

FUEL FLOW METER AIC - 1000 series

**Diesel or gasoline consumption
flow meter for engines / motors up to
515 KW (700 HP)**

888
Instruktor

900
Veritas

1000
series

4000
Veritas

5000
Fuel flow
Master

6000
Swissline

FS
series

Board
computers
Remote
totalizers



The AIC-1000 series are on-line flow meters, specially designed to be mounted in engine compartment with little room conditions.

Made for pulsating liquids, the true consumption of the vehicle engine is measured by switching the return flow from the tank, directly to the fuel supply line.

Application

- Small and medium cars and vans, building machines, tractors, etc.
- Stationery motors
- Motor boats (in- or outboard)

Media that can be measured

- Gasoline / petrol
- Diesel
- Bio-fuel
- Liquid gas

But also :

- Vegetable oil
- Refrigerants (freon, etc.)

Features and benefits

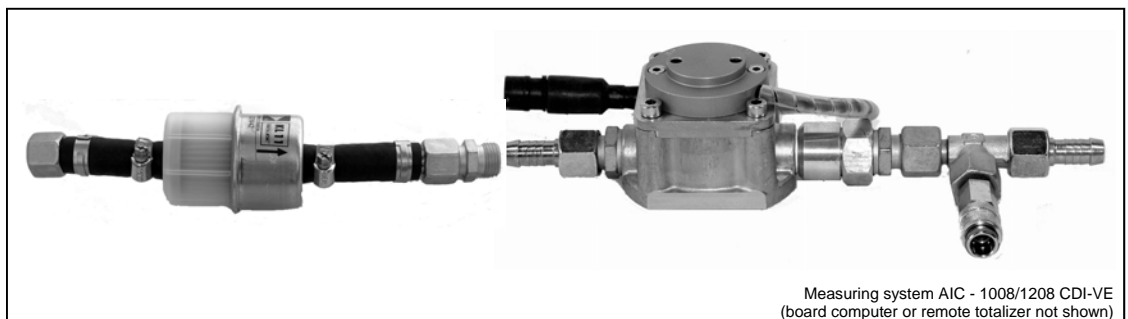
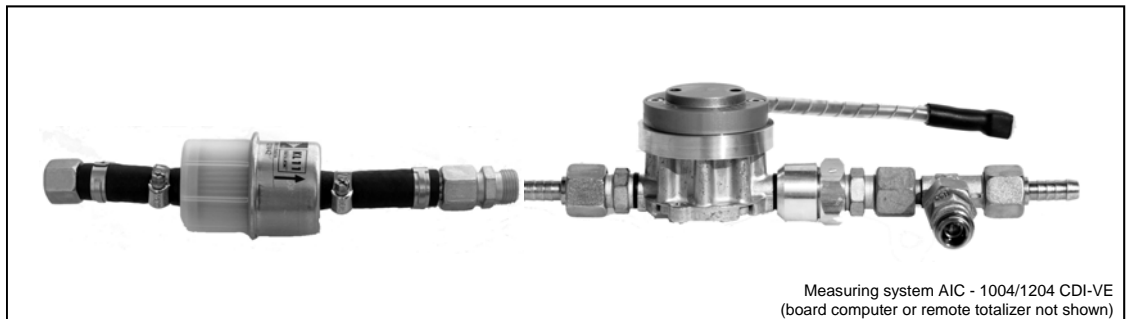
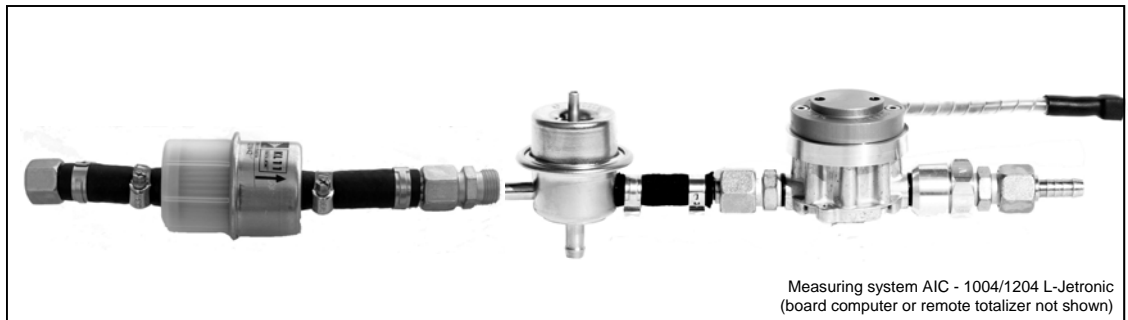
- **Up to 15 % of fuel economy**, through a constant control of the driver
- Reliable instant consumption display and flow totalisation
- Instrument protected via in-line fuel filter
- Mechanical meter of proven technology since more than 20 years
- No interferences with vehicle existing on-board electronic (CAN-Bus)
- AIC flow meters works on all fuel injection type (except systems with open injectors)
- Suitable for engines with fuel injection of latest technology

