	0-80A	0-75-150A
0-40mA				100/5	0-100A	0-80-160A
0-50mA				150/5	0-150A	0-100-200A
0-70mA				200/5	0-200A	0-150-300A
0-100mA				300/5	0-300A	0-200-400A
0-150mA				400/5	0-400A	0-300-600A
0-200mA				500/5	0-500A	0-400-800A
0-300mA				600/5	0-600A	0-500-1000A
0-500mA				750/5	0-750A	0-600-1200A
0-750mA				800/5	0-800A	0-750-1500A
0-1A				1000/5	0-1000A	0-800-1600A
0-1.5A				1500/5	0-1500A	0-1000-2000A
0-2A				2000/5	0-2000A	0-1500-3000A
0-3A				3000/5	0-3000A	0-2000-4000A
0-5A						0-3000-6000A
0-7.5A						0-X-3X
0-10A						0-X-5X.
0-15A						
0-20A						
				Special Scales upon request		

AC/DC Volt Meters



For ranges higher than 300V DC, use external Volt Divider with a 1mA Voltmeter.
For ranges higher than 600V AC, use external Potential Transformer with a 150V AC Voltmeter.

DC Voltmeter	AC Voltmeter		
Direct connection	Direct connection	Connection to PT	
Measuring range	Measuring range	PT ratio	Measuring range
0-10V	0-10V	220/110V	0-300V
0-30V	0-50V	440/110V	0-600V
0-50V	0-75V	3300/110V	0-4.5kV
0-75V	0-100V	6600/110V	0-9kV
0-100V	0-150V	13200/110V	0-18kV
0-150V	0-300V	22000/110V	0-30kV
0-300V	0-500V	30000/110V	0-45kV
0-500V	0-600V		
0-600V			

Frequency Meters



Scale (Hz)	Voltage	Center Frequency
45~55	120V	50Hz
45~55	240V	50Hz
45~65	120V	55Hz
45~65	240V	55Hz
55~65	120V	60Hz
55~65	240V	60Hz

Watt and VAR Meters



	Rating (Current)	Rating (Voltage)	Accuracy
1 Phase / 2-wire, 50 or 60 Hz	1A 5A	120V (L-N) 240V (L-N)	± 1.5% F.S.
3 Phase / 3-wire, 50 or 60 Hz	1A 5A	120V (L-N) 240V (L-N)	± 1.5% F.S.
3 Phase / 4-wire, 50 or 60 Hz	1A 5A	208V / $\sqrt{3}$ (120V L-N) 208V L-L) 415V / $\sqrt{3}$ (240V L-N) 415V L-L)	± 1.5% F.S.

Power Factor Meters



	Rating (Current)	Rating (Voltage)	Accuracy
1 Phase / 2-wire, 50 or 60 Hz	5A	120V (L-N) 240V (L-N)	5% F.S.
3 Phase / 3-wire, 50 or 60 Hz	5A	120V (L-N) 240V (L-N)	5% F.S.
3 Phase / 4-wire, 50 or 60 Hz	5A	208V / $\sqrt{3}$ (120V L-N) 208V L-L) 415V / $\sqrt{3}$ (240V L-N) 415V L-L)	5% F.S.



HLS-110DI Combo Switchboard Meter

Hoyt TWO-VUE switchboard meters are combination Digital/Analog indicating instruments. They can be configured to accept VAC, AAC, VDC, or ADC input. Both the digital and analog displays can be modified to represent virtually any scaling or engineering units as required.

Analog and digital display to provide the ultimate in readability of power and control parameters.

Drop-in replacement for upgrade of existing controls and switchgear panels.

Rugged switchboard style case and IP54 rated cover.

High-intensity LED digital displays with high reliability analog movements.

Specifications

Scaling:	Scaling options are limited only in that there can be no offset zero scaling for the digital display.
Overload:	DC Voltage inputs: x1.2 continuous or 700V max, x1.5 for 10 seconds. DC Current: x1.2 continuous, x1.5 for 10 seconds.
Burden:	VDC: < 0.5 W @ 600 VDC ADC: < 0.5 W @ 1 ADC
Isolation Test Voltage:	2 KV for 60 seconds aux. power to input, aux. power to case, input to case.
Power supply	120V ±15% standard.
Voltage:	optional 240V ±15%, 125 VDC ± 15 VDC, 24 VDC ± 6 VDC, 48 VDC ± 12 VDC.
Frequency:	50/60 Hz ± 2 Hz (48 Hz to 62 Hz) Burden: < 3.5 VA.
Display Analog	Pivot and Jewel, damped moving element with 220° deflection. 6.35" total scale length. White scale with black markings and black pointer (standard). Response time less than 2.5 seconds (0-90%). Center and offset zero are available. The Display may be scaled to any scaling ratio or to represent any engineering units as required. No external zero regulator. Mechanical zero adjust with special tool. Internal adjustment for electrical zero and FS.
Optional features:	Alternate black scale plates, custom logos, colored lines, segments or scales, white or Day-glo orange pointer.
Display Digital	3 1/2 digit, 7 segment display 0.56" (14.2mm) digit height. Red or green LED. Negative polarity indicator. Selectable decimal point settings. Update rate is 2.5 times per second. Response time less than 1 second (90%).
Accuracy:	Reference conditions 25° C. Analog: ±1% of full scale deflection. Digital: AC ±0.1% of reading ±3 counts DC ± 2 counts.
Temperature Coefficient:	200 ppm/°C of full scale for digital display. Less than 1% additional analog display error over operating temperature range.
Long Term Stability:	Analog: ±0.8%. Digital: ±2 counts. Warm Up time: 10 minutes.
Cover:	Polycarbonate UL94V0 rated cover and window.
Terminal Plate:	Phenol Resin.
Enclosure Rating:	IP54 (Dust Proof/Splash Proof).
Weight:	< 2.5 lbs (1134g) including all mounting and connection hardware.
Operating Temperature:	0° to 60°C, 32° to 140°F.
Storage Temperature:	-20° to 70°C, -4° to 158°F.
Humidity:	90% non-condensing relative humidity @ 40°C, 104°F.
Isolation Voltage:	2kV for 1 minute between input and case, input and aux. power, aux. power and case.
Vibration:	8-42 Hz, 0.1 to 2 g, 3 axis.
Shock:	50 g @ 7 ms for 10 shocks, 3 axis.
Calibration:	Recommended calibration interval is 2 years.

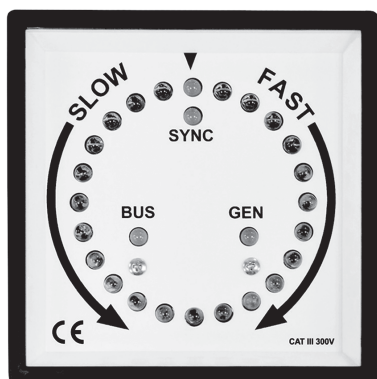
Digital Synchrosopes

Features

Digital Synchroscope Panel Meters are ideal for synchronizing the phase angle and frequency between two electrical networks.

- Initially, SYNC, BUS and GEN LED's are lit Red and the outer ring will show a single Red traveling LED.
- When voltage and phase angle are unmatched the outer ring LED rotates according to the system phase difference.
- When the BUS voltage is at $\pm 10\%$ of nominal system voltage, the BUS LED will change from Red to Green signifying proper BUS voltage has been established. When the GEN voltage is at $\pm 10\%$ of nominal system voltage the GEN LED will change from Red to Green signifying proper GEN voltage has been established.
- Finally, once all system voltages match and the systems are synchronized, the SYNC LED will change from Red to Green. All LED's are now Green when the systems are synchronized.

