



3300 Series Rugged Seal Meter Relay

- Wide Variety of Control, Alarm, and Limit Use
- Calibration Not Affected by Steel Panel Mounting
- Rugged Metal Case for Rigorous Environments
- Two Sizes: 3-1/2" and 4-1/2"
- Commercially-Sealed, Moisture and Dust Proof
- Amplifier Input

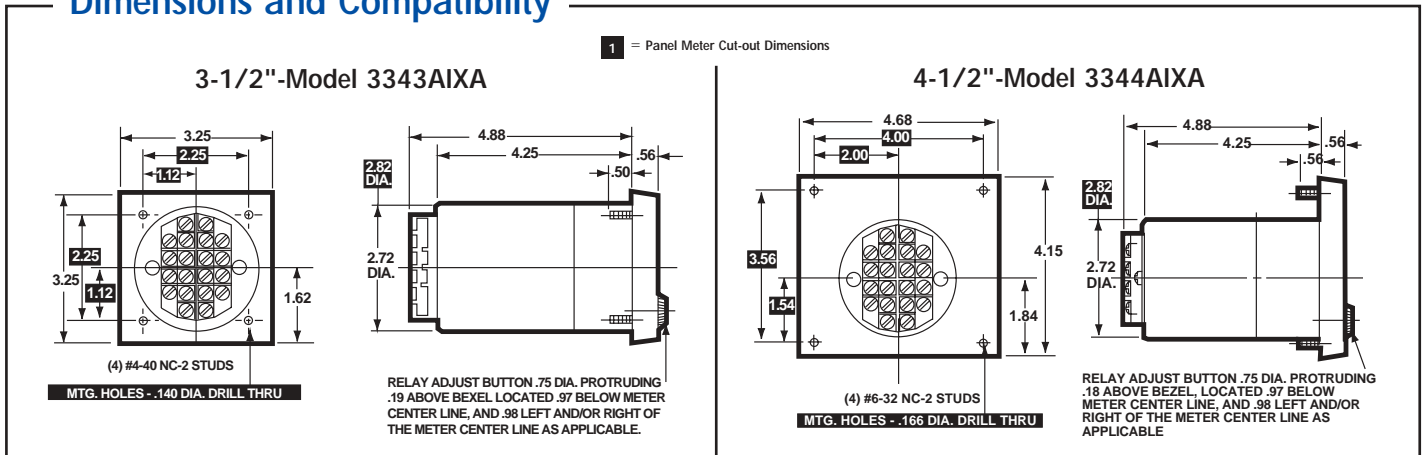


The 3300 Series meter relays offer a wide variety of applications in control, alarm, and limit use. Photo conductor sensing eliminates all interference with the indicating meter. These relays incorporate an amplifier input that drives a rugged high-torque pivot and jewel meter. Metal-cased "Rugged Seal" construction withstands rigorous environmental conditions. The metal cover with a drawn steel plated rear case gives complete magnetic isolation for steel panel mounting. In addition, each meter is moisture, dust, and dirt proof for use in wash-down areas. Fail-safe circuitry opens output relays in the event of power failure. Two different sizes, 3-1/2" and 4-1/2", are available in both single and dual set point models.

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

High-gain transistor switch circuitry provides accurate switching with a "dead band" of no more than 0.5% of full scale (F.S.). All AC current units offer $\pm 3\%$ of accuracy F.S. This style meter is ideal for many other electrical functions. See the "Functions Reference Table."

Dimensions and Compatibility



Compatibility Reference Table

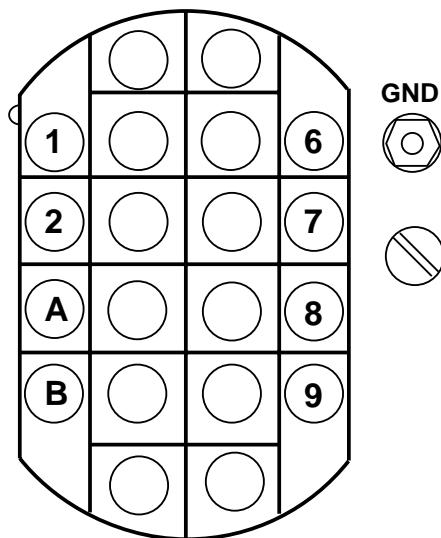
Manufacturer	Size/Model	
	3 -1/2"	4-1/2"
Modutec		
Y Series	Y3S	Y4S
YD Series	YD3	YD4

