

# PNEUMATIC VALVES

## SERIES 77 & 78

---

### Compact & Modular Valves

• SERIES 77 - COMPACT VALVES •

• SERIES 77 - LPP770 •

• SERIES 77 - SUB-D •

• SERIES 77 - FIELDBUS •

• SERIES 77 - LPP772 •

• SERIES 77 - COILS & PLUG-IN SOCKETS •

• SERIES 78 - MODULAR VALVES •

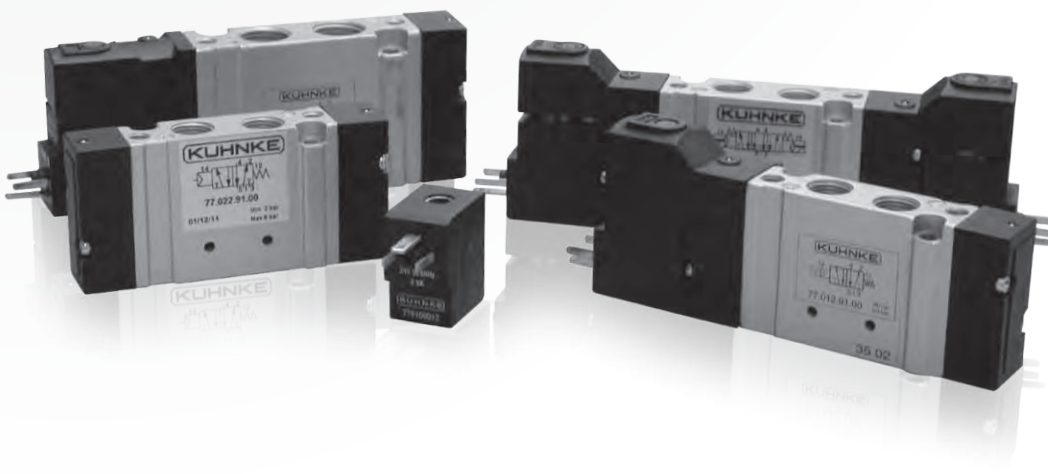
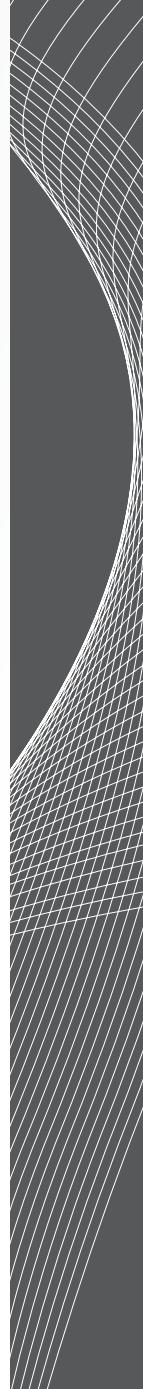
• SERIES 78 - COILS & PLUG-IN SOCKETS •

The components illustrated and described in the present catalogue are sold under the trademark BSG Kuhnke Solutions.

BSG Kuhnke Solutions reserves the right to modify the dimensions or technical characteristics of any of its products contained within this catalogue without prior notice. The products included in this catalogue should only be used in applications for which they were originally intended and should only be used by personnel with adequate technical knowledge. Please note that the misuse of this product could cause serious injury. The user should ensure that the product is installed and operated within the operating characteristics shown and that this complies with any health and safety requirements, however should you require any further information please do not hesitate to contact our technical office.

BSG Kuhnke Solutions accepts no liability for damage or injury arising from the error, misuse or omission in the data provided. BSG Kuhnke Solutions accepts no liability from third parties in the form of consequential losses. It is the responsibility and duty of the client/user to ensure that all operating requirements are carried out and that the products are used safely. The application is always under the responsibility of the client/user.

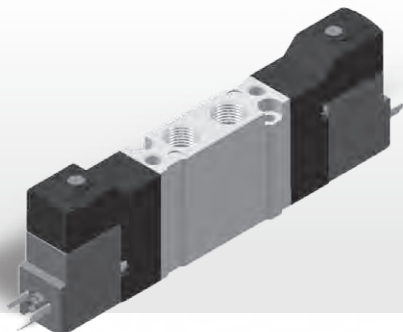
# SERIES 77 COMPACT VALVES





# COMPACT VALVES

## General Information

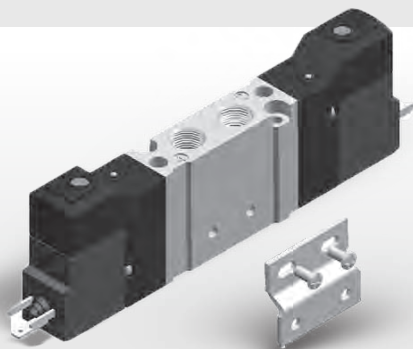
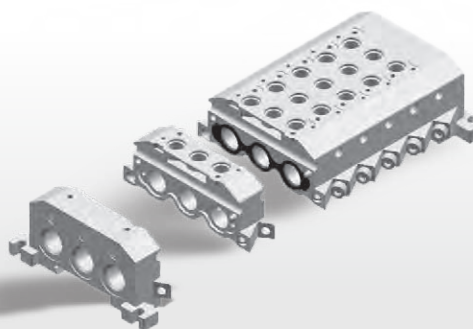


Our 77 series of electrically or pneumatically operated directional control valves are available for single or modular use. The LPP700 range has a 15 mm body width and the larger LPP772 has 18 mm

These robust long life valves have been independently tested to 33million duty cycles (5/2) and 25 million (3/2)

Options for external pilot supply are available for both types of valve (LPP700 and LPP772) enabling low pressure and vacuum use

Any combination of valve sizes and functions can be combined into modules or valve islands, with standard, Sub-D, and fieldbus connection options



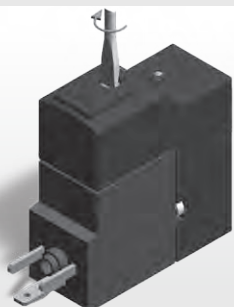
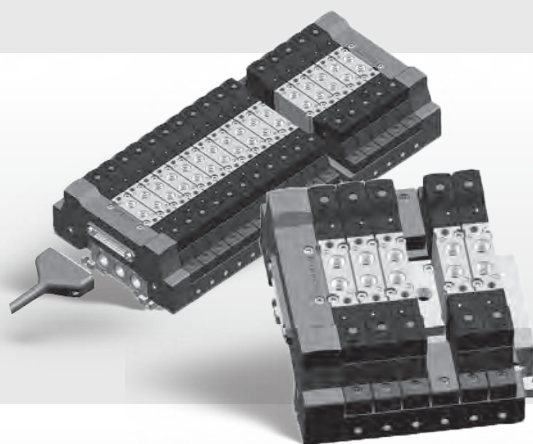
Maximum Flexibility

Mounting Flange Available

Matching interface: It is possible to assemble 15 mm (770) and 18 mm (772) valves together using the matching interface

Different pressures and Intermediate pressure supply

Double sided Sub-D supply and double number of positions using two Sub-D input modules



Manual Override Available

1. Button not actuated
2. Push actuation (pushing the button with a screwdriver)
3. Lock actuation (pushing and turning the button clockwise with a screwdriver)



**General Information**

Version	Type	Section	Pressure range	Pressure connection	Flowrate Q	Nominal orifice	Manual override
LPP770	2 x 3/2-way 5/3-way	A	3 - 8 bar	G 1/8 G 1/4	600 NI/min	6 mm	Push and lock
	5/2-way		2 - 8 bar		800 NI/min		
LPP772	2 x 3/2-way 5/3-way	B	3 - 8 bar	G 1/8 G 1/4	700 NI/min	8 mm	Push and lock
	5/2-way		2 - 8 bar		1200 NI/min		

**Electrical connections:** Coil with 3 spade connectors + plug in socket (order both separately)

**Sealing element:** Soft spool

**Protection classification:** IP 65 (with plug-in socket)

**Mounting:** Any position

**Operating medium:** 5 micron filtered, lubricated (or not) compressed air; also suitable for other media conforming to ISO-VG 10

**Ambient temperature range:** From -5 °C up to +50 °C

**Order Code (single use valves)**

Order specifications	77.	0	1	2.	91.	00
Series No.	77					
Valves dimension						
	15 mm valve	0				
	18 mm valve	2				
Actuation						
	solenoid		1			
	pneumatic connection		2			
	solenoid, external feeding		3			
Version						
	standard			2		
Pneumatic connections						
	5/2 monostable, pneumatic return				90	
	5/2 monostable, spring return				91	
	5/2 bistable				92	
	5/2 bistable with priority				93	
	5/3, all ports closed				12	
	5/3, all ports exhaust				22	
	5/3, all ports pressurized				32	
	2 x 3/2 normally closed				14	
	2 x 3/2 normally open				24	
	2 x 3/2 open / closed				34	
Stroke						
	without coils					00

*This order number refers to the valve without coil. Please order the respective coil separately.*

Special versions	KP.	2	2	2.	93.	00.	zzzz*

\* zzzz = project number (assigned by factory)

**Order Code (valve islands)**

<i>Order specifications</i>		<i>77.</i>	<i>0</i>	<i>T.</i>	<i>04</i>	<i>M.</i>	<i>3218</i>
Series No.		77					
Valves dimension							
	15 mm valve		0				
	18 mm valve		2				
Connection							
	Parallel			T			
	Sub-D (only for 15 mm)			S			
	Profibus (only for 15 mm)			P			
	CANopen (only for 15 mm)			C			
Valves Number							
	No. of subplates				xx		
System							
	Modular base					M	
	Subplates with fixed length (only upon request)					P	
Project Number							
	Project number (assigned by factory)						zzzz

*This order number refers to the valve without coil. Please order the respective coil separately.*



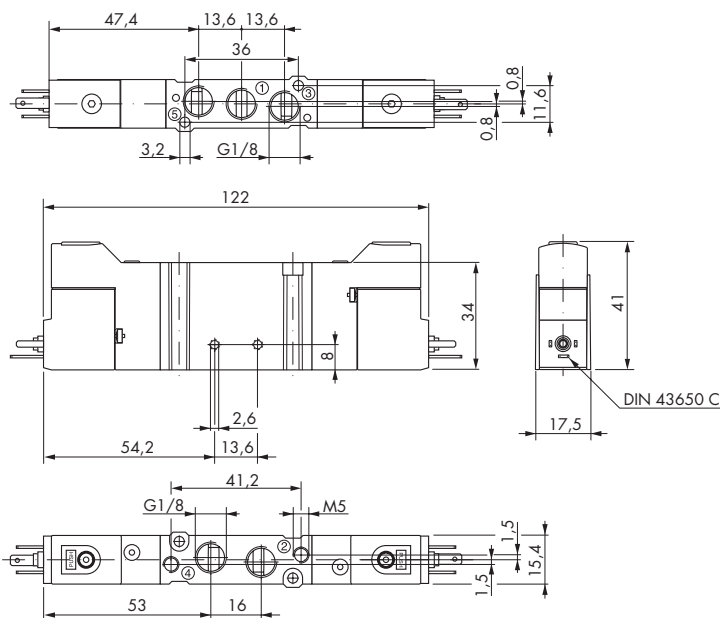
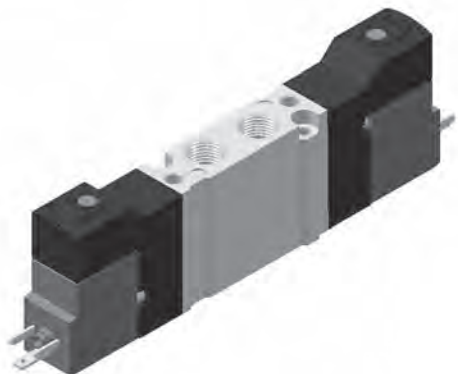
# LPP770 VALVES

## 2 x 3/2-way, 5/2-way and 5/3-way Solenoid Valves - G 1/8 (D<sub>nom</sub> 6 mm)

SECTION A

Press. Conn.: G 1/8

Coil Type: 77.610.xx.xx (order separately)



SERIES 77  
LPP770

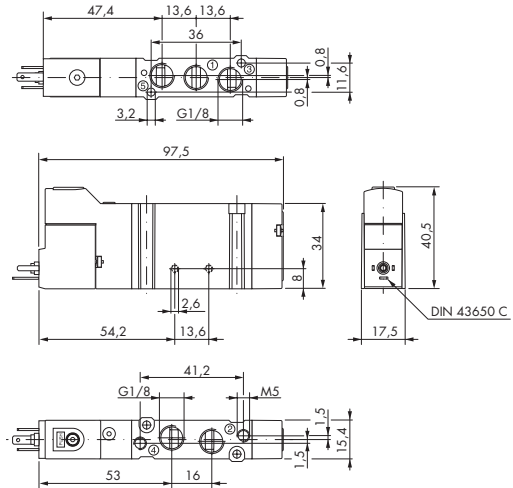
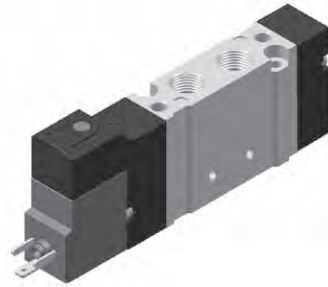
Code	Type	Symbol	Code	Type	Symbol
77.012.14.00	2 x 3/2 Normally closed		77.032.92.00	5/2 External feeding	
77.012.24.00	2 x 3/2 Normally open		77.032.93.00	5/2 With priority External feeding	
77.012.34.00	2 x 3/2 Open / closed		77.012.12.00	5/3 All ports closed	
77.032.14.00	2 x 3/2 Normally closed External feeding		77.012.22.00	5/3 All ports exhaust	
77.032.24.00	2 x 3/2 Normally open External feeding		77.012.32.00	5/3 All ports pressurized	
77.032.34.00	2 x 3/2 Open / closed External feeding		77.032.12.00	5/3 All ports closed External feeding	
77.012.92.00	5/2		77.032.22.00	5/3 All ports exhaust External feeding	
77.012.93.00	5/2 With priority		77.032.32.00	5/3 All ports pressurized External feeding	

**5/2-way Solenoid Valves - G 1/8 (D<sub>nom</sub> 6 mm)**

SECTION A

Press. Conn.: G 1/8

Coil Type: 77.610.xx.xx (order separately)

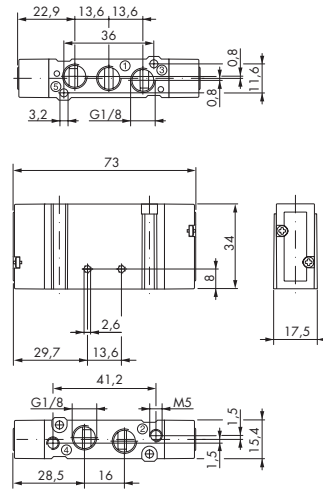


Code	Type	Symbol	Code	Type	Symbol
77.012.90.00	5/2 Monostable Return air assisted		77.032.90.00	5/2 Monostable External feeding Return air assisted	
77.012.91.00	5/2 Monostable Spring return		77.032.91.00	5/2 Monostable External feeding Spring return	