Nominal Input Voltage	110V AC	120V AC	240V AC
Overload	1.25 \times Nominal voltage		
Frequency Range	40~70Hz		
Scale	SLOW / FAST		
Pointer LED	15 degrees / LED		
BUS LED (Bi-colored)	Green: 100V-121V AC Red: <100V or >121V AC	Green: 108V-132V AC Red: <108V or >132V AC	Green: 216V-264V AC Red: <216 or >264V AC
GEN LED (Bi-colored)			
SYNK LED (Bi-colored)	Green: "GEN" and "BUS" are synchronized Red: "GEN" and "BUS" are not synchronized		



HLS-96 SYNC

Specifications

- Input voltage: 110V AC, 120V AC or 240V AC.
- Square shape panel 96 x 96mm.
- 3 bi-colored LED indicators for "SYNC", "GEN" and "BUS".
- 24 LEDs in a circle display the phase angle and the frequency differences between 2 networks.
- 360° indication.
- 12 o'clock position LED is bi-colored.
- PC window, ABS resin frame, PC case.



HLS-110 SYNC

Specifications

- Input Voltage : 110V AC, 120V AC or 240V AC.
- Standard 4.5-inch switchboard case.
- Front panel mount.
- 3 bi-colored LED indicators for "SYNC", "GEN" and "BUS".
- 24 LEDs in a circle display the phase angle and the frequency differences between 2 networks.
- 360° LED indication.
- 12 o'clock position LED is bi-colored.

Analog Synchrosopes

Features

Analog Synchroscope Panel Meters are ideal for synchronizing the phase angle and frequency between two electrical networks.

A synchroscope indicates the synchronization point (scale center), when the frequencies and the phases at a generator side and a bus line side are matched.

- If the frequencies of both side are equal, the position at which the needle is stationary indicates the phase difference between the two.

- When the generator side (starting side) frequency is FG and the bus line side (operating side) frequency is FB, the direction of rotation of the needle is as follows:

When $FG = FB$ The needle is stopped,

When $FG > FB$ The needle rotates in the FAST direction,

When $FG < FB$ The needle rotates in the SLOW direction.

Nominal Input Voltage	120V AC	240V AC
Frequency Range	50HZ or 60Hz	
Scale	SLOW / FAST	
Indication:	Moving pointer	
Angle of rotation:	360°	



HLS-96A SYNC

Specifications

- Input voltage: 120V AC or 240V AC.
- Square shape panel 96 x 96mm.
- 360° indication.
- PC window, ABS resin frame, PC case.



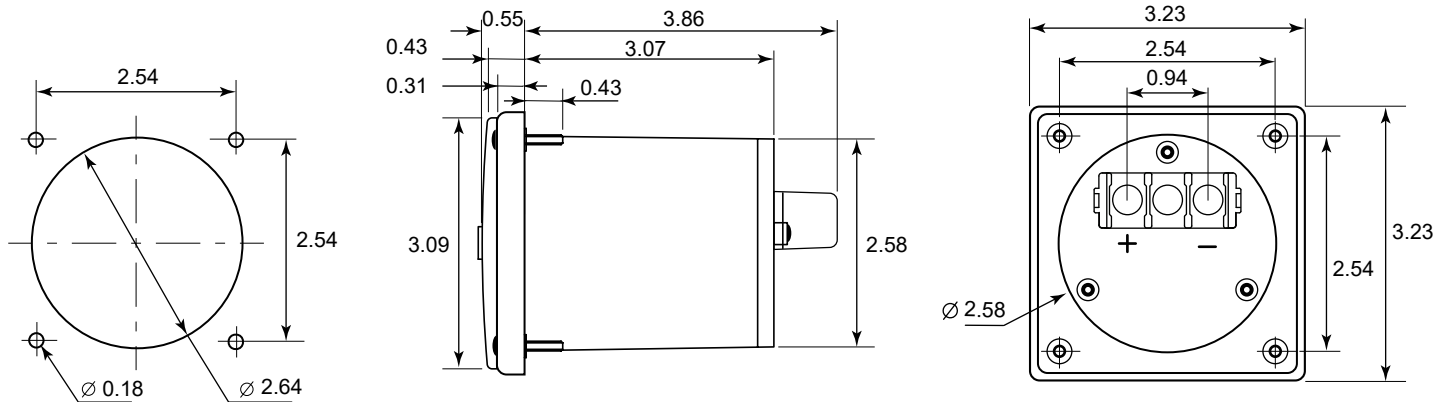
HLS-110A SYNC

Specifications

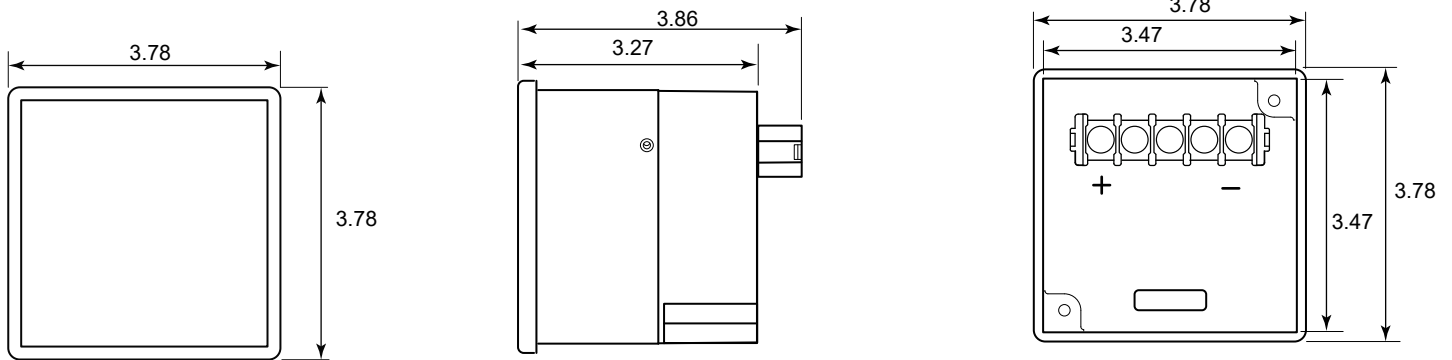
- Input voltage: 120V AC or 240V AC.
- Standard 4.5 inch switchboard.
- Front panel mount.
- 360° indication.
- Metal case.

Dimensions

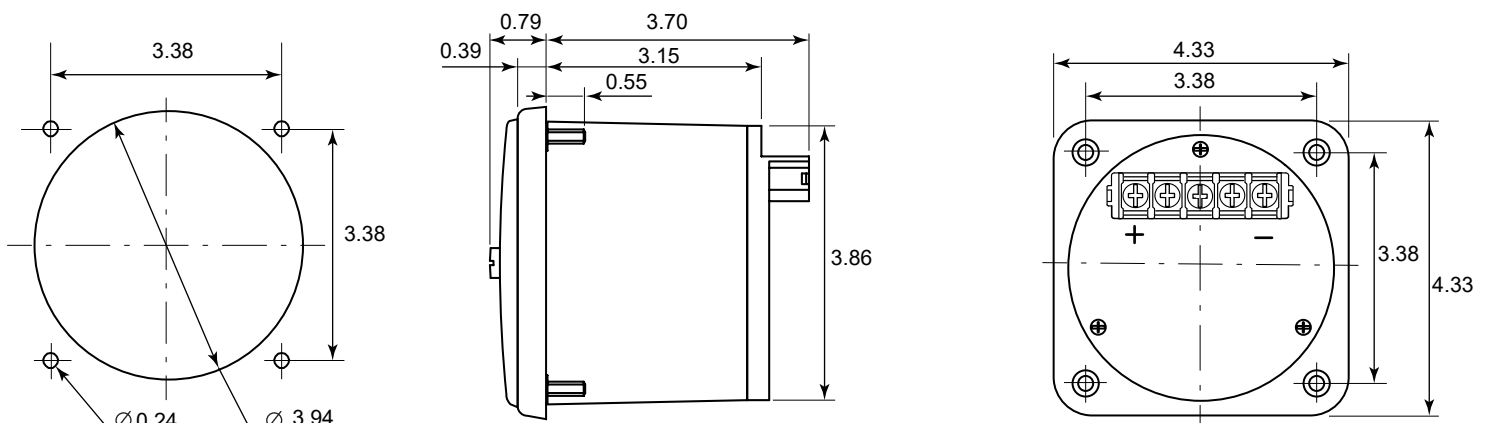
HLS-80



HLS-96



HLS-110



2"

Hoyt 629 Starter Current Indicator

Features

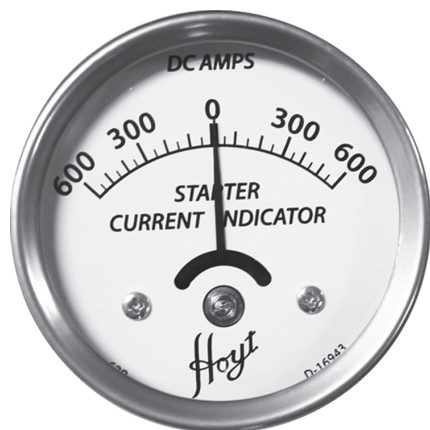
This Analog Inductive Starter Current Indicator has ample capacity for testing starters on most 12 volt vehicle systems.

