

**FEATURES**

- ❖ Staefa phase cut input standard
- ❖ 12A/250V AC contacts
- ❖ Adjustable trip point potentiometers
- ❖ SPDT contact outputs

**APPLICATIONS**

- ❖ Phase cut to on/off conversion
- ❖ Differential control
- ❖ Threshold alarms
- ❖ Low/high limit set points

**DESCRIPTION**

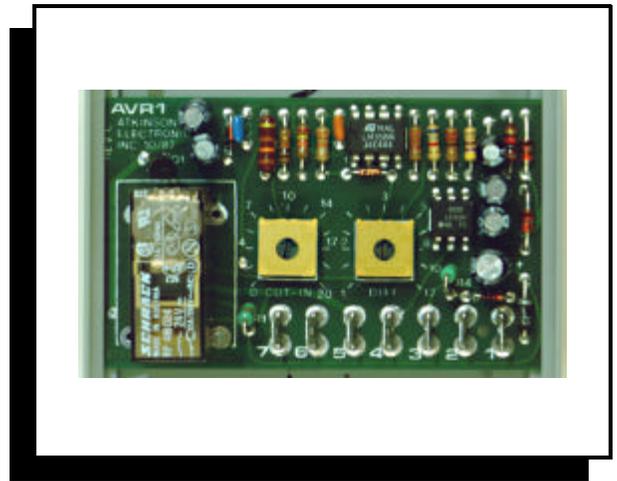
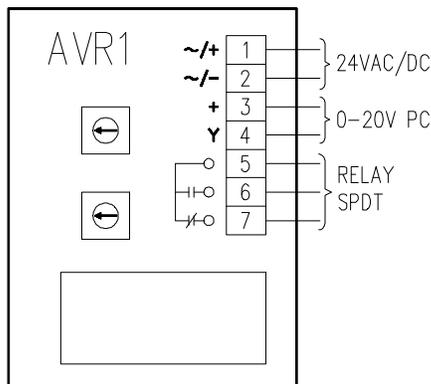
The AVR1 is an adjustable differential and set point, voltage sensitive relay. The was designed to provide a digital output for Staefa's Klimo and Unico Controllers. The AVR1's Phase Cut input is optically isolated, and it's relay output has SPDT contacts for either normally open or closed operation.

The AVR1 can be used in the same function as a pneumatic pressure electric switch to receive an input signal and then switch a two-position load such as circulating pumps, recirculating fans, high/low fan speed, etc.

**OPERATION**

The AVR1 Can be powered from either 24V AC or DC supply. The input signal is fed through an optical coupler for isolation and through an op-amp stage where the set point and differential setting are set. Two single turn pot are used to calibrate the trip point and differential value. The contacts are pilot duty rated (12 amps) and should not be used to switch AC motor loads directly (see Relay specifications for contact ratings).

**WIRING CONFIGURATION**



**SPECIFICATIONS**

SIZE:	3" L x 1.9" W x 1.25" H
MOUNTING:	3" RDI snap-track (supplied)
POWER:	24V AC, ± 10%, 50/60Hz, 2.5VA 24V DC, @ 125mA
INPUT SIGNAL:	0 - 20V phase cut opto-isolated
INPUT IMPEDANCE:	≥3.6KΩ - phase cut input
ACTION:	Make on volt rise measured + to Y Brake on volt drop.
SET POINT:	1 - 18V DC Phase cut
DIFFERENTIAL:	.5V - 15V DC Phase cut
RELAY CONTACT:	SPDT 12 amp continuous, 250V AC maximum voltage, Mechanical life > 30 million ops.
AMBIENT TEMP:	0 to 50° C

