

Batch Controller

Model 414

Features

- Dual relay outputs
- Overrun compensation
- Remote start/stop
- No-signal alarm
- Ticket printing with time and date
- Displays batch total, preset quantity, flow rate, and accumulated total



Overview

The 414 Batch Controller is suited to flow applications where precise measurement and control of batch quantities is required. *Batch total, flow rate, accumulated total* and *preset value* can all be displayed in engineering units on the large LCD display.

The 414 will interface to most flowmeters with versions available for pulse and analog inputs.

Batch Features

Automatic Overrun Compensation

Based on previous batches, the 414 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-energized, 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 start and stop batches.

Auto Restart

The 414 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.

Batch Controller

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Unit ID	001
Delivery No.	0038
Date	03/07/1996
Time	13:08
Delivery Total	Ltrs 120.4
Accum. Total	Ltrs 533.2

Models Available

Model 414A

Analog input version with both linear and square law input relationships.

Model 414B

Frequency input version that will accept pulse and open collector inputs from opto-sensors or Hall effect devices.

Operation

Four key switches on the front fascia, enable the batch quantity to be set, and batch operations to be started, stopped or reset.

To set a batch quantity, the **BATCH SET** key is pressed, and then the \triangleright and \triangleleft keys can be used to change and increment digits. Once set, the **BATCH SET** key is again pressed to return to Run mode.

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

In Run mode, the **DISPLAY** key can be used to display flow rate, batch and accumulated total.

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

Versatile performance options

The instrument will operate from 12 to 28V DC or from 100/110V AC mains.

The fascia is fully watertight to IP65 (Nema 4x) and is resistant to most chemicals.

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

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 via an ASCII protocol.

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.

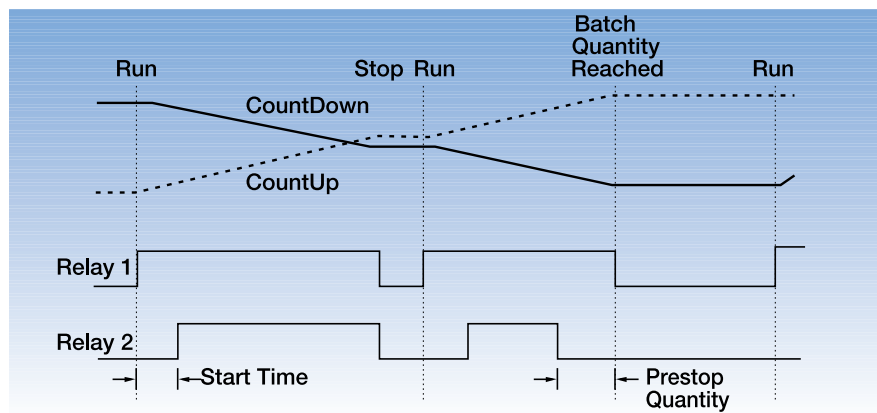
One or two stage valve control

Two output relays provide control for single or dual stage valve operation.

The first relay will energize at the start of the batch, and de-energize when the batch is complete.

The second relay can be programmed to energize at a set time after the start, and to de-energize at a set quantity prior to completion of the batch. This feature enables a slow start-up and slow shut-down 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 0.7" (17.8mm) high LCD.
Display Update Rate	0.25s.
Data Retention	All set-up parameters and totals are stored in a non-volatile memory with 10 years retention.
Pulse Output	Open collector output with a 10ms pulse produced on each increment of the accumulated total.
Max. Output:	49 pulses per second.
Max. Current:	100mA.
Transducer Supply	8-24V DC field adjustable, 50mA maximum.
Relays	
Max Power:	1250VA
Max Voltage:	250V AC, 30V DC.
Max Current:	5 Amps.
Power Requirements	
DC Supply:	11.5-28.5V DC, 200mA typical current (no options).
AC Supply:	AC mains set internally to 95-135V AC or 190-260V AC.
Operating Temperature	0 to 55°C.

