# Badger Meter

# Batch Controller
## Model CB-30

## DESCRIPTION

The Model CB-30 batch controller is especially designed for use in concrete plants to batch water into the concrete mix. Unlike ordinary batch controllers, the CB-30 allows the operator to quickly set and run an exact batch, which includes a preset wash amount and valve overrun compensation. It also allows for manual operation to override normal presets.

## OPERATION

The CB-30 is designed to work mainly with the Badger Meter® Turbo/Butterfly Valve system. The pulse signal coming from the meter's pulse transmitter is scaled to US gallons or other units of measure. Once the *Batch* and *Wash* cycles are set by the operator, a **START** command energizes the valve solenoid, opening the valve. The CB-30 counts down from the batch valve to a number equal to the total desired batch less the wash amount, and then closes the valve. The operator presses **START** again and the wash amount runs, completing the batch. The CB-30 is also suitable for other single-point batching operations.

## FEATURES

### Safety

- Presettable batch limit prevents overbatching by not allowing a batch greater than the specified value to be preset.
- Preprogrammed 3-second pulse time fail-safe closes the valve in case of flow signal interruption.
- Permanent display of preset batch alerts operator of gallons remaining and also of batch value.
- English annunciators (Batch Ready, Batch, Wash Ready, Wash, and Hold) inform the operator of the batch condition.

### Accuracy

- Front panel scaling for fast recalibration of meter and/or for counting in any unit of measure.
- Compensation programming feature provides automatic batch adjustment for valve shutdown overrun.
- Manual override allows operator to manually dispense water or add to the preset batch.

### Ease of Operation

- Three-step programming for fast batch change.
- Wash cycle needs to be preset only once. On manual operation, the counter reverses and counts up.

### Flexibility

- Two counter displays; one for permanent preset batch display and the other for the batch count.
- Accepts inputs from Hall-effect pickups, open collector transistors or dry switch contacts.
- Additional open collector output for use with external relays.
- EEPROM memory preserves all programmed information during power failure.
- Rugged aluminum front panel with industrial keypad.
- Standard: panel mount Optional: meter, desk or wall mount.

## SERVICE

- Front panel or optional enclosure provides NEMA 4X , IP-65 (watertight and corrosion proof) protection.
- Field replaceable output Triac.
- In house stock for prompt replacement.

## COMPLIANCE

The Model CB-30 batch controller is CE approved and RoHS compliant.

# Product Data Sheet

## DIMENSIONS



**CB-30 Meter—Panel Mount**



**CB-30 Meter—Wall or Desk Mount**
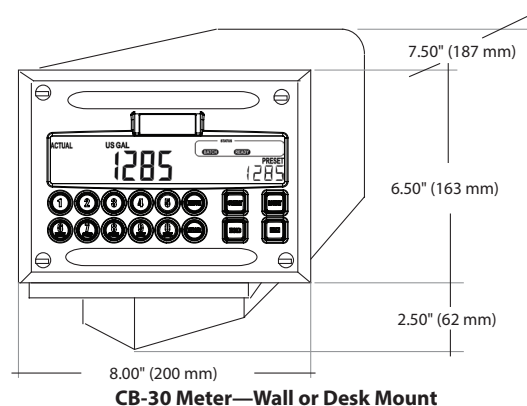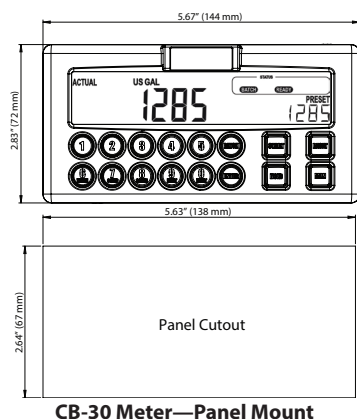
## SPECIFICATIONS

### Power

| | |
|---|---|
| AC Input | 85…265V AC |
| DC Input | 24V DC ± 10% |
| Consumption | 10 Watt |
| Sensor Excitation | 12V DC, max. 50 mA |

### Environment

| | |
|---|---|
| Operating | – 4…140° F (–20…60° C) |
| Storage | – 40…176° F (– 40…80° C) |
| Humidity | 85% non-condensing, relative |

### Physical

| | |
|---|---|
| Dimensions | See dimensional drawings |
| Panel Cutout | |
| Weight | 1.1 lbs (0.5 kg) |
| Materials | Aluminum, polycarbonate, silicone |
| Housing | Glass fiber reinforced |
| Front Panel | Polycarbonate |
| Memory | EEPROM; backup of all settings |
| Displays | Seven 0.56" numerical digits, ten 0.8" alphanumerical digits; symbols; measuring units |
| Keypad | 16 industrial microswitch keys; UV-resistant silicone; replaceable front |

### Counters/ Presets/Controls

| | |
|---|---|
| Batch | Four digit programmable |
| Wash | Three digit programmable |
| Batch Limit | Four digit programmable |
| Scale Factor | Four digit: 0.0001…0.9999 |
| Compensation | Three digit programmable |
| Failsafe Timer | Three seconds |
| Unit of Measure | US gallons – liter selectable |

### Inputs

| | |
|---|---|
| Count Inputs | (pulse transmitter) |
| Frequency | DC to 5 kHz (high speed) DC to 150 Hz (low speed) |
| Low Level | 0V DC min. to 2V DC max. |
| High Level | 8V DC min. to 20V DC max. |
| Impedance | 4.7 K$\Omega$ pullup to +12V DC |
| VDC Current | 2.5 mA steady state |
| Response | 100 $\mu$s min pulse (high speed) 3.5 ms min pulse (low speed) |
| Control Inputs | Remote start, reset, hold, manual, keyboard lockout |
| Frequency | DC to 20 Hz typical |
| Type | Current sinking |
| Logic | Level sensitive |
| Low Level | 0V DC min. to 2V DC max. |
| High Level | 8V DC min. to 20V DC max. |
| Impedance | 4.7 K$\Omega$ pullup to +12V DC |
| Current | 2.5 mA steady state |
| Response | 32 ms make and break time |

### Signal Outputs

| | |
|---|---|
| Triac* | One Triac output SHARP S202T02F Load voltage: 80…240V AC Load current: 2 A Function: batch control output to valve |
| Transistors | One open collector NPN Load voltage: 12V DC max. Load current: 50 mA sink max. (1V DC typical Vce at 50 mA) |
| Terminal Connectors | Removable plug-in terminal strips |

## Control. Manage. Optimize.