

FEATURES

- ❖ Field selectable input pulse per second
- ❖ 256 step resolution with no rollover
- ❖ Timing calibrated to input signal
- ❖ Optically isolated inputs

APPLICATIONS

- ❖ Pulse per second to analog conversion
- ❖ KW pulse meter to analog conversion
- ❖ Flow pulse meter to analog conversion

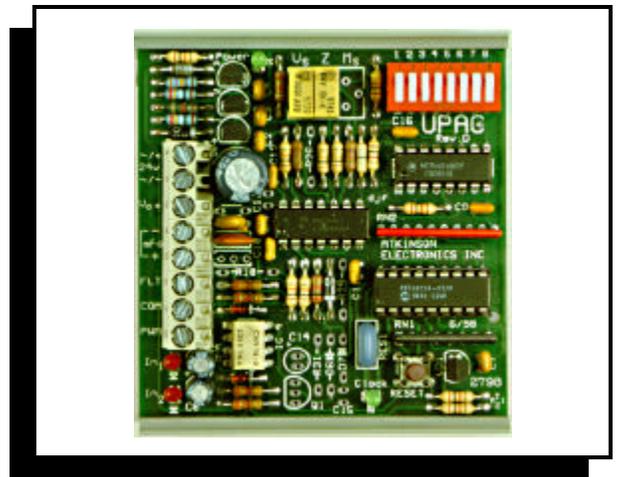
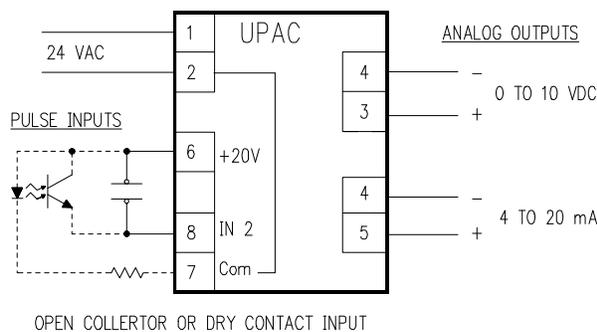
DESCRIPTION

The UPAC-CNT2K (Pulse Counter to Analog Converter) is a customized application specific interface module designed to convert pulses from Kw, water or flow meters to an analog signal. The UPAC-CNT2K can receive pulses from a dry contact (relay) or open collector output devices. The pulse rate is dip switch selectable between 125 to 2k pulses per second. The UPAC provides both 0 to 10V DC and 4 to 20mA output signals.

OPERATION

The UPAC consists of a 24V AC half wave rectifier; 24V, 20V and 5V DC regulated voltage supplies; an input buffer section; a signal processor section; and an output amplifier section. The input can accept either a dry contact pulse or an open collector voltage pulse. The input pulses are counted and compared to pulse rate per second selected and an output is generated and updated every second. The UPAC produces both an 4 to 20mA and an 0 to 10V DC voltage output.

WIRING CONFIGURATION



SPECIFICATIONS

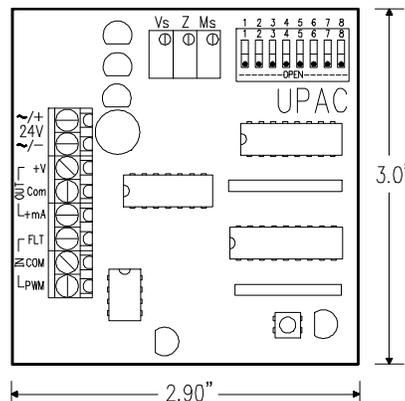
SIZE:	3" L x 2.625" W x 1.25" H
MOUNTING:	3" RDI snap-track (supplied). Will fit inside a 4 x 4 box.
POWER:	24V AC \pm 10%, 50/60Hz, 1.5VA 24V DC, @ 60mA
INPUT SIGNALS:	Dry contact, Open collector or, Voltage 10 to 20V DC
INPUT RATES:	127 Pulses Per Second 255 Pulses Per Second 510 Pulses Per Second 765 Pulses Per Second 1020 Pulses Per Second 1530 Pulses Per Second 2040 Pulses Per Second
OUTPUTS:	4-20mA into 600 Ω maximum 0-10V DC or 0-5V DC, 2K Ω minimum Update every second.
ACTION:	Dir. with 2Hz Filtering
ADJUSTMENT:	ZERO & SPAN \pm 20% 4-20 mA output only
AMBIENT TEMP:	0 to 50°C.

ORDERING INFORMATION

PHYSICAL CONFIGURATION

UPAC-CNT2K/OC - 3 WIRE OPEN COLLECTOR
KW METER INPUT
STANDARD OUTPUT
4-20mA & 0-10V DC

UPAC-CNT2K/SQ - 2 WIRE 4.5-5v SQUARE
WAVE SIGNAL INPUT
STANDARD OUTPUT
4-20mA & 0-10V DC



FIELD SETUP & CALIBRATION

The UPAC has an eight (8) position DIP switch that is used to select the maximum pulse rate per second. A logic **0** or **OFF** is when the DIP switch is in a down position towards the side marked **OPEN**. Note the DIP switch is marked to which side is open.

1. Update rate selection - DIP switch positions 1 & 2 (**SW1 & SW2**) are used to select the output update rate. When both 1 and 2 are in the **OFF** position, the card will updated the output every second. Other options not available at this time.

