

FLS F3.00 PADDLEWHEEL FLOW SENSOR



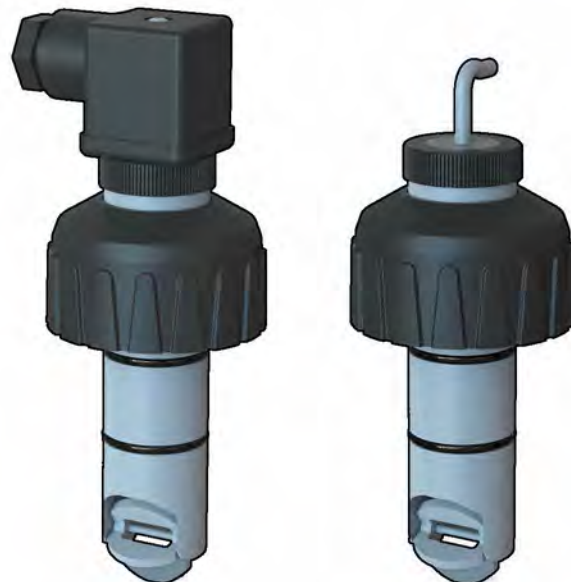
간단하고 안정적인 패들 휠 유량 센서 타입 F3.00은 모든 종류의 고체가 없는 액체에 사용하도록 설계되었습니다. 이 센서는 0.15m / s (0.5ft / s) 에서 유량을 측정하여 반복성이 높은 주파수 출력 신호를 생성합니다. 견고한 구조와 입증 된 기술은 유지 보수가 거의 또는 전혀 필요없는 탁월한 성능을 보장합니다. 모든 종류의 PLC / Instrument 디지털 입력에 안전하게 연결하기 위해 푸시 풀 출력이있는 전용 전자 장치를 사용할 수 있습니다. 특별히 설계된 부속품군은 DN 15 ~ DN600 (0.5" ~ 24") 크기의 모든 파이프 재료에 쉽고 빠르게 설치할 수 있습니다.

응용

- 수처리 및 재생
- 산업 폐수 처리 및 복구
- 섬유 마무리
- 물 분배
- 가공 및 제조 산업
- 여과 시스템
- 화학 생산
- 액체 전달 시스템
- 냉각수 모니터링
- 열 교환기
- 수영장
- 펌프 보호

주요 특징

- C-PVC, PVDF 또는 스테인리스강 센서 본체
- DN15 에서 최대 DN600까지 두개의 센서 길이 적용
- 간편한 삽입 시스템
- IP65 또는 IP68 보호 등급
- 50:1 이상의 측정 범위
- 높은 내화학성
- 배터리 구동 시스템 버전
- 범용 전기 연결을 위한 푸시 풀 출력



기술 데이터

General

- Pipe Size Range: DN15 to DN600 (0.5" to 24")
Please refer to Installation Fittings section for more details
- Flow Rate Range: 0.15 to 8 m/s (0.5 to 25 ft./s)
- Linearity: $\pm 0.75\%$ of full scale
- Repeatability: $\pm 0.5\%$ of full scale
- Minimum Reynolds Number Required: 4500
- Enclosure: IP68 or IP65
- Wetted Materials:
 - sensor Body: C-PVC, PVDF or 316L SS
 - o-rings: EPDM or FPM
 - rotor: ECTFE (Halar®)
 - shaft: Ceramic (Al_2O_3)/316L SS (for metal sensors)
 - bearings: Ceramic (Al_2O_3), none (for metal sensor)

Specific for F3.00.H

- Supply voltage: 5 to 24 VDC $\pm 10\%$ regulated
- Supply current: $< 30\text{ mA}$ @ 24 VDC
- Output signal:
 - square wave
 - frequency: 45 Hz per m/s nominal (13.7 Hz per ft/s nominal)
 - type: transistor NPN open collector
 - output current: 10 mA max
- Cable length: 8 m (26.4 ft) standard, 300 m (990 ft) maximum

Specific for F3.00.C

- Supply voltage: 3 to 5 VDC regulated or 3.6 Volt Lithium battery
- Supply current: $< 10\ \mu\text{A}$ max
- Output signal:

- square wave
- frequency: 45 Hz per m/s nominal (13.7 Hz per ft/s nominal)
- min. input impedance: 100 K Ω
- Cable length: 8 m (26.4 ft) standard, 16 m (52.8 ft) maximum

Specific for F3.00.P

- Supply voltage: 12 to 24 VDC $\pm 10\%$ regulated
- Supply current: $< 30\text{ mA}$ @ 24 VDC
- Output signal:
 - square wave
 - frequency: 45 Hz per m/s nominal (13.7 Hz per ft/s nominal)
 - type: Push-Pull (for connection to NPN and PNP inputs)
 - output current: 20 mA max
- Cable length: 8 m (26.4 ft) standard, 300 m (990 ft) maximum

Standards & Approvals

- Manufactured under ISO 9001
- Manufactured under ISO 14001
- CE
- RoHS Compliant
- EAC
- FDA on request for paddlewheel in C-PVC/EPDM, PVDF/EPDM, SS316L/EPDM.

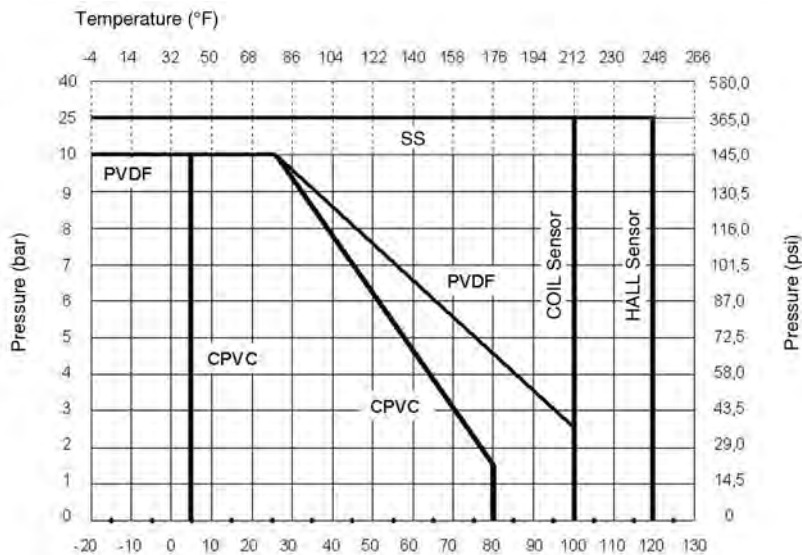
최대 작동 압력 / 온도 (25년 수명)

F3.00.H or F3.00.P Sensor

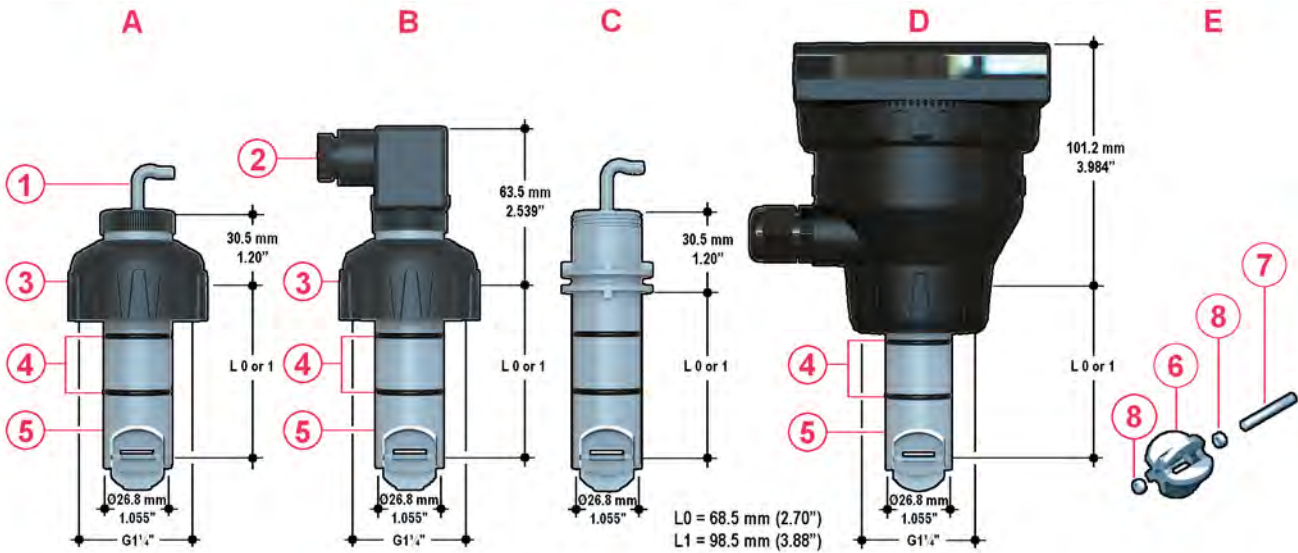
- C-PVC body:
 - 10 bar (145 psi) @ 25°C (77°F)
 - 1,5 bar (22 psi) @ 80°C (176°F)
- PVDF body:
 - 10 bar (145 psi) @ 25°C (77°F)
 - 2,5 bar (36 psi) @ 100°C (212°F)
- SS body:
 - 25 bar (363 psi) @ 120°C (248°F)

