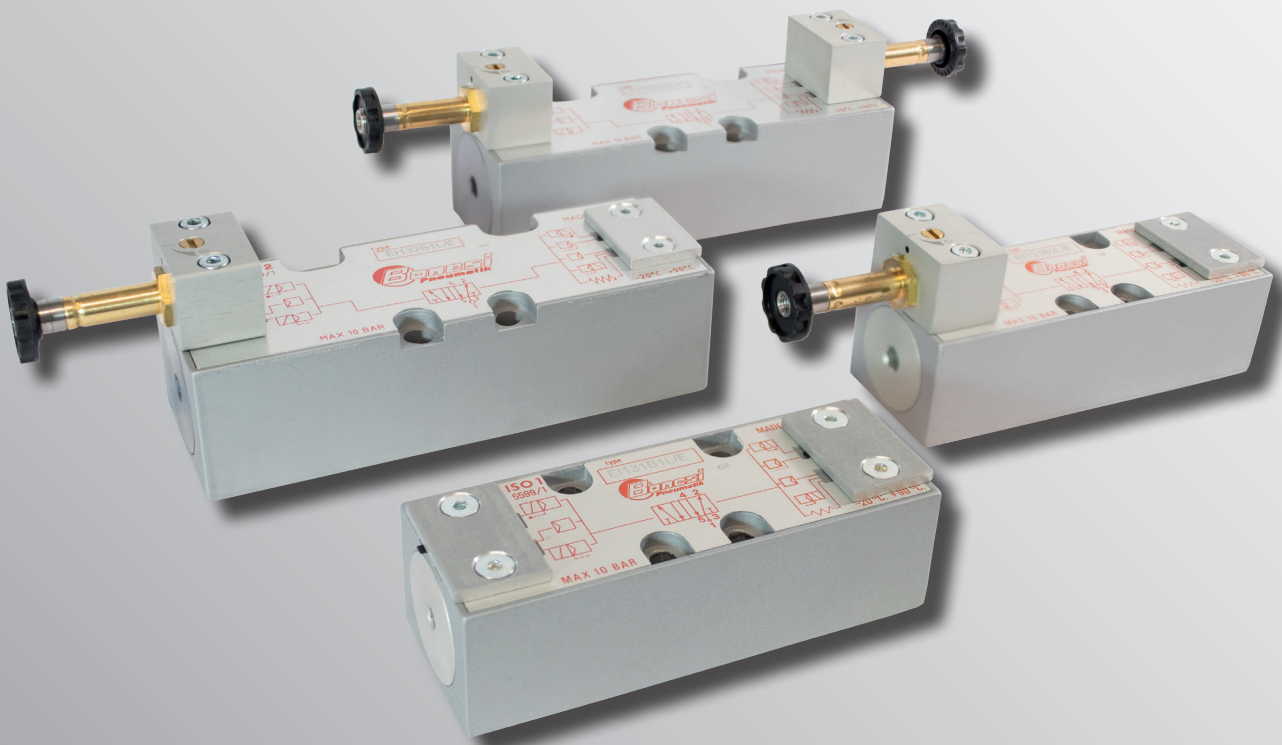


I Series

Spool valves ISO 5599/1



ISO 9001
BUREAU VERITAS
Certification





Balanced spool pneumatic valves - Series ISO 5599/1

Size: ISO 1 - ISO 2

I SERIES



- Balanced spool valves
- According to ISO 5599/1 standard
- High mechanical strength
- Die-cast body in painted aluminium alloy
Anodised aluminium bases
- 5/2 - 5/3 pneumatic actuation
External pilot
- Possibility of series assembly
on modular bases

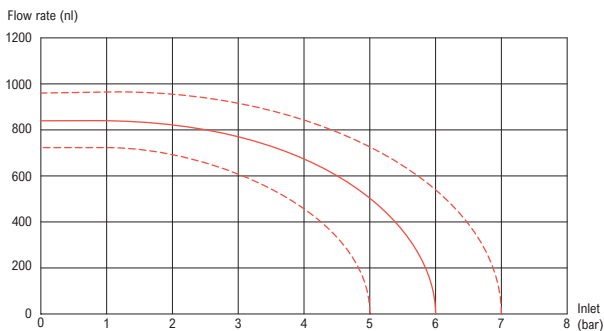
TECHNICAL CHARACTERISTICS

Function	5/2 - 5/3	
Operation	Pneumatic: External pilot - Monostable mechanical or pneumatic spring return, bistable, three positions	
Materials	Anodised aluminium alloy body, anodised aluminium alloy base and cover Internal components in steel - aluminium - brass - NBR gaskets	
Note on materials	Compliant with REACH (1907/2006/EC and subsequent amendments)	
Connections	ISO1 and ISO2 compliant with the ISO 5599/1 standard	
Operating temperature	0°C ÷ +90°C (-20°C with dry air, to avoid ice formation)	
Operating pressure	0 ÷ 10 bar	
Pilot operation pressure	2 bar	
Air flow rate	ISO 1	ISO 2
Rated diameter	5 mm	8 mm
Supply pressure	5 bar 720 NI/min	1320 NI/min
(with ΔP 1 bar)	6 bar 840 NI/min	1560 NI/min
	7 bar 960 NI/min	1780 NI/min
Fluid	Filtered air, lubrication-free, compliant with ISO 8573-1:2010 [7:4:4]	
Lubrication	Not required (if required in the pneumatic circuit, it must be continuous)	

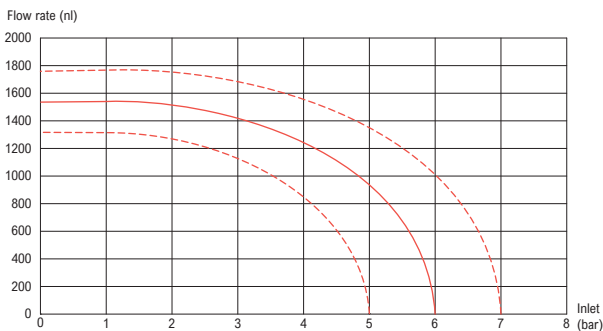
3
PNEUMATIC DISTRIBUTORS

FLOW DIAGRAMS - PNEUMATICALLY OPERATED VALVES

FLOW RATE DIAGRAM - SIZE ISO 1



FLOW RATE DIAGRAM - SIZE ISO 2

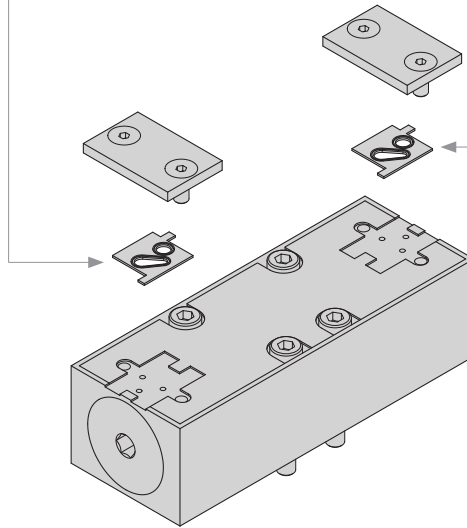
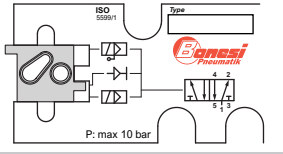


MULTIFUNCTION VALVE

The ISO series distributors are used to obtain all the functions with a single basic command, by positioning the selector gasket at the symbol printed on the plate.

