

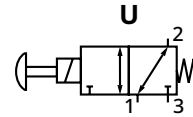
ASCO™ Solenoid Valves

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

3/2
SERIES
327

Features

- The valves are certified according to IEC 61508 Functional Safety data and have SIL-3 capability (Exida certification)
- 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
- The solenoid valves are recommended for pilot applications with basic flow, wide pressure ranges and no minimum operating pressure
- PTFE rider rings and graphite-filled PTFE seals reduce friction and eliminate sticking
- 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 EU directives

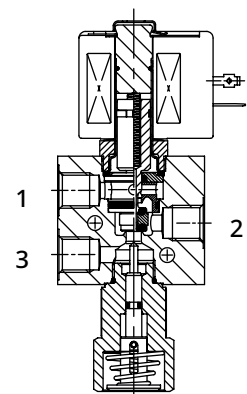


General

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

Fluids (*)	Temperature range (TS) ⁽¹⁾	Seal materials (*)
air, inert gas, water, oil	-20 to +120°C -50 to +60°C	FPM (fluoroelastomer) (F)VMQ ((fluor)silicone)

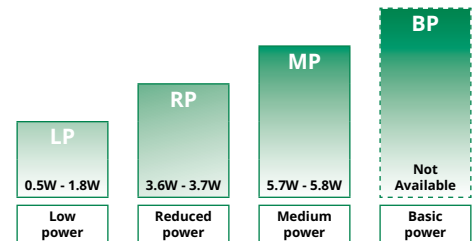
⁽¹⁾ Can be limited by the operator ambient temperature range for explosion proof solenoids



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 316L SS
Stem	Stainless steel	Stainless steel
Core tube	Stainless steel	Stainless steel
Core and plugnut	Stainless steel	Stainless steel
Springs	Stainless steel	Stainless steel
Sealings & poppets	FPM or (F)VMQ	FPM or (F)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				IP65	brass ⁽²⁾	stainless steel					
✧	(mm)	(m ³ /h)/(l/min)	Air/Water (*)	~/=	~/=		EF	NF	WSCR	NFIS				WSCRIS	EM	WSCREM	PV	SC
U - Universal, FPM sealings and poppets, manual reset																		
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
1/4"	5.7	0.55	9.2	0	10	LP	-	●	●	○	○	-	●	-	-	-	✧ 327B321	✧ 327B322
U - Universal, (F)VMQ sealings and poppets, manual reset																		
1/4"	5.7	0.55	9.2	0	10	RP	-	●	-	-	-	●	-	-	●	●	✧ 327B171	✧ 327B172
1/4"	5.7	0.55	9.2	0	10	LP	-	●	●	○	○	-	●	-	-	-	✧ 327B371	✧ 327B372
U - Universal, FPM sealings and poppets, manual reset tamperproof																		
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
1/4"	5.7	0.55	9.2	0	10	LP	-	●	●	○	○	-	●	-	-	-	✧ 327B331	✧ 327B332
U - Universal, (F)VMQ sealings and poppets, manual reset tamperproof																		
1/4"	5.7	0.55	9.2	0	10	RP	-	●	-	-	-	●	-	-	●	●	✧ 327B181	✧ 327B182
1/4"	5.7	0.55	9.2	0	10	LP	-	●	●	○	○	-	●	-	-	-	✧ 327B381	✧ 327B382

✧ 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

⁽²⁾ Not in combination with WSCR solenoids

Prefix table

Prefix							Description	Power level			
1	2	3	4	5	6	7		LP	RP	MP	BP
E	M						Waterproof IP66/67 - Metal enclosure (EN/IEC 60079-7,-18 and -31)*	-	●	●	-
		E	T				Threaded conduit/hole (M20 x 1,5)	-	●	●	-
N	F						Flameproof - Aluminium (EN/IEC 60079-1, 60079-31)*	-	●	●	-
N	F			I	S		I.S. with Aluminium IP66/IP67 enclosure (EN/IEC 60079-11+31)*	○	-	-	-
S	C						Solenoid with spade plug connector (EN/IEC 60730)	-	●	●	-
W	P						Waterproof IP67 - Metal enclosure	-	●	●	-
W	S						Waterproof IP67 - 316 SS enclosure	-	●	●	-
W	S	C	R				Flameproof 316L SS (EN/IEC 60079-0+1+31)*	●	-	-	-
W	S	C	R	E	M		Increased Safety / Encapsulated 316L SS (EN/IEC 60079-0+7+18+31)*	●	-	-	-
W	S	E	M				Waterproof IP66/67 - 316 SS enclosure (EN/IEC 60079-7,-18 and -31)*	-	●	●	-
W	S	C	R	I	S		Intrinsically Safe 316L SS (EN/IEC 60079-0+11+31)*	○	-	-	-
W	S	N	F				Flameproof 316L SS (EN/IEC 60079-1, 60079-31)*	-	●	●	-
W	S	N	F	I	S		I.S. with 316L SS IP66/IP67 enclosure (EN/IEC 60079-11+31)*	○	-	-	-
			T				Threaded conduit (1/2" NPT)	-	●	●	-
						X	Other special constructions	-	●	●	-

