



Iso 5167 mass flow computer and Arian Flow Cad software FL40

General Description

The FL40 is a multivariable flow computer and Cad software designed specifically to be used on differential pressure flow measurement devices under ISO5167 standard such as orifice plates, nozzles and venturi tubes.

Differential pressure measurement on the primary device is corrected with upstream pressure and temperature of the fluid in order to calculate instantaneous mass flow .

Arian Flow Cad software allows to select the fluid within a list, describe the primary device and calculate discharge coefficients, expansion factor and fluid properties under flow conditions.

Results are stored on a file and downloaded to the FL40.

The image displays the Arian Iso5167 Flow Cad software interface, which is used for configuring flow measurement parameters. The main window shows the following settings:

- Flow Conditions:**
 - F: Min 1, Max 2, Units: Atm, Units Type: Absolute, Atmospheric Pressure: 1 Atm
 - T: Min 0, Max 30, Units: C
 - dP: Min 800, Max 24000, Units: Pa
- Flow Units:**
 - Q mass: Kg / per Sec
 - Q volume: Cubic Meter / per Sec
 - Velocity: Meter / per Sec
- Primary device settings (Secondary dialog):**
 - Iso 5167 Formulas: Iso 5167-1:1991 Sec.B Orifice plates
 - Case: D and D/2 Taps
 - Bore diameter (d): 100 mm, 316 Stainless Steel
 - Upstream Pipe diameter (D): 200 mm, 316 Stainless Steel
- Fluid selection (Secondary dialog):**
 - Fluid Type: Fluid: air, State: Gas
 - Table with columns: Name, Formula, Composition, Mol Wt

The fluid selection table includes the following entries:

Name	Formula	Composition	Mol Wt
acetylene	HCCH	C2H2	26.04
acrylonitrile	CH2CHCN	C3H3N	53.06
air	AIR	AIR	28.95
alyl alcohol	CH2CHCH2OH	C3H6O	58.08
ammonia	NH3	H3N	17.03
argon	Ar	Ar	39.95
benzalde			106.1
benzene			8.11
benzyl al			98.1
biphenyl			142.2
carbon d			4.01
carbon n			8.01
carbon t			53.8
cyclohep			8.19
cyclohex			4.16
cycloper			0.13
cycloper			0.12
cyclopro			2.08
chlorine			0.91
chloropn			8.54
chlorotr			16.4
divinyl et			0.09
ethane			0.07
ethanol			6.07
ethylam			5.08
ethylbenzene	(C6H5)CH2CH3	C8H10	106.1
ethylene	CH2CH2	C2H4	28.05
ethylene glycol	HOCH2CH2OH	C2H6O2	62.07

Characteristics

Inputs

- Standard process variables as 4..20mA, 0..10V,etc. for P , dP and T
- Pt100 or thermocouples for Temperature input.
- Two additional external inputs (dry contact) programmable as reset functions.

Readings

- Totalized flow in 6 high bright 14.5mm height red digits. (Upper display)
- Flow rate in lower 4 digits.
- Continuous memory, stores last reading of the totalized flow.
- Registers maximum and minimum readings of flow rate.

Alarms

- 4 alarms assigned independently to preset values of the totalized flow or rate, linked to the 2 output relays,
- Latch and standby functions.

