

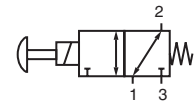


# SOLENOID VALVES

no voltage release (tamperproof)  
manual reset construction

1/4

U



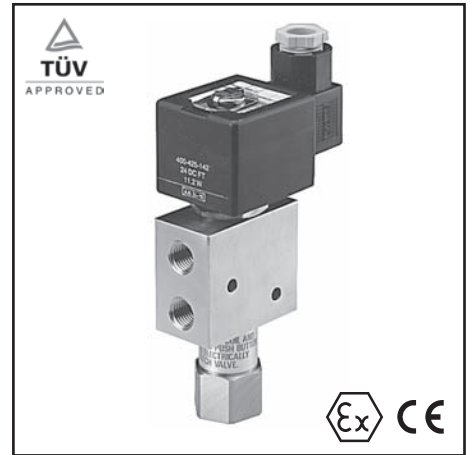
3/2

Series

327

## FEATURES

- The valves have TÜV certified IEC 61508 Functional Safety data and can be used up to SIL-4
- 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 EC Directives



## GENERAL

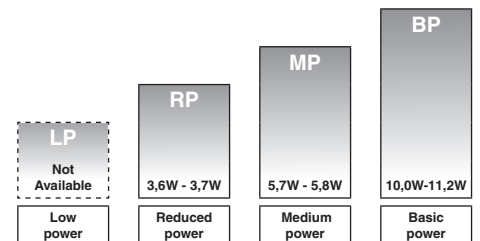
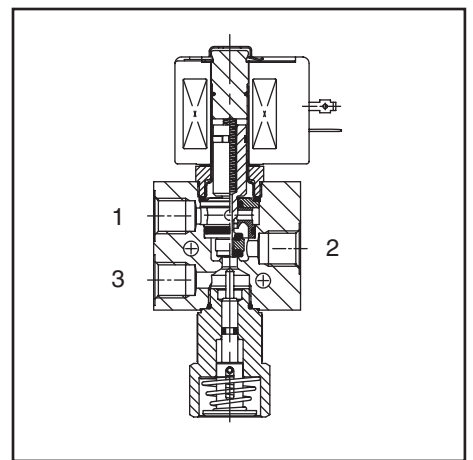
Differential pressure 0 - 10 bar [1 bar = 100kPa]  
Maximum viscosity 65cST (mm<sup>2</sup>/s)  
Response times 75 - 100 ms

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 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 VMQ / NBR	FPM or VMQ / NBR
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		
		port		min.	max. (PS)		NEMA 7&9	ATEX/CENELEC				IP65	brass	stainless st.
		2→1 / 3→2	2→1 / 3→2					EEExd	EEExem	Exmb	EEExn			
❖	(mm)	(m <sup>3</sup> /h)	(l/m)		air/water (*)	~/=	EF <sup>(1)</sup>	NF	EM	PV	ZN	SC		
<b>U - Universal, NBR or FPM sealings and poppets, manual reset</b>														
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
<b>U - Universal, VMQ sealings and poppets, manual reset</b>														
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
<b>U - Universal, NBR or FPM sealings and poppets, manual reset tamperproof</b>														
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
<b>U - Universal, VMQ sealings and poppets, manual reset tamperproof</b>														
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    ● Available feature    - Not available    ○ Available feature in DC only  
Select G for ISO G(228/1)    (1) Prefix EF and EV should always be used in conjunction with change letter H in the basic number