Product selection guide

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

Example: 8327B221

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 8327B221 CO 230V / 50/60 Hz

Suffix table

Suffix					Description	Power level			
1	2	3	4	5		LP	RP	MP	BP
N	V				FPM (fluoroelastomer) and parts cleaned for oxygen service	-	●	●	-
	C	O			Epoxy coating on all external surfaces	-	●	●	-

- Available feature
- Available feature in DC only
- Not available
- * ATEX/IECEx valves using these solenoids are approved according to EN 13463-1 (non electrical)

Options & Accessories

Catalogue number	Spare part kit no. ⁽¹⁾	Mounting bracket
	~ / =	
SC ❖327B121	C132255	■
SC ❖327B122	C132255	■
SC ❖327B131	C132257	■
SC ❖327B132	C132257	■
SC ❖327B171	C117646	■
SC ❖327B172	C117646	■
SC ❖327B181	C117647	■
SC ❖327B182	C117647	■
SC ❖327B221	C132255	■
SC ❖327B222	C132255	■
SC ❖327B231	C132257	■
SC ❖327B232	C132257	■

- ❖ Select 8 for NPT ANSI 1.20.3 or select G for ISO G(228/1)
- ⁽¹⁾ Standard prefixes/suffixes are also applicable to kits
- Mounting holes in body

Ordering Examples Valves:

SC	8	327B121	24V / DC
WSEMT	G	327B122	CO 24V / DC
NFET	G	327B221	230V / 50/60 Hz
WSEM	G	327B122	24V / DC
NF	8	327B231	CO 24V / DC
WS	G	327B121	CO 24V / DC
EM	8	327B221	230V / 50/60 Hz

prefix
pipe thread
basic number

voltage
suffix

Ordering Examples Kits:

	C132255 ⁽²⁾
	NF C117646
WSEM	C132255

prefix
basic number

⁽²⁾ 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 ⁽¹⁾ / F ⁽²⁾
Electrical safety	IEC 60335-1
Standard voltages	DC (=) 24V - 48V; Allowable voltage variation ± 10% AC (-) 24V - 48V - 115V - 230V/50/60Hz; Other voltages are available on request

