

FC-7700 SERIES MASS FLOW CONTROLLERS

Elastomer Seals

Normally-Closed or Normally-Open Solenoid Control Valve



With more than 20,000 in the field, Aera's FC-7700 series mass flow controllers have served for years as the standard for many applications. Although these MFC's have a conventional configuration, they include technical design advances that deliver performance that is superior to competitors' MFC's. An optional electropolishing and ultracleaning treatment for the base, bypass nut, and fittings is available.

FEATURES

- High-sensitivity, fast response, small diameter sensor
- Leak integrity of 1×10^{-6} atm-cc/second of helium
- A normally-closed or normally-open solenoid control valve
- The logical choice for applications where elastomer seals are appropriate

ADVANTAGES OVER COMPETITIVE MFC's:

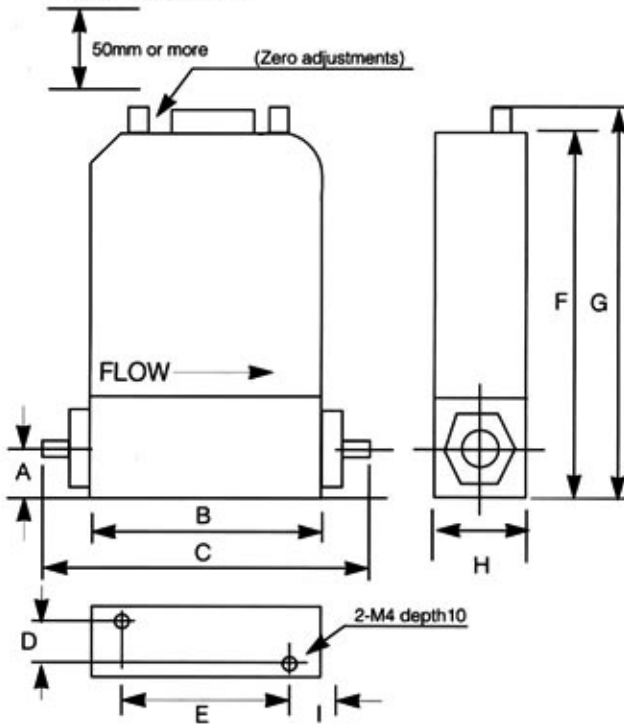
- The fastest actual-flow settling time for an MFC with a solenoid control valve— less than 2 seconds between setpoints
- The best long-term zero drift stability— less than 0.5% of full-scale flow over a period of one year
- The largest purge-mode flows— up to 100 times the calibrated maximum flow
- The highest reliability— less than 0.5% are returned within one year of shipment
- Highly resistant to effects from strong RF fields
- 3 year warranty



SPECIFICATIONS

MODEL	FC-7700	FC-7700C	FC-7710	FC-7710C	FC-7720	FC-7720C
FULL-SCALE RANGE	10 sccm - 5 slm		6 - 20 slm	6 - 20 slm ¹⁾ 20 slm - 50 slm ²⁾	35 slm - 150 slm	
CONTROL VALVE TYPE	Normally-Open solenoid	Normally-Closed solenoid	Normally-Open solenoid	Normally-Closed solenoid	Normally-Open solenoid	Normally-Closed solenoid
SEALS	Elastomer					
RESPONSE TIME	Less than 2 seconds to within $\pm 2\%$ of setpoint				Less than 3 seconds to within $\pm 2\%$ of setpoint	
ACCURACY	Within $\pm 1\%$ of full scale			¹⁾ Within $\pm 1\%$ of full scale ²⁾ Within $\pm 2\%$ of full scale	Within $\pm 2\%$ of full scale	
LINEARITY	Within $\pm 0.5\%$ of full scale		Within $\pm 0.5\%$ of full scale	¹⁾ Within $\pm 0.5\%$ of full scale ²⁾ Within $\pm 1\%$ of full scale	Within $\pm 1\%$ of full scale	
REPEATABILITY	Within $\pm 0.2\%$ of full scale					
LEAK INTEGRITY	1×10^{-6} atm·cc/sec (He) max.					
CONTROL RANGE	5 - 100% of full scale					
DIFFERENTIAL PRESSURE	7-40 psi		10 - 40 psi	¹⁾ 10 - 40 psi ²⁾ 14 - 40 psi	21 - 40 psi	
MAX. OPERATING PRESSURE	70 psi					
PROOF PRESSURE	140 psi					
TEMPERATURE RANGE	5 - 45°C					
COMMAND SIGNAL	0 - 5 VDC					
OUTPUT INDICATION	0 - 5 VDC					
INPUT POWER	+15 VDC $\pm 2\%$ @ 25 mA -15 VDC $\pm 2\%$ @ 180 mA				+15 VDC $\pm 2\%$ @ 25 mA -15 VDC $\pm 2\%$ @ 200 mA	
POWER CONSUMPTION	3.1 watts max.				3.5 watts max.	
MATERIALS	Stainless steel type 316L, Viton™, Teflon™			Stainless steel type 316L, Viton™		
STANDARD FITTINGS	1/4" VCR™				1/4", 3/8" VCR™	
ATTITUDE SENSITIVITY	May be mounted in any position					
WEIGHT	2 lbs.				5 lbs.	

DIMENSIONS



	FC-7700 FC-7700C	FC-7710 FC-7710C	FC-7720 FC-7720C
A	12.7	15.0	15.0
B	76.0	76.0	133.5
C	124.0	124.0	183.8*
D	22.0	22.0	25.5
E	66.0	66.0	101.5
F	119.0	119.0	151.0
G	127.0	127.0	152.6
H	32.0	32.0	37.5
I	5.0	5.0	16.0

All dimensions in mm *183.8 with 1/4" VCR, 192.4 with 3/8" VCR

Electrical Connections

Aera Standard 20-pin Card Edge		
CASE GND-	1 A	-CONTROL 0-5 VDC
COMMON-	2 B	
OUTPUT 0-5VDC-	3 C	-COMMON
+15VDC-	4 D	-VALVE OPEN/CLOSE
	5 E	
VALVE TEST PT-	6 F	-15 VDC
	8 J	
	9 K	
	10 L	



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Aera warrants all mass flow controllers and mass flow meters to be free from defects in materials and workmanship for a period of 3 years after the date of shipment, when the products are used in accordance with all specifications and are not subjected to physical damage or abuse. The warranty does not cover malfunctions caused by misuse of gases that are corrosive or reactive in the presence of air or moisture.