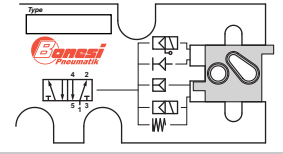
OPERATION

External pneumatic pilot

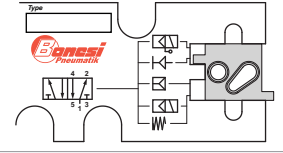


REPOSITIONING

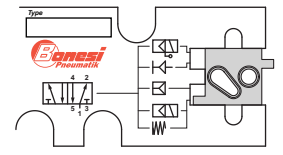
External pneumatic pilot



Monostable - Pneumatic spring

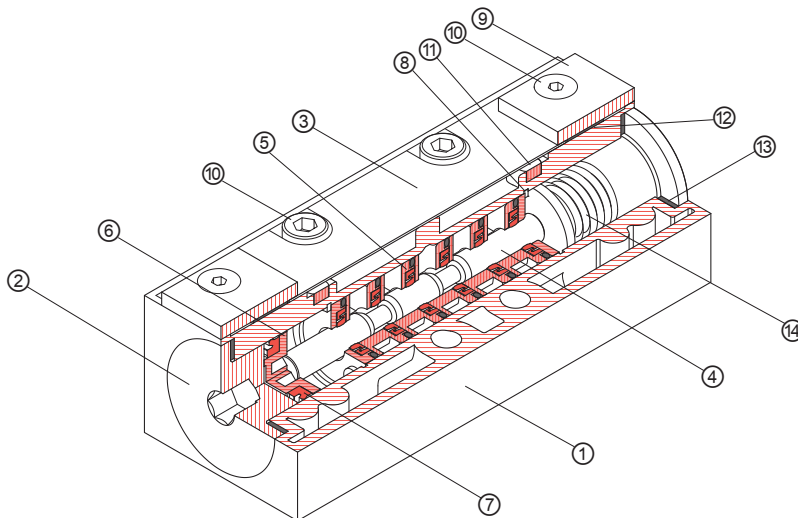


Monostable - Mechanical spring




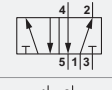
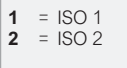




MATERIALS - PNEUMATICALLY OPERATED VALVES

POS	DESCRIPTION	MATERIALS	POS	DESCRIPTION	MATERIALS
①	Body	Painted zinc and aluminium alloy	⑧	Seeger ring	C75 steel
②	Cover	Anodised aluminium	⑨	Closing plate	Anodised aluminium
③	Plate	Anodised aluminium	⑩	Screw	Galvanised steel
④	Spool	Nickel-plated aluminium	⑪	Silencer	Sintered bronze
⑤	Spacers	Brass OT58	⑫	Selector gasket	Nitrile rubber (NBR)
⑥	Piston	Nylon	⑬	Sealing gasket	Fasit oil
⑦	Piston gasket	Nitrile rubber (NBR)	⑭	Spring	AISI 302 steel (X10CrNi18-09)

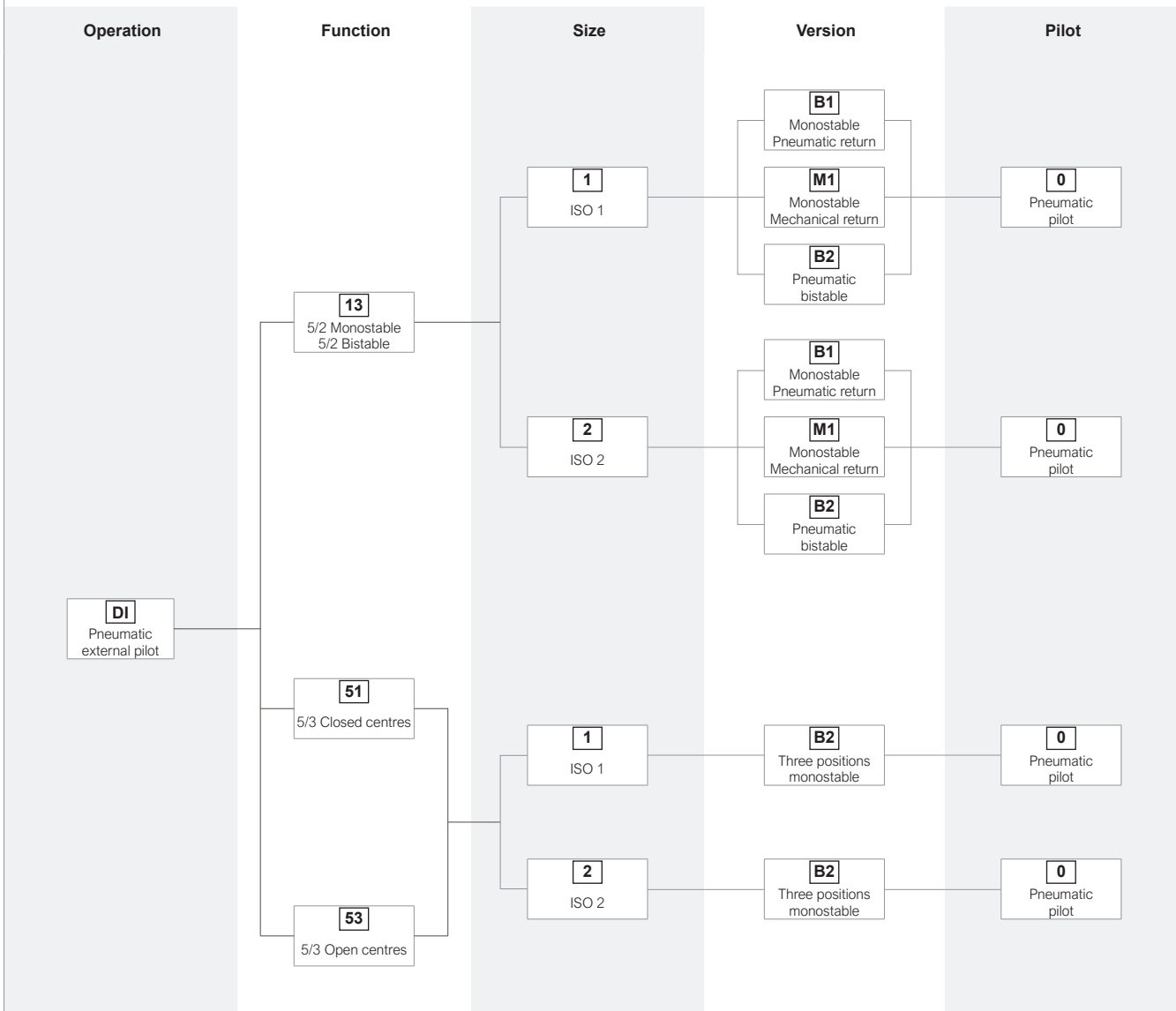




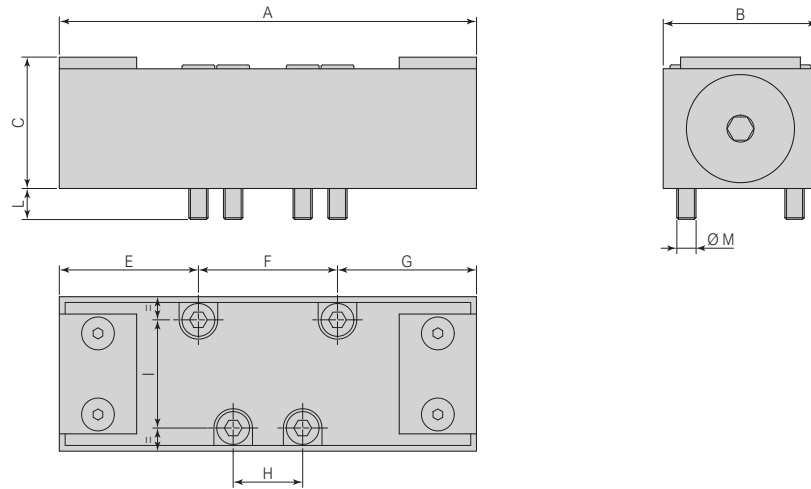
CODING KEY - PNEUMATICALLY OPERATED VALVES

