Badger Meter

Industrial Process Controller

Model PC200

DESCRIPTION

The Badger Meter® Model PC200 is a microprocessor-driven instrument designed for batching and filling both small and large quantities, as well as displaying total, accumulated total and flow rate. Designed to interface with our complete line of industrial flow meters, it totalizes, indicates and controls fluid flows. Many years of experience in the industrial market has allowed Badger Meter to incorporate features indispensable in the liquid batching and control operations.

OPERATION

Input signals in the form of pulses from open collector transistors or dry contact closures can be scaled to any unit of measure for totalization, instantaneous rate of flow indication and bidirectional batch counting. At the preset quantity, a relay signal output can be initiated to control valves, motors, alarms and other process control devices.

FEATURES

This product is designed with a focus on:

- Ease-of-use with the numerical keyboard.
- Ruggedness for its application with a robust enclosure, keyboard and proper mechanical relays.
- Clear operator information: all relevant data can be monitored in one glance.
- User-friendly installation with quality plug-and-play terminals; suitable for both AC and DC applications (standard).
- A wide range of inputs, outputs and functions for a broad fulfillment in many applications.

OPERATOR ALARMS

No Flow Alarm

The PC200 offers a no-flow monitoring feature: if the flow meter fails to generate a signal during a certain period of time, the unit shuts off the control outputs and brings the batch controller into HOLD and alarm mode. A "NO FLOW" alarm message displays.

Flow Rate Alarm

If, during a batch process, the actual flow rate is outside the allowed range, a "LO RATE", or "HI RATE" alarm message displays, indicating the type of alarm: "LO RATE", "HI RATE".

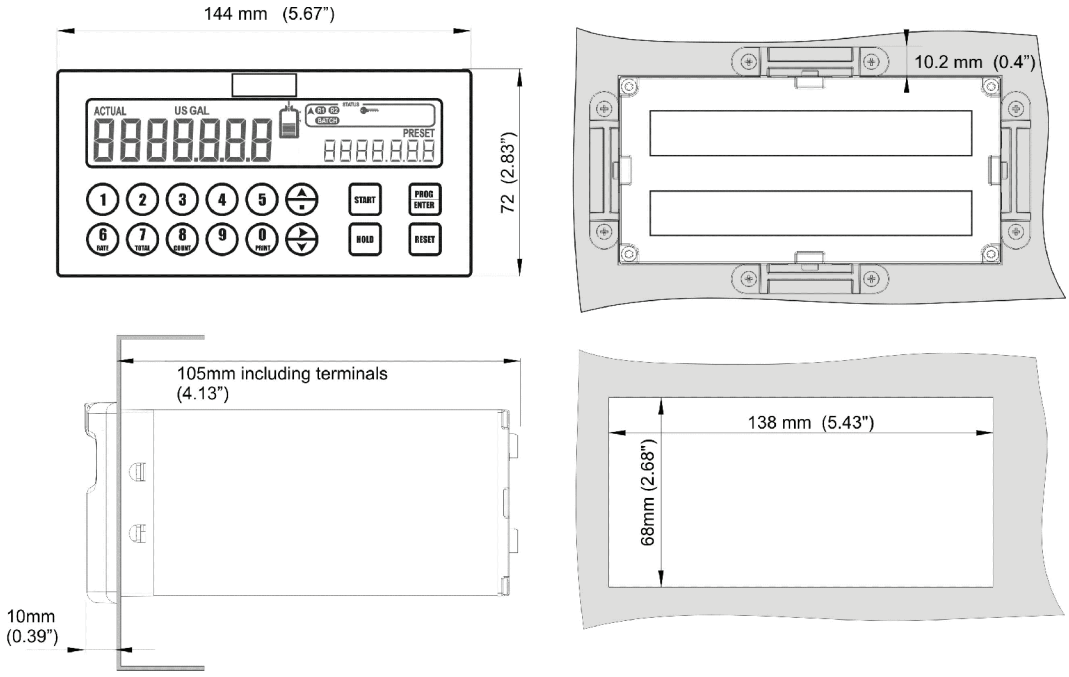
FLEXIBILITY

- Count up or count down with end of batch at zero or at batch preset value.
- Presettable set point and signal length for pre-warn output to control valve's first stage, sound alarm or control injection pumps.
- Non-volatile memory preserves all programmed information during power failure.
- DC input for mobile installations or backup power.
- Field-replaceable keyboard.

SERVICE

- Front panel or optional enclosure provides NEMA 4X (watertight and corrosion-proof) protection.
- Self test alerts of any internal failure.
- Default sets all functions to factory programmed values.
- Plug-in output relays.

