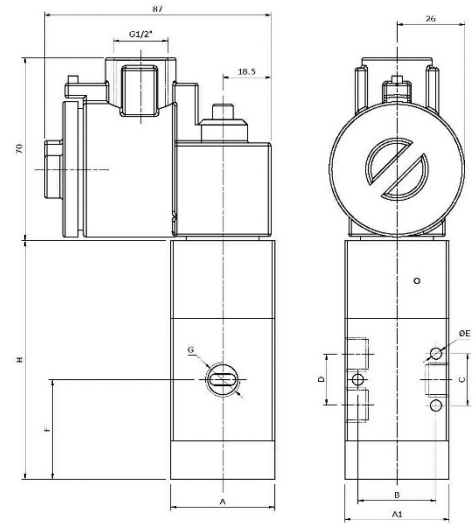




Description

Intrinsically safe coil suitable for Zones 0, 1 and 2, manufactured in accordance with the requirements of the European harmonized standards EN/IEC60079-0, EN/IEC60079-11 and EN/IEC60079-31. Covered by Certificate of Conformity BAS No. BAS01ATEX1391X. 3/2 way pilot operated solenoid valve normally close or normally open. Suitable for instrument air Material, Aluminum, brass or stainless steel body. Mountable in any position.

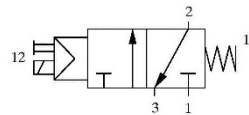
Dimension mm



ELECTRICAL INFORMATION

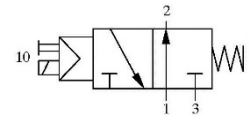
- M20 x 1.5 conduit entry (Cable diameter 6 - 8mm) or 1/2 NPT
- Protection class IP66 according to ENBS60529
- Connection by 2-pole 2.5mm² terminal strip
- Continuously rated
- Maximum permitted voltage variation ±10%
- Maximum ambient temperature +65°C
- Low power consumption
- BASEEFA, FM, IECEx and NEPSI approvals available
- Operates with a wide range of barriers and galvanic isolators
- Voltage Standard: 24DC
- Voltage Tolerance: -10%
- Protection class: IP66
- Duty Cycle: 100%
- Electrical Connection: Junction Box with M20 Conduit Entry
- Ambient Temperature: -40 to +65°C
- Power Consumption: 0.4W or 0.27W
- Magnetic Wire: Class H Coated Copper
- Coil case: Zinc Alloy Epoxy Powder Coated

OPERATION



Normally closed

- In: 1
Out: 2
Vent: 3
Coil de-energized: Input 1 closed
From 2 to vent 3
Coil energized: From 1 to 2
Vent 3 closed



Normally open

- In: 1
Out: 2
Vent: 3
Coil de-energized: From 1 to 2
Vent 3 closed
Coil energized: From 2 to vent 3
Input 1 closed

SPECIFICATIONS AND DIMENSIONS

Port size	Orifice diameter mm	Nominal air flow (NI/min)	Working pressure	Weight Kg.	Dimension (mm)								
					A	A1	B	C	D	E	F	G	H
1/4"	8	1080	2.5~10 bar	Aluminum:	40	40	30	20	19.5	4.2	38	1/4"	92
				Brass:									
				Stainless steel:									
3/8"	15	3500	2.5~10 bar	Aluminum:	60	40	50	40	40	5.5	52	3/8"	128
				Brass:									
				Stainless steel:									
1/2"	15	3500	2.5~10 bar	Aluminum:	60	40	50	40	40	5.5	52	1/2"	128
				Brass:									
				Stainless steel:									

SELECTION CODE:

Size	Body material	Port size		Seals material	Protection class	Option feature	Voltage
B14X (1/4")	A. Aluminum	C. 1/4" GAS	D. 1/4"NPT	0. FPM	A. Exia IIC T6 (Coil case: Blue)	0. Without manual operator	2. 24DC
B38X (3/8")	B. Brass	E. 3/8" GAS	T. 3/8"NPT	1. NBR		1. With manual operator	
B12X (1/2")	I. Stainless steel	F. 1/2" GAS	G. 1/2"NPT	2. HNBR			

SOLENOID VALVE CONTROL SYSTEM

NOTE 1
This apparatus is unspecified except that it must not contain under normal or abnormal conditions a source of potential with respect to earth in excess of 250V R.M.S. or 250V DC.

