

# Universal 2-Channel Process Indicator

Offers two programmable Temperature or Process Channels (4-20ma, 0-10vdc, etc.), two Counter/Rate/RPM/Frequency Channels or a unique combination of any two of the these signals.



## DESCRIPTION

Highly versatile, DCM series offers two analog, two pulse or a unique combination of a Pulse and an Analog input on two completely independent channels. Each channel can be programmed for pulse, voltage, current or temperature signals (thermocouples, RTD or thermistor). With scaling feature, pulses from a flow meter can be displayed in flow units (e.g. gallons /minute) on one channel. The second channel can be programmed for displaying analog signals such as 4-20ma loop current, voltage or temperature from thermocouples, RTDS etc. Thus, for example, flow and temperature or flow and pressure can be monitored in a single unit. Two relay and one audio/visual output per channel allows for very flexible control functions as well.

On analog channels, signals from thermocouples, RTDS or thermistors are linearized and displayed in degrees Centigrade or Fahrenheit. Voltage and milliamp signals (4-20ma etc.) are displayed in engineering units. Scaling is accomplished from the front keys and does not require any tedious formulas.

Three digit long engineering label is programmable and allows easy recognition of process being monitored e.g. Lbs for weight, PSI for pressure, Ft, Yds for length etc. Menu's in plain English help in navigating through programming steps.

Pulse Channels function like four monitors in one. They can be programmed as up/down counter, rate, rpm or frequency monitor.

## TYPICAL APPLICATIONS

- Simultaneous display of temperature & Pressure, humidity & temperature, flow & pressure or Flow & temperature.
- Pressure or Temperature differentials in furnaces or boilers e.g. T1-T2, etc.
- Display liquid levels and Input/output flow differential in Tanks.
- Indicate flow rate and flow total.
- Measure frequency, count parts, keep totals, show production rate/quantity.
- Measure and control volume.
- Monitor and control pressure & length e.g. in injection molding, etc.

In counter mode, these channels can count up or down to a maximum count of 9,999,999 and also offer presets along with built in delay timers. Easy scaling allows the process to be displayed in Engineering units e.g. if a flow sensor puts out 1 pulse per 0.00032 gallons of liquid, then setting the

## FEATURES

- Temperature indication for RTD's Thermistors, and a wide range of Thermocouples.
- Accepts Voltage, current, millivolt and Pulse signals from all type of transducers.
- Three programmable alphabets for showing engineering units e.g. PSI, Ft (Analog Channels only).
- Displays Count, Rate, RPM or Frequency.
- Six Counter modes with a max. count of 9,999,999.
- Rate indication with programmable time base.
- Works as a totalizer and batch counter.
- Displays frequency in 0.01Hz resolution.
- Auto/manual scanning with HOLD feature.
- Two relays and one audio/visual output per channel (optional).
- Output status indication on front panel.
- Keeps track of process run time.
- Built-in buzzer (with alarm option).
- Captures Min/Max readings.
- Shows channel differentials (C1-C2, C2-C1).
- Security password for program changes.
- Compact 1/8th DIN (cutout) enclosure

Only  
**\$295**  
Base Unit



For further information, contact:  
Tel. No: (480) 607-3100  
Fax No: (480) 607-3101  
[www.kaifdigital.com](http://www.kaifdigital.com)

scaling factor to 0.00032 will display flow in gallons. Two alarm relays allow the control of flow based on preset number of gallons. DCM also keeps tracks of Total and number of Batches processed. In addition to count, Rate is also displayed in all modes of operation. The unit can be programmed to work as a Rate indicator thus providing the capabilities of a full fledged rate controller including two rate alarms. For rate indication, Time Base is programmable from 1.000 to 9999.999 seconds.



**Plain English labeling simplifies programming**

Two additional modes of operation are RPM (revolutions per minute) and Frequency. Frequency mode can be made to display either in units or in 100th of a Hertz. Two alarms per Channel are also available in this mode.

