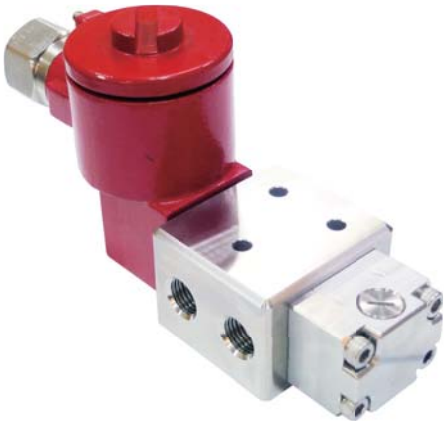
K Series 3 Way Direct Acting Balanced Poppet Solenoid Valve



DBK2SK-M2C

\ Ex d IIC with Integral Stainless Steel Junction Box.
\ Stainless Steel Valve Body.
\ Manual Override, Option M2.

J7707K2SK-M2

\ Ex m II NASS System 13 ATEX.
\ Stainless Steel Valve Body
\ Manual Override, Option M2.

M

\ Ex m II NASS System 8 ATEX.
\ Alloy Aluminum Valve Body.

W4805K2AK

\ General Propuse NASS System 8.
\ Alloy Aluminum Valve Body.

[FEATURES]

- Integral terminal box with coil housing.
- Valve do not require minimum operation pressure.
- Normally open / Normally close in one unit design.
- Valve operation is not affected by mounting position.
- High flow.
- 316 stainless steel body for highly corrosive atmospheres.
- Low power consumption.
- Convenient fixing holes.
- Wide range of voltages available.
- Manual reset. Function available.

[INTRODUCTION]

3 port 2 position direct acting, balanced poppet type, normally close and normally open in one solenoid valve, for operation of single acting pneumatic devices. High flow and low power consumption with no minimum operating pressure required.

[DIMENSION]

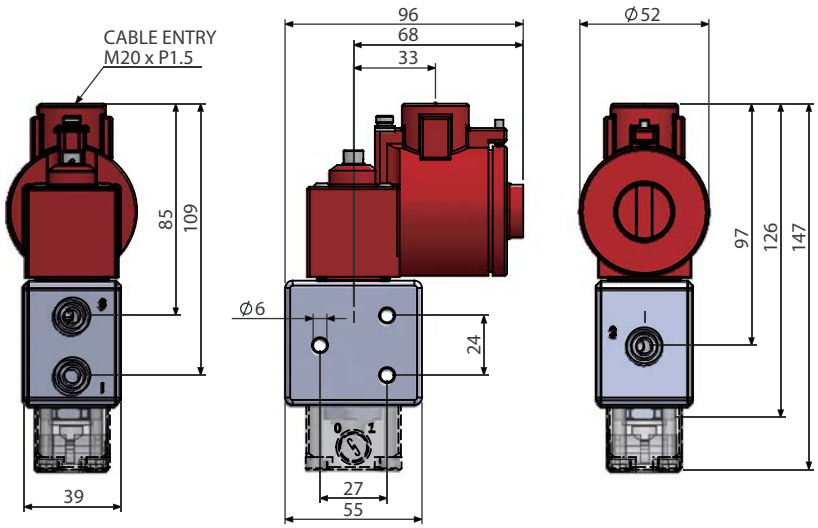
SOLENOID COIL UNIT D

Version
RGS Flame Proof Coil Unit
Ex d IIC T4/T6

Examination Certificate
BSA EX97D1329

Hazardous Location
Ex d IIC T4/T6
Ⓔx II 2 GD

D



K series

[VALVE]

MATERIAL SPECIFICATION	STANDARD
Body	Stainless Steel 316
Seals	H-NBR
Spring	Stainless Steel 302
Trim	Stainless Steel 316

VALVE SPECIFICATION	STANDARD
Port Connection Size	1/4" - 3/8" NPT
Working Pressure Internal Pilot Version	0 to 10 bar
Cv Factor	0.6
Maximum Ambient Temperature	+65°C
Minimum Working Temperature	-15°C

[COIL UNIT D]

MATERIAL SPECIFICATION	STANDARD
Moulding Material	Stainless Steel Epoxy Powerder Coated
Armature	Magnetic Solenoid Quality Stainless Steel
Springs	Stainless Steel
Seals and Seat	FKM