Operation	Function	Size	Version	Pilot
DI	13	1	B1	0
DI = Pneumatic External pilot 	13 = 5/2 Monostable 5/2 Bistable 	1 = ISO 1 2 = ISO 2 	B1 = Monostable Pneumatic spring return  M1 = Monostable Mechanical spring return  B2 = Pneumatic bistable Three-position monostable 	0 = Pilot Pneumatic 

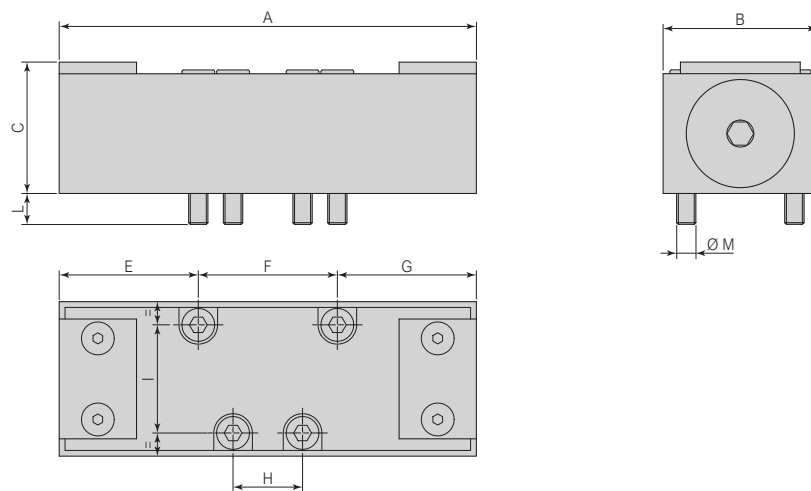
POSSIBLE CONFIGURATIONS



3
PNEUMATIC DISTRIBUTORS

DIMENSIONS - PNEUMATICALLY OPERATED 5/2 VALVES
PNEUMATIC OPERATION - MONOSTABLE WITH PNEUMATIC / MECHANICAL SPRING RETURN


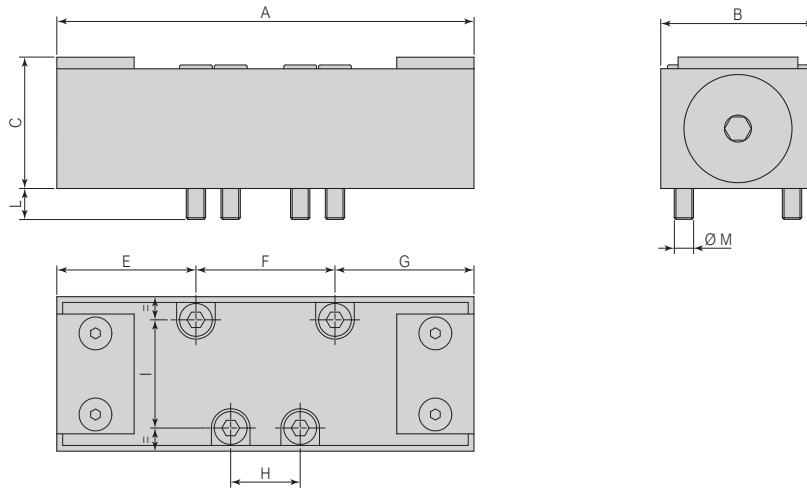
Symbol	Size	Code	A	B	C	E	F	G	H	I	L	Ø M
	1	DI131B10	108	40	34	36	36	36	18	28	8	M5x0.8
	2	D132B10	133.5	48	39	42.75	48	42.75	24	38	9	M6x1.0
	1	DI131M10	108	40	34	36	36	36	18	28	8	M5x0.8
	2	D132M10	133.5	48	39	42.75	48	42.75	24	38	9	M6x1.0

PNEUMATIC OPERATION - BISTABLE


Symbol	Size	Code	A	B	C	E	F	G	H	I	L	Ø M
	1	DI131B20	108	40	34	36	36	36	18	28	8	M5x0.8
	2	D132B20	133.5	48	39	42.75	48	42.75	24	38	9	M6x1.0

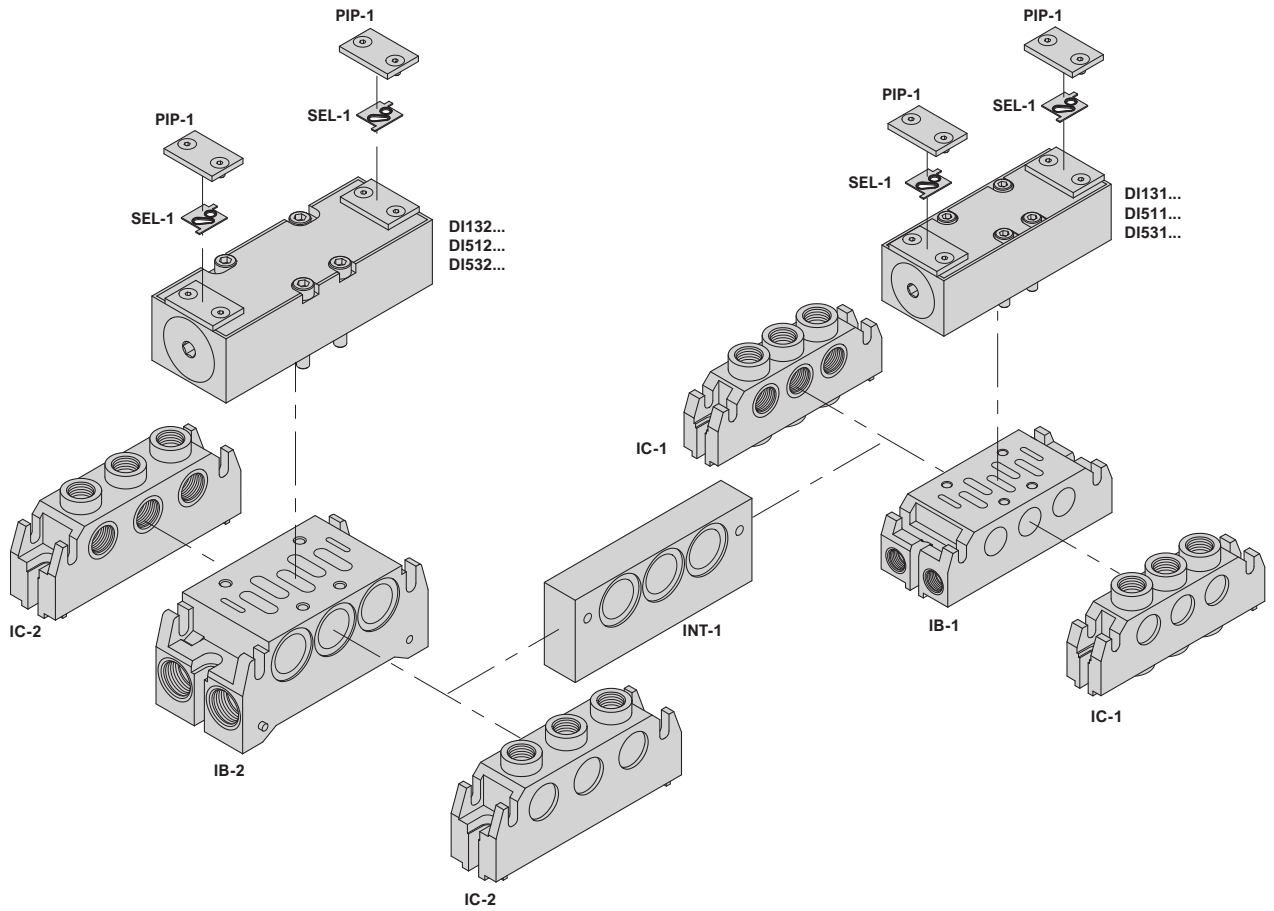
DIMENSIONS - PNEUMATICALLY OPERATED 5/3 VALVES

