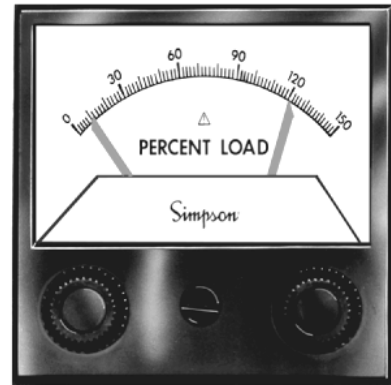




# 3300 Series Rugged Seal Meter Relay

- Provides Visual Monitoring of Load Conditions of AC Current Motors
- Built-in Adjustable Time Delay (Delays up to 20 Seconds Available on Special Order)
- Calibration Not Affected by Steel Panel Mounting
- Rugged Metal Case for Rigorous Environments
- Commercially-Sealed, Moisture and Dust Proof
- Amplifier Input

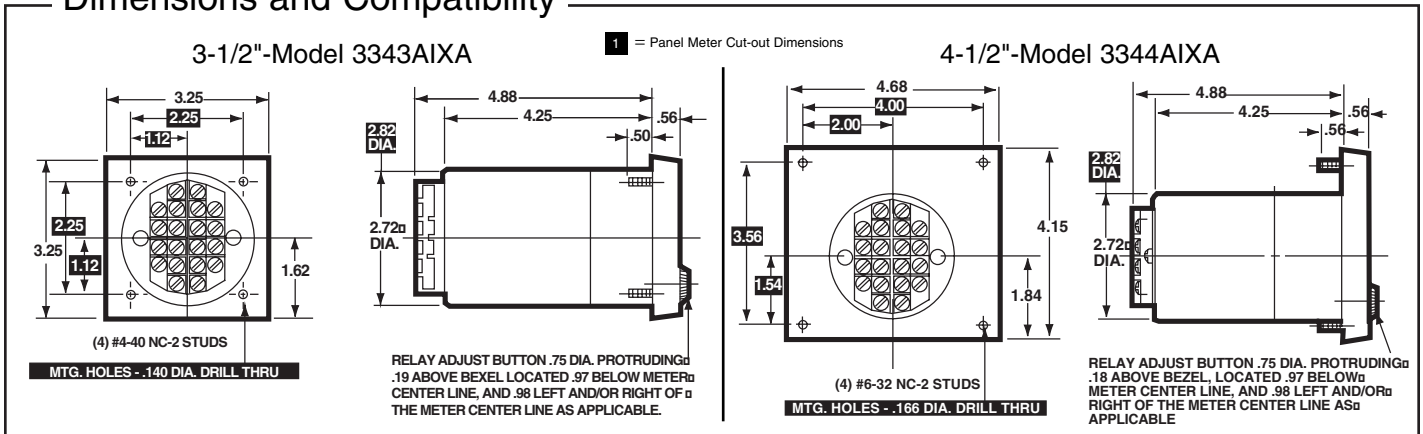


Model Number	Size	Meter Movement
3343AIXA	3-1/2"	Annular
3344AIXA	4-1/2"	Annular

The Simpson Motor Load Meter Relay has been designed to provide visual monitoring of motor load current, in addition to the control action at one or two set points. The controller measures the AC current of a motor and indicates the value on a 0-150% dial. The 100% point is adjusted by means of a gain adjust potentiometer on the rear terminal block, to agree with the 100% nominal rated load current for the motor. To prevent motor shut down during start up or momentary transients where the motor current exceeds the established set point, a time delay of five seconds is provided.

Delays of less than five seconds may be programmed using external resistors. Delays up to 20 seconds are available on special order. Specifically designed for harsh environments, the Model 3300 series is housed in a metal case that gives complete magnetic isolation for steel panel mounting. This commercially-sealed meter relay is moisture and dust proof and recommended for use in wash-down areas. The combined features of time delay, gain adjust, and auto/manual reset provide complete relay switching for alarm, motor shut down or other corrective action.

