

Multiport Flow Selector

Compact and economical production test manifold



BETTIS


EMERSON.
Process Management



Design and Construction

Emerson Process Management – Valve Automation is a recognized leader in oil and gas flow automation solutions.

The BETTIS Multiport Flow Selector is the latest concept and the preferred choice in production test manifold design.

The Multiport Flow Selector is compact, economical and reliable.

Emerson Process Management – Valve Automation provides a broad product offering of automation and control solutions for the oil and gas industry. For more than 55 years, hydrocarbon producers have relied upon the BETTIS™ product brand as an added assurance of safety, reliability and performance. BETTIS innovations have set the brand apart and provided our clients with savings in both time and money.

The BETTIS Multiport Flow Selector (MPFS) provides a cost effective and compact means to improve production management and well optimization. The MPFS allows the selecting and diverting of well fluids from an individual well to a single test outlet, flow loop or sampling device. Connecting up to seven flow lines, the Multiport Flow Selector allows the combined fluids to flow through a separate group outlet, while simultaneously isolating any single well for testing. The unique flow selector is ideal for a variety of oil, gas and process applications and can be used either as a standalone device or with a multiphase meter. The MPFS can also be used for water injection for Enhanced Oil Recovery (EOR) projects. It provides control simplicity in an environment where size, weight and reliability are all key factors. The Multiport Flow Selector reduces the costs of installation, operation and maintenance of the well test system throughout its life cycle.

MULTIPORT FLOW SELECTOR APPLICATION AND FEATURES

- More compact than either conventional two-way or three-way valve manifolds
- Reduces number of isolation valves in production/test manifolds
- Available with a multitude of trims and surface treatments for all operating environments
- Available with two-wire communication for remote control and status indication
- Reduced installation, operating and maintenance costs
- Fitted with BETTIS Multiport Control Actuator (MPA)
- Field adjustable seal/seat with various materials for adverse service conditions
- Operating temperature range:
-20°F to +392°F (-29°C to +200°C)



Assembly and Features

Five available sizes with multiple ANSI pressure ratings

Size	ANSI Class					
	150	300	600	900	1500	2500
2 x 4	X	X	X	X		
3 x 6	X	X	X	X	X	
4 x 8	X	X	X	X		
4 x 10				X	X	
6 x 16	X	X	X	X	X	X

Model designations as follows:

A x B ANSI rating, where;

A = Well inlet/test outlet internal diameters (inches)

B = Group outlet internal diameter (inches)