PNEUMATIC OPERATION - THREE POSITIONS - CLOSED / OPEN CENTRES



Symbol	Size	Code	A	B	C	E	F	G	H	I	L	Ø M
	1	DI511B20	108	40	34	36	36	36	18	28	8	M5x0.8
	2	D512B20	133.5	48	39	42.75	48	42.75	24	38	9	M6x1.0
	1	DI531B20	108	40	34	36	36	36	18	28	8	M5x0.8
	2	D532B20	133.5	48	39	42.75	48	42.75	24	38	9	M6x1.0

ACCESSORIES



	TERMINAL	SUB-BASE For IB sub-base...	CONNECTION INTERFACE Between sub-bases IB...	CLOSING PLATE For ISO1 and ISO2	SELECTOR GASKET For ISO1 and ISO2	
Size	Page 3.5.05.7	Page 3.5.05.7	Page 3.5.05.7	-	-	
1	IB-1	IC-1	INT-1	PIP-1	SEL-1	
2	IB-2	IC-2	INT-1	PIP-1	SEL-1	
	Die-cast aluminium	Die-cast aluminium	Anodised aluminium	Anodised aluminium	Nitrile rubber (NBR)	

ACCESSORIES

IB-... Sub-base	Size	Code	A	B	C	D	E	F	G	H	I	L	M	N	Z
	1	IB-1	106	92	43	36	5.5	Gas 1/8"	24	Gas 1/4"	17	64	12	12	70
	2	IB-2	120	102	56	46	6.5	Gas 1/8"	30	Gas 1/4"	25	69	20	15	85
Die-cast aluminium sub-base - Zinc-plated steel connecting screw - NBR gaskets / 1 piece per pack															

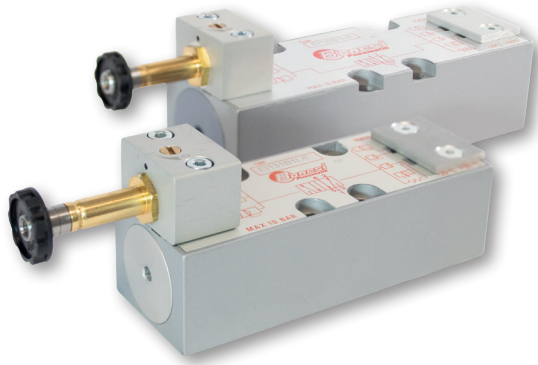
IC-... Terminal	Size	Code	A	B	C	D	E	F	G	H	I	L	Y+	W+
	1	IC-1	106	92	22	12	5.5	Gas 1/4"	22	Gas 3/8"	8	36	65	87
	2	IC-2	120	102	29	15	6.5	Gas 1/4"	29	Gas 1/2"	7	43	85	114
Die-cast aluminium terminal - Zinc-plated steel connecting screw - NBR gaskets / 1 piece per pack														

INT-1 Connection interface	Size	Code	A	B	C	D
	1	INT-1	114	46	20	8
	2					
Die-cast aluminium interface - Zinc-plated steel connecting screw - NBR gaskets / 1 piece per pack						

Balanced spool electropneumatic valves - Series ISO 5599/1

Size: ISO 1 - ISO 2

I SERIES



- Balanced spool valves
- According to ISO 5599/1 standard
- High mechanical strength
- Die-cast body in painted aluminium alloy
Anodised aluminium bases
- 5/2 - 5/3 electropneumatic operation
Internal or external servo-pilot
- Possibility of series assembly
on modular bases

TECHNICAL CHARACTERISTICS

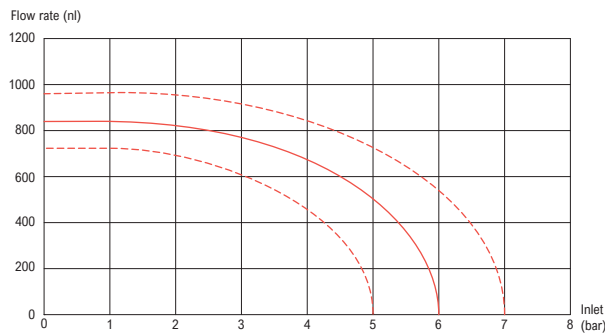
Function	5/2 - 5/3	
Operation	Electropneumatic: Internal or external servo-pilot Monostable mechanical or pneumatic spring return, bistable, three positions	
Materials	Anodised aluminium alloy body, anodised aluminium alloy base and cover Internal components in steel - aluminium - brass - NBR gaskets	
Note on materials	Compliant with REACH (1907/2006/EC and subsequent amendments)	
Connections	ISO1 and ISO2 compliant with the ISO 5599/1 standard	
Operating temperature	0°C ÷ +90°C (-20°C with dry air, to avoid ice formation)	
Operating pressure	0 ÷ 10 bar	
Pilot operation pressure	2 bar	
Air flow rate	ISO 1	ISO 2
Rated diameter	5 mm	8 mm
Supply pressure	5 bar 720 NI/min	1320 NI/min
(with ΔP 1 bar)	6 bar 840 NI/min	1560 NI/min
	7 bar 960 NI/min	1780 NI/min
Fluid	Filtered air, lubrication-free, compliant with ISO 8573-1:2010 [7:4:4]	
Lubrication	Not required (if required in the pneumatic circuit, it must be continuous)	

