



Shown with Optional ABS field-mount back case

- PRESET
- RESETTABLE TOTAL
- NON-RESET TOTAL
- PULSE OUTPUT

Features

- > Displays Batch Total, Accumulated Total and Preset (+ New printer driver option)
- > Two stage valve control Or single stage + pulse O/P
- > Over-run correction feature
- > Selectable on-screen Engineering units
- > Max batch size facility prevents over-filling
- > RS232/RS485 Comms option
- > Remote control / Remote input
- > Environmental protection to IP67 or IP65 (panel mounted)
- > Innovative design allows for Wall / Pipe or Panel mounting
- > Fully programmable via simple to follow software menu - without any fiddly Dip-switches

Input Options

- > Reed-switch
- > NAMUR
- > NPN/PNP Pulse
- > Coil (Sine wave)
- > 0-20 / 4-20mA
- > 0-10 / 2-10V DC



Intrinsically Safe and Explosion Proof models are available on Request.

DC powered with 7 yr battery or mains option

The F130 will operate from the internal lithium battery or an external power source between 8-30V AC/DC or optionally from 110/230V AC

All configuration data and Totals are stored safely in EEPROM even during prolonged periods without power (up to ten years) The seven year Lithium battery will provide backup if the external power is interrupted so that totals may still be seen. Solenoids or sensors, however, still require external power.

The transistorised outputs provide control to a Solenoid or Relay and can sink up to 300mA (I.S version 100mA). Alternatively, various internal power module upgrade options exist with volt-free contacts and adjustable DC sensor power supply.

Overview

The F130 Batch Controller has been designed with a host of features, providing a powerful control unit at a very reasonable price. Set-up is a simple affair, conducted via a user friendly menu structure. There is no need to open the unit to fiddle with dip-switches. All programming is via the three control keys or by RS232/485 comms (see options).

The innovative design of the F130 makes it suitable for panel, wall or pipe mounting. This is achieved via a removable back-case and front facia panel-mount gasket.

The model is designed for flow applications where the precise control of batch quantities is required. A high visibility Liquid Crystal Display provides the operator with on-screen engineering units and clear command prompts.

Both pulse input and analogue input versions are available to accept signals from a wide variety of flowmeter types including: Turbines, Positive Displacement, Paddle Wheel, Magnetic, Coriolis and others.

F130

Tough ABS Panel-mount case(Standard)



Rugged Aluminium Field-mount case (Option)



F130 Control Keys

3 Keys for Quick & Simple Operation

INDUSTRIAL DESIGN

Available in a fire retardant ABS casing or Rugged die-cast Aluminium casing, the F130 is suitable for panel-mounting with the major advantage; it requires minimal depth clearance.

With the Aluminium back-case or optional ABS case, the F130 becomes a compact IP65/IP67 Field-mount model, suitable for industrial environments. The electronics are guaranteed for reliable operation in the temperature range -30 up to +80° Celsius (-22° F / +178° F).(I.S version approved -20 up to +70° Celsius)

SIMPLE OPERATION

To Enter a batch, the ENTER key is pressed. The preset value can then be set by Using the ^ > keys. In RUN mode press START & STOP to start, stop or pause the batch. The Operators main information is displayed in clear 17mm and 8mm alpha-numerical characters. The master batch total is viewed by pressing > once more and the time-day-date by one further press..

QUICK & EASY UNIT CONFIGURATION

We are acutely aware of the excessive amount of equipment which today's technicians need to control. For this reason, a clear user-friendly menu structure was developed for programming all of our products a number of years ago.

The configuration settings are reached after pressing the PROG-key for seven seconds. The settings appear in a convenient menu format. Main headings such as: "Sensor" are followed by sub-categories such as "time-unit" and "filter". When selecting the input signal, the word "NAMUR" may be displayed for example. F1-Series products do not have sensitive switches or jumpers: All parameters are configured via the software including, de-bounce filter activation and pull-up resistor settings.



