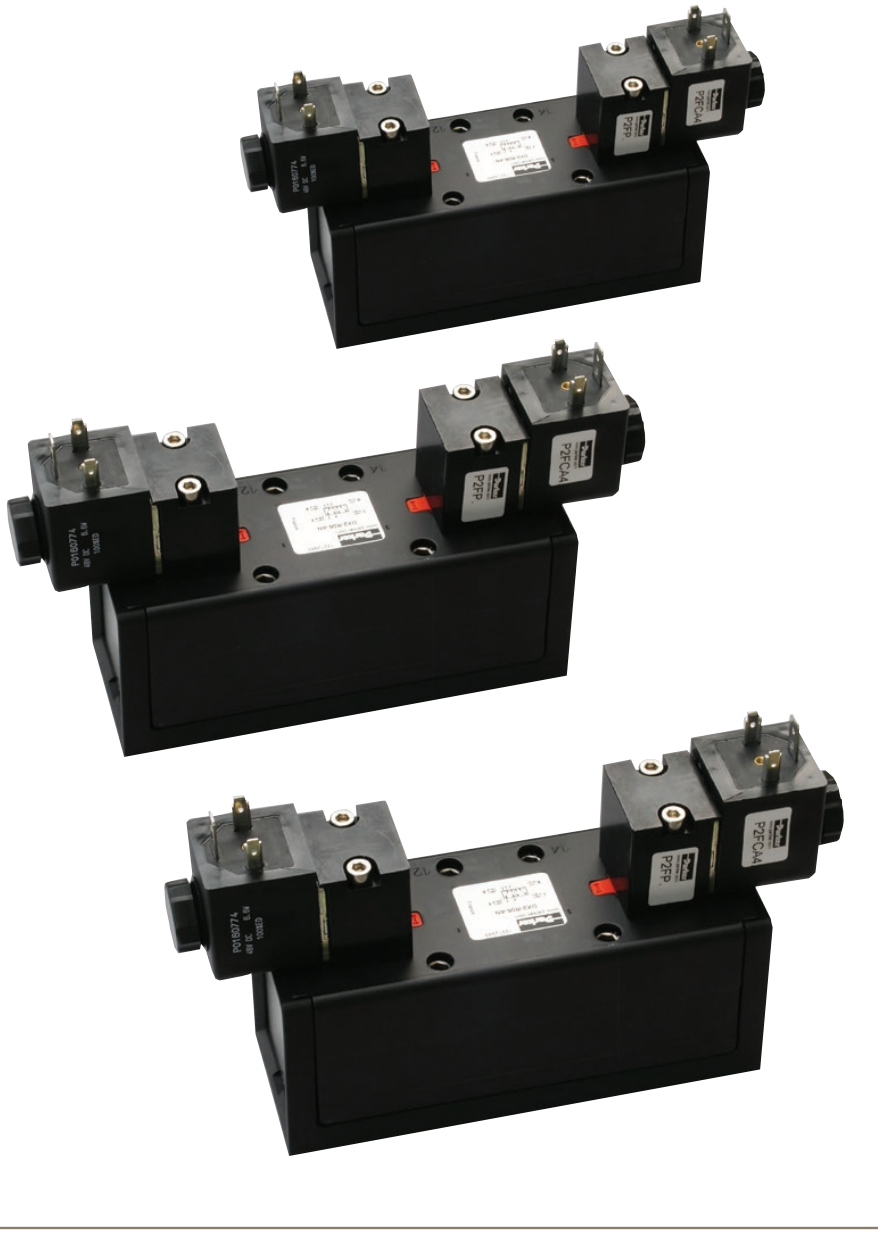




aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding





Global ISO Valves for the Rail Industry

ISO 5599-1 - 1, 2 and 3 sizes

Catalogue PDE2607TCUK 04/2022



Parker

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Global ISO Valves for the Rail Industry

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Important !
Before carrying out any service work, ensure that the valve and manifold have been vented. Remove the primary supply air hose to ensure total disconnection of the air supply before dismantling valves or blank connection blocks.



NB !
All technical data in this catalogue is typical only.

The air quality is decisive for the valve life: see ISO 8573.



WARNING

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.
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Global ISO Valves for the Rail Industry

The Isomax Railway range of directional control valves, ISO5599-1

DX1 1/4", size 1,

DX2 3/8", size 2,

DX3 1/2", size 3,

includes both 5/2 and 5/3 valves, for pneumatic and electrical actuation with a wide choice of subbases and manifolds to suit different application needs in the Railway market.

ISO 5599 - 1





Parker's many years of experience in designing pneumatic products and systems for the rail industry has produced a depth of 'industry specific' knowledge unrivalled in the market place, with a wealth of products, both standard and custom built ideally suited to a wide range of applications.

Throughout Europe Parker have a team of Application Engineers and Design and System Engineers who work closely with customers to understand their requirements and to ensure the optimum engineering solution is provided.

