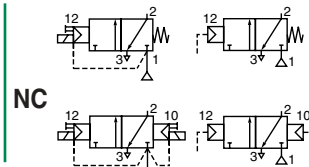




SPOOL VALVES

pilot operated or air operated, spool type
single/dual solenoid (mono/bistable function)
stainless steel body, 1/4-1/2



3/2

Series

551

553

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
- Series 551 versions according to ATEX 94/9/EC, for zones 0, 1 and 2 and series 553 air-operated versions for zones 1 and 2
- All the exhaust ports of this spool valve are connectable, providing better environmental protection, particularly recommended for sensitive areas such as clean rooms, and applications in the pharmaceutical and food processing sectors
- The valve offers environmental protection against the ingress of liquids, dusts or any other foreign matter (environmentally-protected construction)
- The solenoid valves satisfy all relevant EC Directives

GENERAL

Differential pressure

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

Flow (Qv at 6 bar)

1/4 = 860 l/min (ANR)

1/2 = 3000 l/min

fluids (*)	temperature range (TS)	seal materials (*)
air, inert gas, filtered	- 40°C to + 60°C	VMQ (silicone) + PUR (polyurethane)

MATERIALS IN CONTACT WITH FLUID

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

	Air operated (Series 551-553)	CNOMO solenoid (pilot) interface (Series 551)
Body, end covers	Stainless steel, AISI 316L	Stainless steel, AISI 316L
Spool valve internal parts	Stainless steel, POM	Stainless steel, POM
Seals	NBR	NBR
Pilot internal parts	-	Size 30 (E06.05.80N), refer to catalogue pages: 314/LPKF pilot (contact us) and 195 pilot (LISC)

AIR OPERATED SPECIFICATIONS

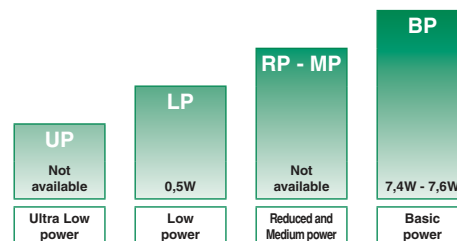
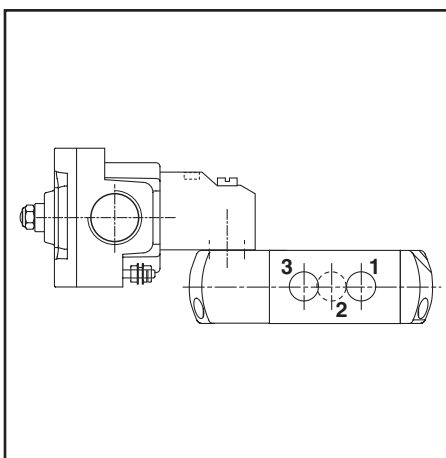
pipe size	orifice size	flow coefficient kv		operating pressure differential (bar)			prefix optional	basic catalogue number
(*)	(mm)	(m³/h)	(l/min)	min.	max. (PS)	air (*)		
						~ =		
Pilot air operated - spring return (monostable)								
1/4	6	0,75	12,5	2	10	10	-	❖551A113 ⁽¹⁾
1/2	13	2,49	41,5	2	10	10	-	❖553A113 ⁽¹⁾
Pilot air operated and return (bistable)								
1/4	6	0,75	12,5	2	10	10	-	❖551A114
1/2	13	2,49	41,5	2	10	10	-	❖553A114

CNOMO SOLENOID (PILOT) INTERFACE SPECIFICATIONS

pipe size	orifice size	flow coefficient kv		operating pressure differential (bar)			power level	prefix optional solenoids		basic catalogue number
(*)	(mm)	(m³/h)	(l/min)	min.	max. (PS)	air (*)		ATEX / IECEx		
						~ =	~/=	Ex d	Ex ia	
								(2)	LISC	
Solenoid air pilot operated - spring return (monostable)										
1/4	6	0,75	12,5	2	10	10	BP	●	-	❖551A213 ⁽¹⁾
1/4	6	0,75	12,5	2	-	8	LP	-	○	❖551B213
Solenoid air pilot operated and return (bistable)										
1/4	6	0,75	12,5	2	10	10	BP	●	-	❖551A214
1/4	6	0,75	12,5	2	-	8	LP	-	○	❖551B214

❖ Select 8 for NPT ANSI 1.20.3 or select G for ISO G (228/1) ● Available feature ○ Available feature in DC only.