3

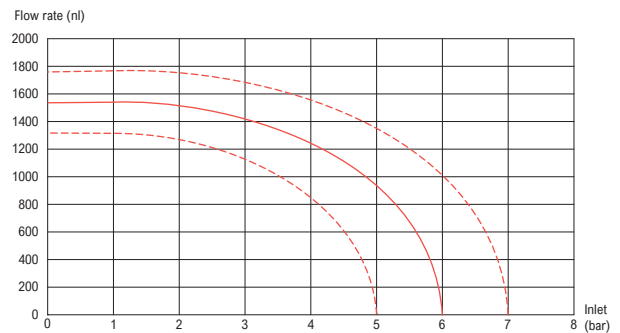
PNEUMATIC DISTRIBUTORS

FLOW DIAGRAMS - ELECTROPNEUMATICALLY OPERATED VALVES

FLOW RATE DIAGRAM - SIZE ISO 1



FLOW RATE DIAGRAM - SIZE ISO 2

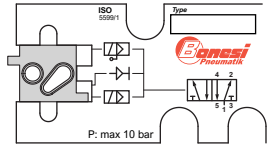


MULTIFUNCTION VALVE

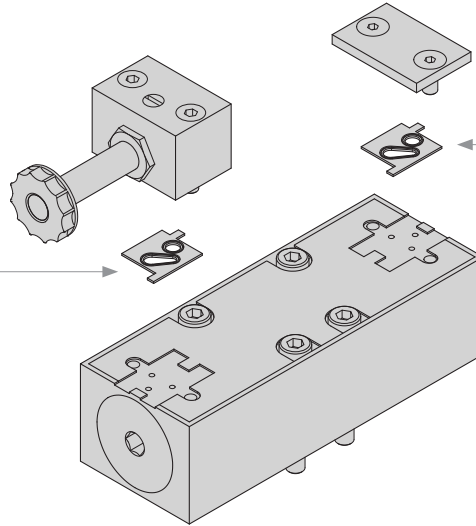
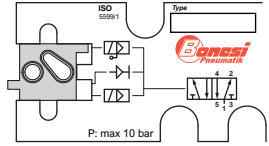
The ISO series distributors are used to obtain all the functions with a single basic command, by positioning the selector gasket at the symbol printed on the plate.

OPERATION

Internal electric pilot

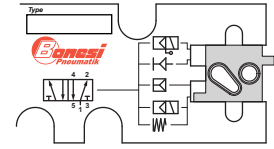


External electric pilot

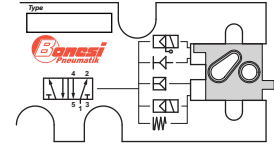


REPOSITIONING

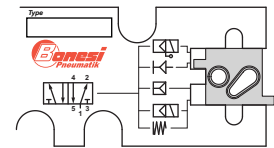
Internal electric pilot



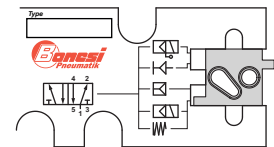
External electric pilot



Monostable - Pneumatic spring

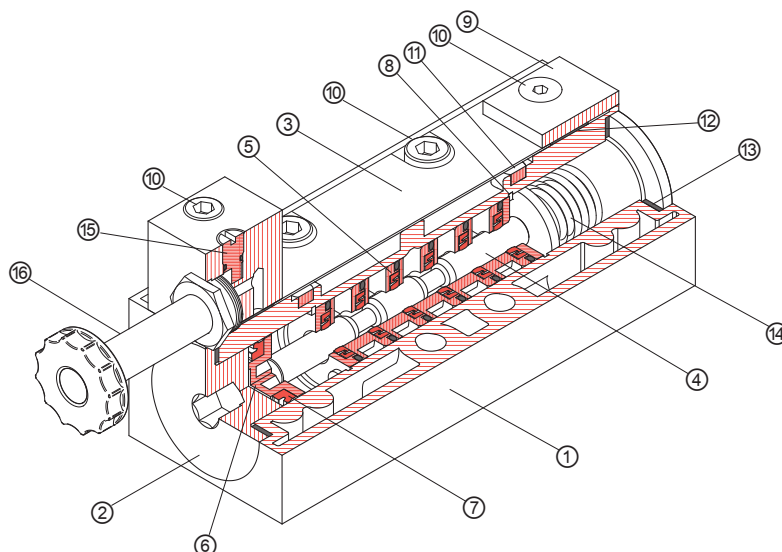


Monostable - Mechanical spring


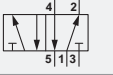



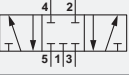

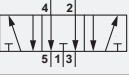




MATERIALS - ELECTROPNEUMATICALLY OPERATED VALVES

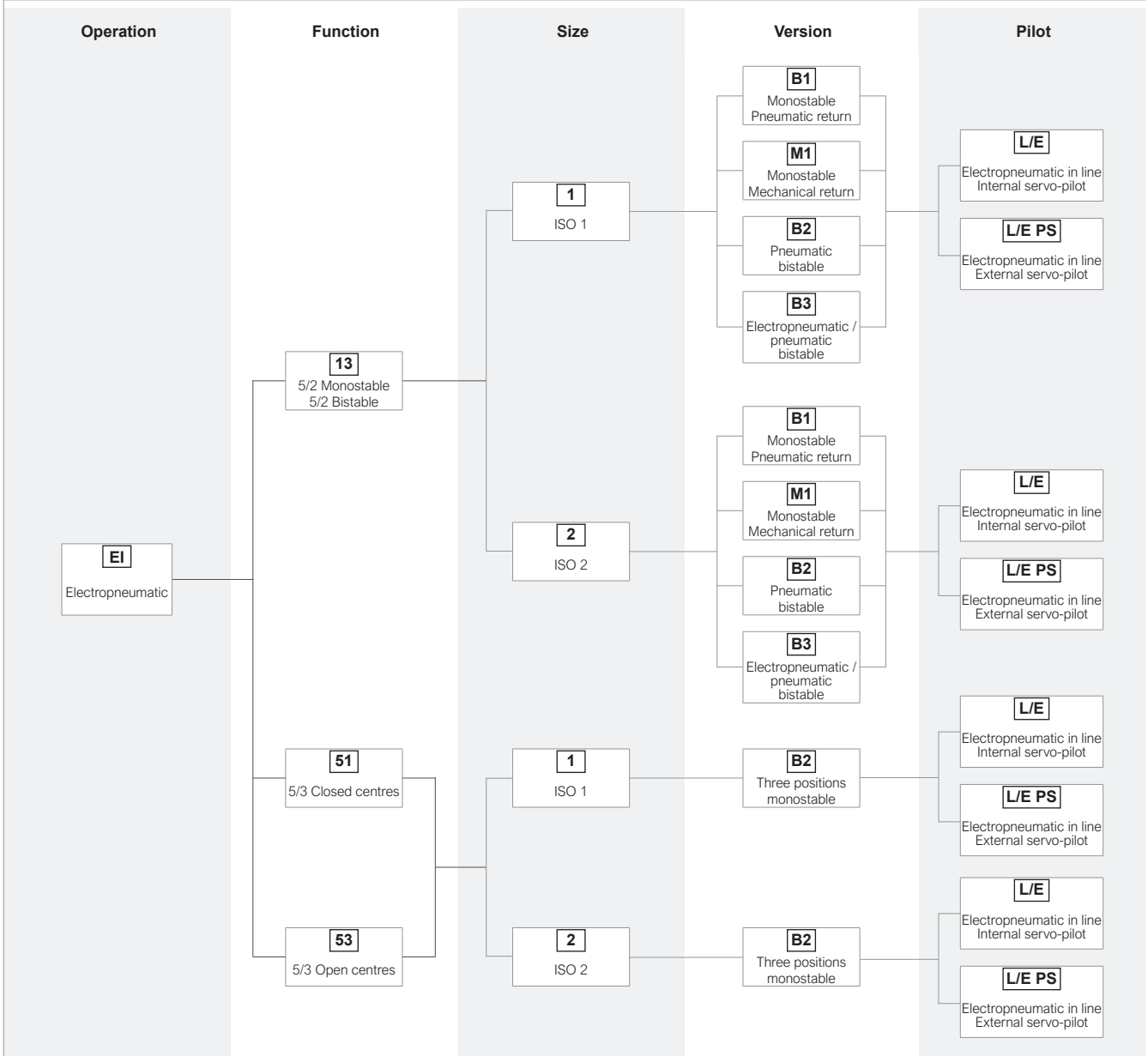
POS	DESCRIPTION	MATERIALS	POS	DESCRIPTION	MATERIALS
①	Body	Painted zinc and aluminium alloy	⑨	Closing plate	Anodised aluminium
②	Cover	Anodised aluminium	⑩	Screw	Galvanised steel
③	Plate	Anodised aluminium	⑪	Silencer	Sintered bronze
④	Spool	Nickel-plated aluminium	⑫	Selector gasket	Nitrile rubber (NBR)
⑤	Spacers	Brass OT58	⑬	Sealing gasket	Fasit oil
⑥	Piston	Nylon	⑭	Spring	AISI 302 steel (X10CrNi18-09)
⑦	Piston gasket	Nitrile rubber (NBR)	⑮	Manual intervention	Brass OT58
⑧	Seeger ring	C75 steel	⑯	Electropilot	Brass - Magnetic stainless steel



