

The Quartz explosion/flame proof design is FM/CSA approved and ATEX certified for use in hazardous environments. And with the epoxy coated anodized aluminum enclosure it may be used in corrosive heavy wash down areas as well.

The Quartz series offers one of the most versatile platforms for adapting to a variety of valve systems. Stainless steel mounting systems are readily available to attach the Quartz to quarter-turn actuators, manual operators, linear operators and positioners.



A wide variety of switch/sensor communications and position transmitters may be selected for the Quartz series. Options include 2, 4 or 6 mechanical or proximity switches, position transmitters with or without switches, and the StoneL dual module with double SST or double Namur sensors or AS-Interface, DeviceNet or FOUNDATION Fieldbus communication capabilities.

The StoneL Quartz series is the most durable and versatile valve communication platform in the industry!



Save Space with Low Profile Design



Clearance above the actuator is critical in complex piping systems. Quartz boldly displays valve position and encloses all electrical components in an explosion-proof/flame-proof compartment.

Cut Installation Time and Cost with Light Read

StoneL's coordinated visual indicator and LEDs give you an extra measure of safety and increased convenience during plant start-up and operation. Green visual indication and green LED means the valve is open and the computer circuit is properly operating. Red visual indication and red LED means the valve is closed and the computer is properly matched. All systems are functioning properly.



Features

1. The Standard Model Covers Most Plant Areas

Explosion-proof, water tight and corrosion-proof enclosure is FM and CSA approved for use in NEMA 4, 4x and 6 (temporary submersibility), Class I and II, Div. 1 and 2 areas (see page 21 for detailed approvals). The Quartz is ATEX certified EEx d IIB T4 for Zone 1 and 2 hazardous areas and is rated to IP 67. Enclosure is made of marine grade aluminum, which is hard anodized and epoxy coated.

2. Rapid Enclosure Access

Screw-on cover allows quick enclosure access, saving you valuable maintenance and set-up time. The cover provides a vapor tight seal and allows entry to internal components in less than five seconds.

3. Faster Wiring

Pre-wired and labeled terminal strip enables quick, convenient attachment of field wires.

4. Solid State Reliability

Switching options include SST solid state sensors, Maxx-Guard proximity switches and mechanical switches. Continuous signal output is available in a 4 to 20 mA position transmitter.

5. Quick Set Cams are Easy to Adjust

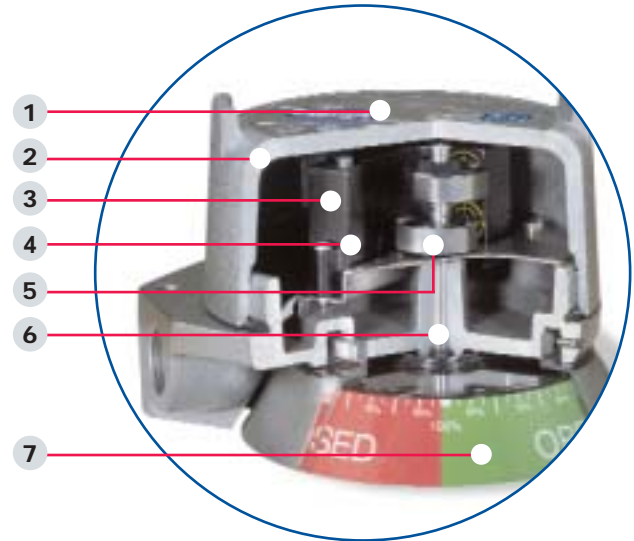
Touch and Tune switch settings allow you to make adjustments in seconds without the use of tools.

6. Dual Shaft O-ring Seals Eliminate Corrosion

Top inner and bottom outer shaft o-rings seal the drive bushing from both external corrosives and internal contaminants that enter the enclosure. Seals contain the drive bushing lubricant assuring smooth operation.

7. Space Saving Visual Indication

Visual indicator offers excellent viewability without sacrificing accessibility or adding to space requirements. Indicators are also available with continuous percentage or three-way indication.