Specifications

Accuracy:	±3% of full scale	Control Point(s)	
Movement:	Annular, self-shielding	Adjustments:	Single, high limit, 0-100% of arc; double, low limit 0-95% of arc; high limit 5-100% of arc Adjustable to within 4° of each other
Suspension:	Pivot and jewel	Switching:	Within 1% of indication
Tracking:	±3%	Differential:	"On," "Off" difference is within 0.5% of F.S.
Repeatability:	Within 0.5% F.S.	Auto/Manual Reset:	Latching function can be enabled independently for each relay by removing jumpers on terminal block.
Shielding:	Calibration is unaffected by magnetic panel mounting	Contacts/Output Relay:	DPDT relay contacts for each control point. Each set of contacts rated at 5 amps, 120 VAC resistive.
Response Time:	1.5 seconds maximum above 10mA	Frequency Response:	50-1000Hz
Overload (1 sec.):	7 amps	Power:	108-132 VAC, 50-400Hz
Overload (Continuous):	7 amps	Operating Temperature:	41°F to 122°F (+5°C to +50°C)
Dial:	Sharp clear scale. Each dial arc is calibrated to track the specific type of movement used.	Circuit-to-Ground Voltage:	250V rms maximum
Case:	Sealed metal, plastic window		
Voltage Drop:	50mV		
Pointer:	Black, knife-edge		
Scale Length:	4.05" (103.0mm)		
Net Weight:	17oz (0.48kg)		

Wiring Diagram

REAR VIEW OF HEADER



TERMINAL DESIGNATIONS

- A. - SIGNAL INPUT
- B. + SIGNAL INPUT
- 1. AUTO/MAN. RESET HI SET POINT
- 2. SHORT FOR AUTO
- 6. AUTO/MAN. RESET LO SET POINT
- 7. SHORT FOR AUTO
- 8. 120 VAC ±10%
50-400 Hz
- 9. 4 VA

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

Input Signal: Input to be monitored is connected to terminals A(+) and B (-). The signal input accepts 5 amperes AC full scale.

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 33 Series: Auto Reset and Manual Reset. Auto Reset is actually 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 de-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.

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 DPDT switch with no electrical connection between poles.

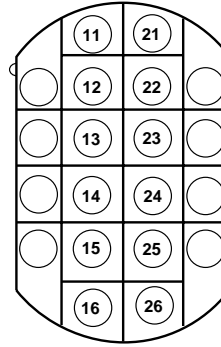
Relays

Relays can be used to turn on or turn off power to a process that Simpson's Rugged Seal controller is 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 for both single and dual set point meters are double pole, double throw relays.

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 or common. 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 terminals 21 and 24. Terminals 22 and 25 are moving contacts or common. Use terminals 23 and 26 for normally closed relays.

