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# V-Solenoid II™ Solenoid Valve

## ► The V-Solenoid II™ Line

Standard Series



ATEX Ex Series



Intrinsically Safe Series



Ex-Proof Series



## Features

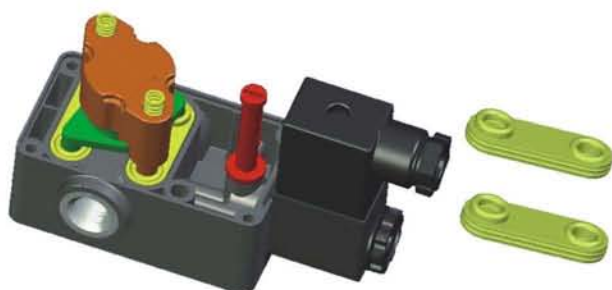
- Multi-million cycle life reliability. The innovative design and all composite construction means the V-Solenoid II™ is not affected by wear or corrosion
- Set 5/2 or 3/2 function simply by turning the rotary sealing plate 180°, dramatically reducing parts inventory
- High airflow: Cv>1.1 (1100 L/min) (I-Safe Cv=0.8)
- Manual override built in - no extra parts required
- Operating temperature range: -4°F to +140°F (-20°C to +60°C)
- For extreme environmental corrosion protection, all port threaded inserts and armature components can be supplied in stainless steel
- Direct mounting conforms to Namur VDI/VDE 3845 standard
- Exhaust feedback – provides spring chamber with instrument air preventing corrosion
- Very competitively priced with a wide variety of available options



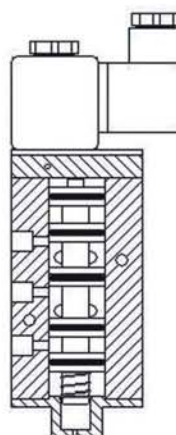
## ► Patented Poppet Valve Design

- Unique patented poppet valve technology provides **high flow, fast response, high temperature range** and **multi-million** cycle life reliability
- Patented poppet valve design minimizes friction by utilizing dual static rolling diaphragm-poppet seals
- Advantage of this design is its suitability for cryogenic environments. Wide operating temperature range -4°F to +140°F (-20°C to +60°C)

### Poppet Valve Design



### Typical O-ring Seal Design

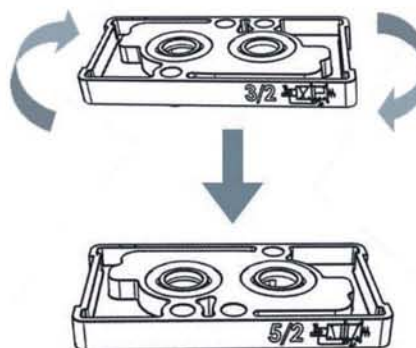


- Traditional solenoid valves operate a spool to direct airflow
- The o-ring type seals are subject to constant abrasion, reducing their lifetime and reliability
- The operating temperature usually is limited to no less than -5°C

Poppet valve design offers better characteristics and reliability

## ► Patented Rotary Sealing Plate

- By turning the patented rotary sealing plate 180° the operating mode can be easily changed from 5/2 to 3/2 function
- The V-Solenoid II™ can be used on both double acting and single acting actuators
- Many competitors' solenoid valves either work 5/2 or 3/2 function requiring stocking for both solenoid valves



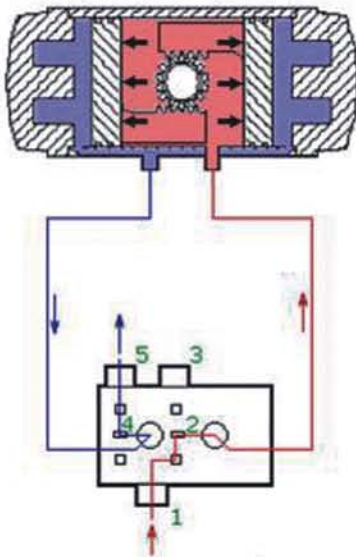
The V-Solenoid II™ rotary sealing plate results in less inventory

# V-Solenoid II™ Solenoid Valve

## ► 5/2 Mode for Double Acting Operation

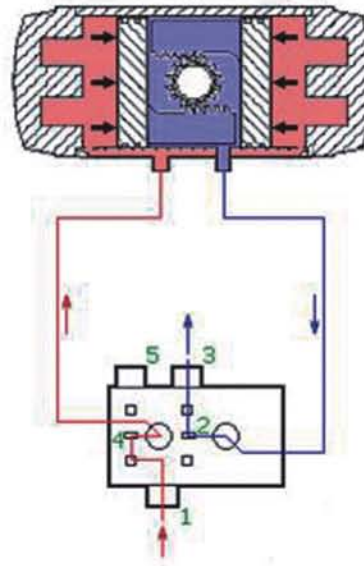
### Energized State

- Air supply through port 1, flow is directed to port 2
- Port 4 is vented to atmosphere via port 5



