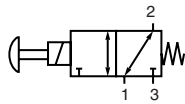


SOLENOID VALVES

no voltage release (tamperproof)
manual reset construction
1/4

U  Series **327**

FEATURES

- The valves are certified according to IEC 61508 Functional Safety data and have SIL-3 capability (Exida approval)
- Compact Tamperproof/Manual Reset function which means that the valve has to be energized as well as manually operated before it stays in the "latched" position. Because of the tamperproof feature there will be no flow from port 3 to port 2 if only the push button is pressed. The No Voltage Release (NVR) function will make sure that the valve trips when de-energized
- PTFE rider rings and graphite-filled PTFE seals reduce friction and eliminate sticking
- The solenoid valves are recommended for pilot applications with basic flow, wide pressure ranges and no minimum operating pressure
- Coils used in metal enclosures have class H insulation materials
- Peak voltage suppression diodes are standard in DC solenoids with metal enclosures
- The solenoid valves satisfy all relevant EC Directives

GENERAL

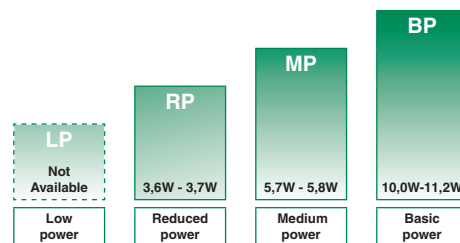
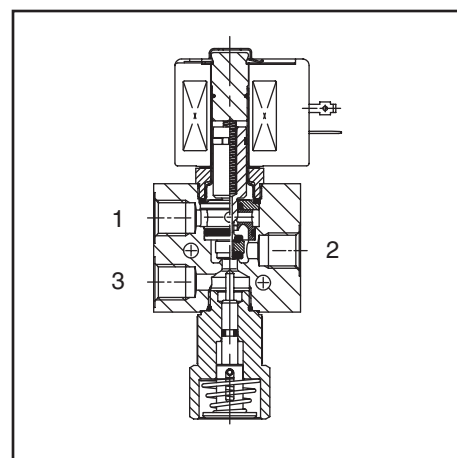
Differential pressure 0 - 10 bar [1 bar = 100kPa]
Maximum viscosity 65 cSt (mm²/s)
Response times 75 - 100 ms

fluids (*)	temperature range (TS)	seal materials (*)
air, inert gas, water, oil	-20 to +120°C -40 to + 40°C	FPM (fluoroelastomer) VMQ ((silicone)

MATERIALS IN CONTACT WITH FLUID

(*) Ensure that the compatibility of the fluids in contact with the materials is verified

	Brass body	Stainless steel body
Body	Brass	AISI 316
Stem	Stainless steel	Stainless steel
Core tube	Stainless steel	Stainless steel
Core and plugnut	Stainless steel	Stainless steel
Springs	Stainless steel	Stainless steel
Sealings and poppets	FPM or VMQ	FPM or VMQ
Rider Ring	PTFE	PTFE



POWER LEVELS - cold electrical holding values (watt)

SPECIFICATIONS

pipe size	orifice size	flow coefficient Kv		operating pressure differential (bar)		power level	prefix optional solenoids					basic catalogue number	
							min.	max. (PS)	NEMA 7&9	ATEX / IECEx			
				air/water (*)	Ex d			Ex e mb		Ex mb			
❖	(mm)	(m³/h)	(l/m)		~/=	~/=	EF	NF	EM	PV	SC	brass	stainless st.
U - Universal, FPM sealings and poppets, manual reset													
1/4	5,7	0,55	9,2	0	10	BP	●	●	●	○	●	❖ 327B021	❖ 327B022
1/4	5,7	0,55	9,2	0	10	MP	-	●	●	-	●	❖ 327B221	❖ 327B222
1/4	5,7	0,55	9,2	0	10	RP	-	●	●	-	●	❖ 327B121	❖ 327B122
U - Universal, VMQ sealings and poppets, manual reset													
1/4	5,7	0,55	9,2	0	10	BP	●	●	●	○	●	❖ 327B071	❖ 327B072
1/4	5,7	0,55	9,2	0	10	MP	-	●	●	-	●	❖ 327B271	❖ 327B272
1/4	5,7	0,55	9,2	0	10	RP	-	●	●	-	●	❖ 327B171	❖ 327B172
U - Universal, FPM sealings and poppets, manual reset tamperproof													
1/4	5,7	0,55	9,2	0	10	BP	●	●	●	○	●	❖ 327B031	❖ 327B032
1/4	5,7	0,55	9,2	0	10	MP	-	●	●	-	●	❖ 327B231	❖ 327B232
1/4	5,7	0,55	9,2	0	10	RP	-	●	●	-	●	❖ 327B131	❖ 327B132
U - Universal, VMQ sealings and poppets, manual reset tamperproof													
1/4	5,7	0,55	9,2	0	10	BP	●	●	●	○	●	❖ 327B081	❖ 327B082
1/4	5,7	0,55	9,2	0	10	MP	-	●	●	-	●	❖ 327B281	❖ 327B282
1/4	5,7	0,55	9,2	0	10	RP	-	●	●	-	●	❖ 327B181	❖ 327B182

