

# Quartz

## Explosionproof valve monitoring

The Quartz is available in explosionproof (QX), nonincendive, intrinsically safe (QN), and general purpose (QG) versions. The robust epoxy-coated anodized aluminum construction, and optional stainless steel version, makes this platform extremely durable and well-suited for use in corrosive, heavy washdown environments.

Options may be selected to accommodate most applications.

### The Quartz series

The StoneL Quartz series is durable, corrosion-resistant, and versatile, making it ideal for most of your process valve monitoring requirements.

#### Enclosures optimized for environment



**QX:** Explosionproof, water tight and corrosion-resistant enclosure is approved for use in Div. 1/Zone 1 hazardous areas. Available options include stainless steel and epoxy-coated anodized aluminum.



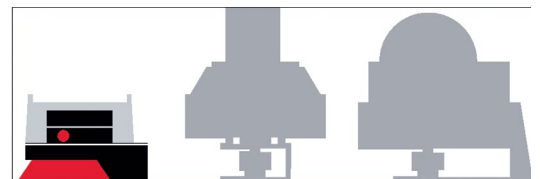
**QN:** Nonincendive is approved for Div. 2/Zone 2 hazardous environments with proximity sensors using a clear cover. Intrinsically safe NAMUR sensors or passive switches are available for Div. 1/Zone 0 applications.



**QG:** General purpose features a clear Lexan® cover with mechanical switches. All enclosures are rated NEMA 4, 4x, and 6.

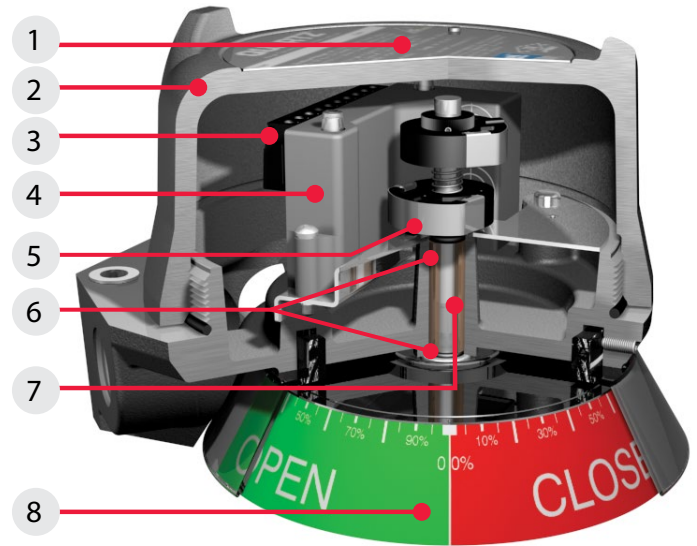
#### Save space with low profile design

Clearance above the actuator is critical in complex piping systems. Quartz boldly displays valve position and encloses all electrical components in an explosionproof compartment with less than 5" clearance requirement.



## Features

- 1. Enclosures optimized for environment**  
Available in three enclosure styles suitable for use in various process environment areas.
- 2. Rapid enclosure access**  
Screw-on cover allows quick enclosure access, saving you valuable maintenance and set-up time. The cover provides a vaportight 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. Wide variety of switching & communication**  
Switching options include dual module sensors and communication, 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.



- 7. Special drive bushing assures long cycle life**  
The oil impregnated bronze bushing maintains smooth operation and eliminates the potential for shaft seizure due to actuator shaft eccentricity.
- 8. 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. (See page 49)

### Wide variety of switch/sensor functions

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 two SST or two NAMUR sensors or AS-Interface, DeviceNet or Foundation Fieldbus communication capabilities.



Proximity switches



Mechanical switches

### Speed installation with LED indication

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.



### Eliminate seal fittings in Division 1 and 2 areas

FMus ratings certify the Quartz QX series with proximity switches for use without seal fittings in all hazardous areas. By passing special pressure piling tests, the all aluminum enclosure was certified for this elite distinction. Now, a time-consuming procedure can be safely eliminated in Division 1 and Division 2 areas.

### Consolidate your components and minimize costs

The Quartz design offers up to three 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.