The principal application areas that ISOMAX Railway have experience in include :

Door Step Control

Coupling Systems

Sanding Control Systems

Pantograph Operation

Parking Brake

Trip Cock Reset Valves

Horn

Whistle

Internal and External Door Actuation and Control



Global ISO Valves for the Rail Industry

ISO Specifications

Common for Railway



5599-1

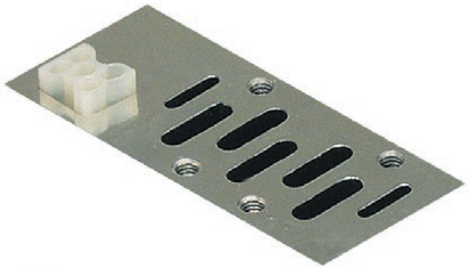
ISO 5599-1

External electrical connection subbase valves

The ISO Standard 5599-1 specifies an interface pattern for a common subbase valve consisting of pressure passages 1, 3, 5, 2 & 4 and pilot passages 12 & 14. The width of the pattern and location of the 4 bolt holes are also specified. There are no specifications for the type of external electrical connection used to control the valve.

Size : 1 2 3

Other specifications not used for Railway (for information)



5599-2

Body-to-base plug-in subbase valves

Same as 5599-1 for pneumatic pressure passages, 5599-2 standard also specifies a plug-in electrical connection.

Sizes : 1 2 3



15407-1 (VDMA 24563)

External electrical connection subbase valves

The ISO Standard 15407-1 specifies an interface pattern for a common subbase valve consisting of pressure passages 1, 3, 5, 2 & 4 and pilot passages 12 & 14. The width of the pattern and location of the 4 bolt holes are also specified. There are no specifications for the type of external electrical connection used to control the valve.

Size : 02 01



15407-2

Body-to-base plug-in subbase valves

Same as 15407-1 for pneumatic pressure passages, 15407-2 standard also specifies a plug-in electrical connection.

Size : 01 02

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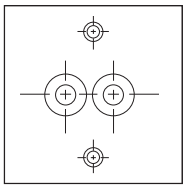
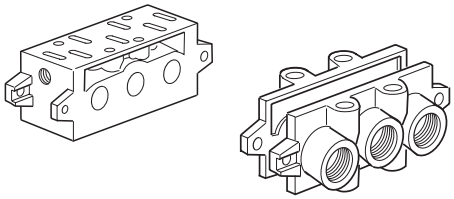
ISO Specifications





CNOMO 06-05-01

The solenoid pilot interface often used with ISO 5599-1 valves is the CNOMO interface. The CNOMO interface specifies the pressure and actuator port, and the screw holes for the mounting of this solenoid pilot. It is commonly used in European automotive plants, and its usage is becoming more prevalent for industrial ISO 5599-1 valves.

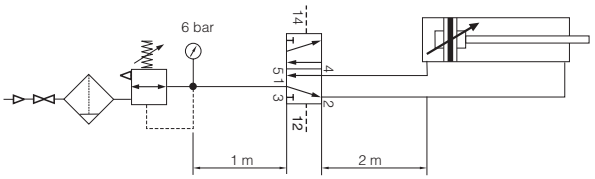
VDMA 24345

The VDMA 24345 is a standard for Manifolds and Subbase specifying a common base mounting footprint in addition to ISO 5599-1 Interface standard. (VDMA is a German organisation - Verband Deutscher Maschinen und Anglagen-Bauer - which is translated to Federation of German Machine and Unit Builders.)

Choice of components for air supply to cylinders

In the chart below can you find the suitable valves, tubes etc. for each cylinder size. If you have a tube length over 2 m, choose one tube size larger than in the chart.

Following data is valid :
Supply pressure : min 7,0 bar
Regulator pressure setting : 6,0 bar
Pipe length between air treatment unit and valve : max 1 m
Pipe length between valve and cylinder : max 2 m