State-of-the-art design



Rugged industrial IP67 case

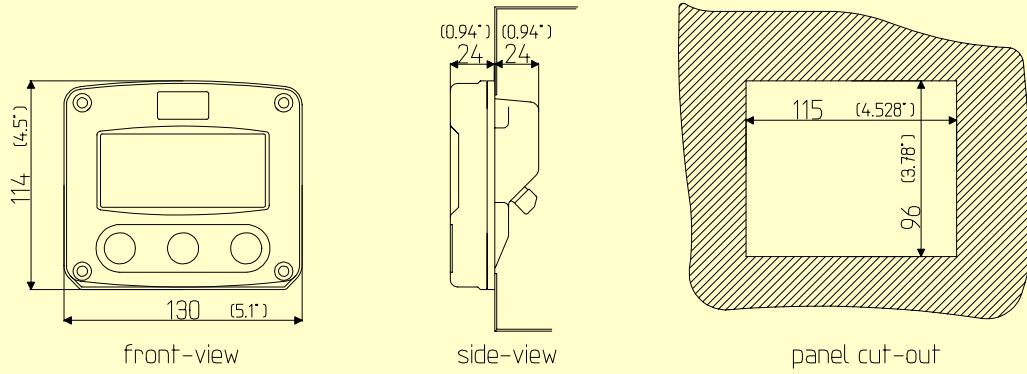


Flow turbine head-mounted

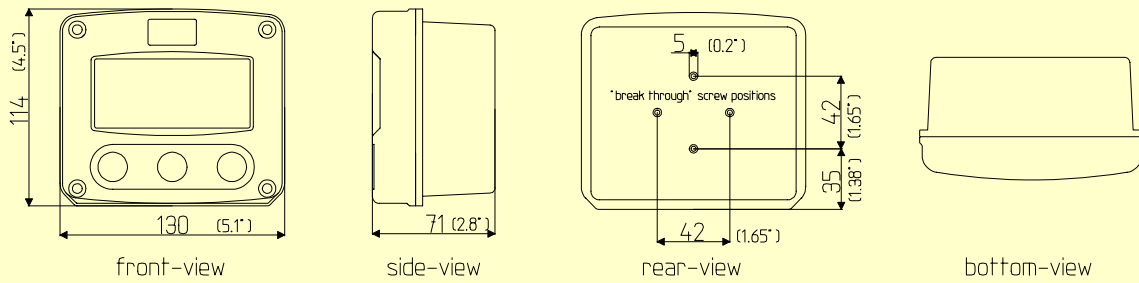
F130

Enclosure Dimensions

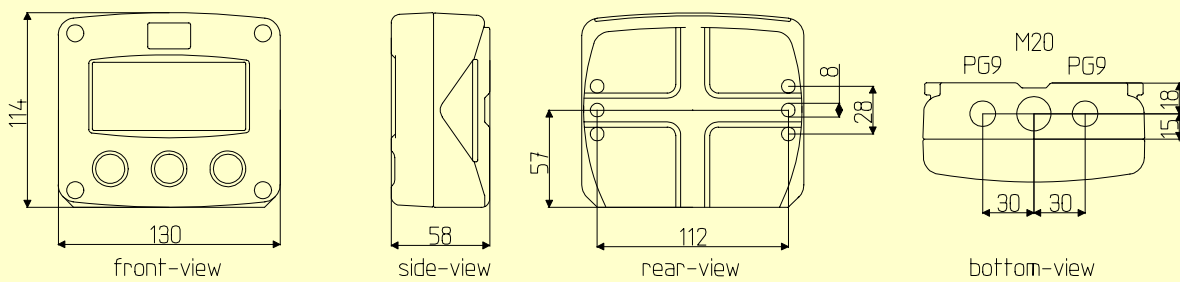
Standard IP65 (NEMA 4) ABS panel-mount enclosure



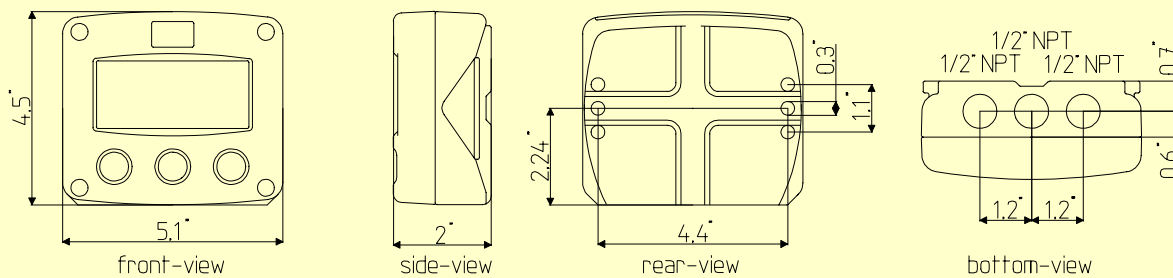
Option HD: IP65 (NEMA 4) ABS Wall-mount enclosure