⁽¹⁾ Certified IEC 61508 Functional Safety data, use suffix "SL". ⁽²⁾ 314/LPKF: Contact us



POWER LEVELS - cold electrical holding values (watt)



THORNE &
DERRICK
INTERNATIONAL

Thorne & Derrick
+44 (0) 191 490 1547
www.heatingandprocess.com

matics.eu

IC-4-45-9

PREFIX TABLE

prefix							description	power level			
1	2	3	4	5	6	7		UP	LP	RP	BP
L	I	S	C				(4) Flameproof with pilot 314/LPKF, aluminium (EN 60079-1 / 60079-31)* Intrinsically safe, pilot 195, ATEX (EN/IEC 60079-11+26, 61241-11)*	-	-	-	●

SUFFIX TABLE

suffix							description	power level			
1	2	3	4	5	6	7		UP	LP	RP	BP
	G	D					Non-electrical, 1 GD c (551)/ 2 GD c (553), gas/dust (EN 13463-5)	-	-	-	-
			M	S			Screw type manual operator (3)	-	-	-	●
	S	L					Certified IEC 61508 Functional Safety data (1)	-	○	-	●

OPTIONS & ACCESSORIES

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

- Available feature
- Available feature in DC only
- Not available
- * ATEX solenoids are also approved according to EN 13463-1 (non electrical valves)
- (1) Not to use with MS suffix
- (2) Provided with "SL" suffix
- (3) Not to use with LISC prefix
- (4) 314/LPKF: Contact us

PRODUCT SELECTION GUIDE

STEP 1

Select the fluid temperature range and seal material from the general table on page 7. Select basic catalogue number, including pipe thread identification letter. Refer to the specifications tables on page 7.

Example : G551B213

STEP 2

Select prefix (combination). Select the appropriate operator from the tables on page 7. Select for this operator in the electrical characteristics table on page 9: the power level (LP, BP), the type of electrical enclosure protection and the desired temperature class.

Warning: The ambient temperature range of your application may not exceed the temperature range of your operator.

Air operated version, does not use prefix.

Example : LISC

STEP 3

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

GD suffix available for air operated version only (do not use manual operator suffix).

Example : -

STEP 4

Select voltage.

Refer to standard voltages on page 15.

Example : 12..24 V

STEP 5

Final catalogue / ordering number.

Example :

LISC G551B213 12..24 V

ORDERING EXAMPLES:

LISC	G	551	B	213	12..24V / DC
LISC	G	551	B	214	12..24V / DC
	G	551	A	113	
	G	551	A	113	GD
	G	551	A	113	GD SL
	G	551	A	114	
	G	553	A	113	
	G	551	A	114	GD
prefix					
pipe thread					
basic number					
					voltage
					suffix

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	F
Electrical safety	IEC 335
Standard voltages	DC (=) ⁽⁵⁾ : 24V - 48V ; LISC : 12..24V CA (~) ⁽⁵⁾ : 24V - 48V - 115V - 230V/50Hz - other voltages and 60Hz are available on request

prefix option	power ratings				operator ambient temperature ranges (TS)	safety code	electrical enclosure protection (EN 60529)	replacement coil		type ⁽¹⁾
	inrush ~	holding ~		hot/cold =				~	=	
	(VA)	(VA)	(W)	(W)				(C°)	-	
Basic power (BP)										
⁽⁵⁾	8,6	1,6	7,4	6/7,6	-25 à +80	II2G Ex d IIB+H2 Gb T4, II2D Ec t IIIC Db	aluminium IP65	-	-	01
Low power (LP)										
LISC ⁽³⁾⁽⁴⁾	-	-	-	0,5	-40 to +65	II 1G Ex ia IIC T6 Ga, II 2D Ex ib IIIC Db ⁽³⁾	moulded IP65	-	-	02

- Not available

⁽¹⁾ Refer to the dimensional drawings on page 12.

prefix option	safety parameters				
	U _i (DC)	I _i	P _i	L _i	C _i
	(V)	(mA)	(W)	(H)	(μF)
Low power (LP)					
LISC	30	300	1,6	0	0

⁽³⁾ Min. operating current (I_(ON) min.): 0,036 A / U_(ON) min. = 12,8 V (For use in zone 0 locations, see the installation conditions given in the I&M instructions)

⁽⁴⁾ Intrinsically safe pilots: Check the electrical characteristics in the corresponding catalogue pages (LISC: 19500036/LISC pilot).

⁽⁵⁾ 314/LPK: Contact us

ELECTRICAL CONNECTIONS

prefix	connection
⁽⁵⁾	Conduits d'entrée de câble 1/2" NPT. Boîtier fourni sans presse-étoupe.
LISC	Spade plug connector with cable gland EN175301-803A (ISO 4400) for cables with an outer diameter from 6 to 8 mm

ADDITIONAL OPTIONS

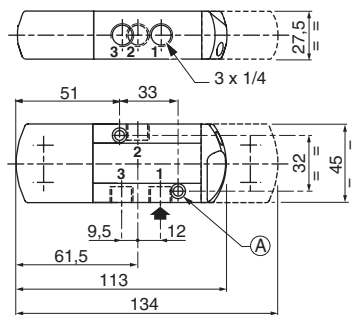
- Mounting on aluminium supply rail, 1/4 or 1/2
- Other pipe threads are available on request