REAR VIEW OF HEADER

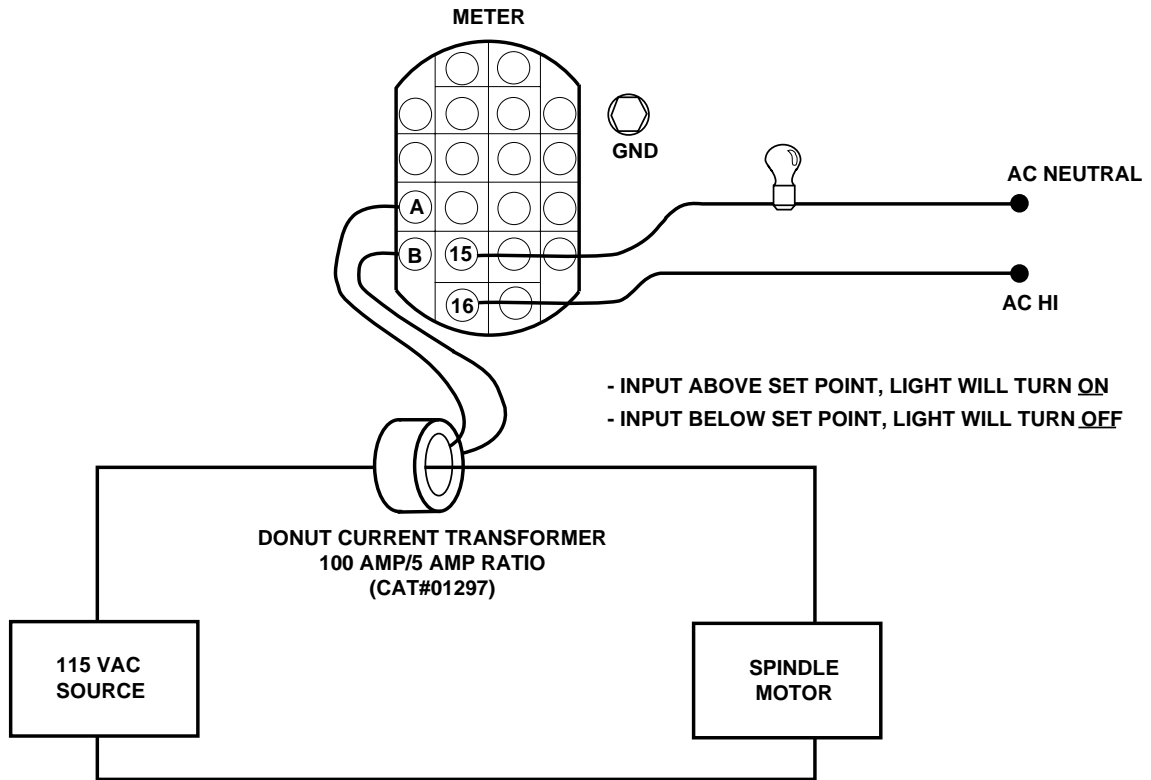


TERMINAL DESIGNATIONS

- | | | |
|--------|---|---|
| 11. NO | } | HIGH SET POINT.
RELAY IS
DE - ENERGIZED
WITH POWER POINTER
ABOVE SET POINT. |
| 12. C | | |
| 13. NC | | |
| 14. NO | } | LOW SET POINT.
RELAY IS
DE - ENERGIZED
WITH POWER POINTER
BELOW SET POINT. |
| 15. C | | |
| 16. NC | | |

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

Application Example



A machine shop manager is interested in measuring the current draw of a 115 VAC spindle motor of a drill press. If the current draw is above 90 amperes the motor could burn up, disrupting the drill press operation.

The 3300 Series AC Current meter relay is configured by simply connecting an external donut current transformer (Toroid) to Terminal A (+) and Terminal B (-). The current-carrying wire to be sensed is passed through the center of the current transformer (100 amp/5 amp ratio). The

controller contains a special dial that reads 0-100 AC amp full scale with an input of 0-5 amperes.

The machine shop manager uses the high set point relay and adjusts it to 90 amperes. If the current goes above the set point the relay will de-energize and will turn on a light, alerting the operator to a change in condition in the process.

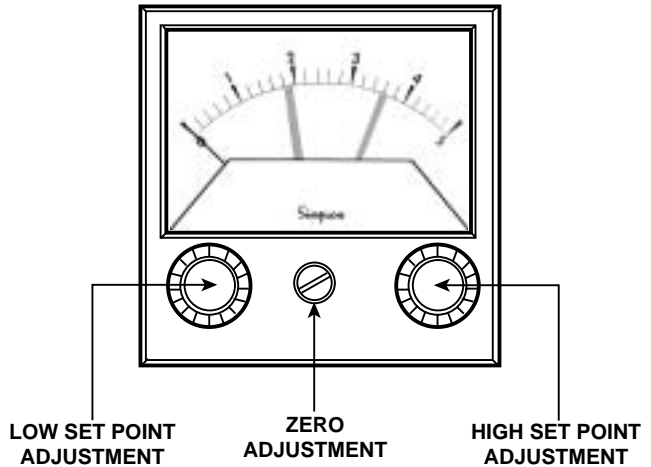
Adjustments

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.



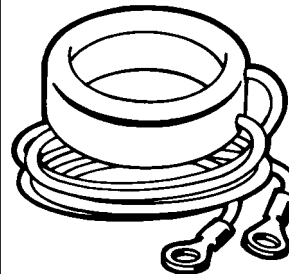
Ordering Information

3300 Series Meter Relays

Ranges	Approx. Impedance (ohms)	Model/Size and Catalog Number			
		3-1/2" Model 3343AIXA		4-1/2" Model 3344AIXA	
		Single Set point (High Limit)	Dual Set point	Single Set point (High Limit)	Dual Set point
0-5	.01	21673	21633	21677	21637

Accessories

Donut Transformer



Ordering Information

Primary	Range/Amps Secondary	Catalog Number
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.

Function Reference Table

For your convenience, the table below lists Rugged Seal Controller models for other electrical monitoring functions and page reference.

Function	Section	Page
AC Voltage	E	47
DC Current	E	67
DC Voltage	E	87
Temperature	E	93
Percent Motor Load	E	101