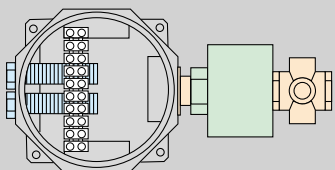




Integrated Linear Valve Monitoring



A cost effective, integrated system that both monitors and controls valve position.

Module³[™]

Nonincendive/Explosionproof

Designed with a clear-sighted concept of true monitoring proficiency, each component is engineered to safely interact with every other control element. The high-current hermetically sealed sensors are manufactured of 316 stainless steel. The NEMA 4, 4X, 7, 9 Hazardous Location enclosure is supported by UL and CSA certification. The optional ASCO[®] solenoid is an integral part of the unit and has been tested as such by UL and CSA under explosive conditions.



OSHA Acceptable Triggering System

Designed with safety intelligence, the Module³, OSHA Acceptable triggering system meets all of the requirements for conformance to the Code of Federal Regulations Section 1910.219. Noting the necessity to increase safety within the process industry, Westlock has redesigned the conventional method of tripping switches (the utilization of exposed metal arms) into a unique system; a system having no component projecting beyond the largest periphery of the shaft collar. All outside edges are smoothly rounded and all screws are countersunk so that nothing protrudes beyond any moving surface. Double recessed upper and lower triggers offer fingertip control for ease of sensor setting.



Magnum Sensors

The Silver Bullet supported by UL and CSA Hazardous Location, Division 1 and 2 certification offers the process industry the kind of corrosion resistance and high-current capacity required in the industrial environment. Rated at 3 Amps, 120 VAC and 2 Amps, 24 VDC, the Magnum Silver Bullet is first hermetically sealed and then safely encased in a 316 stainless steel housing.