It is very easy and safe to use, just place the meter direct over the wire. No direction connections are needed as it is using induction to take the measurement.

Special Dials are available with the following options:
Additional Colors, Scales, Special Legends, Logo and Mirrors.

Specifications

Accuracy:	±5% FS.
Range:	±600 Amps.
Wire Clamp:	0.5" Channel (0000 AWG and up).
Dials:	Calibrated from 0 to 600 on both sides of zero therefore permitting reading regardless of the cable polarity.
Movement:	Moving Magnet.
Case:	Steel.
Operating Temperature:	32°F to 104°F (0°C to 40°C).
Storage Temperature:	-4°F to 131°F (-20°C to 55°C).
Origin:	Made in USA.



2"

Hoyt 652 Induction Current Indicator

Features

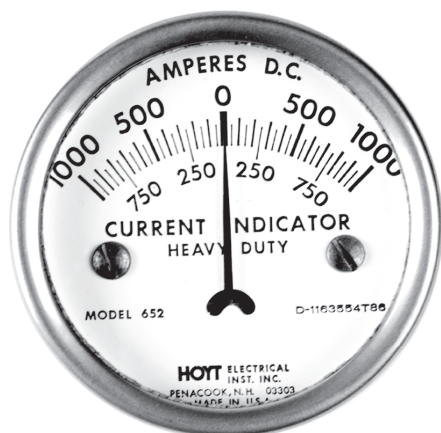
Low-cost Indicator for measuring approximate current drawn by starter of any engine. Also will indicate bad brushes in starter and condition of armature. Designed for diesel trucks and welders.

It is very easy and safe to use, just place the meter direct over the wire. No direction connections are needed as it is using induction to take the measurement.

Special Dials are available with the following options:
Additional Colors, Scales, Special Legends, Logo and Mirrors.

Specifications

Accuracy:	±5% FS.
Range:	±1000 Amps.
Wire Clamp:	0.5" Channel (0000 AWG and up).
Dials:	Calibrated from 0 to 1000 on both sides of zero therefore permitting reading regardless of the cable polarity.
Movement:	Moving Magnet.
Case:	Steel.
Operating Temperature:	32°F to 104°F (0°C to 40°C).
Storage Temperature:	-4°F to 131°F (-20°C to 55°C).
Origin:	Made in USA.



2"

Hoyt 764 Amp Alternator Current Indicator

Features

Tests the output of most vehicle alternators including truck generators. Since the meter is affected by magnetism, it should not be used near the alternator or generator.

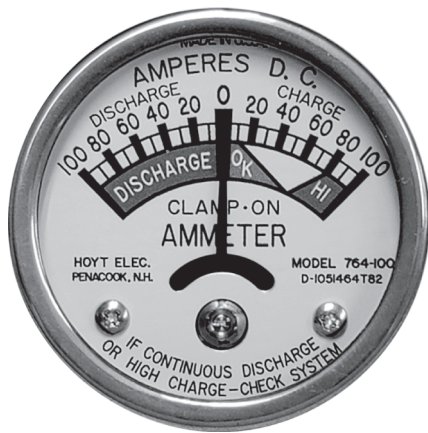
The metal channel on the rear of the meter is placed over the output of the wire.

It is very easy and safe to use, just place the meter direct over the wire. No direction connections are needed as it is using induction to take the measurement.

Special Dials are available with the following options:
Additional Colors, Scales, Special Legends, Logo and Mirrors.

Specifications

Accuracy:	±5% FS.
Range:	±100 Amps.
Wire Clamp:	0.5" Channel (0000 AWG and up).
Dials:	Calibrated from 0 to 100 amps on both sides of zero in 10 amp increments - this permits readings regardless of the direction of the current flow.
Movement:	Moving Magnet.
Case:	Steel.
Operating Temperature:	32°F to 104°F (0°C to 40°C).
Storage Temperature:	-4°F to 131°F (-20°C to 55°C).
Origin:	Made in USA.



2"

SG-1 Alternator-Starter-Battery Checker

Features

An Ideal checker for testing the battery, starter and alternator systems on any 12 volt vehicle.

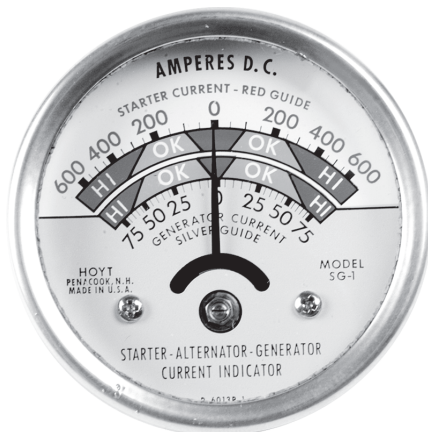
Small enough in size, it can be carried easily in a pocket.

Easy-to-read color dial, heavy duty leads and cigarette plug.

Special Dials are available with the following options:
Additional Colors, Scales, Special Legends, Logo and Mirrors.

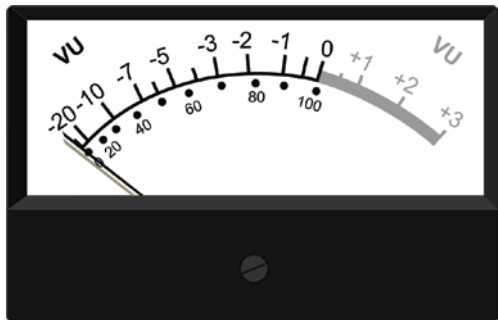
Specifications

Accuracy:	±5% FS.
Range:	±600 Amps.
Wire Clamp:	0.5" Channel (0000 AWG and up).
Movement:	Moving Magnet.
Case:	Steel Portable Case.
Operating Temperature:	32°F to 104°F (0°C to 40°C).
Storage Temperature:	-4°F to 131°F (-20°C to 55°C).
Origin:	Made in USA.



Features

The VU meters have become the universal standard level indicator for practically all audio frequency transmission systems. VU meters are for the measurement of sound or noise levels - including broadcast monitoring, use with public address of communication systems, and in all instances where volume level measurements are to be made. They are also being used for the measurement of noise level and other audio frequency energy where established dynamic characteristics of the instrument give a common result for measurements taken in different laboratories.