### De-energized State

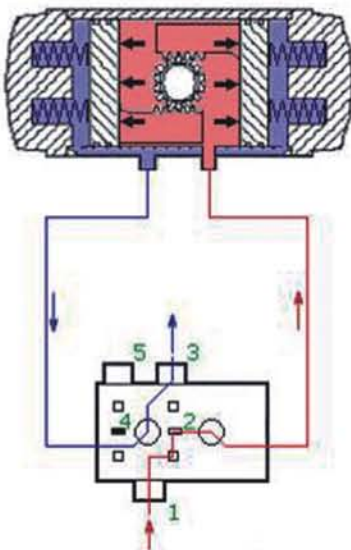
- Air supply through port 1, flow is directed to port 4
- Port 2 is vented to atmosphere via port 3



## ► 3/2 Mode for Single Acting Operation

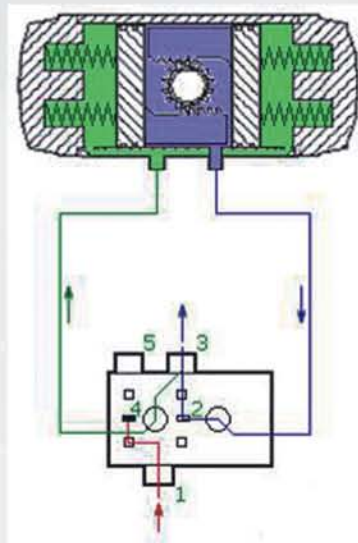
### Energized State

- Air supply through port 1, flow is directed to port 2
- Exhaust air is directed to port 4 and vented to atmosphere via port 3



### De-energized State

- Air supply through port 1, flow is blocked
- Exhaust air is directed through port 2 to port 4 with excess air vented to atmosphere via port 3



