contrec

Batch Controller

Model 430D

Features

- Accepts pulse and frequency flow signals
- Scaled pulse output
- Overrun compensation
- One or two stage valve control
- Optional RS232/422/485 interfaces for computers and printers
- Remote start/stop
- No-signal alarm
- Ticket printing with time and date
- Displays batch total, preset quantity, flow rate and accumulated total



Overview

The 430D Batch Controller is suited to applications where precise measurement and control of variable batch quantities is required.

The instrument is extremely flexible and easy to operate. Batches can be started, paused, stopped and reset via four operational keys and batch quantities and calibration parameters are entered via a 12 key numeric keypad.

Batch Total, Flow Rate, Accumulated Total and Preset Value can all be displayed in engineering units on the green LED display.

The 430D will accept most frequency and pulse signals, including mV outputs from turbine flowmeters, and two-wire proximity switch outputs.

Batch Features

Automatic Overrun Compensation

Based on previous batches, the 430D will automatically compensate for any overrun which may be caused by slow closing valves.

Batch Limit

A maximum batch quantity can be programmed during set-up, so that the operator cannot enter a batch size that exceeds this limit.

Signal Time-out

If the flow signal cuts out midway through a batch, the output relays are de-energised, and an alarm signalled via an open collector output.

Remote Start/Stop

Remote push-button switches can be connected to the rear terminal strip to duplicate the four operational switches: RUN; Rate; Reset and STOP.

Auto Restart

The 430D can be programmed to automatically restart the batch after a preset time delay.

Count Up/Down

The instrument can be programmed to count up from zero, or to count down from the batch quantity.

End of Batch

An End of Batch signal is provided via an open collector transistor output.

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Computer/Printer Interface

An RS232 and RS422/485 option is available for interfacing to computers and printers. The interface allows the Batch Controller to be fully controlled from a computer.

Software drivers are included for a number of printers and can print a ticket with time and date, a sequential delivery/batch number and the batch and accumulated totals. An optional header for the ticket can also be printed.

Rate Totaliser Mode

The 430D can be configured during calibration to operate as a Rate Totaliser as distinct from a batch controller.

In this mode the RUN, STOP and Batch Set keys perform no function. The Rate key is used to toggle the display between Rate and Resettable Total.

By pressing and holding the Accum. key, whenever the instrument is not in data entry mode, the Accumulated Total will be displayed.

Versatile performance options

The instrument will operate from 14 to 28V dc or from 110 to 220V ac mains.

The facia is fully watertight to Nema 4X (IP65) and is resistant to most chemicals.

A total conversion feature enables the rate to be displayed in one engineering unit (eg. gallons/minute) and the totals to be displayed in another engineering unit (eg. barrels).

The standard instrument is supplied as panel mount. Field enclosures are optionally available.

Operation

Keypad operations are straightforward and four LED's indicate the operational status at all times.

The unique keypad simplifies operation, making the instrument suited to use by operators with minimal training.

Four operational keys and a full numeric keypad on the front facia, enable the batch quantity to be set, and batch operations to be started, paused, stopped or reset.

Setting Batch Quantity

To set a batch quantity, the Batch Set key is pressed, and then the quantity is entered via the numeric keys. Once set, the Batch Set key is again pressed to return to Run mode.

The batch quantity can only be set while the instrument is in a nonoperational state such as when the batch is complete or paused.

Once set, the batch quantity will be retained in non-volatile memory and will not alter until changed by the user.

To check the batch quantity while a batch is in progess press the Batch Set key.

Starting a Batch

To start the batch the RUN key is pressed. The Run LED will light and the instrument will begin to totalise from zero or, if programmed for the count down mode, the display will decrement from the batch quantity.

Stopping a Batch

The batch can be stopped at any time by pressing the STOP key. To continue the batch press the RUN key, or to abort the batch press the STOP key again.

When the batch has been interrupted the Pause LED will light. If the batch is aborted the Stop LED will light.