Eliminate Seal Fittings in Both Division 1 and 2 Areas

In North America, FM and CSA have certified the Quartz QZP series for use without seal fittings in all hazardous areas. By passing special pressure piling tests, the Quartz enclosure was certified for this elite distinction. Now, a time-consuming procedure can be safely eliminated in division 1 (aluminum covers) and division 2 (clear covers) areas.

Consolidate Your Components and Minimize Costs

The Quartz design offers one or two additional conduit entries with extra wire terminations. By terminating solenoid valves in the switch enclosure, significant savings are realized by eliminating a junction box, wiring, conduit materials and labor.



Applications and Adaption

Quartz Mounting Systems



Low profile convenient mounting systems are readily available in stainless steel for most non-Namur and Namur (VDI/VDE 3845) actuators.

Manual Valves

Proper fit and operation are assured with StoneL's custom designs for each manual valve. StoneL personnel have designed and fabricated hundreds of unique mounting systems for many different manually operated valves. They are well qualified to solve your valve monitoring problems!



Linear Operators

Precision ball joint connections attach to valve travel stems. Stroke lengths ranging from 20mm to 150mm (3/4" to 6") may be easily accommodated.



Positioners

Quartz position transmitter and switches may be retrofitted directly to most positioners. You get direct output on rotary actuators, and easy access to positioner internal adjustments.

Quartz Position Transmitter

The Quartz two-wire 4 to 20 mA position transmitter offers exceptional accuracy, reliability and performance. It may be directly attached to positioners or actuators in both linear and quarter-turn applications.



Span Range	35° to 270° (Adjustable)
Linearity Error, Standard	± 0.85° Maximum
High Performance	± 0.35°
Cycle Life, Standard	2 Million Rotations Minimum
High Performance	50 Million Rotations Minimum
Temperature Range	-40° to 80° C (-40° to 176° F)

Quartz Expeditor

Fill Control Applications

Fill tanks and hoppers rapidly and accurately. The Quartz Expeditor's field adjustable intermediate position reduces flow as the full level approaches. You get fast, economical "topping off" of every batch.

Flow Dampening Applications

The Quartz Expeditor allows fast closure yet gentle, gradual shut-off from a preset intermediate position. You get prolonged piping life, improved process flow performance and less potential for catastrophic failure.

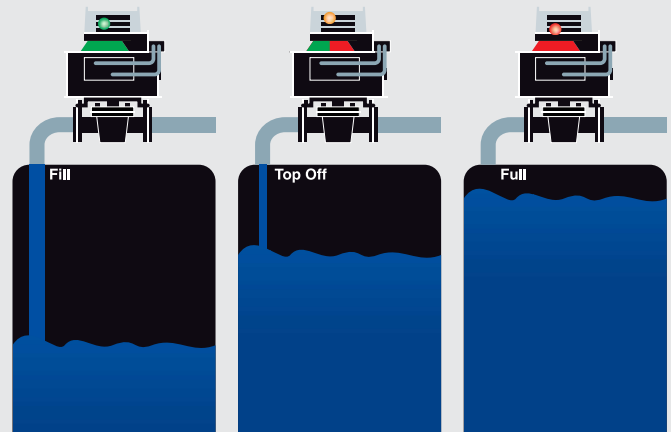
Emergency Shut Down (ESD) Applications

Test your ESD valves by actuating them to a preset intermediate position that does not shut down the process. Reduce costs and increase safety by eliminating several cumbersome manual operations.



Communication Enabled Expeditor

Now you can improve process performance and take advantage of incredible cost savings by utilizing proven bus networking technology with the communication enabled Expeditor. The Expeditor functions are available in the Quartz with either AS-Interface or DeviceNet protocols. An additional switch and cam are integrated into the VCT which may be set to a pre-determined intermediate position enabling fill control, flow dampening or ESD capabilities. Please specify the "82" or "86" for DeviceNet or AS-Interface Expeditor respectively.



The Expeditor enables three position control of On/Off valves in combination with two standard solenoid valves.