❖ Select 8 for NPT ANSI 1.20.3 or Select G for ISO G(228/1)

● Available feature

○ Available feature in DC only

- Not available

Pneutrol International Ltd are Platinum Distributors for ASCO Numatics

Contact us : 5 Caulside Drive, Antrim, Northern Ireland, BT41 2DU www.valves-direct.com Sales@pneutrol.com Tel: +44 (0) 28 9448 1800

PREFIX TABLE

prefix							description	power level			
1	2	3	4	5	6	7		LP	RP	MP	BP
E	F						Explosionproof - NEMA 7, 9 - Zinc plated steel conduit	-	-	-	●
E	V						Explosionproof - NEMA 7, 9 - 316 SS conduit	-	-	-	●
E	M						Waterproof IP67 - Metal enclosure (EN/IEC 60079-7+18, 61241-1)*	-	●	●	●
		E	T				Threaded conduit/hole (M20 x 1,5)	-	●	●	●
I	S						Intrinsically safe with SC coil (EN/IEC 60079-11+26, 61241-11)*	-	-	-	-
N	F						Flameproof - Aluminium (EN/IEC 60079-1, 60079-31)*	-	●	●	●
P	V						Encapsulated epoxy moulded (EN/IEC 60079-18, 61241-18)*	-	-	-	○
S	C						Solenoid with spade plug connector (EN/IEC 60730)	-	●	●	●
W	P						Waterproof IP67 - Metal enclosure	-	●	●	●
W	P				I	S	I.S. with Metal IP67 enclosure (EN/IEC 60079-11+26, 61241-11)*	-	-	-	-
W	S						Waterproof IP67 - 316 SS enclosure	-	●	●	●
W	S	E	M				Waterproof IP67 - 316 SS enclosure (EN/IEC 60079-7+18, 61241-1)*	-	●	●	●
W	S				I	S	I.S. with 316 SS IP67 enclosure (EN/IEC 60079-11+26, 61241-11)*	-	-	-	-
W	S	N	F				Flameproof - 316 SS (EN/IEC 60079-1, 60079-31)*	-	●	●	●
							Threaded conduit (1/2" NPT)	-	●	●	●
					H	C	Class H - Battery charging circuit	-	-	-	●
					H	T	Class H - High temperature	-	-	-	-
						X	Other special constructions	-	●	●	●

SUFFIX TABLE

suffix					description	power level			
1	2	3	4	5		LP	RP	MP	BP
E					EPDM (ethylene-propylene)	-	-	-	-
J					CR (chloroprene)	-	-	-	-
N					Oxygen service (CR (chloroprene))	-	-	-	-
N	V				FPM (fluoroelastomer) and parts cleaned for oxygen service	-	●	●	●
	C	O			Epoxy coating on all external surfaces	-	●	●	●
	M	B			Mounting bracket	-	-	-	-
			M	O	Push type manual operator	-	●	●	●
			M	S	Screw type manual operator ⁽¹⁾	-	●	●	●
			M	M	Metering device	-	-	-	-

● Available feature ○ Available feature in DC only - Not available

* ATEX solenoids are also approved according to EN 13463-1 (non electrical valves)

⁽¹⁾ Functional Safety certification is not applicable with this feature

PRODUCT SELECTION GUIDE

STEP 1

Select basic catalogue number, including pipe thread identification letter. Refer to the specifications table on page 1.

