10 mm PICOSOL
Direct acting solenoid valve

- 2/2, 3/2; Manifold mounting
- Compact Design
- Long life – 100 million cycles
- Low power consumption

Technical features

Medium:
Air, oxygen, neutral gases (10% ... 95% humidity, non condensing), 40 µm filtered

Operation:
Direct acting 2-way and 3-way valves, normally closed and normally opened

Operating pressure:
0 ... 10 bar (0 ... 145 psi)
Details on page 2

Flow:
5 ... 32 l/min at 2 bar (29 psi) at +20°C (+68°F)

Mounting:
Manifold

Orifice:
0,6 ... 2 mm

Response time:
10 ... 15 ms
Response time measured according to ISO 12238

Life expectancy:
≥100 Mio. cycles for 1 W valves

Weight:
10,5 g (0,023 lbs)

Ambient/media temperature:
–10 ... +50°C (+14 ... +122°F)
Air supply must be dry enough to avoid ice formation at temperatures below +2°C (+35°F).

Materials:
Body: PPS
Seat seals: FPM, NBR, EPDM
Internal parts:
Stainless steel, PAA

Electrical details

Voltage	24 V d.c.
Rating	100% E.D.
Voltage tolerance	± 10%
Power consumption	1[W] (3/0,3 W)*
Electrical insulation	1000 V a.c.
Protection class	IP51
Insulation class	F (155°C)

* with optional PWM control

Following options on request

Operating pressure (vacuum)
Medium temperature
Ambient temperature
Response time
Power consumption
Materials
Coils
Protection class
Degreased for oxygen use
Manual override

Embedded electronics options

Integrated pulse width modulation (PWM)
Enhanced opening time repeatability
Larger input voltage tolerances
Improved boosting by plunger movement detection
Improved boosting by plunger movement detection with power adaptation
Faster valve closing
Current control for improved performances over temperature range
Reverse polarity protection
Led signalization

Pulse width modulation (PWM) control

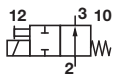
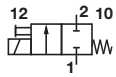
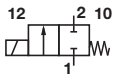
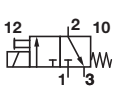
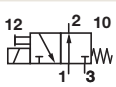
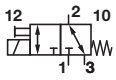
A PWM can be used to control the valve and should be set as follows:

	Definition	Value to be applied
Hit voltage	Voltage used for the valve to commute	Valve nominal voltage
Holding voltage	Voltage applied to the valve after commutation	Set duty cycle to guarantee specified holding voltage. 50% of nominal voltage can be used if no value specified.
Hit time	Maximum time required to ensure full valve commutation	40 ms at T > 20°C *1)
PWM frequency		20 ... 30 kHz

*1) Please contact us for application outside of those conditions.