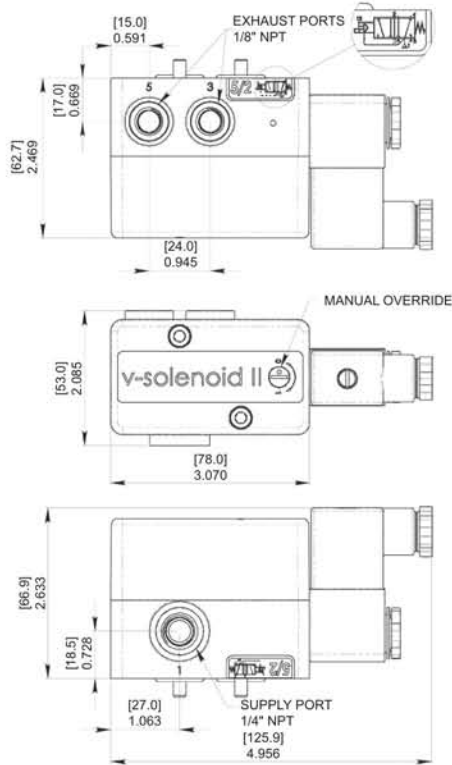


## Specifications

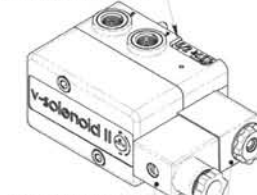
	Standard Series	Explosion Proof		
		ATEX Ex	Ex-Proof	I-Safe
Temperature	-4°F to 140°F (-20°C to 60°C)	-4°F to 122°F (-20°C to 50°C)	-4°F to 140°F (-20°C to 60°C)	-4°F to 140°F (-20°C to 60°C)
Flow	Cv>1.1	Cv>1.1	Cv>1.1	Cv=0.8
Operating Pressure	35 to 120 psi (2.4 to 8.3 bar)			
Ports	1/4" NPT and Namur flange			
Response	Opening (on) 20ms, closing (off) 40ms			
Media	Compressed air-lubricated or unlubricated, instrument air and nitrogen			
Valve Body	Reinforced polyamide (PA)			
Sealing Material	Exhaust ports o-ring: NBR Armature o-ring: Viton			
Ports	Supply ports: MS zinc plated (standard) or Stainless (corrosion resistant)			
Voltage	24VDC, 24VAC 120VAC, 240VAC	24VDC, 120VAC, 230VAC	24VDC, 120VAC, 230VAC	24VDC
Power Consumption	DC 4.8W, AC@60Hz 6.9VA AC@50Hz 8.5VA	Temp class T4, 24VDC, rated power 5.2W Temp class T6, 220V 50/60Hz, rated power 2.5VA	DC 4.8W, AC@60Hz 6.9VA AC@50Hz 8.5VA	Voltage range 21.6 to 28 VDC Peak values 28VDC, 115mA, 1.6w Temp (Max): 50°C
Duty Cycle	100% continuous service			
Insulation Class	F	F	H	F
Connection	DIN industrial form	Encapsulated coil and connector, with cable	1/2" NPT conduit entry	DIN EN 175301-803-A/ ISO 4400
Protection Class	IP65 NEMA types 1,2,3,3S,4&index	IP65	NEMA types 7,8&9	NEMA types 1,2,3,3S,4&4X
Approvals		PTB, ATEX	CSA, FM	CSA, FM, PTB
Hazardous Locations		<ul style="list-style-type: none"> <li>• II 2G EEx m II T6, T5 or T4 approved</li> <li>• IEC Ex m II T6, T5, T4 approved coils are approved according to EN 50</li> <li>• 014:1997 +A1+A2 and EN50028:1987 by the Physikalisch-Technischen Bundesanstalt (PTB)</li> </ul>	<ul style="list-style-type: none"> <li>• Class 1; Zone1</li> <li>• Ex m II; AEx m II</li> <li>• Class I; Division 1; Groups A,B,C and D</li> <li>• Class II; Group E,F and G</li> <li>• Class III</li> <li>• Tested according to CAN/CSA-E79-0-95 and CAN/CSA-E79-18-95 for CSA, according to ANSI/ISA-S12.00.01-1999 and ANSI/ISA-S12.23.01-1998 for FM</li> </ul>	<ul style="list-style-type: none"> <li>• Ex II 2G EEx ia IIC T6 approved</li> <li>• IEC Ex ia IIC T6 approved</li> <li>• FM IS /I, II, III/ ABCDEFG approved</li> <li>• Coils are approved according to EN 50 020 resp</li> <li>• DIN VDE 0170/0171, part 5 by the PTB</li> </ul>

# V-Solenoid II™ Solenoid Valve

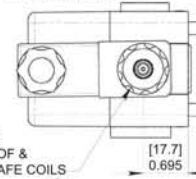
## ► Dimensions: V-Solenoid II STANDARD SERIES



FUNCTION WINDOW  
SHOWS 5/2 OR 3/2  
SELECTION W/ SCHEMATIC



IP65 CONNECTORS  
COIL CAN BE ROTATED  
IN 90 INCREMENTS



CLEARANCE FOR  
EXPLOSION-PROOF &  
INTRINSICALLY SAFE COILS

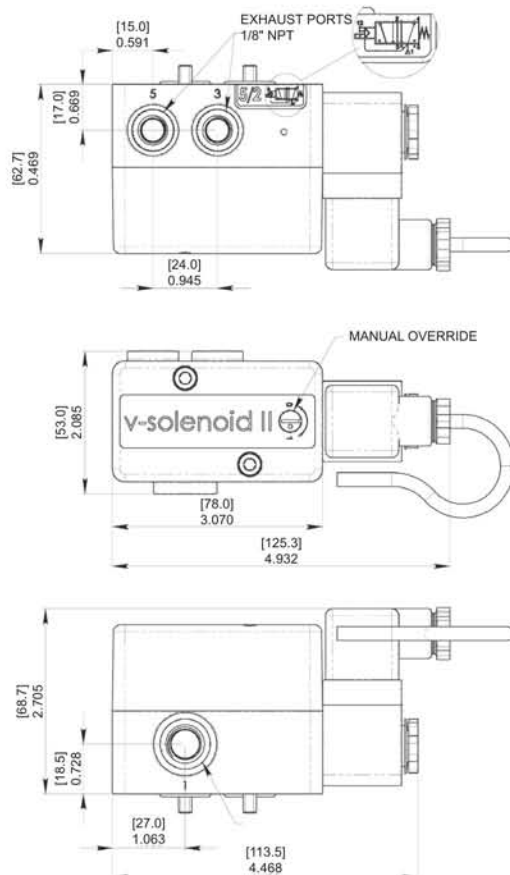


NAMUR MOUNT  
M5 FASTENERS STD  
IMPERIAL OPTIONAL

SINGLE ADAPTER PLATE  
ROTATES 180 TO CHANGE  
5/2 - 3/2 FUNCTION  
UNIQUE SERIAL NUMBER

Note: mm (top) ; inch (bottom)

