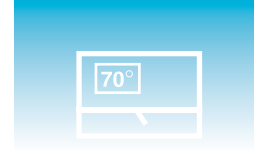


HVAC CONTROLS

SET POINT CONTROLLER MODEL UCM-420A



DESCRIPTION

The **Model UCM-420A** is a low cost microprocessor-based Proportional plus Integral (PI) controller that may be used for a wide variety of control applications. All setup and programming is done by DIP switches and bottle plug jumpers on the **Model UCM-420A**. Set points may be local and/or remote. The output may be direct or reverse acting.

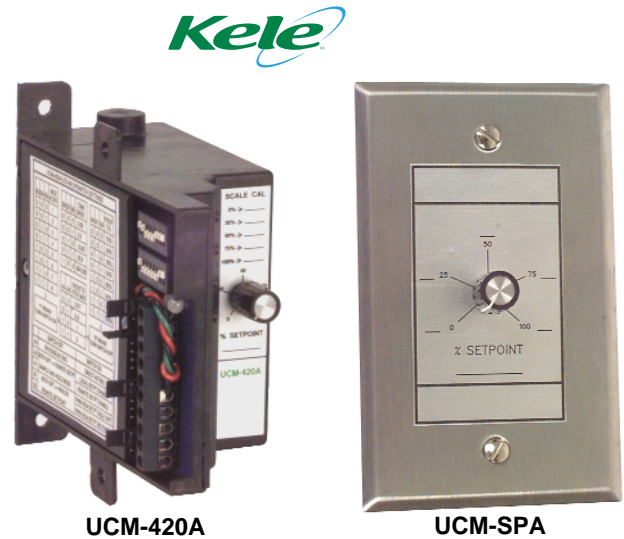
FEATURES

- **PI control**
- **DIP switch/jumper programming**
- **Selectable throttling range**
- **Selectable integral reset rate**
- **Direct or reverse acting**
- **Set point potentiometer on unit**
- **Six-hour memory on loss of power**
- **Optional DIN rail mounting**
- **Optional set point potentiometer with stainless steel wall plate (UCM-SPA)**

MODES OF OPERATION

Set point Controller - The **UCM-420A** input monitors the process being controlled. This input may be a 4-20 mA or 1-5 VDC signal from a pressure sensor, flow transmitter, temperature sensor, etc., or an input from a PreCon Type III temperature thermistor. Then, the **UCM-420A** provides a 4-20 mA PI output signal to control a valve, VFD, damper, etc., based on a set point as described below.

- 1. Local set point controller** - The potentiometer mounted on the unit may be used to control the set point. The local set point may also be a **UCM-SPA** set point potentiometer, the set point option of a PreCon Model ST-S3E-XA temperature sensor - a 4-20 mA signal or a 1-5 VDC signal.
- 2. Remote set point controller** - In this mode, the set point signal may be a 4-20 mA, 1-5 VDC, or time-based pulse-width signal from a BAS controller.
- 3. Remote set point controller with local adjustment** - The **UCM-420A** accepts a remote set point signal as described above in #2. Then, a local set point signal, as described in #1, may be used to adjust



UCM-420A

UCM-SPA

the set point. The local set point will have authority to adjust the set point $\pm 12.5\%$ of the input range.

If the local set point is from a PreCon ST-S3E-XA, it will have authority to adjust the set point $\pm 9.4\%$ of the input range.

- 4. Output expander** - The **UCM-420A** may be operated in a multiplexed pulse-width modulation mode (PWM) so that one BAS output may control up to eight groups of **UCM-420As**, with each group able to have a different set point. Each **UCM-420A** may also have local set point adjustment as described in #3.

Sample and Hold - The **UCM-420A** may be used to monitor a 4-20 mA or 1-5V control signal. If the signal being monitored is lost, the **UCM-420A** will hold the last valid value for the signal until the signal returns. On a power loss, the value of the signal is remembered up to six hours.

Pulse Width to 4-20 mA Converter (single or multiplexed) - The **UCM-420A** may be used to convert a time-based pulse-width AC or DC signal to a 4-20 mA output. By using the multiplexed mode, multiple **UCM-420As** may be controlled by one BAS output.

4-20 mA Signal Generator - If the device to be controlled by the **UCM-420A** needs to be calibrated before the system is started up, the **UCM-420A** may be used to generate a 4-20 mA output in one mA increments.