CODING KEY - ELECTROPNEUMATICALLY OPERATED VALVES

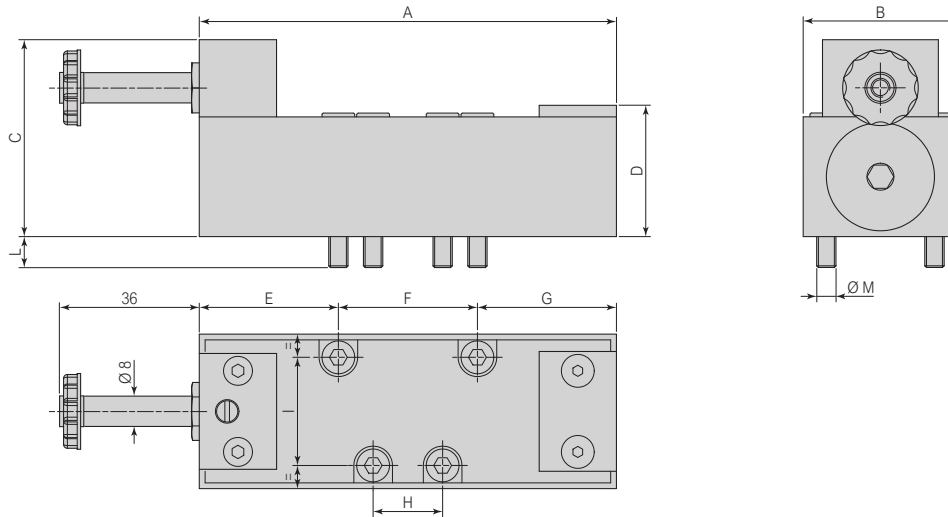
Operation	Function	Size	Version	Pilot
EI	13	1	B1	L/E
EI = Electropneumatic internal servo-pilot 	13 = 5/2 Monostable 5/2 Bistable 	1 = ISO 1 2 = ISO 2 	B1 = Monostable Pneumatic spring return 	L/E = Electropneumatic pilot in line - Internal servo-pilot L/E PS = Electropneumatic pilot in line - External servo-pilot 
	51 = 5/3 Closed centres 		M1 = Monostable Mechanical spring return 	
	53 = 5/3 Open centres 		B2 = Pneumatic bistable Three-position monostable 	
			B3 = Bistable Pneumatic pilot return 	

POSSIBLE CONFIGURATIONS



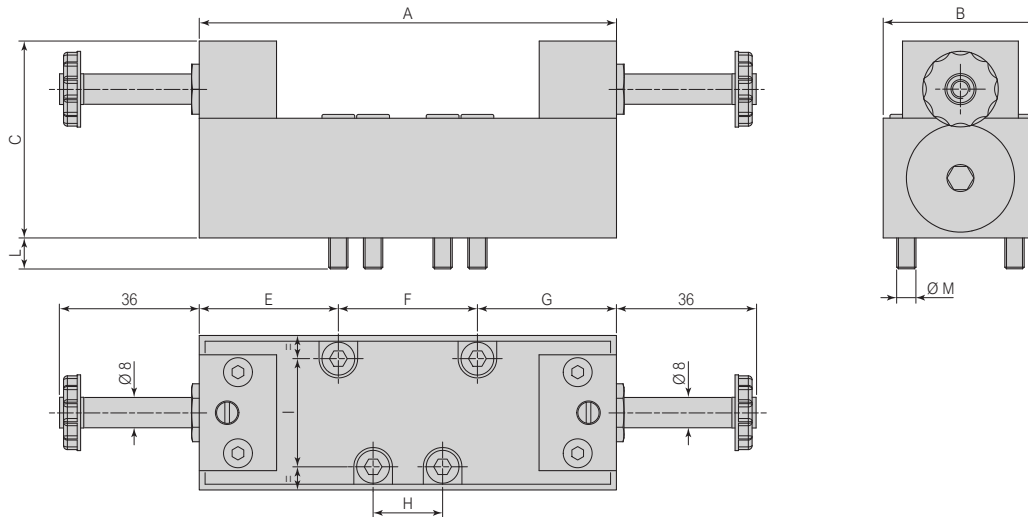
DIMENSIONS - 5/2 VALVES WITH ELECTROPNEUMATIC OPERATION IN LINE

ELECTROPNEUMATIC DRIVE - MONOSTABLE WITH PNEUMATIC / MECHANICAL SPRING RETURN

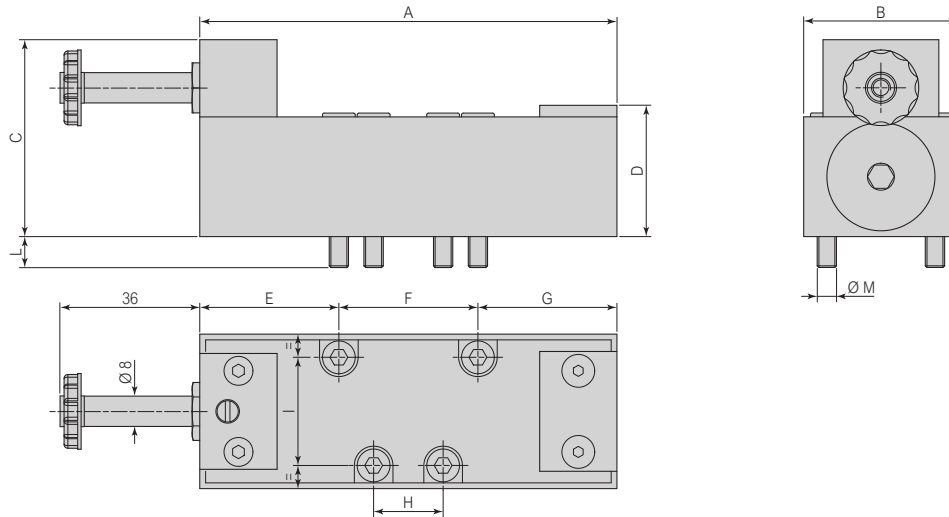


Symbol	Size	Code	A	B	C	D	E	F	G	H	I	L	Ø M
	1	EI131B1L/E	108	40	51	34	36	36	36	18	28	8	M5x0.8
	2	EI132B1L/E	133.5	48	56	39	42.75	48	42.75	24	38	9	M6x1.0
	1	EI131M1L/E	108	40	51	34	36	36	36	18	28	8	M5x0.8
	2	EI132M1L/E	133.5	48	56	39	42.75	48	42.75	24	38	9	M6x1.0
	1	EI131B1L/E PS	108	40	51	34	36	36	36	18	28	8	M5x0.8
	2	EI132B1L/E PS	133.5	48	56	39	42.75	48	42.75	24	38	9	M6x1.0
	1	EI131M1L/E PS	108	40	51	34	36	36	36	18	28	8	M5x0.8
	2	EI132M1L/E PS	133.5	48	56	39	42.75	48	42.75	24	38	9	M6x1.0

