Electronic Instrumentation

Model 1100 Series Flow Rate Indicator/Totalizer

Description

ACT-PAK® (Automatic Control Translator Package) is a line of electronic instruments for recording, totalizing and actuating controls based on meter throughput. The ACT-PAK instrument accepts pulses for contact closures from the metering device and provides a variety of outputs displaying consumption, rate of flow data, process control and data transmission. Enclosures include Standard, a free standing or panelmountable package that meets NEMA 1 requirements, and NEMA 4X, a wall-mountable fiberglass enclosure.

Models Available

- 1100D - Totalizer and Digital Flow Rate Indicator
- 1100DN - Same as above in a NEMA 4X Enclosure

Features

FRONT PANEL

INPUT PULSE INDICATOR: A red LED that blinks on and off to display each pulse received from the meter.

POWER INDICATOR: An “on/off” red LED, located below the Input Pulse Indicator, indicating the instrument’s power supply is functional.

TOTALIZER/FLOW RATE INDICATOR: Displays both the total consumed and flow rate on an eight-digit, transmissive Red LCD backlighted 0.46” display. (For outdoor or high ambient light conditions, reflective readouts will be supplied.) A single display indicates flow rate designated by an R. The display can be toggled manually with the front panel SELECT switch or automatically to display total consumed. The display may be left in either mode. The number of active digits depends on the parameters of the input signal.

OUTPUTS AVAILABLE

STANDARD PROPORTIONAL DC OUTPUT: 4-20 mA

All instruments are supplied with a 4-20 mA DC output proportional to the flow rate through the metering device. This signal has the capability of driving external equipment with impedance from 0 to 500 ohms without recalibration.

OPTIONAL OUTPUTS

OPTION A: Dual 4-20 mA Output Signals: Two(2) 4-20 mA signal outputs proportional to the flow rate through the metering device. With the standard 4-20 mA output this option provides for a total of (3) 4-20 ma signals. if isolation between devices is necessary an analog isolator is recommended

OPTION B: Totalizer Output: A 50 millisecond SPDT contact closure (rated 5 amps, resistive 24 VDC or 3 amps resistive, 117 VAC. Duration approx. 40 msec.) representing a metered volume. If a value is not specified, the output closure is set to the same increment as the totalizer.

OPTION C1: Keying Output: A SPST mercury-wetted contact closure (bounce free rated 1 amp 24 VDC or 0.1 amp at 117 VAC. All resistive loads), synchronous with the input to the instrument. Used to retransmit meter pulses to other instruments or telemetry equipment.

OPTION C2: Same as C1, but two keying outputs.

OPTION C1(SS); C2(SS): Solid State Keying Outputs. A single C1(SS), or double C2(SS) open collector solid state output synchronous with the input to the instrument. Output is 50 ma at 24 VDC.

OPTION D: Scaled Output: A mercury-wetted SPST contact closure with a factory preset output frequency proportional to flow rate through the meter, typically specified as a number of pulses at a maximum flow rate. Example: 60 ppm at 1500 GPM. Contact ratings are the same as C1.

OPTION I: Input Compensator: An input signal multiplier used when totalization of quantities smaller than the standard increments are specified.

OPTION L: Low Flow Output: A SPDT contact closure that is actuated when the flow falls below a preset limit. The switching point must be specified when ordering. Contact ratings; same as Option B.

OPTION P: Panel Mounting: Instrument is supplied with panel mounting brackets.

Electrical Connections: Complete all connections to the metering device and instrument before applying power. If it becomes necessary to disconnect any of these connections, first remove the AC power to the instrument.