Example: 8327B021

STEP 2

Select prefix (combination). Refer to the specifications table on page 1 and the prefix table on page 2, respect the indicated power level.

Example: NF

STEP 3

Select suffix (combination) if required. Refer to the suffix table on page 2, respect the indicated power level.

Example: CO

STEP 4

Select voltage. Refer to standard voltages on page 3.

Example: 230V / 50/60 Hz

STEP 5

Final catalogue / ordering number.

Example:

NF 8327B021 CO 230V / 50/60 Hz

OPTIONS & ACCESSORIES

catalogue number	spare part kit no. ⁽²⁾	mounting bracket
	~ / =	
SC ❖327B021	C123670	■
SC ❖327B022	C123670	■
SC ❖327B031	C131237	■
SC ❖327B032	C131237	■
SC ❖327B071	C117644	■
SC ❖327B072	C117644	■
SC ❖327B081	C117645	■
SC ❖327B082	C117645	■
SC ❖327B121	C132251	■
SC ❖327B122	C132251	■
SC ❖327B131	C132253	■
SC ❖327B132	C132253	■
SC ❖327B171	C117646	■
SC ❖327B172	C117646	■
SC ❖327B181	C117647	■
SC ❖327B182	C117647	■
SC ❖327B221	C132251	■
SC ❖327B222	C132251	■
SC ❖327B231	C132253	■
SC ❖327B232	C132253	■
SC ❖327B271	C117648	■
SC ❖327B272	C117648	■
SC ❖327B281	C117649	■
SC ❖327B282	C117649	■

❖ Select 8 for NPT ANSI 1.20.3 or select G for ISO G(228/1)

⁽²⁾ Standard prefixes/suffixes are also applicable to kits

■ Mounting holes in body

ORDERING EXAMPLES VALVES:

SC	8	327B021	24V / DC
WSEMT	G	327B022	CO 24V / DC
NFET	G	327B021	230V / 50/60 Hz
WSEM	G	327B022	24V / DC
NF	8	327B231	CO 24V / DC
WS	G	327B021	CO 24V / DC
EM	8	327B221	230V / 50/60 Hz
PV	8	327B032	CO 24V / DC
EF	G	327H022	CO 240V / 50/60 Hz

prefix ⁽³⁾ pipe thread basic number ⁽³⁾ voltage suffix

ORDERING EXAMPLES KITS:

C131237 ⁽⁴⁾
PV C123670
NF C131237
WSEM C123670

prefix basic number suffix

⁽³⁾ Prefix EF and EV should always be used in conjunction with change letter H in the basic number

⁽⁴⁾ Basic kit number applies to SC coil construction

EXPLANATION OF TEMPERATURE RANGES OF SOLENOID VALVES

Valve temperature range	The valve temperature range (TS) is determined by the selected seal material, the temperature range for proper operation of the valve and sometimes by the fluid (e.g. steam)
Operator ambient temperature range	The operator ambient temperature range is determined by the selected power level and the safety code
Total temperature range	The temperature range of the complete solenoid valve is determined by the limitations of both temperature ranges above

ELECTRICAL CHARACTERISTICS

Coil insulation class	H
Electrical safety	IEC 335
Standard voltages	DC (=) 24V - 48V; Allowable voltage variation $\pm 10\%$ AC (~) 24V - 48V - 115V - 230V/50/60Hz; Other voltages are available on request