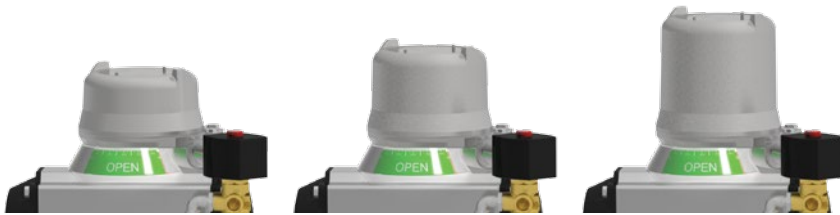


## Quartz Stainless Steel option



### For the most challenging environments

The explosionproof Quartz for process valve monitoring is available with a 316 stainless steel enclosure that is extremely durable and well-suited for use in corrosive, heavy washdown and high seas environments. A broad range of switching, position transmitters and communication options may be selected to accommodate most applications. You can attach the Quartz to quarter-turn actuators, manual operators, linear operators, and positioners using readily available stainless steel mounting systems.



Available in short, medium and tall cover versions.

## Quartz Expeditor



Enables automated on/off valves to be used for flow dampening, fill control and partial stroke testing applications. In combination with two solenoid valves, the intermediate switch may be used to stop the on/off valve in mid-stroke. This option is also available with DeviceNet (82) and AS-Interface (86) protocols.



DeviceNet

## Mounting kits

All StoneL kits are stainless steel. Kits can also be ordered 316 stainless steel available. For all 316 mounting kits consult StoneL.

### Quarter-turn actuators

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 is assured with StoneL's custom designs for each manual valve. Hundreds of unique mounting systems have been designed and fabricated for manually operated valves.



### Positioners

Quartz position transmitter and switches may be retrofitted directly to most positioners. 4 to 20 feedback may be provided on simple pneumatic positioners.



### Linear operators

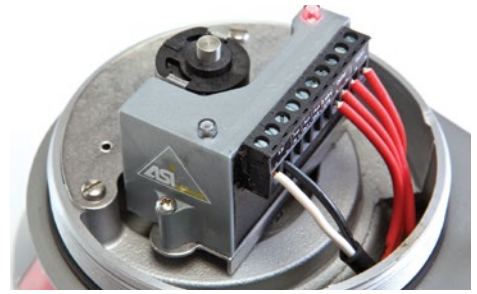
Precision ball joint connections attach the Quartz to valve travel stems. Stroke lengths ranging from 20 mm to 150 mm (3/4" to 6") may be easily accommodated.



# 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 five year warranty.



### Switching and sensor specifications

#### SST switching sensors (33)

Configuration	(2) SST solid state sensors Wire terminations for one or two solenoids
Operation	NO/NC (cam selectable)
Maximum current inrush	2.0 amps @ 125 VAC/VDC
Maximum current continuous	0.3 amps @ 125 VAC/VDC
Minimum on current	2.0 mA
Maximum leakage current	0.5 mA
Voltage range	8 to 125 VDC 24 to 125 VAC
Maximum voltage drop	6.5 volts @ 10 mA 7.0 volts @ 100 mA

**Wiring diagram (33)**

**SST**

#### NAMUR sensors (44)

Configuration	(2) NAMUR sensors (EN 60947-5-6; I.S.) Wire terminations for one or two solenoids
Operation	Normally closed NAMUR sensors (solid state)
Voltage range	5 to 25 VDC
Current ratings	Target on <1 mA Target off >3 mA

**Wiring diagram (44)**

**NAMUR**

### Valve Communication Terminal (VCT) specifications

#### AS-Interface (96)

Configuration	(2) Discrete sensor inputs (2) Auxiliary discrete inputs (2) Power outputs (solenoids)
Maximum current	160 mA, both outputs combined
Auxiliary inputs	24 VDC @ 2 mA (self-powered)
Output	4 watts @ 24 VDC both outputs combined
Outputs, voltage	21 to 26 VDC
Configuration code	ID=F, IO=4; user defined (4DI/2DO)
AS-i version	3.0
Devices per network	31


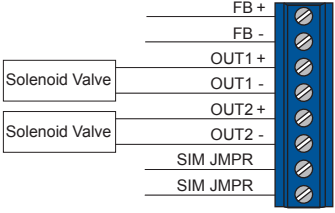
**Wiring diagram (96)**


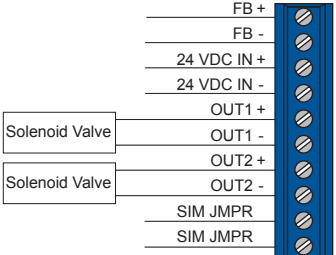
**AS-Interface VCT with extended addressing (97)**