Sensors and Communications

Dual Module System

The Quartz series is available with the dual module in its various configurations. Two solid state sensors and/or communications and other electronics are sealed in for the ultimate in reliability and convenience. All dual module versions have a 5 year warranty. **(For more detailed information please see pages 2 through 8.)**



SST Switching Sensors (33)

Configuration (2) SST Switching Sensors
Terminations for Solenoid
Electrical Ratings 0.3 Amps @ 125 VAC/DC

Namur Sensors (44)

Configuration (2) Namur Sensors
Terminations for Solenoid
Intrinsically safe (DIN 19234)
Voltage Range 6 to 29 VDC
Current Ratings Target On I < 1 mA
Target Off I > 3 mA

AS-Interface VCT (96)

Configuration (2) Sensor Inputs
(2) Auxiliary Inputs
(2) Power Outputs (Solenoids)
Max. Current 160mA, Both Outputs Combined
(Current Limited to 200mA)
Outputs, Max. Power 4 Watts, Both Outputs
Combined
Outputs, Voltage 25 to 30 VDC

DeviceNet VCT (92)

Configuration (2) Discrete Inputs
(Open & Closed)
(2) Power Outputs (Solenoids)
(1) 4-20 mA Auxiliary Input
Outputs, Max. Power 4 Watts, Both Outputs Combined
Outputs, Voltage 24 VDC

Bus Powered FOUNDATION Fieldbus VCT (93)

Configuration (2) Discrete Inputs, DI
(Open & Closed)
(2) Discrete Outputs, DO
(Piezo Valves)
Outputs 2mA @ 6.5 VDC each; Current
Limited to 2mA (Bus Powered)

Externally Powered FOUNDATION Fieldbus VCT (94)

Configuration (2) Discrete Inputs, DI
(Open & Closed)
(2) Power Outputs, DO
(Solenoids)
Outputs 4 watts @ 24VDC Both Outputs
Combined; Current Limited to
200mA (Externally Powered)

Modbus VCT (95)

Configuration (2) Discrete Inputs
(Open & Closed)
(2) Power Outputs (Solenoids)
Outputs 160 mA @ 24 VDC Both
Outputs Combined; Current
Limited to 250 mA



DeviceNet



MODBUS

Switch/Sensor Options

SST Solid State Sensors



SST sensors have an unlimited application life and are ideal for AC and DC computer input circuits. **(See page 8 for more details.)**

Operation Cam Selectable NO or NC
Electrical Ratings 0.3 Amps @ 125V AC/DC
Leakage Current Less than 0.25 mA
Maximum Voltage Drop 6.5 Volts @ 10 mA
Operating Life Unlimited

Maxx-Guard Switches



Maxx-Guard hermetically sealed reed switches with SPDT tungsten contacts are suitable for 120VAC computer inputs. SPST contacts are ideal for either 120VAC or 24VDC computer inputs. **(See page 8 for more details.)**

Electrical Ratings SPST 0.15 A @ 125 VAC, 30 VDC
Electrical Ratings SPDT Varies, see page 8
Seal Hermetically Sealed
Operating Life 5 million cycles

Mechanical Switches (DPDT)



DPDT switches are available for isolation of two circuits operating at the same time. One DPDT operates identically to two SPDT being actuated simultaneously.

(See page 9 for more details.)

Electrical Ratings 4.5 Amp @ 125/250 VAC
Operating Life 250,000 Cycles

Mechanical Switches (SPDT)



Mechanical silver contact switches are ideal for high power applications. Gold SPDT contacts may be used for low power applications. **(See page 9 for more details.)**

Electrical Ratings (Silver) 10 Amp @ 125/250 VAC
0.5 Amp @ 125 VDC
Operating Life (Silver) 400,000 cycles
Electrical Ratings (Gold) 1.0 Amp @ 125 VAC
0.5 Amp @ 30 VDC
Operating Life (Gold) 100,000 cycles