**5/2-way and 5/3-way Pneumatic Valves - G 1/8 (D<sub>nom</sub> 6 mm)**

SECTION A

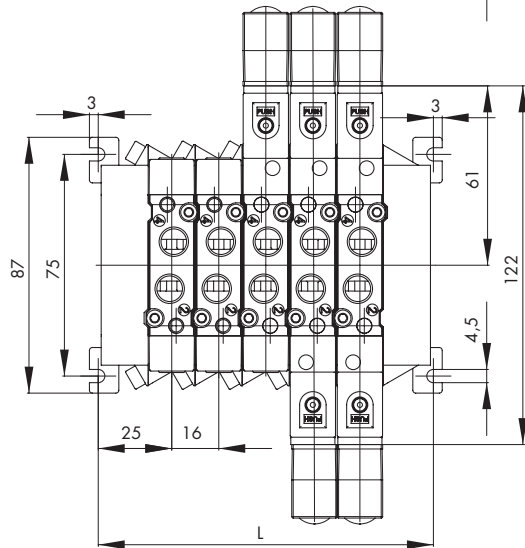
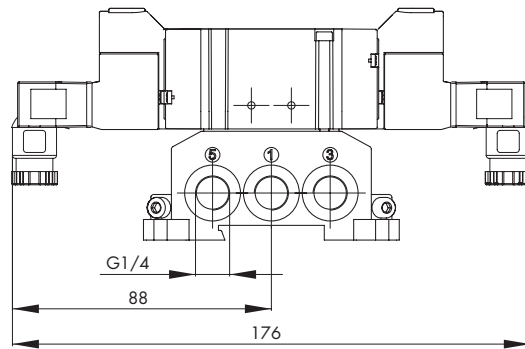
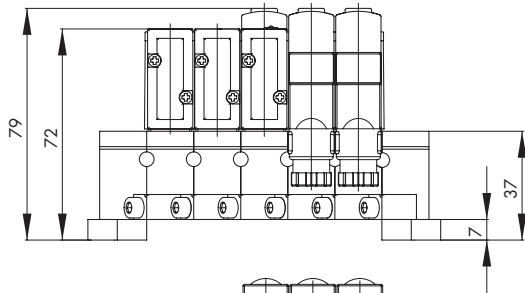
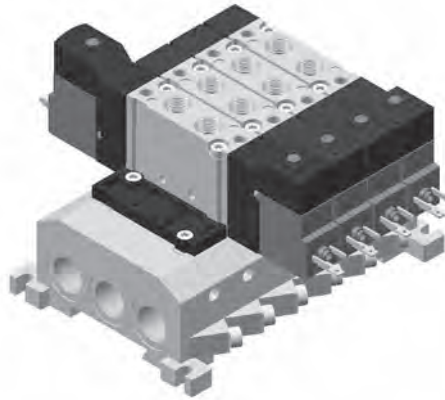
Press. Conn.: G 1/8



Code	Type	Symbol	Code	Type	Symbol
77.022.90.00	5/2 Monostable Return air assisted		77.022.92.00	5/2 Bistable	
77.022.91.00	5/2 Monostable Spring return		77.022.93.00	5/2 Bistable With priority	
77.022.12.00	5/3 All ports closed		77.022.14.00	2 x 3/2 Normally closed	
77.022.22.00	5/3 All ports exhaust		77.022.24.00	2 x 3/2 Normally open	
77.022.32.00	5/3 All ports pressurized		77.022.34.00	2 x 3/2 Open / closed	

**Subplates System LPP770 - Valve Island**

SECTION A



SERIES 77  
LPP770

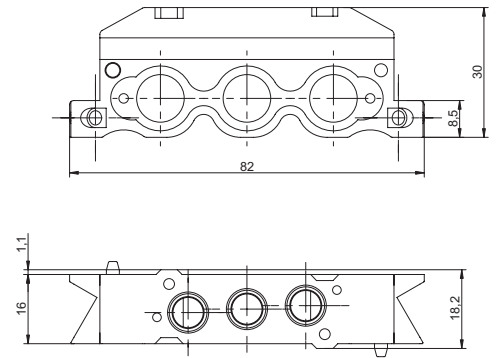
**Number of Station**

Nr	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L	66	82	98	114	130	146	162	178	194	210	226	242	258	274	290	306	322	338	354

**Subplates System LPP770 - Subplates**

SECTION A

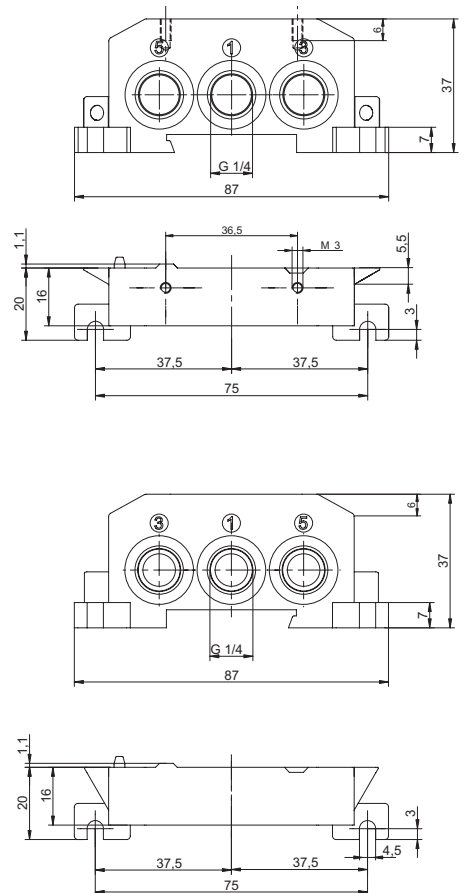
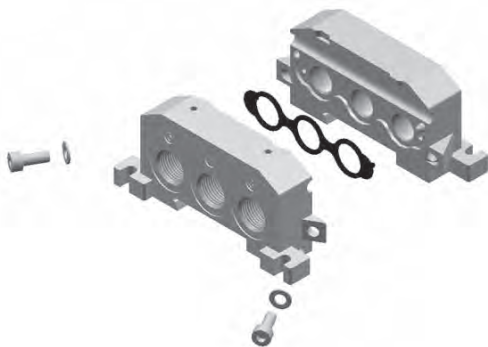
SERIES 77  
LPP770



Product	Code
Subplate kit	77.040.00.13
Subplate kit closed <i>(the subplate is closed on the right side, the one opposite the seal seat)</i>	77.040.00.14
Subplate kit mixed <i>(the subplate is closed on the "P" and open in the exhaust)</i>	77.040.00.15

**Subplates System LPP770 - Endplates**

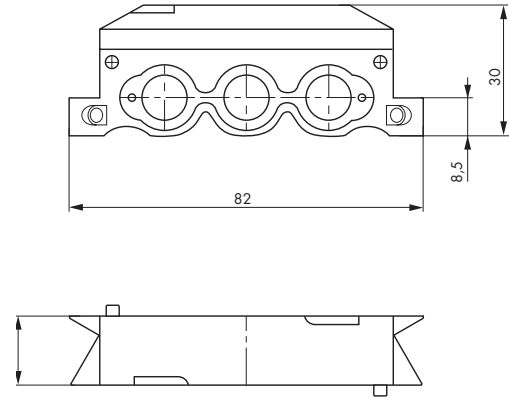
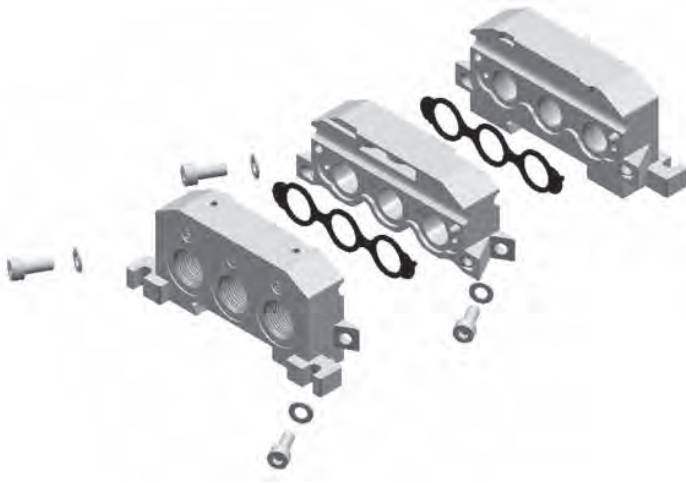
SECTION A



Product	Code
Endplates kit, one side feeding <i>(left and right module)</i>	77.040.00.18
Endplates kit, both side feeding <i>(left and right module)</i>	77.040.00.19

**Subplates System LPP770 - Modules for Matching Interface**

SECTION A

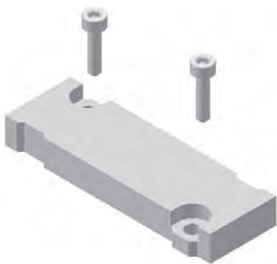


SERIES 77  
LPP770

Product	Code
Interface kit 77.0 and 77.2 (15 mm/18 mm, the kit include left, right and matching interface modules)	77.040.15.18

**Subplates System LPP770 - Accessories**

SECTION A



**Blanking plate**

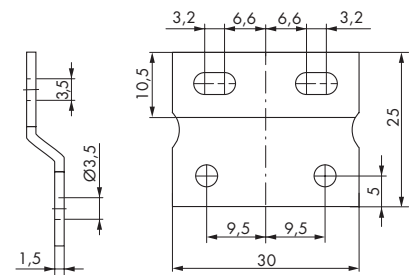


**Intermediate supply**



**Mounting bracket**

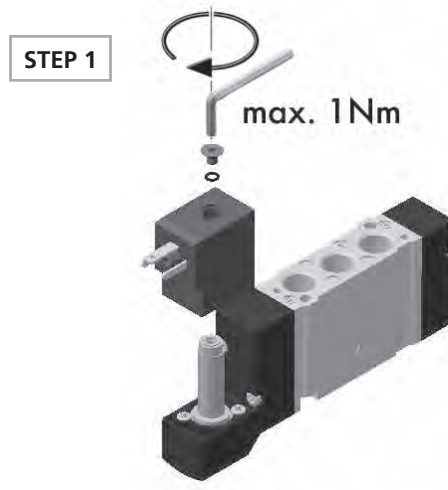
Product	Code
Blanking plate	77.040.00.20
Intermediate supply	77.040.00.40
Mounting bracket	77.040.00.30



**Mounting Instructions**

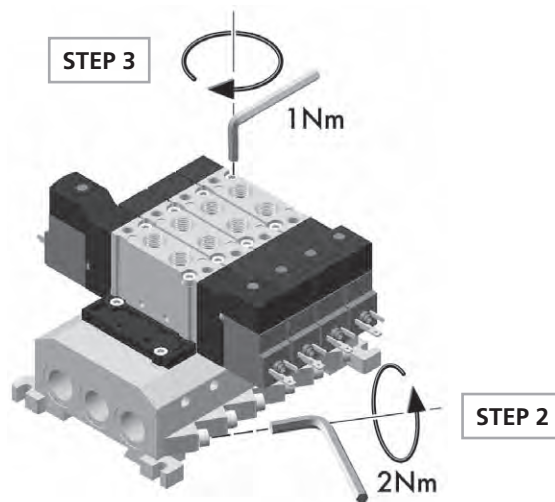
*Assembly of solenoid systems*

SERIES 77  
LPP770



*Assembly of valves and subplates to valve islands.*

Fasten the screws alternately



# SUB-D ISLAND

## Modular System - Sub-D Valve Island - Monostable

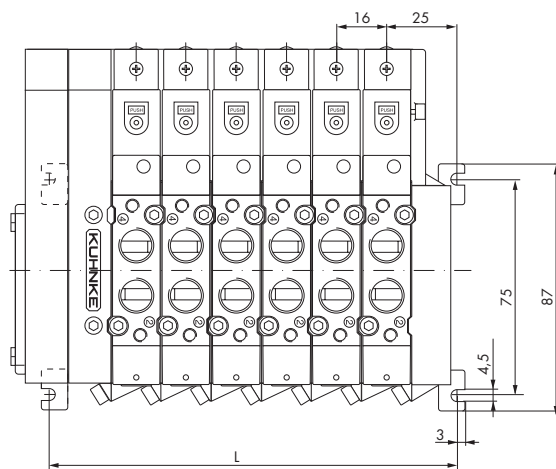
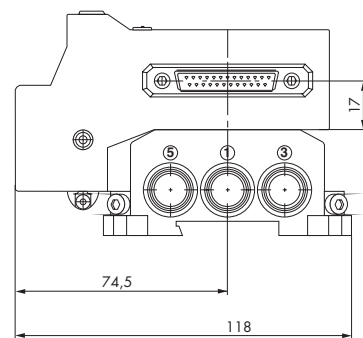
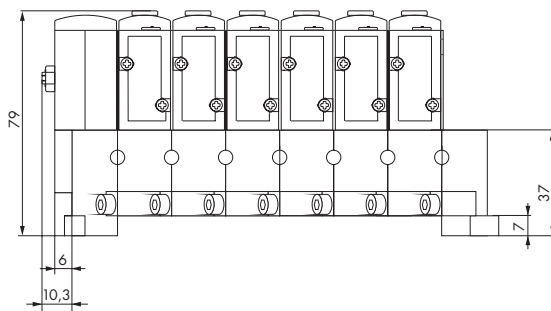
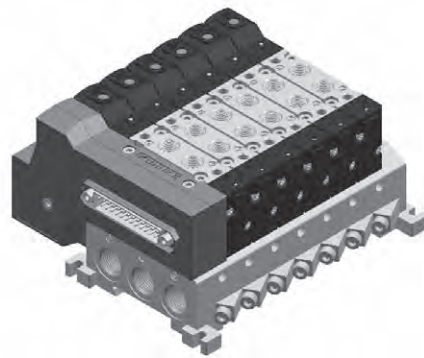
SECTION A

**Valves Number:** Up to 18 valve positions

**Connectors:** Sub-D connector 25 pin

**Valves Type:** 5/2-way monostable

**Coil Type:** 77.610.00.06 (24 VDC)



SERIES 77  
SUB-D ISLAND

Nr	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
L	66	82	98	114	130	146	162	178	194	210	226	242	258	274	290	306	322

