

## Application:

The VISTA range of analog panel meters offers accurate measurement and indication of most electrical and electronic parameters in industry as per industrial standard case size.

### Available Models:

VISTA 212 (Size 2 ½)

VISTA 312 (Size 3 ½)

VISTA 412 (Size 4 ½)



The range offers AC and DC ammeters, voltmeters and frequency meters utilizing a high torque pivot and jewel movement. AC moving iron meters also provided 1.5% high accuracy true RMS measurement.

## Applications:

- Marine
- Switchboard
- Distribution Systems
- Control Panels
- Embedded Generation
- Marine
- Energy Management
- Building Management
- Utility Power Monitoring
- Process Control
- Motor Monitoring

## Features:

- Measuring and indication of AC amps, volts and DC signals
- Panel Mounting
- High torque pivot and jewel movement
- True RMS measurement meters
- AC and DC inputs
- Up to 50A DC direct connected
- Up to 50A AC direct connected

## Benefits:

- Moving iron and coil mechanisms
- ANSI standard case sizes
- Easy to modify for distributions
- Compliant with ANSI C39.1

## Application Standards:

Scale and pointer for electrical measuring instruments.

ANSI C39.1

Terminal bolts

1/4 "UNC" - 28

Safety requirements and protective measures for electrical indicating instruments and their accessories.

IEC 61010-1

DIN 40050/8-70

VDE 0110/11-72

VDE 0410/10-76

Ingress protection

IP50

Performance specifications for direct acting indicating analog electrical measuring instruments and their accessories.

ANSI C39.1

IEC 60051

UL combustibility class

UL 94 V-0

**Comply with the following European directives:** 2004/108/EC (EMC directive), 2006/95/EC (low voltage directive) and amendment 93/68/EEC, for CE marking.

## Specifications:

<b>Accuracy</b>	
DC Ammeters and Voltmeters	1.5% 0 to 100% of full scale deflection
AC Ammeters and Voltmeters	Moving Iron: 1.5% 10 to 100% of full scale deflection
Frequency Meters	0.5% of end scale value
<b>Input Ratings</b>	
DC Moving Coil Ammeters	50µA to 50A
DC Moving Coil Voltmeters	50mV to 600V
AC Moving Iron Ammeters (EQ)	100mA to 50A
AC Moving Iron Voltmeters (EQ)	6V to 600V
Frequency Meters	45-55-55 Hz, 55-60-65 Hz, 45-55-65 Hz
<b>Overload</b>	Continuous
Voltmeters	2 times for 0.5 sec: 9 overloads 2 times for 5 sec: 1 overloads
Ammeters	10 times for 0.5 sec: 9 overloads
DC Center Zero Voltmeter	10 times for 5 sec: 1 overload
<b>Enclosure</b>	
Movement	High torque pivot and jewel moving coil and moving iron
Scale Balance	Within 1% of scale length
Relative Humidity	25% to 80% nominal range of use
Operating Temperature	0° C to + 40° C
Storage Temperature	-20° C to + 55° C
Case	Matte black case UL94V0 polycarbonate
Window	Shatterproof polycarbonate

## Specifications Cont.:

Fixing	Surface mounting: 4 corner studs 4-40 UNC (212&312) for 412, 6-32 UNC
Compliant With	
Performance	ANSI C39.1 and IEC 60051
Manufacture	UL61010-B
Scaling	ANSI C39.1
Safety	IEC 61010-1 (LVD) and BS EN 61326: (EMC) UL 61010
Vibration	ANSI C39.1 cl. 5.13

## Operation:

### Moving Coil Meter

These meters offer a center cored, self-shielding moving coil movement using hair spring, pivots and spring loaded jewels. Variations in movement are limited by design. All DC volt meters are 1000 ohms per volt, moving coil rectified products run at 900 ohms per volt. (Millivolt meter use the 5 milliamps/50mV resistance).