Prefix option	Power ratings				Operator ambient temperature range (C°) ⁽³⁾	Safety code	Electrical enclosure protection (EN 60529)	Replacement coil / Kit		Type (4)
	Inrush	Holding	Hot/Cold					~	=	
	(VA)	(VA)	(W)	(W)				230V/50/60 Hz	24V/DC	
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	01
WP/WS	5.8	5.8	5.8	5.2/5.7	-40 to +90	EN 60730	IP67, steel /SS	400921-297	400914-442	02
NF/WSNF	5.8	5.8	5.8	5.2/5.7	-60 to +60/75/90	II2G Ex db IIC Gb T6/T5/T4, II2D Ex tb IIIC Db	IP66/67, alu./SS	400921-297	400914-442	03
EM/WSEM	5.8	5.8	5.8	5.2/5.7	-40 to +40/75	II2G Ex eb mb IIC Gb T5/T4, II2D Ex tb IIIC Db	IP66/67, steel /SS	400921-297	400914-442	02
Reduced Power (RP)⁽⁵⁾										
SC	3.7	3.7	3.7	3.2/3.6	-40 to +60	EN 60730	IP65, moulded	- ⁽⁵⁾	400923-042	01
WP/WS	3.7	3.7	3.7	3.2/3.6	-40 to +60	EN 60730	IP67, steel /SS	- ⁽⁵⁾	400914-242	02
NF/WSNF	3.7	3.7	3.7	3.2/3.6	-60 to +60	II2G Ex db IIC Gb T6, II2D Ex tb IIIC Db	IP66/67, alu./SS	- ⁽⁵⁾	400914-242	03
EM/WSEM	3.7	3.7	3.7	3.2/3.6	-40 to +40/60	II2G Ex eb mb IIC Gb T6/T5, II2D Ex tb IIIC Db	IP66/67, steel /SS	- ⁽⁵⁾	400914-242	02
Low Power (LP)⁽⁵⁾										
WSCR	1.85	1.85	1.85	1.5/1.8	-60 to +60/75/90	II2G Ex db IIC Gb T6/T5/T4, II2D Ex t IIIC Db	IP66/67, SS	- ⁽⁵⁾	400961-542	04
WSCREM	1.85	1.85	1.85	1.5/1.8	-60 to +60/75/90	II2G Ex eb mb IIC Gb T6/T5/T4, II2D Ex tb IIIC Db	IP66/67, SS	- ⁽⁵⁾	400961-542	04
NFIS	0.5	0.5	0.5	0.5	-40 to +60	II2G Ex ia IIC T6 Gb, II2D Ex tb IIIC Db	IP66/67, alu./SS	-	429013-001	02
WSCRIS	0.5	0.5	0.5	0.5	-40 to +60	II2G Ex ia IIC T6 Gb, II2D Ex tb IIIC Db	IP66/67, SS	-	429013-001	04
WSNFIS	0.5	0.5	0.5	0.5	-40 to +60	II2G Ex ia IIC T6 Gb, II2D Ex tb IIIC Db	IP66/67, alu./SS	-	429013-001	04

⁽¹⁾ Coils used in metal enclosures have class H insulation materials ⁽²⁾ Encapsulated (open) coils have class F insulation standard ⁽³⁾ Temperature range can be limited by sealings - Not available

⁽⁴⁾ Refer to the dimensional drawings on page 4

⁽⁵⁾ AC limited to 127V/50/60Hz or 125V/DC

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 plastics 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, WSCR	1/2" NPT threaded cable entry. Enclosures are supplied without cable gland
WSCREM	M20 x 1.5 316 SS cable gland for cables with an outer diameter from 7.2 to 11.7 mm.
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
- Class H insulation for encapsulated coils
- Material certification like EN 10204 3.1 on the 316L Stainless Steel bodies 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 eb 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 housing is provided with an internal and external connection facility for an earthing or bonding conductor
- Ex db 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 5) or equal

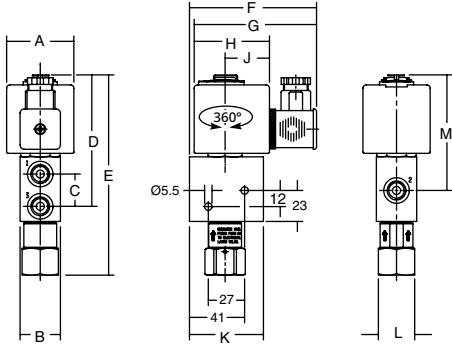
3/2 SERIES 327

Dimensions (mm), Weight (kg)



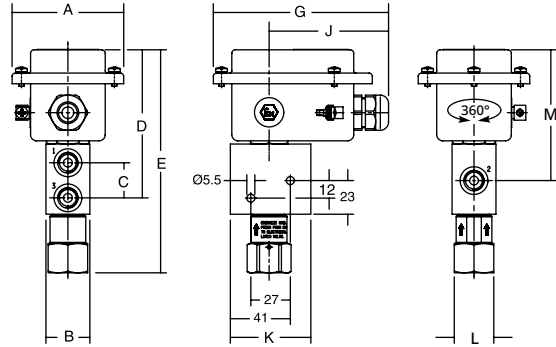
TYPE 01:
Epoxy moulded
SC: IEC 60335-1 / ISO 4400

