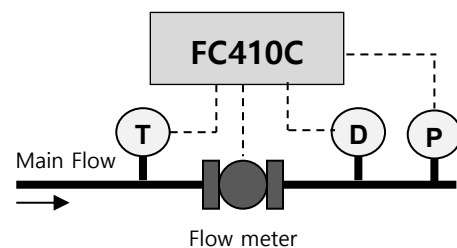# FC410C Series

Flow Controller for Liquid Compensation
FC410C ▶▶▶

Feature

- Gross and net total / gross or net accumulated total / gross and net flow rate
- 4-20mA or Pt 100 Ohms Temperature inputs
- 4-20mA Density input
- 4-20mA Pressure input
- Gross, net scaled pulse output
- 4-20mA Analog output
- API 54B based compensation

Over View

The FC410C series flow controllers are designed to measure volumetric flow for liquids with temperature input. This corrected volume is at standard reference condition. This series are ideally suited to custody transfer applications and include the API/ASTM equations covering general petroleum products and LPG. The FC410C Series have direct RTD input or 4-20mA temperature input and 4-20mA Density, Pressure input..

Flow Controller for Liquid Compensation
FC410C ▶▶▶

▌ General

Display
　2-line * 20-character LCD
Display Update Rate　　0.25-second
Decimal Points
　Fully programmable for Rate and Total
Time Base
　The Rate can be displayed in unit per
　second, Per minute, per hour or per day
Data Retention
　Set up parameters and totals stored in
　non-volatile memory with 10 years
　retention.
Operation Temperature　　0 to 55℃
Power　　AC 85-264V / DC 24V
Power Consumption　　10VA
Transducer Supply
　8V ~ 12V adjustable, 50㎃ max

▌ Flow Inputs

Frequency (Pulse) Input

Frequency Range　　0 to 5㎑
Signal Type
　Sine wave, open collector, reed switch,
　Proximity switch, voltage and current pulse
K-factor Range
　0.0001 – 50000.0000(the pulse per units)

Analog Input

Inputs　　4-20㎃or 1-5V option
Input Impedance
　Current　　250 ohms
　Voltage　　10K ohms
Accuracy　　0.05%
Span　　0.0001 to 50000.0000
Zero　　0.0000 to 50000.0000
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 open
　Channel For open channel flow meters;
　the power of The input relationship is
　programmable
　between 0 and 9.99.

▌ Temperature Input

RTD Input
Type　　Platinum PT100(DIN)
Temperature Range
　-50℃(-58˚F) to +120℃(248˚F)
　(Refer to the ordering information
　　for detail)
Accuracy　　0.1℃
Linearity　　The non-linearity of the RTD is
　Internally compensated for.

Analog Input(4-20㎃)

Input Impedance　　250 ohms
Measurement Range
　-273℃ (-459.4˚F) to 1200℃ (2192˚F)
Accuracy　　0.05%

▌ Density Input

Analog Input(4-20㎃)

Input Impedance　　250 ohms
Measurement Range
　600 kg/㎥ to 1200 kg/㎥
Accuracy　　0.05%

▌ Pressure Input

Analog Input(4-20㎃)

Input Impedance　　250 ohms
Measurement Range
　0 kg/ to 1200 kg/㎥
Accuracy　　0.05%

▌ Pulse Output

Function
　Open collector output with a pulse
　produced on each increment of the
　accumulated total (gross, net).

Pulse Width　　10㎳ (negative going pulse)
Duty Cycle　　49 pulses/sec. Max.
Output
　Current sinking output transistor 50㎃,
　30vdc max.(Pulse output is suitable for
　driving remote counter or PLC's)

Flow Controller for Liquid Compensation
FC410C ▶▶▶

■ 4-20mA Output

Function

Outputs flow rate in net volume,

The 4 ~ 20㎃ points can be programmed to provide a fully scaled output.

Resolution 12-bit.

Accuracy Better than 0.025%

Maximum Load

500 ohms internally powered. 950 ohms from external 24V dc.

Isolation Output is isolated.

■ RS232/422/485

Type

Both RS232 and RS422/485 are provided.
(Note: When using the RS422/485, multi drop communication can be implemented with up to 32 instruments connected to a common bus.)

Function

Printer and computer protocols are fully programmable.

Printer

A print is initiated on each reset or at a programmable time interval.

Computer

An ASCII based protocol enable all display parameters to be read and the totals to be reset.

Baud Rate 1200 to 19200 BPS

Data Bit 8-bit

Parity Bit None

Data Logging

Output generated at intervals of once a minute to once every 24 hours. The total can be programmed to reset on each print or at 24:00 hours

Time

A real time clock is provided to give time and date on each output.

■ Relay Output

Function

High and low, high-high and high or low and low-low flow rate alarms based on the flow rate in gross or net volume.