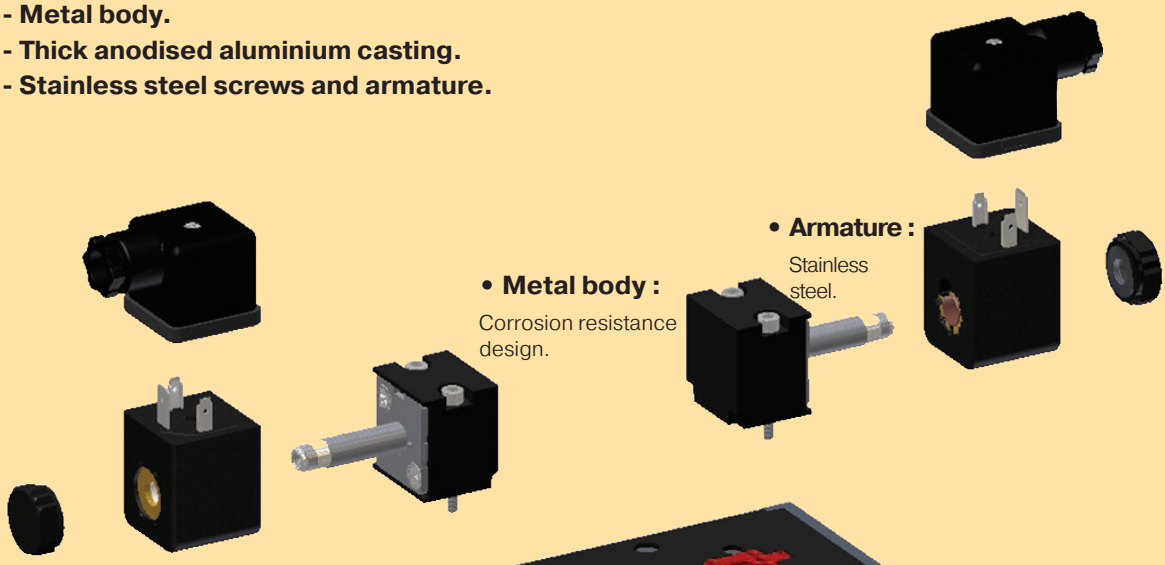


Cylinder bore		<Ø20	Ø20-32	Ø40-50	Ø63	Ø80	Ø100	Ø125	Ø160	Ø200
Cylinder port		M5	G1/8	G1/4	G3/8	G3/8	G1/2	G1/2	G3/4	G3/4
Tubing Ext / Int		4 / 2.7	6 / 4	8 / 6	10 / 7	10 / 7 12 / 9	12 / 9 14 / 11	14 / 11	18 / 15	20 / 18
Size 1	Isomax	G1/4	G1/4	G1/4	G1/4	G1/4	G1/4			
Size 2	Isomax			G3/8	G3/8	G3/8	G3/8	G3/8		
Size 3	Isomax				G1/2	G1/2	G1/2	G1/2	G1/2	G1/2

Cylinder speed < 0.5 m/s Cylinder speed < 1 m/s Cylinder speed > 1 m/s

• Rust and Corrosion resistance Design :

- Metal body.
- Thick anodised aluminium casting.
- Stainless steel screws and armature.



• Armature :
Stainless steel.

• Metal body :
Corrosion resistance design.

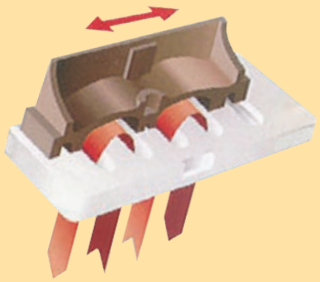
• Coil :
- IP 65 , thermoplastic.
- + / - 30 % Voltage tolerence.
- DC range (12 to 110 V DC).



• Operating temperature :
- 15 °C + 60 °C.

• Shock and Vibration :
IEC 61373 : 1999
Cat 1

• Ceramic technology



- Stable long lasting performances :
Low friction switching : minimum wear of the valve member/seal assembly.

- Excellent reliability :
Long life in excess of 100 million operation, subject to the air supply being filtered to ISO 8573-1 standard.

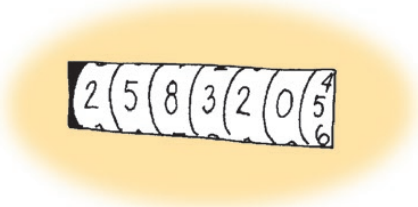
- High performances :
Slide valve concept allows high flow / size ratio and short response time due to short slide stroke and low friction.

Global ISO Valves for the Rail Industry

Rust and corrosion resistant body
With the valve body in polyamide reinforced fiberglass and the casting in thick anodised aluminium, stainless steel screws Isomax Railway presents a comprehensive modern design to suit most Railway applications.

External supply selection
In order to use actuator with low pressure, it is possible to connect an external pressure on port 14 to supply both solenoids. Selection is easily made by reversing the gasket under the operator.

High reliability



Valves easily comply with the requirements for the component reliability in accordance with EU Machinery Directive standards EN292-2 and EN983.

Ceramic technology
Isomax Railway is developped with ceramic technology allowing
- Stability
- Long performance reliabily
- Pressure through exhaust port.

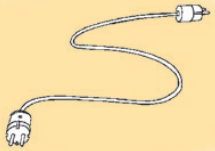
Manual Override
Without manual override as standard, due to safety choice. As option, solenoids are available with flush (locking or non-locking), or extended non-locking metal manual overrides; so that valves can be operated when the electrical supply is turned off.

Solenoid valves, CNOMO interface



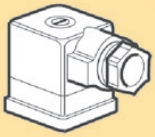
Valve is fitted with a 30mm solenoid having DIN 43650 Industrial form A. Operator body in thick anodised aluminium, stainless steel screws and armature allows compatibility with Railway applications.

High electrical encapsulation class



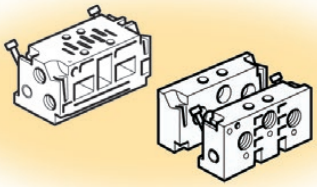
The solenoid valves are protected to IP65 with the standard cable plug.

Wide choice of solenoid connectors/cable plugs



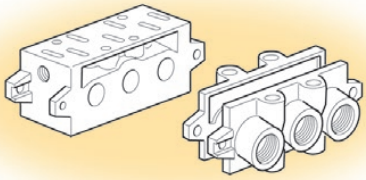
Solenoid connectors are available with or without LED and rectifier.

Bottom or side ported manifold



Manifolds with common ducts for ports 1,3 and 5, outlet port 2 and 4, and supply port for 12 and 14 are available side or bottom ported. Those manifolds are common for Isomax and Isys Iso.

Subbase installation VDMA



A large range of subbase, VDMA or not VDMA, bottom or side ported.

Global ISO Valves for the Rail Industry

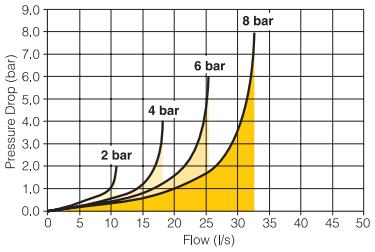
ISO 5599-1

Isomax Flow Characteristics

Flow capacities in accordance with ISO6358, for 5/2 function. 5/3 function are around 10 to 20% less.