### PREFIX TABLE

prefix							description	power level			
1	2	3	4	5	6	7		LP	RP	MP	BP
S	C			D	U		Dustproof ATEX (EN 50281-1-1)*	-	●	●	●
E	F						Explosionproof - NEMA 3, 4, 6, 7, 9	-	-	-	●
E	V						Explosionproof - NEMA 3, 4, 6, 7, 9 - 316 SS	-	-	-	●
E	M						Encapsulated ATEX + IECEx (EN/IEC 60079 / 61241)*	-	●	●	●
		E	T				Threaded conduit/hole (M20 x 1.5)	-	●	●	●
I	S		S	C			Intrinsically safe with SC coil ATEX (EN 50020)*	-	-	-	-
N	F						Flameproof - Aluminium ATEX (EN 50018)*	-	●	●	●
P	V						Encapsulated ATEX + IECEx (EN/IEC 60079 / 61241)*	-	-	-	○
S	C						Solenoid with spade plug connector (EN 60730)	-	●	●	●
W	P						Waterproof IP67 - Metal enclosure (EN 60730)	-	●	●	●
W	P			D	U		Dustproof ATEX (EN 50281-1-1) - Metal enclosure*	-	●	●	●
W	P			I	S		I.S. with Metal IP67 enclosure ATEX (EN 50020)*	-	-	-	-
W	P			Z	N		Non Sparking metal enclosure ATEX (EN 50021)*	-	●	●	●
W	S						Waterproof IP67 - 316 SS enclosure	-	●	●	●
W	S			D	U		Dustproof ATEX (EN 50281-1-1) - 316 SS enclosure*	-	●	●	●
W	S	E	M				316 SS "EM" encl. ATEX + IECEx (EN/IEC 60079/61241)*	-	●	●	●
W	S			I	S		I.S. with 316 SS IP67 enclosure ATEX (EN 50020)*	-	-	-	-
W	S	N	F				Flameproof - 316 SS ATEX (EN 50018)*	-	●	●	●
W	S	Z	N				Non Sparking 316 SS enclosure ATEX (EN 50021)*	-	●	●	●
							Threaded conduit (1/2" NPT)	-	●	●	●
				H	C		Class H - Battery charging circuit	-	-	-	●
				H	T		Class H - High temperature	-	-	-	-
Z	N						Encapsulated Non Sparking ATEX (EN 50021)*	-	-	-	○
						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: 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**

### 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) parts cleaned for oxygen service	-	●	●	●
	C	O			Epoxy coating on all external surfaces	-	●	●	●
	M	B			Mounting bracket	-	-	-	-
			M	O	Manual operator	-	●	●	●
			M	S	Screw type manual operator <sup>(1)</sup>	-	●	●	●
				M	Metering device	-	-	-	-

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

\* ATEX solenoids are also approved according to EN/IEC 61241 (Dust) and EN 13463-1 (non electrical valves)

<sup>(1)</sup> Functional Safety certification is not applicable with this feature

### OPTIONS & ACCESSORIES

catalogue number	spare part kit no. <sup>(2)</sup>	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)

<sup>(2)</sup> 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 327H122 CO	240V / 50/60 Hz

prefix <sup>(3)</sup>      pipe thread      basic number <sup>(3)</sup>      voltage      suffix

### ORDERING EXAMPLES KITS:

C131237 <sup>(4)</sup>
PV C123670
NF C131237
WSEM C123670

prefix      suffix  
basic number

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

<sup>(4)</sup> Basic kit number applies to SC coil construction

## ELECTRICAL CHARACTERISTICS

Coil insulation class H  
 Connector Spade plug  
 Connector specification ISO 4400 (cable Ø 6-10 mm)  
 Electrical safety IEC 335

Standard voltages: DC (=) 24V - 48V  
 AC (~) 24V - 48V - 115V - 230V/50/60Hz; Other voltages are available on request