## ► Dimensions: V-Solenoid II ATEX Ex SERIES

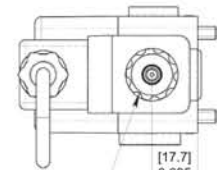


COILS CAN BE ROTATED  
IN 90 INCREMENTS

FUNCTION WINDOW  
SHOWS 5/2 OR 3/2  
SELECTION W/ SCHEMATIC



COILS SUPPLIED WITH  
INTEGRAL CONNECTOR AND  
10FT [3m] CABLE



CLEARANCE FOR  
EXPLOSION-PROOF &  
INTRINSICALLY SAFE COILS

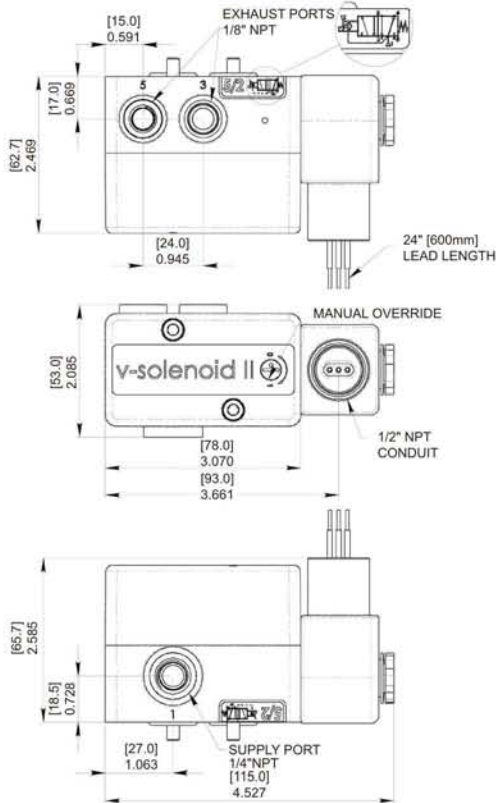


NAMUR MOUNT  
M5 FASTENERS STD  
IMPERIAL OPTIONAL

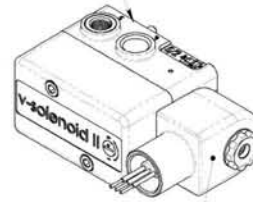
SINGLE ADAPTER PLATE  
ROTATES 180 TO CHANGE  
5/2 - 3/2 FUNCTION  
UNIQUE SERIAL NUMBER

Note: mm (top) ; inch (bottom)

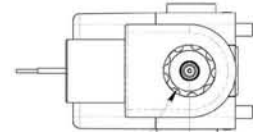
## ► Dimensions: V-Solenoid II EX-PROOF Series



SHOWS 5/2 OR 3/2 SELECTION W/ SCHEMATIC



COILS CAN BE ROTATED IN 90 INCREMENTS



CLEARANCE FOR EXPLOSION-PROOF & INTRINSICALLY SAFE COILS



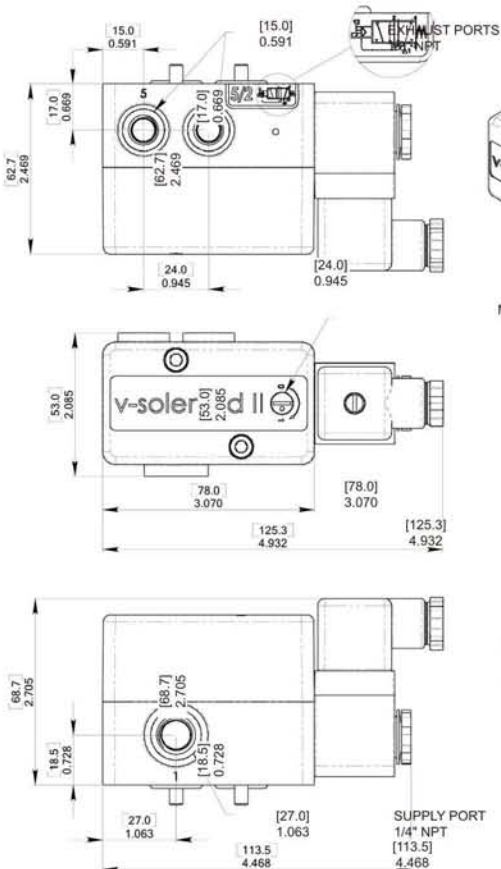
NAMUR MOUNT  
M5 FASTENERS STD  
IMPERIAL OPTIONAL

