

FEATURES

- 24VAC or DC operation
- Zero potentiometer
- Small size 1.10" by 2.19"
- Two mounting options

APPLICATIONS

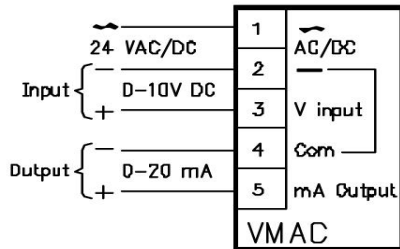
- Converts 2 to 10VDC to 4 to 20mA to drive HVAC
- Converts 0-5VDC to 0-20mA
- NOT for VFD applications

DESCRIPTION & OPERATION

The VMAC was designed as a low cost signal converter for those applications where HVAC DDC controllers have a 0-10VDC output without the capability of driving the current required by actuators that use a 4-20mA input signal. When the 0-10VDC is scaled to 2-10VDC the VMAC's output will be 4-20mA. The VMAC is not isolated and uses the same common for the input, output, and 24VAC/DC power supply common. The VMAC may be mounted in SnapTrack inside electrical enclosures or potted for mounting in exposed field locations.

The VMAC uses a half wave rectifier for 24VAC/ DC power, with terminal 2 being common for the power supply, input and output common (terminal 4). The input signal is reduced to 0-1V which is compared against a 0-1V generated by the 0-20mA output circuitry. The output current is load dependent with the load resistance able to vary between 100 and 600 Ohms. A calibration potentiometer allows for field adjustment for a 10V input signal to correspond to 20mA output with the specific load resistance connected to the output. Factory calibrated with a 250V load resistance.

WIRING CONFIGURATION



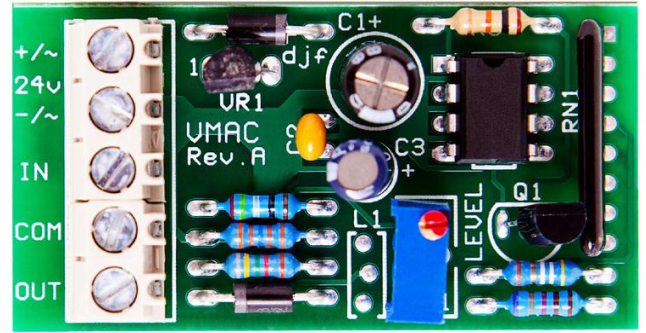
ORDERING INFORMATION

- VMAC/ 5V/X - 0 to 5VDC Input
- VMAC/10V/X - 0 to 10VDC Input

MOUNTING CODE OPTIONS

- S 2.187" SnapTrack
- P Potted enclosure

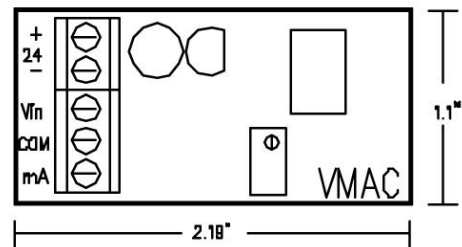
SnapTrack



SPECIFICATIONS

SIZE:	1.10"L x 2.19"W x .75"H
MOUNTING:	2.187" RDI SnapTrack (supplied) 1" Double sided foam tape
POWER:	24VAC, ± 10%, 50/60Hz, .6VA 24VDC, @ 45mA (or filtered DC)
INPUT:	0-5 VDC (VMAC/5V) 0-10VDC (VMAC/10V)
INPUT IMPEDANCE:	≥ 100KΩ
ACTION:	Direct with 2 Hz filtering
OUTPUTS:	0-20mA - Standard Calibrated for 4-20mA with a 2 to 10VDC input signal Maximum load 600Ω (Factory calibrated with 250Ω load)
ADJUSTMENT:	1 Calibration potentiometer for 20mA output @ 10VDC input
AMBIENT TEMP:	0 to 50°C

