FEATURES

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

APPLICATIONS

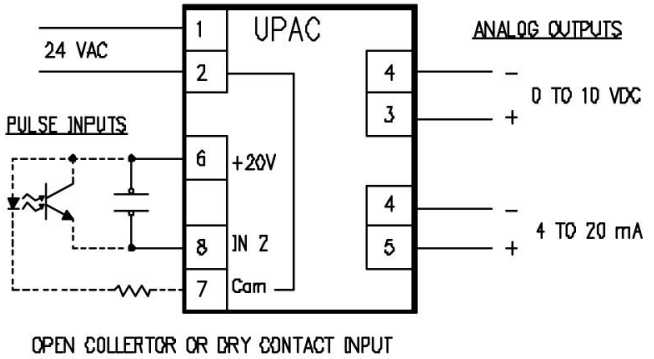
- **Pulse per second to analog conversion**
- **KW pulse meter to analog conversion**
- **Flow pulse meter to analog conversion**

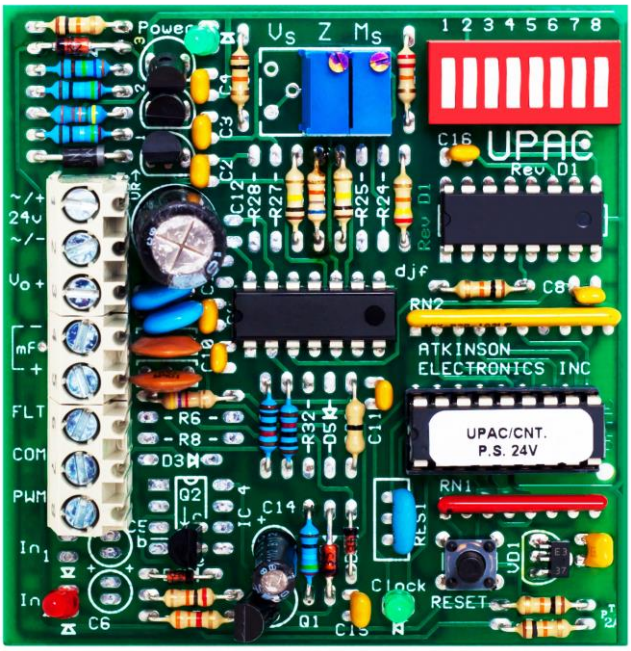
DESCRIPTION & OPERATION

The UPAC-CNT (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-CNT can receive pulses from a dry contact (relay) or open collector output devices. The pulse rate is dip switch selectable between 5 to 60 pulses per second. The UPAC provides both 0 to 10VDC and 4 to 20mA output signals.

The UPAC consists of a 24VAC half wave rectifier; 24V, 20V and 5VDC 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 a 4 to 20mA and an 0 to 10VDC voltage output.

WIRING CONFIGURATION





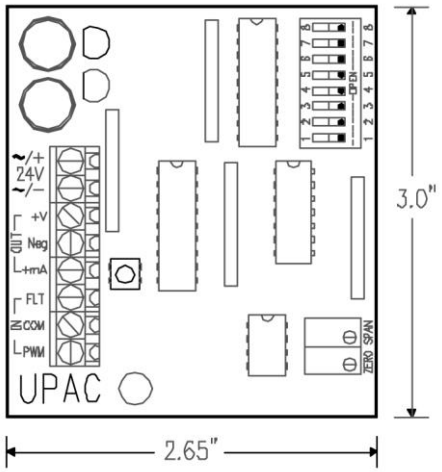
SPECIFICATIONS

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:	24VAC, ± 10%, 50/60Hz, 1.5VA 24VDC, @ 60mA
INPUT SIGNALS:	Dry contact, Open collector or, Voltage 10 to 20VDC
INPUT RATES:	5 Pulses per second 10 Pulses per second 15 Pulses per second 20 Pulses per second 25 Pulses per second 30 Pulses per second 60 Pulses per second
OUTPUTS:	4-20mA into 600Ω maximum 0-10VDC or 0-5VDC, 2KΩ minimum Update every second
ACTION:	Dir. With 2 Hz filtering
ADJUSTMENT:	Zero & span ± 20% 4-20mA output only
AMBIENT TEMP:	0 to 50°C

ORDERING INFORMATION

UPAC-CNT - STANDARD OUTPUT
4-20mA & 0-10V DC

PHYSICAL CONFIGURATION



FIELD SETUP & CALIBRATION

The UPAC has an eight (8) position DIP switch that is used to select the type of pulse input and it's time base. 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.

- 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.
- 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.) With all switches 3 thru 8 (SW3 thru SW8) in the OFF (open) position, the pulse rate defaults to 60 pulses per second. The other pulse rates are detailed below:

Position 3 (SW3) = 5 per	second Position 5 (SW5) = 15 per second	Position 7 (SW7) = 25 per second
Position 4 (SW4) = 10 per	second Position 6 (SW6) = 20 per second	Position 8 (SW8) = 30 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:

Note: Zero adjustment clockwise, will decreases output level. Span adjustment clockwise, will increases output signal differential.

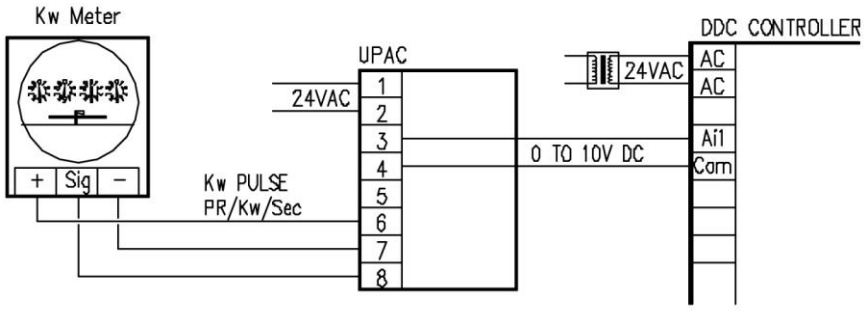
1. With power off connect input signal to the UPAC, select the update rate and pulse rate by setting appropriate DIP switches.
2. Connect multi meter in series with terminal #5 and the load for 4-20mA output. Apply power to the UPAC.
3. With 100% input signal applied, adjust zero potentiometer for 20mA 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 ≤ 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.

APPLICATION 1

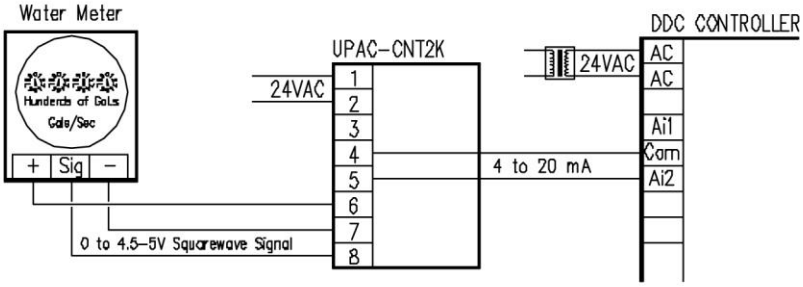
KW METER PULSE INPUT TO VOLTAGE CONVERSION



The UPAC/CNT is configured for an open collector or dry contact pulse signal from a KW meter. The UPAC standard outputs are 0-10VDC 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 0-10VDC output signal that is fed into a DDC controller. See FIELD SETUP AND CALIBRATION for Dip switch settings and calibration).

APPLICATION 2

KW METER PULSE INPUT TO MILLI AMP CONVERSION



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