TECHNICAL GUIDANCE

RR930N
MINI UNIVERSAL CONVERTER

OUTLINE

RR930N is a scaling conversion display unit for pulse signal input. It is designed for frequency pulse output type sensors such as wheel flowmeter sensors.

Equipped with an alarm function and digital signal processing functions such as moving average and linearization, it externally outputs a converted value by means of pulses or a serial communication function.

The serial communication function is also available for remote setting.

FEATURES

❏ Easy-to-see 4-1/2-digit LED display.
❏ Pulse input responds to both contact signal (open collector) and voltage signal.
❏ Provides scaling conversion through multipoint linearizer.
❏ High and low alarm function.
  Capable of selecting the output to CLOSE or OPEN.
❏ Re-pulse output function.
❏ Data output and setting function by two-wire RS-485 serial communication.
  Multi-drop connection allows communications with 2 units or more.
❏ Holds the set data after power-off.
❏ Available power source: 10 to 27V DC. Built-in 12V DC sensor power output.
❏ No metal fittings required for mounting the panel. Conforms to DIN 24 × 48 size.
❏ Easy-to-connect small screw type terminal block.
❏ CE marked.

OUTLINE OF FUNCTIONING

Input pulse signal is detected by a comparator and its frequency is measured by a microcomputer. Input signal selection is made by a built-in pull-up function and switching of the detection voltage level. Measured frequency value is converted to flow rate, and displayed on the panel, frequency can be also displayed by key operation. Serial communication has two functions to output the converted value, frequency and alarm status, and read/alter the settings at the panel. Remote setting and measurement are available with a computer.

The data set at the panel is stored into a nonvolatile memory and read out again at power-on.

MODEL CODE

RR	□ □ □ □	–	□	Description
	9 3 0 N			H or L alarm
				Re-pulse output
			Z	Special

SPECIFICATION

• Functional Specification

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Input signal	Open collector / Voltage pulse signal
Signal voltage / Current detection level	Max. voltage: 30V, Current: 1mA or less ON / Low 1V or 2V or less (Selectable)
Input frequency	0.1Hz to 1.5kHz, Pulse width: 0.3ms or more
Measurement	Resolution of measurement 0.01Hz Accuracy: 0.05% of reading ±0.1Hz

Display	LED (red) digital indicator, 5 digits with decimal point
	  Conversion value: 0.000 to 12000 (Fixed point)
	  Frequency: 0.0 to 1200.0
	Indicator: LED (red) 2 lamp
	  Frequency indication (H) and alarm output (A)

Operation key	MODE, SHIFT, UP and ENT
Alarm output	Isolation, MOSFET, a contact output, One circuit, Polarity Output rating: 30V DC / 100m, ON resistance, 1ohm or less Alarm output (Selectable) CLOSE / OPEN of output (Changeable)
Re-pulse output	Conversion value proportionality pulse frequency signal Output range: 1Hz to 1.5kHz, Duty: 1:1 Output circuit: Open collector Output rating: 30V DC / 10mA Residual voltage: 0.6V or less
Setting function	Scaling conversion value Low level cut frequency Pulse detection timeout Number of moving average samples Updating cycle of conversion and indication Re-pulse output scaling conversion value Input pull-up and Detection level Input high cut filter change Instrument address Transmission speed and Response delay time High alarm and Low alarm Alarm operation setup Linearize point and Linearize setting value
Communication type	RS-485 2-line connection, Asynchronous serial communication Communication speed: 4800 to 38400 bps Command – Response system Instrument address: 00 to 99 Response delay: Variable, Max. 2 seconds
External power-supply output	12V±10% / Max. 25mA

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• General Specification

Power supply	10 to 27V DC
Consumption	Approx. 1.5VA (Max.)
Operating environment	Storage: –20 to 60˚C, 90%RH or less Operating range: 5 to 50˚C, 10%RH to 90%RH Without freezing and dew condensation
Dimension	W48 × H24 × D80 Panel cut: Based on DIN24 × 48
Mass	Approx. 50g
Material	Body: ABS resin Panel: Acryl

INPUT AND OUTPUT TERMINAL

No.	Description	Function
1	POWER SOURCE (+)	Power supply input
2	POWER SOURCE (–)	Input range: 10 to 27V DC
3	OUT-1	Alarm output
7	COM (OUT-1)	
4	OUT-2	Re-pulse output
5	RS485 (+)	RS-485 communication
6	RS485 (–)	
8	POWER OUT	12V DC power supply output for sensor
10	PULSE INPUT	Pulse signal input
9	GND	Pulse signal ground

DIMENSIONS

Panel cut
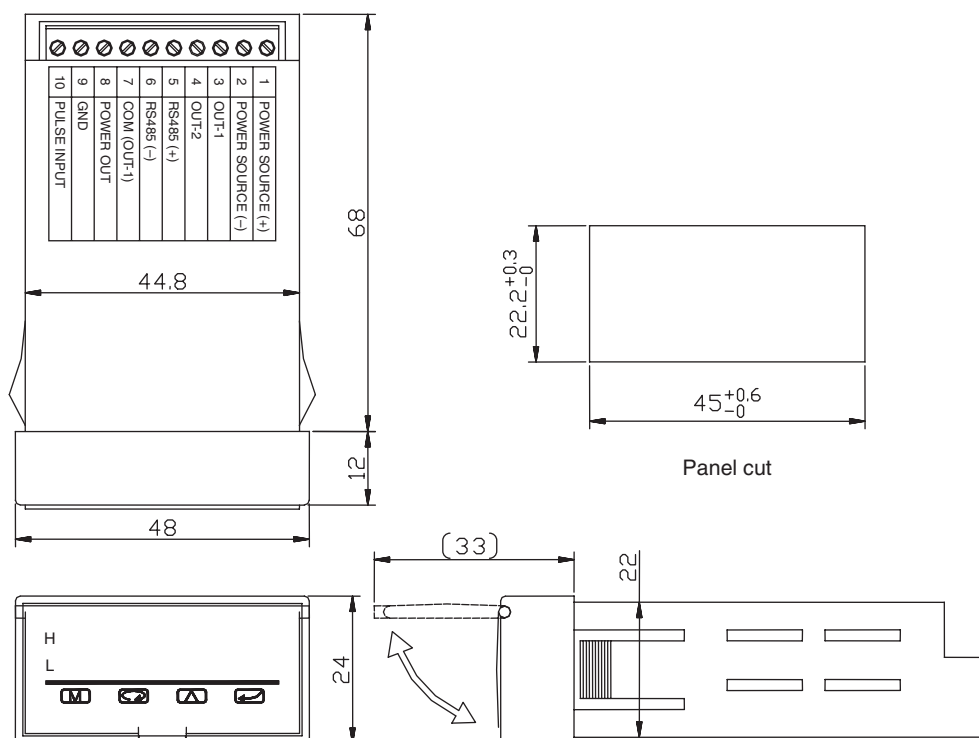
*Specification is subject to change without notice.

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