The Data Industrial Series 2200 is a full featured, programmable batch controller. The flexibility of the 2200 allows it to be used in a wide variety of fluid batching and blending operations that require volumetric or time based measurement. The front panel mounted keypad is used for programming, setting the batch parameters and operation. The two control relays may be programmed to operate one or two stage batch operations. While one relay provides the primary batch function, the other may be used as a pre-warn, overrun signal or missing signal alarm. This second relay may also be used as a high or low flow alarm independent of the batching function. The START, STOP and RESET functions may also be duplicated for remote operation with the addition of an accessory card.

The two line X sixteen character alphanumeric display may be configured by the user to simultaneously display any two of the following: Flow Rate, Flow Total, Batch Status or Batch Count. The Batch Status mode may be programmed to count up or down, in either units of measure or percentage of batch. LEDs are used to indicate batching relay status.

The Series 2200 will measure a single batch, a preset number of batches or will batch continuously with a programmable time delay between batches. The "End of Batch" signal from one unit may be used to start another. Enabling the Automatic Overrun Compensation feature allows the 2200 to adjust the end of the batch based on the overrun of the previous batch.

The panel meter conforms to DIN Standard dimensions, 192 mm X 96 mm, for meter sizes and panel cut-outs. The 2200 is also available in NEMA 4 and NEMA 4X wall mount versions.

Like all Data Industrial flow monitors, the Series 2200 may be calibrated in the field. All Data Industrial flow sensors may be used along with any other digital pulse, sine wave or analog sensors, including non-linear and logarithmic signals. Up to twelve separate calibration points may be entered for linearization.

Programming is menu driven and all data is entered using five front panel mounted keys. A software lock allows the user to enter a password to prevent changing the totals, calibration or control settings. Programming flexibility is extended to the measurement units. The Series 2200 software contains nineteen rate of flow units and seven total flow units. There is also the provision for adding custom units for each.

Also written into the software is a self-diagnostic program that assists the operator in troubleshooting any problems.

The 2200 also provides a standard pulse output to interface with other batch controllers or external data collection devices that accept a pulse or dry contact closure. The resolution of the TTL compatible signal may be programmed from the front keypad.

All calibration information, units of measure, batch sizes and flow totals are stored in a non-volatile memory that does not require battery back-up for data storage.

A Model 2201 dual batch unit is available. This option allows two batch operations from a single unit. These can be volumetric batches from two flow streams using an optional input card, or time based. The dual batch version is equipped with four control relays.

The 2200 is expandable with a long list of options to custom tailor the unit for individual requirements.

These options include:

- Second batch channel- converts the 2200 to a dual batch device.
- Display backlighting- with variable contrast for low light situations.
- Power supplies- 12 VDC, 12-36 VDC, 24 VAC, 115 VAC or 230 VAC.
- Mechanical counters- built-in, non-resettable seven digit mechanical counters.
- Control relays- C Form mechanical relays, two additional available, independently programmed from the keypad by rate for alarms or pump control; or by total for counting and proportioning.
- Analog output- isolated 4-20 mA, 0 to 5 Volt or 0 to 10 Volt outputs, programmed from the keypad.
- Analog input- to accept inputs from other flow devices with analog outputs.
- RS232/485 port- allows two way serial communication with the 2200.

Specifications: Series 2200

Power:
— power supply options:
10-26 VAC/12-36 VDC (24 VAC/12-36 VDC option), or 115/230 VAC, 50/60 Hz (115/230 VAC option), or 10.6-16 VDC (12 VDC option)
— power consumption:
8.5 Watts maximum

Display:
— two lines X 16 characters, alpha-numeric, dot matrix LCD display with variable contrast
— large 0.32" character height
— STN (Super-Twisted Nematic) display type with +/- 20 degree viewing angle
— optional backlighting

Weight:
— 3 pounds maximum (panel mount with DIN draw mounting brackets)
— 9.2 pounds maximum wall mount

Operating Temperature:
— +32°F to +158°F (0°C to +70°C)

Storage Temperature:
— -40°F to +185°F (-40°C to +85°C)

Dimensions:
— Panel Mount
7.56"W x 3.78"H x 4.625"D
— Wall Mount
10.997"W x 9.5"H x 5.784"D

Sensor Input:
— digital pulse input
— input impedance: 14 kΩ

— signal amplitudes:
3 to 15 VDC (high)
open or 0 to 1 VDC (low)
— frequency input range:
0 to 10 kHz

Sensor Calibration:
— Data Industrial "K" and "offset" numbers or 12 point linearization with 7 digit floating point "K" Factor and frequency table entries

Units Of Measure:

Flow rate:
— 19 standard, 1 custom programmable
— custom flow rate unit: 7 character label 7 digit floating point conversion from gallons/minute to custom unit

Flow total:
— 7 standard, 1 custom programmable
— custom flow total unit: 4 character label 7 digit floating point conversion from gallons to custom unit

Totalizer:
— range:
0 to 1,000,000,000 (i.e. 0 to 1,000,000,000 gallons, 0 to 1,000,000,000 liters, etc.)