INSTALLATION

- Installation/maintenance instructions are included with each valve
- The valves can be mounted in any position without affecting operation
- Do not connect the pressure supply to the exhaust port 3. The "environmentally-protected" construction is not adapted for a "distributing" function
- IEC 61508 Functional Safety (suffix SL). Check temperature range of valve body and solenoid for suitability. For probability of failure, contact us
- It is necessary to connect pipes or fittings to the exhaust ports to protect the internal parts of the valve if used outside or in harsh environments (dusts, liquids etc.)
- Threaded pipe connection identifier is: 8 = NPT (ANSI 1.20.3); G = G (ISO 228/1)
- Valves with suffix "SL" are provided with specific exhaust protectors

DIMENSIONS (mm), WEIGHT (kg)

Type 01-02: CNOMO (Series 551) size 30 (E06.05.80)



2 mounting holes

- (A) 5.3 mm dia.; Spotfacing: 9 mm dia., depth 5 mm
- (B) 6.5 mm dia.; Spotfacing: 11 mm dia., depth 6 mm

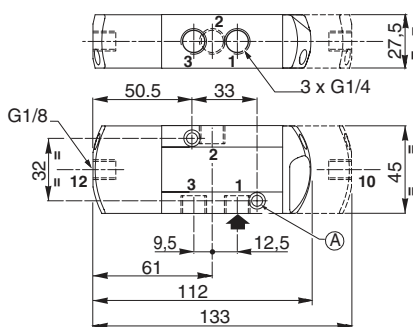


TYPE 01:
314 pilot/LPKF operator
EN/IEC 60079-1 and EN/IEC 60079-31

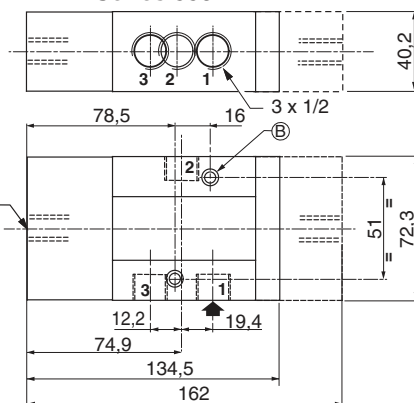
551: Contact us

Type 03: Air operated

Series 551

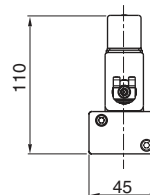
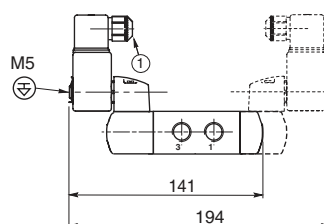
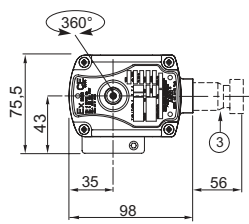
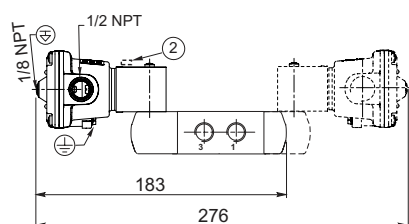


Series 553



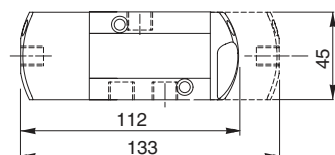
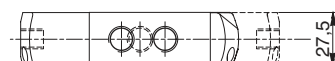
TYPE 02:
LISC
Aluminium
IEC 335/EN 60079-11/26 and EN/IEC 61241-11

551B213 / 551B214

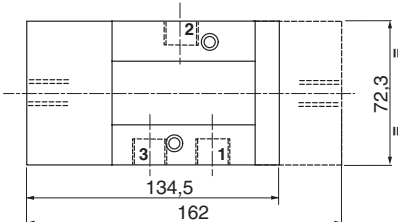
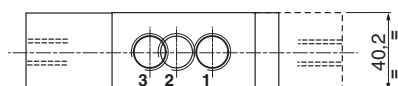


TYPE 03:
No prefix, IP65
[suffixes 551: GD (II 1 GD c) ; SL (SIL) ;
GDSL (SIL, II 1 GD c) ;
suffix 553: GD (II 2 GD c) ; SL (SIL) ;
GDSL (SIL, II 2 GD c)]
Air operated version

551A113 / 551A114



553A113 / 553A114



- (1) Connector rotatable by 90° increments (cable 6 - 8 mm)
- (2) Manual operator location
- (3) Ex d certified cable gland (on request)
- (4) Connectable pilot exhaust port
- (5) Non-connectable pilot exhaust port

type	prefix option	power level	weight ⁽¹⁾			
			monostable		bistable	
01	(2)	basic power	551	553	551	553
02	LISC	low power	0,68	-	0,93	-
03	-	-	0,33	2,14	0,41	2,01

(1) Incl. connector(s), except CFVT.

(2) 314/LPKF: Contact us

ACCESSORIES

ØA	-	1/8	1/4	1/2	
B	-	10	11	14	
exhaust protector (stainless steel)					