F3.00.C Sensor

- C-PVC body:
 - 10 bar (145 psi) @ 25°C (77°F)
 - 1,5 bar (22 psi) @ 80°C (176°F)
- PVDF body:
 - 10 bar (145 psi) @ 25°C (77°F)
 - 2,5 bar (36 psi) @ 100°C (212°F)
- SS body:
 - 25 bar (363 psi) @ 100°C (212°F)



치수



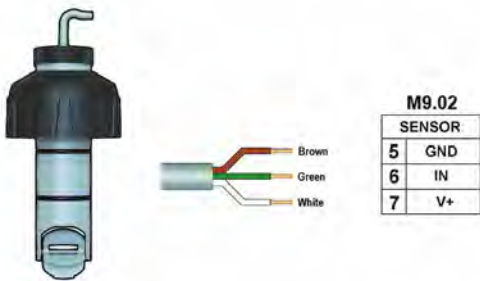
- A F3.00 IP68 Remote Sensor
- B F3.00 IP65 Remote Sensor
- C F3.01 Compact Sensor
- D F3.01 Compact Sensor + Transmitter (sold separately)
- E Paddlewheel system

- 1 Electrical cable: 8 m. (26.4 ft) standard
- 2 4 pole cable plug according to DIN 43650-B/ISO 6952
- 3 U-PVC cap for installation into fittings (SS 316L for metal sensor)
- 4 O-Ring seals available in EPDM or FPM

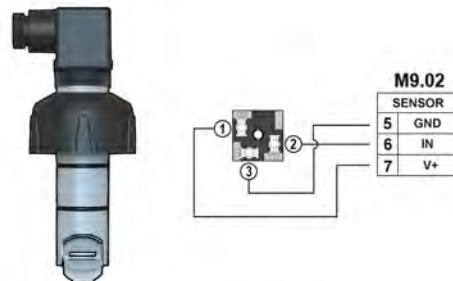
- 5 C-PVC, PVDF or Stainless Steel sensor body
- 6 ECTFE Halar® (registered trademark of Ausimont-Solvay) Open-cell rotor
- 7 Ceramic shaft (SS 316L for metal sensor)
- 8 Ceramic bearings (none for metal sensor)