**Modular System - Sub-D Valve Island - Bistable**

SECTION A

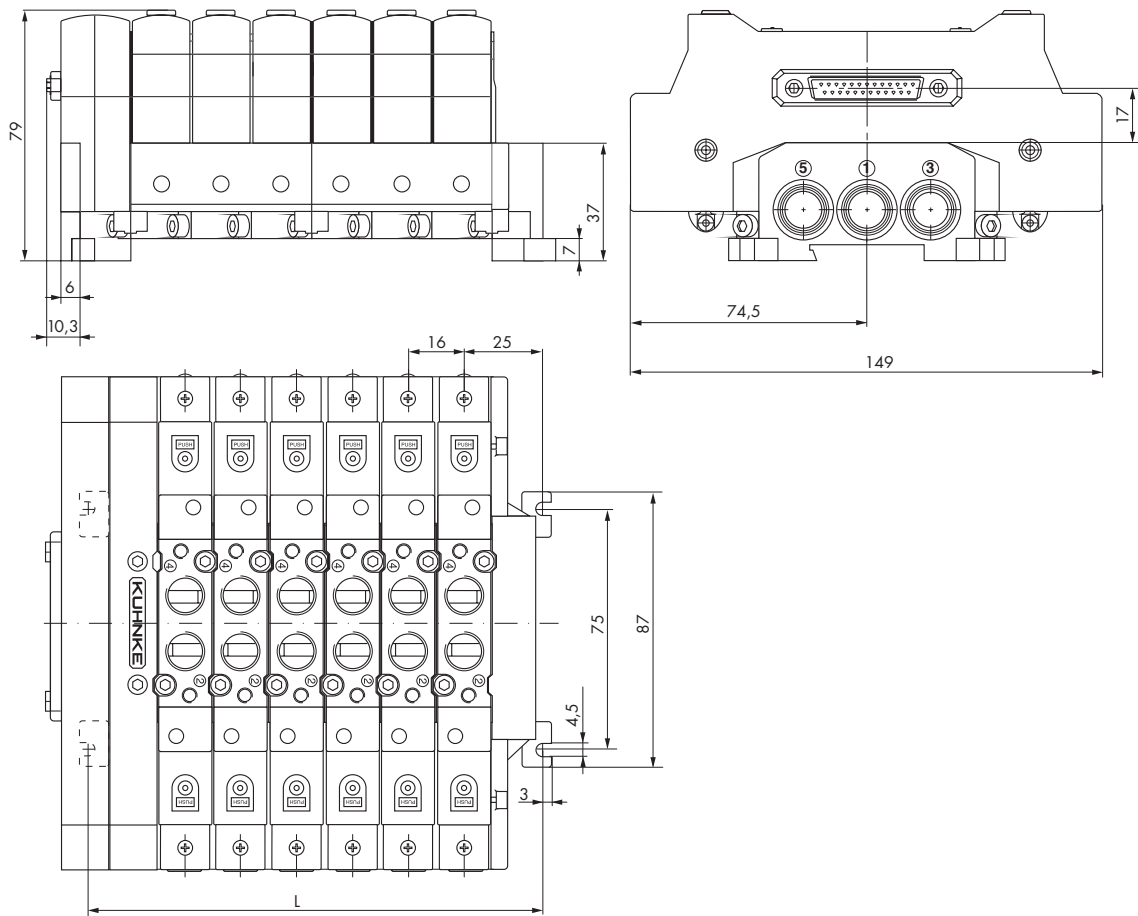
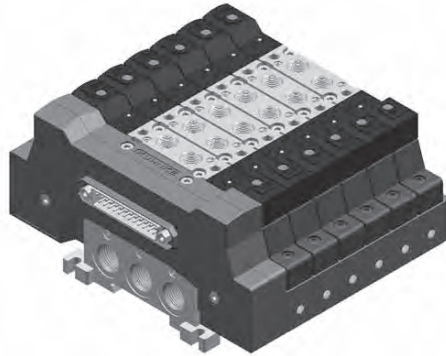
**Valves Number:** Up to 11 valve positions

**Connectors:** Sub-D connector 25 pin

**Valves Type:** 5/2-way bistable; 2x3/2-way; 5/3-way

**Coil Type:** 77.610.00.06 (24 VDC)

SERIES 77  
SUB-D ISLAND



Nr	2	3	4	5	6	7	8	9	10	11
L	66	82	98	114	130	146	162	178	194	210



**Modular System - Sub-D Valve Island - Mixed Configuration**

SECTION A

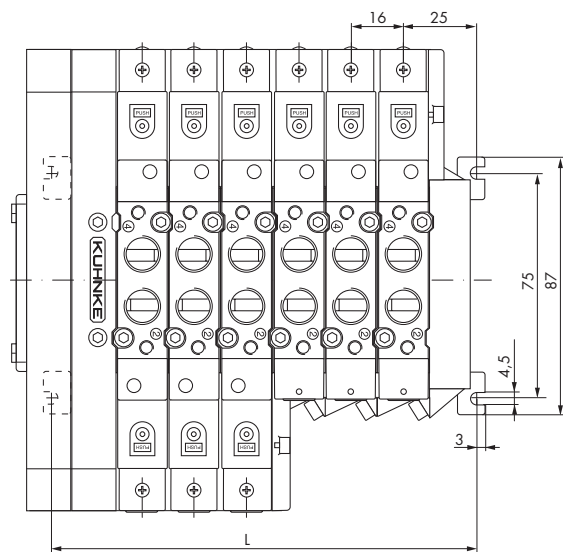
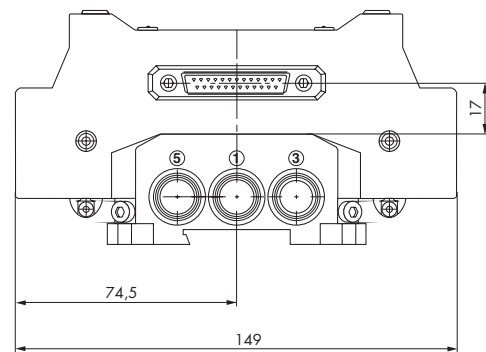
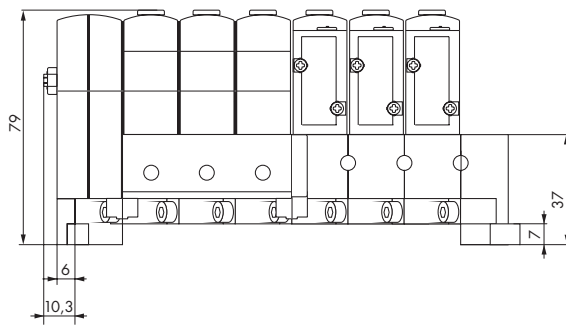
**Valves Type:** 5/2-way mono and bistable; 2x3/2-way; 5/3-way

**Coil Type:** 77.610.00.06 (24 VDC)



		monostable																		
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
bistable	1																			
	2																			
	3																			
	4																			
	5																			
	6																			
	7																			
	8																			
	9																			
	10																			
	11																			

VARIOUS POSSIBLE ASSEMBLINGS

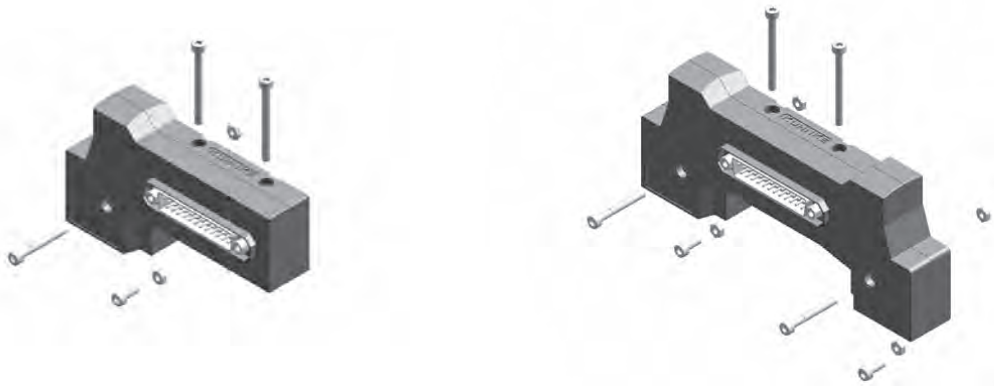


Nr	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
L	66	82	98	114	130	146	162	178	194	210	226	242	258	274	290	306	322

SERIES 77  
SUB-D ISLAND

**Sub-D Valve Island Components - Input Module**

SECTION A



SERIES 77  
SUB-D ISLAND

Version	Code
Input Module Monostable	77.0IMM
Input Module Bistable	77.0IMB

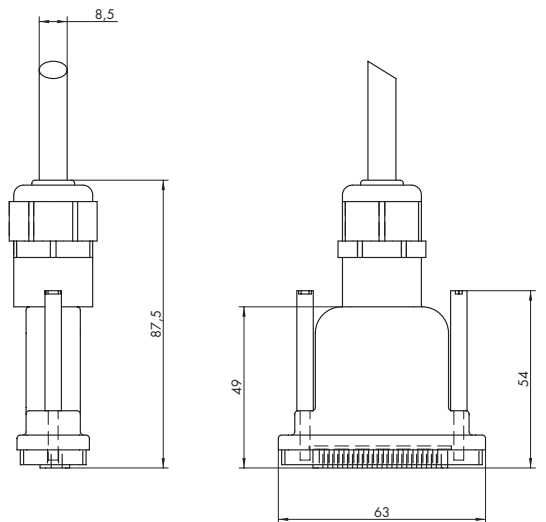
**Sub-D Valve Island Components - Sub-D Connector IP 65**

SECTION A



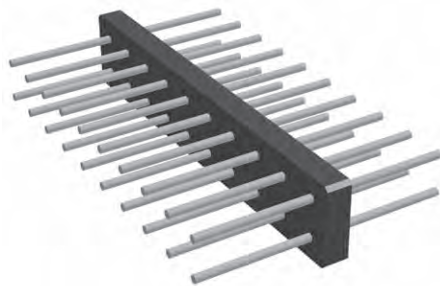
Code
77.CAB

Note: Cable length 5 m.



**Sub-D Valve Island Components - Pin Strip**

SECTION A

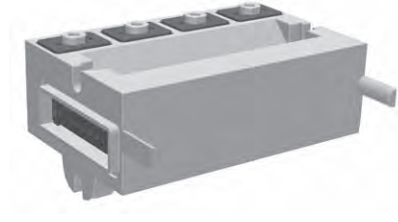
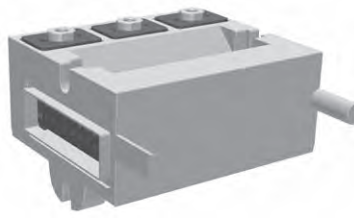
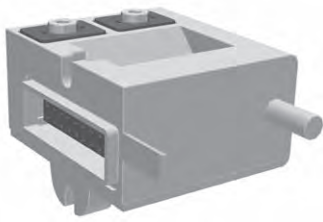


Code
77.0PIN

Note: The shipment includes 10 pcs.

**Sub-D Valve Island Components - Connection Modules**

SECTION A



Module position	Side	Code
Connection Module 2 positions	right	77.0M2R
	left	77.0M2L
Connection Module 3 positions	right	77.0M3R
	left	77.0M3L
Connection Module 4 positions	right	77.0M4R
	left	77.0M4L

Note: The connection module 2 positions can be used only as end module.

