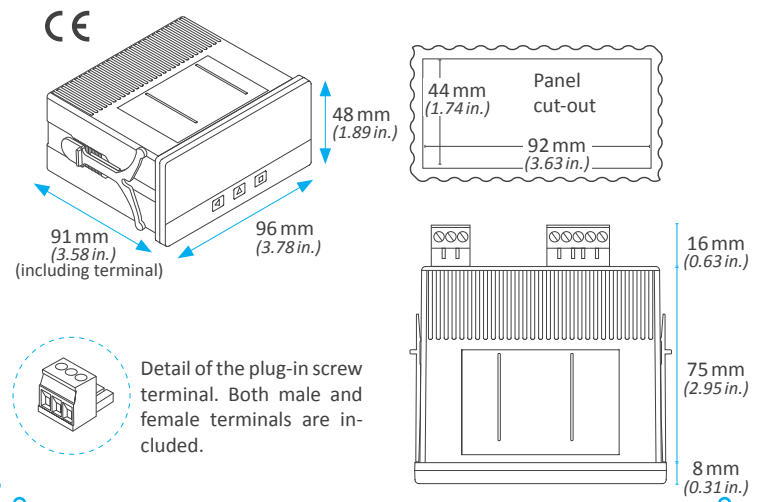# C60-FL   flow meter

Digital flow meter for panel mount, measuring instant and total flow. Accepts impulse signal types NPN, PNP, pick-up, mVac, reed switch, mechanical contact, push-pull and others. Standard 96 x 48 mm (1/8 DIN) size. Scalable reading with 6 digits ('*999999*' to '*-199999*') and configurable decimal point. Provides excitation voltage +15 Vdc (@50 mA). '*Fast access*' function to alarm setpoints and preset value, reset function for total flow by rear contact and / or front key, rear contact to switch reading values, '*Eco*' mode for reduced consumption, 5 brightness levels. Single universal power supply 18 to 265 Vac/dc. Optional relays, analog output and Modbus RTU serial communications. Recommended for OEM applications.

Flow

160 ºC
Counter

Technical specifications

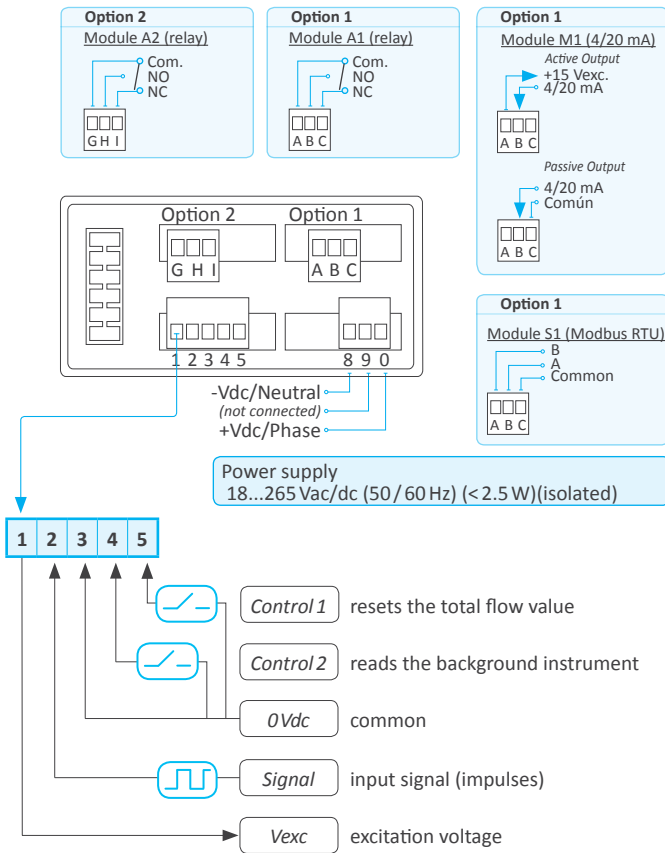|	
Digits	6
Reading	999999 / -199999
Decimal point	configurable
Led color	red
Digit height	14 mm
Accepted signal	NPN, PNP, pick-up*, push-pull, reed contact, mechanical contact, ... (* *minimum 10 mVac RMS*)
Maximum frequency	500 Hz
Minimum frequency	0.06 Hz (with parameter '*Gate*' at 16 seconds)
Maximum voltage at input	±30 Vdc
Input impedance	4.4 KOhms with pull-up, pull-down resistances 120 KOhms without resistances
Quartz accuracy	±0.01 %
Thermal stability	20 ppm/ºC
Excitation voltage	+15 Vdc (max. 50 mA)
Value refresh	each time an impulse is detected
Display refresh	15 refresh / second
Memory retention	yes, retains total flow value in case of power loss
Configuration	from front keypad
Power 'U'	18 to 265 Vac/dc (50 / 60 Hz) (isolated 1500 Veff @60 seconds)
Power wiring	1 mm² to 2.5 mm² (AWG17 to AWG14)
Output and control options	1 or 2 relays 1 analog output 4/20 mA isolated 1 Modbus RTU communications port, isolated
Front protection	IP50 standard (optional IP65)
Consumption (normal mode)	<1.0 W (meter only) <2.5 W (meter with options)
Consumption ('Eco' mode)	<0.3 W (meter only) <1.5 W (meter with options)

Dimensions (mm / *in.*)

48 mm (1.89 in.)
91 mm (3.58 in.) (including terminal)
96 mm (3.78 in.)

