



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

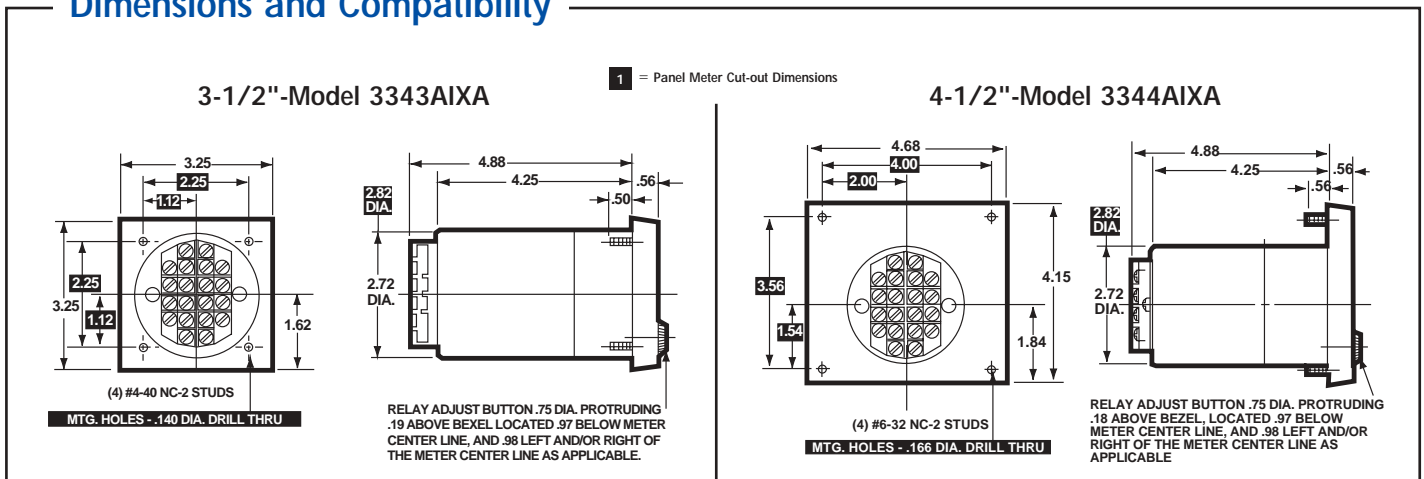


The 3300 Series meter relays offer a wide variety of applications in control, alarm, and limit use. Photo conductor sensing eliminates all interference with the indicating meter. These controllers incorporate an amplifier input that drives a rugged high-torque pivot and jewel meter. Metal-cased "Rugged Seal" construction withstands rigorous environmental conditions. The die cast metal bezel 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.

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

Two different sizes, 3-1/2" and 4-1/2" are available in both single and dual set point models. 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 voltage units offer $\pm 3\%$ of accuracy F.S. This style meter is ideal for many other electrical functions. See "Function Reference Table."

Dimensions and Compatibility



Compatibility Reference Table

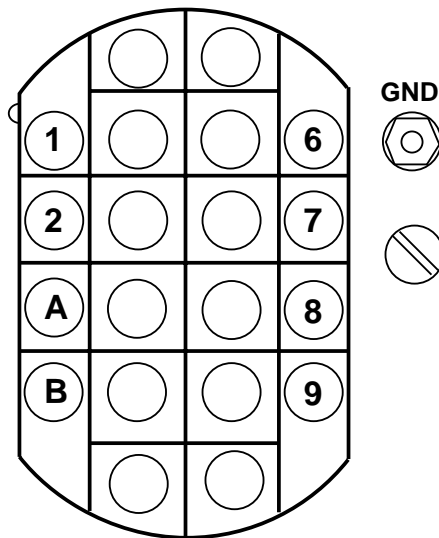
Manufacturer	Size/Model	
	3-1/2"	4-1/2"
Modutec		
YS Series	YS3	YS4
YD Series	YD3	YD4

Specifications

Accuracy:	± 3% F.S.	Power:	108-132 VAC, 50-400 Hz
Movement:	Annular, self-shielding	Operating Temperature:	41°F to 122°F (+5°C to +50°C.)
Adjustments:	Single, 0-100% of arc; double, low limit 0-95% of arc; high limit, 5-100% of arc Adjustable to within 4° of each other	Circuit-to-Ground Voltage:	250 RMS maximum
Switching:	Within 1% of indication	Case:	Sealed metal, plastic window
Differential:	"On," "Off" difference is within 0.5% of F.S.	Shielding:	Calibration is unaffected by magnetic panel mounting.
Auto/Manual Reset:	Latching function can be enabled independently for each relay by removing jumpers on terminal block.	Response Time:	1.5 seconds maximum
Contacts/Output Relays:	DPDT relay contacts for each control point except motor load types. SPDT low point. Each set of contacts rated at 5 amps, 115 VAC.	Overload (1 sec.):	10 times F.S.
Calibration Accuracy:	±3% of F.S.	Overload (Continuous):	1.5 times F.S.
Repeatability:	Within 0.5% F.S.	Repeatability:	2%
Frequency Response:	50-1000Hz	Dial:	Sharp clear scale. Each dial arc is calibrated to track the specific type of movement used.
		Resistance:	±15%

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 (-).

Input Power: The power source used is 120VAC ±10%, 50 to 400Hz. 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 3344AIXA: 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.

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.