File code: LS_DS_PICOSOL_en/04/24

Technical data – standard models

Symbol	Operation	Orifice	Operating pressure		kv*2)	Power consumption *3)	Voltage	Manual override *4)	Seal material	Drawing	Model
		(mm)	(bar)	(psi)	(l/min)	(W)	(V d.c.)			No.	
	2/2 NO (3/2 mounting pattern)	0,6	0 ... 10	0 ... 145	0,12	1	24	With	FPM	2	11-221PI060H1+1111+AYV
		1,1	0 ... 4	0 ... 58	0,3	1	24	With	FPM	2	11-221PI011H1+1111+AYR
	2/2 NC (3/2 mounting pattern)	0,6	0 ... 8	0 ... 116	0,12	1	24	With	FPM	2	11-211PI060H1+1111+AYV
		0,8	2 ... 8	29 ... 116	0,19	1	24	With	FPM	2	11-211PI01-H1+1111+AYV
		1,1	0,5 ... 2,1	7,2 ... 30	0,3	1	24	With	FPM	2	11-211PI011H1+1111+AYV
	2/2 NC	0,8	0 ... 8	0 ... 116	0,2	1	24	Without	FPM	1	11-211P601-H1+1311+AYV
		1,2	0 ... 4	0 ... 58	0,39	1	24	Without	FPM	1	11-211P602-H1+1311+AYR
		1,6	0 ... 8	0 ... 116	0,54	4/0,4	24	Without	FPM	1	11-211P603-H1+6311+AXA
	3/2 NC	0,6	0 ... 8	0 ... 116	0,12	1	24	With	FPM	2	11-311PI060H1+1111+AYV
		0,8	2 ... 8	29 ... 116	0,19	1	24	With	FPM	2	11-311PI01-H1+1111+AYV
		1,1	2 ... 8	29 ... 116	0,37	3/0,3	24	With	FPM	2	11-311PI011H1+6111+AZR
		1,3	2 ... 6,5	29 ... 94	0,44	3/0,3	24	With	FPM	2	11-311PI013H1+6111+AZR
	3/2 NO	0,8	0 ... 6	0 ... 87	0,19	1	24	With	FPM	2	11-321PI01-H1+1111+AYV
	3/2 UNI	0,8	0 ... 2	0 ... 29	0,18	1	24	With	FPM	2	11-331PI01-H1+1111+AYV

*2) Cv = 0,07 kv
*3) Power consumption: “boosting power during ca. 50 ms”/ “holding power”
*4) Push only

Accessories

Mounting plate with barbed fittings for 3 mm øID tubing (up to 2 bar)