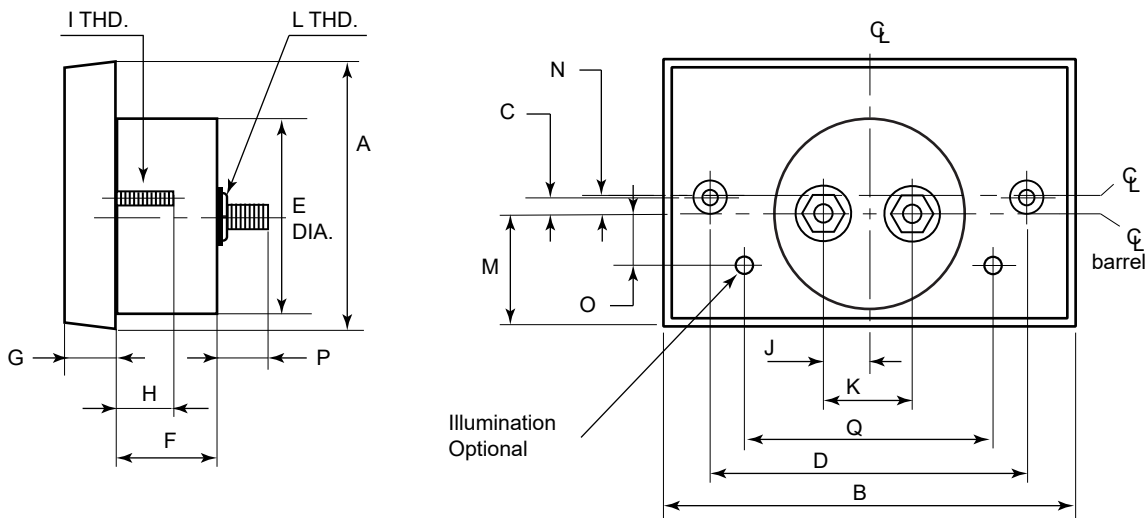
3" 2135 VU

4.5" 2145 VU

Specifications

Accuracy:	±2% full scale value.
Resistance:	Designed to read zero VU or 100% with 1.228 volts applied to the instrument and the 3600 ohm series resistance; this represents 4 DB above 1 milliwatt in 600 ohms.
Dials:	100 degree arc, black lettering on white or buff background.
Scale:	Type "A" reads "-20 to +3" in type on the top of the arc, with "0-100" on the bottom of the arc in type. Type "B" reads "0-100" in type on the top of the arc, with "-20 to +3" in type on the bottom of the arc.
Pointer:	Knife Edge.
Movement:	Pivot and Jewel.
Mounting:	Specify (S) Surface mount, (B) Bezel mount or (W) Window mount.
Case:	Lexan.
Operating Temperature:	32°F to 104°F (0°C to 40°C).
Storage Temperature:	-4°F to 131°F (-20°C to 55°C).
Relative Humidity:	20% to 80%RH (Nominal Use).
Meter Approvals:	ANSI C39.1.
Origin:	Made in USA.

Dimensions



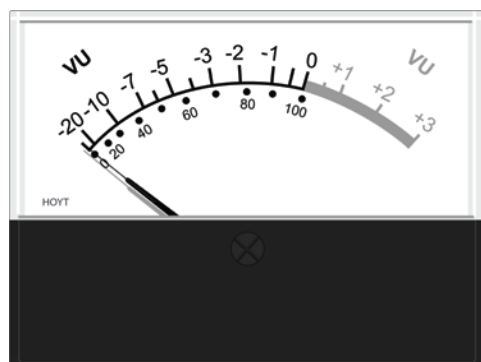
Models	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
2135VU	2.73	4.04	0.00	2.94	2.16	1.08	0.55	0.66	6-32	0.48	0.97	10-32	1.25	0.12	0.57	0.50	2.46
2145VU	2.96	4.56	0.20	3.50	2.16	1.08	0.55	0.66	6-32	0.48	0.97	10-32	1.25	0.24	0.57	0.50	2.75

1.5"
3115 VU

2.5"
3125 VU

3.5"
3135 VU

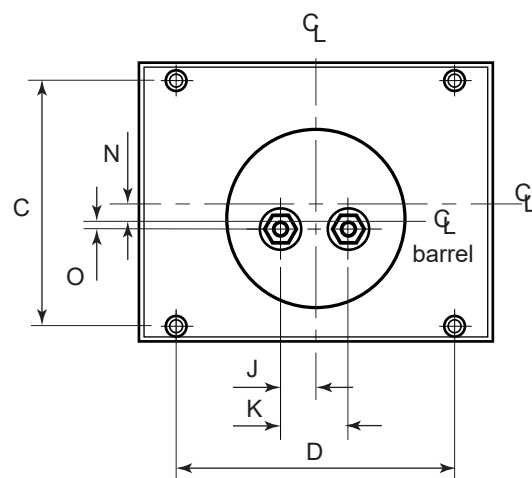
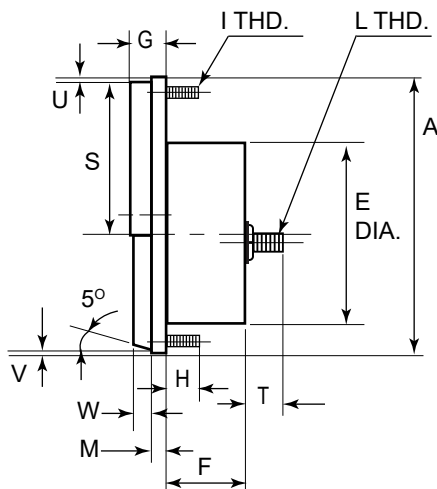
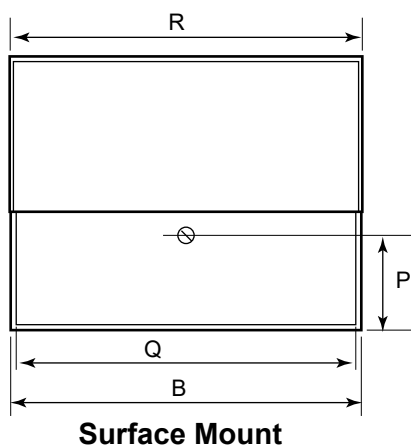
4.5"
3145 VU



Specifications

Accuracy:	±2% full scale value.
Resistance:	Designed to read zero VU or 100% with 1.228 volts applied to the instrument and the 3600 ohm series resistance; this represents 4 DB above 1 milliwatt in 600 ohms.
Dials:	100 degree arc, black lettering on white or buff background.
Scale:	Type "A" reads "-20 to +3" in type on the top of the arc, with "0-100" on the bottom of the arc in type. Type "B" reads "0-100" in type on the top of the arc, with "-20 to +3" in type on the bottom of the arc.
Pointer:	Knife Edge.
Movement:	Pivot and Jewel.
Mounting:	Specify (S) Surface mount, (B) Bezel mount or (W) Window mount.
Case:	Lexan.
Operating Temperature:	32°F to 104°F (0°C to 40°C).
Storage Temperature:	-4°F to 131°F (-20°C to 55°C).
Relative Humidity:	20% to 80%RH (Nominal Use).
Meter Approvals:	ANSI C39.1.
Origin:	Made in USA.

Dimensions



Models	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
3115VU	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	-.22	0.66	2.14	2.16	0.88	0.50	0.04	0.04	0.16
3125VU	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
3135VU	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
3145VU	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