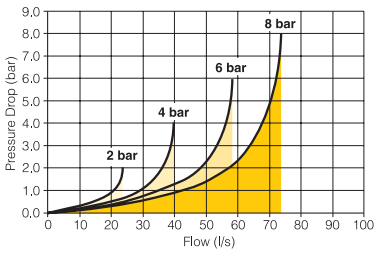


Technical Data Isomax Size 1



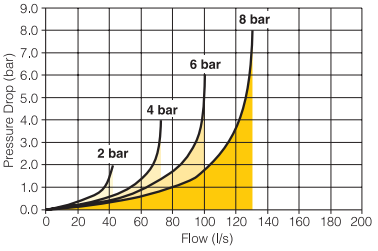
Operating pressure :		
	5/2 Spring return	4,0 - 10 bar
	5/2 Double solenoid	2,5 - 10 bar
	5/3 Double solenoid	4,0 - 10 bar
Pneumatic version :		12 bar
Working temperature :		-15 °C to + 60 °C
Flow (acc. to ISO 6358) :		c = 3,8 Nl/s x bar
		b = 0,35
		Qn = 17,2 l/s
		Qmax = 25,5 l/s

Technical Data Isomax Size 2



Operating pressure :		
	5/2 Spring return	4,0 - 10 bar
	5/2 Double solenoid	2,5 - 10 bar
	5/3 Double solenoid	4,0 - 10 bar
Pneumatic version :		12 bar
Working temperature :		-15 °C to + 60 °C
Flow (acc. to ISO 6358) :		c = 8,2 Nl/s x bar
		b = 0,35
		Qn = 38,3 l/s
		Qmax = 58,7 l/s

Technical Data Isomax Size 3



Operating pressure :		
	5/2 Spring return	4,0 - 10 bar
	5/2 Double solenoid	2,5 - 10 bar
	5/3 Double solenoid	4,0 - 10 bar
Pneumatic version :		12 bar
Working temperature :		-15 °C to + 60°C
Flow (acc. to ISO 6358) :		c = 14,5 Nl/s x bar
		b = 0,35
		Qn = 64,0 l/s
		Qmax = 101,0 l/s

Railway Solenoid Characteristics



Operating pressure :		
	3/2 Spring return	0,0 - 10 bar
Working temperature :		-40 °C to 60 °C (1)
Flow (acc. to ISO 6358) :		Qn = 0.7l/s

(1) limited to 50°C if use with 100% duty cycle.
Increase of leakage below -25 %C.

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Global ISO Valves for the Rail Industry

Material Specification and Characteristics

Isomax Railway Valve

Material

Valve member - seat :	Self lubricating acetal - ceramic
Body :	Polyamide reinforced fibreglass
Casing - End plates :	Anodised aluminium
Valve plate :	Zamak
Seals :	Nitrile
Springs :	Stainless steel
Screws :	Stainless steel

Railway Solenoid

Pilot Valve	**Railway**
Body :	Aluminium
Armature tube :	Stainless steel
Plunger & core :	Corrosion resistant Cr-Ni steel
Seals :	Low temp FKM
Screws :	Stainless steel

Coil	
Encapsulation material :	Thermoplastic as standard

Characteristics

Fluid :	Air or inert gas filtered 40 µ class 5 according to ISO 8573-1 dry class according to service temperature non-lubricated, or lubricated
Storage temperature :	-40 °C to + 70 °C
Low temperature climatic :	According to EN 60068-2-1, test Ad
High temperature climatic :	According to EN 60068-2-2, test Bd
Shock and Vibration :	According to IEC 61373 : 1999 Cat 1 Class B
Salt spray test :	According to ISO 9227, 168 h
Solenoid orifice :	1.2/1.3mm
Power (DC) :	6 to 6.8W
Voltage tolerance :	+/- 30%
Pull in voltage :	According to VDE 0580 July 2000
Duty cycle :	100%
Insulation :	Class II 2000 V
Temperature :	Class F 155 °C
Electrical connection :	Din A

Certification

EMC / CE mark. :	According to EN 61 000-6-2
Dust & water protection :	IP65 according to EN 60529

Transients

Interrupting the current through the solenoid coil produces momentary voltage peaks which, under unfavourable conditions, can amount to several hundred times the rated operating voltage. Normally, these transients do not cause problems, but to achieve the maximum life of relays in the circuit (and particularly of transistors, thyristors and integrated circuits) it is desirable to provide protection by means of voltage-dependent resistors (varistors). All connectors/cable plugs EN175301-803 with LED's include this type of circuit protection.

Global ISO Valves for the Rail Industry

Isomax - ISO 5599 - Size 1 / 2 / 3 - CNOMO

Order chart

DX 1 - R 06 - A N [ ]

	Size
1	Size 1 (ISO 5599)
2	Size 2 (ISO 5599)
3	Size 3 (ISO 5599)

Railway Version

Voltage	
	DC
47	12
48	24
74	48
70	72
71	96
72	110
Blank	Valve less coil

Valve type function	
Internal pilot supply	
06	5/2 double solenoid
56	5/2 double solenoid, 14 prioritised
21	5/2 single solenoid, spring return
51	5/2 single solenoid, differential return
11	5/3 double solenoid vented centre
16	5/3 double solenoid closed centre
13	5/3 double solenoid pressurised centre
External pilot 14 supply	
05	5/2 double solenoid
59	5/2 double solenoid, 14 prioritised
23	5/2 single solenoid, spring return
54	5/2 single solenoid, differential return
09	5/3 double solenoid vented centre
19	5/3 double solenoid closed centre
14	5/3 double solenoid pressurised centre

	Solenoid enclosure
L	3 pin 30mm DIN 43650A
N	Valve less coil

	Electrical version - manual override
A	No override
B	Non-locking Flush - Metal
C	Locking Flush - Metal
D	Non-locking Extended - Metal
	Pneumatic version
60	No override

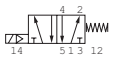
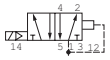
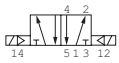
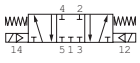
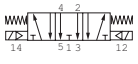
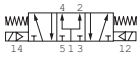
Isomax



Part numbers for complete valves available on request.
Shaded part numbers are standard.

