FEATURES

- **24VAC operation**
- **Output can sink input's pull-up voltage**
- **Optional zero & span potentiometers**
- **Small size 1.10" by 2.19"**
- **Two mounting options**

APPLICATIONS

- **Analog 0 to 5VDC & 0 to 10VDC scaling**
- **Rescale nonstandard sensors**
- **Rescale nonstandard voltages**

DESCRIPTION & OPERATION

The ASM1 was designed as an analog signal scaling module to rescale control voltages or sensor signals to meet the input requirements of the various controllers. The ASM1 will also allow you to use existing sensors and scale the ASM1's output to match your controllers input requirement. The ASM1's output can sink the controller's input pull-up voltage on the application inputs. The ASM1 can be factory calibrated to your specific signal requirements. It can be snap track mounted for panel use or be potted with detachable terminal block for field use.

The ASM1 uses a half wave rectifier for 24VAC power input, with terminal 2 being common for the power supply, input common and output common. The input can be factory configured for voltage, current, or sensor signals either requiring a pull-up voltage or a load resistance. The signal then passes through two op-Amp stages where it is scaled to the desired output signal.

WIRINGE CONFIGURATION
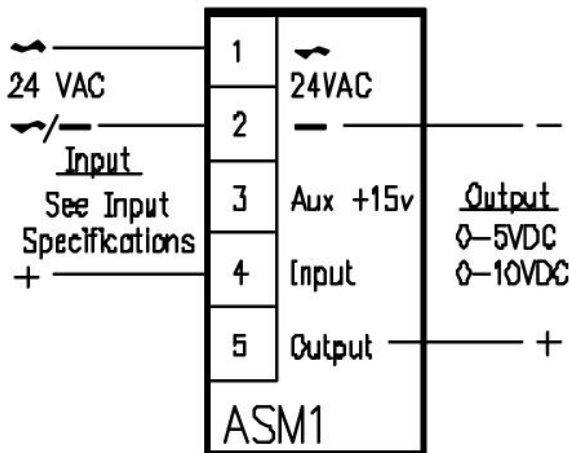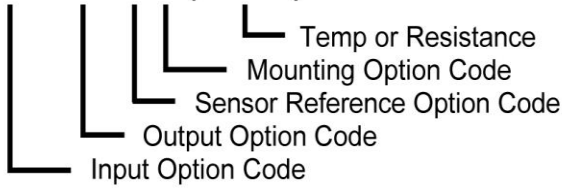
Snap Track
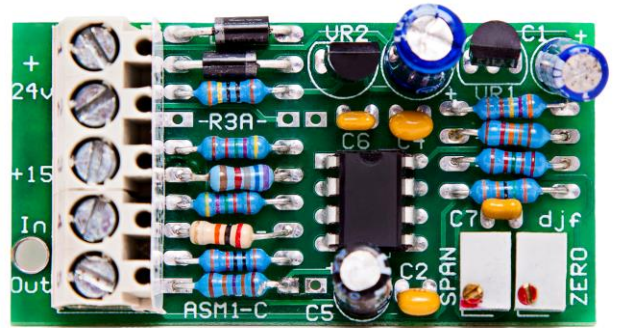
Potted

SPECIFICATIONS

SIZE:	1.10"L x 2.19"W x 0.75"H
MOUNTING:	2.187" RDI snap track (supplied) or 2"L x 1"W Double sided foam tape
POWER:	24VAC ± 10%, 50/60Hz, 0.6VA
INPUT:	0 TO 5VDC, 0 TO 10VDC 4 to 20mA Temperature sensors: RTD's AD590 or 92, STAEFA sensors
INPUT IMPEDANCE:	Voltages ≥ 100K 4 to 20mA ≥ 61.9 Sensors ≥ 100K
ACTION:	Dir. With 2 Hz filtering
OUTPUT:	0 to 5VDC – Standard 0 to 10VDC – Standard Sensor voltages – Custom Voltage load 1KΩ minimum
ADJUSTMENTS:	Zero & span ± 20%
AMBIENT TEMPERATURE:	0 to 50°C

ORDERING INFORMATION

ASM1/XXX/XXX/X/X (XX-XX)

Temp or Resistance
Mounting Option Code
Sensor Reference Option Code
Output Option Code
Input Option Code