## Dimensions and Compatibility

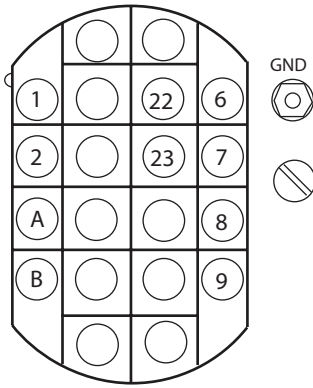


## Specifications

Accuracy:	±3% full scale (F.S.)	Switching:	Within 1% of indication
Movement:	Annular, self-shielding	Differential:	"On," "Off" difference is within 0.5% of F.S.
Suspension:	Pivot and jewel	Auto/Manual Reset:	Latching function can be enabled independently for each relay by removing jumpers on terminal block.
Tracking:	±3%	Contacts/Output	Single Set Point--One DPDT relay for Hi set point
Repeatability:	Within 0.5% F.S.	Relay:	Double Set Point--SPDT relay for Lo set point DPDT relay for Hi set point, Each set of contacts rated at 5 amps, 115 VAC.
Shielding:	Calibration is unaffected by magnetic panel mounting.	Frequency Response:	50-1000Hz
Response Time:	1.5 seconds maximum above 10mA	Power:	108-132 VAC, 50-400Hz
Overload (1 sec.):	10 times F.S.	Operating Temperature:	41°F to 122°F (+5°C to +50°C)
Overload (Continuous):	1.5 times F.S.	Circuit-to-Ground Voltage:	250V ms maximum
Dial:	Sharp clear scale. Each dial arc is calibrated to track the specific type of movement used.		
Case:	Sealed metal, plastic window		
Resistance:	±15%		
Pointer:	Black, knife-edge		
Scale Length:	4.05" (103.0mm)		
Net Weight:	17oz (0.48kg)		
Control Point(s) Adjustments:	Single, high limit, 0-100% of arc; double, low limit 0-95% arc; high limit 5-100% of arc Adjustable to within 4° of each other		

# Wiring Diagram

REAR VIEW OF HEADER



TERMINAL DESIGNATIONS

- A. + SIGNAL INPUT
- B. - SIGNAL OUTPUT
- 1. AUTO/MAN. RESET HI SET POINT
- 2. SHORT FOR AUTO
- 6. AUTO/MAN. RESET LO SET POINT
- 7. SHORT FOR AUTO
- 8. 120VAC ± 10% 50-400 Hz
- 9. 5 VA
- 22. SHORT
- 23. TO DISABLE DELAY

RATED CIRCUIT TO GROUND VOLTAGE: 250V AC RMS MAX.  
ALL RELAY CONTACT POSITIONS SHOWN WITH RELAYS DE-ENERGIZED

**Input Signal:** Input to be monitored (proportional to load current) is connected to terminals A (+) and B (-). For single set point units, full scale can be from 0.5A RMS to 5A RMS. For dual set point units, full scale can be from 1 volt RMS to 10 volts RMS.

**Input Power:** The power source used is 120VAC ±10%, 50 to 400 Hz. The power requirement is nominally 5VA. Connect power source to terminals 8 and 9.

### Auto/Manual Reset

There are two modes of relay logic available in the 3300 Series: Auto Reset and Manual Reset. Auto Reset is a simple on-off action in which the high set point relay is de-energized when the pointer exceeds the high set point, and is automatically energized when the pointer again drops below the set point. The low set point relay is de-energized when the pointer drops below the low set point, and is automatically energized again when the pointer rises above the low set point.

Manual Reset is a latching action. When the pointer exceeds the high set point, the high set point relay energizes and is latched out. It can only pull in after the pointer drops below the high set point and the operator presses a reset button. In the manual reset mode the low set point relay is likewise latched out until the pointer is above the low set point and the operator presses a reset button.

### Installing Auto/Manual Reset

If Auto Reset is desired, simply connect a jumper between terminals 1 and 2 for the high set point or 6 and 7 for the low set point. If Manual Reset is desired, connect a normally-open SPST push-button switch to the terminals as shown in the terminal designation diagram to the left.