2. Pulse rate selection - DIP switch positions 3 thru 8 (**SW3 thru SW8**) are used to select the maximum pulses per second that will result in a 100% output signal. (NOTE: Only one of these six switches should be on at one time.) The pulse rates are detailed below:

- | | | |
|--|--|---|
| Position 3 (SW3) = 127 per second | Position 5 (SW5) = 510 per second | Position 7 (SW7) = 1000 per second |
| Position 4 (SW4) = 255 per second | Position 6 (SW6) = 765 per second | Position 8 (SW8) = 1530 per second |
- With all switches 3 thru 8 (**SW3 thru SW8**) in the **OFF** position, the pulse rate defaults to 2040 pulses per second.

Voltage outputs are fixed and have no adjustment. The 4-20mA output is adjustable, and are made with the zero and span potentiometers. The 4-20mA adjustments are as follows:

- * Zero adjustment clockwise, will decreases output level. Span adjustment clockwise, will increases output signal differential.
- 1- With power off connect input signal to the UPAC, select the update rate and pulse rate by setting appropriate DIP switches.
- 2- Connect multi meter in series with terminal #5 and the load for 4-20mA output. Apply power to the UPAC.
- 3- With 100% input signal applied, adjust ZERO potentiometer for 20mA output.
- 4- Adjust input signal to minimum and adjust SPAN for half of the difference of present output value and the desired 4mA output.
- 5- Repeat steps 3 & 4 until desired output is achieved.
- 6- Power down and remove multi meter from output, and power up the UPAC for normal operation.

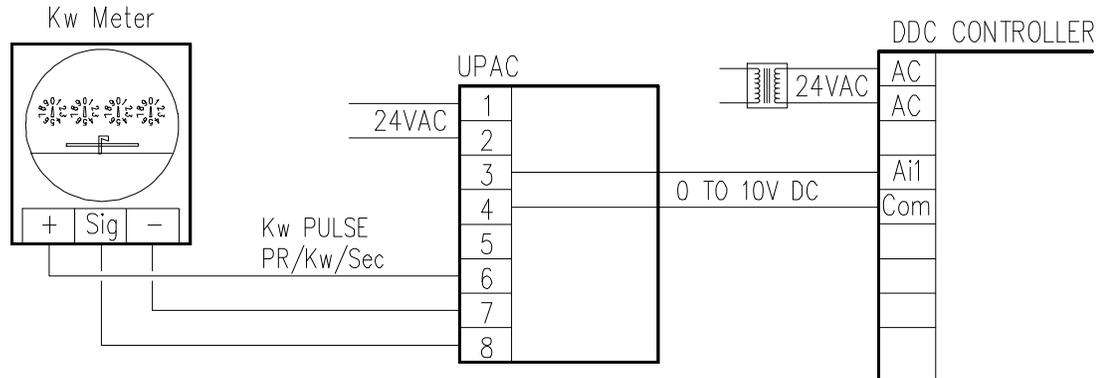
* Only make adjustments of $\leq 70\%$ at a time, of the difference between the current output and the desired output.

**** Note: any time the update or pulse rate dip switches are changed the card must be reset by pressing the reset button or by powering down the UPAC for 5 Seconds.**

Call for other calibration ranges and versions.

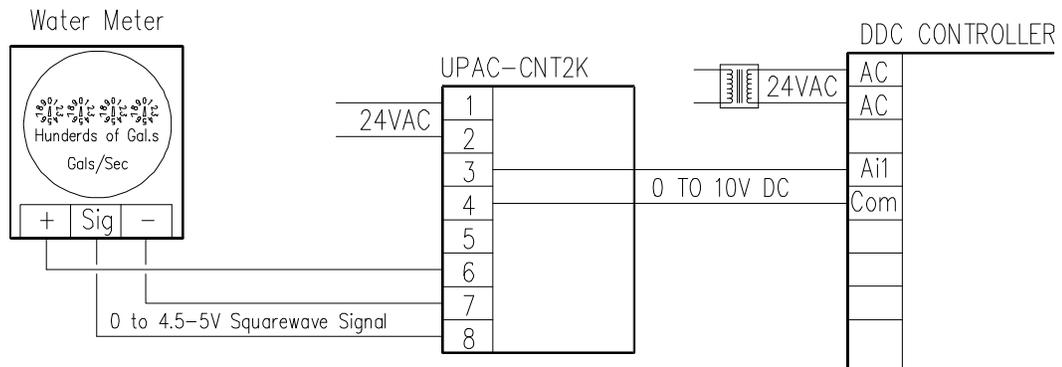
If you have a different application or need, please call 1-800-261-3602 and discuss your needs with our Sales Engineers.

APPLICATION 1 - KW METER PULSE INPUT TO VOLTAGE CONVERSION



The UPAC/CNT is configured for an open collector or dry contact pulse signal from a KW meter. The UPAC standard outputs are 0-10V DC and 4-20mA. The UPAC/CNT has six pulse rates per second. In this application the kw meter pulse rate is converted to a stepped 0-10V DC output signal that is fed into a DDC controller. (See FIELD SETUP AND CALIBRATION for Dip switch settings and calibration).

APPLICATION 2 - WATER METER SQUARE WAVE PULSE INPUT TO VOLTAGE CONVERSION



The UPAC/CNT2K is configured for a 0 to 4.5-5v square wave signal from a Water or Pulse meter. The UPAC standard outputs are 0-10V DC and 4-20mA. The UPAC/CNT2K has six pulse rates per second. In this application the water meter pulse rate is converted to a stepped 0-10V DC output signal that is fed into a DDC controller. (See FIELD SETUP AND CALIBRATION for Dip switch settings and calibration).

Call for other calibration ranges and versions.

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