Page 4

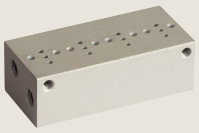
S111.1772

Mounting manifold with M3 threads — 1 position

Page 4

S110.1277

Mounting manifold with M5 threads — 1 ... 8 positions



Page 5

Available on request

Electrical connection

Electrical connector Molex 50-57-9402 with 300 mm flying leads

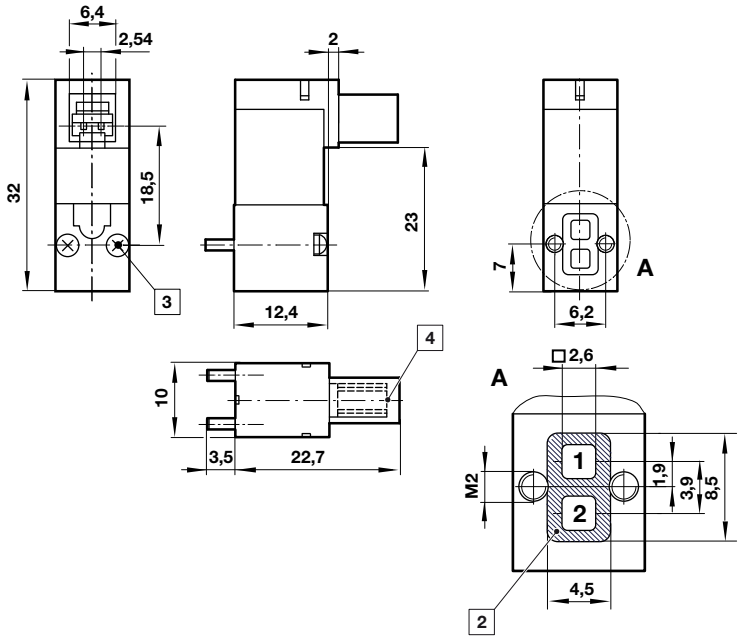
Page 5

S110.1032

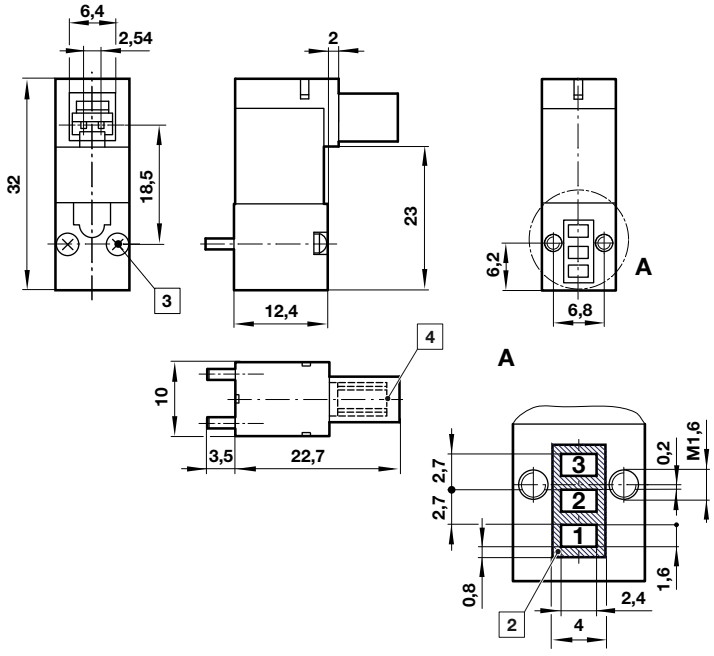
Dimensions

Dimensions in mm
Projection/first angle

1



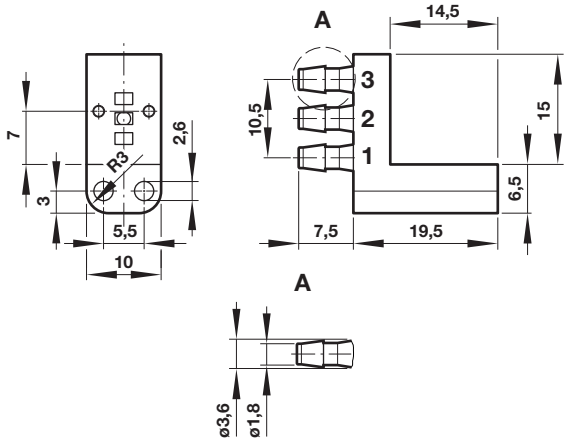
2



1 Manual override, push only
2 Sealing area
3 The recommended mounting screw tightening torque is 0,15 Nm.
4 Connector mates with Molex 50-57-9402

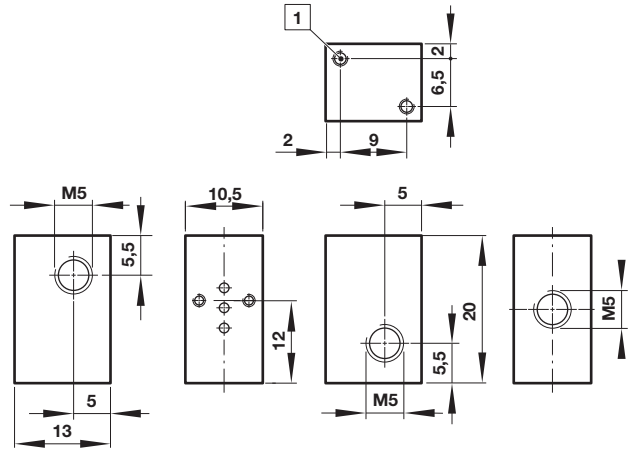
All solenoids are supplied with mounting screws and gasket.

Mounting plate with barbed fittings for 3 mm øID tubing (up to 2 bar)
Model: S111.1772