SINGLE ADAPTER PLATE  
ROTATES 180 TO CHANGE  
5/2 - 3/2 FUNCTION

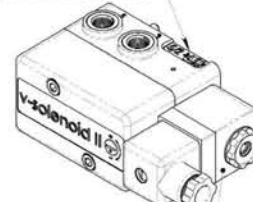
UNIQUE SERIAL NUMBER

Note: mm (top) ; inch (bottom)

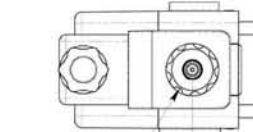
## ► Dimensions: V-Solenoid II I-SAFE SERIES



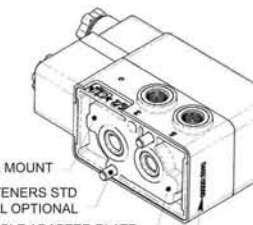
FUNCTION WINDOW  
SHOWS 5/2 OR 3/2  
SELECTION W/ SCHEMATIC



COILS CAN BE ROTATED IN 90 INCREMENTS



CLEARANCE FOR EXPLOSION-PROOF & INTRINSICALLY SAFE COILS



NAMUR MOUNT  
M5 FASTENERS STD  
IMPERIAL OPTIONAL

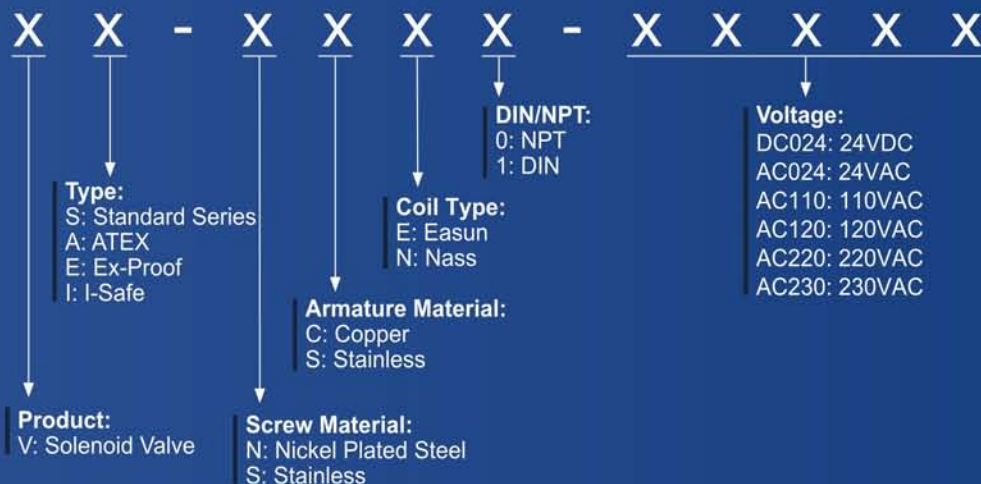
SINGLE ADAPTER PLATE  
ROTATES 180 TO CHANGE  
5/2 - 3/2 FUNCTION

UNIQUE SERIAL NUMBER

Note: mm (top) ; inch (bottom)



## V-Solenoid II P/N Coding Rule



### V-Solenoid II: Standard Series

#### Standard P/N

VS110S	VS-NCE0-AC110
VS220S	VS-NCE0-AC220
VS24DS	VS-NCE0-DC024
VS24AS	VS-NCE0-AC024

#### Corrosion Resistant P/N

VS110C	VS-SSE0-AC110
VS220C	VS-SSE0-AC220
VS24DC	VS-SSE0-DC024
VS24AC	VS-SSE0-AC024

### V-Solenoid II: ATEX Series

#### Standard

#### New P/N

VA120S	VA-NCN0-AC120
VA230S	VA-NCN0-AC230
VA24DS	VA-NCN0-DC024

#### Corrosion Resistant P/N

VA120C	VA-SSN0-AC120
VA230C	VA-SSN0-AC230
VA24DC	VA-SSN0-DC024

### V-Solenoid II: Ex-Proof Series

#### Standard P/N

VE120S	VE-NCN0-AC120
VE230S	VE-NCN0-AC230
VE24DS	VE-NCN0-DC024

#### Corrosion Resistant P/N

VE120C	VE-SSN0-AC120
VE230C	VE-SSN0-AC230
VE24DC	VE-SSN0-DC024

### V-Solenoid II: I-Safe

#### Standard

#### New P/N

VI24DS	VI-NSN0-DC024
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#### Corrosion Resistant P/N

VI24DC	VI-SSN0-DC024
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Taiwan

Puretorq Industrial Co., Ltd.

Phone : 886-37-861-202

Fax:886-37-855-962

www.puretorq.com

E-mail:Sales@puretorq.com

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