2.5" 635 VU

3" 597 VU

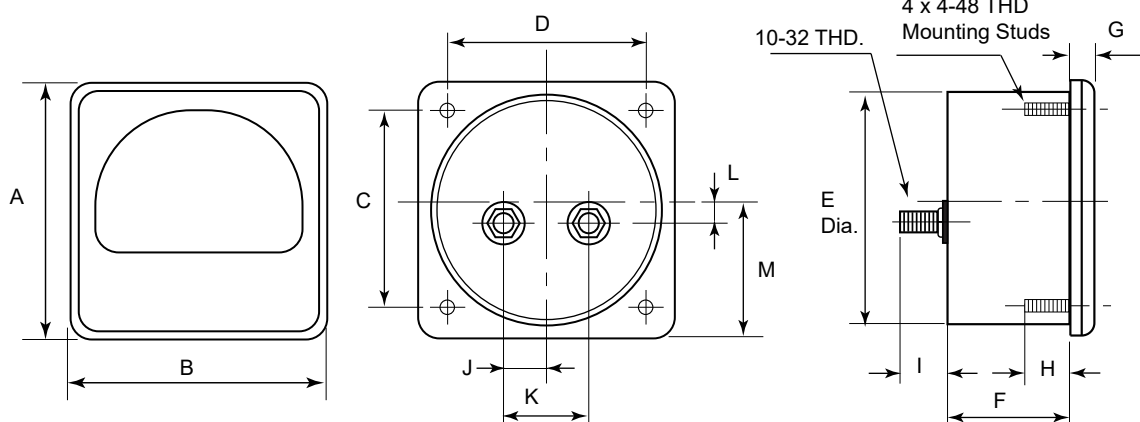
4.5" 647 VU

Specifications

Accuracy:	±2% full scale value.
Resistance:	Designed to read zero VU or 100% with 1.228 volts applied to the instrument and the 3600 ohm series resistance; this represents 4 DB above 1 milliwatt in 600 ohms.
Dials:	100 degree arc, black lettering on white or buff background.
Scale:	Type "A" Scale reads "-20 to +3" in type on the top of the arc, with "0-100" on the bottom of the arc in type. Type "B" Scale reads "0-100" in type on the top of the arc, with "-20 to +3" in type on the bottom of the arc.
Pointer:	Knife Edge.
Movement:	Pivot and Jewel.
Mounting:	Specify (F) Flush or (S) Surface Mount.
Case:	Phenolic and ABC.
Operating Temperature:	32°F to 104°F (0°C to 40°C).
Storage Temperature:	4°F to 131°F (-20°C to 55°C).
Relative Humidity:	20% to 80%RH (Nominal Use).
Meter Approvals:	ANSI C39.1.
Origin:	Made in USA.

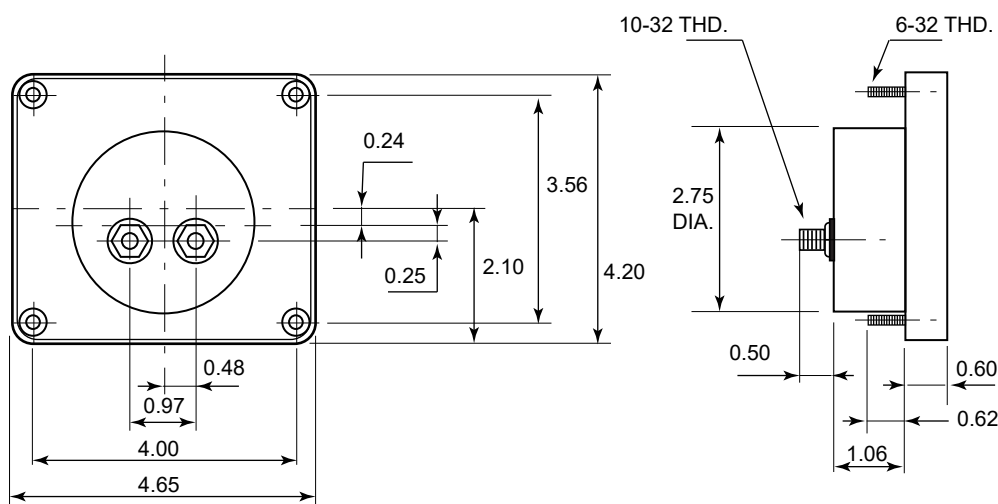
Dimensions

2.5" 635 VU 3" 597 VU



Models	A	B	C	D	E	F	G	H	I	J	K	L	M
635 VU	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 VU	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

4.5" 647VU



2.5" 17/3 VU

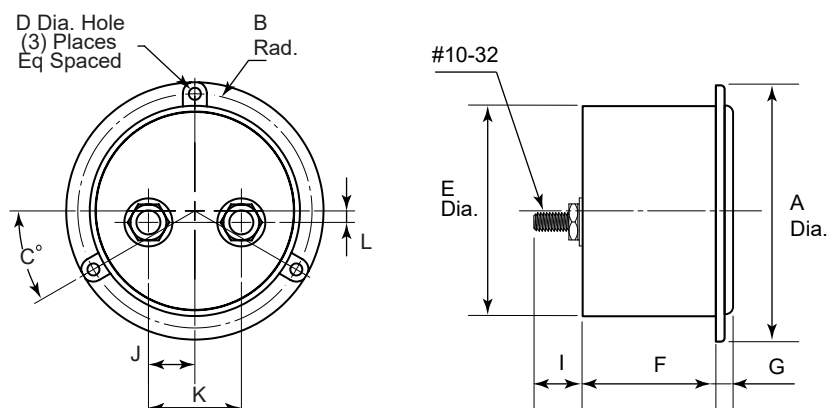
3.5" 582 VU



Specifications

Accuracy:	±2% full scale value.
Resistance:	Designed to read zero VU or 100% with 1.228 volts applied to the instrument and the 3600 ohm series resistance; this represents 4 DB above 1 milliwatt in 600 ohms.
Dials:	100 degree arc, black lettering on white or buff background.
Scale:	Type "A" Scale reads "-20 to +3" in type on the top of the arc, with "0-100" on the bottom of the arc in type. Type "B" Scale reads "0-100" in type on the top of the arc, with "-20 to +3" in type on the bottom of the arc.
Pointer:	Knife Edge.
Movement:	Pivot and Jewel.
Mounting:	Surface mount.
Case:	ABS.
Operating Temperature:	32°F to 104°F (0°C to 40°C).
Storage Temperature:	-4°F to 131°F (-20°C to 55°C).
Relative Humidity:	20% to 80%RH (Nominal Use).
Meter Approvals:	ANSI C39.1.
Origin:	Made in USA.

Dimensions



Models	A	B	C	D	E	F	G	H	I	J	K	L
17/3 VU	2.69	1.22	30	0.12	2.20	1.38	0.20	10-32	0.50	0.48	0.97	0.00
582 VU	3.50	1.58	30	0.14	2.75	1.39	0.26	10-32	0.50	0.48	0.97	0.25