INPUT CODE OPTIONS

mA	4 to 20mA non-isolated with 62V load
5V	0 to 5VDC Analog voltage
10V	0 to 10VDC Analog voltage
VDC	Analog DC voltage (specify)
Ohms	3 wire potentiometers (specify resistance)
AD590	Linear temperature sensor*
	(*specify temperature range)
RTD-100	RTD 100V temperature sensor **
RTD-1K	RTD 1KV temperature sensors **
RTD-2K	RTD 2KV temperature sensors **
	(**specify RTD type, temperature coef. and temperature range)

OUTPUT CODE OPTIONS

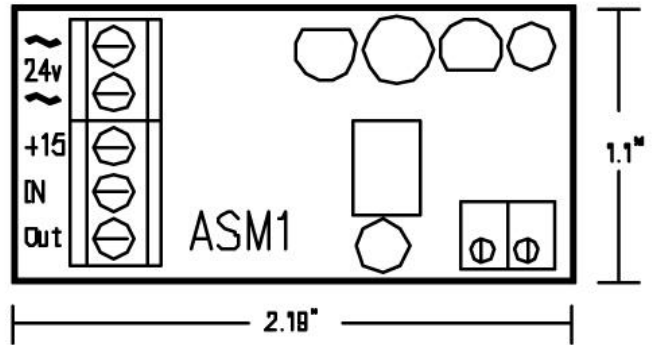|	
5V	0 to 5VDC
10V	0 to 10VDC
10R	10 to 0VDC
VDC	DC voltages - specify
BC-X	3V span starting @ X voltage (3, 6, 9, 12)
BC-15	1 to 15VDC special (24VDC Regulator)
KLIMO	3.75V to 2.25VDC
SM2-T30X	T30 Exp (in#0) voltage

SENSOR REFERENCE OPTIONS

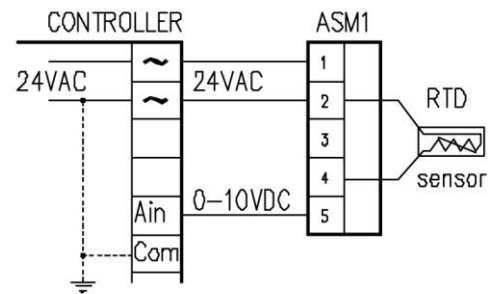|	
SA	Standalone sensor (pull-up resistor and reference voltage or load resistor applied to ASM1's high impedance input)
PI	Parallel input to controller (no pull-up or load resistor or reference voltage applied to ASM1's high impedance input).

PHYSICAL CONFIGURATION

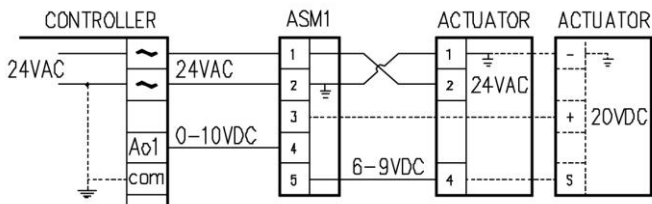## TYPICAL SENSOR APPLICATION

MOUNTING OPTIONS CODE

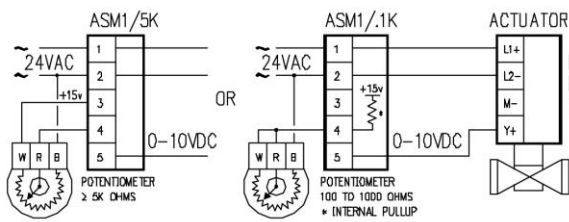|	
S	2.187" Snap Track
P	Potted enclosure double stick foam tape

TYPICAL SENSOR APPLICATION

Output adjustments are made with the ZERO and SPAN potentiometers on the ASM1. A clockwise ZERO adjustment increases the output level and should be made with a 0% input signal. A clockwise SPAN adjustment increases the signal differential and should be made with a 100% input signal.