prefix option	power ratings				operator ambient temperature range (TS) (°C) <sup>(1)</sup>	safety code	electrical enclosure protection (EN 60529)	replacement coil / kit		type <sup>(2)</sup>
	inrush	holding		hot/cold				~	=	
	(VA)	(VA)	(W)	(W)				230V/50/60 Hz	24V/DC	
<b>Basic Power (BP)</b>										
SC	10,0	10,0	10,0	9,0/11,2	-40 to +55	EN 60730	moulded IP65	123664-017	400425-142	01
WP/WS	10,0	10,0	10,0	9,0/11,2	-40 to +55	EN 60730	steel/SS IP67	400915-017	400913-142	03
(WS)NF	10,0	10,0	10,0	9,0/11,2	-60 to +40/60	II 2 G/D EEx d IIC T6/T5	alu/SS IP67	400915-017	400913-142	05
EM/WSEM	10,0	10,0	10,0	9,0/11,2	-40 to +40	II 2 G/D EEx em II T3	steel/SS IP67	400915-017	400913-142	03
PV	-	-	-	9,0/11,2	-40 to +65	II 2 G/D Ex mb II T4 / Ex mD	moulded IP67	-	- <sup>(4)</sup>	06
EF/EV	10,0	10,0	10,0	9,0/11,2	-40 to +55	NEMA type 7 and 9	mould. NEMA 4X	-	238714-006D	07
ZN	-	-	-	9,0/11,2	-20 to +50	II 3 G/D EEx nA II T3	moulded IP65	-	- <sup>(4)</sup>	01
WP(WS)ZN	-	-	-	9,0/11,2	-40 to +60/75	II 3 G/D EEx nA II T4/T3	steel/SS IP67	400915-017	400913-142	03
<b>Medium Power (MP)</b>										
SC	5,8	5,8	5,8	5,2/5,7	-40 to +90	EN 60730	moulded IP65	400924-297	400923-442	02
WP/WS	5,8	5,8	5,8	5,2/5,7	-40 to +90	EN 60730	steel/SS IP67	400921-297	400914-442	04
(WS)NF	5,8	5,8	5,8	5,2/5,7	-60 to +60/75/90	II 2 G/D EEx d IIC T6/T5/T4	alu/SS IP67	400921-297	400914-442	05
EM/WSEM	5,8	5,8	5,8	5,2/5,7	-40 to +40/75/90	II 2 G/D EEx em II T5/T4/T3	steel/SS IP67	400921-297	400914-442	04
WP(WS)ZN	5,8	5,8	5,8	5,2/5,7	-40 to +40/60/90	II 3 G/D EEx nA II T6/T5/T4	steel/SS IP67	400921-297	400914-442	04
<b>Reduced Power (RP)<sup>(3)</sup></b>										
SC	3,7	3,7	3,7	3,2/3,6	-40 to +55	EN 60730	moulded IP65	400924-098 <sup>(3)</sup>	400923-042	02
WP/WS	3,7	3,7	3,7	3,2/3,6	-40 to +55	EN 60730	steel/SS IP67	400921-098 <sup>(3)</sup>	400914-242	04
(WS)NF	3,7	3,7	3,7	3,2/3,6	-60 to +60	II 2 G/D EEx d IIC T6	alu/SS IP67	400921-098 <sup>(3)</sup>	400914-242	05
EM/WSEM	3,7	3,7	3,7	3,2/3,6	-40 to +40/55	II 2 G/D EEx em II T6/T5	steel/SS IP67	400921-098 <sup>(3)</sup>	400914-242	04
WP(WS)ZN	3,7	3,7	3,7	-	-40 to +40/55	II 3 G/D EEx nA II T6/T5	steel/SS IP67	400921-098 <sup>(3)</sup>	-	04
WP(WS)ZN	-	-	-	3,2/3,6	-40 to +40/55	II 3 G/D EEx nA II T6/T5	steel/SS IP67	-	400914-242	04

<sup>(1)</sup> Temperature range can be limited by sealings

<sup>(3)</sup> AC (~) limited to 120V/50/60Hz

- Not available

<sup>(2)</sup> Refer to the dimensional drawings on page 4 and 5

<sup>(4)</sup> Multiple coil kits are available under ATEX, contact us

## 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

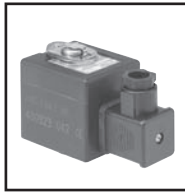
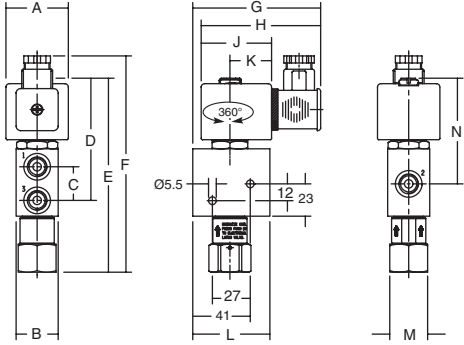
- Multi language installation/maintenance instructions are included with each valve
- The solenoid valves can be mounted in any position without affecting operation
- The mounting holes are provided in the valve body
- Threaded pipe connection identifier is 8 = NPT (ANSI 1.20.3); G = G (ISO 228/1)
- Declarations of conformity are available on request
- EEx em (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
- EEx d (prefix "(WS)NF") 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

### DIMENSIONS (mm), WEIGHT (kg)



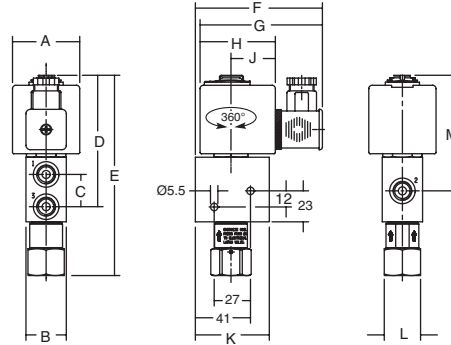
**TYPE 01:**  
Prefix "SC" and "ZN" Solenoid  
Basic power  
Epoxy moulded  
IEC 335 / ISO 4400 (SC)  
EN 50021 (ZN)  
IP65 / II 3 G/D EEx nA II

327B021 / B022 / B031 / B032



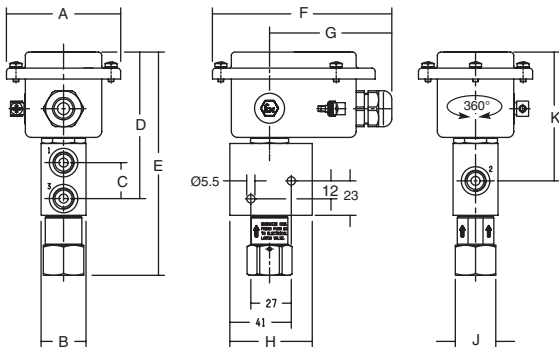
**TYPE 02:**  
Prefix "SC" Solenoid  
Reduced and medium power  
Epoxy moulded  
IEC 335 / ISO 4400  
IP65

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



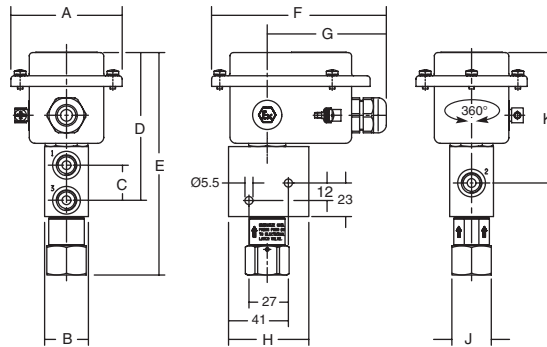
**TYPE 03:**  
Prefix "WP", "WS", "(WS)EM" and "WP(WS)ZN" Solenoid  
Basic power  
Steel; epoxy coated (EM, WP and WPZN)  
AISI 316 SS (WS, WSEM and WSZN)  
IEC 335 / EN 50019, EN 50028 and 50281-1-1  
IP67 / II 2 G/D EEx em II / II 3 G/D EEx nA II

327B021 / B022 / B031 / B032



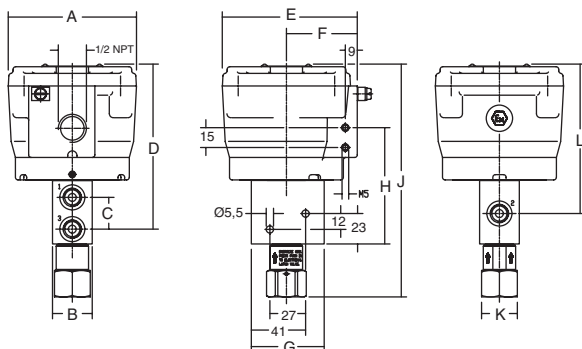
**TYPE 04:**  
Prefix "WP", "WS", "(WS)EM" and "WP(WS)ZN" Solenoid  
Medium and reduced power  
Steel; epoxy coated (EM, WP and WPZN)  
AISI 316 SS (WS, WSEM and WSZN)  
IEC 335 / EN 50019, EN 50028 and 50281-1-1  
IP67 / II 2 G/D EEx em II / II 3 G/D EEx nA II

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



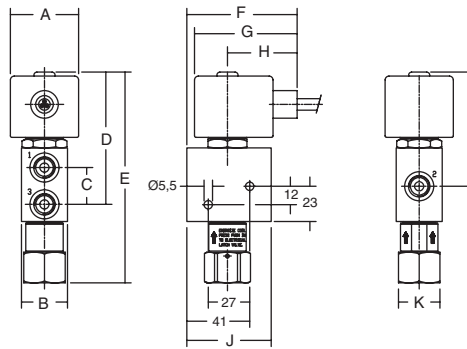
**TYPE 05:**  
Prefix "NF" and "WSNF" Solenoid  
Basic, medium and reduced  
Aluminium; epoxy coated (NF)  
AISI 316 SS (WSNF)  
EN 50018 and EN 50281-1-1  
IP67 / II 2 G/D EEx d IIC

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



**TYPE 06:**  
Prefix "PV" Solenoid  
Basic power  
Epoxy encapsulated  
EN 50028 and EN 50281-1-1  
II 2 G/D Ex mb II / Ex mD  
IP67

327B001 / B002 / B011 / B012

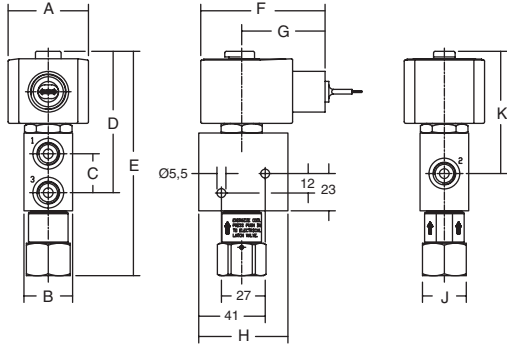


### DIMENSIONS (mm), WEIGHT (kg)



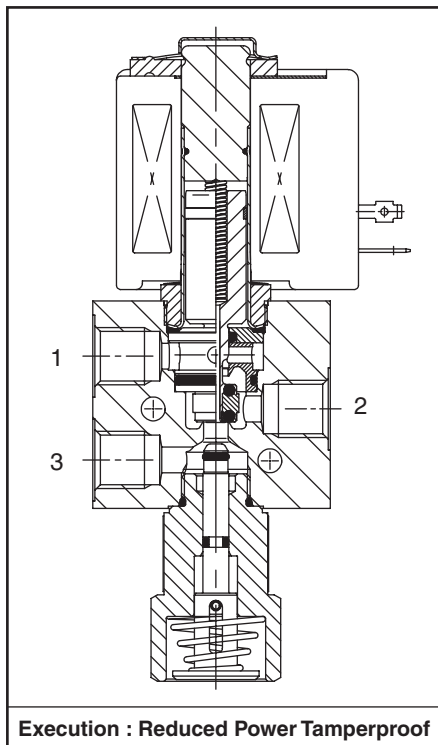
**TYPE 07:**  
 Prefix "EF" and "EV" Solenoid  
 Basic power  
 Epoxy encapsulated  
 ICS-6 ANSI / NEMA  
 Type 7 and 9  
 NOTE: applicable to solenoid only

#### 327H021 / H022 / H031 / H032

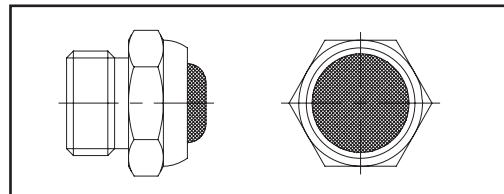


type	prefix/option	power level	A	B	C	D	E	F	G	H	J	K	L	M	N	weight
01	SC, ZN	BP	45	30	24	79	138	155	91	85	50	30	55	27	67	1,20 kg
02	SC	MP/RP	50	30	24	98	149	95	91	56	33	55	27	86	-	1,30 kg
03	WP, WS, (WS)EM, WP(WS)ZN	BP	77	30	24	98	155	120	81	55	27	86	-	-	-	1,20 kg
04	WP, WS, (WS)EM, WP(WS)ZN	MP/RP	77	30	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 22/1	stainless steel	B-VX110014
	NPT		B-PV110014 Inox