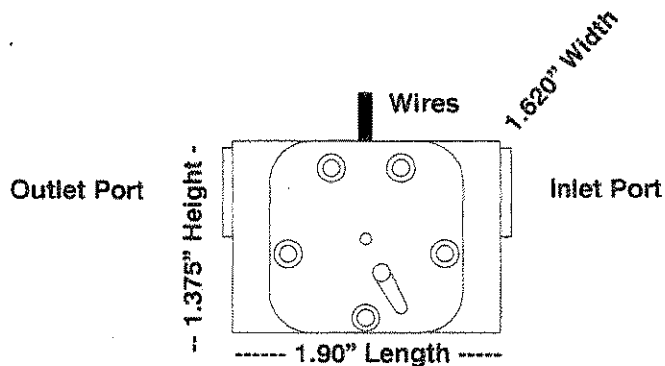


FT-180 Flow Transducer (Black Cube)



Warnings:

If the installation of the Black Cube FT-180 transducer is not covered on an STC, you must perform the flow and pressure tests in FAA document A.C. 23-16 to insure safe and proper engine operation. Installation must conform to aircraft standards and practices (A.C. 43.13). DO NOT attempt to remove the screws in this transducer. Doing so will cause the screws to break and render the Black Cube FT-180 unsafe.

General:

The Black Cube FT-180 interfaces directly with E.I.'s (and most other) fuel flow instruments and does not need a foxboro interface. The Black Cube FT-180 has considerably less pressure drop than other units on the market and a blocked rotor does not effect pressure drop. Also, the overall accuracy and linearity of Black Cube FT-180 is superior to most other flow transducers. The Black Cube FT-180's design vacates bubbles and is not nearly as susceptible to debris as other units on the market. Additionally, rotor pin to jewel clearances are matched on every unit resulting in a single K-factor for all units. Note: Installation configuration can effect the K-factor.

Identification:

The Black Cube FT-180 can be identified by its black anodized body and cube shape.

Electrical Interface:

The Black Cube FT-180 interfaces with the FP-5(L). The Black Cube FT-180 does not require a foxboro interface. It incorporates an open collector output, the same configuration as the Floscan units.

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FT-180 Continued

Mechanical Interface:

The Black Cube FT-180 has 1/4" NPT ports and comes with two fittings to interface to a #8 female flare fitting. **DO NOT EXCEED** a torque of 25 ft. lbs. when installing fittings into the transducer. The Black Cube FT-180 should NOT be installed with the wires pointing DOWN (the best situation is with wires pointing UP). Also, the fuel line on the outlet port should not drop down after exiting the transducer. Both of these configurations can trap bubbles in the transducer causing jumpy readings. The inlet port, outlet port and flow direction are marked on the top of the Black Cube FT-180.

Specifications:

Model: FT-180 (Black Cube)

K-Factor: 22700 Pulses/Gal (installation configurations can effect the K-Factor) (use 227 when programming the K-Factor in the FP-5).

Pressure Drop (with 6.0 Lbs/Gal fuel), (blocked or unblocked rotor) : 0.5PSI @ 88 Gal/Hr
2.0PSI @ 176 Gal/Hr

To Calculate Pressure Drop: $P = \frac{(\text{Flow})^2 \times Wf}{93596}$ P = Pressure Drop in PSI
Flow = Fuel Flow in Gal/Hr.
Wf = Weight of Fuel in Lbs/Gal

Fuel Flow Range: 2 to 250+ Gal/Hr.

Fuel Flow Over Range (with no damage to transducer): Unlimited

Linearity: +/- 1% over an engines normal operating range.

Repeatability: +/- 1/4%

Burst Pressure: 4000+ psi

Recommended Maximum Working Pressure: 1000 psi

Temperature Range: -65°C to 125°C

Weight: 5.26 Oz.

Life Expectancy: 10,000 Hrs. min.

FAA PMA'd