**Sub-D Valve Island Components - End-cap for Connection Module 3 and 4 Positions**

SECTION A



Code	Side
77.0ENDR	Right
77.0ENDL	Left

**Sub-D Valve Island Components - Blind Plug for Unused Electrical Position**

SECTION A

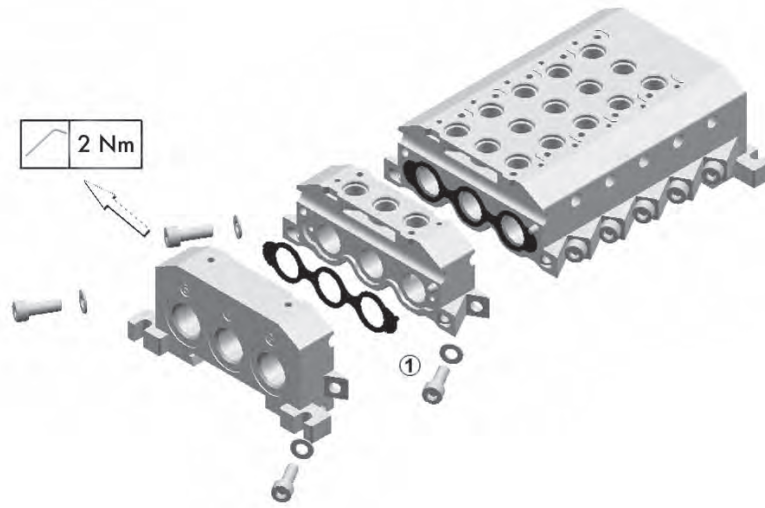


Code
77.0PLUG

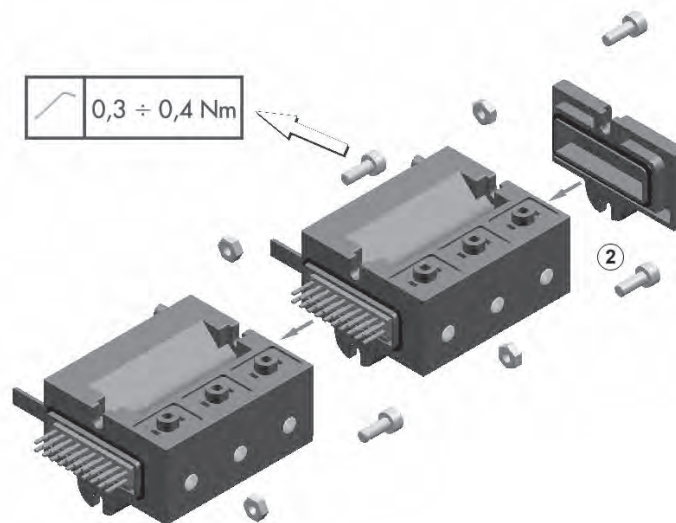
**Mounting Instructions**

SECTION A

**STEP 1 - Assembly of the subplates**



**STEP 2 - Assembly of the connecting modules**

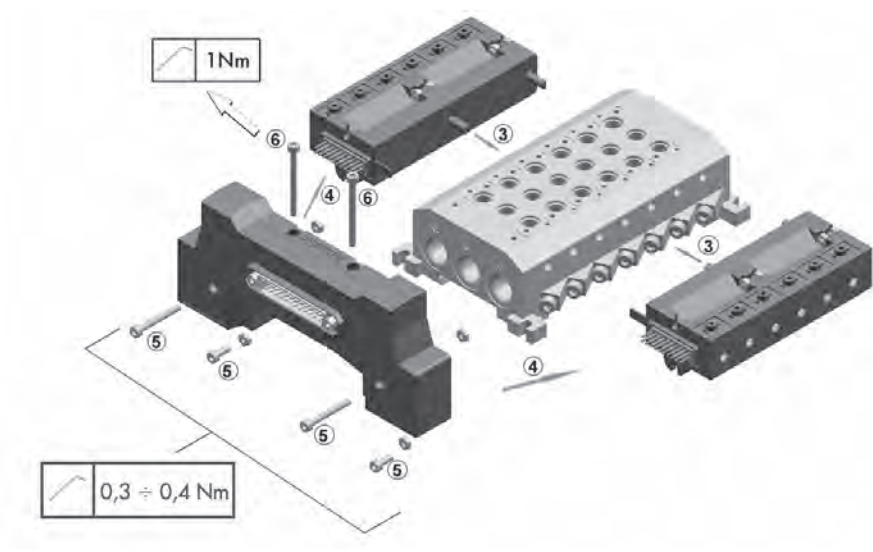


SERIES 77  
SUB-D ISLAND

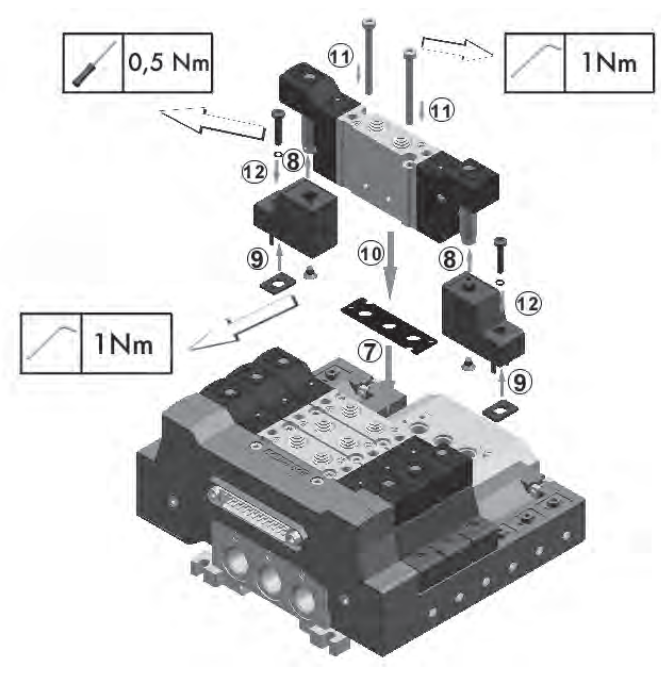
**Mounting Instructions**

SECTION A

**STEP 3 - Mounting of the modules to the subplates**



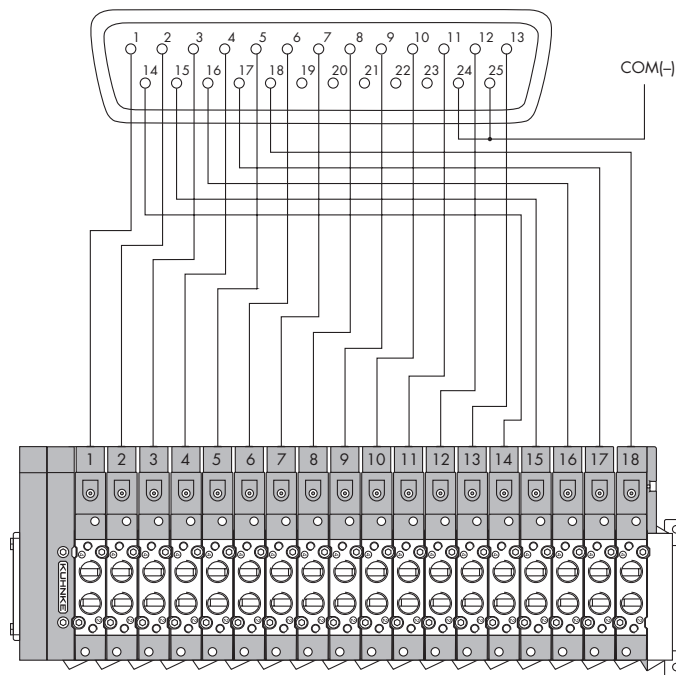
**STEP 4 - Assembly of the valves**



SERIES 77  
SUB-D ISLAND

Wiring 25 pin Connector - Monostable Input

SECTION A

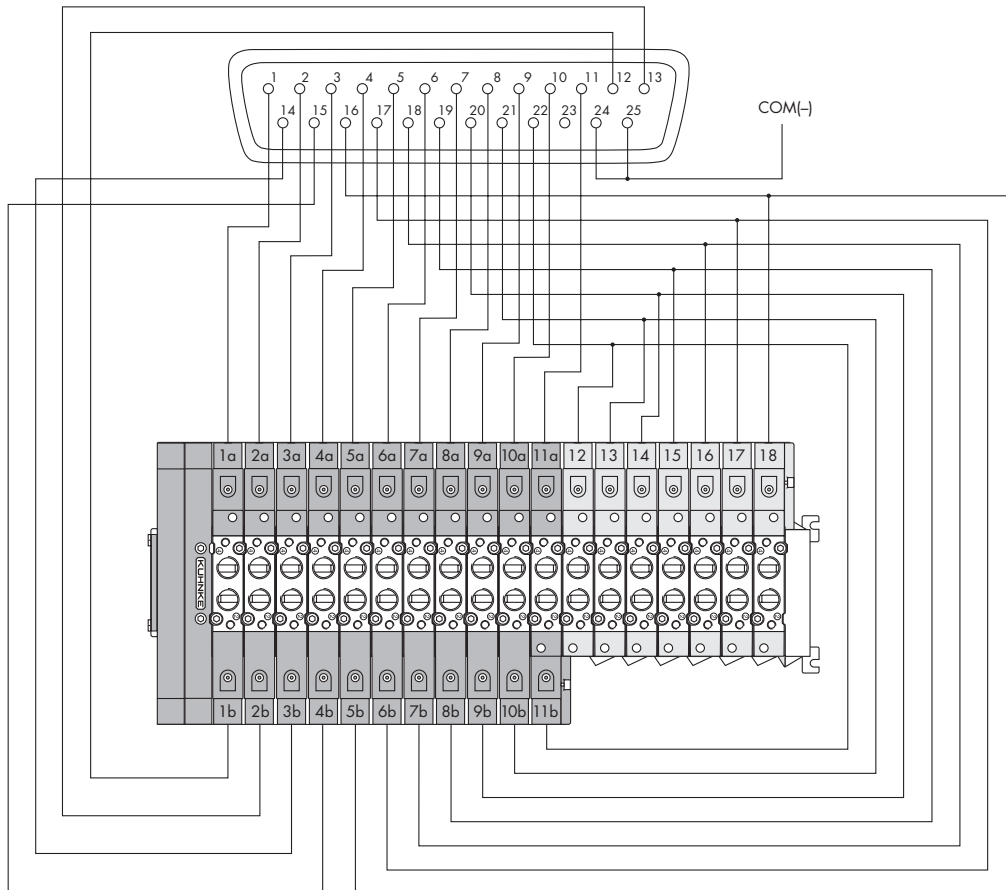


SERIES 77  
SUB-D ISLAND

Pin No. Sub-D connector	1	2	3	4	5	6	7	8	9	10	11	12	13
Colour of insulation	BN brown	BN brown	RD red	RD red	RD red	OR orange	OR orange	OR orange	PK pink	PK pink	YE yellow	YE yellow	GN green
Colour of identification strip		WT white		WT white	BK black		WT white	BK black		BK black		BK black	(dark)
Pin No. Sub-D connector	14	15	16	17	18	19	20	21	22	23	24	25	
Colour of insulation	GN green	GN green	GN green	BU blue	BU blue	VT violet	VT violet	GY grey	GY grey	WT white	BK black	BK black	
Colour of identification strip	WT white	BK black	(bright)		WT white		WT white		BK black			GY grey	

**Wiring 25 pin Connector - Bistable Input**

SECTION A



SERIES 77  
SUB-D ISLAND

Pin No. Sub-D connector	1	2	3	4	5	6	7	8	9	10	11	12	13
Colour of insulation	BN brown	BN brown	RD red	RD red	RD red	OR orange	OR orange	OR orange	PK pink	PK pink	YE yellow	YE yellow	GN green
Colour of identification strip		WT white		WT white	BK black		WT white	BK black		BK black		BK black	(dark)
Pin No. Sub-D connector	14	15	16	17	18	19	20	21	22	23	24	25	
Colour of insulation	GN green	GN green	GN green	BU blue	BU blue	VT violet	VT violet	GY grey	GY grey	WT white	BK black	BK black	
Colour of identification strip	WT white	BK black	(bright)		WT white		WT white		BK black			GY grey	





# FIELD BUS ISLAND

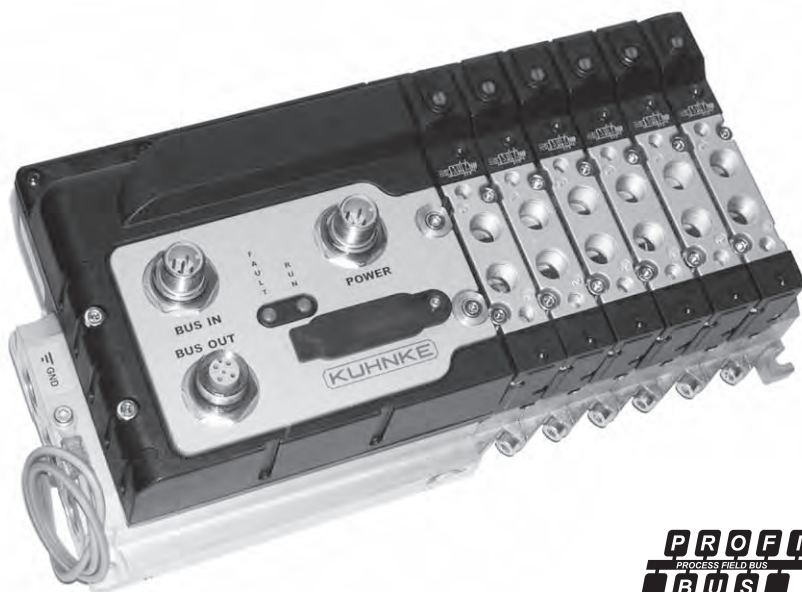
## Valve Islands with Fieldbus Interfaces

SECTION A

Our 15mm body valves, LPP 770, can be assembled into valve islands with a choice of 2 fieldbus interfaces, either Profibus DP or CANopen. Up to 18 valves with a total of 22 coils can be mounted in one valve island, providing a mix of bistable and monostable valves as

required. Users will already have selected the appropriate fieldbus, and our valve island will occupy one node on the network. We also offer digital I/O modules.

<b>Voltage:</b>	24 VDC
<b>Voltage tolerance:</b>	± 10%
<b>Duty cycle:</b>	Continuous 100%
<b>Protection class:</b>	IP65
<b>Baud rate:</b>	Profibus-DP 12 Mbit/s, CANopen 1 Mbit/s
<b>Max. No. of nodes:</b>	Profibus-DP: 32/127 / CANopen: 127
<b>Ambient Temperature:</b>	From 0 °C to +50 °C



The LPP valve island bus interface can actuate up to 22 solenoid coils (outputs) in various valve configurations. In most bus systems you will also need signal inputs associated with each valve's function (typically sensors). Use our PROFIBUS DP or CANopen I/O stations, either Profi I/O 690 or CnControl I/O 691, which are ideal.

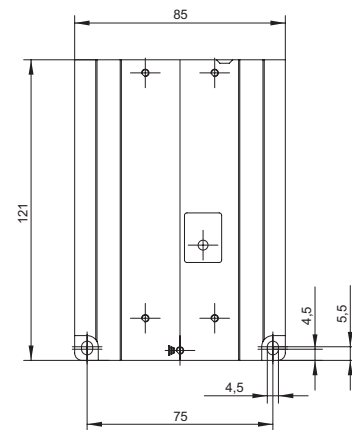
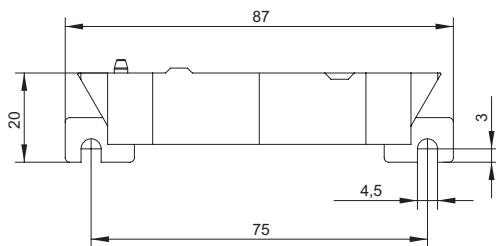
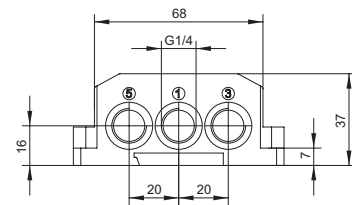
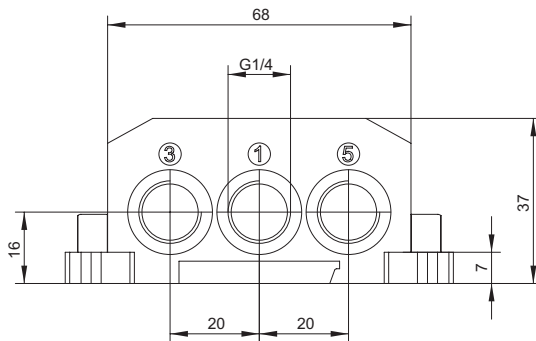
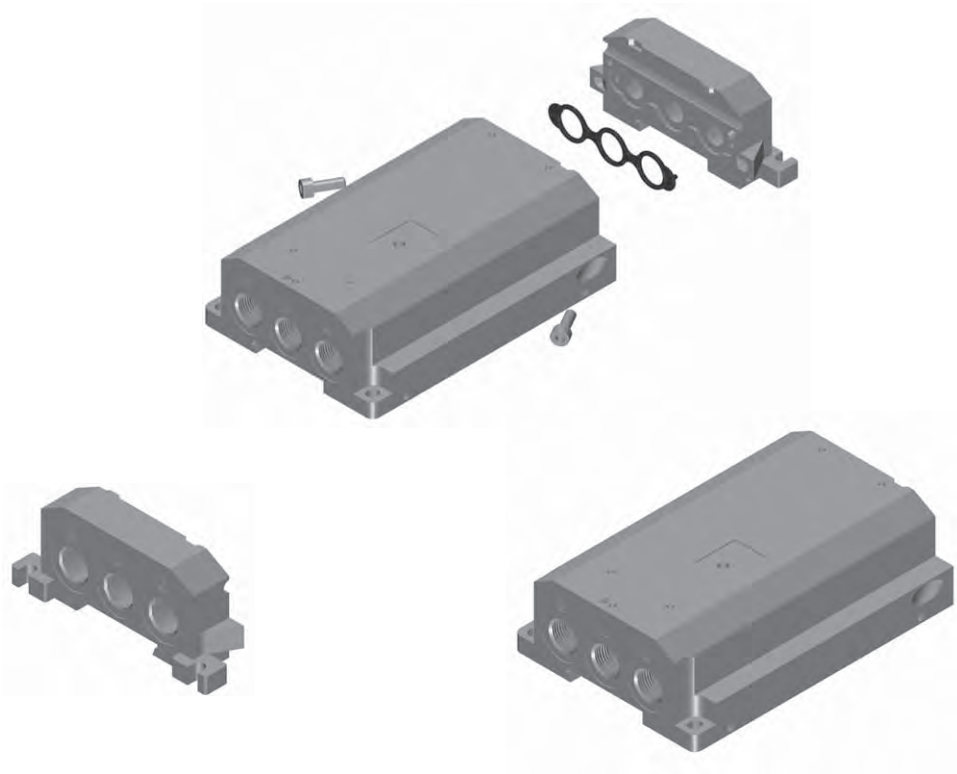
Baud rates of up to 12Mbit/sec are possible with our PROFIBUS DP devices.