Max. Switching Power 2000VA, 240W

Max. Switching Voltage AC 250V, DC 30V

Max. Switching Current 8 Amps

■ Enclosure

Basic Enclosure (Vertical)

Dimension

142.5㎜(H) x 96㎜(W) x 168㎜(D)

Material Polycarbonate, Aluminum

Panel Cutting Size

139㎜ x 92㎜ (±0.2㎜)

Basic Enclosure (Horizontal)

Dimension

72㎜(H) x 144㎜(W) x 177㎜(D)

Material Polycarbonate, Aluminum

Panel Cutting Size

67㎜ x 139㎜ (±0.2㎜)

Explosion Proof

Outside Dimension

270㎜(H) x 290㎜(W) x 280㎜(D)

Mounting hole Dimension

90㎜ (H) x 83㎜ (W) x M8 Bolt

Classification

Division 1, Class Ⅰ Group-A, B, C, D

Class Ⅱ Group-E, F & G

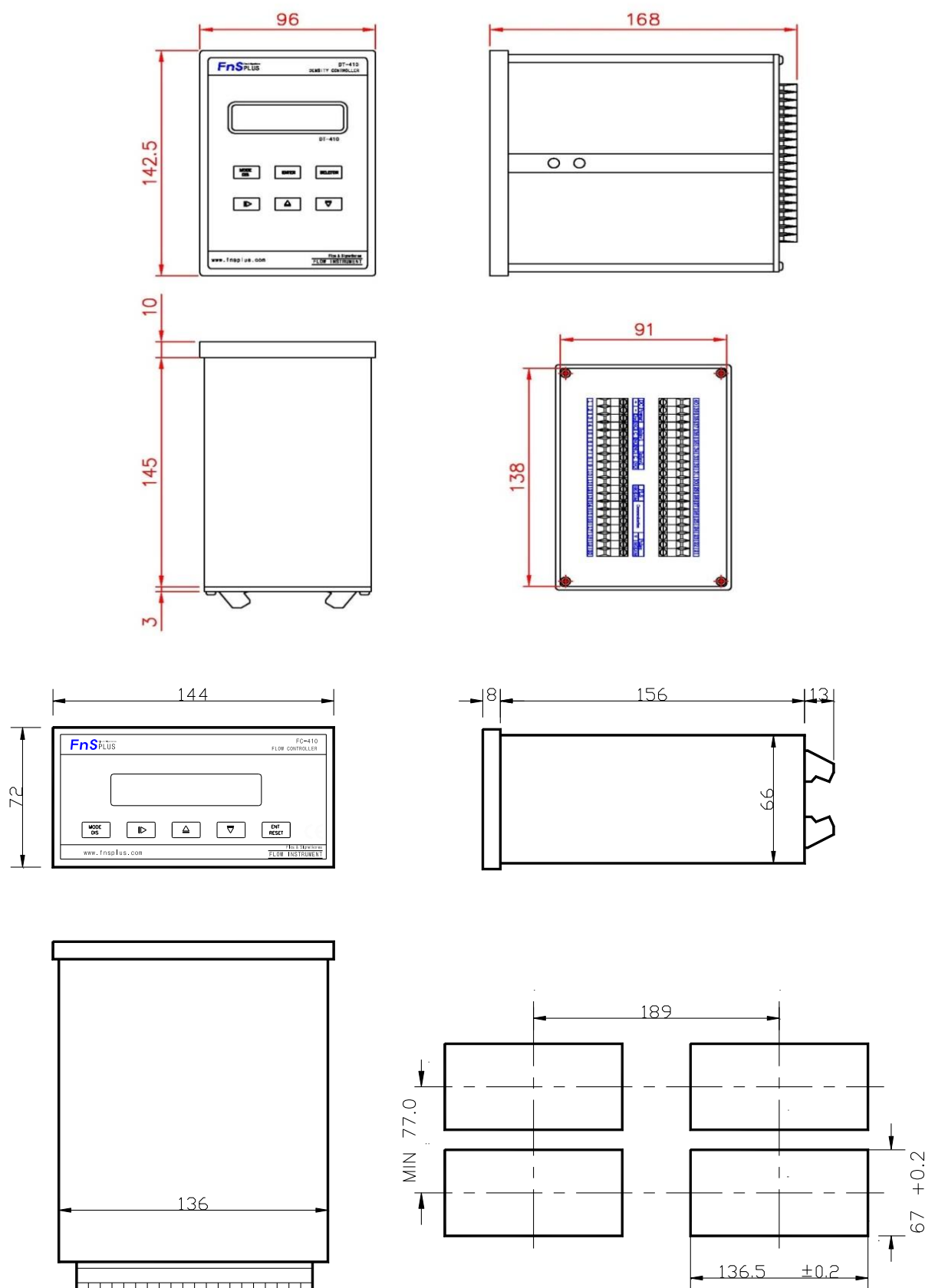Class Ⅲ

Zone 1 or 2, Exd ⅡB T6

■ Standards and Approvals

CE

Manufactured under **ISO 9001**

Flow Controller for Liquid Compensation
FC410C ▶▶▶

■ Dimension

▍ Ordering information

MODEL	Order Code						Description
FC410C							Flow Controller with LCD Display (LED-Backlight)
Flow Sensor	P						Frequency Type Flow Meter Input
	A						4-20mA Analog Type Flow Meter Input
Temperature		A					4-20mA Analog Temperature Input
		R					Pt 100 Ohms RTD Input(0~100℃)
Density							4-20mA Analog Density Input Only
Pressure							4-20mA Analog Pressure Input Only
In/Output			0				Basic Model(No Option)
			1				4-20mA Analog Output
			2				Remote Switch Input
Communication				0			None Communication
				1			RS-232 Communication
				2			RS-422/RS-485 Communication
Power					A		AC 85-264V(Free Voltage)
					D		DC 24V
Case						0	Only Basic
						1	With Weather Proof
						2	With Explosion Proof