On a dual set point unit, the Auto or Manual mode may be selected for either set point, independent of the mode used for the other set point. If both set points of a dual set point unit are connected for Manual Reset, two independent push buttons are usually used. However, one master reset button may be used for both set points provided it is a double pole switch with no electrical connection between poles.

### Time Delay

When the meter point of the 3300 Series goes upward past the high set point, there is a time delay before the relay contacts transfer. If the pointer returns below the high set point before the time delay is over, nothing happens. This prevents normal starting surges or brief transients from causing undesired operation of the relay. Please note that there is no time delay on the low set point.

If a longer delay is desired, a delay of 20 seconds is available on special request when ordering the 3344AIXA. Before using an extended delay, make sure that it will not present any hazard in your application. The normal five delay may be shortened by connecting a resistor or a jumper wire between terminals 22 and 23. Use the values shown in the following table.

Desired Delay (seconds)	Resistor Value
0	Jumper
0.5	39KΩ Resistor
1	100KΩ Resistor
2	300KΩ Resistor
3	620KΩ Resistor
4	1.5MΩ Resistor
5	No Connection

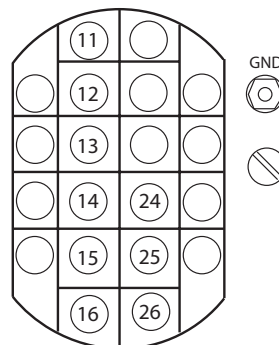
# Relays

Relays can be used to turn on or turn off power to a process that the 3343AIXA and 3344AIXA are monitoring. A light can be turned on when a set point is exceeded, alerting the operator to change in condition in the process. The controller's relays are double pole, double throw for high set point and single pole, double throw for low set point.

**High Set Point:** The high set point relay contacts (on both single and dual set point meters) are de-energized when the pointer is above the desired set point. For normally open relay connection use terminals 11 and 14. Terminals 12 and 15 are moving contacts. Terminals 13 and 16 are normally closed.

**Low Set Point Connection:** The low set point relay contacts (appear on dual set point meters only) are de-energized when the pointer is below desired set point. For normally open relay connection use terminal 24. Terminal 25 is the moving contact or common. Use terminal 26 for normally closed relay connection.

REAR VIEW OF HEADER

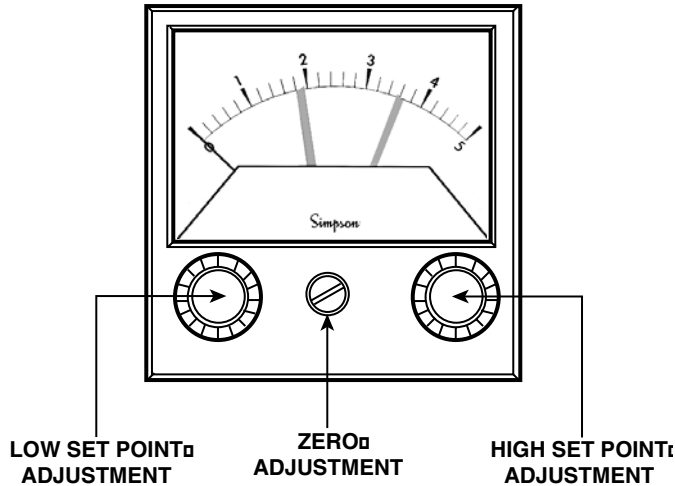


TERMINAL DESIGNATIONS

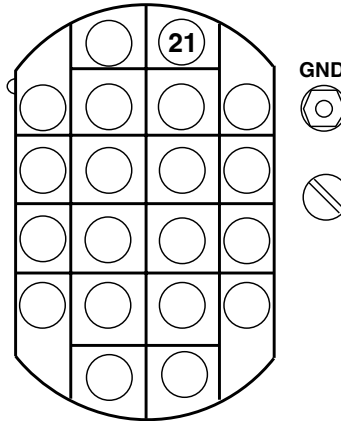
- 11. NO } HI SET POINT
- 12. C } RELAY IS
- 13. NC } DE-ENERGIZED
- 14. NO } WITH POINTER
- 15. C } ABOVE
- 16. NC } SET POINT
- 24. NO } LO SET POINT
- 25. C } RELAY IS
- 26. NC } DE-ENERGIZED
- } WITH POINTER
- } BELOW
- } SET POINT