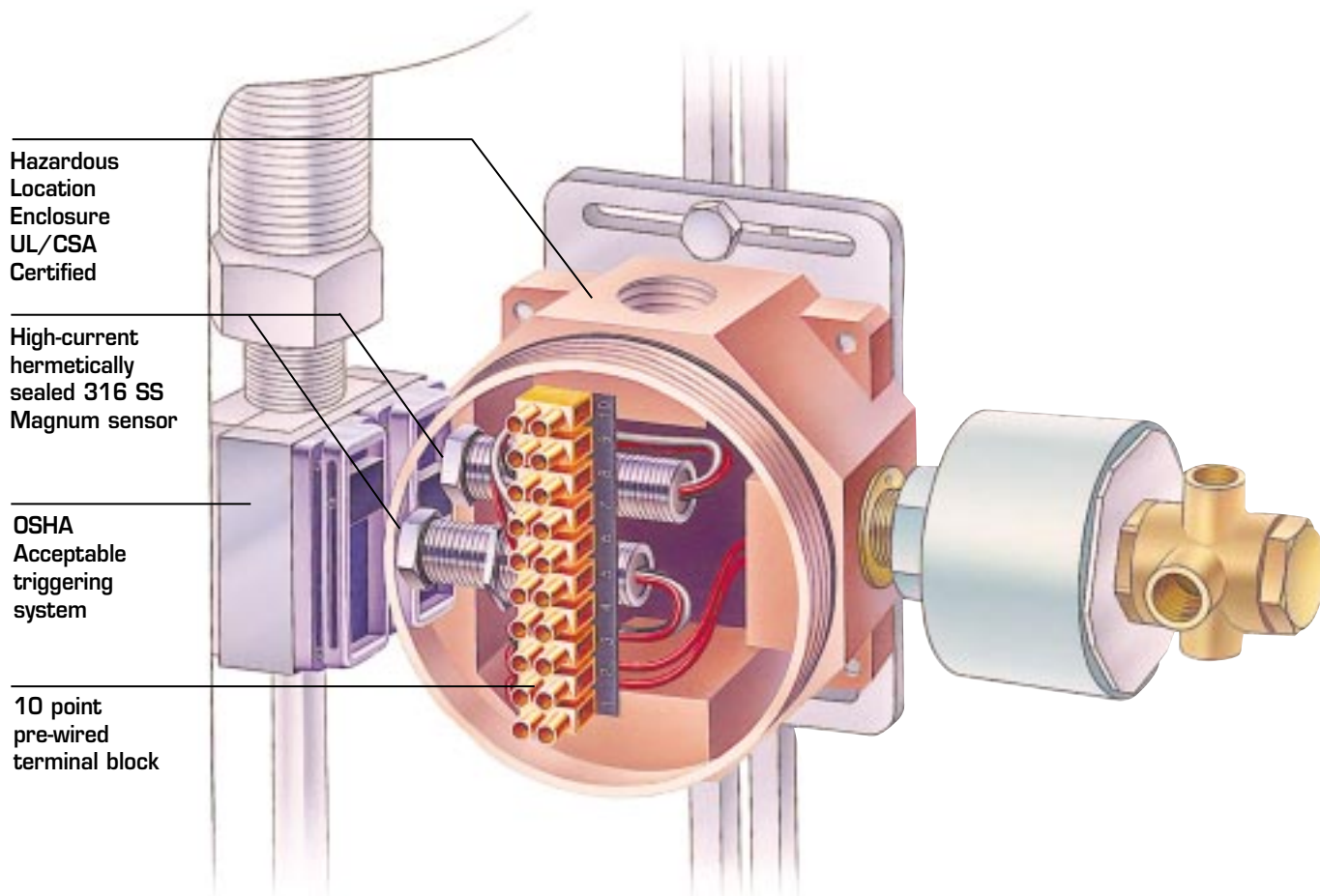
Knife Gate Valves

The MOD³ has been expanded to include the monitoring and control of knife gate valves. Combined with the Magnum Silver Bullet, the MOD³/Silver Bullet combination offers the process industry a versatile range of optional configurations for position sensing and solenoid actuator control. Each assembly is UL and CSA certified and suitable for use in NEMA 4, 4x, 7, 9, Class I, Groups B, C & D, Class II, Groups E, F & G, Division 1 & 2 and Class I, Group A, Division 2 hazardous areas.



Module³TM

Technical Specifications



OSHA
Acceptable

Comparative Cost Analysis

The Module³ applies the economic advantages offered by the National Electrical Code, which states, "In hazardous locations, apparatus which may produce sparks need not be sealed if the current interrupting contacts are enclosed within a hermetically sealed chamber." Through the utilization of hermetically sealed Magnum sensors, substantial savings are realized by the elimination of costly seal fittings. Integration of all components into a single housing provides additional savings through the elimination of junction boxes, wiring and labor.

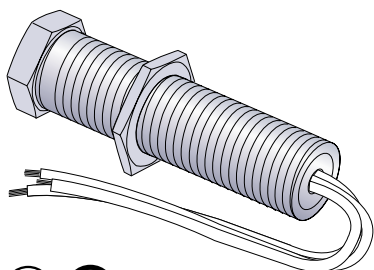
CONVENTIONAL METHOD Potted Switches		MODULE ³ Hermetically Sealed Sensors	
2 switches	\$322	MODULE ³ w/bracket	\$442
junction box	\$65	junction box	N/R*
solenoid valve	\$100	solenoid valve	\$100
seal fittings	\$80	seal fittings	N/R*
wire, conduit	\$70	wire, conduit	N/R*
field labor	\$340	field labor	N/R*
TOTAL COST	\$977	TOTAL COST	\$542

*Not Required

Comparative costs were based upon list prices from major manufacturers. (Solenoid: Asco 8320A90)

Module³TM

MAGNUM SENSOR



Certified for hazardous and highly corrosive areas.

Housing	316 Stainless Steel
Hermetic Seal	Glass (vacuum)
Temp. Range	-40°F to 220° F
Operational Life	600,000 Cycles (full rated load)
Sensor Actuation	Ferromagnetic (stainless steel encapsulated)
Sensing Distance	0.100" End Sensing
Agency Certification	UL, CSA
Operating Time	3.0 m Sec.
Initial Contact Resistance	.50 Ohms (max.)
Repeatability	.005 in.
Hysteresis	.030 in.
Warranty	5 Year Unconditional

