

SMARTLINK® MRV

Intelligent MICRO-RATIO® Valve Series



- **Precise and repeatable flow control** optimizes fuel efficiency, enables accurate temperature control and lowers burner emissions.
- **SMARTLINK® MRV is an electronic parallel positioning system** for air/fuel ratio control; for use in industrial applications providing a high degree of precision, repeatability and durability.
- **Synchronous control** of up to four valves with conventional signal from the user's process controller.
- **Direct coupled valve and actuator assembly** includes weatherproof housing with integrated position feedback and heavy duty planetary gearheads for reliable, long life operation.
- **Compact, robust design** mounts in any orientation.
- **Each SMARTLINK® Valve is adjustable** to 0.1 degrees accuracy.
- **UL and CE approved** electronics and software for air-fuel ratio control
- **Stores a 22 point user-customized profile** for each valve.
- **Factory Mutual (FM) approved** as non-incendive for Hazardous Locations Class I, Division 2, Groups A, B, C and D, T4 Temperature code; NEMA 4X standard actuator
- **Maintenance-free operation**; no lubrication required. No valve packing to adjust.
- **Electronic passcode protection** eliminates valve profile tampering.
- **Simple set-up**; no PC required.
- **Standby, purge and light off positions** can be defined independent of valve profiles.

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COMBUSTION SYSTEMS FOR INDUSTRY

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Product Description

The MAXON SMARTLINK® MICRO-RATIO® Valve (MRV) is an industrial parallel positioning system for combustion applications providing a high degree of precision, repeatability, tamper resistance, and durability. In addition, SMARTLINK® MRV interfaces with all burner management and flame safety systems, simplifying retrofit applications. The system is simple to set-up and does not require a personal computer in the field for commissioning.

SMARTLINK® MRV includes 1, 2, 3, or 4 Valve Actuators directly coupled to flow control valves, and a Control Interface unit which serves as a commissioning interface and “gateway” between the Valve Actuators and the user's process controller, PLC, or distributed control system (DCS).

The SMARTLINK® **Valve Actuator** design is an industrial, factory-calibrated assembly. It incorporates a precision, planetary gear-head with integrated position feedback and a stepper motor for continuous duty control of various valves. Each valve actuator is powered by 24VDC and includes a digital position control loop and a digital interface that ensures reliable operation even in electrically noisy environments. The small footprint, weatherproof enclosure and Class I, Division 2 approvals, and superior position control performance make this product a high performance, cheaper alternative to pneumatic equipment.

The SMARTLINK® MRV **Control Interface** is a DIN rail-mounted digital hub that electronically “links” and synchronizes valve movement for precision air/fuel ratio control. Front-mounted switches and indicators are provided for displaying alarms, system configuration, and valve characterization. The Control Interface also provides a precision 4-20 mA firing rate feedback signal. Optional equipment includes MAXON Relay Input and Output Interfaces, a User Display, universal power supply, factory-wired panel assemblies, and several NEMA 4X enclosures.



SMARTLINK® gas butterfly valve (left), air butterfly valve (center) and ball valve (right) assemblies



Inside view of SMARTLINK® Actuator, showing planetary gearheads



Control Interface with optional User Display, Relay Input, Output and Network Interfaces in pre-wired panel assembly

Typical applications

SMARTLINK® MRV is designed for precision control of industrial combustion systems, boiler combustion systems, and related heating process flows. The rugged industrial package adds value to many heating and manufacturing processes by providing highly accurate, characterizable flow control with enhanced, digital intelligence.

Typical applications include:

- Simple burner ratio controls
- Low NOx and low CO burner controls
- Control of combustion systems on processes sensitive to products of combustion
- Control of complex burners with staging or flue gas recirculation
- Precise control of process flows like feed water, atmosphere gases, and even product feeds
- Accurate flow control of metered processes and process heaters for liquids and gases



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