LPP valve islands are IP65 rated (with all ports connected) and DIN rail or surface mountable.

**Modular Fieldbus Valve Island - Endplates**

SECTION A

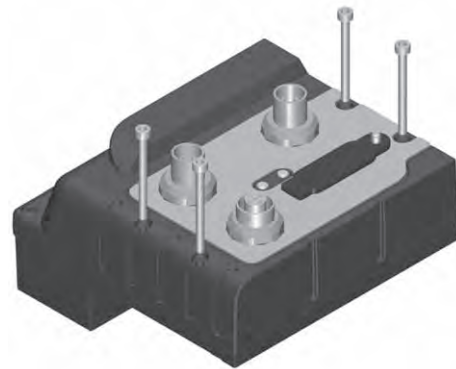
SERIES 77  
FIELDBUS ISLAND



Product	Code
Endplates kit, one side feeding (left and right module)	77.04F.0018
Endplates kit, both side feeding (left and right module)	77.04F.0019

**Modular Fieldbus Valve Island - Input Module Monostable**

SECTION A

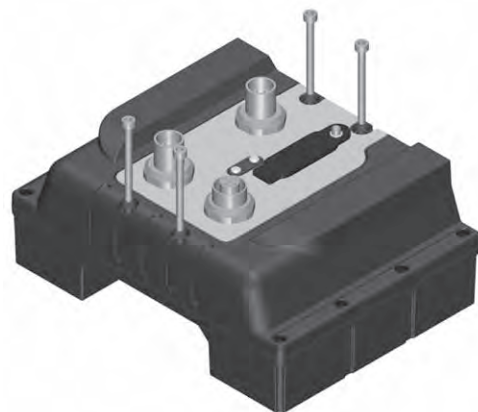


Fieldbus	Code
CANopen	77.0CMM
Profibus DP	77.0PMM

Note: The fieldbus input modules are assembled with Sub-D connection modules.

**Modular Fieldbus Valve Island - Input Module Bistable**

SECTION A



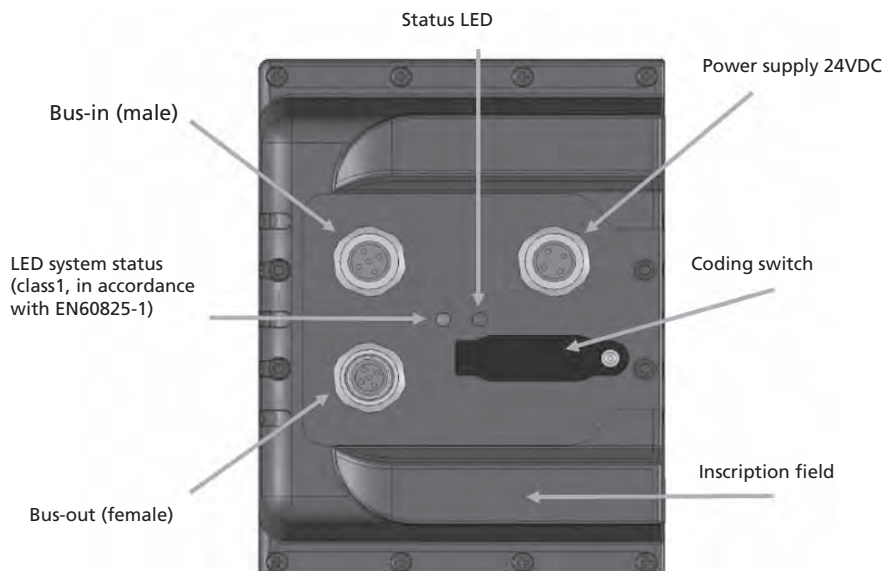
Fieldbus	Code
CANopen	77.0CMB
Profibus DP	77.0PMB

Note: The fieldbus input modules are assembled with Sub-D connection modules.

SERIES 77  
FIELDBUS ISLAND

**Modular Fieldbus Valve Island - Input Connection**

SECTION A



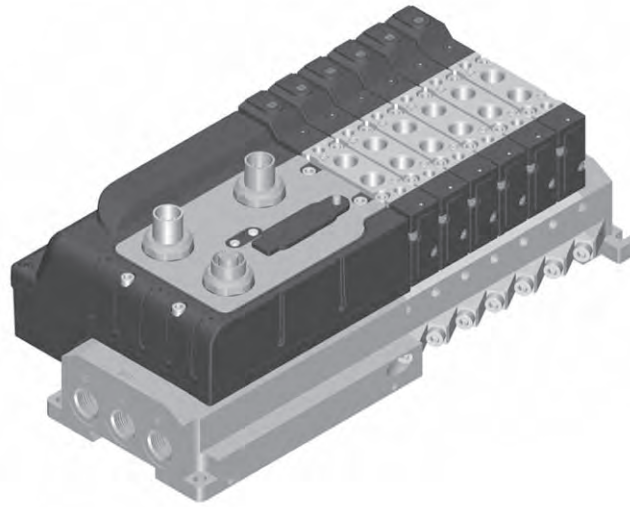
**Modular Fieldbus Valve Island - Monostable**

SECTION A

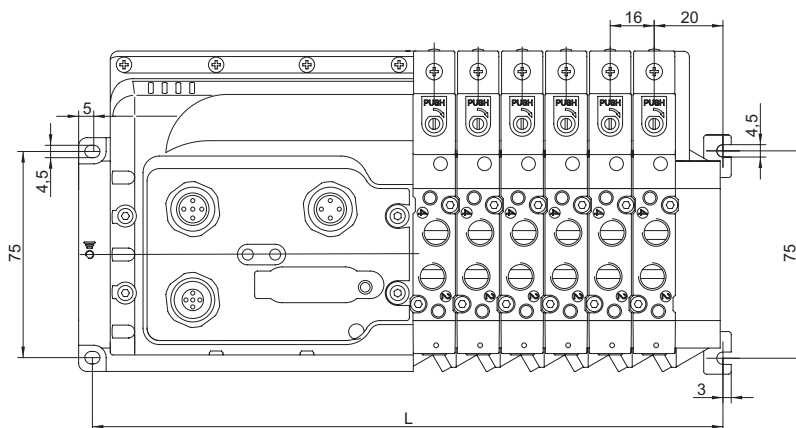
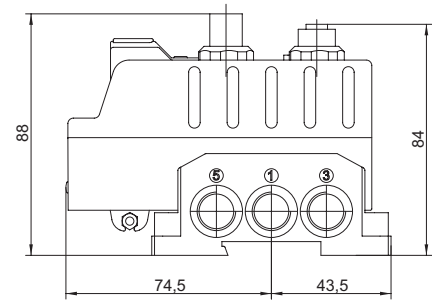
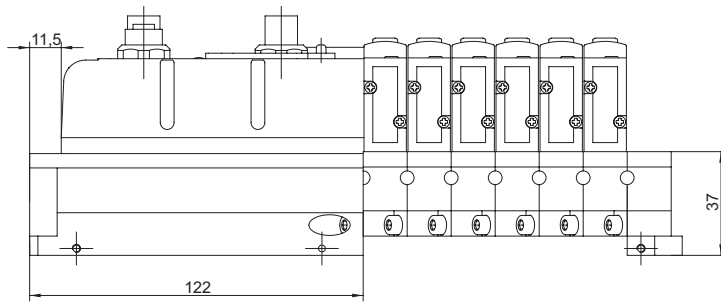
**Valves Number:** Up to 18 valve positions

**Valves Type:** 5/2-way monostable

**Coil Type:** 77.610.00.06 (24 VDC)



SERIES 77  
FIELDBUS ISLAND



**Number of Station**

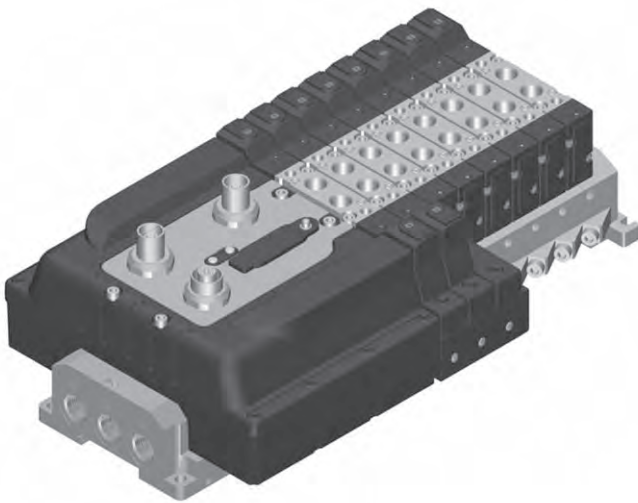
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
L	166	182	198	214	230	246	262	278	294	310	326	342	358	374	390	406	422

**Modular Fieldbus Valve Island - Mixed Configuration / Bistable**

SECTION A

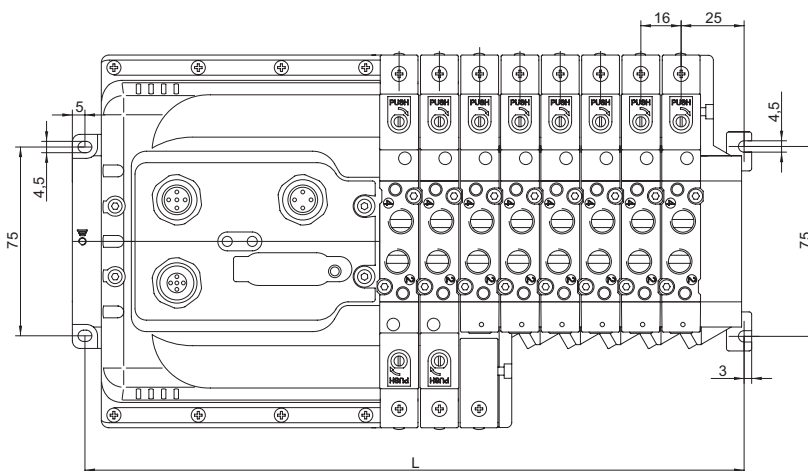
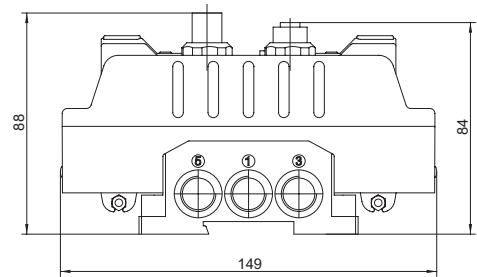
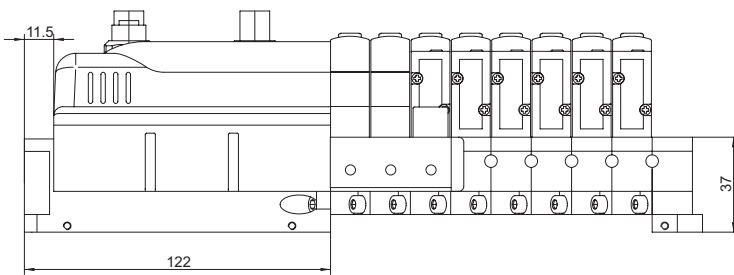
**Valves Type:** 5/2-way mono and bistable; 2x3/2-way; 5/3-way

**Coil Type:** 77.610.00.06 (24 VDC)



		monostable																		
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
bistable	1																			
	2																			
	3																			
	4																			
	5																			
	6																			
	7																			
	8																			
	9																			
	10																			
	11																			

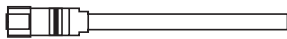
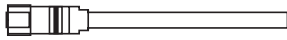
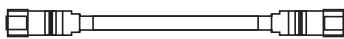
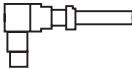

VARIOUS POSSIBLE ASSEMBLINGS



**Number of Station**

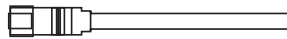
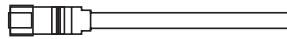
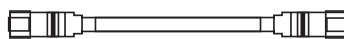
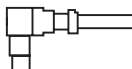

	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
L	166	182	198	214	230	246	262	278	294	310	326	342	358	374	390	406	422

**Modular Fieldbus Valve Island - Connection Cables for CANopen** SECTION A

<i>Power cable 24 V. M12</i>		
	5.0 m	77.BUS.PC
<i>CANopen, straight connector single sided, M12</i>		
	5.0 m	77.CAN.SS
<i>CANopen, straight connector double sided, M12</i>		
	1.0 m	77.CAN.DS
<i>CANopen, 90° connector single sided, M12</i>		
	5.0 m	77.CAN.SA
<i>CANopen, 90° connector double sided, M12</i>		
	1.0 m	77.CAN.DA

SERIES 77  
FIELDBUS ISLAND

**Modular Fieldbus Valve Island - Connection Cables for Profibus-DP** SECTION A

<i>Power cable 24 V. M12</i>		
	5.0 m	77.BUS.PC
<i>PROFIBUS, straight connector single sided, M12</i>		
	5.0 m	77.PRO.SS
<i>PROFIBUS, straight connector double sided, M12</i>		
	1.0 m	77.PRO.DS
<i>PROFIBUS, 90° connector single sided, M12</i>		
	5.0 m	77.PRO.SA
<i>PROFIBUS, 90° connector double sided, M12</i>		
	1.0 m	77.PRO.DA