ORDERING CODE EXAMPLES

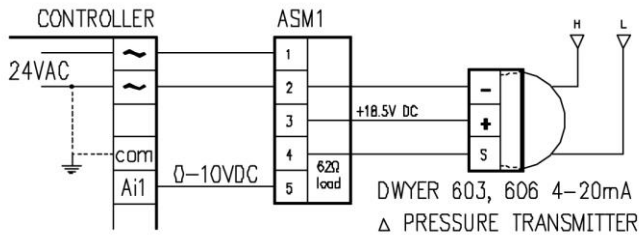|	
ASM1/10V/BC6	0 to 10VDC input signal, to a 6 to 9VDC output signal) for Barber Colman-Seibe actuators)
ASM1/mA /10V	4 to 20mA input signal, to a 0 to 10VDC output signal (for improved 10V input resolution).
ASM1/270V/10V	0 to 270V feedback potentiometer signal, to a 0 to 10VDC output signal (for feedback status).
ASM1/AD590/10V/P 0-100	AD590 stand-alone sensor (0 to 1008F) signal, to a 0 to 10VDC output signal.
ASM1/RTD-1K/5V/S 0-100	RTD 1KV sensor - paralleled inputs (0-1008F) signal, to a 0 to 5VDC output signal.
ASM1/mA /KLIMO	4 to 20mA input signal, to a 3.75 to 2.25VDC output signal (for STAEFA's Klimo Controllers).

APPLICATION 1
VOLTAGE TO VOLTAGE SCALING

The ASM1/10V/BC9 rescales a 0 to 10VDC signal to 6 to 9VDC to drive a Barber Colman valve or damper actuators. The ASM1's output is configured to be adjustable between 0 to 15 DC, with a delta as narrow 2.75VDC. The Zero potentiometer can adjust level off 0 to 9VDC. The ASM1/BCX versions should be powered from a 24VAC or DC source only.

APPLICATION 2
3 WIRE RESISTANCE INPUT TO 0 TO 10VDC OUTPUT

The ASM1/Ohms/10V or VDC interface module can be factory configured for 2 or 3 wire potentiometer (resistance) inputs. A pull-up resistor is connected between the input and the internal voltage regulator to provide one half of a voltage divider circuit while the potentiometer provides the second. This application could be used to provide a manual positioning potentiometer or to read the damper position from a feedback potentiometer and generate an adjustable voltage output.

APPLICATION 3
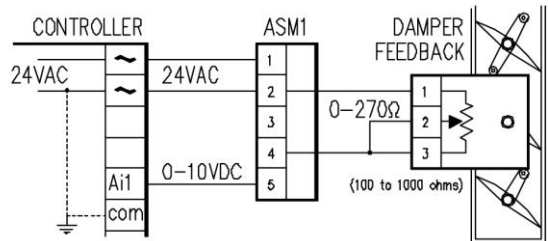## 3 WIRE RESISTANCE INPUT TO 0 TO 10VDC OUPUT

The ASM1/5K/0-10V interface module is factory configured to accept a potentiometer resistance of 0 to 2500 to 10,000 Ohms, while the ASM1/100/10V interface is configured to accept a potentiometer resistance of 0 to 100 Ohms (minimum) to 1000 Ohms, and provide a 0 to 10VDC output signal to drive the MVB or MVL series valves.

APPLICATION 4
2 WIRE (POSITIVE REFERENCED) 4 TO 20MA TRANSMITTER SIGNAL CONVERSION

The ASM1/mA/VDC interface module is factory configured to accept a 4 to 20mA signal into a 250 Ohm load resistor and provide an adjustable voltage output from a maximum of 0 to 12.5VDC output to a minimum of 0 to 3VDC output. The output level can be adjusted off the 0VDC to a maximum of 6VDC.

APPLICATION 5
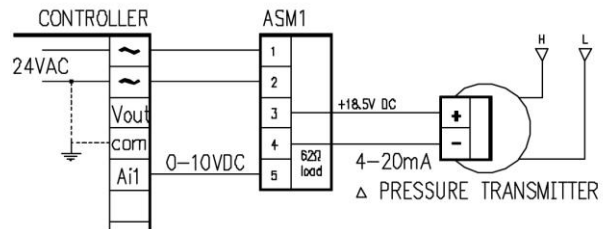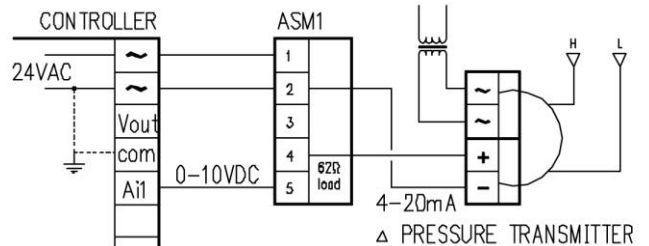## 3 WIRE (POSITIVE REFERENCED) 4 TO 20MA TRANSMITTER SIGNAL CONVERSION

The ASM1/mA3/VDC//P (potted version) is factory configured to provide +18.5VDC power for 3 wire (positive referenced) 4 to 20mA transmitters. The input has an internal 62 Ohm load resistor, referenced to the 18.5VDC supply, as required by DWYER's 603 and 606 transmitters. The load resistor produces a .24 to 1.24V signal that is scaled to the desired output signal.