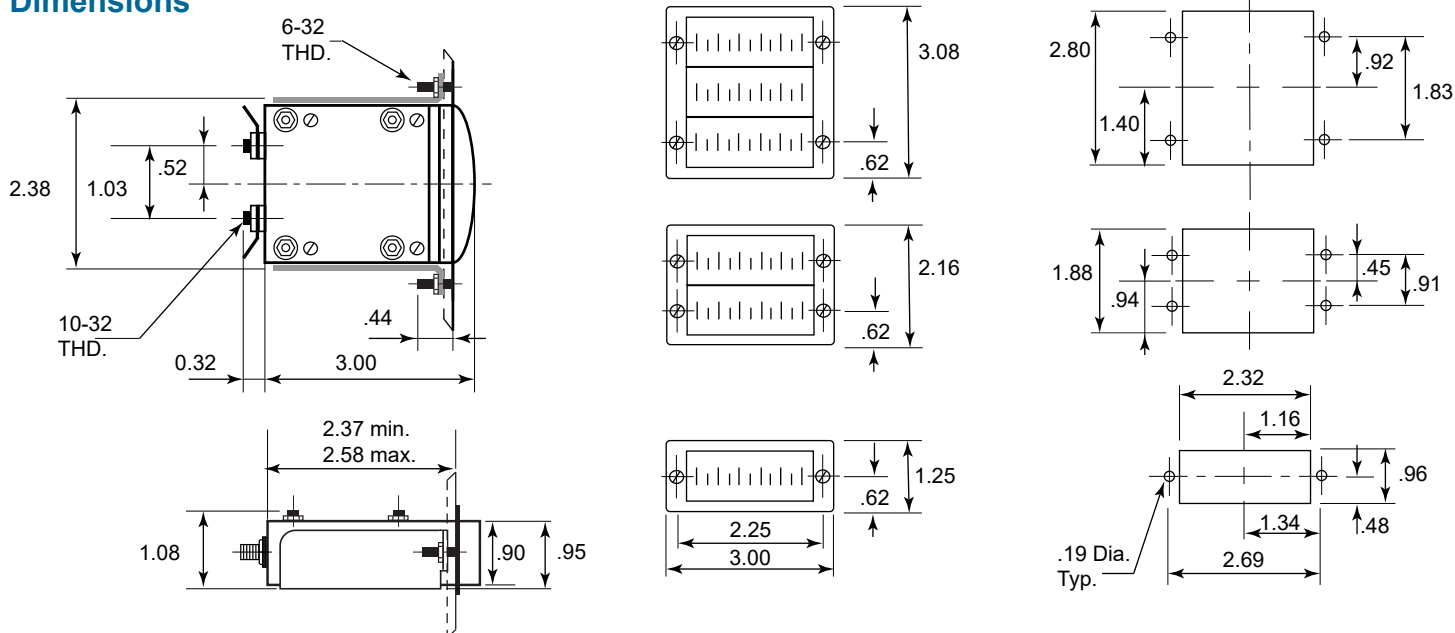
2.5" 685 VU



Specifications

Accuracy:	±2% full scale value.
Resistance:	Designed to read zero VU or 100% with 1.228 volts applied to the instrument and the 3600 ohm series resistance; this represents 4 DB above 1 milliwatt in 600 ohms.
Dials:	100 degree arc, black lettering on white or buff background.
Scale:	Type "A" Scale reads "-20 to +3" in type on the top of the arc, with "0-100" on the bottom of the arc in type. Type "B" Scale reads "0-100" in type on the top of the arc, with "-20 to +3" in type on the bottom of the arc.
Pointer:	Knife Edge.
Movement:	Pivot and Jewel.
Mounting:	Panel Mount with Bezel (Horizontal/Vertical).
Case:	Lexan.
Operating Temperature:	32°F to 104°F (0°C to 40°C).
Storage Temperature:	-4°F to 131°F (-20°C to 55°C).
Relative Humidity:	20% to 80%RH (Nominal Use).
Meter Approvals:	ANSI C39.1.
Origin:	Made in USA.

Dimensions



Bezel Mount Kit

for the 685-1 (Single), 685-2 (Dual Stack), 685-3 (Triple Stack) has a cold rolled steel finish in black.



2.5" 17/3MM-HRD

3.5" 582MM-HRD



Features

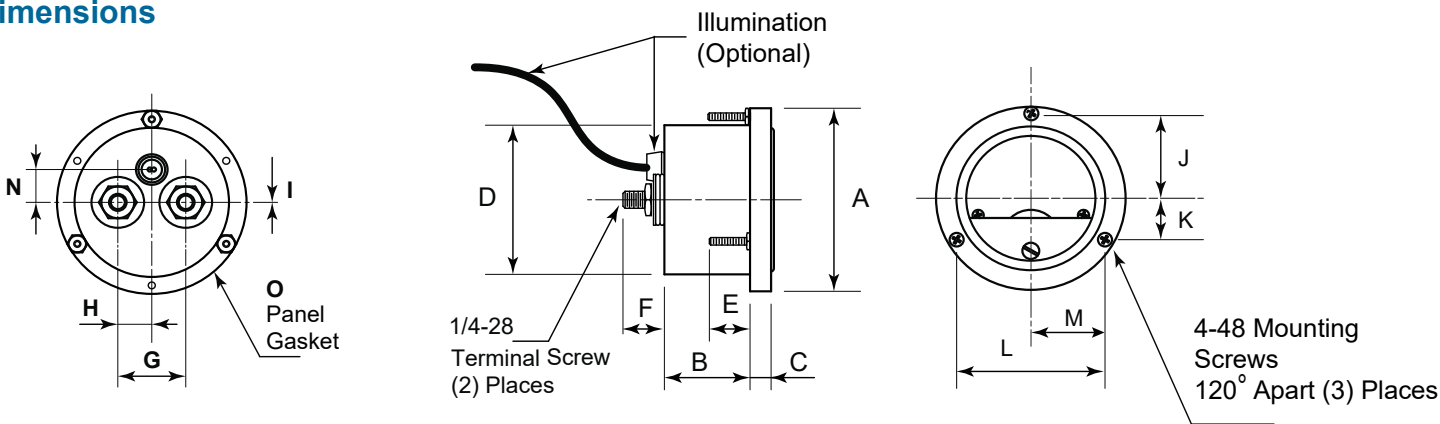
The Hoyt LCD Digital Hour Meters are designed for extreme duty applications where a high degree of resistance to the environment is required. Solid state electronic drive circuitry provides long life with no motor and less moving parts. Electronic actuation assures accuracy by eliminating delicate springs and mechanical clock mechanisms that can be affected by vibration and temperature.

Special Dials are available with the following options: Additional Colors, Scales, Special Legends, Logo and Mirrors.

Specifications

- Accuracy: Matches frequency control of power $\pm 1\%$ Quartz accuracy.
- Ranges: 48-150 VDC, 120VAC and 240VAC.
- Display: Easy to read 10,000 or 100,000 hour numeric display.
- Case: Brass case, ruggedized, gasket sealed.
- Window: 17/3MM-HRD - Thermoplastic.
582MM-HRD - Glass.
- Mounting: Surface mount.
- Operating Temperature: -25° to 185°F (-32° to 80°C).

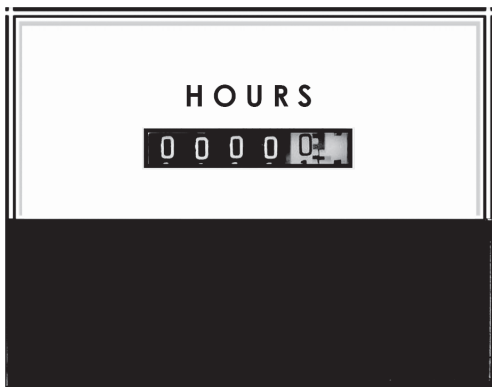
Dimensions



Models	A	B	C	D	E	F	G	H	I	J	K	L	M	N
17/3MM-HRD	2.70	1.22	.29	2.20	.58	.59	.97	.48	0.00	1.22	.61	2.113	1.056	.484
582MM-HRD	3.50	1.50	.39	2.77	-	.71	1.00	.50	0.00	1.58	.79	2.736	1.368	.90

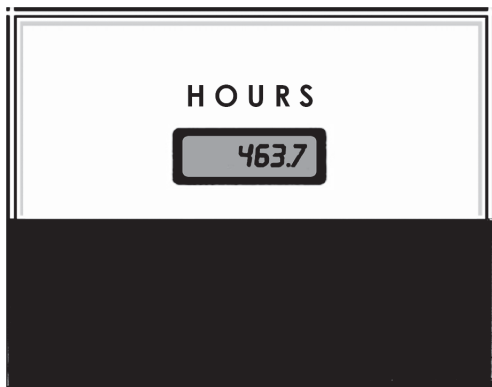
Elapsed Time Meters

2.5" 312-HRM
3.5" 313-HRM



Mechanical

2.5" 312-HRD
3.5" 313-HRD



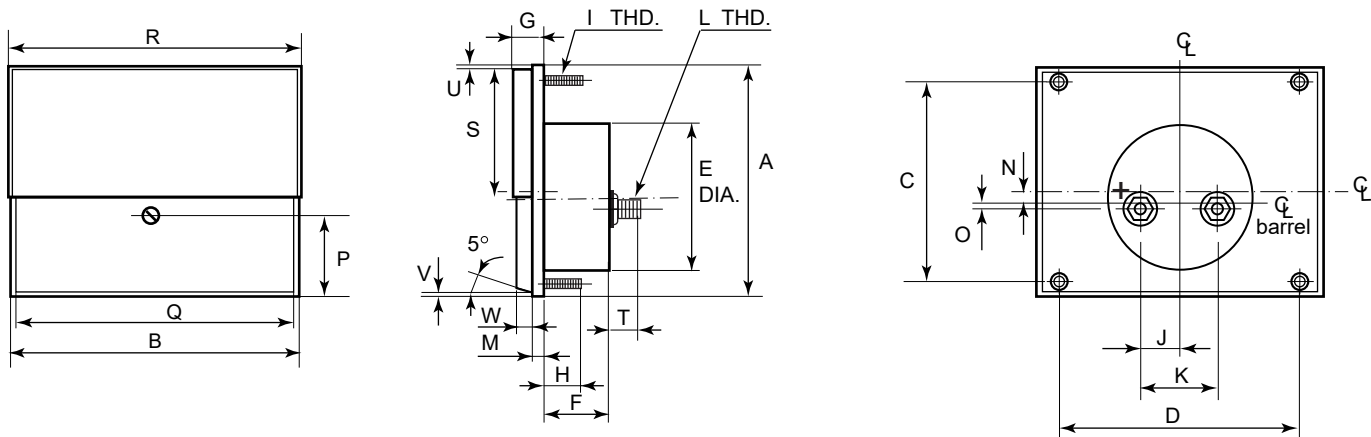
LCD

All meters available to operate 120, 240 VAC, 50 or 60 Hertz.
Special Dials are available with the following options: Additional Colors, Scales, Special Legends, Logo and Mirrors.