Configuration	(2) Discrete sensor inputs (2) Auxiliary discrete inputs (1) Power output (solenoid)
Maximum current	100 mA
Auxiliary inputs	24 VDC @ 2 mA (self-powered)
Output	2 watts @ 24 VDC
Output, voltage	21 to 26 VDC
Configuration code	ID=A, IO=4; user defined (4DI/1DO)
AS-i version	3.0
Devices per network	62

**Wiring diagram (97)**

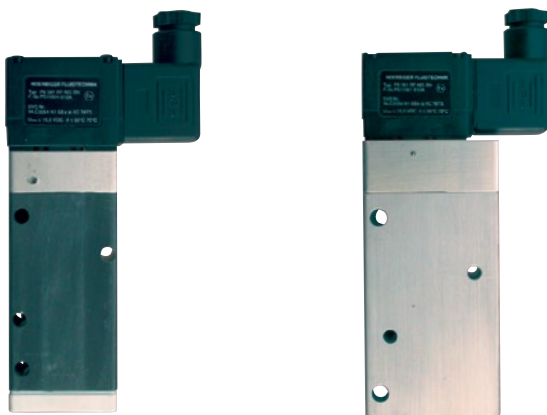
## Sensors and communications continued

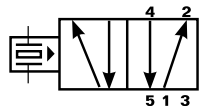
Valve Communication Terminal (VCT) specifications	
<b>Foundation Fieldbus VCT, bus powered (93)</b>	
Configuration	(2) Discrete Inputs, DI (open and closed) (2) Discrete Outputs, DO (piezo valves) Multiple DI/DO blocks or modified output block
Outputs	2 mA @ 6.5 VDC each current limited to 2 mA (bus powered)
Devices per network	Max of 16 devices recommended
<b>Wiring diagram (93)</b>	
	

Valve Communication Terminal (VCT) specifications	
<b>Foundation Fieldbus VCT, externally powered (94)</b>	
Configuration	(2) Discrete Inputs, DI (open and closed) (2) Discrete Outputs, DO (solenoids) Multiple DI/DO blocks or modified output block
Outputs	4 watts @ 24 VDC, both outputs combined; (externally powered)
Devices per network	Max of 16 devices recommended
<b>Wiring diagram (94)</b>	
	

## Piezo ultra low power valve for use with (93) bus powered Foundation Fieldbus

Use either the 0.5 Cv or the 1.3 Cv NAMUR mount pneumatic valve with StoneL Foundation Fieldbus bus powered VCTs. These are ultra low power valves that use piezo technology to actuate, utilizing less than 2 mA @ 6.5 VDC to operate either device. Both of these five-way two-position, spring return pneumatic valves are designed to meet the NAMUR standards for actuator pad mount solenoid valves.



Piezo specifications	
<b>0.5 Cv and 1.3 Cv models</b>	
Configuration	Piezo operated 5-way spool valve, 2-position, spring return
Operating pressure	36 to 120 psi (2.5 to 7.5 bar)
Media	Dried/filtered air (30 micron)
Operating life	1 million cycles
Operating temperature	-10° to 60°C (14° to 140°F)
DC coil power	2 mA @ 6.5 VDC
Operating voltage	5.5 to 9 VDC
Mounting	2 screws (M5) per NAMUR standards
Connection	Plug to DIN 43650B
Electrical protection	Ex ia IIC T6
<b>NAMUR mount 0.5 Cv (ST443015)</b>	
Flow rating	Cv - 0.5 (Kv - 7.1)
Manifold porting	G 1/8" (BSP)
Exhaust porting	G 1/8" (BSP)
<b>NAMUR mount 1.3 Cv (ST443016)</b>	
Flow rating	Cv - 1.3 (Kv - 18.5)
Manifold porting	G 1/4" (BSP)
Exhaust porting	G 1/4" (BSP)
	

## Sensors and communications

### Valve Communication Terminal (VCT) specifications

#### DeviceNet (92)

Configuration	(2) Discrete inputs (open and closed) (2) Power outputs (solenoids) (1) 4-20 mA auxiliary analog input, 10-bit resolution; no additional power source required
Transmission rate	Software selectable 125K, 250K or 500K baud
Messaging	Polling, cyclic and change of state
Outputs	4 watts @ 24 VDC outputs combined
Outputs, voltage	24 VDC (with input voltage ranging from 10 to 24 VDC)
Other features	Predetermined output fail state

#### Wiring diagram (92)

The diagram shows a terminal block with 12 pins. The connections are: V+ (pin 1), CAN H (pin 2), SHIELD (pin 3), CAN L (pin 4), V- (pin 5), Ain - (pin 6), Ain + (pin 7), OUT1 + (pin 8), 24 VDC + (pin 9), and OUT2 - (pin 10). A 4-20 mA Transmitter is connected to Ain - and Ain +. Two Solenoid Valves are connected to OUT1 + and OUT2 -.