Electrical Rating

Rhodium	SPST/SPDT Form C (Normally Open) 0.295 amps/120 VAC, 0.15 amps/240 VAC, 1 amp/24 VDC
Tungsten	SPST/SPDT Form C (Normally Open) 3 amps/120 VAC, 1.5 amps/240 VAC, 2 amps/24 VDC



ATTENTION

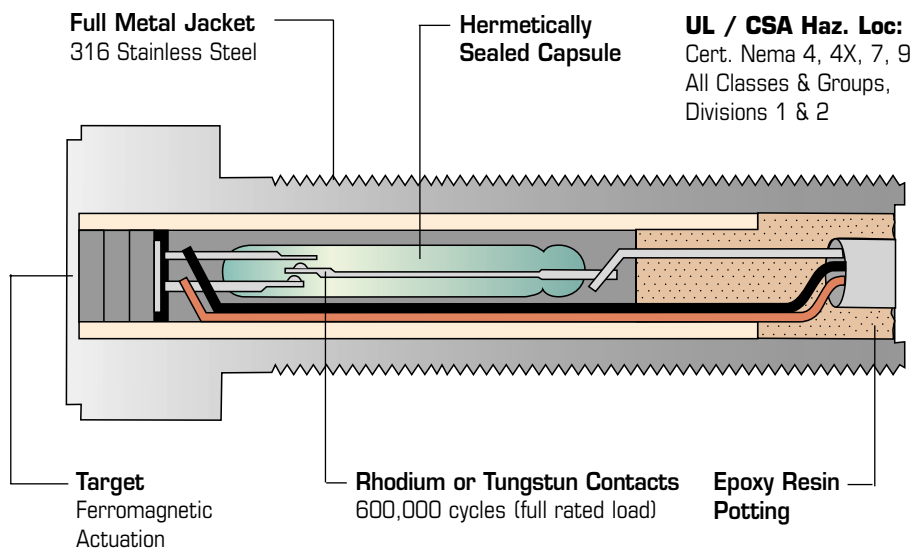
For very low power sensing applications, Power ≤ 240 mW (24 VDC @10 mA for example) Magnum sensors with Rhodium contacts must be used.



ATTENTION

Magnum and Proximity Sensors Only
PLC input modules utilize capacitors to filter out electrical noise. Newer, more sensitive designs have higher input impedances and lower operating currents and thus require higher values of capacitance for filtration. If the DI card Capacitance ≥ 0.01 mfd. a resistor of appropriate size **MUST** be used in series with the switch contacts to prevent the capacitive discharge from damaging the switch contacts. Please consult factory for resistor sizing, a procedure to measure the capacitance of your DI card and/or additional information.

MATERIALS OF CONSTRUCTION

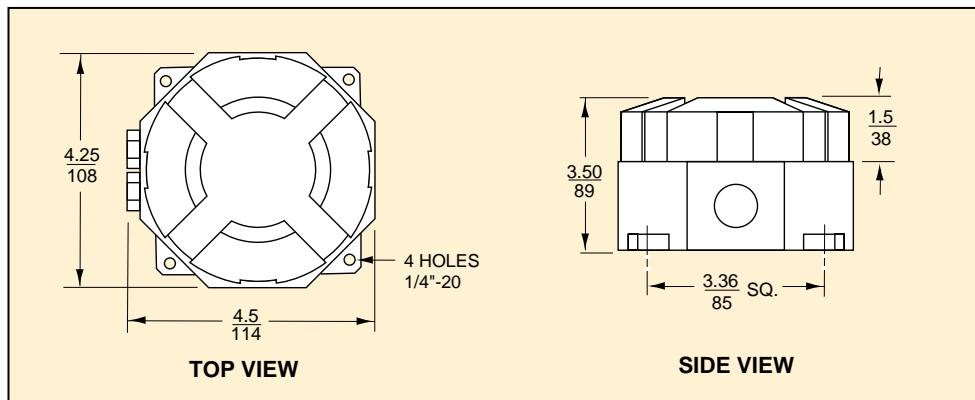


Module³™

AREA CLASSIFICATIONS

Nema 4, 4x, 7, 9
 Class I, Groups B, C, D
 Class II, Groups E, F, G,
 Divisions 1 & 2
 Class I, Group A, Division 2

DIMENSIONS (inches/mm)



Suggested Specification MOD-ULE³

Valve position monitor shall be Westlock Controls Module³ Model _____.
 Sensors shall be Magnum, Hermetically sealed (UL & CSA Recognized) and rated at 3 amps/120 VAC, 2 amps/24 VDC with OSHA acceptable triggering system. Complete assembly shall be UL & CSA certified for Class I, Groups B, C & D, Class II, Groups E, F & G, Divisions 1 & 2.

