

## FEATURES

- The valves are certified according to IEC 61508 Functional Safety data and have SIL-3 capability (Exida approval)
- 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
- Dedicated execution for low power
- Dedicated execution for extreme low ambient temperatures
- Peak voltage suppression diodes are standard in DC solenoids with metal enclosures
- The solenoid valves satisfy all relevant EC Directives
- Manual Operators are optional including an under pressure removable type



## GENERAL

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

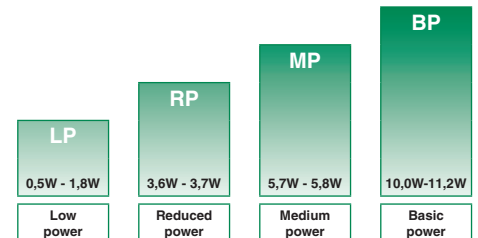
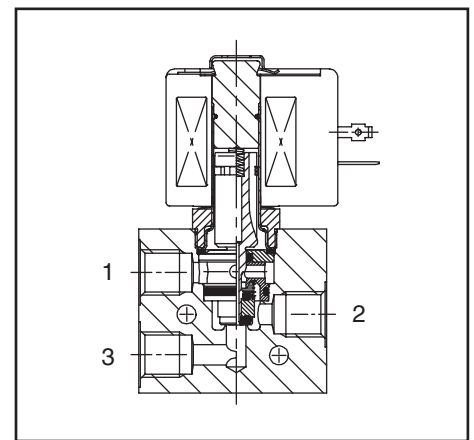
fluids <sup>(*)</sup> (*)	temperature range (TS)	seal materials (*)
air, inert gas, water, oil	-20 to +120°C -40 to +40°C -50 to +60°C	FPM (fluoroelastomer) VMQ (silicone) (F)VMQ ((fluoro)silicone)

<sup>(\*)</sup> Air / inert gas only for Ex i version (NFIS and WSNFIS)

## MATERIALS IN CONTACT WITH FLUID

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

	Brass body	Stainless steel body
<b>Body</b>	Brass	AISI 316L SS
<b>Stem</b>	Stainless steel	Stainless steel
<b>Core tube</b>	Stainless steel	Stainless steel
<b>Core and plugnut</b>	Stainless steel	Stainless steel
<b>Springs</b>	Stainless steel	Stainless steel
<b>Sealings &amp; poppets</b>	FPM, VMQ or (F)VMQ	FPM, VMQ or (F)VMQ
<b>Rider ring</b>	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	
										air/water (*)	Ex d				Ex i
❖	(mm)	(m <sup>3</sup> /h)	(l/m)		~/=	~/=	EF	NF	NFIS	EM	PV	SC	brass	stainless steel	
<b>U - Universal, FPM sealings and poppets</b>															
1/4	5,7	0,45	7,5	0	10	BP	●	●	-	●	○	●	❖ 327B001	❖ 327B002	
1/4	5,7	0,45	7,5	0	10	MP	-	●	-	●	-	●	❖ 327B201	❖ 327B202	
1/4	5,7	0,45	7,5	0	10	RP	-	●	-	●	-	●	❖ 327B101	❖ 327B102	
1/4	5,7	0,45	7,5	0	10	LP	-	●	-	-	-	-	❖ 327B301	❖ 327B302	
<b>U - Universal, VMQ sealings and poppets</b>															
1/4	5,7	0,45	7,5	0	10	BP	●	●	-	●	○	●	❖ 327B011	❖ 327B012	
<b>U - Universal, (F)VMQ sealings and poppets</b>															
1/4	5,7	0,45	7,5	0	10	MP	-	●	-	●	-	●	❖ 327B211	❖ 327B212	
1/4	5,7	0,45	7,5	0	10	RP	-	●	-	●	-	●	❖ 327B111	❖ 327B112	
1/4	5,7	0,45	7,5	0	10 <sup>(1)</sup>	LP	-	●	○	-	-	-	❖ 327B311	❖ 327B312	

❖ 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

<sup>(1)</sup> Air / inert gas only for Ex i version (NFIS and WSNFIS)

## 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)	-	●	●	●
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	-	●	●	●
N	F			I	S		I.S. with Aluminium IP66/IP67 enclosure (EN/IEC 60079-11+31)*	○	-	-	-
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	N	F	I	S		I.S. with 316L SS IP66/IP67 enclosure (EN/IEC 60079-11+31)*	○	-	-	-
W	S	N	F				Flameproof - 316L SS (EN/IEC 60079-1, 60079-31)*	●	●	●	●
						T	Threaded conduit (1/2" NPT)	●	●	●	●
					H	C	Class H - Battery charging circuit	-	-	-	●
						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	●	●	●	●
V					FPM (fluoroelastomer)	●	●	-	-
	C	O			Epoxy coating on all external surfaces	●	●	●	●
	M	B			Mounting bracket	-	-	-	-
			M	O	Push type manual operator <sup>(2)</sup>	●	●	●	●
			M	S	Screw type manual operator <sup>(1) (2)</sup>	●	●	●	●
				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)

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

<sup>(2)</sup> Under pressure removable execution (see page 6)

## PRODUCT SELECTION GUIDE

### STEP 1

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

**Example: 8327B001**

### 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: MS**

### STEP 4

Select voltage. Refer to standard voltages on page 3.

**Example: 230V / 50/60Hz**

### STEP 5

Final catalogue / ordering number.

**Example:**

**NF 8327B001 MS 230V / 50/60 Hz**

## OPTIONS & ACCESSORIES

catalogue number	spare part kit no. <sup>(2)</sup>	mounting bracket
	~ / =	
SC ❖327B001	C123670	■
SC ❖327B002	C123670	■
SC ❖327B011	C131237	■
SC ❖327B012	C131237	■
SC ❖327B101	C132251	■
SC ❖327B102	C132251	■
SC ❖327B111	C132253	■
SC ❖327B112	C132253	■
SC ❖327B201	C132251	■
SC ❖327B202	C132251	■
SC ❖327B211	C132253	■
SC ❖327B212	C132253	■
SC ❖327B301	C133441	■
SC ❖327B302	C133441	■
SC ❖327B311	C133442	■
SC ❖327B312	C133442	■

❖ 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	327B001	24V / DC
WSEMT	G	327B002	MS 24V / DC
NFET	G	327B001	230V / 50/60 Hz
WSEM	G	327B002	MS 24V / DC
NF	8	327B211	24V / DC
WS	G	327B001	MS 24V / DC
EM	8	327B201	230V / 50/60 Hz
PV	8	327B012	MS 24V / DC
EF	G	327H002	MS 240V / 50/60 Hz

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

## ORDERING EXAMPLES KITS:

C131237 <sup>(4)</sup>			
WSEM	C123670	MS	
NF	C131237		
WSEM	C123670	MO	

prefix    basic number    suffix

<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

**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 ± 10%

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

prefix option	power ratings				operator ambient temperature range (C°) <sup>(2)</sup>	safety code	electrical enclosure protection (EN 60529)	replacement coil / kit		type <sup>(3)</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	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 IIC Gb T3, II2D Ex tb IIIC Db	IP67, steel /SS	400915-017	400913-142	03
PV	-	-	-	9,0/11,2	-40 to +55	II2G Ex mb IIC Gb T4, II2D Ex mb IIIC Db	IP65, moulded	-	- <sup>(4)</sup>	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
<b>Medium Power (MP)</b>										
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 IIC Gb T5/T4/T3, II2D Ex tb IIIC Db	IP67, steel /SS	400921-297	400914-442	04
<b>Reduced Power (RP)<sup>(5)</sup></b>										
SC	3,7	3,7	3,7	3,2/3,6	-40 to +55	EN 60730	IP65, moulded	- <sup>(5)</sup>	400923-042	02
WP/WS	3,7	3,7	3,7	3,2/3,6	-40 to +55	EN 60730	IP67, steel /SS	- <sup>(5)</sup>	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	- <sup>(5)</sup>	400914-242	05
EM/WSEM	3,7	3,7	3,7	3,2/3,6	-40 to +40/55	II2G Ex e mb IIC Gb T6/T5, II2D Ex tb IIIC Db	IP67, steel /SS	- <sup>(5)</sup>	400914-242	04
<b>Low Power (LP)<sup>(5)</sup></b>										
NF/WSNF	1,85	1,85	1,85	1,5/1,8	-60 to +55	II2G Ex d IIC Gb T6, II2D Ex t IIIC Db	IP67, alu./SS	- <sup>(5)</sup>	400914-542	05
NFIS <sup>(6)</sup>	0,5	0,5	0,5	0,5	-40 to +60	II1G Ex ia IIC T6 Ga, II2D Ex tb IIIC Db	IP66/67, alu./SS	-	429013-001	05
WSNFIS	0,5	0,5	0,5	0,5	-40 to +60	II1G Ex ia IIC T6 Ga, II2D Ex tb IIIC Db	IP66/67, alu./SS	-	429013-001	05

<sup>(1)</sup> NFIS and WSNFIS only available in 24V/DC                      <sup>(2)</sup> Temperature range can be limited by sealings                      <sup>(3)</sup> Refer to the dimensional drawings on page 4 and 5

<sup>(4)</sup> Multiple coil kits are available under ATEX/IECEx, contact us                      <sup>(5)</sup> AC (~) limited to 127V/50/60Hz or 125V/DC                      <sup>(6)</sup> Shall be protected against any impact or friction, see the installation conditions given in the I&M sheet

- 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, NFIS, WSNFIS	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, NFTIS, WSNFTIS	1/2" NPT threaded cable entry. Enclosures are supplied without cable gland
NFET, WSNFET, NFETIS, WSNFETIS	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 Operators are available as shown on page 6

## INSTALLATION

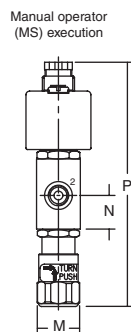
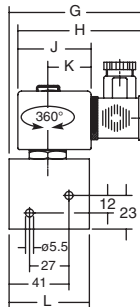
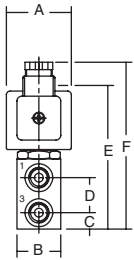
- Multi language installation/maintenance instructions are included with each valve
- The solenoid valves can be mounted in any position without affecting operation
- The mounting holes are provided in the valve body
- Threaded pipe connection identifier is 8 = NPT (ANSI 1.20.3); G = G (ISO 228/1)
- Declarations of conformity are available on request
- Ex e mb Prefix "EM" and Ex ia Prefix "NFIS" 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)



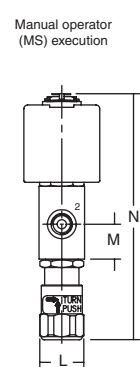
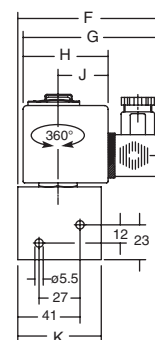
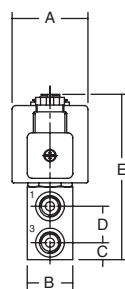
**TYPE 01:**  
Epoxy moulded  
SC: IEC 335 / ISO 4400

327B001 / B002 / B011 / B012



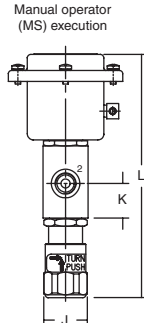
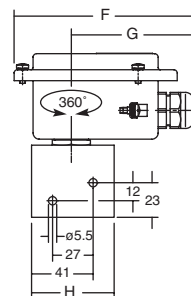
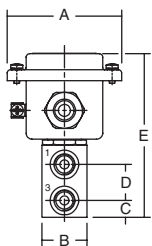
**TYPE 02:**  
Epoxy moulded  
SC: IEC 335 / ISO 4400

327B101 / B102 / B111 / B112 / B201 / B202 / B211 / B212



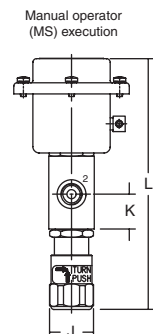
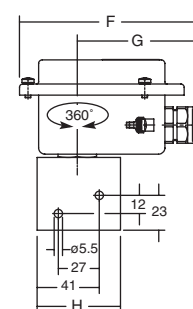
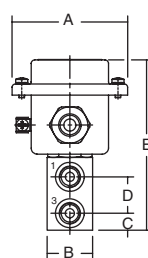
**TYPE 03:**  
Metal, epoxy coated / AISI 316 SS  
WP / WS: IEC 335  
EM / WSEM: EN/IEC 60079-7+18, 61241-1

327B001 / B002 / B011 / B012



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

327B101 / B102 / B111 / B112 / B201 / B202 / B211 / B212



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



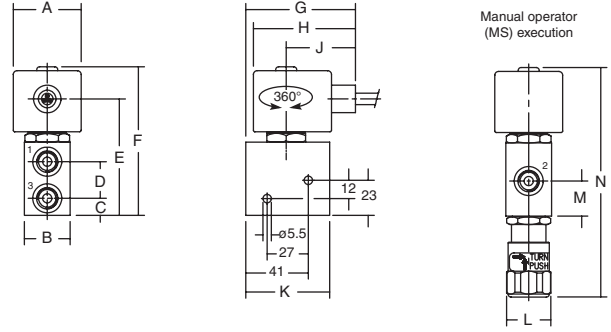
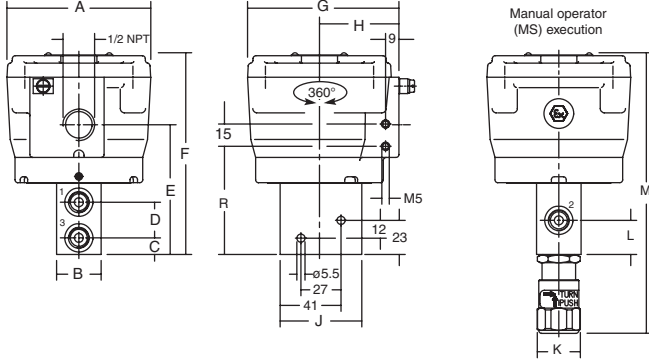
**TYPE 05:**  
Aluminium, epoxy coated / AISI 316L SS  
NF/WSNF : EN/IEC 60079-1, 60079-31  
NFIS/WSNFIS : EN/IEC 60079-11, 60079-31

327B001 / B002 / B011 / B012 / B101 / B102 / B111 / B112 /  
327B201 / B202 / B211 / B212 / B301 / B302 / B311 / B312



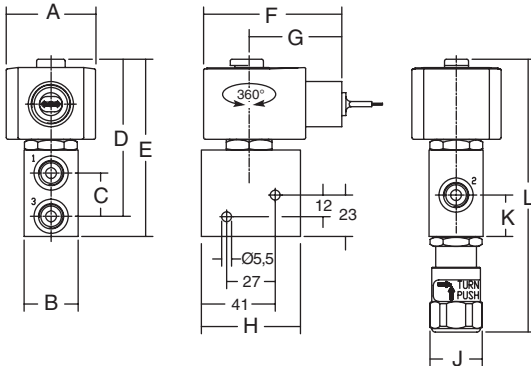
**TYPE 06:**  
Epoxy encapsulated  
PV: EN/IEC 60079-18, 61241-18

327B001 / B002 / B011 / B012

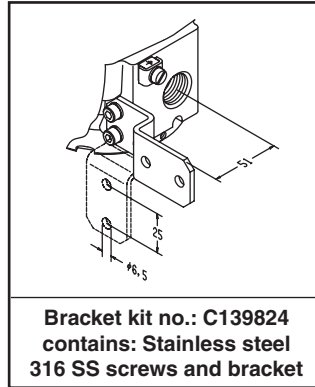


**TYPE 07:**  
Epoxy encapsulated  
EF and EV: NEMA type 7, 9 / ICS-6 ANSI

327H001 / H002 / H011 / H012

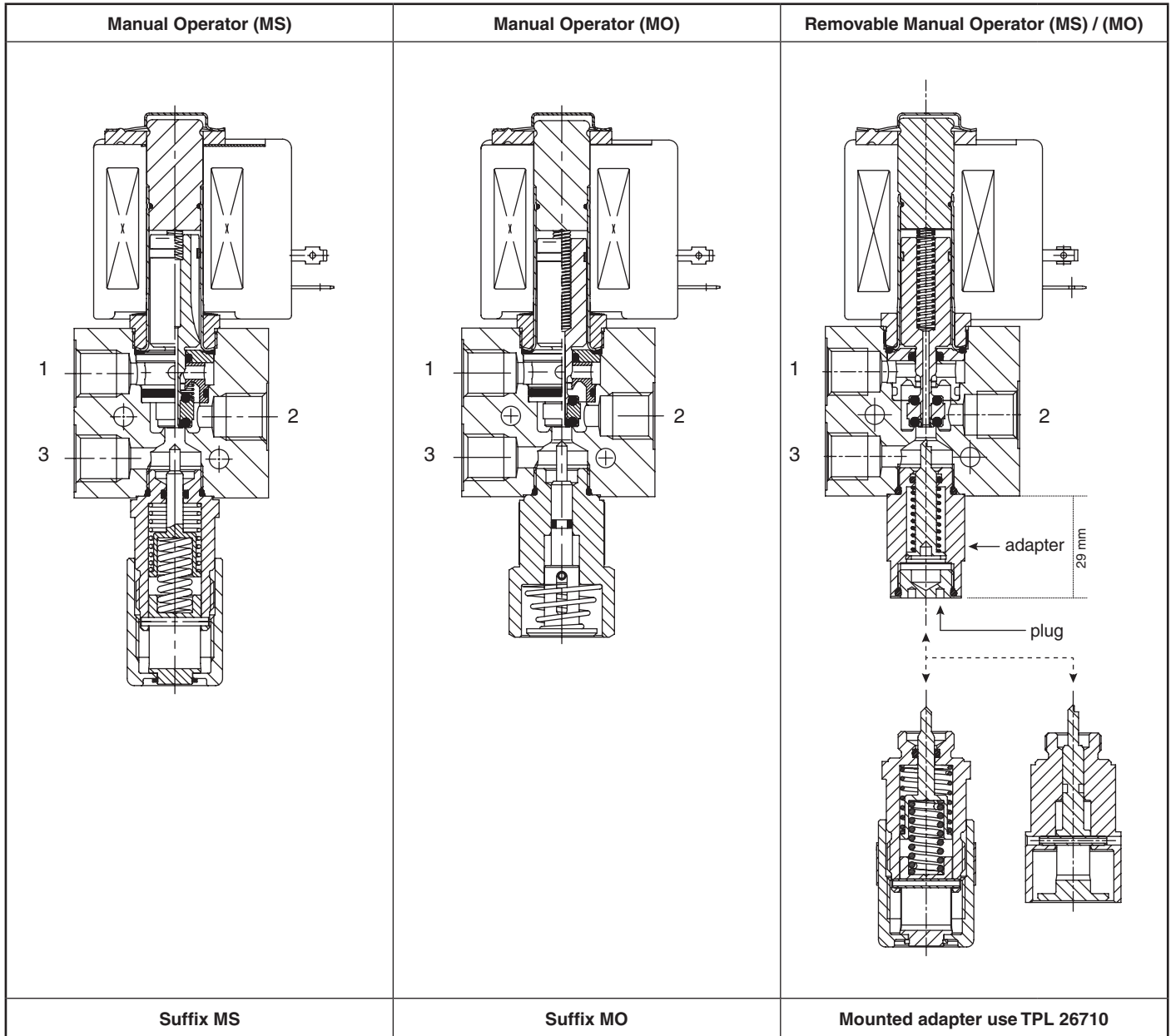


### MOUNTING BRACKET



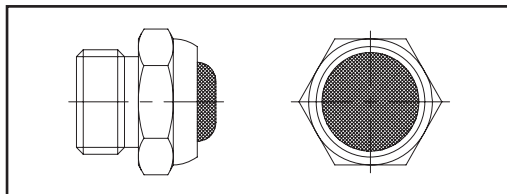
type	prefix/option	power level	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	weight
01	SC	BP	45	30	11	24	90	114	91	85	50	30	55	29	23	167	-	0,95 kg
02	SC	MP/RP	50	30	11	24	109	95	87	56	53	55	29	23	162	-	-	1,05 kg
03	WP, WS, EM, WSEM	BP	77	30	11	24	109	120	81	55	29	23	162	-	-	-	-	1,00 kg
04	WP, WS, EM, WSEM	MP/RP	77	30	11	24	112	120	81	55	29	23	165	-	-	-	-	1,00 kg
05	NF, WSNF	BP/MP/RP	97	30	11	24	87	136	102	54	55	29	23	189	-	-	73	2,60 kg
05	NF, WSNF, NFIS, WSNFIS	LP	97	30	11	24	97	146	102	54	55	29	23	199	-	-	83	2,65 kg
06	PV	BP	45	30	11	24	76	97	72	67	45	55	29	23	150	-	-	1,05 kg
07	EF, EV	BP	50	30	24	87	98	77	51	55	29	23	151	-	-	-	-	0,95 kg

**SECTIONAL DRAWINGS**



Removable Manual Operator	Kit number
MS type	C325324
MO type	C325323
Adapter type	C325410

**EXHAUST PROTECTOR**



**EXHAUST PROTECTOR ORDER NO.**

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

**REMOVABLE MO / MS TOOL**