Approvals

Electrical ETL (US) approved to UL 508 and CSA

Frequency Input Models

Frequency Range	
Minimum:	0.25Hz on Rate, 0Hz on Total
Maximum:	10kHz
Scaling Range	0.1000 to 50,000
	0.1000 to 4,000 (414H)

Analog Input (Model 414A)

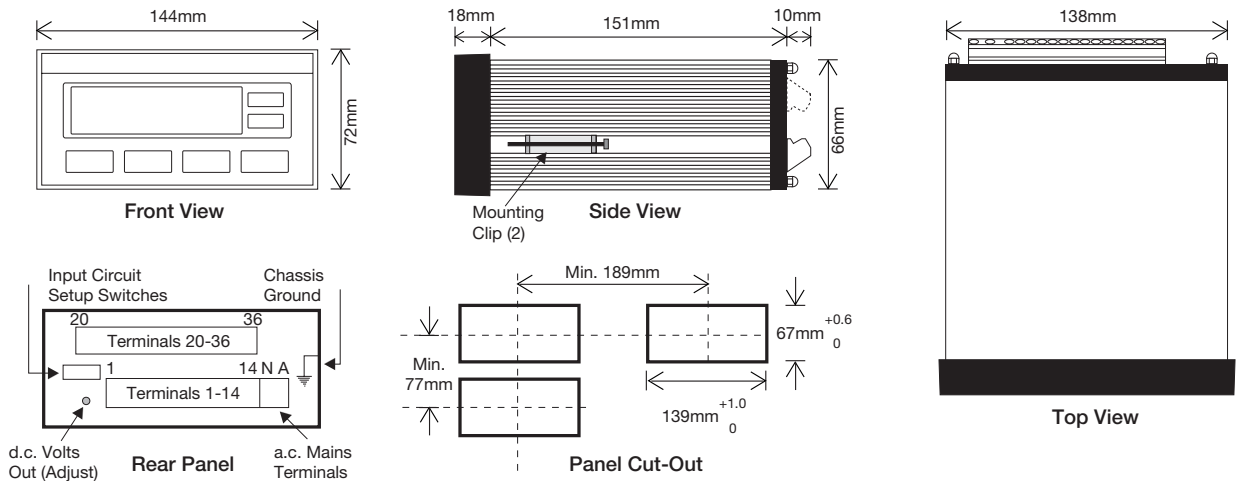
Inputs	Isolated 4-20mA, 0-20mA & 0-10V
Input Impedance	
Current:	250 ohms
Voltage:	10K ohms
Accuracy	0.075%
Span	0.1000 to 50,000
Cut-off Point	A low flow rate cut-off can be programmed below which flow is not registered. The cut-off is programmed as a percentage of span.
Relationship	Linear, square root or programmable power between 0 and 9.99

Optional Enclosures

Field Enclosures IP65 (Nema 4X)

Important: Specifications are subject to change without notice.

Dimension Drawings



Terminal Descriptions

Terminals Common to all Models			
No.		No.	
1	Calibration	29	Remote Stop Switch
2	Switch Common	30	End of Batch Signal
		31	Relay 2 Normally Open
11	DC Power Out	32	Relay 2 Normally Closed
12	DC Ground	33	Relay 2 Common
13	DC Power In	34	Relay 1 Normally Open
		35	Relay 1 Normally Closed
28	Remote Run Switch	36	Relay 1 Common

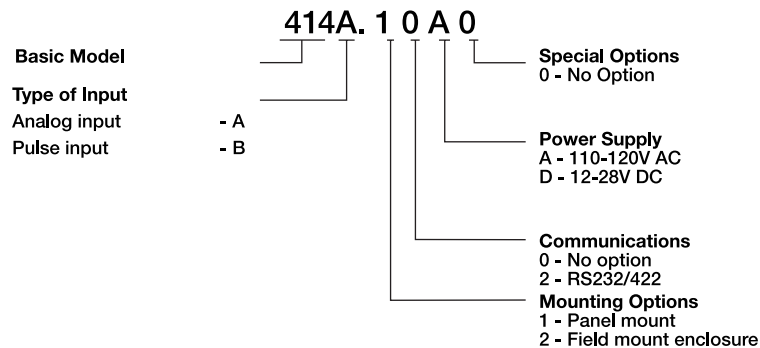
RS232/422 Option (All Models)	
No.	
20	RS232 Signal Ground
21	RS232 Data In
22	RS232 Data Out
23	RS422 (-) Data Out
24	RS422 (+) Data Out
25	RS422 (-) Data In
26	RS422 (+) Data In
27	RS232 CTS

Terminals specific to each model

No.	414A	414B
3	Not Used	Not Used
4	Display Switch	Not Used
5	Batch Set Switch	Not Used
6	Not Used	Not Used
7	Flow Alarm	Not Used
8	Flow Common	Flow Common
9	Flow Signal (mA)	Flow Signal
10	Pulse Out	Not Used
14	Flow Signal (volts)	Not Used

Ordering Information

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



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