AVR1A
ADJUSTABLE VOLTAGE SENSITIVE RELAY

FEATURES

- **Linear operation**
- **12A/250V AC contacts**
- **Single-turn or multi-turn adjustment pots**
- **Jumper selectable input**
- **LED relay position indication**

APPLICATIONS

- **Analog to on/off conversion**
- **Differential control**
- **Analog signal alarms**
- **Low/High limit set points**

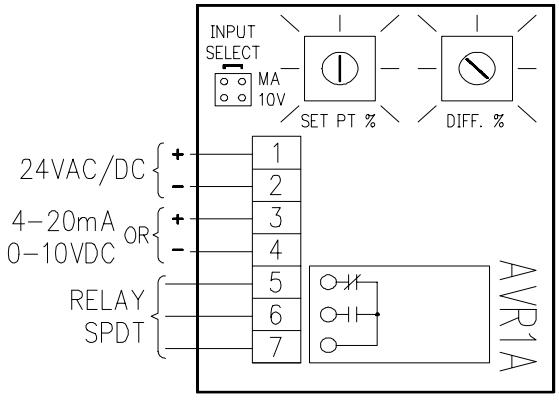
DESCRIPTION

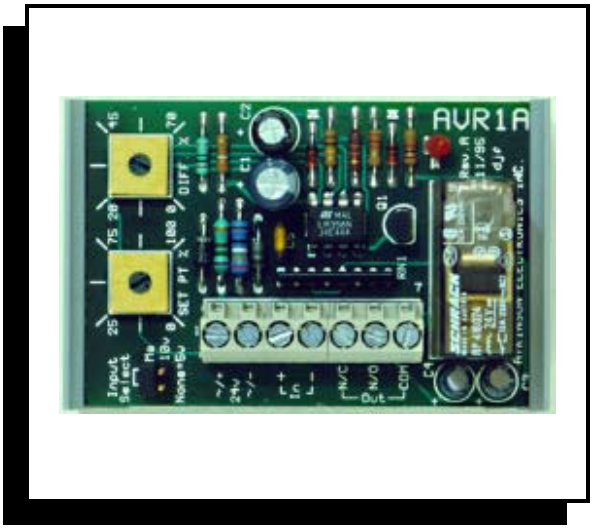
The AVR1A is an adjustable differential and trip point voltage or current sensitive relay. The relay output has SPDT contacts (see next page for specifications). It will accept a 4 to 20mA or 0 to 10V DC signal. The AVR1A can be used in applications where an analog signal needs to switch two-position loads such as circulating pumps, recirculating fans, high/low fan speeds, humidifiers, etc.

OPERATION

The AVR1A is powered by a 24V AC or DC supply. The input signal is fed through two stages of op-amps where the trip point and differential settings are set. Two single or multi-turn pots are used to calibrate the trip point and differential. An LED indicates when the relay is engaged. Calibration of the AVR1A is quite simple. With both pots turned to their maximum settings (clockwise for single turn pots or counter clockwise for multi turn pots), set the input signal to the desired turn on point and adjust the trip point pot until the relay is engaged indicated by the LED. Then adjust the input to the desired trip out point and adjust the span pot until the relay turns off.

WIRING CONFIGURATION





SPECIFICATIONS

SIZE:	3" L x 2" W x 1.25" H
MOUNTING:	3" RDI snap-track (supplied)
POWER:	24V AC ±10% 50/60Hz 1.8VA 24V DC 1.5VA
INPUT SIGNALS:	0-5V DC non-isolated 0-10V DC non-isolated 4-20mA non-isolated
INPUT IMPEDANCE:	⩾100K Ω 0-5V DC, ⩾20K Ω 0-10V DC, ⩾250 Ω 4-20mA.
ACTION:	Make on voltage/current rise Brake on voltage/current drop.
SET POINT:	10-100% of input
DIFFERENTIAL:	5-100% of input
AMBIENT TEMP:	0-50°C
RELAY CONTACT:	SPDT 12 amp continuous, 250V AC maximum voltage, Mechanical life >30 million ops.

ORDERING INFORMATION

AVR1A/SEL/X/XX

- Power Supply Option (AC or DC)
- Set Point Adjustment Option Code
- Onboard Selectable Input

STANDARD ONBOARD INPUT OPTIONS

0-5VDC	No Jumper
0-10VDC	Jumper 10V
4-20mA	Jumper mA

SET POINT ADJUSTMENT OPTIONS

S - Single-turn potentiometer adjustments (Standard)
M - Multi-turn potentiometer adjustments

POWER SUPPLY OPTIONS

AC - 24VAC ±10% 50/60 Hz 1.8VA
DC - 24VDC ±5% 1.5VA

ORDERING CODE EXAMPLES

AVR1A/S Adjustable voltage/current relay with signal turn trip point potentiometers.

AVR1A/M Adjustable voltage/current relay with multi turn trip point potentiometers.

RELAY OUTPUT SPECIFICATIONS

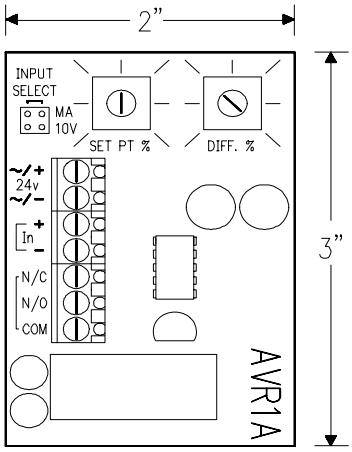
Relay type:	Schrack # RTB14024 24V DC
Contact type.:	1 Form C
Contact rating:	12 Amp @ 30V DC resistive 12 Amp @ 120V, 250V AC resistive
Contact material:	AgCdO
Min electrical life:	> 250k operations (12A,250V AC)
Min mechanical life:	> 30 million operations
Dielectric Strength:	4000V AC coil/contact

TERMINAL BLOCK SPECIFICATIONS

Terminal type:	Wieland # 25.163.0753.0
Connection type:	Screw-cage clamp
Connection rating:	UL: 20 Amp 12-20 AWG 300V AC CSA:25 Amp 12-22 AWG 300V AC

Call for other calibration ranges and versions.

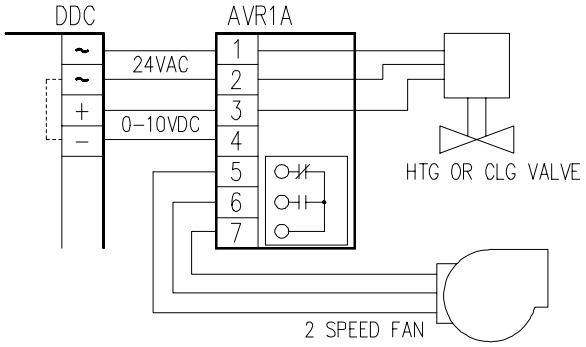
PHYSICAL CONFIGURATION



CALIBRATION ADJUSTMENTS

Calibration of the AVR1A is quite simple. With both pots turned to their maximum settings (clockwise), set the input signal to the desired turn on point and adjust the set point pot until the relay is engaged indicated by the LED. Then adjust the input to the desired trip out point and adjust the span pot until the relay turns off.

TYPICAL APPLICATION



The AVR1A uses a half-wave bridge rectifier, term #2 of AC line is connected to input common term #4. 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.