NOTE 2
The electrical circuit in the Hazardous area must be capable of withstanding an AC test voltage of 500V R.M.S. to earth of frame of the apparatus for one minute.

NOTE 3
Any single channel or single channel of a multiple channel Shunt Zener Diode Safety Barrier, Solenoid Driver or supply certified by any EU notified certification body to [Exia] IIC, whose output voltage (U_z , $U_{max:out}$ or U_o) does not exceed 28V and whose output current ($I_{max:out}$ or I_o) is limited by resistance 'R' such that the output voltage divided by 'R' does not exceed 110mA, or whose output voltage (U_z , $U_{max:out}$ or U_o) does not exceed 25.5V and whose output current ($I_{max:out}$ or I_o) is limited by resistance 'R' such that the output voltage divided by 'R' does not exceed 147mA.

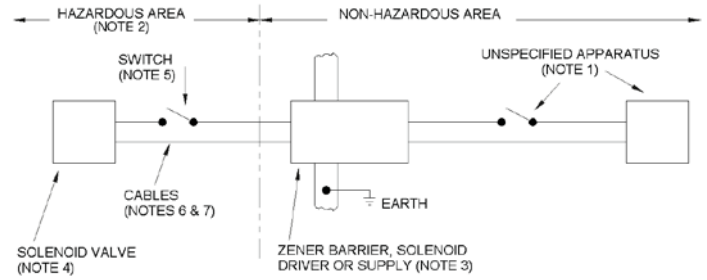
NOTE 4
Badran solenoid valve covered by Certificate of Conformity BAS. No. BAS01ATEX1391 to category Exia IIC T6.

NOTE 5
Switch must be selected and installed to meet the requirements of clauses 5.4 of EN60079-11.

NOTE 6
The cable maybe twin pair, or a pair contained in a type A, or type B multicore cable (as defined in clause 5.3 of EN60079-25), provided that the peak voltage of any circuit contained within the multicore does not exceed 60 volts.

NOTE 7
The capacitance and inductance to resistance ratio of the hazardous area cables must not exceed the values shown in table 1.

Certificate of Conformity BAS No. Ex 01E2392



INTRINSICALLY SAFE SUPPLY SPECIFICATION

U _{max: in}	31 Vdc
I _{max:}	0.67A
W _{max: in}	2.98W

TABLE 1

Group	CAPACITANCE (µF)	INDUCTANCE (mH)	L/R RATIO (µH/ohm)
IIC	0.083	1.4	39
IIB	0.65	7.2	155
IIA	2.1	14.4	283

INTRINSIC SAFETY

Intrinsic safety is the safest form of protection for electrical equipment operating in potentially hazardous atmospheres. Intrinsic safety (IS) is based on the principle of restricting the electrical energy available in hazardous area circuits such that any sparks or hot surfaces that may occur as a result of electrical faults are too weak to cause ignition.

An intrinsically safe system consists of a certified IS interface which passes signals to and from the process (hazardous area) but limits the energy (that is voltage and current) that can reach the hazardous area under fault conditions.

The interface is usually mounted in the safe area and can be either a shunt diode safety barrier or a galvanic isolator.

In the hazardous area 'simple' or 'non-energy storing devices' (switches thermocouples & LED's) can be used without certification but 'Energy-storing' equipment such as solenoid valves must be designed so as to prevent this energy escaping and of necessity need to be of sufficiently low power to operate within the constraints of the power of the IS signal.

HAZARDOUS AREA SOLENOID VALVE

The Badran EP000/ia solenoid coil is approved for this duty and is certified safe for all classified areas of hazard and gasses when installed in accordance with an approved system. The coil is protected by diodes which suppresses the inductance, effectively to zero, and there is no capacitive characteristics in the coil either.

The coil assembly, which is encapsulated, forms a compact solenoid actuator to interchange with the standard (non-hazardous duty) coil fitted to the 3 and 4 way spool valves.

The IS coil because of its low wattage requires that the spring load and travel of the armature be closely controlled and for this reason each solenoid has an inbuilt adjustable jet which is factory set so as to control the operating characteristics of the coil. Where the IS solenoid actuator is fitted to the spool valve, the jet in the end cap which is required for the normal coil, is removed.