CE certified
EME Test according
to 95/54/CE directives

Measuring Systems

A complete measuring systems consist of :

- flow meter AIC 1000 series
- fuel filter
- pressure regulator for gasoline / petrol engines or • "T" coupling for Diesel engine
- board computer (for high resolution flow meter AIC 1204 & 1208) or • remote totalizer (for standard resolution flow meter AIC 1004 & 1008)
- cables for electrical connection
- couplings for installation



Measuring principle

Each unit is produced as one module in the interests of simple installation. All holders and housing parts are made of stainless steel or anodized aluminum.

Fuel flow measurement:

The consumption of fuel for engines can be measured by 2 ways :

- Direct (means that there is no fuel returning to the tank, the return flow is reinjected in the fuel circulation flow of the injection circuit.
- Differential (means that the supply and return flow are subtracted. The return fuel flow goes back in the tank.

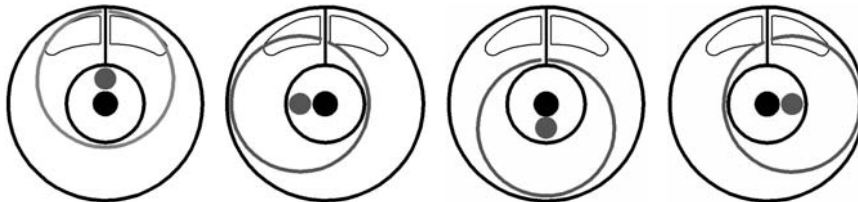
AIC SYSTEMS Ltd. has strongly developed the best measuring solution : the **DIRECT flow** measurement. **The AIC SYSTEMS Ltd. solution allows a true measurement of the fuel flow, within a uncertainty better than +/- 1 % (+/- 0.2 % repeatability).** The differential fuel flow allows only an accuracy of 8 to 15%.

High pulse rate output:

The control and pulse technology is based on the latest SMD technology and is moulded to be water tight and vibration resistant (Pat. AIC). This allows high pulse count per flow quantity unit. **The AIC-1000 series are supplied with 80, 200, 800 or 2000 ppl** (pulses per one litre), according the meter size and application.

Rotary piston technology:

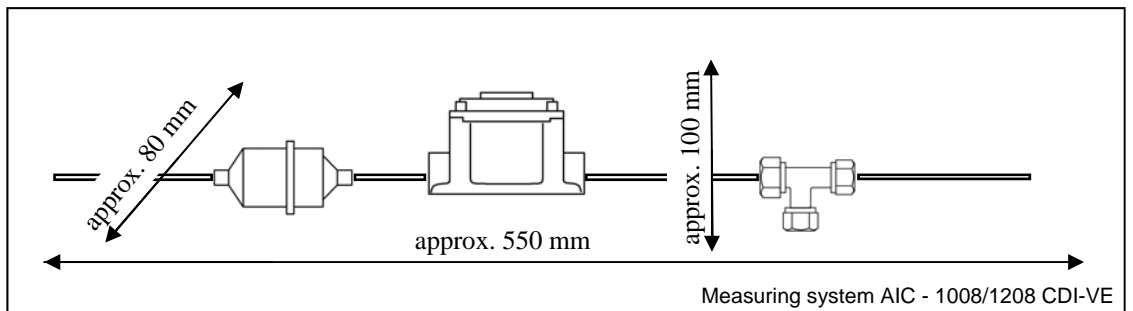
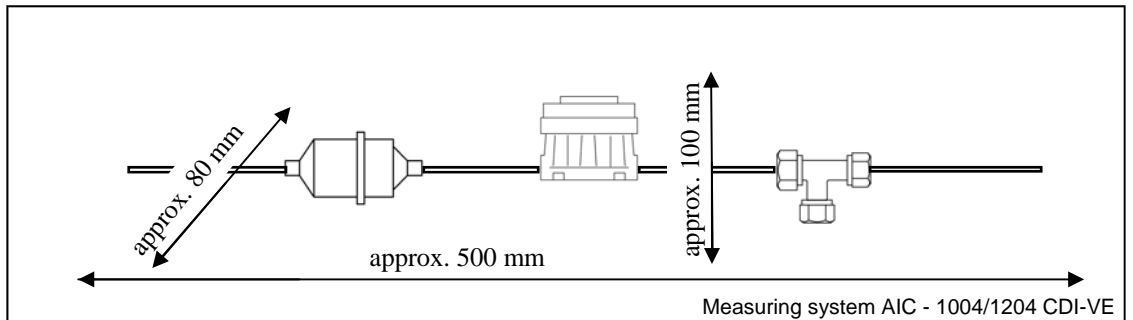
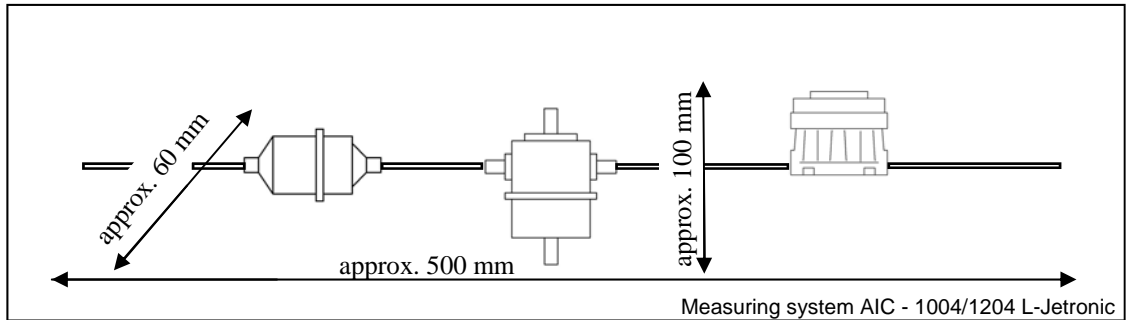
After decades of experience, AIC SYSTEMS Ltd. make his choice for the reliablest volumetric flow meter technology existing, with the less weir and moving parts. The rotary piston technology fits the fuel consumption measuring principle perfectly, a single moving piston oscillates smoothly in a measuring chamber protected by a thin layer of fuel maintaining the piston self floating. This allows the meter to have the less possible mechanical friction. Under normal working conditions **the pressure loss ahead of the meter is of 100 mbar max.**



Calibration

Each flow meter unit, is subject to careful calibration at the factory. Customer calibration can also be saved on simple demand.

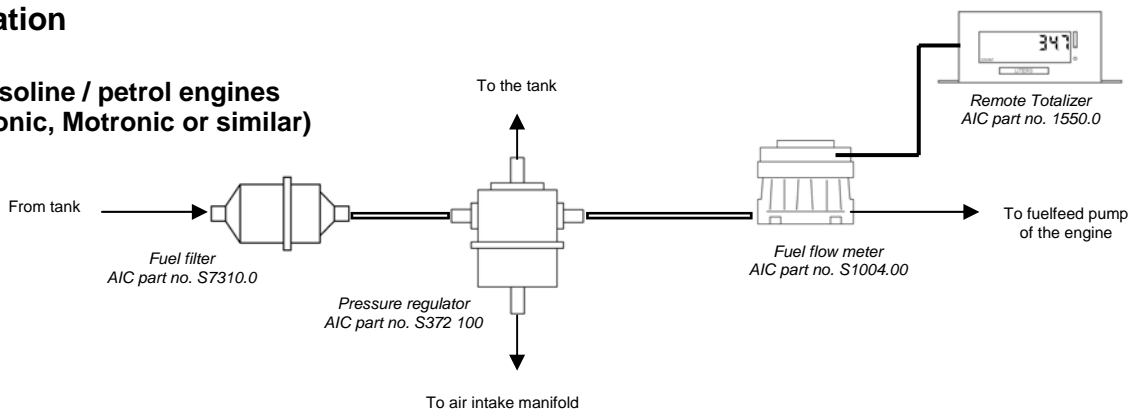
Dimensions



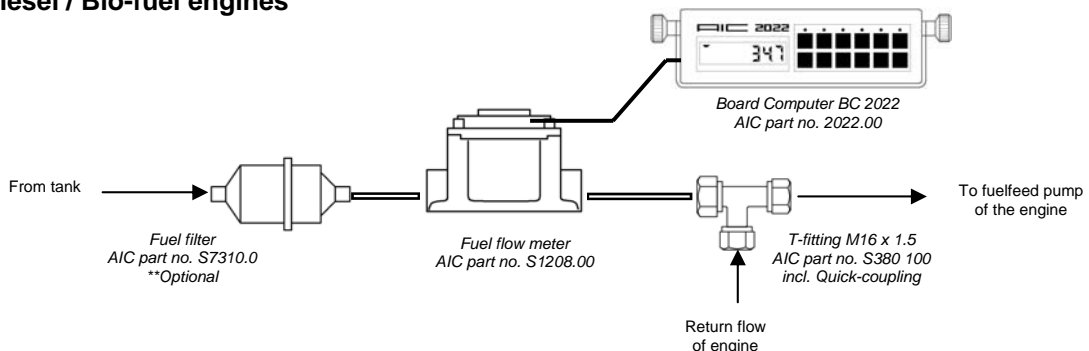
Note : (linear mounting disposition, mounting length can be shortened)