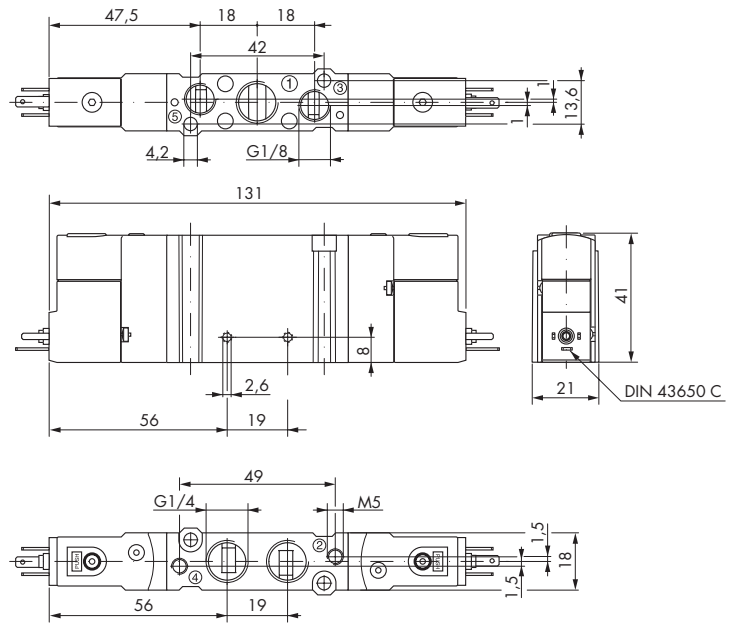
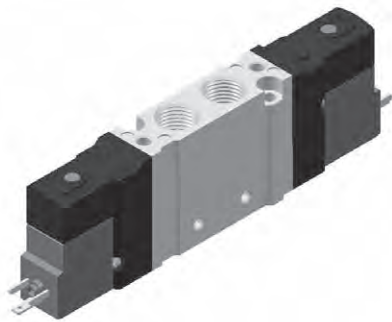
# LPP772 VALVES

5/2-way and 5/3-way Solenoid Valves - G 1/8 and G 1/4 (D<sub>nom</sub> 8 mm)

SECTION B

Press. Conn.: G 1/8 and G 1/4

Coil Type: 77.610.xx.xx (order separately)



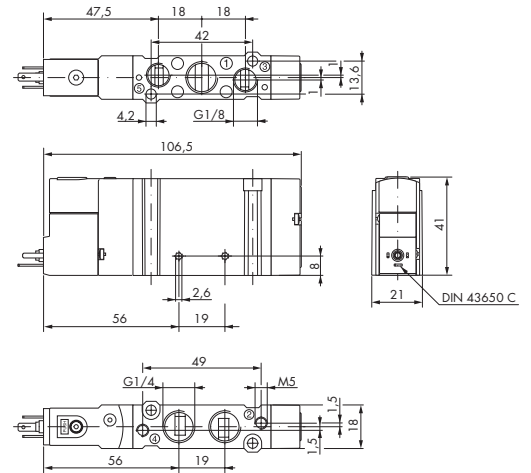
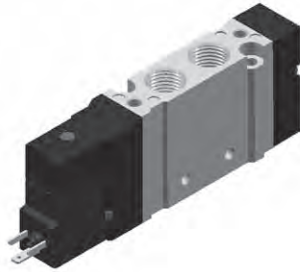
Code	Type	Symbol	Code	Type	Symbol
77.212.14.00	2 x 3/2 Normally closed		77.232.92.00	5/2 External feeding	
77.212.24.00	2 x 3/2 Normally open		77.232.93.00	5/2 With priority External feeding	
77.212.34.00	2 x 3/2 Open / closed		77.212.12.00	5/3 All ports closed	
77.232.14.00	2 x 3/2 Normally closed External feeding		77.212.22.00	5/3 All ports exhaust	
77.232.24.00	2 x 3/2 Normally open External feeding		77.212.32.00	5/3 All ports pressurized	
77.232.34.00	2 x 3/2 Open / closed External feeding		77.232.12.00	5/3 All ports closed External feeding	
77.212.92.00	5/2		77.232.22.00	5/3 All ports exhaust External feeding	
77.212.93.00	5/2 With priority		77.232.32.00	5/3 All ports pressurized External feeding	

**5/2-way Solenoid Valves - G 1/8 and G 1/4 (D<sub>nom</sub> 8 mm)**

**SECTION B**

Press. Conn.: G 1/8 and G 1/4

Coil Type: 77.610.xx.xx (order separately)



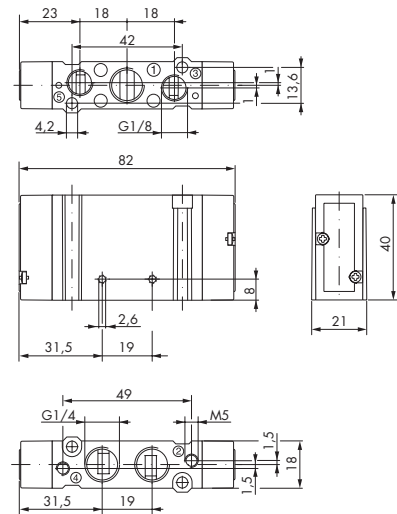
Code	Type	Symbol	Code	Type	Symbol
77.212.90.00	5/2 Monostable Return air assisted		77.232.90.00	5/2 Monostable External feeding Return air assisted	
77.212.91.00	5/2 Monostable Spring return		77.232.91.00	5/2 Monostable External feeding Spring return	

**5/2-way and 5/3-way Pneumatic Valves - G 1/8 and G 1/4 (D<sub>nom</sub> 8 mm)**

**SECTION B**

Press. Conn.: G 1/8 and G 1/4

SERIES 77  
LPP772

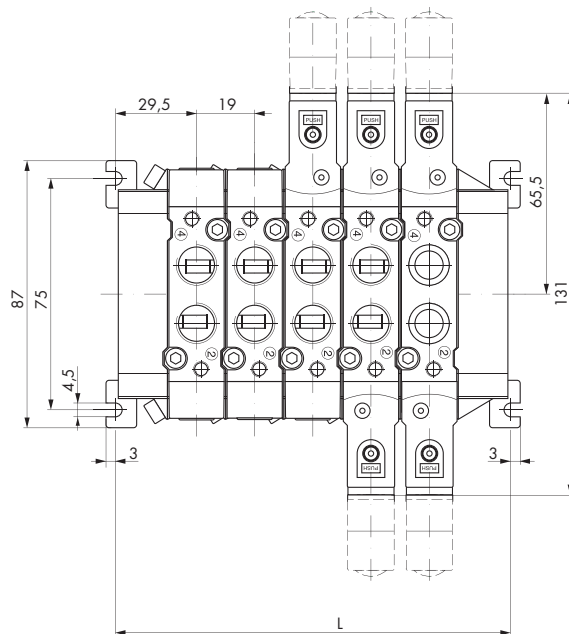
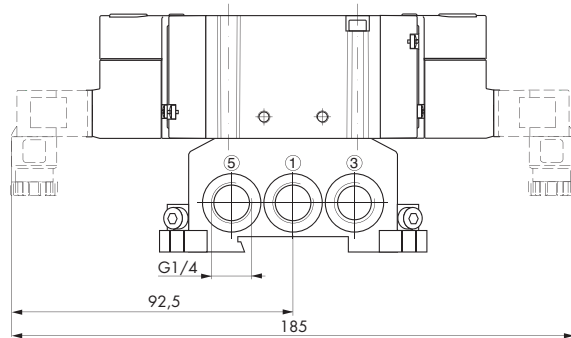
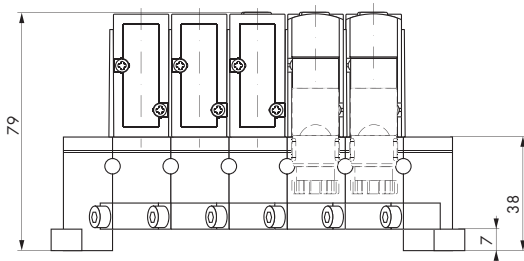
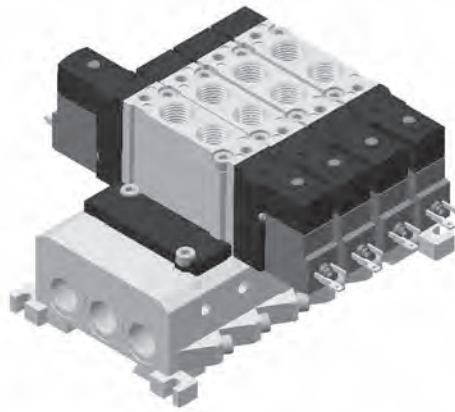


Code	Type	Symbol	Code	Type	Symbol
77.222.90.00	5/2 Monostable Return air assisted		77.222.92.00	5/2 Bistable	
77.222.91.00	5/2 Monostable Spring return		77.222.93.00	5/2 Bistable With priority	
77.222.12.00	5/3 All ports closed		77.222.14.00	2 x 3/2 Normally closed	
77.222.22.00	5/3 All ports exhaust		77.222.24.00	2 x 3/2 Normally open	
77.222.32.00	5/3 All ports pressurized		77.222.34.00	2 x 3/2 Open / closed	



**Subplates System LPP772 - Valve Island**

**SECTION B**



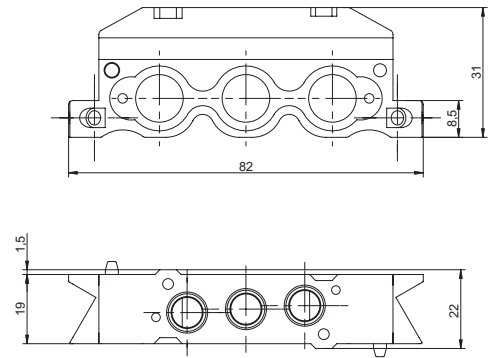
**Number of Station**

Nr	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L	78	97	116	135	154	173	192	211	230	249	268	287	306	325	344	363	382	401	420

SERIES 77  
LPP772

**Subplates System LPP772 - Subplates**

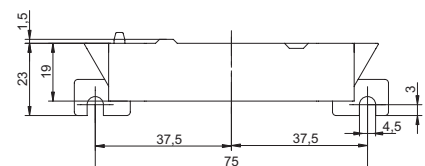
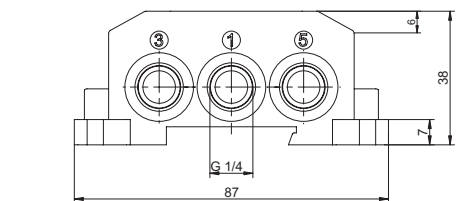
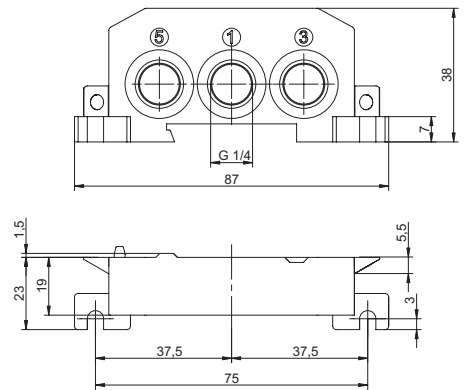
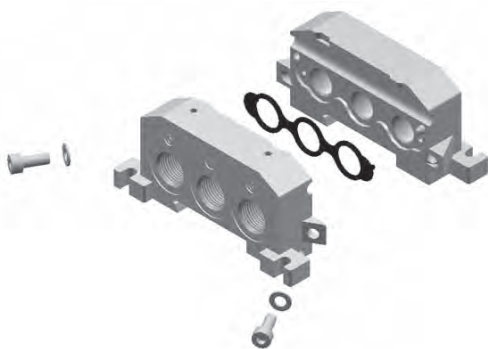
**SECTION B**



Product	Code
Subplate kit	77.240.00.13
Subplate kit closed <i>(the subplate is closed on the right side, the one opposite the seal seat)</i>	77.240.00.14
Subplate kit mixed <i>(the subplate is closed on the "P" and open in the exhaust)</i>	77.240.00.15

**Subplates System LPP772 - Endplates**

**SECTION B**

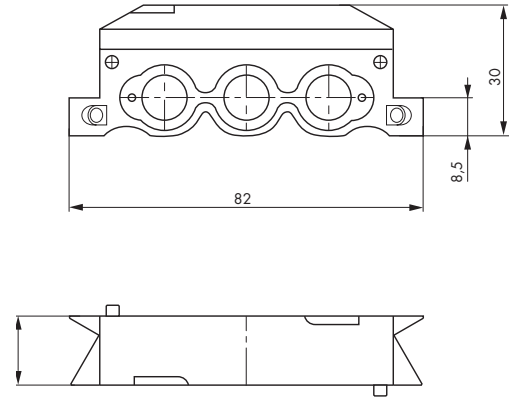
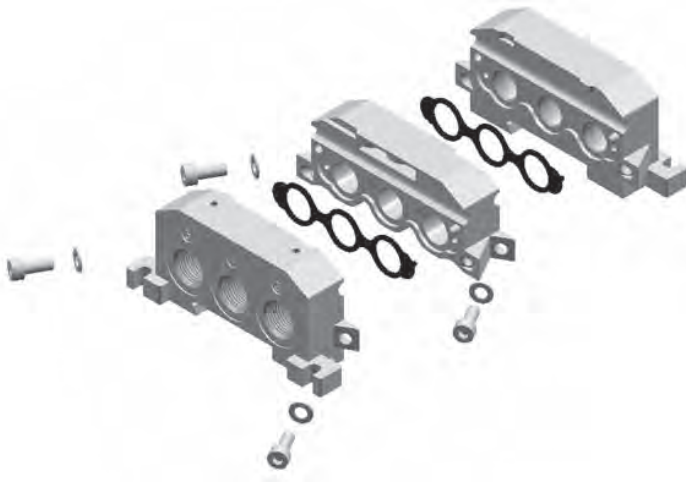


Product	Code
Endplates kit, one side feeding <i>(left and right module)</i>	77.240.00.18
Endplates kit, both side feeding <i>(left and right module)</i>	77.240.00.19

SERIES 77  
LPP772

**Subplates System LPP772 - Modules for Matching Interface**

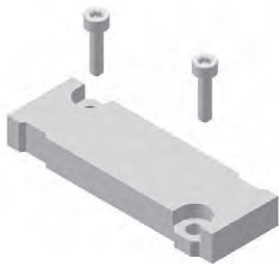
**SECTION B**



Product	Code
Interface kit 77.0 and 77.2 (15 mm/18 mm, the kit include left, right and matching interface modules)	77.040.15.18

**Subplates System LPP772 - Accessories**

**SECTION B**



**Blanking plate**

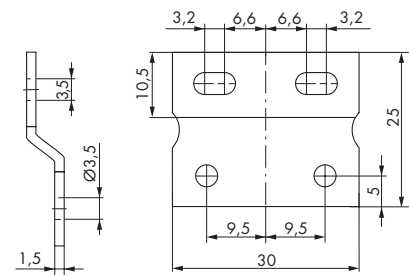


**Intermediate supply**



**Mounting bracket**

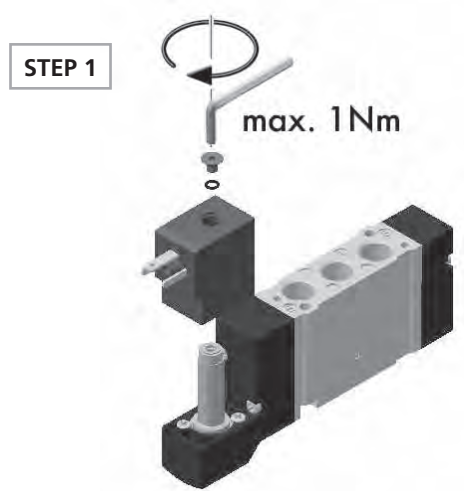
Product	Code
Blanking plate	77.240.00.20
Intermediate supply	77.240.00.40
Mounting bracket	77.040.00.30