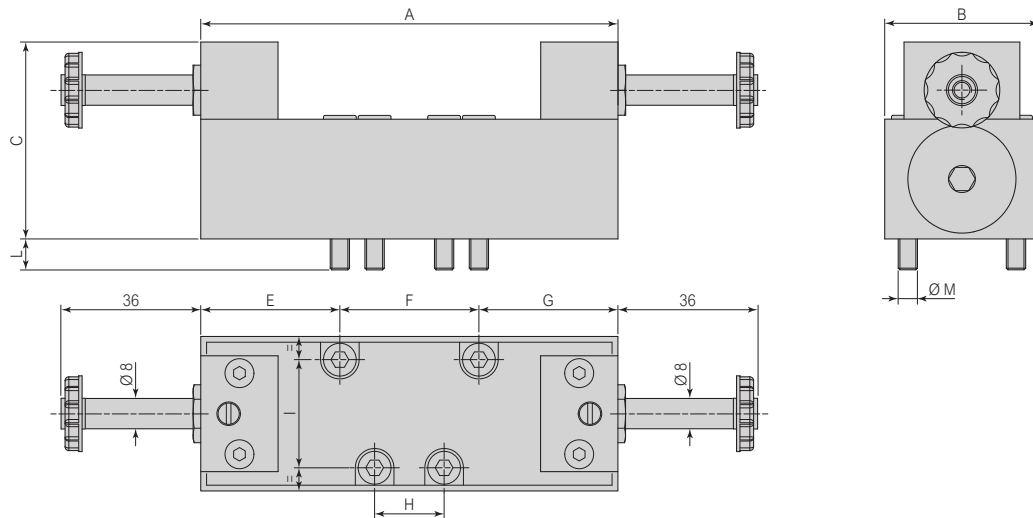
ELECTROPNEUMATIC OPERATION - BISTABLE



Symbol	Size	Code	A	B	C	E	F	G	H	I	L	Ø M
	1	EI131B2L/E	108	40	31	36	36	36	18	28	8	M5x0.8
	2	EI132B2L/E	133.5	48	36	42.75	48	42.75	24	38	9	M6x1.0
	1	EI131B2L/E PS	108	40	31	36	36	36	18	28	8	M5x0.8
	2	EI132B2L/E PS	133.5	48	36	42.75	48	42.75	24	38	9	M6x1.0

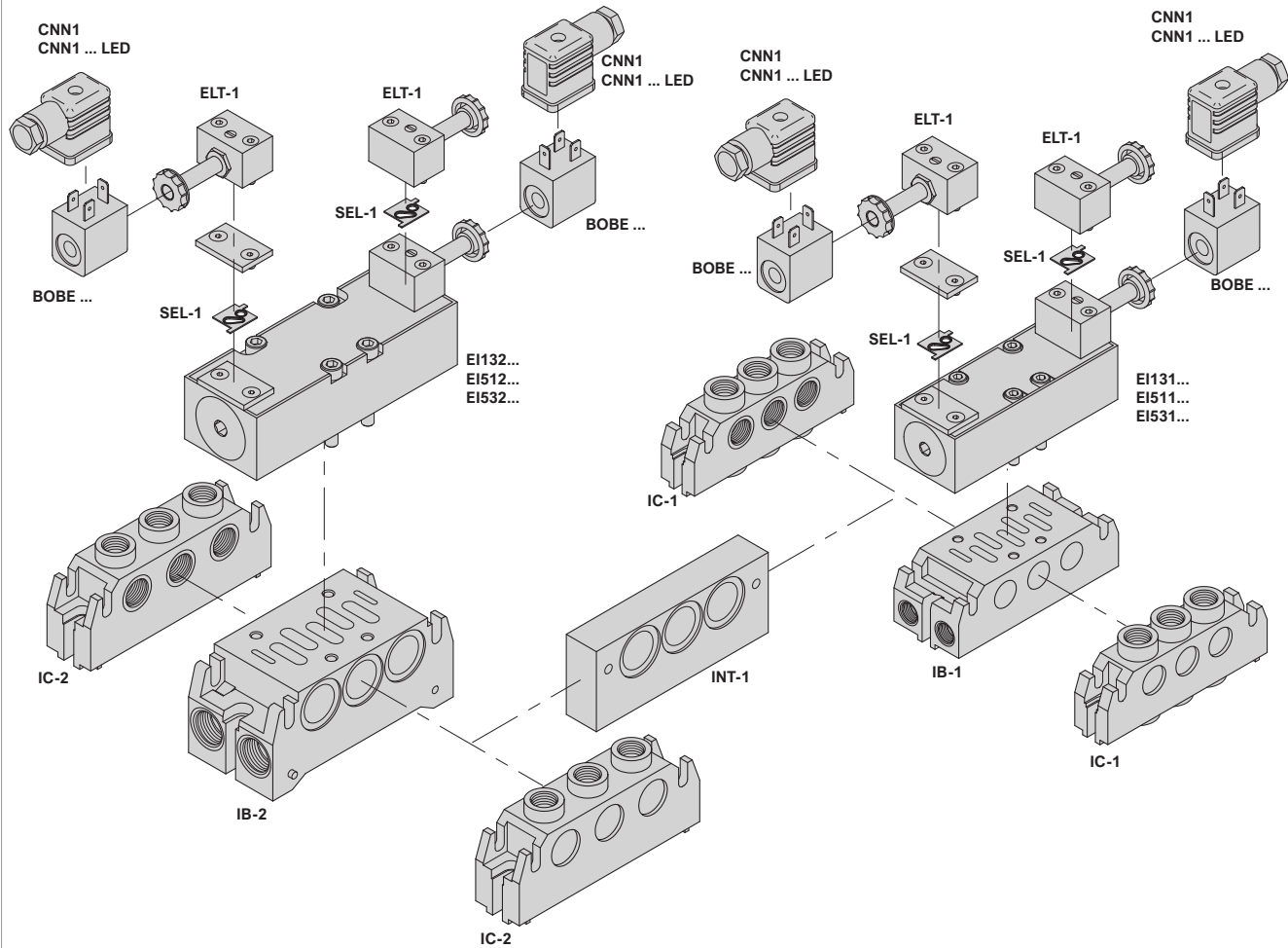
DIMENSIONS - 5/2 VALVES WITH ELECTROPNEUMATIC IN LINE / PNEUMATIC OPERATION
ELECTROPNEUMATIC OPERATION - REPOSITIONING WITH PNEUMATIC OPERATION


Symbol	Size	Code	A	B	C	D	E	F	G	H	I	L	Ø M
	1	EI131B3L/E	108	40	51	34	36	36	36	18	28	8	M5x0.8
	2	EI132B3L/E	133.5	48	56	39	42.75	48	42.75	24	38	9	M6x1.0
	1	EI131B3L/E PS	108	40	51	34	36	36	36	18	28	8	M5x0.8
	2	EI132B3L/E PS	133.5	48	56	39	42.75	48	42.75	24	38	9	M6x1.0

DIMENSIONS - 5/3 VALVES WITH ELECTROPNEUMATIC OPERATION
ELECTROPNEUMATIC OPERATION - THREE POSITIONS - CLOSED / OPEN CENTRES