SOLENOID	STANDARD	
Type	DC Solenoid Coil	AC Solenoid
Voltage Standard	12, 24, 48, 110	24, 48, 110, 220, 415 (50/60 Hz
Coil Rating	Class H	Class H
Voltage Tolerance	±10%	±10%
Ambient Temperature	-10°C to +80°C	-10°C to +55°C
Duty Cycle	100%	100%
Degree of Protection	IP66	IP66
Connection	Junction Box with M20 Entry	Junction Box with M20 Entry
Power Consumption	3W (standard)	Inrush 9.5VA, Holding 5VA

[DIMENSION]

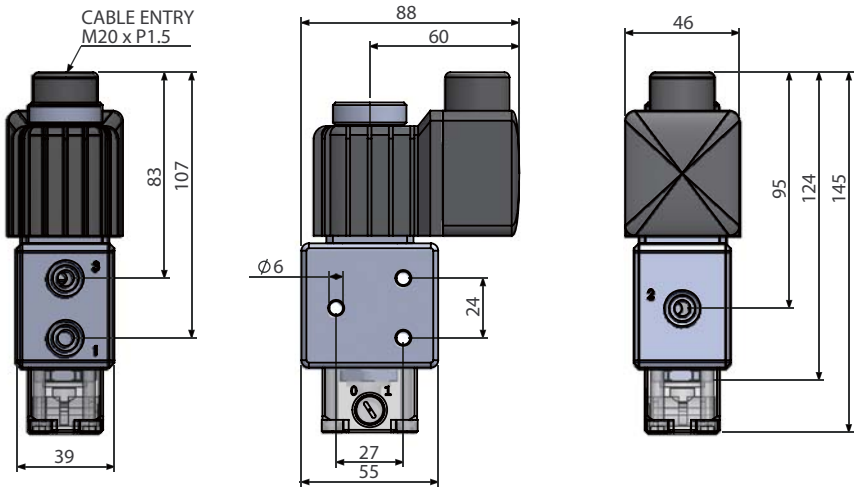
SOLENOID COIL UNIT J

Version
System 8 Ex CSA/FM
Ex m II T4 + Division 1

EC-Type Examination Certificate
PTB 10 ATEX
6519 00 / 7137 IP

Hazardous Location
Ⓔx II 2 GD
Ex e mb IIC T4 Gb
Ex e mb IIIC T130˚C Db IP67

J



[VALVE]

MATERIAL SPECIFICATION	STANDARD
Body	Stainless Steel 316
Seals	H-NBR
Spring	Stainless Steel 302
Trim	Stainless Steel 316

VALVE SPECIFICATION	STANDARD
Port Connection Size	1/4" - 3/8" NPT
Working Pressure Internal Pilot Version	0 to 10 bar
Cv Factor	0.6
Maximum Ambient Temperature	+65°C
Minimum Working Temperature	-15°C

[COIL UNIT J]

MATERIAL SPECIFICATION	STANDARD
Moulding Material	Thermoplastic
Armature	Magnetic Solenoid Quality Stainless Steel
Springs	Stainless Steel
Seals and Seat	FPM

SOLENOID	STANDARD	
Type	DC Solenoid Coil	AC Solenoid
Voltage Standard	12, 24, 120	24, 48, 110, 220 (50/60 Hz)
Coil Rating	Class H	Class H
Voltage Tolerance	±10%	±10%
Ambient Temperature	-40°C to +60°C	-40°C to +60°C
Duty Cycle	100%	100%
Degree of Protection	IP66	IP66
Connection	Junction Box with M20 Entry	Junction Box with M20 Entry
Power Consumption	11W (standard)	Pull in 10VA, Holding 5VA

[DIMENSION]