Data Update Rate:
— adjustable 0.5 seconds to 5.0 seconds in 0.5 second increments
— adjustable averaging function for smoothing erratic flow rates

Pulse Output:
— open collector transistor pulse in any standard or custom flow total units
— adjustable 25 mS to 5.0 second pulse output width in 25 mS increments
— maximum sinking current:
300 mA @ 36 VDC

Batch Relay Output:
— SPDT contacts, 6.0 amps @ 250 VAC or 30 VDC maximum resistive load
— user configured as batch relay, pre-warn, or overrun relay
— coil energizes at "start" and de-energizes at "stop" or end of batch function

Relay Option:
— 2 optional relays-single batch unit only
— SPDT contacts, 6.0 amps @ 250 VAC or 30 VDC maximum resistive load
— user configurable as totalizer, high rate alarm, or low rate alarm
— adjustable 0 to 120 second delay (in 0.5 second increments) until activation for alarm functions
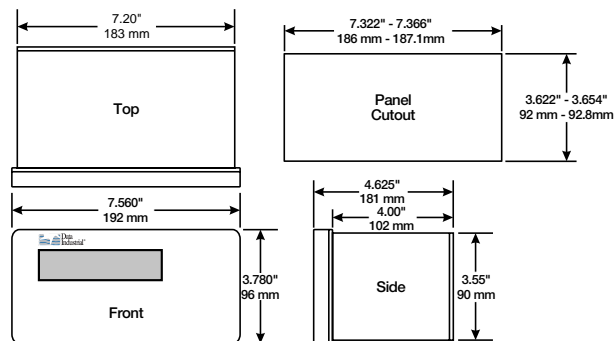— 0 to 50% (of set point) hysteresis for alarm functions

Totalizer Option:
— two 7 digit, non-resettable electro-mechanical counters
— user configurable output in any standard or flow total units or number of batches

SERIES 2200 ORDERING MATRIX

EXAMPLE: 22 x x - x x x x - x x x

SERIES											
BATCH CONTROLLER	22										
MONITORING CAPABILITY											
STANDARD		0									
12 POINT LINEARIZATION		1									
CHANNEL MONITORING											
SINGLE CHANNEL			0								
DUAL CHANNEL			1								
CARD OPTION 1											
NO OPTION				0							
REMOTE BATCH CARD				1							
CARD OPTION 2											
NO OPTION					0						
ANALOG OUTPUT					1						
ANALOG INPUT					2						
DIGITAL/SINE WAVE INPUT-10 VDC EXCITATION					3						
DIGITAL/SINE WAVE INPUT-24 VDC EXCITATION					4						
RS-232 SERIAL COMMUNICATIONS OUTPUT					5						
RS-485 SERIAL COMMUNICATIONS OUTPUT					6						
CARD OPTION 3											
NO OPTION						0					
ANALOG OUTPUT						1					
ANALOG INPUT						2					
DIGITAL/SINE WAVE INPUT-10 VDC EXCITATION						3					
DIGITAL/SINE WAVE INPUT-24 VDC EXCITATION						4					
RS-232 SERIAL COMMUNICATIONS OUTPUT						5					
RS-485 SERIAL COMMUNICATIONS OUTPUT						6					
OPTIONS - RELAY - SINGLE CHANNEL ONLY											
NO ADDITIONAL RELAYS							1				
2 ADDITIONAL RELAYS							2				
INPUT VOLTAGE / BACKLIGHTING											
12 VDC - ONLY WITHOUT LCD ILLUMINATION								A			
24 VAC / 12-36 VDC WITHOUT LCD ILLUMINATION								B			
115 VAC WITHOUT LCD ILLUMINATION								C			
230 VAC WITHOUT LCD ILLUMINATION								D			
12 VDC - ONLY WITH LCD ILLUMINATION								E			
24 VAC / 12-36 VDC WITH LCD ILLUMINATION								F			
115 VAC WITH LCD ILLUMINATION								G			
230 VAC WITH LCD ILLUMINATION								H			
COUNTER											
NO MECHANICAL COUNTER									0		
ONE MECHANICAL COUNTER									1		
TWO MECHANICAL COUNTERS									2		
MOUNTING											
PANEL MOUNT, NEMA 4X FRONT PANEL										0	
WALL MOUNT, NEMA 4 - HINGED METAL ENCLOSURE										1	
WALL MOUNT, NEMA 4X - MOLDED CASE										2	
WALL MOUNT, NEMA 4X - HINGED POLYMER ENCLOSURE										3	

Panel Mount

7.20" / 183 mm — Top
7.560" / 192 mm — Front
3.780" / 96 mm

7.322" - 7.366" / 186 mm - 187.1mm — Panel Cutout
3.622" - 3.654" / 92 mm - 92.8mm

4.625" / 181 mm
4.00" / 102 mm — Side
3.55" / 90 mm

Wall Mount

5.784" / 147 mm — Side
10.997" / 279 mm — Front
9.5" / 241 mm
8.75" / 222 mm
6.0" / 152 mm

Data Industrial®