DIMENSIONS



SPECIFICATIONS

Display	Type	High intensity transflective numeric and alphanumeric LCD, UV-resistant White LED backlight. Intensity adjustable from 0…100% in steps of 20% Good readings in full sunlight and darkness
	Digits	Seven 14 mm (0.56 in.) and ten 8 mm (0.3 in.); various symbols and measuring units
	Refresh rate	User definable: 8 times/sec.
Enclosure	Die-cast aluminum front panel, GRP back enclosure Polycarbonate window, silicone gasket; UV stabilized and flame retardant material	
	Keypad	Sixteen industrial micro-switch keys; UV-resistant silicone keypad; replaceable front
	Painting	UV-resistant 2-component industrial painting
	Dimension	144 × 72 × 110 mm (5.67 × 2.83 × 4.33 in.), W x H x D
	Classification	IP65 / NEMA4X at the front side
	Panel cutout	138 × 68 mm (5.43 × 2.68 in.) W x H
	Weight	650 gram / 1.7 lb
	Panel thickness	Max. 6 mm (0.25 in.)
Environment	Operation	–20…60° C (–4…140° F)
	Storage	–40…80° C (–40…176° F)
	Humidity	85% non-condensing, relative
Power	Type PG	85…265V AC. Power consumption max. 15 Watt 24V DC + 10%. Power consumption max. 15 Watt
	Sensor excitation	8.2 / 12 or 24V DC selectable; max. 50 mA
Terminal Connections	Type	Removable plug-in terminal strip; wire max. 2.5 mm^2 (0.1 $in.^2$)
Data Protection	Type	EEPROM backup of all setting Backup of running totals Data retention at least 10 years
	Passcode	Configuration settings and control keys can be passcode protected
	Lock function	Complete keyboard can be locked with external input (for example, key lock or PLC)
Environment	EMC	Compliant ref: EN 61326 (1997), EN 61010-1 (1993). CE and FPP certified

Flow Meter Inputs	NPN, open collector, reed-switch, active pulse signals 8, 12 and 24V	
	Frequency	• Minimum 0 Hz, maximum 7 kHz for total and flow rate • Maximum frequency depends on signal type and internal low-pass filter • Example: Reed switch with low-pass filter: max. frequency 120 Hz
	K-Factor	0.000010…9,999,999 with variable decimal position
	Low-pass filter	Available for all pulse signals
	Low Level	0…2V DC max.
	High Level	8…20V DC max.
	Impedance	4.7 kOhm pull-up to 12V DC
	VDC Current	2.5 mA steady state
Control Inputs	Function	Six remote inputs: START, HOLD, RESET, total reset, counter reset, lock keyboard
	Frequency	DC to 20 Hz typical
	Type	Current sinking
	Logic	Level sensitive
	Low Level	0… 2V DC max
	High Level	8…20V DC max
	Impedance	4.7 kOhm pull-up to 12V DC
	Current	2.5 mA steady state
	Response	100 ms make and break time
Control Outputs	Function	• One batch output (always a mechanical relay) • Four user-defined outputs (one mechanical relay and three transistor): • Batch, two-stage control, high flow rate alarm, low flow rate alarm, no-flow alarm, any alarm, scaled pulse, pre-warn, end of batch signal
	Scaled pulse output	Max. frequency 500 Hz. Pulse length user-definable 0.001…2 seconds
	Mechanical relays	Two mechanical relay outputs; max. switch power 230V AC…3A
	Transistors	Three passive transistor outputs, not isolated; load max. 50V DC…300 mA
Operator Functions	• Enter a preset value • Start / interrupt and stop the batch process • Total can be reset to zero • Batch counter can be reset to zero	
	Displayed information	• Preset value • Running batch total or remaining quantity • Total and accumulated total • Flow rate • Batch counter
	Additional functions	• Active overrun correction • Minimum / maximum preset value
Preset / Total	Digits	7 digits
	Units	L, m^3, USGAL, IGAL, ft^3, bbl, kg, ton, US ton, lb
	Decimals	0, 1, 2 or 3
	Note	Total can be reset to zero.
Accumulated Total	Digits	10 digits
	Units/decimals	According to selection for preset.
Flow Rate	Digits	7 digits
	Units	L, m^3, USGAL, IGAL, ft^3, bbl, kg, ton, US ton, lb
	Time unit	sec, min, hour, day
	Decimals	0, 1, 2 or 3

Control. Manage. Optimize.

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