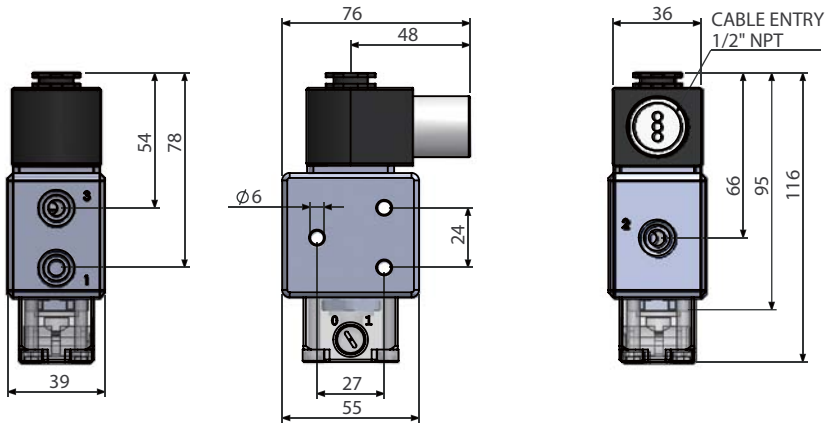
SOLENOID COIL UNIT M

Version
System 8 Ex CSA/FM
Ex m II T4 + Division 1

Examination Certificate
CSA 202633
FM 3006713

Hazardous Location
Ex m II T4
Division 1 - Class I, Group A, B, C and D
Class II, Group E, F and G
Class III

M



[VALVE]

MATERIAL SPECIFICATION	STANDARD
Body	Stainless Steel 316
Seals	H-NBR
Spring	Stainless Steel 302
Trim	Stainless Steel 316

VALVE SPECIFICATION	STANDARD
Port Connection Size	1/4" - 3/8" NPT
Working Pressure Internal Pilot Version	0 to 10 bar
Cv Factor	0.6
Maximum Ambient Temperature	+65°C
Minimum Working Temperature	-15°C

[COIL UNIT M]

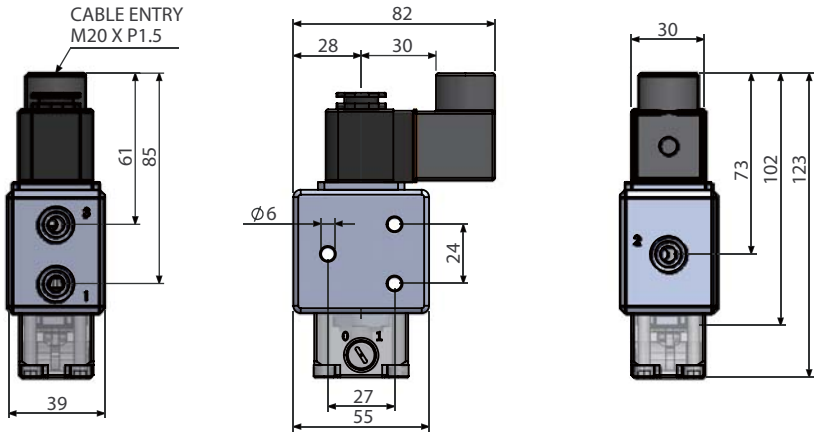
MATERIAL SPECIFICATION	STANDARD
Moulding Material	Thermoplastic
Armature	Magnetic Solenoid Quality Stainless Steel
Springs	Stainless Steel
Seals and Seat	FPM

SOLENOID	STANDARD	
Type	DC Solenoid Coil	AC Solenoid
Voltage Standard	12, 24, 48, 120	24, 110, 220 (50/60 Hz)
Coil Rating	Class H	Class H
Voltage Tolerance	±10%	±10%
Ambient Temperature	-20°C to +60°C	-20°C to +60°C
Duty Cycle	100%	100%
Degree of Protection	IP65	IP65
Connection	Flying Leads Thread 1/2-NPT	Flying Leads Thread 1/2-NPT
Power Consumption	4.6W (standard)	Pull in - 7.5VA, Holding - 5VA

[DIMENSION]

SOLENOID COIL UNIT W

Version
NASS System 8
General Purpose
EN 1759-803-A
ISO 4400



W

[VALVE]

MATERIAL SPECIFICATION	STANDARD
Body	Stainless Steel 316
Seals	H-NBR
Spring	Stainless Steel 302
Trim	Stainless Steel 316

VALVE SPECIFICATION	STANDARD
Port Connection Size	1/4" - 3/8" NPT
Working Pressure Internal Pilot Version	0 to 10 bar
Cv Factor	0.6
Maximum Ambient Temperature	+65°C
Minimum Working Temperature	-15°C

[COIL UNIT W]

MATERIAL SPECIFICATION	STANDARD
Moulding Material	Thermoplastic
Armature	Magnetic Solenoid Quality Stainless Steel
Springs	Stainless Steel
Seals and Seat	FPM