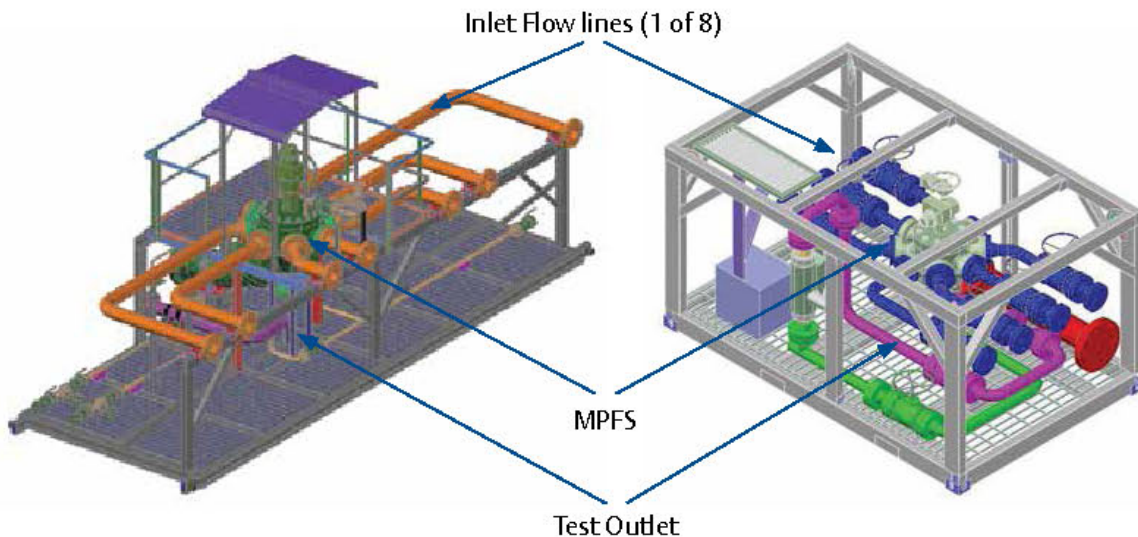
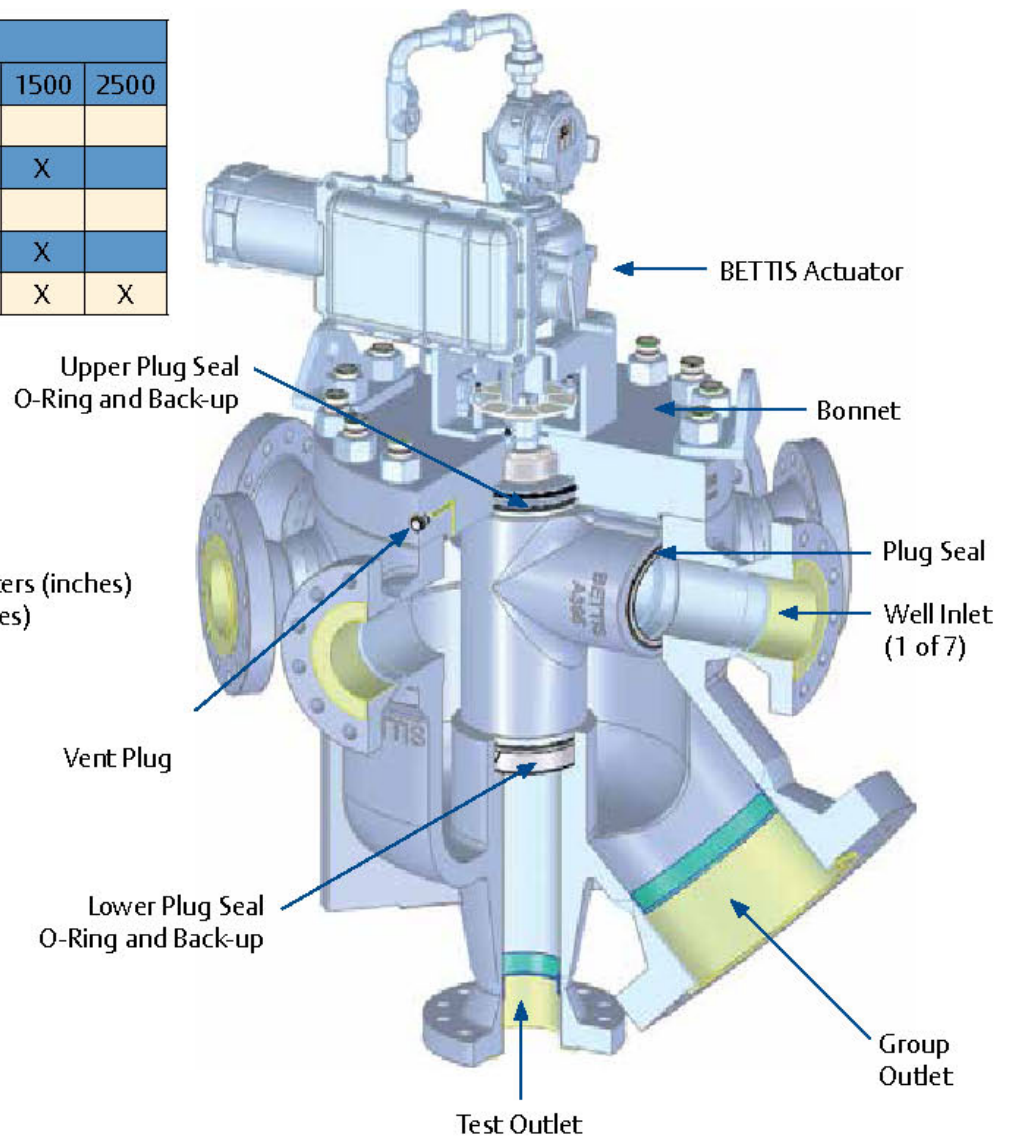
COMMERCIAL BENEFITS

Initial Purchase/Commissioning

- Reduced number of valves
- Reduced piping costs
- Reduced automation costs
- Reduced wiring costs
- Reduced maintenance costs
- Reduced skid weight and size

Ownership/Maintenance

- Reduced operating costs
- Reduced parts cost
- Reduced downtime
- Reduced labor