RATED CIRCUIT TO GROUND VOLTAGE: 250V AC RMS MAX. □  
ALL RELAY CONTACT POSITIONS SHOWN WITH RELAYS DE-ENERGIZED

# Adjustments



REAR VIEW OF HEADER



TERMINAL DESIGNATION

21. GAIN ADJUST

### Set Point Adjustment

Low and High Set Point — To adjust dual set point units for low range, turn the adjustment knob at the left on the front face of the meter until the wide red pointer indicates the desired reading (low from 0-95% of arc). High range adjustments are made by turning the black knob at the right on the front face of the meter (Hi from 5-100% of arc).

### Zero Adjustment

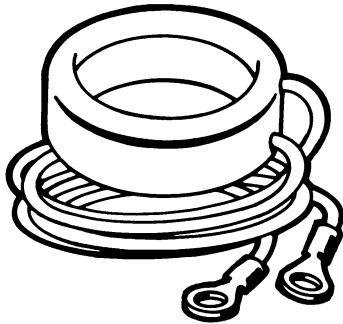
Make sure that all power to the meter has been shut down. For zero adjustment, simply turn the slotted adjustment knob that is flush with the front panel. After zeroing the pointer, turn the knob back a few degrees in the direction opposite from your final adjustment. This frees the zero adjust from the pointer mechanism.

### Gain Adjustment

Make certain no power is present at the terminals of the 3300 Series before starting. Set the high set point to full scale (150% mark). Remove the small plastic plug at position 21 of the terminal block. Using a non-conductive tool, such as the plastic tool supplied with meter, insert the tool into the hole in the terminal block and engage the adjustment screw. Turn the adjustment screw counterclockwise 15 full revolutions. Next, apply power to the meter and to the motor circuit and operate the motor under its full normal load. While the motor is under load, turn the adjustment screw in the terminal block clockwise until the pointer indicates exactly 100%. Finally, shut down all power to the terminals of the meter and replace the small plastic plug in the terminal block.

# Accessories

## Donut Transformer

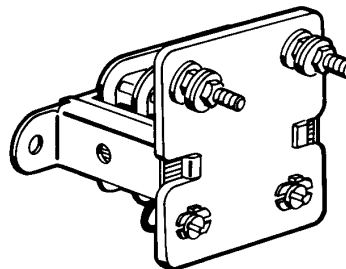


### Ordering Information

Range/Amps		Catalog Number
Primary	Secondary	
50	5	01293
75	5	01306
100	5	01297
150	5	01298
200	5	01299
250	5	01313
300	5	01300
400	5	01305
500	5	01301
600	5	02303
750	5	02459
1000	5	02304

A Donut Current Transformer enables this current meter to monitor AC current up to 1000 amps. The Donut (also known as a "Toroid") is placed around one of the legs of the device being monitored, and emits up to a 5 amp signal. Each Donut Transformer, rated at 2 volt amps, comes with 2' long secondary leads.

## Model 186 Current Transformer



### Ordering Information

Range	VA	Catalog Number
0-5 amp	0.75	01312
0-10 amp	1.45	01314
0-15 amp	1.05	01315
0-20 amp	1.04	01316
0-25 amp	1.50	01317
0-30 amp	1.10	01318
0-40 amp	1.09	01319
0-50 amp	1.90	01321
0-100mA	0.50	01295
0-500mA	0.53	01304

Model 186 Current Transformers easily convert a current signal (up to 50 A) into a 0-10 AC volt signal and transmit the signal over a long distance. This allows remote monitoring of a process or application. These units can be coupled with a Donut Current Transformer if a high current rating (up to 1000 Amps) is to be monitored at a remote location.