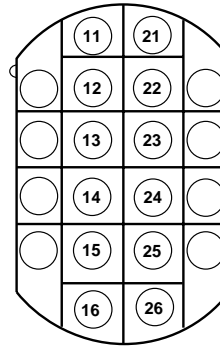
Relays

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 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. 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

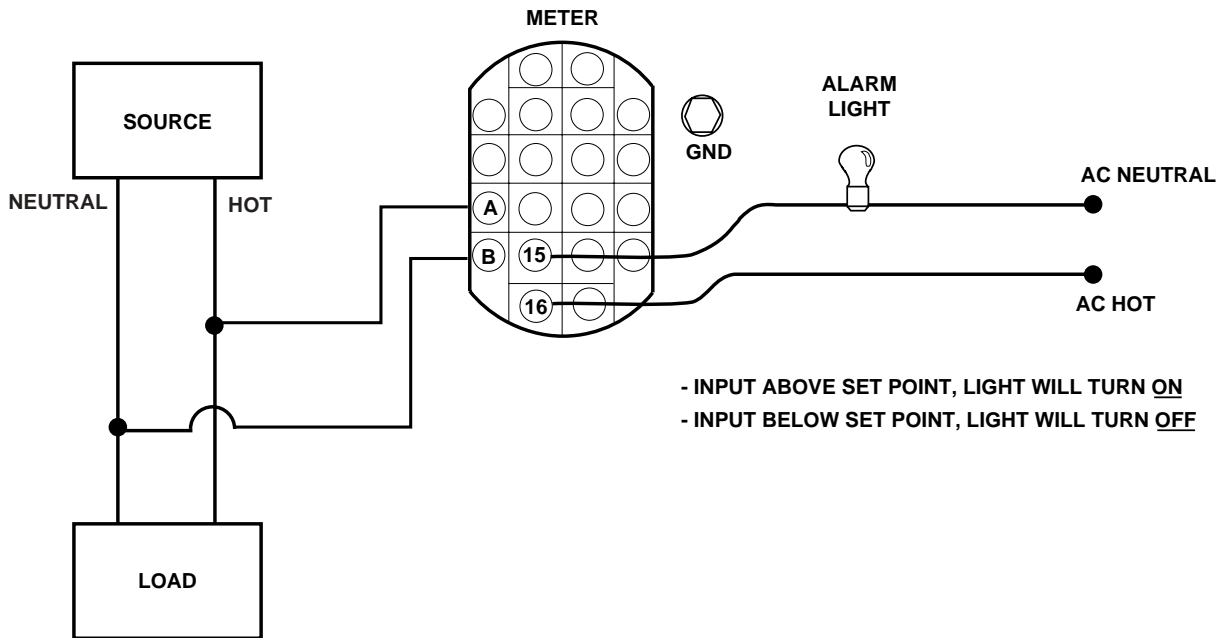


TERMINAL DESIGNATIONS

- | | | |
|--------|---|---|
| 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 | | |
| 21. NO | } | LOW SET POINT.
RELAY IS
DE - ENERGIZED
WITH POWER POINTER
BELOW SET POINT. |
| 22. C | | |
| 23. NC | | |
| 24. NO | } | LOW SET POINT.
RELAY IS
DE - ENERGIZED
WITH POWER POINTER
BELOW SET POINT. |
| 25. C | | |
| 26. NC | | |

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

Application Example



- INPUT ABOVE SET POINT, LIGHT WILL TURN ON
- INPUT BELOW SET POINT, LIGHT WILL TURN OFF

A Plant Supervisor of a newspaper publishing company needs to monitor the line voltage supplying power to a printing press and conveyor motor that operates the press rollers. If the line voltage exceeds 130 volts, the motor could burn up, shutting down the printing operation. In the event that a power surge happens, the maintenance team needs to be notified so as to activate a back-up generator to finish the newspapers and continue the printing process.

A Model 3343AIXA single set point meter relay (150 AC Volt) is installed in parallel between the source (line voltage) and the load (the conveyor motor) to monitor the line voltage. The Plant Supervisor adjusts the set point relay at 130 volts. If the voltage goes above the set point the relay will de-energize and will "turn on" a light that will alert the maintenance team to this change in condition.

The signal input is connected to Terminal A (+) and Terminal B (-) on back of the meter relay. The relay contacts for a normally closed state are Terminals 15 (common) and 16 (normally closed).

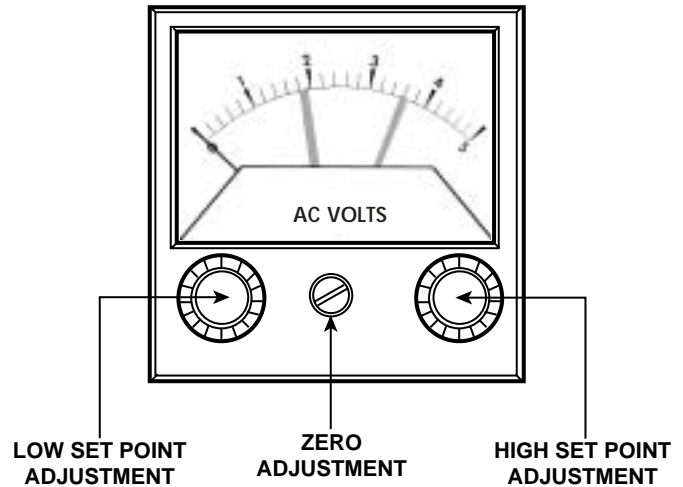
Adjustments

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

AC Millivolts

Range	Approx. Resistance (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
0-100	2k	21674	21634	21687	21638

AC Volts

Range	Approx. Resistance (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
0-10	200 k	21675	21635	21679	21639
0-150	3 M	21676	21636	21680	21640
0-300	6 M	21681	21641	21682	21642

Function Reference Table

For your convenience, the table below lists Rugged Seal controller models for other electrical monitoring functions with page number reference.

Function	Section	Page
AC Current	E	27
DC Current	E	67
DC Voltage	E	87
Temperature	E	93
Percent Motor Load	E	101