Quartz Proximity Models

Model Example: QZP33C2R

	Function	Cover Type	Conduit Entries	Indicator																					
QZP	Sensor Modules 33 (2) SST Sensor Dual Module 44 (2) Namur Sensor Dual Module (IS)(DIN 19234) Expeditors 82 DeviceNet VCT with Expeditor Function 86 AS-Interface VCT with Expeditor Function Valve Communication Terminals (VCT) 92 DeviceNet Dual Module 93 FOUNDATION Fieldbus Dual Module (Bus Powered) 94 FOUNDATION Fieldbus Dual Module (Externally Powered) 95 Modbus Dual Module 96 AS-Interface Dual Module	C Clear Lexan® E Epoxy Coated Aluminum	1 (1) 3/4" NPT 2 (1) 3/4" NPT & (1) 1/2" NPT 3 (1) 3/4" NPT & (2) 1/2" NPT	R Red Closed/ Green Open 1, 2, 3, 4, or 5 Three Way Flow Path C Continuous % X Special O None See Visual Indications Designations chart on page 15																					
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Quartz Intrinsically Safe Models

Model Example: QZ12JC2R

	Function	Switch/Sensor Type	Cover Type	Conduit Entries	Indicator
QZI	2 (2) Switches 4 (4) Switches 5 Position Transmitter No Switches or With (2) Switches 7 High Performance Position Transmitter No Switches or With (2) Switches	K SPST Maxx-Guard LED J SPST Maxx-Guard O No Switches	C Clear Lexan® E Epoxy Coated Aluminum	1 (1) 3/4" NPT 2 (1) 3/4" NPT & (1) 1/2" NPT 3 (1) 3/4" NPT & (2) 1/2" NPT	R Red Closed/ Green Open 1, 2, 3, 4, or 5 Three Way Flow Path C Continuous % X Special O None See Visual Indications Designations chart on page 15
	44 (2) Namur Sensor Dual Module (IS)(DIN 19234)				

Quartz Mechanical Models

Model Example: QZM2VE2C

	Function	Switch/Sensor Type	Cover Type	Conduit Entries	Indicator
QZM	2 (2) Switches 4 (4) Switches 5 Position Transmitter With (2) Switches	V SPDT Mechanical W SPDT Gold Contact Mechanical	C Clear Lexan® E Epoxy Coated Aluminum	1 (1) 3/4" NPT 2 (1) 3/4" NPT & (1) 1/2" NPT 3 (1) 3/4" NPT & (2) 1/2" NPT	R Red Closed/ Green Open 1, 2, 3, 4, or 5 Three Way Flow Path C Continuous % X Special O None See Visual Indications Designations chart on page 15
	14 (2) DPDT Mechanical Switches				

Quartz European Models

Model Example: QZE92C5R

	Function	Cover Type	Conduit ¹	Indicator
QZE	Dual Modules 33 (2) SST Sensor Dual Module with LED 44 (2) Namur Sensor Dual Module (IS)(DIN 19234) 92 DeviceNet VCT 93 FOUNDATION Fieldbus Dual Module (Bus Powered) 94 FOUNDATION Fieldbus Dual Module (Externally Powered) 95 Modbus Dual Module 96 AS-Interface Dual Module Switches/Sensors 2V (2) SPDT Mechanical 2W (2) SPDT Gold Contact Mechanical 2H (2) SPDT Maxx-Guard 2J (2) SPST Maxx-Guard (Passive) 5V Position Transmitter with (2) SPDT Mechanical Switches 5O Position Transmitter 7O High Performance Position Transmitter	C Clear Lexan® E Epoxy Coated Aluminum	4 (1) M20 5 (2) M20 6 (3) M20 1. Consult Factory for other thread options	R Red Closed/ Green Open 1, 2, 3, 4, or 5 Three Way Flow Path C Continuous % X Special O None See Visual Indications Designations chart on page 15

Specifications

Materials of Construction

Housing & Cover	Epoxy coated anodized marine grade aluminum
Elastomer Seals	Viton; Optional Buna-N and EPDM
Drive Shaft	Stainless steel, teflon lubricated
Fasteners	Stainless steel
Clear Cover & Indicator	Lexan® polycarbonate

Temperature Ratings

Mechanical Components	-40° to 80° C (-40° to 176° F)
Dual Modules	-40° to 80° C (-40° to 176° F)
Maxx-Guard & SST	-40° to 80° C (-40° to 176° F)

Warranty

Mechanical Components	Two years
SST & Dual Modules	Five years

Intrinsically Safe Entity Parameters

Values apply to QZI sensors, switches and position transmitters

Voltage Maximum (V max)	30 VDC
Current Maximum (I max)	100 mA
Capacitance Input (Ci)	66 nF
Inductance Input (Li)	0.08 mH

North American Approvals & Ratings

Visit www.stonel.com/valvepoint/approvals for more information.