### Valve Communication Terminal (VCT) specifications

#### Modbus (95)

Configuration	(2) Discrete inputs (open and closed) (2) Power outputs (solenoids) (1) 4-20 mA auxiliary input, 10-bit resolution
Analog input impedance	250 Ω
Outputs	4 watts @ 24 VDC both outputs combined
Outputs, voltage	24 VDC (with input voltage ranging from 10 to 24 VDC)
Transmission rate	Software selectable for 9.6, 19.6 or 38.4 kbits/sec
Transmission mode	RTU (Remote Terminal Unit)
Other features	Predetermined output fail state

#### Wiring diagram (95)

The diagram shows a terminal block with 12 pins. The connections are: V+ (pin 1), BUS + (pin 2), BUS - (pin 3), V- (pin 4), Ain + (pin 5), Ain - (pin 6), OUT1 + (pin 7), OUT1 - (pin 8), OUT2 + (pin 9), and OUT2 - (pin 10). A 4-20 mA Transmitter is connected to Ain + and Ain -. Two Solenoid Valves are connected to OUT1 + and OUT2 -.

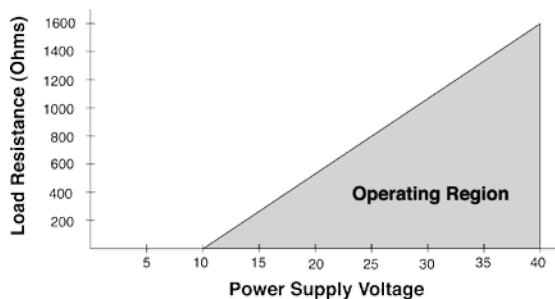
## Position transmitter

### 4 to 20 mA position transmitter

Position transmitters provide a precise 4 to 20 mA signal on a two-wire DC loop. Control valves and dampers are accurately monitored through their range of travel offering assurance of exact valve position at all times. Select a standard potentiometer or a vibration proof, high-performance potentiometer on your position transmitter.



### Load curve



### Position transmitter specifications

#### Position transmitter (5\_, 7\_)

Output	2-wire 4 to 20 mA
Supply source	10-40 VDC
Span range*	35° to 270° (adjustable)
Maximum loading	700 ohms @ 24 VDC
Linearity error	
Standard (5)	+/-0.85° maximum
High performance (7)	+/-0.35°
Cycle life	
Standard (5)	2 million rotations
High performance (7)	50 million rotations
Vibration tolerance	
Standard (5)	Acceptable
High performance (7)	Outstanding

\*Please consult factory for higher spans.

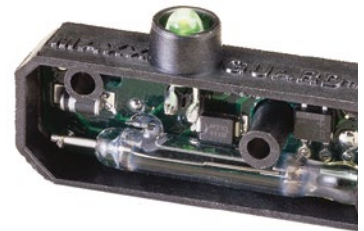
#### Electrical schematic

The schematic shows a 4-20 mA readout circuit. It is powered by a Power Supply (positive terminal on the right). The circuit includes a 55% potentiometer connected to the readout. The readout has two output terminals, one positive and one negative.

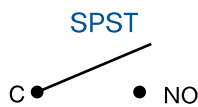
## Sensors and switches

### Maxx-Guard proximity switch

Maxx-Guard hermetically-sealed switches are suitable for computer input circuits and general purpose applications. SPDT tungsten contacts are designed for 125 VAC computer inputs and 240 VAC moderate power applications. SPDT rhodium contacts are suitable for both 24 VDC and 120 VAC computer inputs. SPST ruthenium contacts are ideal for either 24 VDC or 125 VAC low power computer inputs.