SENSUS

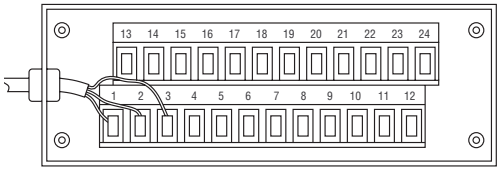
SPECIFICATIONS

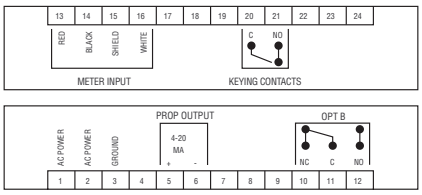
INPUT SIGNALS GENERAL REQUIREMENTS	Input frequency(full scale): 1-1000 Hz Maximum loop resistance: 40 ohms Duty Cycle: 50/50 + 20%
CONTACT CLOSURE INPUTS	Type: SPST (contact bounce less than 5.5ms) Interrupting current: 50 ma (max.)
SOLID STATE iNPUTS	An open collector design conforming to switch specifications listed above.
ELECTRICAL	117 VAC + 10%, 60 Hz, 1 Phase, 3 wire circuit Power Consumption: 10 Volt amps (watts), maximum
ENVIRONMENTAL OPERATING CONDITIONS	Ambient Temperature: 0° F to 120° F Relative Humidity: Non-condensating
MEMORY	Non-volatile E2PROM memory retains all programming parameters and the count value when power is removed.
FRONT PANEL BUTTONS	**Select:** Toggle display and advances menu selection in the programming mode. **Reset:** Reset counter to zero if enabled and changes display in program-ming mode. **Count Display:** 8-digit, display flashes for an overflow condition. **Rate Display:** 6-digit with an enunciator “R” on the left side.

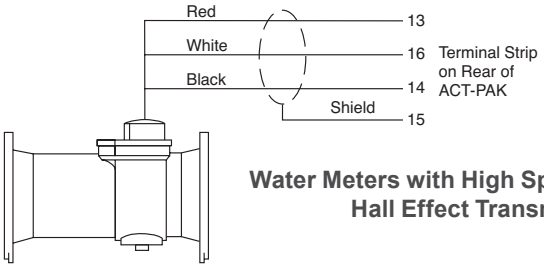
METER OR SIGNAL INPUT

TERMINAL NUMBER	FUNCTION	WIRE COLOR – SWITCH INPUTS (BELDEN 8760)	WIRE COLOR – SOLID STATE INPUTS (BELDEN 8770)
13	+12VDC	No Connection	Red
16	Input Signal	White	White
14	Ground	Black	Black
15	Shield	Bare (Shield)	Bare (Shield)

Typical Series 1100 ACT-PAK – Wiring Connection Diagrams



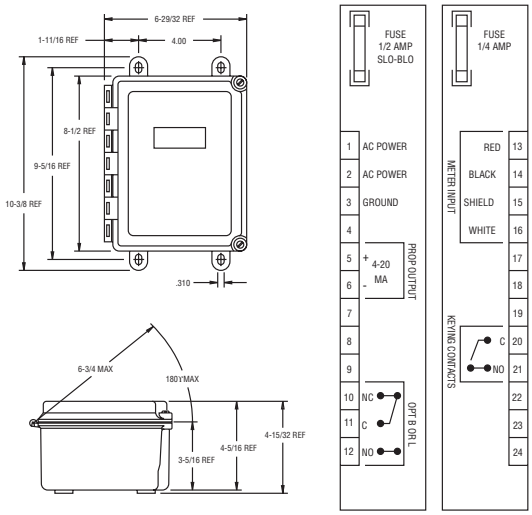




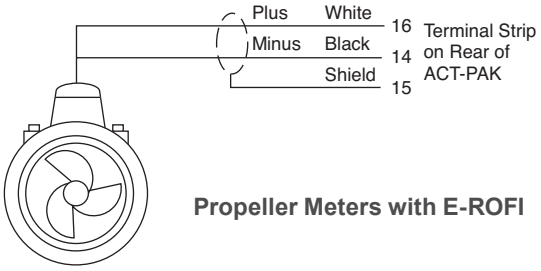
Water Meters with High Speed Pickup or Hall Effect Transmitter

PHYSICAL SIZE / WEIGHT

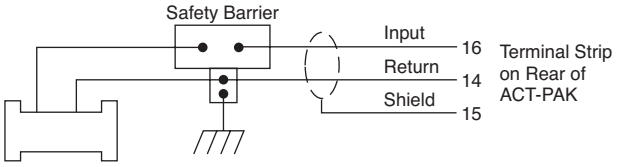
	MODELS 1104 AND 1100D	NEMA ENCLOSURE
LENGTH	8-1/4” (DN 210mm)	8-1/2” (DN 216mm)
HEIGHT	3-1/8” (DN 79mm)	4-1/4” (DN 108mm)
WIDTH	8-9/16” (DN 218mm)	6-1/2” (DN 165mm)
WEIGHT	4 lbs. (1.8 kg.)	4.0 lbs. (1.8 kg.)



Wiring Diagram and Physical Dimensions



Propeller Meters with E-ROFI



Gas Meters with Slot Sensors

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