Resetting a Batch

The instrument can be programmed to reset in either of two ways.

By manually pressing the Reset key, at the end of a batch, the Batch Total will be reset to zero (if programmed to count up) or to the preset quantity (if programmed to count down).

If Auto Reset is programmed, however, the Batch Total will automatically reset when the RUN key is pressed.

One or two stage valve control

Two output relays provide control for single or dual stage valve operation. The first relay will energise at the start of the batch, and de-energise when the batch is complete.

The second relay can be programmed to energise at a set time after the start, and to deenergise at a set quantity prior to completion of the batch. This feature enables a slow startup and slow shutdown of the flow.

The Batch Controller can also be programmed to count up from zero or down from the batch quantity.



General

Display	6 digit 0.4" (10.2mm) high green LED.						
Display Update Rat	e 0.25s.						
Data Retention	All set-up parameters and totals are stored in a non-volatile memory with 10 years retention.						
Transducer Supply	8-24V dc field adjustable, 50mA maximum.						
Power Requirement	ts						
dc Supply:	14-28V dc, 450mA typical current (no options).						
ac Supply:	ac mains set internally to 95-135V ac of 190-260V ac.						
Operating Temp	0 to 55°C.						
Relay Outputs							
Maximum Power	1250VA.						
Maximum Voltage	250V ac, 30V dc.						
Maximum Current	5 Amps.						
Pulse Output							
Pulse Width	10ms (negative going pulse).						
Max Duty Cycle	49 pulses per second.						
Scaling	The pulse output is scaled and outputs one pulse each time the accumulated total increments.						

Approvals

Electrical Interference

ETL (US) approved to UL 508 and CSA. CE Compliance.

Two Stage Valve Control

Frequency Input

Field Enclosures	IP67 (Nema 4X).
Optional Enclos	ures
Coil - low impedance (22mV P-P min.):	2.4ΚΩ.
Coil (20mV P-P min):	100ΚΩ.
Switch or Reed Switch with debounce circuit (200Hz max.):	n 10KΩ.
Namur Proximity (set dc out to 8V):	1ΚΩ.
Open Collector or Reed Switch:	10ΚΩ.
Logic Signal, CMOS, Pulse:	100ΚΩ.
Input Impodance	50V peak.
Maximum Input Volta	coil input types). age
Switching Threshold	I 2.5V (except for Namur proximity and
Scaling Range	0.1000 to 50,000.
Maximum:	10kHz.
Frequency Range Minimum:	0.25Hz on Rate. 0Hz on Total.

Important: Specifications are subject to change without notice.

Dimension Drawings



Terminal Descriptions

	Standard Termin	nal C	Connections	[RS232/422/485]		
No.		No.			No.	Option		No.	
1	Calibration Link	8	Flow Common (-)	[20	RS232 Signal Ground		28	Not to
2	Signal Ground	9	Flow Pulse Input	[21	RS232 Data In		29	Not to
3	Remote RUN Switch	10	Pulse Out	1 [22	RS232 Data Out		30	End o
4	Remote Rate Switch	11	dc Power Out (8-24V)	[23	RS422/485 (-) Data Out		31	Relay
5	Remote Reset Switch	12	dc Ground	[24	RS422/485 (+) Data Out		32	Relay
6	Remote STOP Switch	13	dc Power Input		25	RS422/485 (-) Data In	1	33	Relay
7	Flow Alarm	14	Not to be used		26	RS422/485 (+) Data In	1	34	Relay
				- 1	27	RS232 CTS	1	35	Relay

Relay Output					
No.	& Switches				
28	Not to be used				
29	Not to be used				
30	End of Batch/Pump Control Signal				
31	Relay 2 - Normally Open				
32	Relay 2 - Normally Closed				
33	Relay 2 - Common				
34	Relay 1 - Normally Open				
35	Relay 1 - Normally Closed				
36	Relay 1 - Common				

Ordering Information

When specifying please indicate model(s) required using the following method.



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