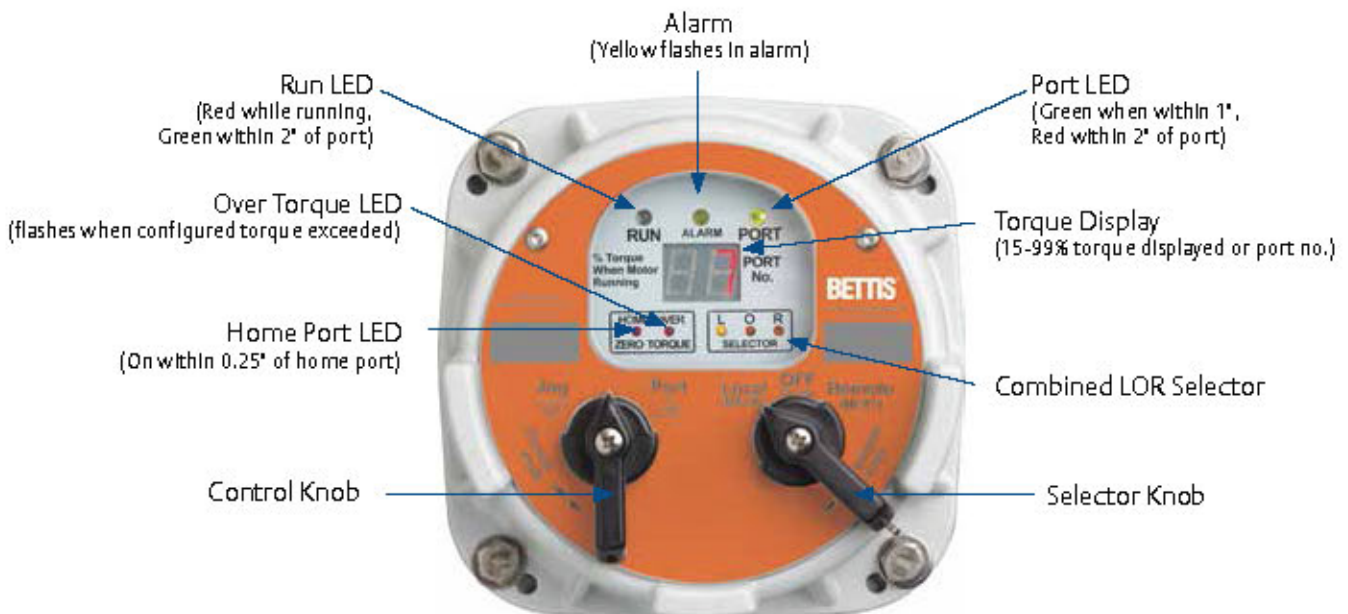
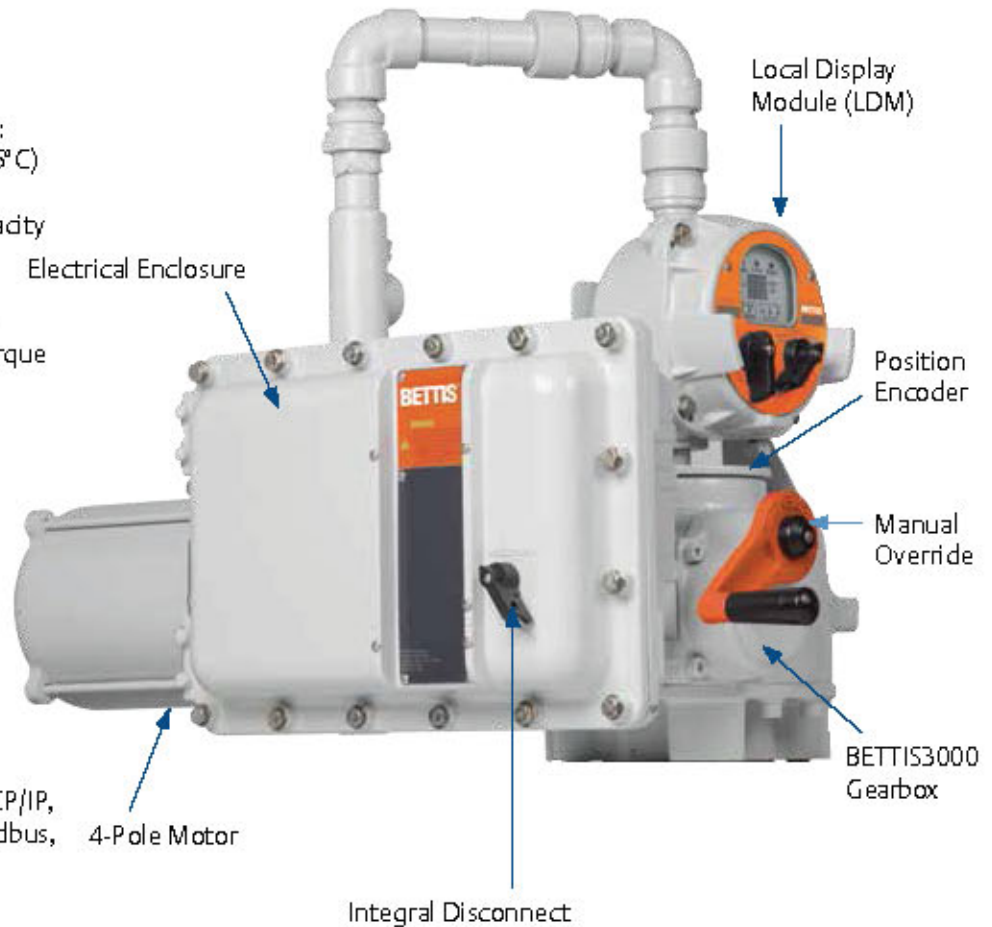