Symbol	Size	Code	A	B	C	E	F	G	H	I	L	Ø M
	1	EI511B2L/E	108	40	51	36	36	36	18	28	8	M5x0.8
	2	EI512B2L/E	133.5	48	56	42.75	48	42.75	24	38	9	M6x1.0
	1	EI531B2L/E	108	40	51	36	36	36	18	28	8	M5x0.8
	2	EI532B2L/E	133.5	48	56	42.75	48	42.75	24	38	9	M6x1.0
	1	EI511B2L/E PS	108	40	51	36	36	36	18	28	8	M5x0.8
	2	EI512B2L/E PS	133.5	48	56	42.75	48	42.75	24	38	9	M6x1.0
	1	EI531B2L/E PS	108	40	51	36	36	36	18	28	8	M5x0.8
	2	EI532B2L/E PS	133.5	48	56	42.75	48	42.75	24	38	9	M6x1.0

ACCESSORIES



	TERMINAL	SUB-BASE For IB sub-base...	CONNECTION INTERFACE Between sub-bases IB...	CLOSURE PLATE For ISO1 and ISO2	SELECTOR GASKET For ISO1 and ISO2	
Size	Page 3.5.05.14	Page 3.5.05.14	Page 3.5.05.14	-	-	
1	IB-1	IC-1	INT-1	PIP-1	SEL-1	
2	IB-2	IC-2	INT-1	PIP-1	SEL-1	
	Die-cast aluminium	Die-cast aluminium	Anodised aluminium	Anodised aluminium	Nitrile rubber (NBR)	
	BOBE ... "E" type coils AC / DC	CNN1 ... Connectors for "E" type coils	CNN1 ... LED Connectors for "E" type coils			
Size	Page 3.5.05.15	Page 3.5.05.15	Page 3.5.05.15			
1	BOBE ...	CNN1	CNN1 ...			
2						
	Coating in NYLON + GLASS FIBRES	PA6 GF	PA6 GF - PA12			

ACCESSORIES

IB-... Sub-base	Size	Code	A	B	C	D	E	F	G	H	I	L	M	N	Z
	1	IB-1	106	92	43	36	5.5	Gas 1/8"	24	Gas 1/4"	17	64	12	12	70
	2	IB-2	120	102	56	46	6.5	Gas 1/8"	30	Gas 1/4"	25	69	20	15	85

Die-cast aluminium sub-base - Zinc-plated steel connecting screw - NBR gaskets / 1 piece per pack

IC-... Terminal	Size	Code	A	B	C	D	E	F	G	H	I	L	Y+	W+
	1	IC-1	106	92	22	12	5.5	Gas 1/4"	22	Gas 3/8"	8	36	65	87
	2	IC-2	120	102	29	15	6.5	Gas 1/4"	29	Gas 1/2"	7	43	85	114

Die-cast aluminium terminal - Zinc-plated steel connecting screw - NBR gaskets / 1 piece per pack

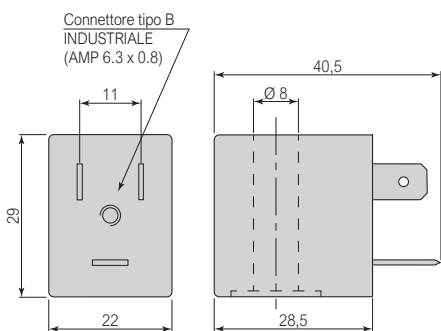
INT-1 Connection interface	Size	Code	A	B	C	D
	1	INT-1	114	46	20	8
	2					

Die-cast aluminium interface - Zinc-plated steel connecting screw - NBR gaskets / 1 piece per pack

"E" type COILS (22 mm)

BOBE ...

Direct current coils



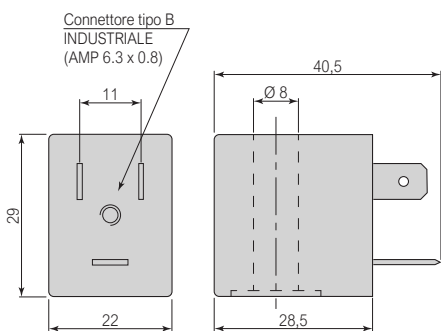
Technical characteristics

Code	BOBE012DC	BOBE024DC	BOBE048DC	
Operating voltage	12 VDC	24 VDC	48 VDC	
Power (max.)	5.5 W			
Voltage tolerance	±10% (of nominal voltage)			
Insulation class	155°C (F)			
Wire insulation class	200°C (H)			
Insertion duration	100% (at 20°C)			
Electrical connection	INDUSTRIAL (AMP 6.3 x 0.8) form B			
Protection class	IP54 (with connector) IP65 (with connector and suitable gaskets)			
Material	NYLON + Fibreglass coating			

BOBE... / 1 piece per pack

BOBE ...

AC coils



Technical characteristics

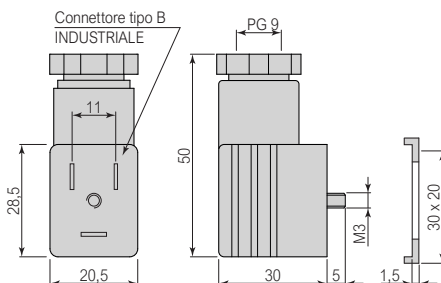
Code	BOBE024AC	BOBE048AC	BOBE110AC	BOBE220AC
Operating voltage	24 VAC	48 VAC	110 VAC	220 VAC
Power (max.)	6,5 VA			
Voltage tolerance	±10% (of nominal voltage)			
Insulation class	155°C (F)			
Wire insulation class	200°C (H)			
Insertion duration	100% (at 20°C)			
Electrical connection	INDUSTRIAL (AMP 6.3 x 0.8) form B			
Protection class	IP54 (with connector) IP65 (with connector and suitable gaskets)			
Material	NYLON + Fibreglass coating			

BOBE... / 1 piece per pack

CONNECTORS for "E" type coils (22 mm)

CNN1...

Connector for "E" type coils

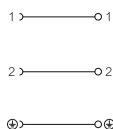


Technical characteristics

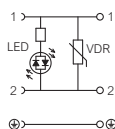
Code	CNN1	CNN1 2 LED	CNN1 4 LED	CNN1 5 LED
Voltage	0÷250 V AC/DC	12/24 V AC/DC	115 V AC/DC	230 V AC/DC
Current (max.)	10 A	5 A	5 A	5 A
Contact resistance (max.)	15 mΩ			
Overvoltage category	III			
Conductor cross-section (max.)	1.5 mm ² (without terminals)			
Cable clamp thread	PG9			
Operating temperature	-40°C ÷ +100°C	-20°C ÷ +80°C	-20°C ÷ +80°C	-20°C ÷ +80°C
Electrical connection	INDUSTRIAL (AMP 6.3 x 0.8) form B			
Protection class	IP65 (properly assembled)			
Insert and case materials	PA6 GF - PA6 GF	PA6 GF - PA12	PA6 GF - PA12	PA6 GF - PA12
Visual indicator	None	Yellow LED diode	Yellow LED diode	Yellow LED diode
Colour	Black	Clear	Clear	Clear
Electrical circuit protection	None	VDR Circuit	VDR Circuit	VDR Circuit
Fixing type	Central screw M3x32,5			

CNN1... / Insert, case, gasket and fixing screw - 1 piece per pack

CNN1



CNN1...LED





BONESI PNEUMATIK makes all its products in Italy



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