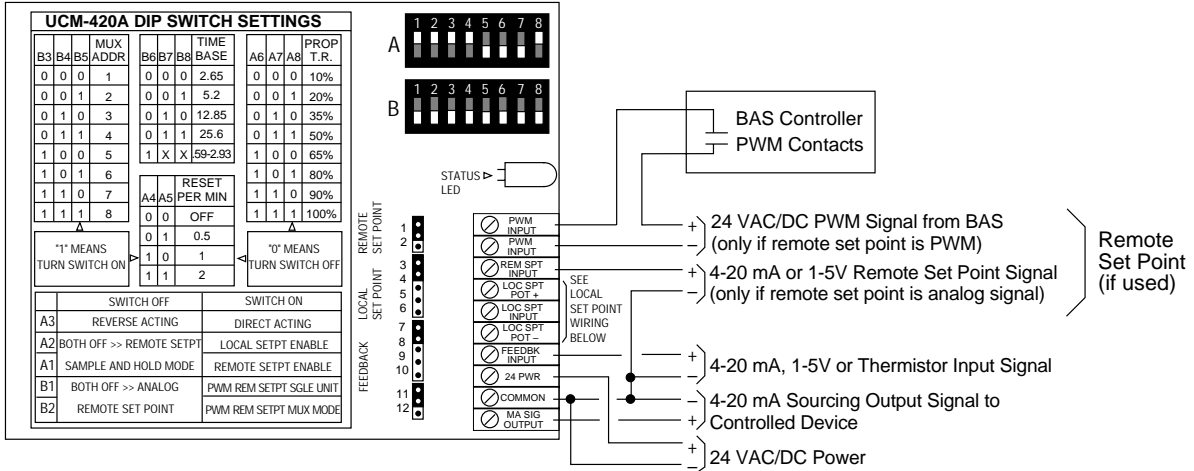
SPECIFICATIONS	
Supply voltage	24 VAC $\pm 10\%$ @ 130 mA max 24 VDC $+15\%$, -10% @ 65 mA max
Remote set point input	4-20 mA, 1-5 VDC, PWM or multiplexed PWM
Local set point input	4-20 mA, 1-5 VDC, three-wire potentiometer or PreCon two-wire potentiometer (ST-S3E-XA)
PWM time base	0.1-2.65, 5.2, 12.85, 25.6, or 0.59-2.93 sec
Output	4-20 mA sourcing
Output resolution	255 steps
Output burden	650 Ω max
Input	4-20 mA, 1-5 VDC or PreCon Type III thermistor (Thermistor range 50° to 90°F)
Input impedance	250 Ω (mA), 10,000 Ω (voltage)
Accuracy	$\pm 1\%$
Operating temp	32° to 158°F (0° to 70°C)
Humidity limit	5% to 95% noncondensing
Remote set point pot	UCM-SPA 0-10 k Ω
Weight	
UCM-420A	1.3 lb (0.61 kg)
UCM-SPA	0.75 lb (0.34 kg)

HVAC CONTROLS

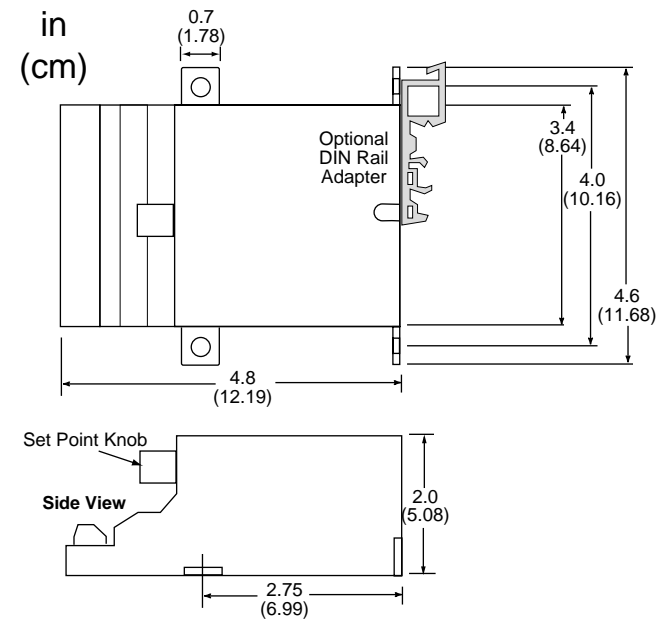


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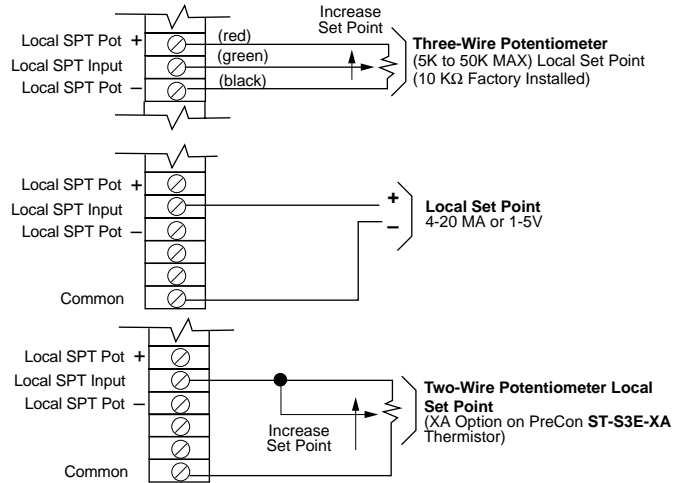
WIRING



DIMENSIONS



LOCAL SET POINT WIRING OPTIONS



ORDERING INFORMATION

MODEL	DESCRIPTION
UCM-420A	Set Point Controller with Local Set Point Potentiometer
OPTIONS	
47	DIN rail mount (must be factory installed)

UCM-420A - 47 Example: UCM-420A-47 Set point controller with DIN rail mounting

Related Products

UCM-SPA PCM Set point potentiometer, 0-10 kΩ, three-wire pot on S.S. plate for remote mounting
Air pressure controller