MATERIALS OF CONSTRUCTION

Housing	Aluminum
Coating	Double Polyurethane
Conduit Entries	2-3/4" (3-3/4" optional)
Terminal Strip	10 contacts

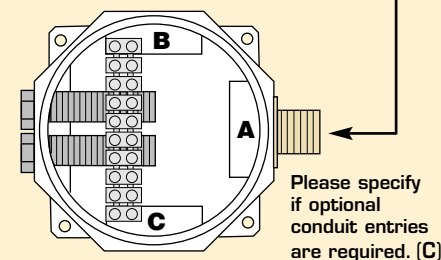
APPROVALS / CERTIFICATION

UL (Underwriters Laboratories, Inc.)
CSA (Canadian Standards Association)


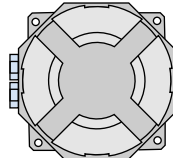

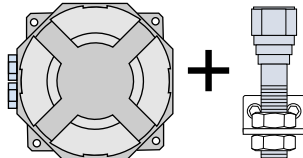
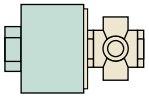
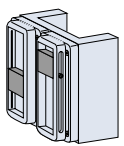

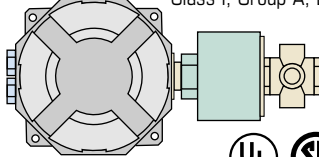

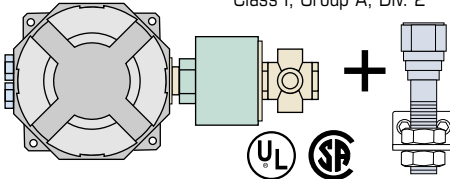
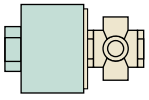
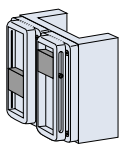
CONDUIT ENTRY OPTIONS

Model 3479: A & B Standard (3/4" NPT)
Model E3479: A (solenoid) & B Standard (A: 1/2" NPT Male, B: 3/4" NPT)

Solenoid Transition Coupling (1/2" NPT) Model E3479 Only



ORDERING GUIDE

MODULE ³ 2-SPDT Sensors*	MODULE ³ for Knifegate Valves 2-SPDT Sensors*	ASC0 Solenoid**	Triggering System (OSHA Acceptable)
<p>Nema 4, 4x, 7 & 9 Class I, Groups B, C & D Class II, Groups E, F & G, Div. 1 & 2 Class I, Group A, Div. 2</p> <p>3479</p>  	<p>Nema 4, 4x, 7 & 9 Class I, Groups B, C & D Class II, Groups E, F & G, Div. 1 & 2 Class I, Group A, Div. 2</p> <p>3479 + 316</p>  	<p>To Be Specified by Customer</p> 	<p>Please specify Actuator and Model Number</p>  <p>Stainless Steel</p>
<p>E3479 Nema 4, 4x, 7 & 9 2-SPDT Sensors w/ Solenoid Class I, Groups B, C & D Class II, Groups E, F & G Divisions 1 & 2 Class I, Group A, Div. 2</p>  	<p>E3479 + 316 Nema 4, 4x, 7 & 9 2-SPDT Sensors w/ Solenoid Class I, Groups B, C & D Class II, Groups E, F & G Divisions 1 & 2 Class I, Group A, Div. 2</p>  	<p>To Be Specified by Customer</p> 	<p>Please specify Actuator and Model Number</p>  <p>Stainless Steel</p>

*The Mod³ is also available with solid-state sensors rated for Intrinsically-safe applications. Please contact factory for IS Options.
 **Hazardous area ratings of solenoid must meet Classes and Groups for intended use.