배선 연결

F3.00.H IP68 센서 배선 연결

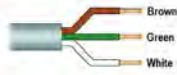


F3.00.H IP65 센서 배선 연결

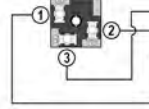


다른 모니터에 F3.00.H의 배선 연결

	M9.00	M9.50	M9.03	M9.07	M9.08	M9.10
GND	7	30	30	16	16	37
IN	8	28	28	14	14	36
V+	9	27	27	13	13	35



M9.20 SENSOR	
7	GND
8	IN
9	V+



M9.20 SENSOR	
7	GND
8	IN
9	V+

주문 데이터

F3.00.H.XX Paddlewheel Flow Sensor (Remote version)							
Part No.	Version	Power supply	Length	Main wetted materials	Enclosure	Flow Rate Range	Weight (gr.)
F3.00.H.01	Hall	5 - 24 VDC	L0	C-PVC/ EPDM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	250
F3.00.H.02	Hall	5 - 24 VDC	L0	C-PVC/FPM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	250
F3.00.H.03	Hall	5 - 24 VDC	L1	C-PVC/ EPDM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	300
F3.00.H.04	Hall	5 - 24 VDC	L1	C-PVC/FPM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	300
F3.00.H.05	Hall	5 - 24 VDC	L0	PVDF/EPDM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	250
F3.00.H.06	Hall	5 - 24 VDC	L0	PVDF/FPM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	250
F3.00.H.07	Hall	5 - 24 VDC	L1	PVDF/EPDM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	300
F3.00.H.08	Hall	5 - 24 VDC	L1	PVDF/FPM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	300
F3.00.H.09	Hall	5 - 24 VDC	L0	316SS/EPDM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	600
F3.00.H.10	Hall	5 - 24 VDC	L0	316SS/FPM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	600
F3.00.H.11	Hall	5 - 24 VDC	L1	316SS/EPDM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	650
F3.00.H.12	Hall	5 - 24 VDC	L1	316SS/FPM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	650
F3.00.H.13	Hall	5 - 24 VDC	L0	C-PVC/EPDM	IP65	0.15 to 8 m/s (0.5 to 25 ft./s.)	250
F3.00.H.14	Hall	5 - 24 VDC	L0	C-PVC/FPM	IP65	0.15 to 8 m/s (0.5 to 25 ft./s.)	250
F3.00.H.15	Hall	5 - 24 VDC	L1	C-PVC/EPDM	IP65	0.15 to 8 m/s (0.5 to 25 ft./s.)	300
F3.00.H.16	Hall	5 - 24 VDC	L1	C-PVC/FPM	IP65	0.15 to 8 m/s (0.5 to 25 ft./s.)	300
F3.00.H.17	Hall	5 - 24 VDC	L0	PVDF/EPDM	IP65	0.15 to 8 m/s (0.5 to 25 ft./s.)	250
F3.00.H.18	Hall	5 - 24 VDC	L0	PVDF/FPM	IP65	0.15 to 8 m/s (0.5 to 25 ft./s.)	250
F3.00.H.19	Hall	5 - 24 VDC	L1	PVDF/EPDM	IP65	0.15 to 8 m/s (0.5 to 25 ft./s.)	300
F3.00.H.20	Hall	5 - 24 VDC	L1	PVDF/FPM	IP65	0.15 to 8 m/s (0.5 to 25 ft./s.)	300
F3.00.H.21	Hall	5 - 24 VDC	L0	316SS/EPDM	IP65	0.15 to 8 m/s (0.5 to 25 ft./s.)	600
F3.00.H.22	Hall	5 - 24 VDC	L0	316SS/FPM	IP65	0.15 to 8 m/s (0.5 to 25 ft./s.)	600
F3.00.H.23	Hall	5 - 24 VDC	L1	316SS/EPDM	IP65	0.15 to 8 m/s (0.5 to 25 ft./s.)	650
F3.00.H.24	Hall	5 - 24 VDC	L1	316SS/FPM	IP65	0.15 to 8 m/s (0.5 to 25 ft./s.)	650