Maxx-Guard proximity switch Single-Pole Single-Throw (SPST)	
<b>J switch</b>	
Configuration	SPST; passive (intrinsically safe)
Electrical ratings	0.10 amp @ 10 to 30 VDC
Maximum voltage drop	0.1 volts @ 10 mA 0.5 volts @ 100 mA
Contact composition	Ruthenium
<b>P switch</b>	
Configuration	SPST
Electrical ratings	0.15 amp @ 30 VDC/125 VAC
Maximum voltage drop	0.1 volts @ 10 mA 0.5 volts @ 100 mA
Contact composition	Ruthenium



Specifications	
Temperature range	-40° C to 80° C (-40° F to 176° F)
Seal	Hermetically-sealed
Operating life	5 million cycles
Warranty	Two years

Maxx-Guard proximity switch Single-Pole Double-Throw (SPDT)	
<b>G switch</b>	
Configuration	SPDT
Electrical ratings	0.30 amp @ 24 VDC 0.2 amp @ 120 VAC
Maximum voltage drop	0.1 volts @ 10 mA 0.5 volts @ 100 mA
Contact composition	Rhodium
<b>H switch</b>	
Configuration	SPDT
Electrical ratings	240 VAC max; 3 amp max 100 watts max; 2.0 watts min
Maximum voltage drop	0.1 volts @ 10 mA 0.5 volts @ 100 mA
Contact composition	Tungsten
<b>M switch</b>	
Configuration	SPDT; passive (intrinsically safe)
Electrical ratings	0.10 amp @ 10 to 30 VDC
Maximum voltage drop	0.1 volts @ 10 mA 0.5 volts @ 100 mA
Contact composition	Rhodium
<b>S switch</b>	
Configuration	SPDT (LED)
Electrical ratings	0.30 amp @ 24 VDC 0.2 amp @ 120 VAC
Maximum voltage drop	3.5 volts @ 10 mA 6.5 volts @ 100 mA
Contact composition	Rhodium





## Sensors and switches

### Mechanical switch (SPDT)

Low cost single-pole double-throw mechanical switches with silver contacts are recommended for high power 125 VAC applications. Gold contacts may be used in 24 VDC computer input applications when cycle life does not exceed 100,000 operations.

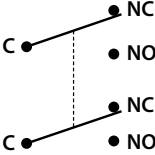

Mechanical switch (SPDT)	
<b>Silver contacts (_V switch)</b>	
Electrical ratings	10 amp @ 125/250 VAC 0.5 amp @ 125 VDC
Operating life	400,000 cycles
Not recommended for electrical circuits operating at less than 20 mA @ 24 VDC.	
<b>Gold contacts (_W switch)</b>	
Electrical ratings	1 amp @ 125 VAC 0.5 amp @ 30 VDC
Operating life	100,000 cycles

### Mechanical switch (DPDT)

Double-pole double-throw mechanical switches enable two electrical circuits to be activated simultaneously. Each switch circuit is electrically isolated from the other. As with standard silver contacts, DPDT switches are designed to operate in high-power applications.


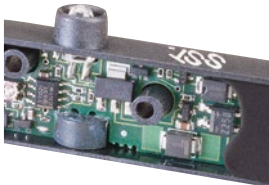
Mechanical switch (DPDT)	
<b>14 switch</b>	
Electrical ratings	4.5 amp @ 125/250 VAC, 24 to 125 VDC
Operating life	250,000 (VAC), 100,000 (VDC) cycles
Not recommended for electrical circuits operating at less than 20 mA @ 24 VDC.	

### SST switching sensor

Solid state SST proximity sensors are ideal for use in AC and DC computer input circuits.

SST switching sensors	
<b>_X switch</b>	
Operation	NO/NC (cam selectable)
Maximum current	Inrush 2.0 amps @ 125 VAC/VDC Continuous 0.3 amps @ 125 VAC/VDC
Minimum on current	2.0 mA
Leakage current	Less than 0.50 mA
Voltage range	8 to 125 VDC 24 to 125 VAC
Maximum voltage drop	6.5 volts @ 10 mA 7.5 volts @ 100 mA
Operating life	Unlimited
Warranty	Five years



Model selector - Dual modules and VCTs

**SERIES**

QX Explosionproof (aluminum cover)

**FUNCTION**

**Sensor/switching modules (proximity type)**

- 33 SST NO switching sensor dual module
- 44 NAMUR (EN 60947-5-6; I.S.)

