CURRENT TO PULSE CONVERTER

MODEL: RMG-CPC-48-2025

DESCRIPTION

A typical CPC circuit includes:

- Current-to-Voltage Converter: Often a Precision Metal Film resistor is used to convert current input to voltage.
- Integrator: Operational amplifier (op-amp) configured with capacitor and resistor for integration.
- Comparator: Compares the integrator's output with a reference level.
- Pulse Generator/Monostable Multivibrator: Creates a
- clean digital pulse when the comparator triggers.
- Reset Mechanism: Resets the integrator after each pulse.

Key Parameters

- Input Current Range: e.g., 4–20 mA standard.
- Pulse Width: Determines the duration of the output pulse.
- Pulse Frequency: Proportional to the input current level.
- Resolution: Defined by how much current (or charge) corresponds to one pulse.

Advantages

- Robust digital representation of analog signals.
- Noise immunity over long distances.
- Easy interfacing with microcontrollers or digital counters.

Design Considerations

- Accurate integration requires stable components (precision op-amps, low-drift capacitors).
- Filtering of input current to avoid false pulses.
- Proper hysteresis in the comparator to avoid bouncing. Alternatives

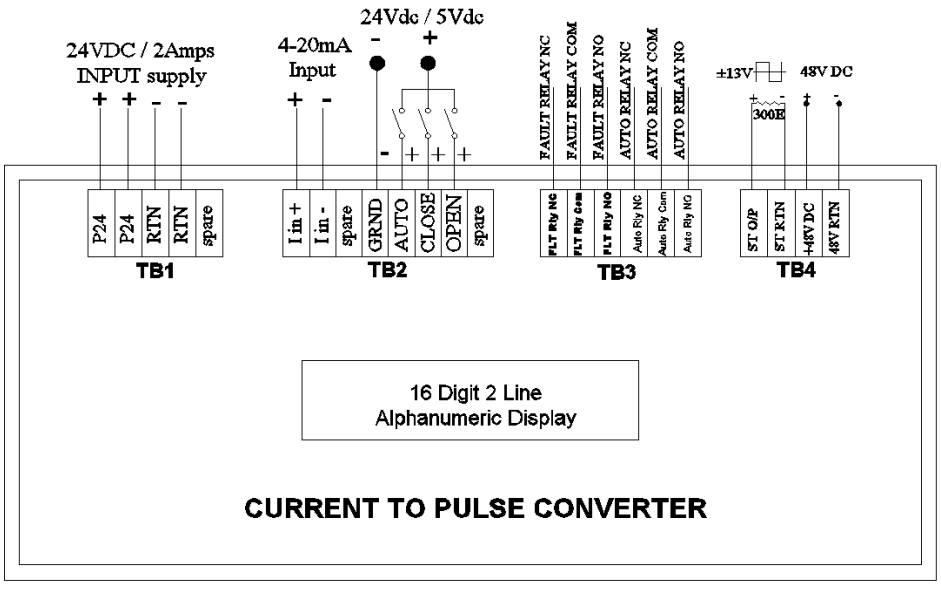
Alternatives

- Current to Frequency Converter (CFC): Similar concept, but produces a continuous frequency output instead of discrete pulses.
- Analog to Digital Converters (ADC): For more complex digitization needs.

Application

- ❖ Flow metering : Converts analog flow signals [e.g, from turbine or magnetic flowmeters] into digital pulses for counters.
- ❖ Industrial Automation : Interfacing analog sensors with digital PLCs.
- ❖ Energy Monitoring : Current consumption translated into pulse rates for energy calculation.
- ❖ Telemetry systems : Easier transmission of analog data over long distances using pulse counts.

CONNECTION DIAGRAM



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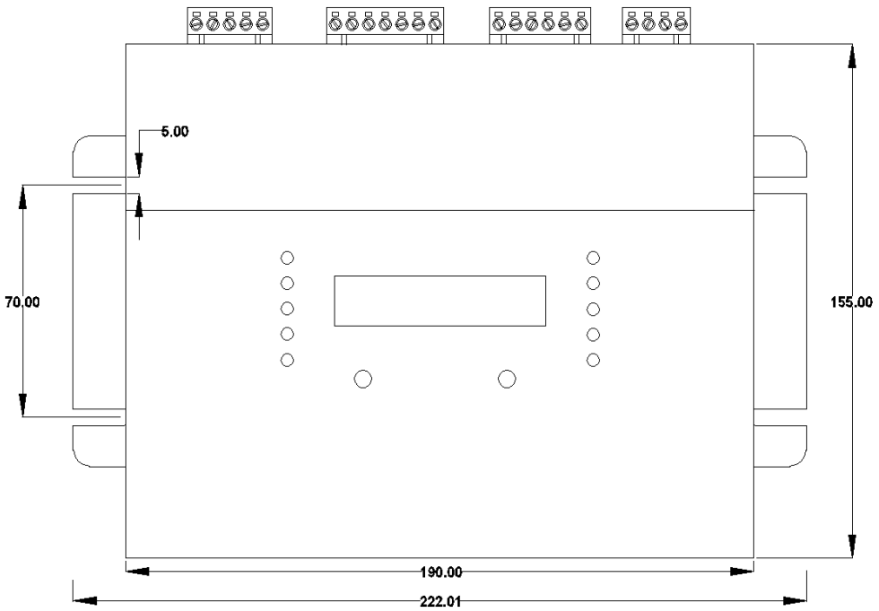
SPECIFICATION

Sl No	Characteristics	Specified Value
1	Supply Voltage Range	24Vdc ± 10%
2	Input Supply Current	2.00A Max
3	Inputs	
	❖ Analog Input	4-20mA
	❖ Digital Input [optional]	0-24V DC / 0-5 VDC
4.	Outputs	
	(a) PWM Output [Standard]	
	❖ Amplitude	±13V ±5%
	❖ Frequency	60 Hz
	❖ Max. load impedance	300E at 24VDC
	(b) Release Output [Be]	
	❖ Output Voltage [optional]	48V DC ±5%
	❖ Max. load impedance	100E at 24V DC
	(c) Relay outputs	
	❖ Potential Free contacts	a) 1NO + 1 NC contacts for AUTO , MANUAL CLOSE & OPEN
		(b) 1 NO + 1 NC contacts for FALULT condition
5.	Electronic Design Technology	Microcontroller based embedded design
6.	Display	16 Digit, 2 Line, Alpha Numeric Backlight LCD
7.	Output and Fault Indications	Through discrete LEDs
8.	Built in Protection	❖ Reverse Polarity Protection
		❖ Short Circuit Protection
9.	❖ Enclosure	Sheet Metal Fabricated Electrostatic Powder coated and oven baked
	❖ Mounting	1. WALL MOUNTING BRACKET [standard] 2. DIN RAIL adaptor for 35 x 7.5mm Rail Channel top hat slotted. [optional]
10.	Dimensions	190mm W x 155mm D x 92mm H
11.	Weight	< 2.5Kg



MOUNTING DETAILS [WALL MOUNTING] - TOP VIEW

- **Due to continuous product improvement initiatives, specification is subject to change.**
- **The images provided are for indicative purposes only. The accessories shown are part of standard supply.**
- **In addition, we design and manufacture Position Feedback Transmitters as per customer requirements / specifications**