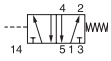
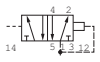
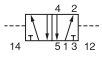
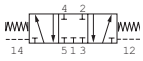
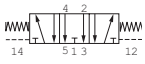
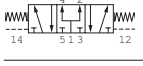
Solenoid operated ISO Railway Valve fitted with CNOMO operator without coil

Solenoid plug/connector to be ordered separately. See page 14.

Symbol	Size	Actuation	Return	Changeover time (ms) at 6 bar 20 °C actua./return	Weight kg	Order code
5/2 Valves						
	1 - 43 mm	Electrical signal	Spring	40/55	0.400	**DX1-R21-AN**
	2 - 56 mm	Electrical signal	Spring	60/105	0.650	**DX2-R21-AN**
	3 - 71 mm	Electrical signal	Spring	85/160	1.150	**DX3-R21-AN**
	1 - 43 mm	Electrical signal	Differential	30/70	0.400	**DX1-R51-AN**
	2 - 56 mm	Electrical signal	Differential	55/110	0.650	**DX2-R51-AN**
	3 - 71 mm	Electrical signal	Differential	80/180	1.150	**DX3-R51-AN**
	1 - 43 mm	Electrical signal	Electrical signal	25/25	0.550	**DX1-R06-AN**
	2 - 56 mm	Electrical signal	Electrical signal	30/30	0.800	**DX2-R06-AN**
	3 - 71 mm	Electrical signal	Electrical signal	40/40	1.300	**DX3-R06-AN**
5/3 Valves						
	1 - 43 mm	Electrical signal	Electrical signal	30/95	0.550	**DX1-R16-AN**
	2 - 56 mm	Closed centre	Self centering	40/190	0.800	**DX2-R16-AN**
	3 - 71 mm			55/330	1.300	**DX3-R16-AN**
	1 - 43 mm	Electrical signal	Electrical signal	25/70	0.550	**DX1-R11-AN**
	2 - 56 mm	Vented centre	Self centering	40/140	0.800	**DX2-R11-AN**
	3 - 71 mm			60/270	1.300	**DX3-R11-AN**
	1 - 43 mm	Electrical signal	Electrical signal	25/65	0.550	**DX1-R13-AN**
	2 - 56 mm	Press. centre	Self centering	40/150	0.800	**DX2-R13-AN**

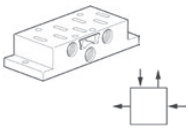
Indicates stocked products.

Pneumatic operated ISO Railway Valve without valve spool override

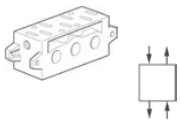
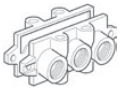
Symbol	Size	Actuation	Return	Changeover time (ms) at 6 bar 20 °C actua./return	Weight kg	Order code
5/2 Valves						
	1 - 43 mm	Air signal	Spring	30/45	0.350	**DX1-R21-60**
	2 - 56 mm	Air signal	Spring	50/95	0.600	**DX2-R21-60**
	3 - 71 mm	Air signal	Spring	80/160	1.100	**DX3-R21-60**
	1 - 43 mm	Air signal	Differential	25/60	0.350	**DX1-R51-60**
	2 - 56 mm	Air signal	Differential	45/100	0.600	**DX2-R51-60**
	3 - 71 mm	Air signal	Differential	70/170	1.100	**DX3-R51-60**
	1 - 43 mm	Air signal	Air signal	20/20	0.350	**DX1-R06-60**
	2 - 56 mm	Air signal	Air signal	25/25	0.600	**DX2-R06-60**
	3 - 71 mm	Air signal	Air signal	35/35	1.100	**DX3-R06-60**
5/3 Valves						
	1 - 43 mm	Air signal	Air signal	20/80	0.350	**DX1-R16-60**
	2 - 56 mm	Closed centre	Self centering	30/170	0.600	**DX2-R16-60**
	3 - 71 mm			45/330	1.100	**DX3-R16-60**
	1 - 43 mm	Air signal	Air signal	20/65	0.350	**DX1-R11-60**
	2 - 56 mm	Vented centre	Self centering	30/140	0.600	**DX2-R11-60**
	3 - 71 mm			50/270	1.100	**DX3-R11-60**
	1 - 43 mm	Air signal	Air signal	20/60	0.350	**DX1-R13-60**
	2 - 56 mm	Press. centre	Self centering	25/140	0.600	**DX2-R13-60**

ISO 5599-1 Subbase & Manifolds

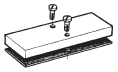
VDMA Side Ported Subbases

	Description	Size	Port size	Weight kg	Order code
	**Subbases VDMA**				
	Side port according to VDMA	1 - 43 mm	G1/4	0.160	**P2N-VS512SD**
	Side port according to VDMA	2 - 56 mm	G3/8	0.280	**P2N-WS513SD**
	Side port according to VDMA	3 - 71 mm	G1/2	0.350	**P2N-YS514SD**