Specifications

- Accuracy: Matches frequency control of power $\pm 1\%$ Quartz accuracy.
- Ranges: 120VAC and 240VAC, 50 or 60 Hertz.
- Power Rating: 0.6 watts.
- Vibration Shock: Meets ANSI C39.1
- Display: Easy to read 10,000 or 100,000 hour numeric display.
- Mounting: Specify (S) Surface mount, (B) Bezel mount or (W) Window mount.
- Case: Lexan case construction, brass terminal studs.
- Operating Temperature: -25° to 185°F (-32° to 80°C).

Dimensions



Models	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
312-HRM	2.29	2.99	1.88	1.88	2.08	2.16	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
312-HRD	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
313-HRM	2.89	3.70	2.25	2.25	2.60	2.16	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
313-HRD	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

2.5" 502-HRM
3.5" 503-HRM



Mechanical

2.5" 502-HRD
3.5" 503-HRD



LCD

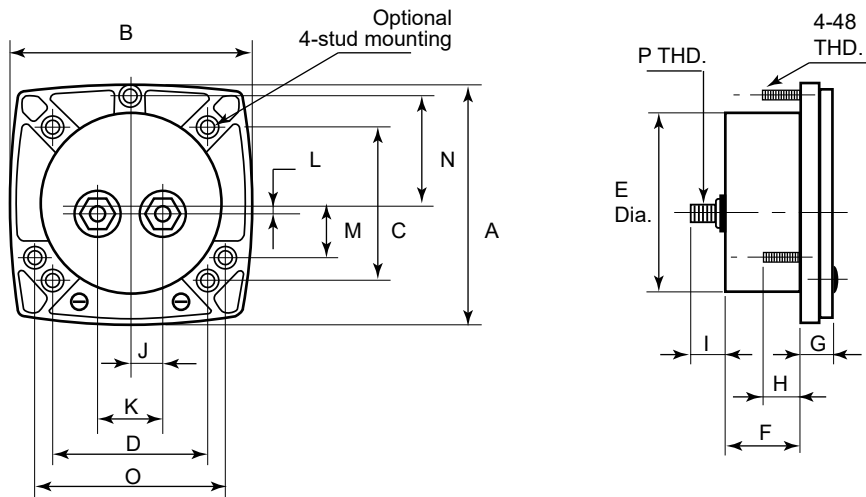
Features

The solid state electronic drive circuitry effects longer life with no motor and less moving parts. Electronic actuation assures accuracy by eliminating delicate springs and mechanical clock mechanisms that can be affected by vibration and temperature. The Meters are weather resistant: weather Gasket between base and cover to protect the counter. Special Dials are available with the following options: special Legends and Logo.

Specifications

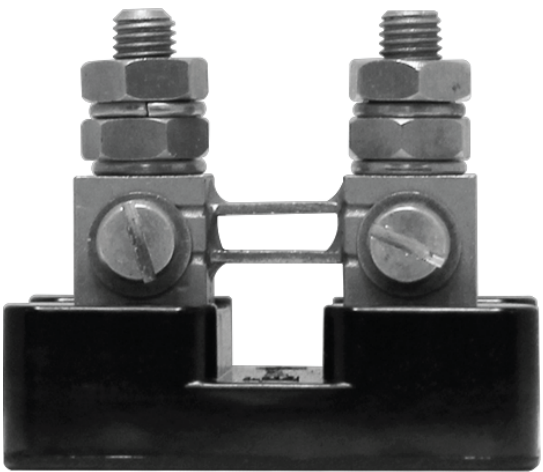
- Accuracy: Matches frequency control of power $\pm 1\%$ Quartz accuracy.
- Ranges: 120VAC and 240VAC, 50 or 60 Hertz.
- Power Rating: 0.6 watts.
- Vibration Shock: Meets ANSI C39.1
- Display: Easy to read 10,000 or 100,000 hour numeric display.
- Mounting: Surface mount.
- Case: Lexan case construction, brass terminal studs.
- Operating Temperature: -25° to 185°F (-32° to 80°C).

Dimensions



Models	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
502-HRM	2.71	2.71	1.88	1.88	2.08	2.16	0.47	0.50	0.50	0.48	0.97	0.00	0.61	1.22	2.11	1/4-28
502-HRD	2.71	2.71	1.88	1.88	2.08	1.16	0.47	0.50	0.50	0.48	0.97	0.00	0.61	1.22	2.11	1/4-28
503-HRM	3.50	3.50	2.25	2.25	2.60	2.16	0.50	0.50	0.50	0.48	0.97	0.13	0.79	1.58	2.74	1/4-28
503-HRD	3.50	3.50	2.25	2.25	2.60	1.16	0.50	0.50	0.50	0.48	0.97	0.13	0.79	1.58	2.74	1/4-28

Current Shunts



Features

DC Ammeter shunt allows the measurement of current values too large to be directly measured by a particular ammeter by taking high amperage (10A +) down to 50 or 100mV reading. The shunt connects in parallel with the ammeter and forms an alternative path for a portion of the current. Shunt voltage drop is used in conjunction with an ammeter to measure amperage of a circuit.

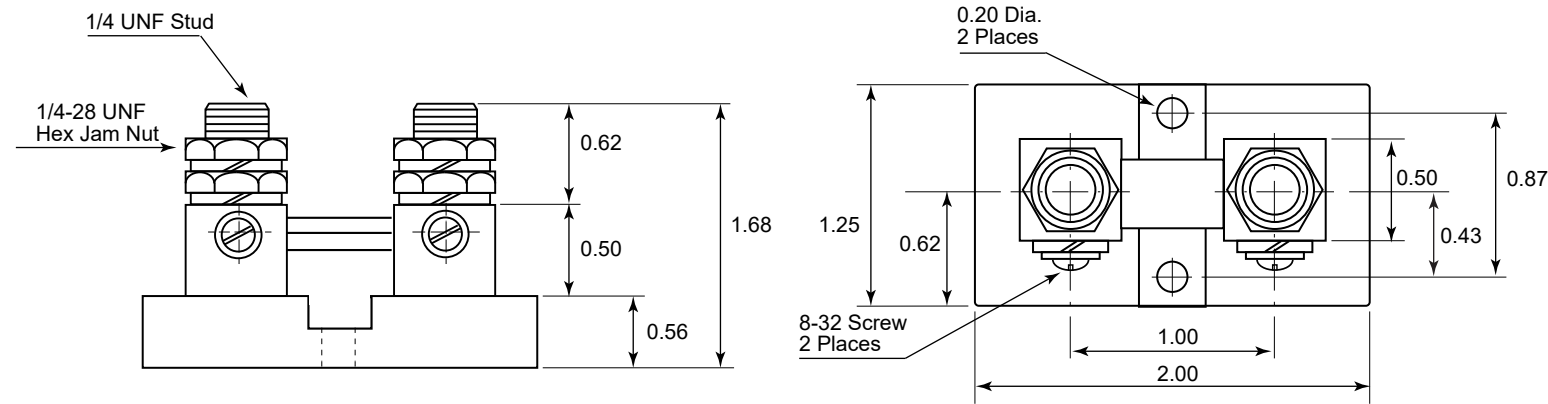
Type LA

Current Rating 5 to 200 Amps. 50 mV or 100 mV or Custom Output.
Tolerances $\pm .015$ for the hole diameters.
Other tolerances $\pm .030$ unless specified.

