

F4000 Fire Service Meters

High Velocity, Horizontal, Magnetic Drive, Round Flanged Ends

Sizes 4", 6", 8", 10" & 12"



Sizes:	4"	6"	8"	10"	12"
Low Flow GPM	1/2	3/4	1 1/2	1 1/2	1 1/2
Normal Flow GPM	3/4-1200	1 1/2-2500	2-4000	2-6500	2-6500
Maximum Peak Flow GPM	1500	3100	5000	8000	8000

<u>Sweep Hand Registers:</u>	Bypass/Main				
US Gallons	10/100	100/1000	100/1000	100/1000	100/1000
Cubic Feet	1/10	10/100	10/100	10/100	10/100
Cubic Meters	0.1/10	0.1/10	1/10	1/10	1/10

<u>Capacity of Register:</u>	Bypass/Main				
US Gallons (millions)	10/100	100/1000	100/1000	100/1000	100/10000
Cubic Feet (millions)	1/10	10/100	10/100	10/100	10/1000
Cubic Meters (millions)	0.1/10	0.1/10	0.1/100	0.1/10	0.1/10

Register Type: Permanently sealed direct reading register

Materials:

Turbine Main Case	Stainless Steel Epoxy Coated
Top Cover Plate	304 Stainless Steel
Measuring Chamber Housing	Glass-filled Noryl
Rotor	Polypropylene
Rotor Radial Bearings	Synthetic Sapphire
Rotor Thrust Bearings	Carbide
Rotor Spindle	Stainless Steel
Chamber Shafts and Screws	Stainless Steel
Up-shaft Assembly:	
Magnet	Cobalt
Gear	PPS
Magnet Holder	Noryl
Upshaft	Stainless Steel
Bearings	Lubricated Nylon
O-rings	EPDM
Register Gearing	Acetal Copolymer & Nylon
Register Cover & Housing	Brass
Register Lid	Brass
Changeover Valve Assembly:	
Clapper	Stainless Steel
Seat	Bronze
Seal	Vulcanized EPDM
Body	Fusion Bonded Epoxy Coated Stainless Steel
Strainer Body & Top Cover	Fusion Bonded Epoxy Coated Carbon Steel
Strainer Screen	Stainless Steel
Bypass Ball Valves	Bronze
Plugs	Bronze

Description. The F4000 incorporates Elster AMCO Water's T4000 turbine element within an assembly featuring a high performance check valve, a FM approved fire service strainer and a proven Elster AMCO Water C700 bypass meter. For convenient maintenance both the T4000 turbine element and the C700 bypass can be replaced without removing the meter from the line. Additionally, the check valve can be checked for proper maintenance without removing the meter from the meter setting.

Operation. The F4000 Fire Service Assembly is designed for use where water both for fire protection and domestic needs are combined into a single service. It is designed to measure flows ranging from very low to very high. Water passes through the strainer and meter without a change in flow direction at high flows, driving a helix rotor in direct proportion to the quantity of water passing through the meter. Rotor revolutions are transferred to a sealed register by appropriate reduction gearing and a magnetic drive. Low flows are diverted through the positive displacement meter on the bypass line.



Compliance to Standards. The F4000 Fire Service Assembly meets or exceeds performance and material requirements of the American Water Works Association Standard C703, as most recently revised for Type II devices.

Installation. The meter must be installed in a clean pipe line, free from any foreign materials. Install the meter with direction of flow as indicated by the arrow cast in the meter case. The meter should be installed in horizontal lines. The AWWA M6 manual recommends 10 pipe diameters upstream and 5 pipe diameters downstream of straight pipe for optimal accuracy of all inferential type flowmeters. The installer should provide upstream and downstream gate valves and a bypass for use during maintenance.

Application. The meter is for use only with POTABLE COLD WATER up to 120°F (50°C) and working pressures up to 175 psi. The meter will perform with accuracy registration of 100% ±1 1/2% within the normal flows. Calibration and accuracy tests are made before shipment. No adjustments need to be made before installation.

Construction. The Fire Service Strainer has a polyester-coated stainless steel body that houses a 304 stainless steel screen. Strainer incorporates a drain plug for easy flushing of debris without lid removal. After removal of the lid bolts, strainer screen and screen support are removable, simplifying disposal of accumulated debris. The F4000 strainer is FM approved.

The Turbine Meter is enclosed in a epoxy-coated, stainless steel body that houses both turbine chamber and automatic check valve. The meter's stainless steel upper body and measuring assembly allow measuring unit removal without pulling the meter from the line. A combination of a fiberglass-reinforced polymer fixed flow straightener and flow straightener incorporated into the chamber housing condition flows to maximize accuracy, particularly at crossover.

The changeover valve assembly is incorporated into a single housing with the meter. The valve features stainless steel clapper, ring, arm and bushings, with bronze seat and stainless steel shaft. A test port is provided in the valve cover.

The Bypass Meter is an appropriately sized positive displacement C700 meter that provides low-flow measurement to the Fire Service Assembly. The meter consists of a main case, oscillating piston measuring chamber and strainer and a magnetically driven register assembly. For the 4" F4000, the bypass meter includes a removable bottom plate, gasket and body bolts. For the 6" - 12" sizes, the bypass meter includes a bolted top plate and O-ring. The main case is cast in bronze with raised characters showing model, size and direction of flow. The self-flushing measuring assembly consists of the measuring chamber with division plate and a nylon insert, piston, chamber top assembly with drive bar and magnet. Each register assembly is secured to the meter with a bronze cover and a tamper screw, is protected by a hinged bronze lid and is positioned over the inlet throat. Two ball valves on the bypass allow isolation of the positive displacement meter for maintenance.

Registers. The sealed registers are permanently and hermetically sealed. The glass lenses are tempered, providing resistance to breakage, scratching and abrasion. The cans are roll-sealed over L-shaped rubber gaskets. The odometer wheels are color-coded for easy reading. The size, model, registration, and date code are printed to the dial faces. The dials are calibrated for accuracy testing. The sweep hands move clockwise during operation.

Magnetic Drive. The magnetic drive design facilitates coupling between the measuring chambers and the external registers. Coupling is absolute at all rated flows.

Connections. Round-flanged connections conform to AWWA Class D.

Reading Options. F4000 meters are available with Absolute Encoder and Digital register options to provide water usage output to the entire spectrum of electronic meter reading systems, giving flexibility to utilities implementing or upgrading reading technologies. Elster AMCO Water's Encoder and Digital registers interface to a variety of automated meter reading systems, allowing technology upgrade without register replacement.

Automatic Meter Reading (AMR). Elster AMCO Water offers the full spectrum of RF technology alternatives - Walk-by, Drive-by and Fixed Network, to reduce reading cost beyond electronic meter reading, while further increasing personnel safety. RF Transmitters accept input from the Elster AMCO's Encoder or Digital Register for reliable measurement inputs. RF Systems from Elster AMCO Water are designed for reading both pit and inside set meter installations, and are to perform in the extremes of service conditions they will encounter.

Dimensions & Net Weights

Dimensions (inches)	4"	6"	8"	10"	12"
Length	33	45	53	68	68
Height	20	23	26	30	33
Width	23	30	39	40	40
Weight (lbs)	300	490	740	950	1010

Mainline	Bypass
4"	1"
6"	1 1/2"
8" thru 12"	2"

Mainline	Bypass Test ports
4"	1" NPTF
6"	1" NPTF
8"	2" NPTF
10"	2" NPTF
12"	2" NPTF

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