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



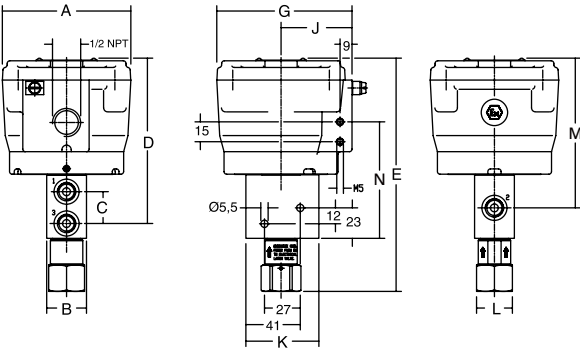
TYPE 02:
Metal, epoxy coated / AISI 316 SS
WP / WS: IEC 60335-1
EM / WSEM: EN/IEC 60079-7+18+31

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



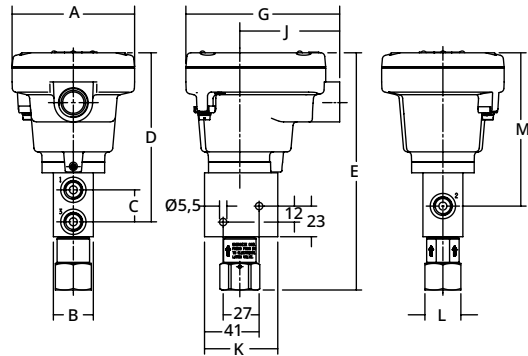
TYPE 03:
Aluminium, epoxy coated / AISI 316L SS
NF / WSNF: EN/IEC 60079-1, 60079-31
NFIS / WSNFIS: EN/IEC 60079-11, 60079-31

B121 / B122 / 327B131 / B132 / B221 / B222 / B231 / B232
B321, B371, B331, B381



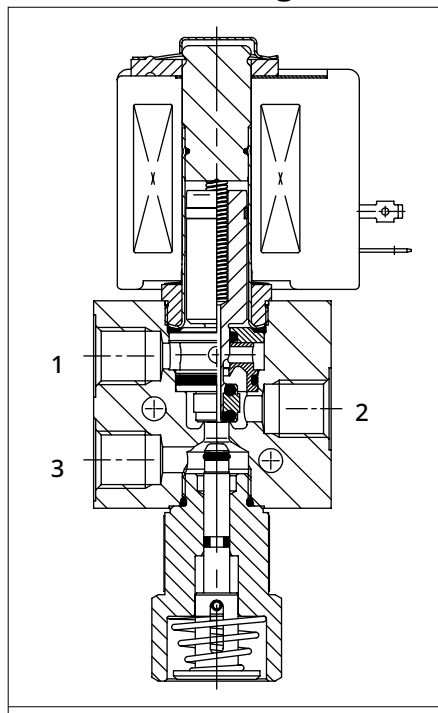
TYPE 04:
AISI 316L SS
WSCR : EN/IEC 60079-0, 60079-1, 60079-31
WSCREM : EN/IEC 60079-0, 60079-7, 60079-18,
EN/IEC 60079-31
WSCRIS : EN/IEC 60079-0, 60079-11, 60079-3

327B322 / B332 / B372 / B382



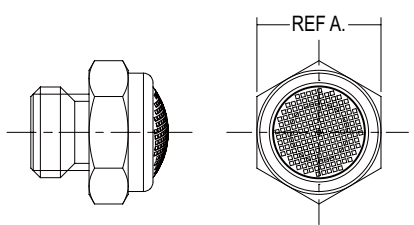
Type	Prefix/Option	Power level	A	B	C	D	E	F	G	H	J	K	L	M	N	Weight
01	SC	MP/RP	50	30	24	98	149	95	91	56	33	55	27	86	-	1.30 kg
02	WP, WS, EM, WSEM	MP/RP	77	30	24	101	158	-	120	-	81	55	27	89	-	1.30 kg
03	NF, NFIS	MP/RP/LP	97	30	24	125	176	-	102	-	54	55	27	113	88	2.70 kg
	WSNF/WSNFIS	MP/RP/LP	97	30	24	125	176	-	102	-	54	55	27	113	88	3.90 kg
04	WSCR, WSCREM, WSCRIS	LP	92	30	24	127	178	-	116	-	75	55	27	115	-	3.10 kg

Sectional drawings



Execution: Reduced Power Tamperproof

Exhaust protector

Pipe size	Thread	Part number		Mesh\Filtering	Wrench size (REF A.)	
		Brass nickel plated	316L stainless steel			
1/4"	ISO 228/1	131875-001	131875-014	100 - 200 µm	16 mm	
	NPT	131875-002	131875-015			