주문 데이터

F3.00.C.XX Paddlewheel Flow Sensor (Remote version for Battery powered monitor M9.20)							
Part No.	Version	Power supply	Length	Main wetted materials	Enclosure	Flow Rate Range	Weight (gr.)
F3.00.C.01	Coil	3 - 5 VDC	L0	C-PVC/EPDM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	250
F3.00.C.02	Coil	3 - 5 VDC	L0	C-PVC/FPM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	250
F3.00.C.03	Coil	3 - 5 VDC	L1	C-PVC/EPDM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	300
F3.00.C.04	Coil	3 - 5 VDC	L1	C-PVC/FPM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	300
F3.00.C.05	Coil	3 - 5 VDC	L0	PVDF/EPDM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	250
F3.00.C.06	Coil	3 - 5 VDC	L0	PVDF/FPM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	250
F3.00.C.07	Coil	3 - 5 VDC	L1	PVDF/EPDM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	300
F3.00.C.08	Coil	3 - 5 VDC	L1	PVDF/FPM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	300
F3.00.C.09	Coil	3 - 5 VDC	L0	316SS/EPDM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	600
F3.00.C.10	Coil	3 - 5 VDC	L0	316SS/FPM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	600
F3.00.C.11	Coil	3 - 5 VDC	L1	316SS/EPDM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	650
F3.00.C.12	Coil	3 - 5 VDC	L1	316SS/FPM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	650
F3.00.C.13	Coil	3 - 5 VDC	L0	C-PVC/EPDM	IP65	0.15 to 8 m/s (0.5 to 25 ft./s.)	250
F3.00.C.14	Coil	3 - 5 VDC	L0	C-PVC/FPM	IP65	0.15 to 8 m/s (0.5 to 25 ft./s.)	250
F3.00.C.15	Coil	3 - 5 VDC	L1	C-PVC/EPDM	IP65	0.15 to 8 m/s (0.5 to 25 ft./s.)	300
F3.00.C.16	Coil	3 - 5 VDC	L1	C-PVC/FPM	IP65	0.15 to 8 m/s (0.5 to 25 ft./s.)	300
F3.00.C.17	Coil	3 - 5 VDC	L0	PVDF/EPDM	IP65	0.15 to 8 m/s (0.5 to 25 ft./s.)	250
F3.00.C.18	Coil	3 - 5 VDC	L0	PVDF/FPM	IP65	0.15 to 8 m/s (0.5 to 25 ft./s.)	250
F3.00.C.19	Coil	3 - 5 VDC	L1	PVDF/EPDM	IP65	0.15 to 8 m/s (0.5 to 25 ft./s.)	300
F3.00.C.20	Coil	3 - 5 VDC	L1	PVDF/FPM	IP65	0.15 to 8 m/s (0.5 to 25 ft./s.)	300
F3.00.C.21	Coil	3 - 5 VDC	L0	316SS/EPDM	IP65	0.15 to 8 m/s (0.5 to 25 ft./s.)	600
F3.00.C.22	Coil	3 - 5 VDC	L0	316SS/FPM	IP65	0.15 to 8 m/s (0.5 to 25 ft./s.)	600
F3.00.C.23	Coil	3 - 5 VDC	L1	316SS/EPDM	IP65	0.15 to 8 m/s (0.5 to 25 ft./s.)	650
F3.00.C.24	Coil	3 - 5 VDC	L1	316SS/FPM	IP65	0.15 to 8 m/s (0.5 to 25 ft./s.)	650

주문 데이터

F3.00.P.XX Paddlewheel Flow Sensor (for direct connection to PLC)							
Part No.	Version	Power supply	Length	Main wetted materials	Enclosure	Flow Rate Range	Weight (gr.)
F3.00.P.01	Push-Pull	12 - 24 VDC	L0	C-PVC/EPDM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	250
F3.00.P.02	Push-Pull	12 - 24 VDC	L0	C-PVC/FPM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	250
F3.00.P.03	Push-Pull	12 - 24 VDC	L1	C-PVC/EPDM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	300
F3.00.P.04	Push-Pull	12 - 24 VDC	L1	C-PVC/FPM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	300
F3.00.P.05	Push-Pull	12 - 24 VDC	L0	PVDF/EPDM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	250
F3.00.P.06	Push-Pull	12 - 24 VDC	L0	PVDF/FPM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	250
F3.00.P.07	Push-Pull	12 - 24 VDC	L1	PVDF/EPDM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	300
F3.00.P.08	Push-Pull	12 - 24 VDC	L1	PVDF/FPM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	300
F3.00.P.09	Push-Pull	12 - 24 VDC	L0	316SS/EPDM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	600
F3.00.P.10	Push-Pull	12 - 24 VDC	L0	316SS/FPM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	600
F3.00.P.11	Push-Pull	12 - 24 VDC	L1	316SS/EPDM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	650
F3.00.P.12	Push-Pull	12 - 24 VDC	L1	316SS/FPM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	650
F3.00.P.13	Push-Pull	12 - 24 VDC	L0	C-PVC/EPDM	IP65	0.15 to 8 m/s (0.5 to 25 ft./s.)	250
F3.00.P.14	Push-Pull	12 - 24 VDC	L0	C-PVC/FPM	IP65	0.15 to 8 m/s (0.5 to 25 ft./s.)	250
F3.00.P.15	Push-Pull	12 - 24 VDC	L1	C-PVC/EPDM	IP65	0.15 to 8 m/s (0.5 to 25 ft./s.)	300
F3.00.P.16	Push-Pull	12 - 24 VDC	L1	C-PVC/FPM	IP65	0.15 to 8 m/s (0.5 to 25 ft./s.)	300
F3.00.P.17	Push-Pull	12 - 24 VDC	L0	PVDF/EPDM	IP65	0.15 to 8 m/s (0.5 to 25 ft./s.)	250
F3.00.P.18	Push-Pull	12 - 24 VDC	L0	PVDF/FPM	IP65	0.15 to 8 m/s (0.5 to 25 ft./s.)	250
F3.00.P.19	Push-Pull	12 - 24 VDC	L1	PVDF/EPDM	IP65	0.15 to 8 m/s (0.5 to 25 ft./s.)	300
F3.00.P.20	Push-Pull	12 - 24 VDC	L1	PVDF/FPM	IP65	0.15 to 8 m/s (0.5 to 25 ft./s.)	300
F3.00.P.21	Push-Pull	12 - 24 VDC	L0	316SS/EPDM	IP65	0.15 to 8 m/s (0.5 to 25 ft./s.)	600
F3.00.P.22	Push-Pull	12 - 24 VDC	L0	316SS/FPM	IP65	0.15 to 8 m/s (0.5 to 25 ft./s.)	600
F3.00.P.23	Push-Pull	12 - 24 VDC	L1	316SS/EPDM	IP65	0.15 to 8 m/s (0.5 to 25 ft./s.)	650
F3.00.P.24	Push-Pull	12 - 24 VDC	L1	316SS/FPM	IP65	0.15 to 8 m/s (0.5 to 25 ft./s.)	650