VDMA Bottom Ported Manifold

	Description	Size	Port size	Weight kg	Order code
	**VDMA Form C**				
	Bottom port according to VDMA	1 - 43 mm	G1/4	0.240	**P2N-VM512MB**
	Bottom port according to VDMA	2 - 56 mm	G3/8	0.360	**P2N-WM513MB**
	Bottom port according to VDMA	3 - 71 mm	G1/2	0.700	**P2N-YM514MB**
	VDMA Transition plate				
	Size 1 to Size 3	1 to 3	G1/4		**P2N-VM500AK**
	Kit includes : Transition plate only				
	**VDMA Form D -** End plate				
	According to VDMA	1 - 43 mm	G3/8	0.210	**P2N-VM513ES**
	According to VDMA	2 - 56 mm	G1/2	0.360	**P2N-WM514ES**
	According to VDMA	3 - 71 mm	G1	0.680	**P2N-YM518ES**
	VDMA Isolation - Main galley				
	According to VDMA	1 - 43 mm			**P2N-VK0P**
	According to VDMA	2 - 56 mm			**P2N-WK0P**
	According to VDMA	3 - 71 mm			**P2N-YK0P**
	Kit includes : (1) Isolator plug.				

Accessories

	Description	Size	Port size	Weight kg	Order code
	**Blanking plate**				
		1 - 43 mm	G1/4	0.100	**P2N-AA5B**
	Kit includes : (1) Blanking plate, (1) Gasket	2 - 56 mm	G3/8	0.150	**P2N-BA5B**
	and (4) Mounting bolts	3 - 71 mm	G1/2	0.200	**P2N-CA5B**

Indicates stocked products.

Global ISO Valves for the Rail Industry

ISO 5599-1

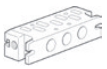
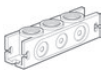
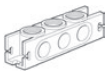
Side ported subbases

	Description	Size	Port size	Weight kg	Order code BSP
	**Single subbase** 1 3 5 2 4 ports & 12 14	1 - 43 mm	G1/4	0.160	**PL1-1/4-70**
		1 - 43 mm	G3/8	0.160	**PL1-3/8-70**
		2 - 56 mm	G3/8	0.280	**PL2-3/8-70**
		2 - 56 mm	G1/2		**P2N-HS514SS**
		3 - 71 mm	G1/2		**PL3-1/2-70**
		3 - 71 mm	G3/4		**P2N-JS516SD**

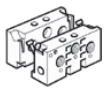
Bottom ported subbases

	Description	Size	Port size	Weight kg	Order code BSP
	**Single subbase** 1 3 5 2 4 ports & 12 14	1 - 43 mm	G1/4	0.370	**PD1-1/4-70**
		2 - 56 mm	G3/8	0.590	**PD2-3/8-70**
		3 - 71 mm	G1/2	0.590	**PD3-1/2-70**

Size 1 bottom ported manifold

	Description	Size	Port size	Weight kg	Order code
 	**Manifold** With bottom ports low profile	1 - 43 mm	G1/4	0.200	**P2N-AM512MB**
 	**Connecting block** Top or bottom ported connecting block for above manifold "low profile"	1 - 43 mm	G3/8	0.150	**P2N-AM513GT**
 	**End** End piece for above manifold "low profile"	1 - 43 mm	no	0.060	**P2N-AM500J**
 	**Intermediate supply** Top or bottom ported intermediate supply for above manifold "low profile"	1 - 43 mm	G3/8	0.140	**P2N-AM513BT**
	**Isolation plugs** Isolating seal for above manifold "low profile"	1 - 43 mm		0.070	**P2N-AK0P**

Sizes 1 & 2 side ported manifold

	Description	Size	Port size	Weight kg	Order code
 	**Manifold** Manifold with side ports	1 - 43 mm	G1/4	0.240	**P2N-EM512MD**
		2 - 56 mm	G3/8	0.210	**P2N-FM513MD**
 	**End** Side ported connecting kit for above manifold with side ports	1 - 43 mm	G3/8	0.360	**P2N-EM513ES**
		2 - 56 mm	G1/2	0.290	**P2N-FM514ES**

Indicates stocked products.

Global ISO Valves for the Rail Industry

ISO 5599-1

Solenoid coils with Din A 30 x 30 connection

Voltage	Order code	Weight (kg)
Direct current		
12V DC	**P2FCA447**	0.105
24V DC	**P2FCA448**	0.105
48V DC	**P2FCA474**	0.105
72V DC	**P2FCA470**	0.105
96V DC	**P2FCA471**	0.105
110V DC	**P2FCA472**	0.105

Spare Solenoid Nut

Diffuser nut for vented exhaust

Description	Order code	Weight (kg)
Plastic Version	**P2FND**	0.010
Metalic Version	**P2FNPR**	0.020

Spare Solenoid Operators

Solenoid pilot operator CNOMO NC

Description	Order code No manual override	Weight (kg)	Order code Non-lock. manual override	Weight (kg)	Order code Locking manual override	Weight (kg)
Mobile metal	**P2FP43M4A**	0.100	**P2FP43M4B**	0.100	**P2FP43M4C**	0.100

Note.
Solenoid pilot operators are fitted to the Isomax Railway valve range. Order the above part numbers for spares. The operators are supplied with mounting screws and interface 'O' rings.
Coils and connectors must be ordered separately.