prefix option	power ratings				operator ambient temperature range	safety code	electrical enclosure protection (EN 60529)	replacement coil / kit		type ⁽²⁾
	inrush	holding		hot/cold				~	=	
	~	~	=							
	(VA)	(VA)	(W)	(W)	(C°) ⁽¹⁾			230V/50/60 Hz	24V/DC	
Basic power (BP)										
SC	10,0	10,0	10,0	9,0/11,2	-40 to +55	EN 60730	IP65, moulded	123664-017	400425-142	01
WP/WS	10,0	10,0	10,0	9,0/11,2	-40 to +55	EN 60730	IP67, steel /SS	400915-017	400913-142	03
NF/WSNF	10,0	10,0	10,0	9,0/11,2	-60 to +40/60	II2G Ex d IIC Gb T6/T5, II2D Ex t IIIC Db	IP67, alu./SS	400915-017	400913-142	05
EM/WSEM	10,0	10,0	10,0	9,0/11,2	-40 to +40	II2G Ex e mb II T3, II2D Ex tD A21	IP67, steel /SS	400915-017	400913-142	03
PV	-	-	-	9,0/11,2	-40 to +55	II2G Ex mb II T4, II2D Ex mD 21	IP67, moulded	-	- ⁽³⁾	06
EF/EV	12,0	12,0	12,0	9,3/11,6	-40 to +52/40	NEMA type 7 and 9	NEMA 4X	276002-058D	238714-006D	07
Medium Power (MP)										
SC	5,8	5,8	5,8	5,2/5,7	-40 to +90	EN 60730	IP65, moulded	400924-297	400923-442	02
WP/WS	5,8	5,8	5,8	5,2/5,7	-40 to +90	EN 60730	IP67, steel /SS	400921-297	400914-442	04
NF/WSNF	5,8	5,8	5,8	5,2/5,7	-60 to +60/75/90	II2G Ex d IIC Gb T6/T5/T4, II2D Ex t IIIC Db	IP67, alu./SS	400921-297	400914-442	05
EM/WSEM	5,8	5,8	5,8	5,2/5,7	-40 to +40/75/90	II2G Ex e mb II T5/T4/T3, II2D Ex tD A21	IP67, steel /SS	400921-297	400914-442	04
Reduced Power (RP) ⁽⁴⁾										
SC	3,7	3,7	3,7	3,2/3,6	-40 to +55	EN 60730	IP65, moulded	- ⁽⁴⁾	400923-042	02
WP/WS	3,7	3,7	3,7	3,2/3,6	-40 to +55	EN 60730	IP67, steel /SS	- ⁽⁴⁾	400914-242	04
NF/WSNF	3,7	3,7	3,7	3,2/3,6	-60 to +60	II2G Ex d IIC Gb T6, II2D Ex t IIIC Db	IP67, alu./SS	- ⁽⁴⁾	400914-242	05
EM/WSEM	3,7	3,7	3,7	3,2/3,6	-40 to +40/55	II2G Ex e mb II T6/T5, II2D Ex tD A21	IP67, steel /SS	- ⁽⁴⁾	400914-242	04

⁽¹⁾ Temperature range can be limited by sealings

⁽²⁾ Refer to the dimensional drawings on page 4 and 5

⁽³⁾ Multiple coil kits are available under ATEX/IECEx, contact us

⁽⁴⁾ AC (~) limited to 127V/50/60Hz or 125V/DC

- Not available

ELECTRICAL CONNECTIONS

prefix	connection
SC	Spade plug connector with cable gland EN175301-803A (ISO 4400) for cables with an outer diameter from 6 to 10 mm
WP, WS, EM, WSEM	M20 cable gland for cables with an outer diameter from 7 to 12 mm. With an internal and external facility for an earthing or bonding conductor
NF, WSNF	1/2" NPT threaded cable entry. Enclosures are supplied without cable gland
NFET, WSNFET	M20 x 1,5 threaded cable entry. Enclosures are supplied without cable gland

ADDITIONAL OPTIONS

- Ex mb/mD (prefix "PV") solenoid can be supplied with various cable lengths
- Compliance with "UL", "CSA" and other local approvals available on request
- Manual Reset constructions suitable for -40°C are available on request

INSTALLATION

- Multi language installation/maintenance instructions are included with each valve
- The solenoid valves can be mounted in any position without affecting operation
- The mounting holes are provided in the valve body
- Threaded pipe connection identifier is 8 = NPT (ANSI 1.20.3); G = G (ISO 228/1)
- Declarations of conformity are available on request
- Ex e mb Prefix "EM" execution: solenoid enclosure has a cable gland with integral strain relief for cables with an o.d. from 7 to 12 mm and is provided with an internal and external connection facility for an earthing or bonding conductor
- Ex d Prefix "NF/WSNF" enclosure is provided with a 1/2" NPT threaded entry hole, M20 x 1,5 (prefix "ET") is optional Both are supplied without cable gland
- All DC solenoids with metal enclosure are provided with switch-off peak voltage suppression diodes
- To comply with IEC 61508 (SIL) the valves must be provided with a specific exhaust protector (as shown on page 6) or equal

