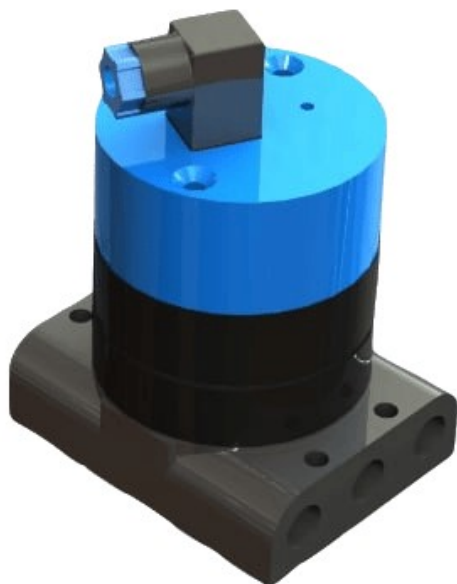


Friction Free Digital Valve

High Performance and Intrinsically Safe

Zone 0 – ATEX & IECEX



Features

- Fast and positive equipment control coupled with high flow capacity.
- Low Power Consumption - can be used on large sites or long control loops.
- Friction free non-sticking operation, design to eliminate one of the most common plan valve problems.
- Up to 4 FFDs can be operated via one I.S (Intrinsically Safe) interface.
- Minimise piping and simplify sit installation direct NAMUR actuator mounting option.
- All common valve functions available to match virtually all process and control applications.
- Momentary operation for process setup and local plant control. Manual reset for "sequential" process control.
- Easily removed from base due to modular construction, minimising downtime.
- Manufacturing by one of the leaders in hazardous area technology, with expert advice and application support available as part of the overall service.

Performance Promise

The FFD "Friction Free Digital" valve offers exceptionally low power operation with reliability in all service applications. From either non-stop cycling to low use applications, the FFD is wear free frictionless during operation.

The FFD provides freedom from sticking even over long intrinsically safe and other low power control loops.

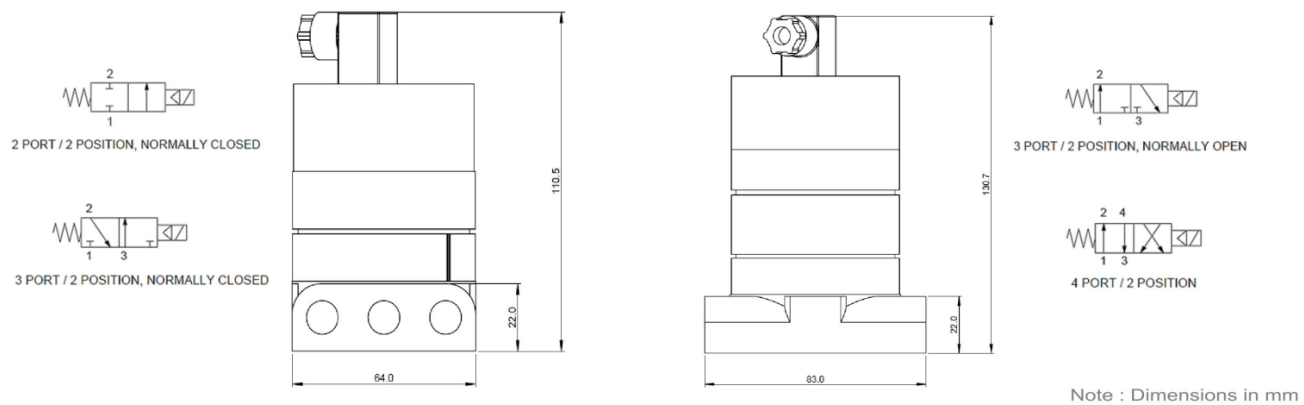
Specifying Information

The FFD consists of 3 main sections:

- **Electrical:** Solenoid assembly
- **Pneumatic:** Valve Module Section
- **Pneumatic Connection Block:** Port block or manifold

The main part number consisting of 10 digits defines the valve. Select from the matrix on page 3 or speak with your technical sales representative for further advice

Technical Specification



Outline Performance Data

Range of Pneumatic Functions

- 2 port 2 positions normally closed.
- 3 port 2 positions normally closed.
- 2 port 2 positions normally open.
- 4 port 2 positions.

Manifolds

Common exhaust and supply options. Integrated individual stop valves can also be supplied.

Port Blocks

NAMUR adapter plates for direct mounting to valve actuators are available.

Air Quality

Filtration to be better than 50 micron particle size and dew point below expected ambient temperature. Lubricated air is not required, but is not detrimental.

Certification/Approval

Intrinsically Safe

II 1 G Ex ia IICT*Ga

INERIS 03 ATEX0249X

IECEX INE 10.0002X

Flow Capacity

Flow Constant Cv is 0.87 based on an inlet pressure of 7 bar and a flow rate of 850 litres/min (30 scfm), the pressure drop will be 1 bar.