**Mounting Instructions**

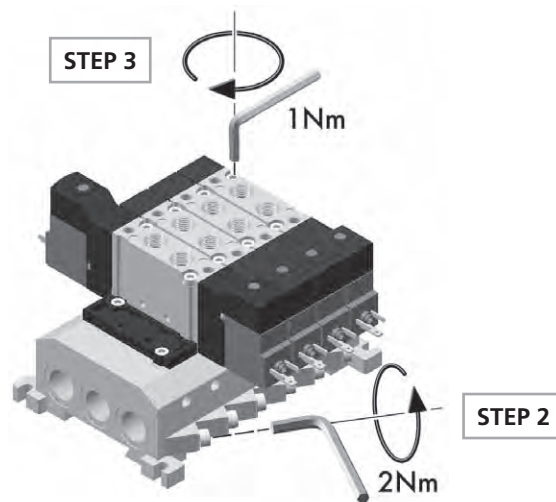
**SECTION B**

*Assembly of solenoid systems*



*Assembly of valves and subplates to valve islands.*

Fasten the screws alternately



SERIES 77  
LPP772

# COILS & PLUG-IN SOCKETS

## Coils Type 77 - Details

**Electrical Standards:** EN 60335-1

**Pull-in power:** Approx. 1.6 x nominal

**Insulation class:** F (155 °C)

**LED:** None

**Voltage tolerance:** ± 10%

**Copper enamelled wire:** Temperature class H (200 °C)

**Duty cycle:** Continuous 100 %

**Bobbin materials & cover:** PA 6.6

**Electrical connections:** Plug in socket or flying lead connector (order separately) or Sub-D & Fieldbus

## Coils for Standard Valves



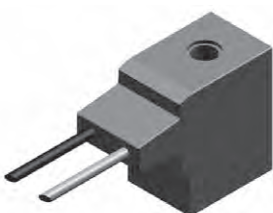
Code	Power	Voltage	Nominal resistance	Nominal current
77.610.00.01	1.1 W DC version	12	125 Ω	96 mA
77.610.00.02		24	500 Ω	48 mA
77.610.00.03		48	2000 Ω	24 mA
77.610.00.04		110	10500 Ω	10.5 mA
77.610.00.11	2/1.7 VA (50/60Hz) AC Version	12	35 Ω	165/138 mA
77.610.00.12		24	125 Ω	100/87 mA
77.610.00.13		48	460 Ω	48/40 mA
77.610.00.14		110	2850 Ω	19/16 mA
77.610.00.15		230	9000 Ω	9/8 mA

## Coil for Sub-D and Fieldbus Valve Island



Code	Power	Voltage	Nominal resistance	Nominal current
77.610.00.06	1.1 W DC version	24	500 Ω	48 mA

## Coils with Flying Leads



Code	Power	Voltage	Nominal resistance	Nominal current
77.610.00.07	1.1 W	12	125 Ω	96 mA
77.610.00.08	DC version	24	500 Ω	48 mA
77.610.00.17	2/1.7 VA (50/60Hz)	12	35 Ω	165/138 mA
77.610.00.18	AC Version	24	125 Ω	100/87 mA

Note: Length approx. 1000 mm

### Plug-in Socket - DIN 43650 Type C

**Nominal Voltage AC/DC:** 250V AC/DC

**Nominal current:** 6 A

**Contact resistance:** <= 5 mΩ

**Wire cross section:** max 1.0 mm<sup>2</sup>

**Casing:** PA6 GF

**LED:** none

**No. of poles:** 2+ground (earth position H6)

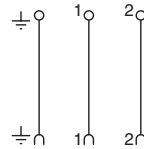
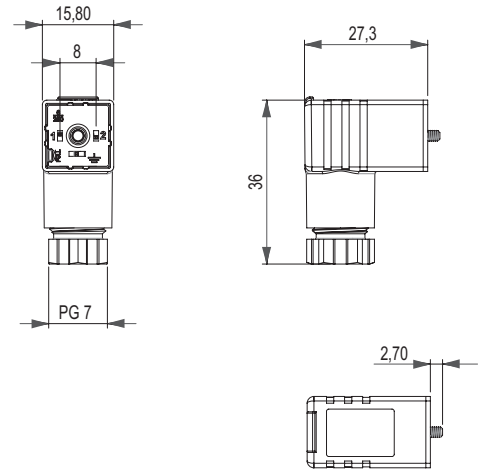
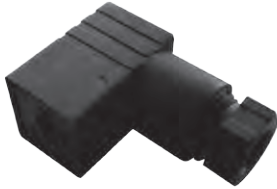
**Cable screw connection:** Pg 7

**Protection:** IP 65 (if correctly assembled)

**Gasket:** flat

**Colour:** black

**Ambient temperature:** from -40 °C to +100 °C



Code	Voltage
PCP.00.N000	Up to 250V

### Plug-in Socket - DIN 43650 Type C (LED)

**Nominal Voltage AC/DC:** see order code

**Nominal current:** 4 A

**Contact resistance:** <= 5 mΩ

**Wire cross section:** max 1.0 mm<sup>2</sup>

**Casing:** PA12

**LED:** yellow

**No. of poles:** 2+ground (earth position H6)

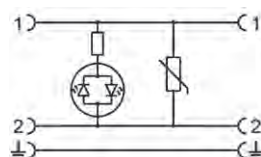
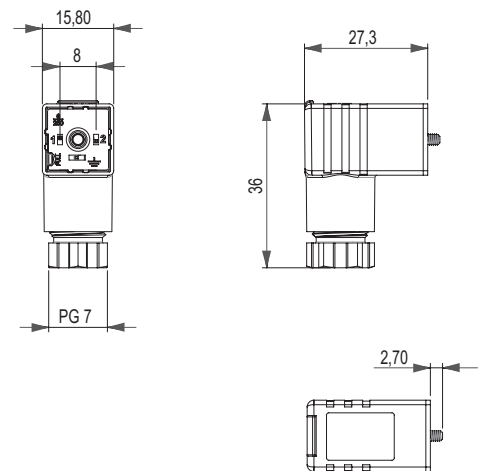
**Cable screw connection:** Pg 7

**Protection:** IP 65 (if correctly assembled)

**Gasket:** flat

**Colour:** transparent

**Ambient temperature:** from -20 °C to +80 °C



Code	Voltage
PCP.00.Y024	24V
PCP.00.Y115	115V
PCP.00.Y230	230V

# PART No. INDEX

## Part No. Index

VALVE	TYPE	ID	PAGE
77.012.12.00	LPP770	131774	B - 7
77.012.14.00	LPP770	131775	B - 7
77.012.22.00	LPP770	131776	B - 7
77.012.24.00	LPP770	131777	B - 7
77.012.32.00	LPP770	131778	B - 7
77.012.34.00	LPP770	131779	B - 7
77.012.90.00	LPP770	131780	B - 8
77.012.91.00	LPP770	84353	B - 8
77.012.92.00	LPP770	131781	B - 7
77.012.93.00	LPP770	131782	B - 7
77.022.12.00	LPP770	131805	B - 8
77.022.14.00	LPP770	107032	B - 8
77.022.22.00	LPP770	131806	B - 8
77.022.24.00	LPP770	107031	B - 8
77.022.32.00	LPP770	131807	B - 8
77.022.34.00	LPP770	106609	B - 8
77.022.90.00	LPP770	84403	B - 8
77.022.91.00	LPP770	84404	B - 8
77.022.92.00	LPP770	84405	B - 8
77.022.93.00	LPP770	131808	B - 8
77.032.12.00	LPP770	131829	B - 7
77.032.14.00	LPP770	131830	B - 7
77.032.22.00	LPP770	131831	B - 7
77.032.24.00	LPP770	131832	B - 7
77.032.32.00	LPP770	131833	B - 7
77.032.34.00	LPP770	131834	B - 7
77.032.90.00	LPP770	131835	B - 8
77.032.91.00	LPP770	84374	B - 8
77.032.92.00	LPP770	131836	B - 7
77.032.93.00	LPP770	131837	B - 7
77.040.00.13	LPP770	84454	B - 10
77.040.00.14	LPP770	117517	B - 10
77.040.00.15	LPP770	108770	B - 10
77.040.00.18	LPP770	84456	B - 10
77.040.00.19	LPP770	84457	B - 10
77.040.00.20	LPP770	117521	B - 11
77.040.00.30	LPP770	84459	B - 11
77.040.00.30	LPP772	84459	B - 33
77.040.00.40	LPP770	117523	B - 11
77.040.15.18	LPP770	85630	B - 11
77.040.15.18	LPP772	85630	B - 33
77.04F.0018	PROFIBUS	117514	B - 24
77.04F.0019	PROFIBUS	117515	B - 24
77.0CMB	PROFIBUS	131697	B - 25
77.0CMM	PROFIBUS	131698	B - 25
77.0ENDL	SUB-D	131706	B - 17
77.0ENDR	SUB-D	131708	B - 17
77.0IMB	SUB-D	117498	B - 16
77.0IMM	SUB-D	117500	B - 16
77.0M2L	SUB-D	117502	B - 17
77.0M2R	SUB-D	117504	B - 17
77.0M3L	SUB-D	117506	B - 17
77.0M3R	SUB-D	117508	B - 17
77.0M4L	SUB-D	117510	B - 17
77.0M4R	SUB-D	117512	B - 17
77.0PIN (10 pcs)	SUB-D	131718	B - 16

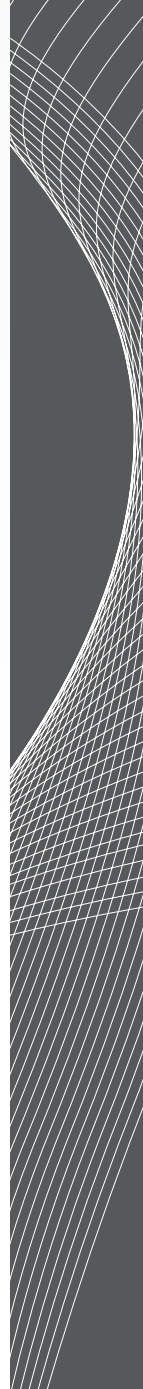
VALVE	TYPE	ID	PAGE
77.0PLUG	SUB-D	131720	B - 17
77.0PMB	PROFIBUS	131722	B - 25
77.0PMM	PROFIBUS	131723	B - 25
77.212.12.00	LPP772	131913	B - 29
77.212.14.00	LPP772	109573	B - 29
77.212.22.00	LPP772	131914	B - 29
77.212.24.00	LPP772	109574	B - 29
77.212.32.00	LPP772	131915	B - 29
77.212.34.00	LPP772	109575	B - 29
77.212.90.00	LPP772	131916	B - 30
77.212.91.00	LPP772	84281	B - 30
77.212.92.00	LPP772	84282	B - 29
77.212.93.00	LPP772	131917	B - 29
77.222.12.00	LPP772	131937	B - 30
77.222.14.00	LPP772	109579	B - 30
77.222.22.00	LPP772	131938	B - 30
77.222.24.00	LPP772	109580	B - 30
77.222.32.00	LPP772	131939	B - 30
77.222.34.00	LPP772	109581	B - 30
77.222.90.00	LPP772	131940	B - 30
77.222.91.00	LPP772	131941	B - 30
77.222.92.00	LPP772	84333	B - 30
77.222.93.00	LPP772	131942	B - 30
77.232.12.00	LPP772	131963	B - 29
77.232.14.00	LPP772	169318	B - 29
77.232.22.00	LPP772	131964	B - 29
77.232.24.00	LPP772	-	B - 29
77.232.32.00	LPP772	131965	B - 29
77.232.34.00	LPP772	-	B - 29
77.232.90.00	LPP772	131966	B - 30
77.232.91.00	LPP772	131967	B - 30
77.232.92.00	LPP772	131968	B - 29
77.232.93.00	LPP772	131969	B - 29
77.240.00.13	LPP772	84460	B - 32
77.240.00.14	LPP772	84461	B - 32
77.240.00.15	LPP772	-	B - 32
77.240.00.18	LPP772	117524	B - 32
77.240.00.19	LPP772	84463	B - 32
77.240.00.20	LPP772	84464	B - 33
77.240.00.40	LPP772	117525	B - 33
77.610.00.01	COILS	84322	B - 35
77.610.00.02	COILS	84323	B - 35
77.610.00.03	COILS	132664	B - 35
77.610.00.04	COILS	132666	B - 35
77.610.00.06	COILS	131990	B - 35
77.610.00.07	COILS	132668	B - 35
77.610.00.08	COILS	132670	B - 35
77.610.00.11	COILS	132672	B - 35
77.610.00.12	COILS	84327	B - 35
77.610.00.13	COILS	132675	B - 35
77.610.00.14	COILS	132677	B - 35
77.610.00.15	COILS	84330	B - 35
77.610.00.17	COILS	132680	B - 35
77.610.00.18	COILS	132682	B - 35
77.BUS.PC	PROFIBUS	132651	B - 28
77.BUS.PC	PROFIBUS	132651	B - 28

**Part No. Index**

<i>VALVE</i>	<i>TYPE</i>	<i>ID</i>	<i>PAGE</i>
77.CAB (5 m)	SUB-D	132652	B - 16
77.CAN.DA	PROFIBUS	132653	B - 28
77.CAN.DS	PROFIBUS	132654	B - 28
77.CAN.SA	PROFIBUS	132655	B - 28
77.CAN.SS	PROFIBUS	132656	B - 28
77.PRO.DA	PROFIBUS	132657	B - 28
77.PRO.DS	PROFIBUS	132658	B - 28
77.PRO.SA	PROFIBUS	132659	B - 28
77.PRO.SS	PROFIBUS	132660	B - 28
PCP.00.N000	PLUG	-	B - 36
PCP.00.Y024	PLUG	-	B - 36
PCP.00.Y115	PLUG	-	B - 36
PCP.00.Y230	PLUG	-	B - 36
PCP.00.Y115	PLUG	-	B - 36
PCP.00.Y230	PLUG	-	B - 36



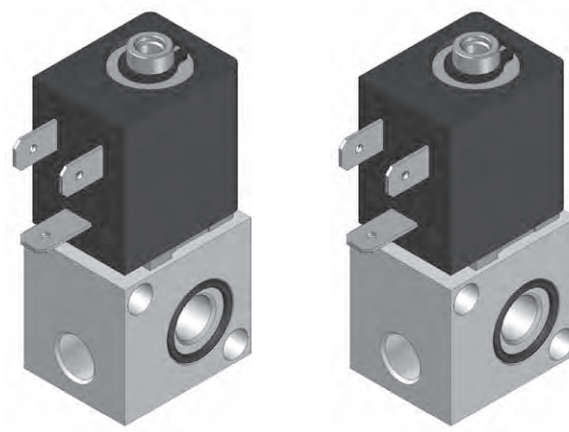
SERIES 78  
MODULAR VALVES





# MODULAR VALVES

## General Information



Our 78 series 3/2 valves can be assembled into blocks of up to 10 pieces. These are designed for arduous duties, typically in industrial automotive applications. Features include high shock resistance, extended operating temperatures, and wide voltage tolerances.