QZP Aluminum Cover	Class I Groups ¹ C,D Div 1,2 Class II Groups F,G Div 1,2 (No seal-offs required except position transmitter) Nema 4, 4X & 6
QZP Lexan® Cover	Class I Groups A,B,C,D Div 2 Class II Groups F,G Div 2 Nema 4, 4X & 6
QZI All Models	Class I Groups A,B,C,D Div 1,2 Class II Groups E,F,G Div 1,2 Nema 4, 4X & 6
QZM Aluminum Cover	Class I Groups ¹ C,D Div 1,2 Class II Groups F,G Div 1,2 Nema 4, 4X & 6
QZM Lexan® Cover	Nema 4, 4X & 6

1. FM Group B Division 1 approval available

Some models may not be CSA and FM approved. Please consult factory for details.

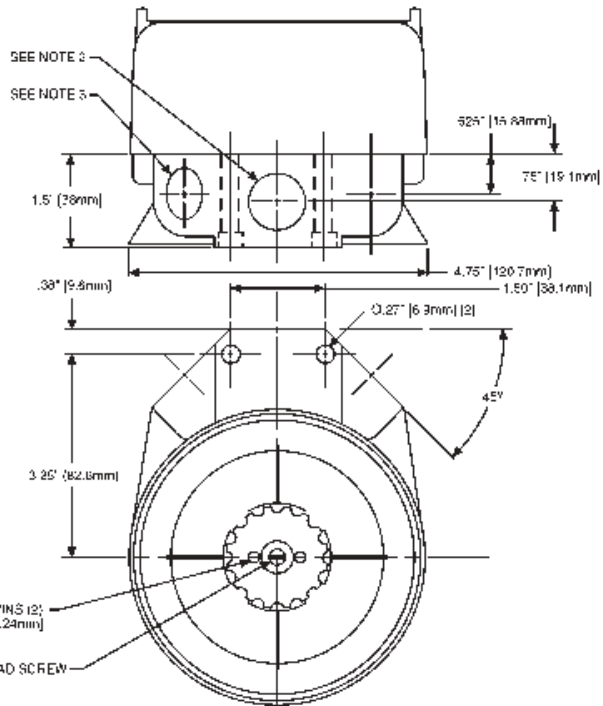
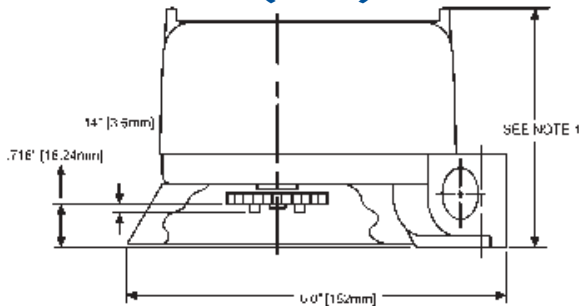
European Approvals & Ratings

QZE (Aluminum Cover only)

CE 0344  II 2 G EEx d IIB T4

Note: QZE series is in conformity with the protection requirements of Council Directive: 94/9/EC (ATEX Directive) concerning equipment and protective systems intended for use in potentially explosive atmospheres, and 89/336/EEC (EMC Directive) relating to Electromagnetic Compatibility.

Dimensions (mm)



NOTE
1) COVER HEIGHTS MAY VARY ON DIFFERENT MODELS
• J.N. T HEIGHT WITH SHORT COVER- 4.0" [102mm]
• J.N. T HEIGHT WITH MEDIUM COVER- 4.88" [123.4mm]
• J.N. T HEIGHT WITH TALL COVER- 6.12" [155.4mm]
• J.N. T HEIGHT WITH TALL COVER- 6.12" [155.4mm]
• TALL FITS POSITION TRANSMITTER 5 & 7 (with 2 switches)
AND MODELS 4 (with 4 switches) & 8.

2) 3/4" NPT PG13.5 OR V20
3) 1/2" NPT PG13.5 OR V20