Solenoid Connectors / Cable Plugs 30 mm Form A ISO4400

		Description	Order code
With standard screw		Standard IP65 without flying lead	**3EV290V10**
		With LED and protection 24V AC/DC	**3EV290V20-24**
		With LED and protection 110V AC	**3EV290V20-110**
With cable		24V AC/DC, 5m cable LED and protection IP65	**3EV290V20-24L5**
		110V AC/DC, 5m cable LED and protection IP65	**3EV290V20-110L5**

Indicates stocked products.

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Electric Motion and Pneumatic Division - Europe

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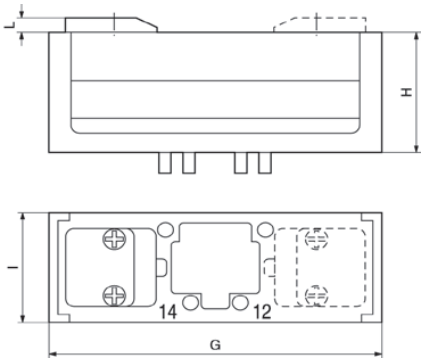
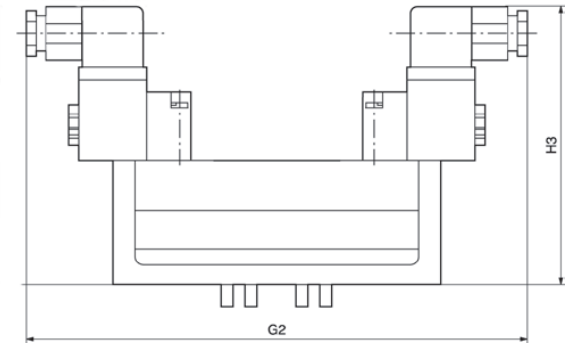
Global ISO Valves for the Rail Industry

Railway Isomax Valve - Dimensions (mm)

Pneumatically actuated

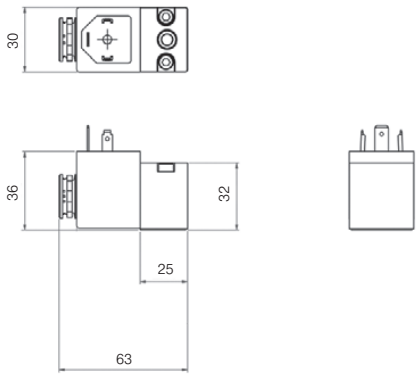


With P2F solenoids

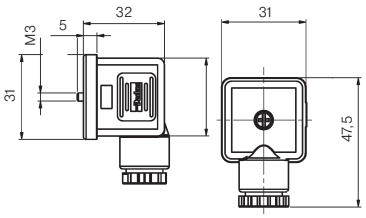


	G	G2	H	H3	I	L
Size 1	120	196	46	114	42	5
Size 2	140	206	58	126	54	5
Size 3	170	224	72	140	68,5	5

Solenoid operators (Mobile Metal) - 30 x 30mm

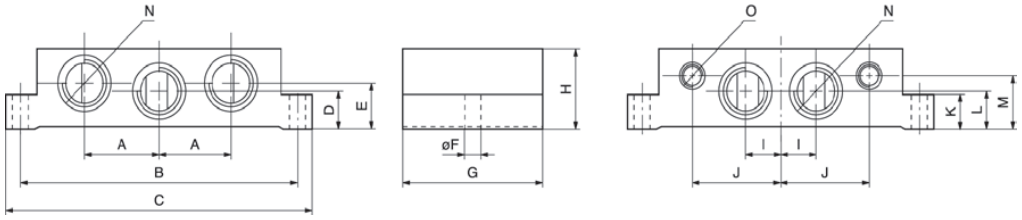


Cable plugs
3EV290V10



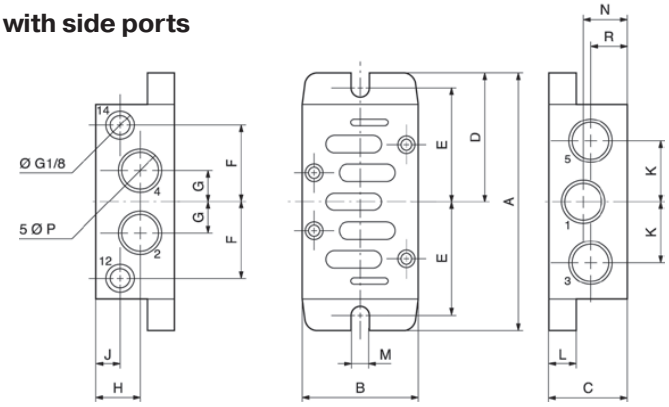
Global ISO Valves for the Rail Industry

Single subbase with side ports according to VDMA - Dimensions



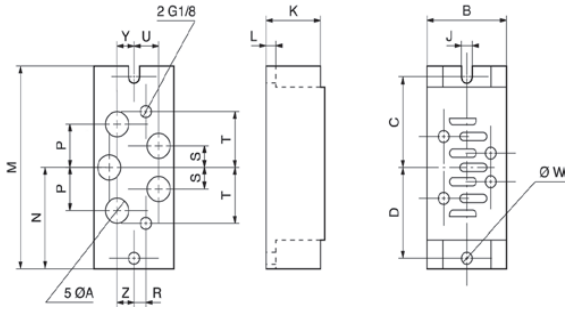
Order code	Size ISO	Port Size	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
P2N-VS512SD	1	G1/4	21,5	98	110	11	20	5,5	48	32	12	29	10	11	23	G1/4	G1/8
P2N-WS513S	2	G3/8	28	112	124	14	26	6,6	56	40	15	37	13	14	30	G3/8	G1/8
P2N-YS514SD	3	G1/2	34	136	149	17	17	6,6	71	32	16	45	18	17	22	G1/2	G1/8