**Valve Communication Terminals (VCTs)**

- 92 DeviceNet
- 93 Foundation Fieldbus (bus powered; I.S.)
- 94 Foundation Fieldbus (externally powered)
- 95 Modbus
- 96 AS-Interface
- 97 AS-Interface (with extended addressing)

**Expeditors**

- 82 DeviceNet
- 86 AS-Interface

**ENCLOSURE**

- E North American
- R International
- F Brazilian
- S\* Stainless steel North American (NEC/CEC)
- T\* Stainless steel International (IEC)
- M\* Stainless steel Brazilian

*\*Available with 03 or 06 conduit entry only*

**CONDUIT ENTRIES**

- 02 (1) ¾" NPT & (1) ½" NPT
- 03 (1) ¾" NPT & (2) ½" NPT
- 05 (2) M20
- 06 (3) M20

**VISUAL INDICATION\*\***

- SRA Red closed/green open
- SGA Green closed/red open
- S1A T-1 three-way flow path
- S2A T-2 three-way flow path
- S3A T-3 three-way flow path
- S4A T-4 three-way flow path
- S5A T-5 three-way flow path
- SOA No indication
- SXA Special
- SCA Continuous

**MODEL NUMBER**

Mounting hardware required and sold separately.

Model number example:

QX 33 E 02 SRA

**Partnership ID\***

\*Some models may include 5-digit suffix for partnership identification.

(optional)

Model selector - Proximity switches

**SERIES**

QX Explosionproof (aluminum cover)

**FUNCTION**

**Sensors**

- 2G (2) SPDT Maxx-Guard (low current)
- 2H (2) SPDT Maxx-Guard (3 amp)
- 2L (2) SPST Maxx-Guard (LED)
- 2P (2) SPST Maxx-Guard
- 2S (2) SPDT Maxx-Guard (LED)
- 4G (4) SPDT Maxx-Guard (low current)
- 4H (4) SPDT Maxx-Guard (3 amp)
- 4L (4) SPST Maxx-Guard (LED)
- 4P (4) SPST Maxx-Guard
- 4S (4) SPDT Maxx-Guard (LED)
- 4X (4) SST sensor (LED)

**Expeditors**

- 8H Expeditor with (3) SPDT Maxx-Guard (3 amp)
- 8Y Expeditor with (3) switches

**ENCLOSURE**

- E North American
- R International
- F Brazilian
- S\* Stainless steel North American (NEC/CEC)
- T\* Stainless steel International (IEC)
- M\* Stainless steel Brazilian

*\*Available with 03 or 06 conduit entry only*

**CONDUIT ENTRIES**

- 02 (1) ¾" NPT & (1) ½" NPT
- 03 (1) ¾" NPT & (2) ½" NPT
- 05 (2) M20
- 06 (3) M20

**VISUAL INDICATION\*\***

- SRA Red closed/green open
- SGA Green closed/red open
- S1A T-1 three-way flow path
- S2A T-2 three-way flow path
- S3A T-3 three-way flow path
- S4A T-4 three-way flow path
- S5A T-5 three-way flow path
- SOA No indication
- SXA Special
- SCA Continuous

**MODEL NUMBER**

Mounting hardware required and sold separately.

Model number example:

QX 2G E 02 SRA

**Partnership ID\***

\*Some models may include 5-digit suffix for partnership identification.

(optional)

\*\* See visual indication designations chart on page 49.

Model selector - Mechanical switches and transmitters

SERIES	
QX	Explosionproof (aluminum cover)
FUNCTION	
Mechanical switches	
2V	(2) SPDT switches
2W	(2) SPDT switches, gold contacts
4V	(4) SPDT switches
4W	(4) SPDT switches, gold contacts
14	(2) DPDT switches
Position transmitters	
5O	Standard with no switches
5G	Standard with (2) SPDT Maxx-Guard (low current)
5V	Standard with (2) SPDT mechanical switches
5W	Standard with (2) SPDT mechanical switches, gold contacts
5X	Standard with (2) SST sensor (LED)
7O	High performance with no switches
7G	High performance with (2) SPDT Maxx-Guard (low current)
7X	High performance with (2) SST sensors (LED)
ENCLOSURE	
E	North American
R	International
F	Brazilian
S*	Stainless steel North American (NEC/CEC)
T*	Stainless steel International (IEC)
M*	Stainless steel Brazilian
<i>*Available with 03 or 06 conduit entry only</i>	
CONDUIT ENTRIES	
02	(1) ¾" NPT & (1) ½" NPT
03	(1) ¾" NPT & (2) ½" NPT
05	(2) M20
06	(3) M20
VISUAL INDICATION**	
SRA	Red closed/green open
SGA	Green closed/red open
S1A	T-1 three-way flow path
S2A	T-2 three-way flow path
S3A	T-3 three-way flow path
S4A	T-4 three-way flow path
S5A	T-5 three-way flow path
SOA	No indication
SXA	Special
SCA	Continuous

MODEL NUMBER	Partnership ID*
QX 2V E 02 SRA	(optional)

Mounting hardware required and sold separately.