44 mm (1.74 in.)   Panel cut-out
92 mm (3.63 in.)

16 mm (0.63 in.)
75 mm (2.95 in.)
8 mm (0.31 in.)

Detail of the plug-in screw terminal. Both male and female terminals are included.

Connections	plug-in screw terminals
Mount	panel
Weight	<150 grams
Housing material	ABS, polycarbonate
Operation temperature	0 to 50 ºC
Storage temperature	-20 to 70 ºC
Warm-up time	15 minutes
Packaging	120 x 114 x 51 cm carton box
Material included	1 x instrument C60-FL-U 1 x signal terminal 1 x power terminal 1x set of units 1 x '*Quick installation guide*'

How to order

Series	Model	Power	Option 1	Option 2	Others	Customization
C60	FL	U				
		-U *(18-265 Vac/dc)*	-A1 *(1 relay)* -M1 *(analog output)* -S1 *(Modbus RTU)* -(empty)	-A2 *(1 relay)* -(empty)	-NBT *(no front keypad)* -65 *(front IP65)* -(empty)	-XXXX *(customized execution)* -(empty)

Connections and rear view

Option 2
Module A2 (relay)
Com.
NO
NC
G H I

Option 1
Module A1 (relay)
Com.
NO
NC
A B C

Option 1
Module M1 (4/20 mA)
Active Output
+15 Vexc.
4/20 mA
A B C

Passive Output
4/20 mA
Común
A B C

Option 2 | Option 1
G H I | A B C
1 2 3 4 5 | 8 9 0
-Vdc/Neutral
(not connected)
+Vdc/Phase

Option 1
Module S1 (Modbus RTU)
B
A
Common
A B C

Power supply
18...265 Vac/dc (50 / 60 Hz) (< 2.5 W)(isolated)

1 2 3 4 5

Control 1 — resets the total flow value

Control 2 — reads the background instrument

0 Vdc — common

Signal — input signal (impulses)

Vexc — excitation voltage

Functions included

'Fast access' menu . . . . configurable menu at the '**UP**' (▲) front key to access and modify the alarm setpoints, and preset values.

'Rear controls' . . . . two rear controls, activated by shortcircuit to the '0 V' terminal, to apply a reset to the total flow value, and switch display reading between instant flow and total flow values.

'Eco' mode . . . . automatic turn-off of the display leds, to reduce the consumption of the instrument when the operator does not need reading.

Alarms . . . . 1 or 2 alarms, independent, configurable as maximum or minimum, with setpoint, hysteresis and '*on alarm*' functions.

Simplified scaling . . . . easy scaling of the meter by using the '*K factor*' parameter of the flow sensor, and independent multiplier and divider parameters for the instant flow and total flow values.

Output and control options . . optional 1 or 2 relay outputs, 1 analog 4/20 mA isolated output, 1 Modbus RTU isolated communications port.

Brightness . . . . configurable 5 levels of brightness intensity.

Password . . . . blocks the configuration menu.

Front Units . . . . set of labels '*Units 9*' included
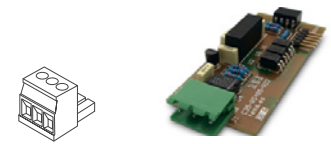
Options and accessories

Relay Output
Module A1 and A2
Function 1 relay output
3 contacts (NC, NO, Common)
up to 250 Vac @ 8 Amperes

Modbus RTU output
Module S1
Function 1 Modbus RTU output
9.600 bps, 4.800 bps
isolated 1000 Vdc

Analog Output
Module M1
Function 1 analog output isolated
4/20 mA
isolated 1000 Vdc

Additional documentation

User's manual C60-FL	www.fema.es/docs/5046_C60-FL_manual_en.pdf
Datasheet C60-FL	www.fema.es/docs/5058_C60-FL_datasheet_en.pdf
Quick installation guide C60-FL	www.fema.es/docs/5060_C60-FL_installation_en.pdf
CE declaration of conformity	www.fema.es/docs/5047_CE-Declaration_C60-FL_en.pdf
Warranty	www.fema.es/docs/4153_Warranty1_en.pdf

Other signals we work

Pt Temperature	tc Temperature	NTC PTC Temperature
Kg Weight	mA Vdc Process	Vdc
Speed	160°C Counter	Flow
Potentiometer	Time	Adc
Period	Custom	Vac
Aac	Integrators	Hz Frequency
Resistances	RS-485 RS-232 Digital	Modbus RTU Digital
BCD Parallel Digital	BCD Multiplex Digital	

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