Installation

For gasoline / petrol engines (L-jetronic, Motronic or similar)



For diesel / Bio-fuel engines



Technical data

AIC 1000 series

General data

Manufacturer	AIC SYSTEMS Ltd.
Product designation	AIC-1004 LC 200 AIC-1204 HR 2000 AIC-1008 LC 80 AIC-1208 HR 800

Mechanical data

Dimensions (L x l x h)	500 x 60 x 100 mm (1004 & 1204) 550 x 80 x 100 mm (1008 & 1208) (in linear disposition, can be shortened)
Weight	0.8 kg (1004 & 1204 sensor only) 1.2 kg (1008 & 1208 sensor only) 0.5 to 0.8 kg (accessories)

Materials

Flow meter sensor	Brass, aluminum
O-ring	Viton®
Connectors	Steel anodized TAAC3 protec., Stainless Steel

Flow meter

Measurement principle	Volumetric, oscillating piston, with microprocessor controlled pulse emitter (Pat. AIC)
Measuring range	1 to 80 l/h (1004 & 1204) 4 to 200 l/h (1008 & 1208)
Accuracy	better than 1 % of reading
Repeatability	better than 0.2 % of reading
Admissible pressure	- 1 to 20 bar
Mounting position	indifferent
Operating temperature	-30 ... 90°C
Ingress protection	Sensor and electronic, IP 68

Electrical connection

Power supply	8 to 28 VDC for AIC-1004 & 1008 8 - 15 VDC / 30 mA for AIC-1204 & 1208 (through BC 2022)
Pulse signal	rectangular, 50% duty cycle (1004 & 1008) rectangular NPN, open collector, pulse width 0.6ms (1204 & 1208)
Pulse rate	200 ppl (1004) 2000 ppl (1204) 80 ppl (1008) 800 ppl (1208) (other pulse weight available on demand)

Ordering Structure

Flow meter

Model Type

AIC-1004 LC 200

Designation

for engines up to max. 220 KW (300 HP)
200 ppl, pulse rectangular, 50% duty cycle

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Order code
S1004.00

AIC-1008 LC 80

for engines up to max. 515 KW (700 HP)
80 ppl, pulse rectangular, 50% duty cycle

S1008.00

AIC-1204 LC 2000

for engines up to max. 220 KW (300 HP)
2000 ppl, pulse rectangular, NPN open collector
pulse width 0.6 ms

S1204.00

AIC-1208 LC 800

for engines up to max. 515 KW (700 HP)
800 ppl, pulse rectangular, NPN open collector
pulse width 0.6 ms

S1208.00

Accessories

Mounting kit for diesel engines

T-fitting M16 x 1.5 with quick coupling for bleeding of the fuel circuit / system

S380 100

Mounting kit for gasoline / petrol engines

Pressure control valve with connector M16 x 1.5 for petrol engines (L-jetronic, Motronic, or similar)

S372 200

Online fuel filter

Filter with connector M16 x 1.5 (1004 & 1204 only)
(Available for 1008 & 1208 on demand at AIC Systems)

S7310.0

Transport case

Transport and protection of measuring instrument and accessories, dim. 400 x 300 x 184 mm, PE

460 115

Board Computers

Model Type

BC-2022

Designation

on-board computer, incl. 11 functions with feed cable and programming plug. Operating voltage : 11 to 30 VDC
Functions available : consumption-instantaneous, -average with 3 decimals, -cumulated, travel speed, distance traveled, average speed, cumulated fuel consumption during stationary service, driving time, operating time, speed warning
Choice of standards : metric, US, British

Order code

2022.00

Remote totalizers

AIC-RT/VR

without reset to zero

1550.0

AIC-RT/VR/R

reset to zero by reset button

1550.1

AIC-RT/VR/KS

reset to zero by keyswitch
LCD 8 digits up to 9 999 999.9, programmable, for pulse counting.
Display in Litres, US-Gal. or Imp.-Gal.
Stainless steel housing, 75 x 60 x 38 mm

1570.0

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