INSERTION FLOW SENSORS

주문 데이터

F3.01.X.XX Paddlewheel Flow Sensor (Compact version)							
Part No.	Version	Power supply	Length	Main wetted materials	Enclosure	Flow Rate Range	Weight (gr.)
F3.01.H.01	Hall	5 - 24 VDC	L0	C-PVC/EPDM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	250
F3.01.H.02	Hall	5 - 24 VDC	L0	C-PVC/FPM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	250
F3.01.H.03	Hall	5 - 24 VDC	L1	C-PVC/EPDM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	300
F3.01.H.04	Hall	5 - 24 VDC	L1	C-PVC/FPM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	300
F3.01.H.05	Hall	5 - 24 VDC	L0	PVDF/EPDM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	250
F3.01.H.06	Hall	5 - 24 VDC	L0	PVDF/FPM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	250
F3.01.H.07	Hall	5 - 24 VDC	L1	PVDF/EPDM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	300
F3.01.H.08	Hall	5 - 24 VDC	L1	PVDF/FPM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	300
F3.01.H.09	Hall	5 - 24 VDC	L0	316SS/EPDM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	600
F3.01.H.10	Hall	5 - 24 VDC	L0	316SS/FPM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	600
F3.01.H.11	Hall	5 - 24 VDC	L1	316SS/EPDM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	650
F3.01.H.12	Hall	5 - 24 VDC	L1	316SS/FPM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	650
F3.01.C.01	Coil	3 - 5 VDC	L0	C-PVC/EPDM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	250
F3.01.C.02	Coil	3 - 5 VDC	L0	C-PVC/FPM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	250
F3.01.C.03	Coil	3 - 5 VDC	L1	C-PVC/EPDM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	300
F3.01.C.04	Coil	3 - 5 VDC	L1	C-PVC/FPM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	300
F3.01.C.05	Coil	3 - 5 VDC	L0	PVDF/EPDM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	250
F3.01.C.06	Coil	3 - 5 VDC	L0	PVDF/FPM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	250
F3.01.C.07	Coil	3 - 5 VDC	L1	PVDF/EPDM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	300
F3.01.C.08	Coil	3 - 5 VDC	L1	PVDF/FPM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	300
F3.01.C.09	Coil	3 - 5 VDC	L0	316SS/EPDM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	600
F3.01.C.10	Coil	3 - 5 VDC	L0	316SS/FPM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	600
F3.01.C.11	Coil	3 - 5 VDC	L1	316SS/EPDM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	650
F3.01.C.12	Coil	3 - 5 VDC	L1	316SS/FPM	IP68	0.15 to 8 m/s (0.5 to 25 ft./s.)	650