Outputs

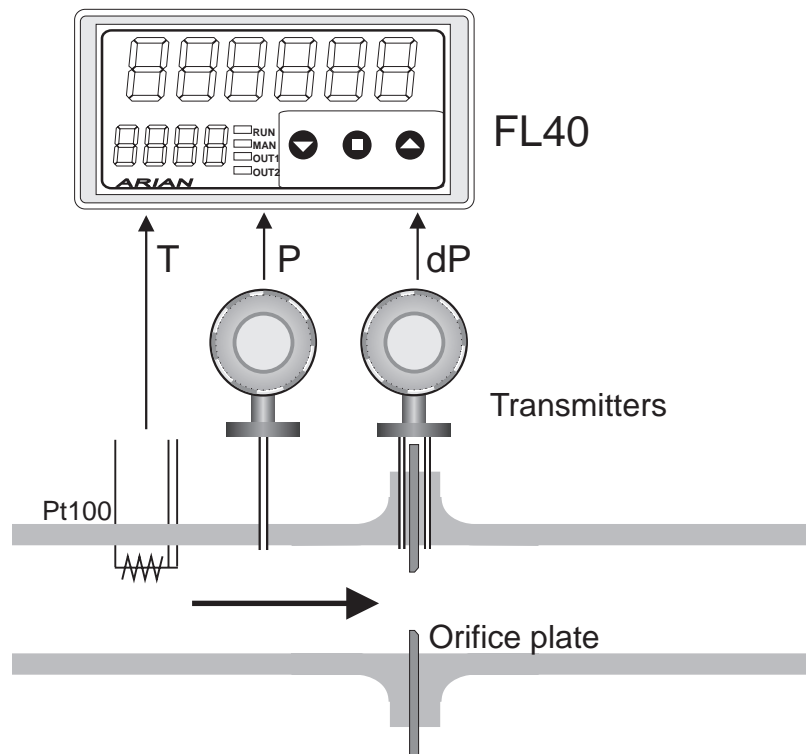
- Two output relays, with two programmable alarms each (high and low)
- Output pulse with frequency proportional to flow rate. Used for external totalizing in PLCs.
- Galvanically isolated analog outputs for the rate meter:
active loop 4..20ma ,0...10V, passive loop 4..20ma.

Communications

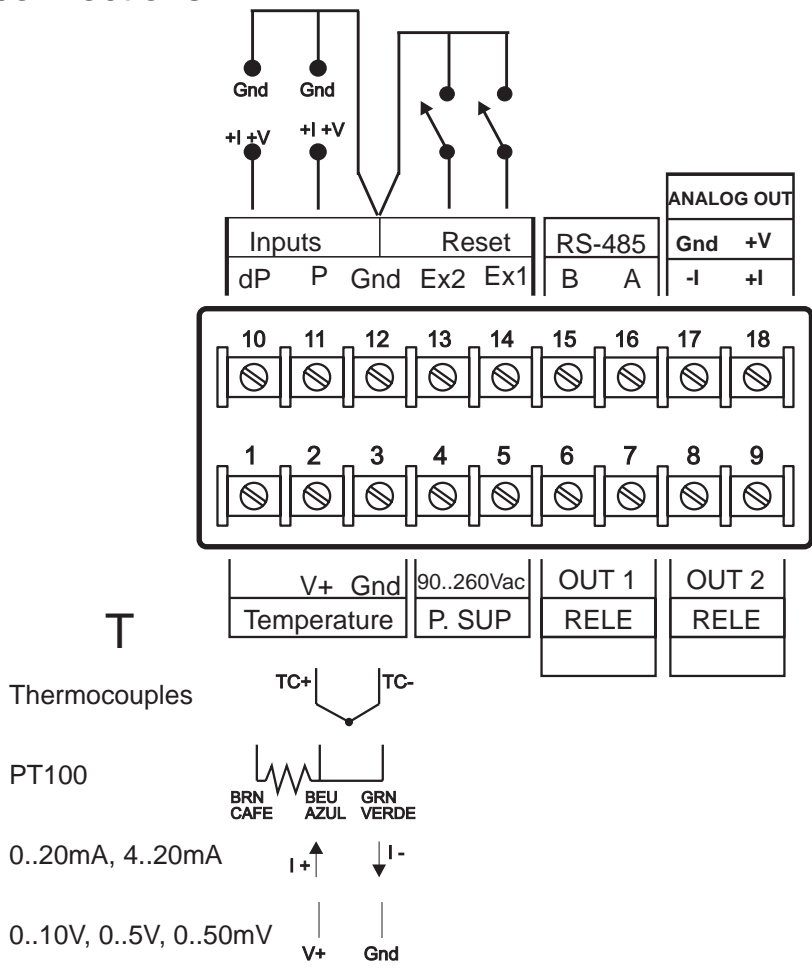
- RS485 Modbus RTU serial communications reports data to a PC or PLC.

Configuration.

- From a PC compatible by means of RPS software.
- From frontal push buttons.