Option HA: IP67 Aluminum Field enclosure: 2xPG9 and 1xM20 Tapped holes



Option HU: NEMA 4(X) Aluminum Field enclosure: 3x 1/2" NPT Tapped holes



Technical specification

GENERAL

Display	
Type	High intensity reflective numeric and alphanumeric LCD, UV-resistant.
Digits	Seven 17mm (0.67") and eleven 8mm (0.31"). Various symbols and measuring units.
Refresh rate	User definable: 8 times/sec - 30 secs.
Option	LED-backlight - not available yet.

Casing	
Type	ABS - IP65 / NEMA 4, UV-resistant and flameproof.
Mounting	Standard panel-mount case.
Dimensions	130 x 114 x 52mm (5.1" x 4.5" x 2.05") - LxHxD.
Panel cut-out	115 x 96mm (4.53" x 3.78") LxH.
Window	Polycarbonate window.
Sealing	EPDM and PE.
Control keys	Three industrial micro-switch keys. UV-resistant polyester keypad.
Option HA / HU	Die-cast aluminum IP67 / NEMA 4 with 2-component UV-resistant coating.
Dimensions	130 x 114 x 58mm (5.1" x 4.5" x 2.28") - LxHxD.
Mounting	Wall-mount, sensor head-mount, panel-mount, horizontal/vertical pipes.
Cable Entry	HA: 2xPG9 and 1xM20 tapped hole in the center. HU: 3x ½"NPT tapped hole.
Option HD	ABS IP65 / NEMA 4 wall-mount casing.
Dimensions	130 x 114 x 71mm (5.1" x 4.5" x 2.8") - LxHxD.
Cable Entry	None. User defined.

Operating temperature	
Operational	-30°C to +80°C (-22°F to +178°F).

Power requirements	
Standard	8-28V DC (or AC) supply can be connected to power the unit.
Option PB	Long life Lithium battery - life-time depends upon settings - up to 5 years.
Option PD	8-28 V AC/DC - sensor supply voltage 8 - 12 and 24V DC - max. 50mA@24V DC
Option PM	80-240V AC with sensor supply voltage 8 - 12 and 24V DC - max. 100mA@24V DC

Sensor excitation	
Standard / option PB	Supply voltage: 3.2V DC for pulse signals and 1.2V DC for coil pick-up.
Option PD	Sensor supply voltage 8 - 12 and 24V DC - max. 50mA@24V DC
Option PM	Sensor supply voltage 8 - 12 and 24V DC - max. 100mA@24V DC

Terminal connections	
Type:	Removable plug-in terminal strip. Wire max. 1.5mm ² and 2.5mm ²

Data protection	
Type	EEPROM backup of all setting. Backup of running totals every minute. Data retention at least 10 years.
Pass code	Configuration settings can be pass code protected.

Hazardous area (optional)	
Intrinsically safe Option XI	Cenelec approval ref: EEx ia IIB/IIC T4. Atex approval pending. Maximum ambient +70°C (158°F).
Explosion proof Option XD/XF	Cenelec approval ref: EEx d IIB T5. Dimensions of enclosure: 218 x 418 x 213mm (8.58" x 16.45" x 8.38") LxHxD.

Environment	
Electromagnetic compatibility	Compliant ref: EN50081, EN50082, EN61000-4-2, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-6, EN61000-4-8, ENV50204, NAMUR NE21, IEC61000-4-16, IEC61000-4-17.
Low voltage directive	Compliant ref: EN60950.