DIMENSIONS (mm), WEIGHT (kg)



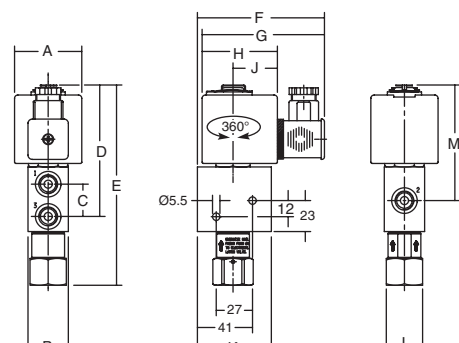
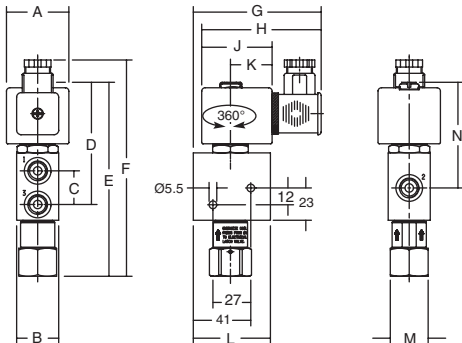
TYPE 01:
Epoxy moulded
SC: IEC 335 / ISO 4400

327B021 / B022 / B031 / B032



TYPE 02:
Epoxy moulded
SC: IEC 335 / ISO 4400

327B121 / B122 / B131 / B132 / B221 / B222 / B231 / B232



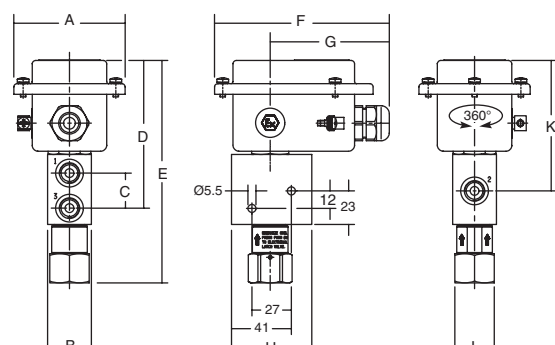
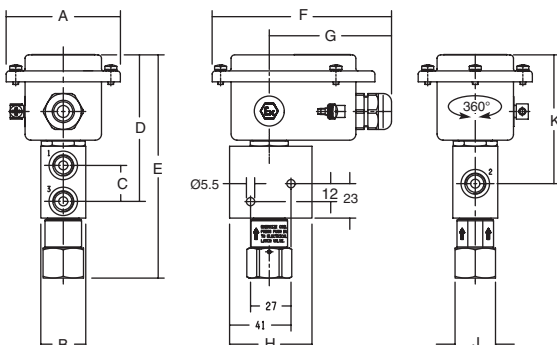
TYPE 03:
Metal, epoxy coated / AISI 316 SS
WP / WS: IEC 335
EM / WSEM: EN/IEC 60079-7+18, 61241-1

327B021 / B022 / B031 / B032



TYPE 04:
Metal, epoxy coated / AISI 316 SS
WP / WS: IEC 335
EM / WSEM: EN/IEC 60079-7+18, 61241-1

327B121 / B122 / B131 / B132 / B221 / B222 / B231 / B232



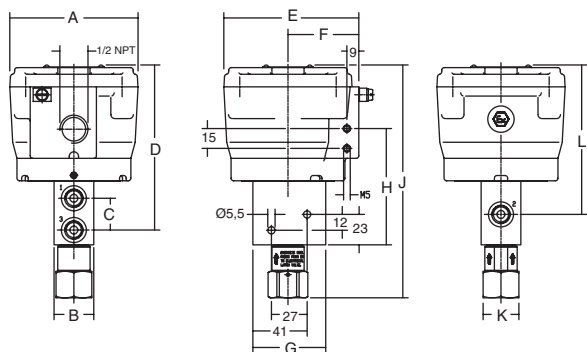
DIMENSIONS (mm), WEIGHT (kg)



TYPE 05:

Aluminium, epoxy coated / AISI 316 SS
NF/WSNF: EN/IEC 60079-1, 60079-31

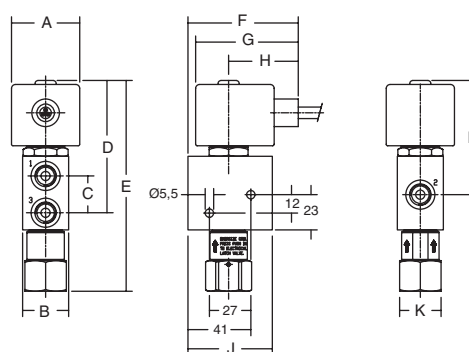
327B021 / B022 / B031 / B032 / B121 / B122 /
327B131 / B132 / B221 / B222 / B231 / B232



TYPE 06:

Epoxy encapsulated
PV: EN/IEC 60079-18, 61241-18

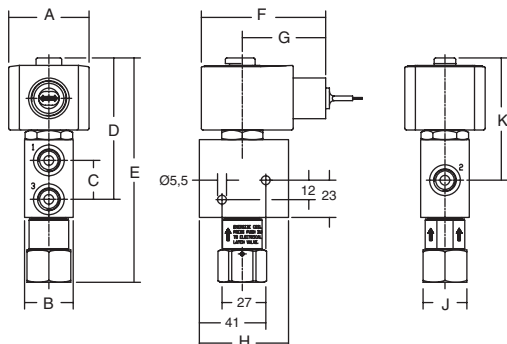
327B001 / B002 / B011 / B012



TYPE 07:

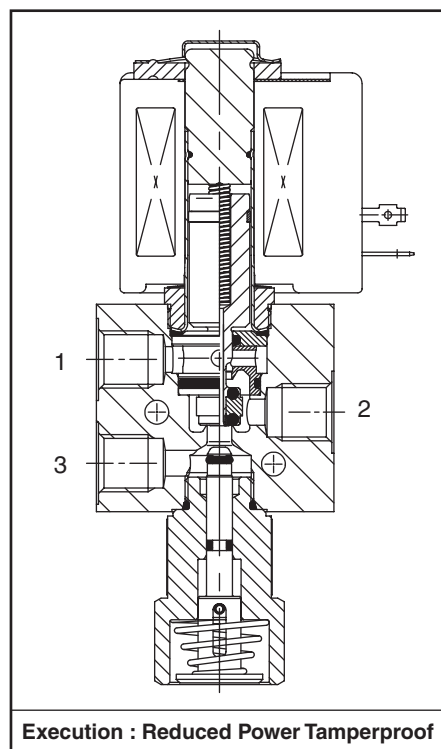
Epoxy encapsulated
EF and EV: NEMA type 7, 9 / ICS-6 ANSI

327H021 / H022 / H031 / H032

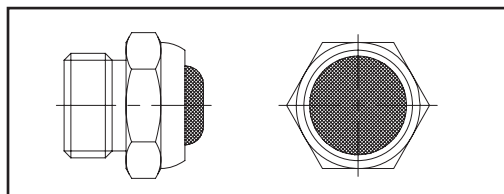


type	prefix/option	power level	A	B	C	D	E	F	G	H	J	K	L	M	N	weight
01	SC	BP	45	30	24	79	138	155	91	85	50	30	55	27	67	1,20 kg
02	SC	MP/RP	50	30	24	98	149	95	91	56	33	55	27	86	-	1,30 kg
03	WP, WS, EM, WSEM	BP	77	30	24	98	155	120	81	55	27	86	-	-	-	1,20 kg
04	WP, WS, EM, WSEM	MP/RP	77	30	24	101	158	120	81	55	27	89	-	-	-	1,30 kg
05	NF, WSNF	BP/MP/RP	97	30	24	125	102	54	55	88	176	27	113	-	-	2,70 kg
06	PV	BP	45	30	24	86	137	72	67	45	55	27	74	-	-	1,20 kg
07	EF, EV	BP	50	30	24	87	138	77	51	55	27	75	-	-	-	1,20 kg

SECTIONAL DRAWING



EXHAUST PROTECTOR



EXHAUST PROTECTOR ORDER NUMBERS

1/4	ISO 228/1	brass/nickel	B-MV110014
	NPT		B-PV110014
	ISO 228/1	stainless steel	B-VX110014
	NPT		B-PV110014 Inox