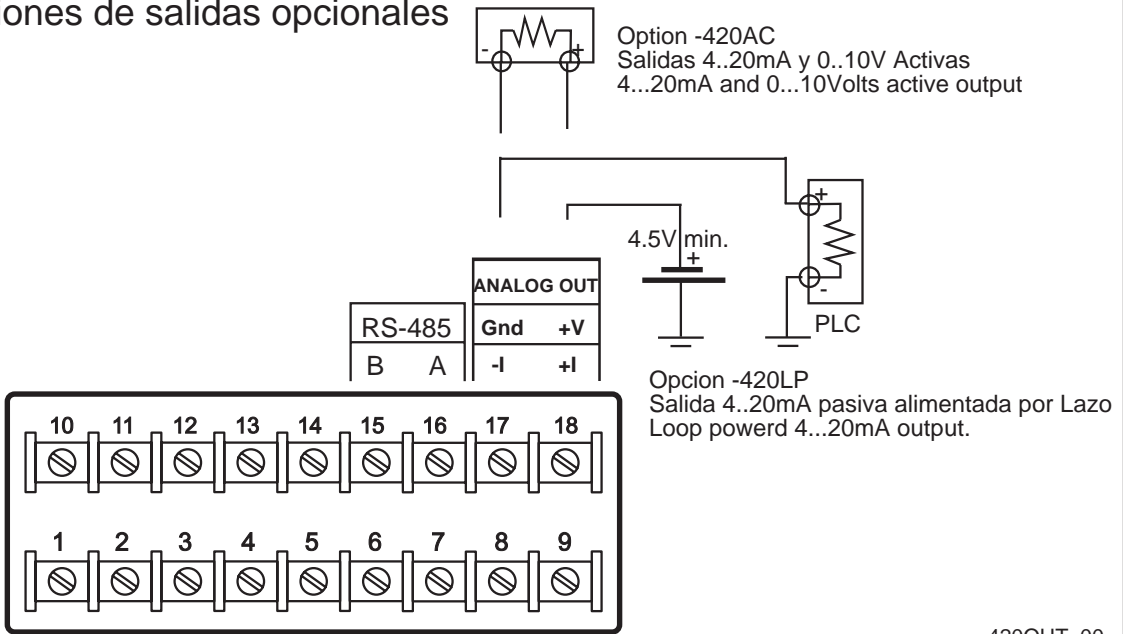


FL40 connections



FL40_c1

Conexiones de salidas opcionales



420OUT_00

TECHNICAL SPECIFICATIONS

INPUTS 3 channel for P, dP and T:
Pt 100, thermocouples, 4...20 mA, 0...20 mA, 0...5 V, 1..5 V, 0..10 V, 0..50 mV

OUTPUTS: Relays, 2 outputs for alarms 250VAC/ 3A., normally open or normally close by software.

Optional:

-420L 4... 20 mA, loop powered, Vdrop 4.5V max. opto isolated (5kV).
-420A 4..20ma/0-10V Active loop, opto isolated (5kV).
-RS485 modbus RTU serial communications, opto isolated (5kV).

POWER SUPPLY:

Current mode switching power supply.
Version: 85...260 Vac, 6 W, 45...65 Hz.
Version: 20...60 VDC, 6 W, (optional)

CONSTRUCTION:

Aluminum and Polycarbonate; IP65
Total Dimension: DIN 1/8; 96 x 48 x 180 mm.
Panel cut: 92 x 45 mm.
Weight: 350 grams.
Operation temperature: 0 ... 50 °C.

PART CODES:

Part number must be done selecting the following alternatives.

FL40

-AC : 85...260 Vac, 6 W, power supply.
-DC : 18....60 Vdc, 6 W power supply.

OPTIONAL

-420L :4..20ma passive loop
-420A :4..20ma active, includes also 0..10Vdc

OPTIONAL

-RS485 :modbus RTU serial communications

For example:

FL40-AC

AC power supply , without any optional output.

FL40-DC-RS485

DC power supply and modbus RTU serial communications.

FOR MORE INFORMATION CONTACT US:

ARIAN S. A.

Teniente Montt 1932, Ñuñoa
Santiago, Chile
Fono/Fax 56-2-4249363
arian@arian.cl
www.arian.cl