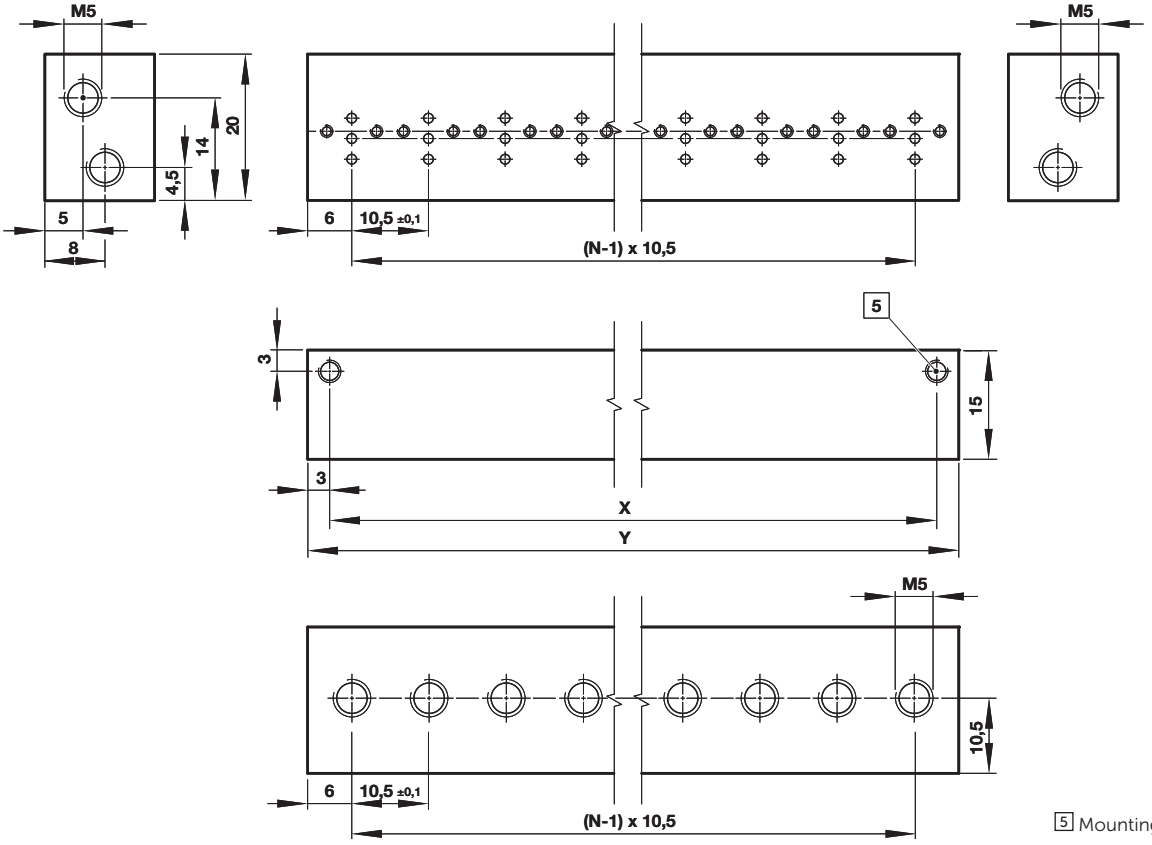
Mounting manifold
Model: S110.1277

Dimensions in mm
Projection/first angle



1 Mounting thread M2 x 5 deep

Mounting manifold
Model: on request



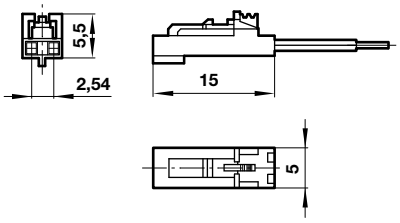
5 Mounting thread M3 x 4,5 deep

Valve station	X	Y
2	16,5	22,5
3	27	33
4	37,5	43,5
5	48	54
6	58,5	64,5
7	69	75
8	79,5	85,5

Electrical connector

Model: S110.1032

Dimensions in mm
Projection/first angle



Warning

These products are intended for use in air, oxygen and neutral gas systems only. Do not use these products where pressures and temperatures can exceed those listed under »Technical features«.

Before using these products with fluids other than those specified, for non-industrial applications, life-support systems, or other applications not within published specifications, consult IMI Plc., FAS MEDIC SA.

Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes.

The system designer is warned to consider the failure modes of all component parts used in fluid power systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure.

System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided.

System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products.