\*Some models may include 5-digit suffix for partnership identification.

Visual indicator designations

DESIGNATION	0°	90°	180°
R	RED CLOSED	GREEN OPEN	
G	GREEN CLOSED	RED OPEN	
1			
2			
3		CLOSED	
4			
5			
C			
X	Specialty configuration - please consult factory		

\*\* See visual indication designations chart on page 49.

Model selector - Dual modules and VCTs

**SERIES**

QN Nonincendive and intrinsically safe

**FUNCTION**

**Sensor/switching modules (proximity type)**

- 33 SST NO switching sensor
- 44 NAMUR (EN 60947-5-6; I.S.)

**Valve Communication Terminals (VCTs)**

- 92 DeviceNet
- 93 Foundation Fieldbus (bus powered; I.S.)
- 94 Foundation Fieldbus (externally powered)
- 95 Modbus
- 96 AS-Interface
- 97 AS-Interface (with extended addressing)

**Expeditors**

- 82 DeviceNet
- 86 AS-Interface

**ENCLOSURE**

**Clear Cover**

- C North American
- D International

**Aluminum cover (not explosionproof)**

- E North American
- R International
- F Brazilian

**CONDUIT ENTRIES**

- 02 (1) 3/4" NPT & (1) 1/2" NPT
- 03 (1) 3/4" NPT & (2) 1/2" NPT
- 05 (2) M20
- 06 (3) M20

**VISUAL INDICATION\*\***

- SRA Red closed/green open
- SGA Green closed/red open
- S1A T-1 three-way flow path
- S2A T-2 three-way flow path
- S3A T-3 three-way flow path
- S4A T-4 three-way flow path
- S5A T-5 three-way flow path
- SOA No indication
- SXA Special
- SCA Continuous

**MODEL NUMBER**

Mounting hardware required and sold separately.

Model number example:

QN 33 C 02 SRA

**Partnership ID\***

\*Some models may include 5-digit suffix for partnership identification.

(optional)

\*\* See visual indication designations chart on page 49.

Model selector - Proximity switches and transmitters

**SERIES**

QN Nonincendive and intrinsically safe

**FUNCTION**

**Sensors**

- 2G (2) SPDT Maxx-Guard (low current)
- 2H (2) SPDT Maxx-Guard (3 amp)
- 2L (2) SPST Maxx-Guard (LED)
- 2P (2) SPST Maxx-Guard
- 2S (2) SPDT Maxx-Guard (LED)
- 4G (4) SPDT Maxx-Guard (low current)
- 4H (4) SPDT Maxx-Guard (3 amp)
- 4L (4) SPST Maxx-Guard (LED)
- 4P (4) SPST Maxx-Guard
- 4S (4) SPDT Maxx-Guard (LED)
- 4X (4) SST sensor (LED)

**Intrinsically safe**

- 2J (2) SPST (passive)
- 2M (2) SPDT (passive)
- 2N (2) P+F NAMUR sensors
- 4N (4) P+F NAMUR sensors
- 4J (4) SPST (passive)
- 4M (4) SPDT (passive)

**Position transmitters**

- 50 Standard with no switches
- 5G Standard with (2) SPDT Maxx-Guard (low current)
- 5X Standard with (2) SST sensor (LED)
- 70 High performance with no switches
- 7G High performance with (2) SPDT Maxx-Guard (low current)
- 7X High performance with (2) SST sensors (LED)

**Expeditors**

- 8H Expeditor with (3) SPDT Maxx-Guard (3 amp)
- 8Y Expeditor with (3) switches

**ENCLOSURE**

**Clear Cover**

- C North American
- D International

**Aluminum cover (not explosionproof)**

- E North American
- R International
- F Brazilian

**CONDUIT ENTRIES**

- 02 (1) 3/4" NPT & (1) 1/2" NPT
- 03 (1) 3/4" NPT & (2) 1/2" NPT
- 05 (2) M20
- 06 (3) M20

**VISUAL INDICATION\*\***

- SRA Red closed/green open
- SGA Green closed/red open
- S1A T-1 three-way flow path
- S2A T-2 three-way flow path
- S3A T-3 three-way flow path
- S4A T-4 three-way flow path
- S5A T-5 three-way flow path
- SOA No indication
- SXA Special
- SCA Continuous

**MODEL NUMBER**

Mounting hardware required and sold separately.