APPLICATION 6
## 3 WIRE (POSITIVE REFERENCED) 4 TO 20MA TRANSMITTER SIGNAL CONVERSION

The ASM1/mA/VDC/P (potted version) is factory configured to accept the 4 to 20mA signal from a 4 wire transmitter. The 4 to 20mA signal is fed into a 62 Ohm load resistor, referenced to common, and provides an adjustable voltage output from 0 to 3V to 0 to 10VDC.

APPLICATION 7
TEMPATURE SENSOR CONVERSION
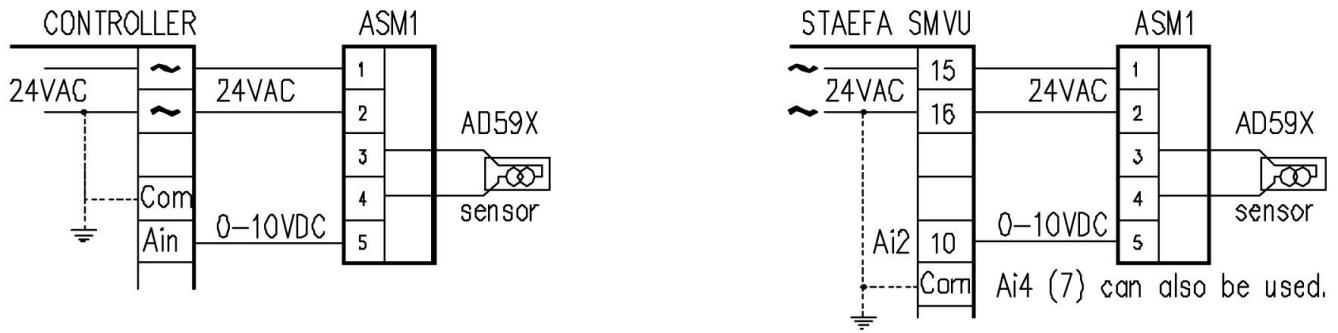
The ASM1/AD59X/10V/0-100/P interface module is factory set up to provide a +15VDC power source for an AD590 or AD592 temperature sensor and receive a 0 to 100°F signal and provide a 0 to 10VDC output. The ASM1 output is scaled for a specific temperature range allowing other sensors to be used with controllers that have a specific sensor type input.

APPLICATION 8
TEMPATURE SENSOR CONVERSION
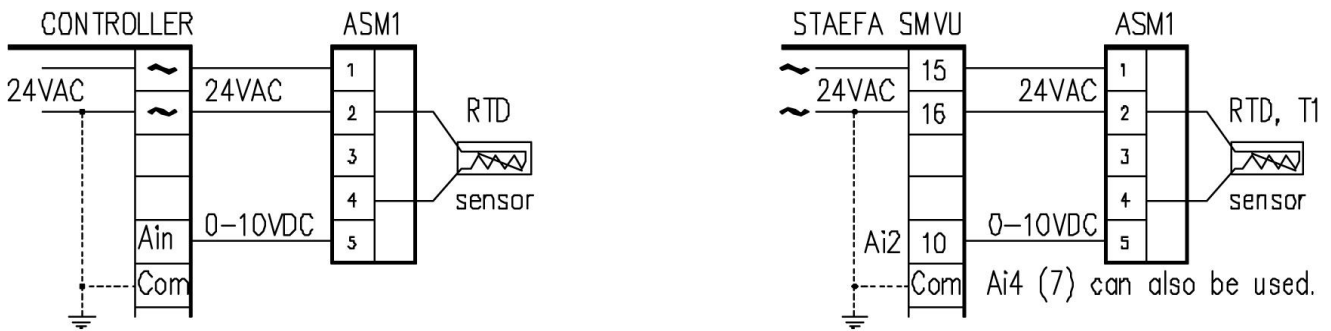
The ASM1/RTD-1K/10V/0-100/S or ASM1/T1/10V/0-100/S interface module is factory set up to receive a 0 to 100°F resistance signal from a RTD or STAEFA's T1 temperature sensor and provide a voltage output inputs. The stand-alone version provides an internal pull-up resistor, while the parallel version has a high input impedance as to not load the existing sensor circuit.