SOLENOID	STANDARD	
Type	DC Solenoid Coil	AC Solenoid
Voltage Standard	24	48, 110, 230 (50/60 Hz)
Coil Rating	Class H	Class H
Voltage Tolerance	±10%	±10%
Ambient Temperature	-20°C to +50°C	-20°C to +50°C
Duty Cycle	100%	100%
Degree of Protection	IP65 / IP67*	IP65 / IP67*
Connection	Junction Box with M20 Entry	Junction Box with M20 Entry
Power Consumption	4.5W (standard)	7.6VA (50Hz) / 5.3VA (60Hz)

* With IP67 Terminal Box

[PRODUCT CODE]

D	●	K	●	●	●	–	●
COIL UNIT	VOLTAGE	SERIES CODE	PORT	VALVE MATERIAL	FUNCTION		OPTION

COIL UNIT

- **D** Ex D IIC with Integral Stainless Steel Junction Box
- **J** Ex m II NASS System 13 ATEX
- **M** Ex m II NASS System 8 ATEX
- **W** General Propuse NASS System 8

VOLTAGE - COIL UNIT D

- **B** 24VDC 3W
- **D** 110VDC 3W
- **T** 110VAC (50/60 Hz) 9.5VA
- **U** 240VAC (50/60 Hz) 9.5VA
- **R** 24VAC 9.5VA

VOLTAGE - COIL UNIT J

- **0103** 24VAC (50/60 Hz) 10.5VA
- **0118** 110VAC (50 Hz) 9.9VA
  120VAC (60 Hz) 11.9VA
- **0097** 220VAC (50 Hz) 10.3VA
  240VAC (60 Hz) 12.5VA

VOLTAGE - COIL UNIT M

- **7706** 12VDC 4.5W
- **7707** 24VDC 4.6W
- **9580** 120VDC 5.5W
- **8097** 110VAC 7.5VA

VOLTAGE - COIL UNIT W

- **4805** 24VDC 4.5W
- **0159** 110VAC (50Hz) 7.6VA
  110VAC (60Hz) 5.3VA
- **5786** 230VAC (50Hz) 7.9VA
  230VAC (60Hz) 5.5VA

PORT

- **2** 1/4" CV0.6
- **3** 3/8" CV0.6

VALVE MATERIAL

- **A** Alloy Aluminum Valve Body, Stainless Steel Internal Parts
- **S** Stainless Steeel 316 Valve Body, Stainless Steel Internal Parts

FUNCTION

- **K** 3/2 Direct Operated

OPTION

- **C** 1/2" NPT Electric Conduit
- **M2** Manual Override
- **MR** Manual Reset, No Voltage Release
- **X** Customized (Additional Code is required)
- **H** High Temperature FKM Seal
- **L1** Mounting Bracket
- **L2** Mounting Bracket (2" Pipe Mounting)

[METHODS OF PROTECTION]

The generic term for all methods of protection of electrical equipment used in Europe is ' explosion proof '. American practice is to use this term for flameproof equipment. The table lists the more usual methods of protection.

TECHNIQUES	SYMBOL (Ex)
Oil Immersion	o
Pressurisation	p
Powder Filling	q
Flameproof Enclosure	d
Increased Safety	e
Intrinsically Safe	ia
Intrinsically Safe	ib
Non-incendive	N
Encapsulation	m
Special Protection	s

[SOLENOIDS VALVES IN HAZARDOUS AREAS]

Not all of these methods are applicable to solenoid protection, the more commonly used are listed below.

1. Flameproof This form of protection entails enclosing the coils in a robust enclosure which will contain an internal explosion should it occur and prevent its transmission to the surrounding atmosphere.

2. N-Type Protection (Non-incendive) Generally applied to non-sparking electrical components such as a solenoid coil which will not get abnormally hot even if the armature is locked out.

3. Encapsulation This involves enclosing the coil and any associated electrical components in a compound so as to prevent the ignition of a surrounding explosive atmosphere.

4. Intrinsically Safe Intrinsic safety is a technique that achieves safety by limiting the electrical-spark energy (and surface temperature) that can aries in hazardous area circuits to levels that are insufficient to ignite an explosive atmosphere.

An intrinsically safe system consists of a certified Intrinsically safe 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 IS signal.

5. Special Protection Offers combination of one or more methods of protection and in the case of solenoids these are usually 'e' and 'm', where the coil is encapsulated, has over temperature protection and the terminals are approved under the increased safety requirement.