Operating Speed (Typical)

70ms [3 port 2 positions]

110ms [4 port 2 positions]

Electrical Performance

Voltage (V)	Voltage Range (V)	Current (mA)	Power (W)
12	11.9 - 23	33	0.5
24	16.4 - 28	25	0.5
24*	12.2 - 28	20	0.25
12 / 24**	-	-	1.2

* Low Energy Vision ** Non-Certified Version

Pressure Limits

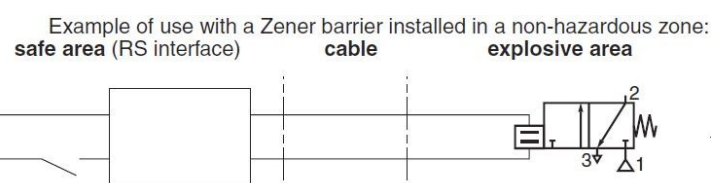
[3/2 N.C.] & [2/2 N.C], 2-9 bar [30-130 psi]

[4/2] & [3/2 N.O], 4-7 bar [60-100 psi]

Separate pilot supply and low pressure air supply are available. Outside this range consult Expo Technologies Ltd. for tailored options.

Solenoid Voltage	*T-Class	Ambient Temperature
12V, 24V Non-Certified	N/A	-20°C to +60°C
12V [Box 6-Option6]	T5	-10°C to +50°C
	T6	-10°C to +38°C
24V [Box 6-Option7]	T5	-10°C to +48°C
	T6	-10°C to +33°C
24V Low Energy [Box 6-Option8]	T6	0°C to +40°C

Pn	safety parameters				
	U _i = (DC)	I _i	P _i	L _i	C _i
(W)	(V)	(mA)	(W)	(mH)	(μF)
0,25/0,5	28	300	1,6	0	0



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Simplifying Complexity. Delivering Safety.

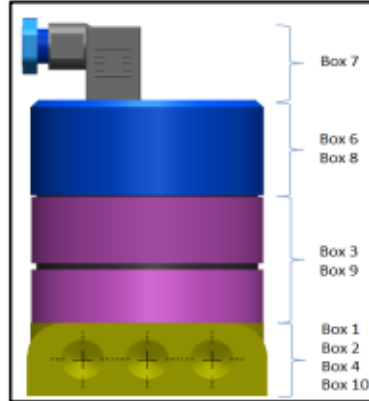
SPECIFYING INFORMATION

The FFD (Friction Free Digital Valve) part code selection matrix is comprised of 3 main sections:

- Solenoid Assembly (Box 6-8)
- Valve Module (Box 3 & 9)
- Port Block/Manifold (Box 1, 2, 4 and 10)

The main part number consisting of 10 digits which defines the key features of the FFD.

"Select from the matrix or speak with your technical sales representative for further advice"



MATERIAL IN CONTACT WITH PROCESS FLUID

Valve Modules | Kematal

Port Blocks | Aluminium alloy LM6 - black anodized.
[Coating & Material options are available on request]

Solenoid Assembly | PARA (polyarylamide) / POM (polyoxymethylene) / PET (PET Copolymer) / NBR (Nitrile) / TPE (Thermoplastic Elastomers) / FPM (Fluoroelastomers)

Seals | ECO (Epichloropydrin)

OTHER MATERIALS

Stainless Steel

Brass

PART CODE SELECTION MATRIX

FFD - **V 2 2 0 N 6 1 D 0 0**

BOX 1

- V** VALVE + ALUMINIUM PORT BLOCK
- B** VALVE + BRASS PORT BLOCK
- S** VALVE + ST/STL PORT BLOCK
- M** MODULE ONLY
- C** VALVE + ALUMINIUM MANIFOLD WITH STOP VALVES
- R** NAMUR ADAPTER PLATE

BOX 2 - PORT SIZE

- 0** NOT APPLICABLE
- 2** 1/4" BSPP (G1/4)
- 5** 1/4" NPT
- 6** 3/8" BSPP (G3/8)
- 9** 3/8" NPT

BOX 3 - VALVE MODULE FUNCTION

- 0** NOT APPLICABLE
- 1** 2 PORT 2 POSITION NORMALLY CLOSED
- 2** 3 PORT 2 POSITION NORMALLY CLOSED
- 3** 3 PORT 2 POSITION NORMALLY OPEN
- 4** 4 PORT 2 POSITION

BOX 4 - MANUAL RESET

- 0** NOT APPLICABLE
- R** MANUAL RESET

BOX 5 - NOT USED

- N** NOT USED

BOX 10 - MANIFOLD BASE

- NOT APPLICABLE **0**
- SUPPLY COMMON, EXHAUST COMMON **X**
- COMMON SUPPLY ONLY **Y**
- COMMON EXHAUST ONLY **Z**

BOX 9 - VALVE MODULE

- STANDARD SEALS AND STANDARD PILOT SUPPLY **0**
- STANDARD SEALS AND SEPERATE PILOT SUPPLY **2**
- VITON SEALS AND STANDARD PILOT SUPPLY **5**
- VITON SEALS AND SEPERATE PILOT SUPPLY **6**

BOX 8 - APPROVAL REFERENCE

- NOT APPLICABLE **0**
- ATEX/IECEX (Ex ia IIC) **D**
- NON-CERTIFIED **N**

BOX 7 - SOLENOID CONNECTOR

- NOT APPLICABLE **0**
- PLUG-IN CONNECTOR (PGA, DIN43650) **1**
- FLYING LEAD (2 METRE LENGTH) **4**

BOX 6 - SOLENOID VOLTAGE

- NOT APPLICABLE **0**
- 12V DC **6**
- 24V DC **7**
- *LOW ENERGY 24V DC **8**

"*" : ONLY AVAILABLE ON CERTIFIED VERSION

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