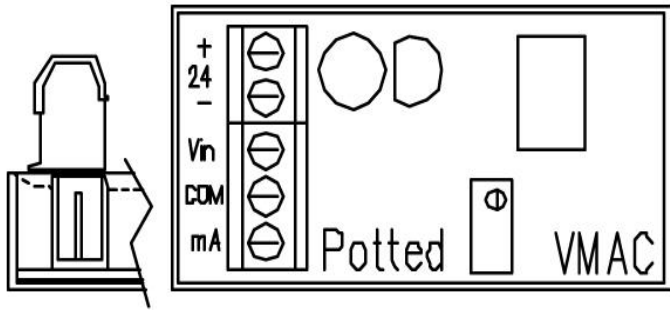
PHYSICAL CONFIGURATION SNAPTRACK



Potted



PHYSICAL CONFIGURATION POTTED

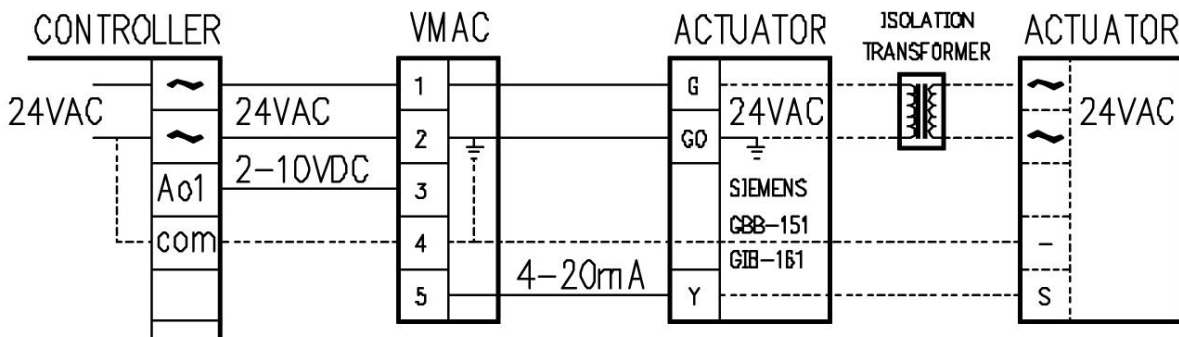


FIELD CALIBRATION ADJUSTMENTS

After the VMAC is connected between the DDC controller and the actuator, it may be calibrated by performing the following procedure:

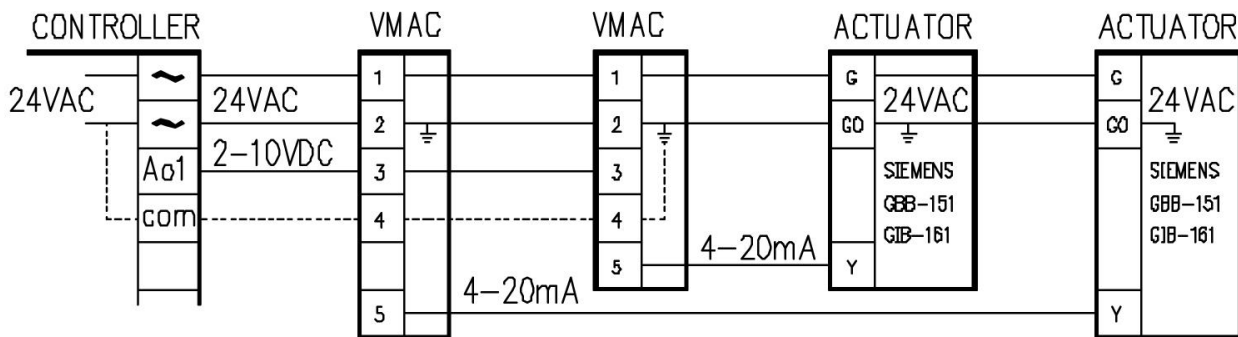
1. Command the DDC output to 100% or 10VDC.
2. Connect a current meter in series with the VMAC output and actuator (load), and verify the output signal.
3. Adjust the potentiometer on the VMAC for 20.0mA output with a 10VDC input signal.
4. Command DDC output to 20% or 2VDC, and verify that the output is close to 4mA.
5. If output isn't close to 4mA (62% of input span) you may want to calibrate for 5VDC input with 10.0mA output.

**APPLICATION 1
VOLTAGE TO MILLIAMP CONVERSION**



The VMAC converts a 2 to 10VDC signal from DDC controller to 4 to 20mA to drive the actuator. Field calibrations may be required due to load resistance variations. See FIELD CALIBRATION ADJUSTMENTS above. The actuator, VMAC, and DDC controller may be connected to the same transformer if one side of the 24VAC power is also signal common. If the signal common on the actuator is not one side of the 24VAC as shown, an isolation transformer may be needed to avoid a ground loop that may damage either or both the VMAC, actuator, or controller.

**APPLICATION 2
MULTIPLE ACTUATOR CONNECTION**



The VMAC inputs may be connected in parallel to share the same DDC 2-10VDC signal and provide individual 4-20mA signals for multiple actuators that share the same power supply. If the total resistance of the actuators is less than 600 Ohms, their current inputs may be connected in series if the actuators are powered by separate transformers. Field calibrations may be required due to load resistance variations. See FIELD CALIBRATION ADJUSTMENTS above.