### Moving Iron Meter

This clapper type repulsion design utilizes a hair spring, pivots and spring loaded jewels. The bottom jewel is oil filled to provide damping while the top is spring for resilience. All voltmeters are manufactured with internal voltage dropper resistors.

### Frequency Meter

Frequency meters use a 1mA/36ohm movement driven by an EMC hard frequency conversion circuit.

### Dials, Pointers and Scales

Standard dials are matte white black printed scales and a tubular knife-edge black pointer are balanced within 1% of scale length and feature a highly repeatable scale shape, ensuring consistently accurate measurement reading. Dials are interchangeable between the range of products using the same input within the published specification of the meter. Options for non-standard customer specific dials are available upon request.

## Standard Measuring Ranges:

D. C. Current		D. C. Voltage	
Rated Value	Approx Voltage drop	Rated Value	Sensitivity (± 10%)
50 uA <sup>±</sup>	424 mV	50 mV <sup>±</sup>	3.33kohm/V
60 uA <sup>±</sup>	600 mV	60 mV <sup>±</sup>	1 kohm/V
100 uA	400 mV	75 mV <sup>±</sup>	1 kohm/V
150 uA	600 mV	100 mV <sup>±</sup>	1 kohm/V
250 uA	140 mV	150 mV <sup>±</sup>	1 kohm/V
400 uA	540 mV	250 mV <sup>±</sup>	1 kohm/V
500 uA	540 mV	400 mV <sup>±</sup>	1 kohm/V
600 uA	540 mV	600 mV <sup>±</sup>	1 kohm/V
1 mA	37 mV	1 V	1 kohm/V
1.5 mA	196 mV	1.5 V	1 kohm/V
2.5 mA	196 mV	2.5 V	1 kohm/V
4 mA	196 mV	4 V	1 kohm/V
5 mA	196 mV	6 V	1 kohm/V
6 mA	196 mV	10 V	1 kohm/V
10 mA	196 mV	15 V	1 kohm/V
15 mA	11 mV	25 V	1 kohm/V
20 mA	60 mV	30 V	1 kohm/V
25 mA	60 mV	40 V	1 kohm/V
40 mA	60 mV	50 V	1 kohm/V
60 mA	60 mV	60 V	1 kohm/V
100 mA	60 mV	100 V	1 kohm/V
150 mA	60 mV	150 V	1 kohm/V
250 mA	60 mV	200 V	1 kohm/V
400 mA	60 mV	250 V	1 kohm/V
600 mA	60 mV	300 V	1 kohm/V
1 A	60 mV	400 V	1 kohm/V
1.5 A	60 mV	500 V	1 kohm/V
2.5 A	60 mV	600 V	1 kohm/V
4 A	60 mV		
5 A	60 mV		
6 A	72 mV		
10 A	60 mV		
15 A	60 mV		
20 A	60 mV		
25 A	60 mV		
30 A	60 mV		
40 A	60 mV		
60 A	72 mV		

A.C. Voltage	A.C. Current
6V	100mA
10V	150mA
15V	250mA
25V	400mA
40V	600mA
60V	1A
100V	1.5A
120V	2.5A
132V	4A
150V	5A
250V	6A
400V	10A
500V	15A
600V	20A
	25A
	40A
	50A

<b>Frequency Range</b>	45.....50.....55 Hz 45.....55.....65 Hz 55.....60.....65 Hz 360...400...440 Hz 380...400...420 Hz
<b>Rated input voltage</b>	57.7V, 63.5V, 100V, 110V, 115V, 120V, 127V, 208V, 220V, 230V, 240V, 289V, 380V, 400V, 415V, 440V, 500V
Non-Standard ranges available on request.	

## Ordering Information:

<b>Model &amp; Size</b>	VISTA 212 (Size 2 ½) VISTA 312 (Size 3 ½) VISTA 412 (Size 4 ½)
<b>Meter Type</b>	Moving Iron/Moving Coil/Frequency
<b>Measuring Range</b>	DC Voltage/DC Current/AC Voltage/AC Current/Frequency
<b>Logo</b>	Jewell