Single subbase with side ports



Order code	ISO Size	ØP	A	B	C	D	E	F	G	H	J	K	L	M	N	R
PL1-1/4-70	1	G1/4	110	46	29	55	49	30	11	17,75	17,75	22	6	5,5	17,75	17,75
PL2-3/8-70	2	G3/8	124	56	37	62	55	37	14,5	22,5	14	28	6	5,5	22,5	14,5
P2N-JS516SD	3	G3/4	149	71	60	74,5	68	45	21	33	10	40	18	6,6	37,5	22,5

Single subbase with bottom ports



Order code	A	B	C	D	J	K	L	M	N	P	R	S	T	U	W	Y	Z
PD1-1/4-70	G1/4	46	49	49	5,5	29	6	110	55	22	10	11	30	10	5,5	10	10
PD2-3/8-70	G3/8	56	55	55	5,5	37	6	124	62	29	10	14,5	37	12,5	5,5	12,5	12,5
PD3-1/2-70	G1/2	77	68	68	6,6	32	18	149	74,5	34	10	17	45	17	6,5	17	17

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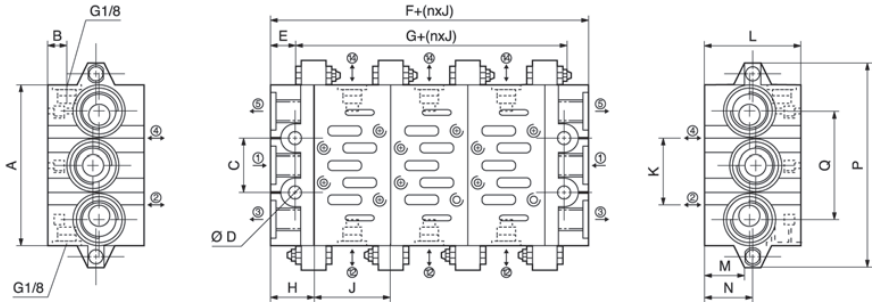
Global ISO Valves for the Rail Industry

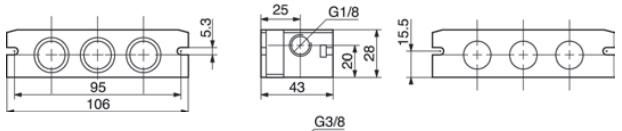
Manifold and end plates according to VDMA (P2N-VM / WM / YM) - Dimensions



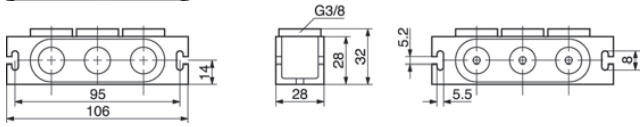
ISO Size	Port 1, 3, 5	Port 2, 4	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P
1	G3/8	G1/4	85	8,5	28	7	11	44	22	22	43	26	46	21	24	56	110
2	G1/2	G3/8	100	9	35	9	13	52	26	26	56	30	47	22	24	68	135
3	G1	G1/2	140	10	52	12	15	60	30	30	71	38	56	31	34	104	190

Manifold and end plates with bottom ports "low profile" (P2N-AM..)

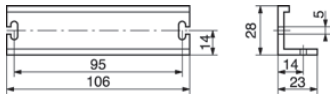
Manifold P2N-AM512MB



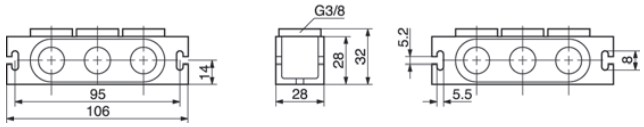
Connecting block P2N-AM513GT



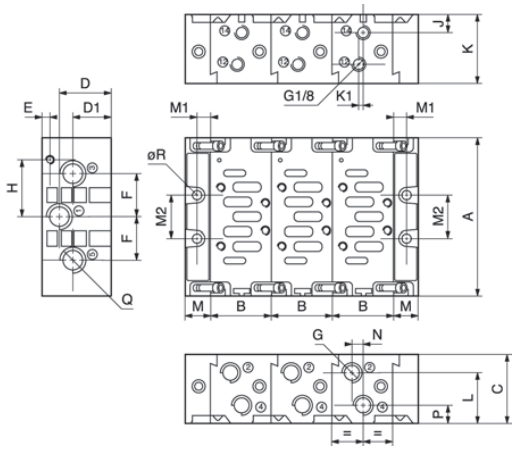
End piece P2N-AM500J



Intermediate supply P2N-AM513BT



Manifold and end plates with side ports (P2N-EM / FM..)



Order code	A	B	C	D	D1	E	F	G	H	J	K	K1	L	M	M1	M2	N	P	Q	R
P2N-EM . . .	110	43	48	35,5	26,5	5,5	28	G1/4	36	15,5	35	3	32	20	11	28	12	12,5	G3/8	6
P2N-FM . . .	129	56	60	44,5	35,5	6	34,5	G3/8	45	16	41,5	3	41	24	13	35	12,5	16	G1/2	8

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