**ORDERING INFORMATION**

**AVR1/PC**  
└─ 0-20V PHASE CUT INPUT

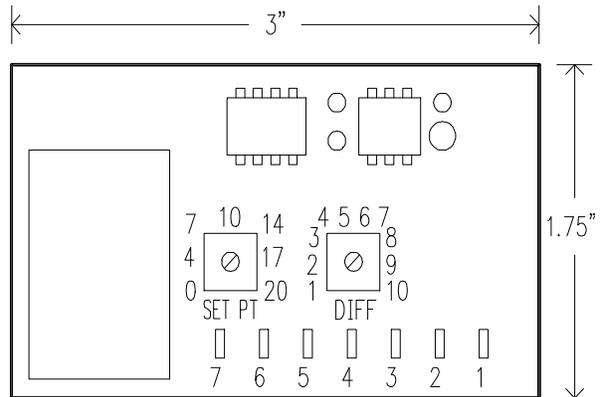
**RELAY OUTPUT SPECIFICATIONS**

Relay type: Schrack # RTB14024 24V DC  
 Contact configuration: 1 Form C  
 Contact rating: 12 Amp @ 30V DC resistive  
 12 Amp @ 120V, 250V AC resistive  
 Contact Material: AgCdO  
 Min. Electrical life: >250k operations @12A, 250V AC  
 Min. Mechanical life: >30 million operations  
 Dielectric Strength: 4000V AC coil/contact

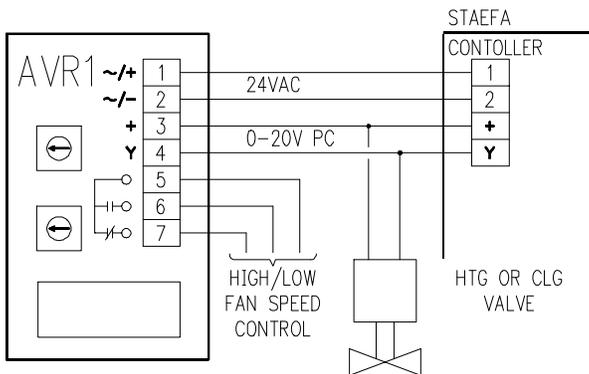
**CALIBRATION ADJUSTMENTS**

The AVR1 has its trip-on and differential (trip-off) set points adjusted by varying the input signal and adjusting the respective potentiometers for the on and off points. The trip-on set point potentiometer should be adjusted for the high end turn on point, the differential potentiometer for the low end turn off point. The differential and trip-on set point potentiometers are minimally interactive so that once the differential has been adjusted it will be maintained at approximately the same value across the full set point adjustment range. Caution should be exercised so that the differential is not set higher than the set point because the relay will switch on with a signal increase but not turn off when the signal goes back to zero.

**PHYSICAL CONFIGURATION**

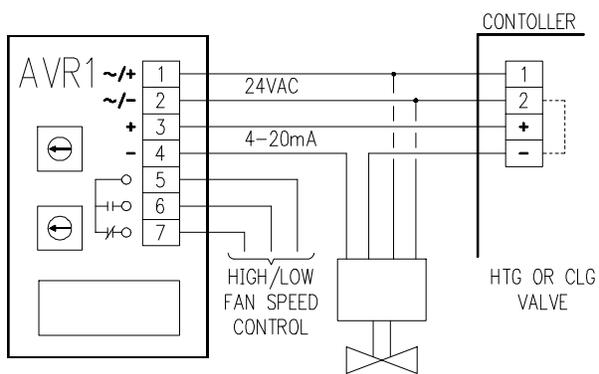


**TYPICAL APPLICATION - PHASE CUT INPUT**



The AVR1 receives the same 0-20V phase cut signal driving a Staefa M3P... or AM1S valve. It may be powered by the same 24V AC transformer as the controller or a separate 24V AC source when the AVR1 is mounted a considerable distance from the controller. Several AVR1's may be connected in parallel to provide several stepped outputs.

**TYPICAL APPLICATION - 4 TO 20mA INPUT**



The AVR1 IS NO LONGER RECOMMENDED for use with a 4-20mA OR 0-10V DC input signals (See AVR1A). The AVR1 uses a half-wave bridge rectifier, term #2 of AC line is connected to input common term #4 when the input is configured for 4-20mA signal. If your output common is not common to one side of the 24V AC line then an isolation transformer is RECOMMENDED to avoid ground loop problems.

Call for other calibration ranges and versions.

If you have a different application or need, please call 1-800-261-3602 and discuss your needs with our Sales Engineers.