INPUTS

Flowmeter	
Type P	Coil/sine wave (minimum 20mVpp or 80mVpp - sensitivity selectable), NPN/PNP, open collector, reed-switch, Namur, active pulse signals 8 - 12 and 24V.
Frequency	Minimum 0 Hz - maximum 7 kHz for total and flowrate. Maximum frequency depends on signal type and internal low-pass filter. E.g. Reed switch with low-pass filter: max. frequency 120 Hz.
K-Factor	0.000010 - 9,999,999 with variable decimal position.
Low-pass filter	Available for all pulse signals.
Type A	(0)4-20mA - with signal calibration feature. Resolution: 14 bit.
Type U	0-10 V, 0-5 V, 1-5 V - with signal calibration feature. Resolution: 14 bit.
Accuracy	0.05%. Low level cut-off programmable.
Span	0.000010 - 9,999,999 with variable decimal position.
Update time	Four times a second.
Voltage drop	2.5 Volt.
Load impedance	3kOhm
Relationship	Linear and square root calculation.
Note	For signal type A and U: external power to sensor is required; e.g. option PD.

OUTPUTS

Transistor outputs	
Type	two passive transistor outputs - not isolated.
Load	max. 1 kOhm
Function	User defined: batch process two stage control or scaled pulse output acc. batch or acc. total.
Pulse output	Max. frequency 60Hz. Pulse length user definable between 7,8msec up to 2 seconds.
Option OA	Active 24V DC output; max. 50mA per output (requires option PD or PM).
Option OR	Mechanic relay output; max. switch power 230V AC - 0,5A (requires option PD or PM).

Communication option	
Type	RS232 or RS485 (2-wire or 4-wire).
Protocol	Modbus ASCII / RTU
Speed	1200 - 2400 - 4800 - 9600 baud
Addressing	maximum 255 addresses.
Functions	reading display information, reading / writing all settings.

OPERATIONAL

Operator functions	
Functions	<ul style="list-style-type: none"> enter a preset value, start / interrupt and stop the batch process, total can be reset to zero.
Displayed information	<ul style="list-style-type: none"> preset value running batch total or remaining quantity, total and accumulated total.

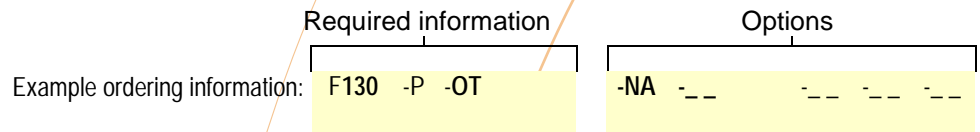
Preset / Total	
Digits	7 digits.
Units	L, m3, GAL, USGAL, KG, lb, bbl, no unit.
Decimals	0 - 1 - 2 or 3.
Note	total can be reset to zero.

Accumulated total	
Digits	11 digits.
Units / decimals	according to selection for total.

Ordering information

How to order: Model number + inputs + options

Standard configuration: **ABS panel-mount enclosure, passive transistorized pulse output / 8-28V DC(AC) power supply**



Flowmeter input signal
P pulse: coil, npn, pnp, namur, reed-switch input
A analog: (0)4-20mA input
U volt: (0)2-10V DC input

Option - batch output signals
OA active transistor output x2 - requires option PD + AA/AB/AU
OR electro-mechanical relay x2 - requires option PD or PM
OT STANDARD passive transistor output x2

Option - NOT AVAILABLE ON THIS UNIT (SEE MODEL F131)
AA active 4-20mA output - requires option PD or PM
AB active 0-20mA output - requires option PD or PM
AF Intrinsically Safe floating 4-20mA output
AI isolated 4-20mA output
AP STANDARD - passive 4-20mA output
AU active 0-10V output - requires option PD or PM

Option - communication (+ RS232 printer driver on request)
CB communication RS232 - Modbus RTU
CH communication RS485 - 2wire - Modbus RTU
CI communication RS485 - 4 wire - Modbus RTU
CT Intrinsically Safe TTL - Modbus RTU

Option - housing
HA aluminum field enclosure IP65 - 2x PG9 1x M20 drilling
HD ABS wall-mount enclosure IP65
HU aluminum field enclosure NEMA 4X - 3x 1/2" NPT drilling

Option - power supply
PB Lithium battery powered
PD (not available on this model)
PL Input loop powered from flow sensor signal (type A...4-20mA)
PM 80-240V AC + sensor supply

Option - hazardous area
XI intrinsically safe
XD EExd enclosure - 1 key
XF EExd enclosure - 3 keys