MSM Skid Assembly

BETTIS Multiport Actuator (MPA)

The BETTIS Multiport Actuator (MPA) is an electronic system specifically designed to control and monitor the operation of the Multiport Flow Selector. It combines an exclusive solid state motor starter with control software to provide precise positioning of the Multiport Flow Selector within +/- one degree of the selected port, retaining that position even in the event of a power loss. The Multiport Actuator features include:

- Certified explosion proof
 - Class I, Div I, Groups C & D
 - EEx d IIB T4
- Operating temperature range:
 - 58°F to +149°F (-50°C to +65°C)
- Heavy duty gearbox with capacity of 3000 ft lbs
- Wide range of 4-pole motors available for any voltage or torque
- Configurable for MPFS from 3 to 8 ports
- 12-bit encoder coupled directly to valve stem for position feedback
- Precise motor control with microcontroller updates every 1 mS
- Supports network protocols including Modbus, Modbus TCP/IP, Profibus DP, FOUNDATION™ fieldbus, DeviceNet and Ethernet
- I/O and alarm monitoring
- Dual configuration
 - factory or user setup



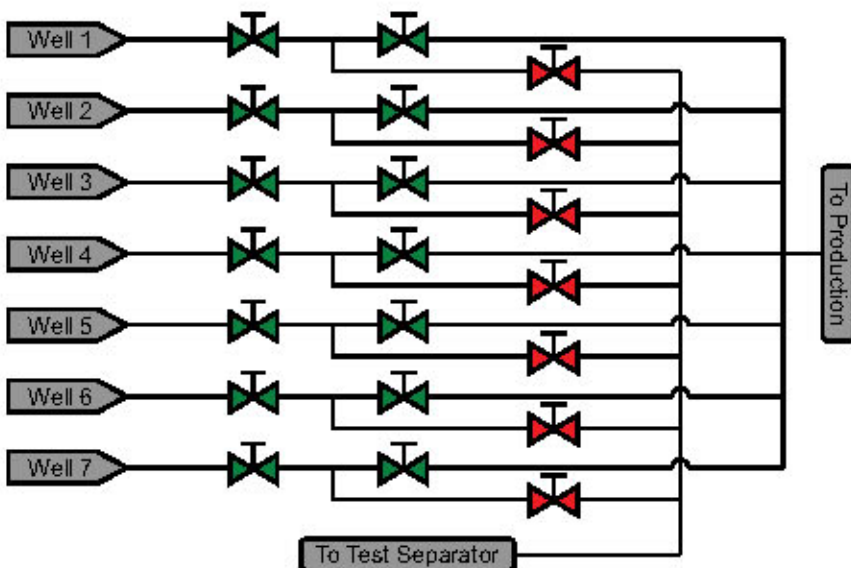


Modular Versatility

Historically, connecting individual production wells or flowlines to a test separator required a multitude of valves that had to be opened by hand. In addition to the valves and shutoff devices, the system required considerable piping. The conventional two-way or three-way systems cost more initially, required higher operating costs, needed more maintenance and downtime and added to the personnel risks. The Multiport Flow Selector, with automated actuated control, is safer, less expensive, lighter weight and more compact than conventional systems.

CONVENTIONAL 7-WELL, TWO-WAY VALVE MANIFOLD

Requires 21 separate manual or actuated valves with associated piping



Multiport Flow Selectors are less expensive than conventional manifolds in both initial purchase and ownership costs.

MPFS can be installed as standalone or with a test separator or multiphase meter.

Multiport Flow Selectors typically amortize the cost of automation over fewer than seven wells.

BETTIS MULTIPOINT FLOW SELECTOR MANIFOLD

Only requires seven valves

- Less piping
- More compact
- Fewer control points
- Less expensive
- Less weight (especially critical for offshore applications)