Channel differential can be used for indicating processes such as difference of input and output flow on a tank, temperature variance between two points in a furnace etc.



**Upto 7-digit display of Count, Total, Batch, Rate etc.**

<u>TYPE</u>	<u>RANGE</u>	<u>ACCURACY</u>
J	-200 to 1190C	+1C+1cnt
K	-328 to 2174F	+2F+1cnt
T	-170 to 1370C	+1C+1cnt
E	-274 to 2500F	+2F+1cnt
T	-160 to 400C	+1C+1cnt
E	-256 to 752F	+2F+1cnt
R	-185 to 915C	+1C+1cnt
R	-300 to 1675F	+2F+1cnt
S	0C to 1600C	+3C+1cnt
S	32F to 2900F	+6F+1cnt
B	470 to 1800C	+3C+1cnt
B	900 to 3300F	+6F+1cnt
RTD-385	-200 to 800C	+1C+1cnt
RTD-385	-328 to 1472F	+2F+1cnt
RTD-392	-100 to 450C	+1C+1cnt
RTD-392	-148F to 842F	+2F+1cnt
Thermistor	-8.0 to 100.0C	+0.5C+1ct
Thermistor	17.2 to 212.0F	+1.0F+1ct
Current	1 to 30,000	.05%+1cnt
Millivolt	1-30000	.05%+1cnt
Voltage	1-30000	.05%+1cnt

### SPECIFICATIONS

**ANALOG INPUTS:**  
 i) J,K,T,E,R,S,B Thermocouples, Thermistor, RTD  
 ii) 4-20milliamp iii) 0-10vdc, 0-5vdc iv) 0-100 millivolt  
**Cold junction error:** +/- 1 C (10C to 45c)  
 Open thermocouple indication: HELP displayed

**ACCURACY:**  
 Temperature resolution: 1C/1F  
 Voltage = 0.05% FS      Current = 0.05% FS

**ANALOG TO DIGITAL CONVERSION**  
 Dual Slope, integrating, 20,000 count A/D converter  
 Conversion rate: 7 conversions/sec (typical)

**SCALE/OFFSET (Programmable):**  
 Scale: 1 - 30000    Offset : 0 - 20.00 (current),  
 0 - 10.000 (voltage),    0 - 100.00 (millivolt)

**DECIMAL POINT:** None, 10th, 100th & 1000th position.

**PULSE/SQUARE WAVE INPUTS:**  
 0-5vdc pulse or square wave (Schmitt Trigger on input)  
 Input Low = 0.0vdc minimum    0.6vdc, maximum  
 Input high = 2.5vdc, minimum    5.0vdc, maximum

**RPM range:** 1 - 999,999 revolutions per minute  
**COUNT range:** 1 - 9,999,999

**RATE range:** Varies with time base -- 9,999,999 max.  
**Time base for rate:** 100 milliseconds to 9,999.999 Sec.  
**High frequency range:** 1 Hz to 1 megahertz  
**Low frequency range:** 2.00Hz to 5000.00Hz.

**DISPLAY:** Red, 7-seg LED displays (Seven), 0.39" Height  
 Negative polarity and Over-range indication.

**DISPLAY TEST:** 8.8.8.8.8.8.8. on power up

**POWER OPTION**  
 120VAC (60 Hz) (Standard)    220VAC (50 Hz) (Optional)  
 8VDC -- 15VDC @ 900ma (optional)

**OUTPUT (optional)**  
 1. Open collector - 4 open collector outputs, maximum sink capability of 50ma per output  
 2. Relays: Single pole single throw, 1 Amp @ 28Vdc or 0.5 Amp @ 120Vac resistive  
 Output termination: Euro-style plugable connector

## ORDERING GUIDE

To find a model number, fill in blanks 1, 2, 3, 4 and 5 with appropriate selection. Refer to ordering example below:

