

Features

- The monostable spool valves in conformity with IEC 61508 Standard (2010 route 2_H version) have TÜV (551 series) and EXIDA (551-553 series) certified with integrity levels: SIL 2 for HFT = 0 / SIL 3 for HFT = 1
- The spool valves 5/2 and 5/3 have threaded port connections
- All the exhaust ports of the spool valve are connectable, providing better environmental protection. Particularly recommended for sensitive areas, such as cleanrooms, and applications in the pharmaceutical and food processing sectors
- The valves offer environmental protection against the ingress of liquids, dusts or other foreign matter (environmentally-protected construction)
- Can be externally piloted (external air pilot supply) to convert valve to zero minimum operation by flipping a gasket
- The solenoid valves satisfy all relevant EU directives

General

Differential pressure

2 - 10,4 bar [1 bar = 100 kPa]

Flow (Q_v at 6 bar)

1/4 = 860 l/min (5/2) ; 760 l/min (5/3) (ANR)

1/2 = 3800 l/min (5/2, 5/3)

fluids (*)	temperature range (TS)	seal materials (*)
air, inert gas, filtered	-25°C to +60°C	NBR (nitrile) + PUR (polyurethane)

Materials in contact with fluid

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

Body

Aluminium, black anodised

End cover (spring return)

Glass-filled PA

Spool valve internal parts

Zamak, stainless steel, POM, aluminium

Pilot internal parts

Refer to specific solenoid catalogue pages

Pilot end covers

Aluminium

Core tube

Stainless steel

Core and plugnut

Stainless steel

Core spring

Stainless steel

Seals

NBR

Top disc

PA

Disc holder

POM

Cartridge (low power)

Welded, stainless steel or aluminium

Seat

Brass

Seat insert

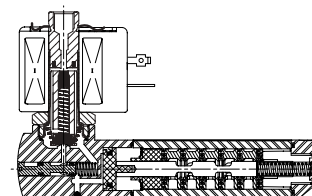
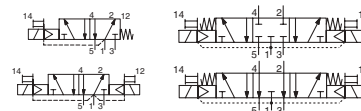
POM

Shading coil

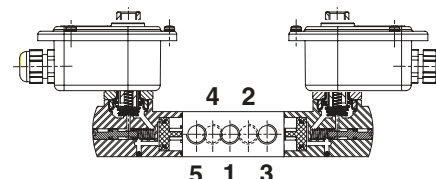
Copper

Rider rings (low power)

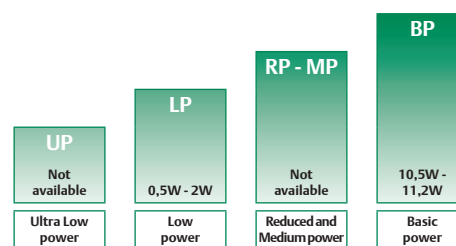
PTFE (NF/WSNF solenoids only)



5/2 function, monostable



5/3 function



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. ⁽²⁾	max. (PS)		NEMA	ATEX / IECEx						IP65			
					air (★)			7 & 9	Ex db	Exebmb	Ex mb	Ex ia	-				
(✧)	(mm)	(m³/h)	(l/min)	~	=	~/=	EF	LPKF	NF	EM	PV	LI	WSLI	-	SC		
5/2 - Solenoid air pilot operated - spring return (monostable)																	
1/4	6	0,75	12,5	0 / 2	10	10	BP	-	-	●	●	●	-	-	-	●	❖551B417 ⁽²⁾
1/4	6	0,75	12,5	0 / 2	10	10	BP	●	-	-	-	-	-	-	-	-	❖551H417 ⁽²⁾
1/4	6	0,75	12,5	0 / 2	10	10	LP	-	●	●	●	○	○	○	-	●	❖551B317 ⁽²⁾
1/4	6	0,75	12,5	0 / 2	10	10	LP	○	-	-	-	-	-	-	-	-	❖551H317 ⁽²⁾
1/2	13	3,15	52,5	0 / 2	10	10	BP	-	-	●	●	●	-	-	-	●	❖553A417 ⁽²⁾
1/2	13	3,15	52,5	0 / 2	10	10	BP	●	-	-	-	-	-	-	-	-	❖553G417 ⁽²⁾
1/2	13	3,15	52,5	0 / 2	10	10	LP	-	●	●	●	○	○	○	-	●	❖553A317 ⁽²⁾
1/2	13	3,15	52,5	0 / 2	10	10	LP	○	-	-	-	-	-	-	-	-	❖553G317 ⁽²⁾

❖ 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

⁽¹⁾ Certified IEC 61508 Functional Safety data, use suffix "SL".

⁽²⁾ Zero minimum is only achieved if external pressure is applied.

Specifications

pipe size	orifice size	flow coefficient Kv		operating pressure differential (bar)			power level	prefix optional solenoids										basic catalogue number
								min. ⁽²⁾	max. (PS)		NEMA	ATEX / IECEx						
				air (★)	~	=			~/=	7 & 9		Ex db		Ex eb mb	Ex mb	Ex ia	-	
(✧)	(mm)	(m³/h)	(l/min)					EF	LPKF	NF	-	EM	PV	WS(LI)	-			
5/2 - Solenoid air pilot operated and return (bistable)																		
1/4	6	0,75	12,5	0/2	10	10	BP	-	-	●	-	●	●	-	-	●	❖551B418	
1/4	6	0,75	12,5	0/2	10	10	BP	●	-	-	-	-	-	-	-	-	❖551H418	
1/4	6	0,75	12,5	0/2	10	10	LP	-	●	●	-	●	○	○	-	●	❖551B318	
1/4	6	0,75	12,5	0/2	10	10	LP	○	-	-	-	-	-	-	-	-	❖551H318	
1/2	13	3,15	52,5	0/2	10	10	BP	-	-	●	-	●	●	-	-	●	❖553A418	
1/2	13	3,15	52,5	0/2	10	10	BP	●	-	-	-	-	-	-	-	-	❖553G418	
1/2	13	3,15	52,5	0/2	10	10	LP	-	●	●	-	●	○	○	-	●	❖553A318	
1/2	13	3,15	52,5	0/2	10	10	LP	○	-	-	-	-	-	-	-	-	❖553G318	
5/3 - W1 - pressure held, solenoid air pilot operated and return																		
1/4	6	0,75	11	0/2	10	10	BP	-	-	●	-	●	●	-	-	●	❖551B467	
1/4	6	0,75	11	0/2	10	10	BP	●	-	-	-	-	-	-	-	-	❖551H467	
1/4	6	0,75	11	0/2	10	10	LP	-	●	●	-	●	○	○	-	●	❖551B367	
1/4	6	0,75	11	0/2	10	10	LP	○	-	-	-	-	-	-	-	-	❖551H367	
1/2	13	3,15	52,5	0/2	10	10	BP	-	-	●	-	●	●	-	-	●	❖553A467	
1/2	13	3,15	52,5	0/2	10	10	BP	●	-	-	-	-	-	-	-	-	❖553G467	
1/2	13	3,15	52,5	0/2	10	10	LP	-	●	●	-	●	○	○	-	●	❖553A367	
1/2	13	3,15	52,5	0/2	10	10	LP	○	-	-	-	-	-	-	-	-	❖553G367	
5/3 - W3 - pressure release, solenoid air pilot operated and return																		
1/4	6	0,75	11	0/2	10	10	BP	-	-	●	-	●	●	-	-	●	❖551B468	
1/4	6	0,75	11	0/2	10	10	BP	●	-	-	-	-	-	-	-	-	❖551H468	
1/4	6	0,75	11	0/2	10	10	LP	-	●	●	-	●	○	○	-	●	❖551B368	
1/4	6	0,75	11	0/2	10	10	LP	○	-	-	-	-	-	-	-	-	❖551H368	
1/2	13	3,15	52,5	0/2	10	10	BP	-	-	●	-	●	●	-	-	●	❖553A468	
1/2	13	3,15	52,5	0/2	10	10	BP	●	-	-	-	-	-	-	-	-	❖553G468	
1/2	13	3,15	52,5	0/2	10	10	LP	-	●	●	-	●	○	○	-	●	❖553A368	
1/2	13	3,15	52,5	0/2	10	10	LP	○	-	-	-	-	-	-	-	-	❖553G368	

❖ 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⁾ Zero minimum is only achieved if external pressure is applied.

Prefix table

prefix					description	power level			
1	2	3	4	5		LP	RP	MP	BP
E	F				Explosionproof - NEMA 7, 9 - Zinc plated steel conduit	○	-	-	●
E	M				Waterproof IP66/67 - Metal enclosure (EN/IEC 60079-7,-18 and -31)*	●	-	-	●
		E	T		Threaded conduit/hole (M20 x 1,5)	●	-	-	●
L	P	K	F		Flameproof - Aluminium (EN/IEC 60079-1, 60079-31)*	●	-	-	-
N	F				Flameproof - Aluminium (EN/IEC 60079-1, 60079-31)*	●	-	-	●
P	V				Encapsulated epoxy moulded (EN/IEC 60079-18)*	○	-	-	●
S	C				Solenoid with spade plug connector (EN/IEC 60730)	●	-	-	●
W	P				Waterproof IP67 - Metal enclosure	●	-	-	●
L	I				I.S. with Aluminium IP66/IP67 enclosure (EN/IEC 60079-11+31)*	○	-	-	-
W	S				Waterproof IP67 - 316 SS enclosure	●	-	-	●
W	S	L	P	K	Flameproof 316L SS (EN/IEC 60079-1, 60079-31)*	●	-	-	-
W	S	E	M		Waterproof IP66/67 - 316 SS enclosure (EN/IEC 60079-0+7+18+31)*	●	-	-	●
W	S			L	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	Class H - High temperature, +80°C ambient temp.	-	-	-	●
					Other special constructions	●	-	-	●

Suffix table

suffix					description	power level			
1	2	3	4	5		LP	RP	MP	BP
			M	O	Push type manual operator	○/●	-	-	●
S	L				Certified IEC 61508 Functional Safety data ⁽¹⁾	○/●	-	-	●

Product selection guide

STEP 1

Select basic catalogue number, including pipe thread identification letter. Refer to the specifications table on page: 1 or 2

Example: G551A417

STEP 2

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

Example: EM

STEP 3

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

Example: MO

STEP 4

Select voltage. Refer to standard voltages on page: 4

Example: 230V / 50Hz

STEP 5

Final catalogue / ordering number.

Example:

EM G551A417MO 230 V / 50 Hz

Options & Accessories

series	pipe size	exhaust protector (stainless steel)		
		G	NPT	(M)
551/553	1/8	34600418 ⁽²⁾	34600482 ⁽²⁾	-
551	1/4	34600419 ⁽²⁾	34600483 ⁽²⁾	-
553	1/2	34600479 ⁽²⁾	34600481 ⁽²⁾	-
551	M5	-	-	34600484 ⁽²⁾

● Available feature

○ Available feature in DC only

- Not available

* ATEX/IECEx valves using these solenoids are approved according to EN 13463-1 (non electrical)

⁽¹⁾ Not to use with MO suffix

⁽²⁾ Provided with "SL" suffix

Ordering examples valves:

SC	G	551 B 417	230V / 50 Hz
SC	G	551 B 417 SL	230V / 50 Hz
SC	G	551 B 418 MO	230V / 50 Hz
SCHT	8	551 B 418 MO	230V / 50 Hz
LPKF	G	551 B 317 MO	24V / DC
LPKF	G	551 B 317 MO	230V / 50 Hz
WSLPKF	G	551 B 317 MO	24V / DC
LI	G	553 A 317	24V / DC
EM	8	553 A 418 MO	230V / 50 Hz
EF	G	551 H 417 MO	240V / 60 Hz

⁽³⁾ Prefixes EF should always be used with the letter H or G in the basic number.

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
Electrical safety
Standard voltages

F
IEC 335
DC (=) 24V - 48V
AC (~) 24V - 48V - 115V - 230V⁽⁵⁾/50Hz; other voltages and 60Hz are available on request

prefix option	power ratings				operator ambient temperature range (TS) (C°) ⁽¹⁾	safety code	electrical enclosure protection (EN 60529)	replacement coil / kit		type (2)
	inrush ~ (VA)	holding ~ (VA)	hot/cold = (W)					~ 230 V/50 Hz	= 24V/DC	
Basic power (BP)										
SC	55	23	10,5	9/11,2	-40 to +75	EN 60730	IP65, moulded	400425-117	400425-142	01
WP/WS	55	23	10,5	9/11,2	-40 to +75	EN 60730	IP67, steel /SS	400405-117	400405-142	04
NF/WSNF	55	23	10,5	-	-60 to +25/40/60	II2G Ex db IIC Gb T6/T5/T4, II2D Extb IIIC Db	IP66/67, alu./SS	400405-117	-	02
NF/WSNF	-	-	-	9/11,2	-60 to +40/60/75	II2G Ex db IIC Gb T6/T5/T4, II2D Extb IIIC Db	IP66/67, alu./SS	-	400405-142	02
EM/WSEM	55	23	10,5	9/11,2	-40 to +40	II2G Ex mb IIC Gb T3, II2D Extb IIIC Db	IP66/67, steel /SS	400909-117	400913-142	04
PV	55	23	10,5	9/11,2	-40 to +65	II2G Ex mb IIC Gb T3(-)/T4(=), II2D Ex mb IIIC Db	IP67, moulded	-(4)	-(4)	05
EF	55	23	10,5	9/11,2	-40 to +52/40	NEMA type 7 and 9	NEMA 4X	238614-058	238714-006	06
Low Power (LP)										
SC	1,5	1,5	1,5	1,7/1,7	-40 to +60	EN 60730	IP65, moulded	400925-097	400925-042	07
WP/WS	1,5	1,5	1,5	1,7/1,7	-40 to +60	EN 60730	IP67, steel /SS	400926-097	400926-042	09
LPKF/WSLPKF (7)	2,4	2,4	2,4 (8)	-	-40 to +40/65/80	II2G Ex db IIB+H2 Gb T6/T5/T4, II2D Extb IIIC Db	IP66/67, alu./SS	-(4)	-(4)	13
LPKF/WSLPKF	-	-	-	0,5/0,5 (7)	-40 to +60	II2G Ex db IIB+H2 Gb T6, II2D Extb IIIC Db	IP66/67, alu./SS	-(4)	-(4)	13
LPKF/WSLPKF	-	-	-	2,1 (8)	-40 to +40/80	II2G Ex db IIB+H2 Gb T6/T4, II2D Extb IIIC Db	IP66/67, alu./SS	-(4)	-(4)	13
NF/WSNF	1,85	1,85	1,85	1,5/1,8	-60 to +75/80	II2G Ex db IIC Gb T6/T5, II2D Extb IIIC Db	IP66/67, alu./SS	-(4) (5)	-(4)	08
EM/WSEM	1,5	1,5	1,5	1,7/1,7	-40 to +40/55	II2G Ex mb IIC Gb T6/T5, II2D Extb IIIC Db	IP66/67, steel /SS	-(4)	-(4)	09
PV	-	-	-	1,7/1,7	-40 to +65	II2G Ex mb IIC Gb T6, II2D Ex mb IIIC Db	IP67, moulded	-	-(4)	10
EF	-	-	-	1,7/1,7	-40 to +60	NEMA type 7 and 9	NEMA 4X	-	-(4)	11
LI (3) (6)	-	-	-	0,5/0,5	-40 to +60	II1G Ex ia IIC T6 Ga, II2D Extb IIIC Db (6)	IP66/67, alu.	-	-(4)	14
WSLI (3) (6)	-	-	-	0,5/0,5	-40 to +60	II1G Ex ia IIC T6 Ga, II2D Extb IIIC Db (6)	IP66/67, SS	-	-(4)	14

prefix option	safety parameters				
	U _i (DC)	I _i	P _i	L _i	C _i
	(V)	(mA)	(W)	(H)	(μF)
Low Power (LP)					
LI/WSLI	32	500	1,5	0	0

- ⁽¹⁾ Temperature range can be limited by sealings
⁽²⁾ Refer to the dimensional drawings on pages: 5 to 7
⁽³⁾ LI/WSLI: Check the electrical characteristics in the corresponding catalogue pages
⁽⁴⁾ Multiple coil kits are available under ATEX/IECEX, contact us
⁽⁵⁾ Only available in 24, 48 and 110V/DC
⁽⁶⁾ LI/WSLI: Low Power, 24 V DC only (LI: For use in zone 0 locations, see the installation conditions given in the I&M instructions)
⁽⁷⁾ LPKF/WSLPKF: 24 V DC, max. ambient temp. +80°C, contact us (48 V DC = 2,1 W)
⁽⁸⁾ Max. power ratings values: 115 V AC (2,4 W), 48 V DC (2,1 W)
 - Not available

Electrical connections

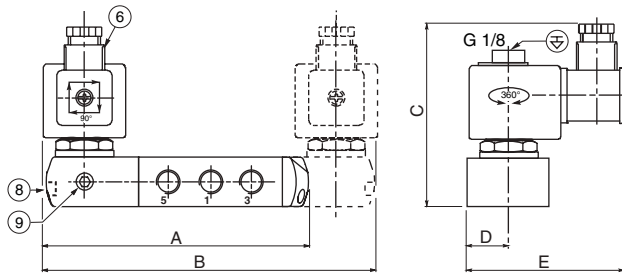
prefix	connection
SC	Spade plug connector with cable gland EN175301-803A (ISO 4400) for cables with an outer diameter from 6 to 10 mm
WP, WS, EM, WSEM	M20 plastics cable gland for cables with an outer diameter from 7 to 12 mm.
NF, WSNF, LPKF, WSLPKF	1/2" NPT threaded cable entry. Enclosures are supplied without cable gland
PV	Moulded-in cable, standard length 2 m
LI, WSLI	1/2" NPT threaded cable entry. Enclosures are supplied without cable gland
EF	1/2" NPT conduits, standard length 35 cm

Dimensions (mm), Weight (kg)



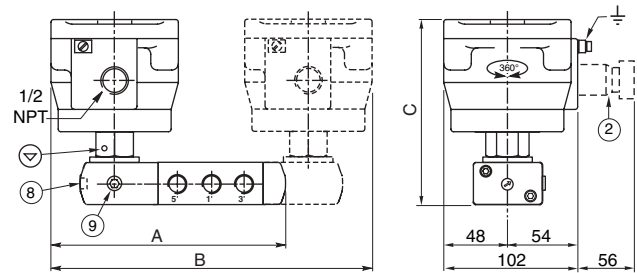
TYPE 01:
Epoxy moulded
SC: IEC 335 / ISO 4400

551B417/B418/B417MO/B418MO/B467/B468/B467MO/B468MO
553A417/A418/A417MO/A418MO/A467/A468/A467MO/A468MO



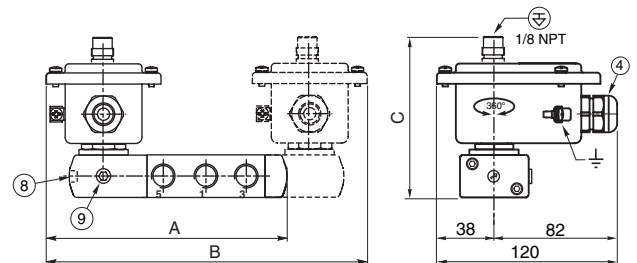
TYPE 02:
Aluminium, epoxy coated / AISI 316L SS
NF / WSNF: EN/IEC 60079-1, 60079-31

551B417/B418/B417MO/B418MO/B467/B468/B467MO/B468MO
553A417/A418/A417MO/A418MO/A467/A468/A467MO/A468MO



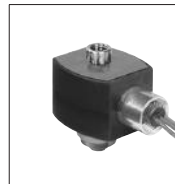
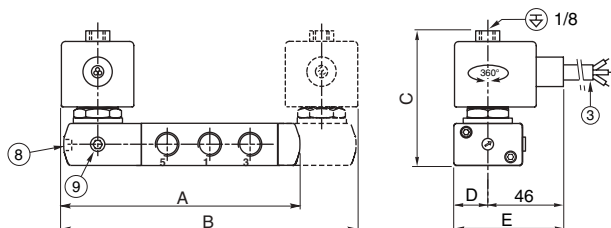
TYPE 04:
Metal, epoxy coated / AISI 316L SS
WP / WS: IEC 335
EM / WSEM: EN/IEC 60079-7+18+31

551B417/B418/B417MO/B418MO/B467/B468/B467MO/B468MO
553A417/A418/A417MO/A418MO/A467/A468/A467MO/A468MO



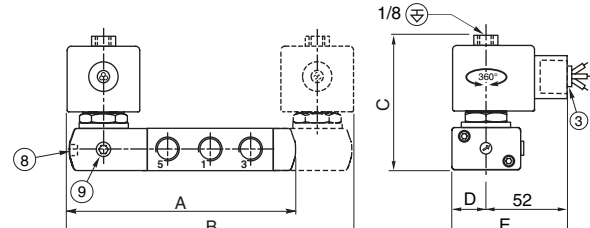
TYPE 05:
Epoxy encapsulated
PV: EN/IEC 60079-18

551B417/B418/B417MO/B418MO/B467/B468/B467MO/B468MO
553A417/A418/A417MO/A418MO/A467/A468/A467MO/A468MO



TYPE 06:
Epoxy encapsulated
EF: NEMA type 7, 9 / ICS-6 ANSI

551H417/H418/H417MO/H418MO/H467/H468/H467MO/H468MO
553G417/G418/G417MO/G418MO/G467/G468/G467MO/G468MO

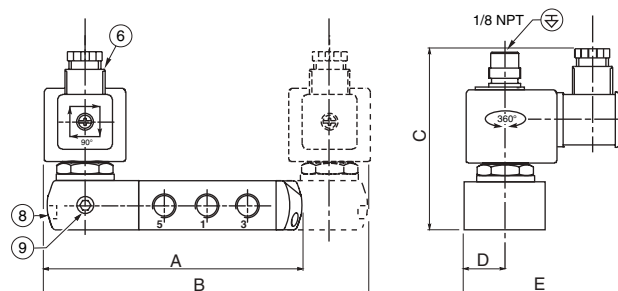


Dimensions (mm), Weight (kg)



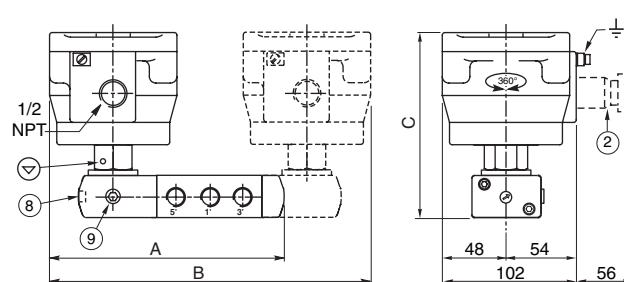
TYPE 07:
Epoxy moulded
SC: IEC 335 / ISO 4400

551B317/B318/B317MO/B318MO/B367/B368/B367MO/B368MO
553A317/A318/A317MO/A318MO/A367/A368/A367MO/A368MO



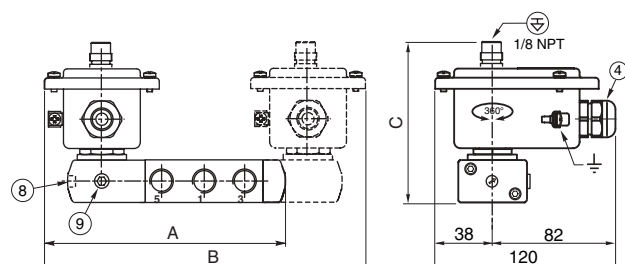
TYPE 08:
Aluminium, epoxy coated / AISI 316L SS
NF / WSNF: EN/IEC 60079-1, 60079-31

551B317/B318/B317MO/B318MO/B367/B368/B367MO/B368MO
553A317/A318/A317MO/A318MO/A367/A368/A367MO/A368MO



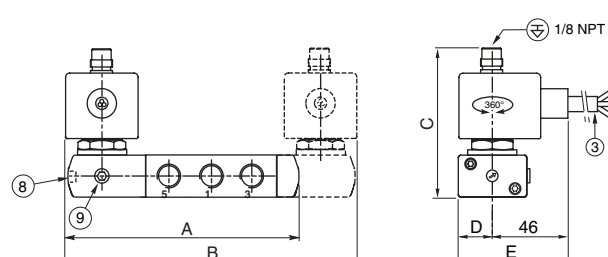
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Metal, epoxy coated / AISI 316L SS
WP / WS: IEC 335
EM / WSEM: EN/IEC 60079-7+18+31

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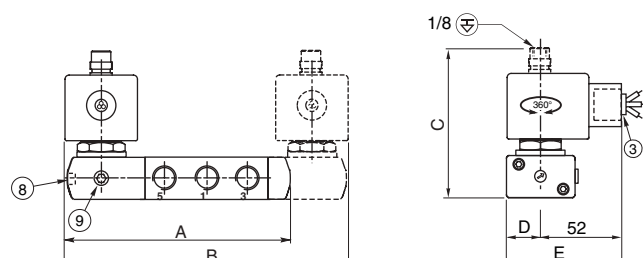
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Epoxy encapsulated
PV: EN/IEC 60079-18

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553A317/A318/A317MO/A318MO/A367/A368/A367MO/A368MO



TYPE 11:
Epoxy encapsulated
EF: NEMA type 7, 9 / ICS-6 ANSI

551B317/B318/B317MO/B318MO/B367/B368/B367MO/B368MO
553A317/A318/A317MO/A318MO/A367/A368/A367MO/A368MO



Dimensions (mm), Weight (kg)



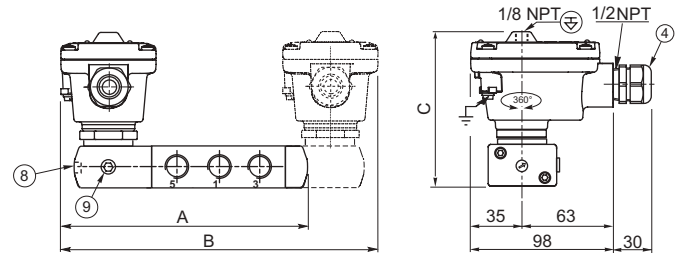
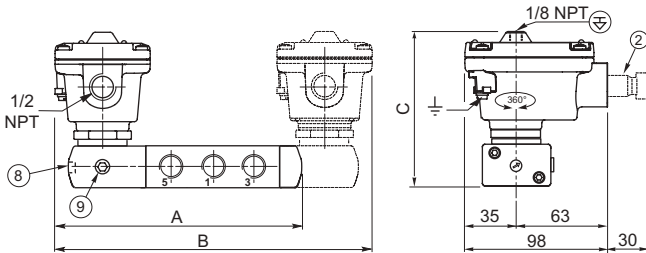
TYPE 13:
Aluminium, cataphoresis black painting / AISI 316L SS
LPKF/WSLPKF: EN/IEC 60079-1, 60079-31



TYPE 14:
Aluminium, cataphoresis black painting / AISI 316L SS
LI / WSLI: EN/IEC 60079-11, 60079-31

551B317/B318/B317MO/B318MO/B367/B368/B367MO/B368MO
553A317/A318/A317MO/A318MO/A367/A368/A367MO/A368MO

551B317/B318/B317MO/B318MO/B367/B368/B367MO/B368MO
553A317/A318/A317MO/A318MO/A367/A368/A367MO/A368MO



- ② Ex d certified cable gland (on request)
- ③ Three-core cable, length 2 m
- ④ Cable gland for unarmoured cable with 7 to 12 mm dia. sheath
- ⑥ Connector rotatable by 90° increments, cable Ø 6 - 10 mm
- ⑧ Manual operator location, suffix MO
- ⑨ External pilot air supply, 1/8 pipe size
- ⊕ Connectable pilot exhaust port
- ⊖ Non-connectable pilot exhaust port

type	prefix/option	power level	A		B		C		D		E		weight ⁽¹⁾			
			551	553	551	553	551	553	551	553	551	553	monostable		bistable	
01	SC	BP	144	179,5	182	225	102,7	112,2	22,5	36,15	86,5	100,2	0,79	1,50	1,37	2,06
02	NF / WSNF	BP	170	224,3	236	314,6	141,8	151,3	-	-	-	-	1,88	2,54	3,54	4,20
04	WP / WS	BP	160	196,2	216	253,3	103	112,5	-	-	-	-	0,87	1,51	1,52	2,08
04	(WS)EM	BP	160	196,2	216	253,3	103	112,5	-	-	-	-	0,87	1,51	1,52	2,08
05	PV	BP	144	179,5	184	225	88	97,5	22,5	36,15	67,5	81,2	0,85	1,51	1,48	2,07
06	EF	BP	144,5	183	185	232	85,5	95	22,5	36,15	74,5	88,2	0,67	1,51	1,32	2,08
07	SC	LP	144,5	180,5	185	227	101,5	111	22,5	36,15	87,5	101,2	1,00	1,71	1,58	2,27
08	NF / WSNF	LP	170	224,3	236	314,6	141,8	151,3	-	-	-	-	1,88	2,54	3,54	4,20
09	WP/WS/(WS)EM	LP	160	196,2	216	258,3	102,2	111,7	-	-	-	-	1,08	1,72	1,73	2,29
10	PV	LP	144	179,5	184	225	100,5	110	22,5	36,15	67,5	81,2	1,06	1,72	1,69	2,28
11	EF	LP	144,5	183	185	232	100,5	110	22,5	36,15	74,5	88,2	0,88	1,72	1,53	2,29
13	LPKF	LP	153	191,5	204	249	113	122,5	-	-	-	-	0,93	1,91	1,65	2,36
13	WSLPKF	LP	153	191,5	204	249	113	122,5	-	-	-	-	1,54	2,92	2,85	3,43
14	LI	LP	153	191,5	204	249	113	122,5	-	-	-	-	0,94	1,92	1,66	2,37
14	WSLI	LP	153	191,5	204	249	113	122,5	-	-	-	-	1,55	2,53	2,86	3,57

⁽¹⁾ Incl. coil(s) and connector(s).

Accessories