Model number example:

QN 2G C 02 SRA

**Partnership ID\***

\*Some models may include 5-digit suffix for partnership identification.

(optional)

Model Selector - Mechanical switches

**SERIES**

QG General purpose (clear cover)

**FUNCTION**

**Mechanical switches**

- 2V (2) SPDT switches
- 2W (2) SPDT switches, gold contacts
- 4V (4) SPDT switches
- 4W (4) SPDT switches, gold contacts
- 14 (2) DPDT switches

**ENCLOSURE**

C General purpose, universal  
 All **QG** models have clear Lexan® cover and anodized aluminum housing.

**CONDUIT ENTRIES**

- 02 (1) ¾" NPT & (1) ½" NPT
- 03 (1) ¾" NPT & (2) ½" NPT
- 05 (2) M20
- 06 (3) M20

**VISUAL INDICATION\*\***

- SRA Red closed/green open
- SGA Green closed/red open
- S1A T-1 three-way flow path
- S2A T-2 three-way flow path
- S3A T-3 three-way flow path
- S4A T-4 three-way flow path
- SSA T-5 three-way flow path
- SOA No indication
- SXA Special
- SCA Continuous

**MODEL NUMBER**

Mounting hardware required and sold separately.

Model number example:

QG 2V C 02 SRA

**Partnership ID\***

\*Some models may include 5-digit suffix for partnership identification.

(optional)

\*\* See visual indication designations chart on page 49.

**Specifications**

**Materials of construction**

Housing & aluminum cover	Epoxy-coated anodized marine grade aluminum
Clear cover & indicator	Lexan® polycarbonate
Elastomer seals	Buna-N; optional EPDM
Drive shaft	Stainless steel
Drive bushing	Bronze, oil impregnated
Fasteners	Stainless steel

**Temperature ratings**

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

**Warranty**

Mechanical components	Two years
SST & dual modules	Five years

Lexan® is a registered trademark of General Electric Corporation.

**Ratings**

Explosionproof <i>(Ex d, Zone 1 or Class I and II, Div. 1)</i>	QX models*
Nonincendive <i>(Class I and II, Div. 2)</i>	QN models*
Intrinsically safe <i>(Ex ia, Zone 0 or Class I and II, Div. 1)</i>	Functions 44, 93, _A, _J, _M and _N*

**Enclosure protection**

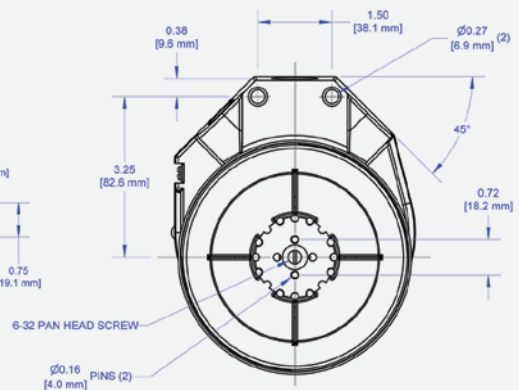
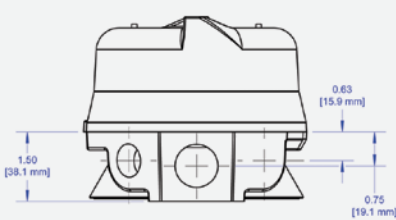
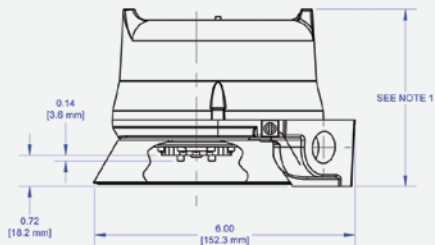
NEMA 4, 4X and 6	All models
Ingress Protection 67	All models

**Approvals\***

See StoneL.com/approvals

\* Only models listed on StoneL's official website are approved per specific rating.

Dimensions inches [mm]



NOTE 1:

Cover height varies based on model number.  
 Dual module and 2-switch models use short covers.

\* Short Cover = 4.0" [102mm]

\* Medium Cover = 4.86" [123.4mm]

\* Tall Cover = 6.12" [155.4mm]

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