1/4 UNF Brass Studs with Hex Jam Nut.
8-32 Screws provide wire terminal connection.

TYPE LA 50 mV		TYPE LA 100 mV	
LA-5-50,	5 Amp	LA-5-100,	5 Amp
LA-10-50,	10 Amp	LA-10-100,	10 Amp
LA-15-50,	15 Amp	LA-15-100,	15 Amp
LA-20-50,	20 Amp	LA-20-100,	20 Amp
LA-30-50,	30 Amp	LA-30-100,	30 Amp
LA-50-50,	50 Amp	LA-50-100,	50 Amp
LA-75-50,	75 Amp	LA-75-100,	75 Amp
LA-80-50,	80 Amp	LA-80-100,	80 Amp
LA-85-50,	85 Amp	LA-85-100,	85 Amp
LA-100-50,	100 Amp	LA-100-100,	100 Amp
LA-150-50,	150 Amp	LA-150-100,	150 Amp
LA-200-50,	200 Amp	LA-200-100,	200 Amp

Dimensions

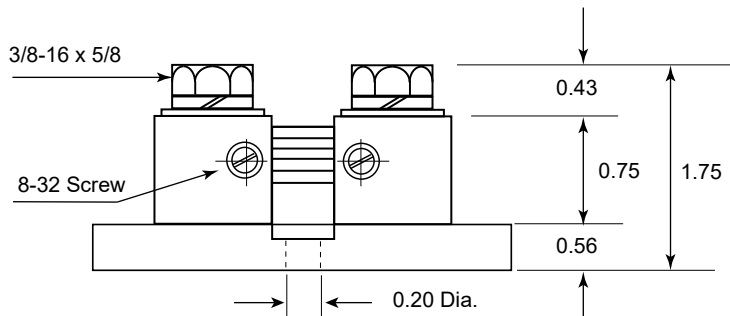


Type LB

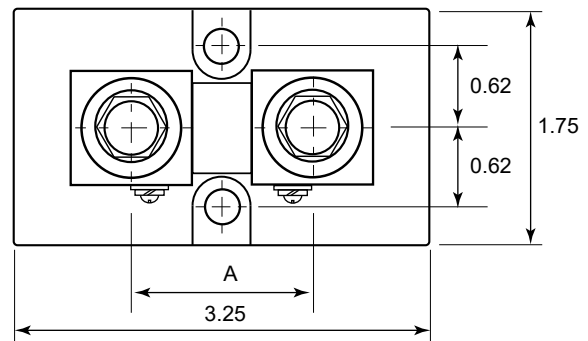
Current Rating 170 to 600 amps. 50 mV, 100 mV or Custom Output.
Tolerances $\pm .015$ for the hole diameters.
Other tolerances $\pm .030$ unless specified.

3/8-16 x 5/8 Brass Connections with Lock Washers.
8-32 Screws provide wire terminal connection.

Dimensions



TYPE LB 50 mV		TYPE LB 100 mV	
LB-170-50,	170 Amp	LB-170-100,	170 Amp
LB-200-50,	200 Amp	LB-200-100,	200 Amp
LB-250-50,	250 Amp	LB-250-100,	250 Amp
LB-300-50,	300 Amp	LB-300-100,	300 Amp
LB-400-50,	400 Amp	LB-400-100,	400 Amp
LB-450-50,	450 Amp	LB-450-100,	450 Amp
LB-500-50,	500 Amp	LB-500-100,	500 Amp
LB-600-50,	600 Amp	LB-600-100,	600 Amp

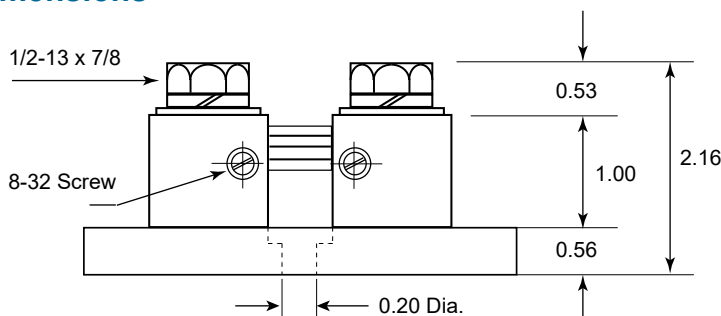


Type LC

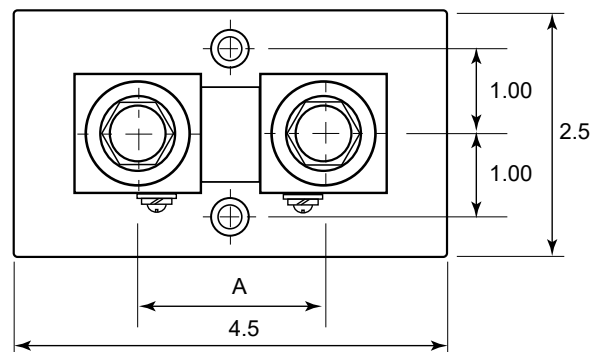
Current Rating 800 to 1200 amps. 50 mV, 100 mV or Custom Output.
Tolerances $\pm .015$ for the hole diameters.
Other tolerances $\pm .030$ unless specified.

1/2-13 x 7/8 Brass Connections with Lock Washers.
8-32 Screws provide wire terminal connection.

Dimensions



TYPE LC 50 mV		TYPE LC 100 mV	
LC-800-50,	800 Amp	LC-800-100,	800 Amp
LC-1000-50,	1000 Amp	LC-1000-100,	1000 Amp
LC-1200-50,	1200 Amp	LC-1200-100,	1200 Amp



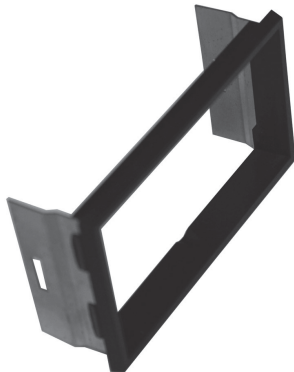


2000 Series Bezel Mount Kit

Bezels for mounting rectangular custom series models: 2018, 2025/26, 2035/36 and 2045/46 behind the panel are sturdy high impact ABS.

Bezel Part Numbers

M107081-KIT for 2018/R
M207036-KIT for 2025/26
M207048-KIT for 2035/36
M207030-KIT for 2045/46



3100 Series Bezel Mount Kit

Bezels for mounting rectangular custom 3100 series models: 3125/26, 3135/36, 3145/46 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 for drilling an additional hole.



685 Series Bezel Mount Kit

Bezels for mounting rectangular custom 685 series models: 685-1 (Single), 685-2 (Dual Stack), 685-3 (Triple Stack) The bezel has a cold rolled steel finish in black.



Meter terminal cover kits

Meter terminal cover kits offer protection for your electrical connections. This provides additional safety by preventing accidental contact and insulates against electrical shorting. Available in two sizes, #10, 1/4". Mounting hardware included.

Part numbers:

1/4" Terminal Cover Kit P/N: P-TERMKIT-COVER-1/4"
#10 Terminal Cover Kit P/N: P-TERMKIT-COVER-#10

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Hoyt Electrical Instrument Works, the leading manufacturer of analog panel meters for over 100 years, produces a complete line of the highest quality electrical indicating panel meters available today. Our production facilities include dial printing, CAD, tool and die shop, metal stamping, production painting, meter coil winding and assembly.



We specialize in custom instruments.

Many of our customers purchase Hoyt Panel Meters because their needs are:

Custom Dials

Custom Cases

Custom Ranges

Custom Accuracy

Custom Electrical Specifications

Custom Resistance and Damping.

We are a complete operation for mechanical and electrical products.

We can produce our products with the highest quality, fast turnaround - and at a competitive price.



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