## Technical Data

Version	Type	Pressure range	Pressure connection	Flowrate Q	Nominal orifice	Air exhaust port
Directional Valves	3/2-way NC	6 - 10 bar	G 1/8	70 Nl/min	1.2 mm	M5

- Body material:** Aluminum alloy - anodised
- Sealing element:** NBR, Viton®
- Shock / vibration:** 25 G all 3 axis/125 Hz random, test in accordance with EN 60068-2
- Protection classification:** IP 65 (with plug-in socket and occupied pneumatic connections)
- Mounting:** 2 x M4 thread on bottom side
- Operating medium:** 5 micron filtered, lubricated or dry compressed air; also suitable for other media conforming to ISO-VG 10
- Ambient temperature range:** From -40 °C up to +50 °C
- Voltage options:** 24 VDC ± 30%

**Order Code**

<i>Order specifications</i>		<b>78.</b>	<b>A</b>	<b>1.</b>	<b>M02</b>
Series No.		<b>78</b>			
Version					
	3/2 NC G1/8 24VDC 4.5W, NW 1.2, NBR		<b>A</b>		
	3/2 NC G1/8 24VDC 4.5W, NW 1.2, Viton®		<b>B</b>		
Actuation					
	without manual override			<b>1</b>	
	with manual override			<b>2</b>	
Modularity					
	Single valve				-
	2 valves				M02
	3 valves				M03
	4 valves				M04
	5 valves				M05
	6 valves				M06
	7 valves				M07
	8 valves				M08
	9 valves				M09
	10 valves				M10

<i>Special versions</i>		<b>KB.</b>	<b>A</b>	<b>1.</b>	<b>zzzz*</b>
-------------------------	--	------------	----------	-----------	--------------

\* zzzz = project number (assigned by factory)

**Examples**

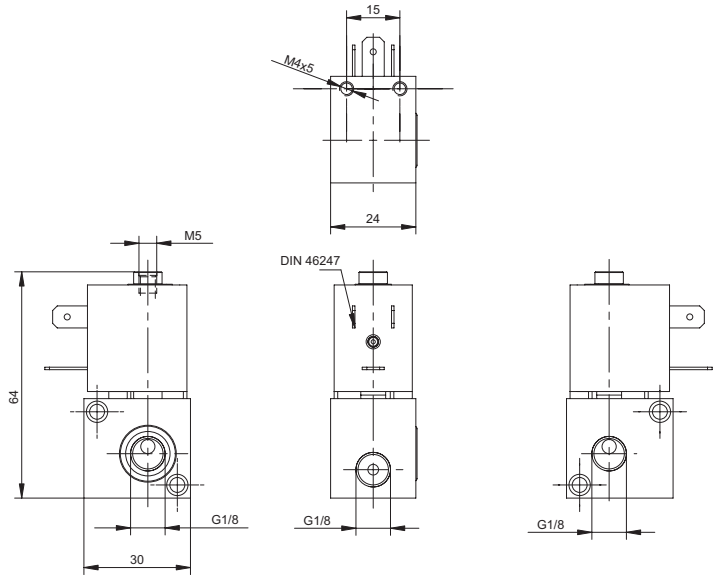
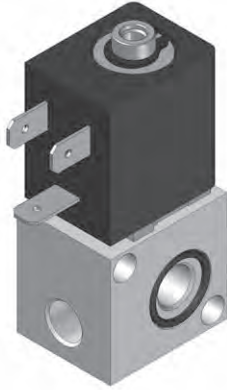
<i>Standard single valve, without manual override</i>	<b>78.A1</b>
<i>Block of 6 valves pre-assembled, without manual override</i>	<b>78.A1.M06</b>
<i>Viton® sealed single valve with manual override</i>	<b>78.B2</b>
<i>Block of 9 valves, Viton® sealed, with manual override</i>	<b>78.B2.M09</b>
<i>Special block of 7 standard valves without manual override</i>	<b>SP.778.xxxx</b>

**5/2-way Poppet Valves - G 1/8 (D<sub>nom</sub> 6 mm)**

**Actuation:** Solenoid, manual override

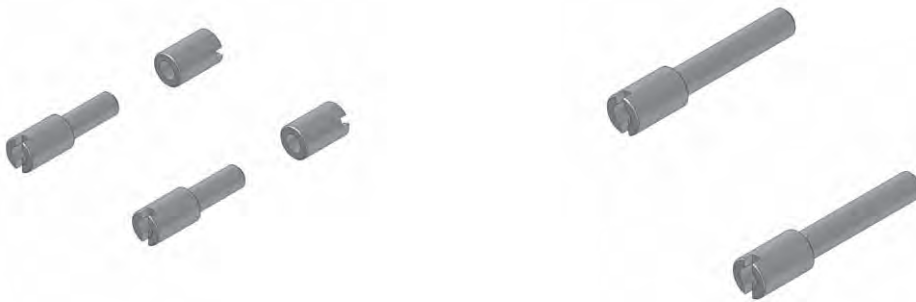
**Return:** Spring

**Coil Type:** JL4100002



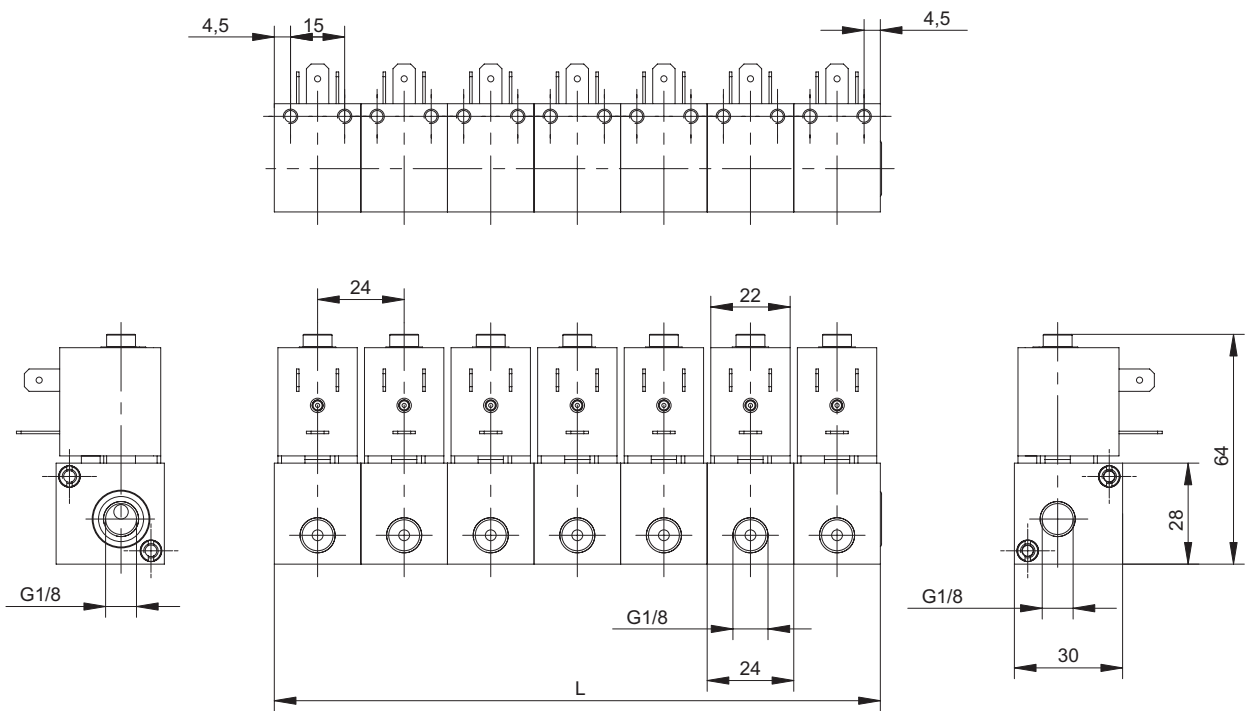
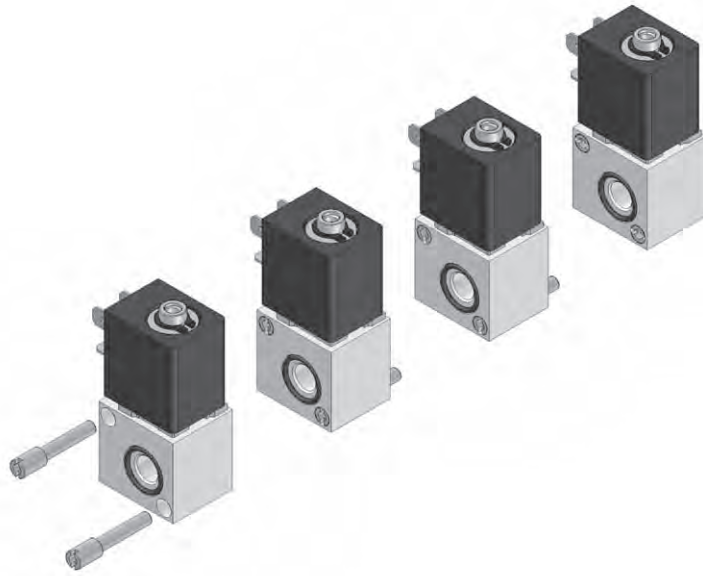
Code	A	Symbol
78.A1	3/2 NC	
78.A2	3/2 NC	

**KIT for Block Assembly**



Product	Content	Code
Screw kit for assembly of first valve place	2 short screws + 2 inserts	78.KIT.01
Screw kit for adding a valve place	2 long screws	78.KIT.02

**Valve Block - Dimensional Drawing**



**Number of Places**

Nr	2	3	4	5	6	7	8	9	10
L	48	72	96	120	144	168	192	216	240

# COILS & PLUG-IN SOCKETS

## Coil - Type DIN B

This coil is only used with 78 series valves and is supplied pre-mounted.

**Electrical standards:** EN 60335-1, EN 60730-1

**Insulation class:** F (155 °C)

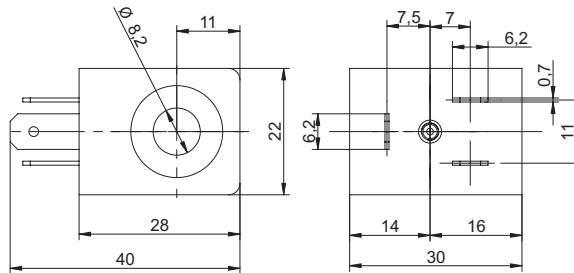
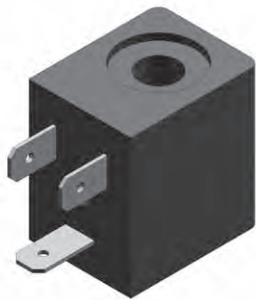
**Duty cycle:** Continuous 100%

**Copper enamelled wire:** Temperature class H (200 °C)

**Bobbin materials:** PA 6.6

**Cover:** Die-cast material PA 6.6

**Electrical connections:** 3 spade connectors (6.3 x 0.8 DIN 46247) for plug in socket (order separately)



Code	Power	Voltage	Voltage tolerance	Switching frequency	Return power	Pull-in time	Drop-out time
JL4100002	(DC Version) approx. 4.6 W	24	-30% +30%	1 Hz	0.1 W	approx. 9 - 12 ms	approx. 9 - 12 ms

Note: Coils are pre-mounted on each valve.

### Plug-in Socket - DIN 43650 Type B

**Nominal Voltage AC/DC:** 250V AC/DC

**Nominal current:** 10 A

**Contact resistance:** <= 5 mΩ

**Wire cross section:** max 1.5 mm<sup>2</sup> (AWG 16)

**Casing:** PA6 GF

**LED:** none

**No. of poles:** 2+ground (earth position H12)

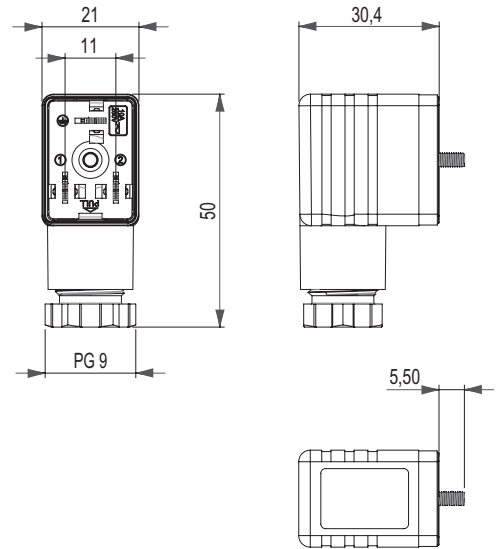
**Cable screw connection:** Pg 9

**Protection:** IP 65 (if correctly assembled)

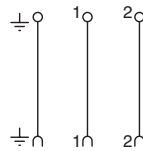
**Gasket:** flat

**Colour:** black

**Ambient temperature:** from -40 °C to +100 °C



Code	Voltage
PBP.00.N000	Up to 250V



### Plug-in Socket - DIN 43650 Type B (LED)

**Nominal Voltage AC/DC:** see order code

**Nominal current:** 4 A

**Contact resistance:** <= 5 mΩ

**Wire cross section:** max 1.5 mm<sup>2</sup>

**Casing:** PA12

**LED:** yellow

**No. of poles:** 2+ground (earth position H12)

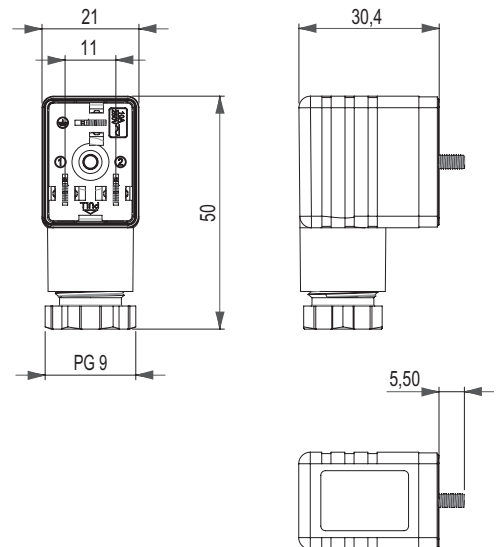
**Cable screw connection:** Pg 9

**Protection:** IP 65 (if correctly assembled)

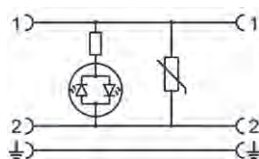
**Gasket:** flat

**Colour:** transparent

**Ambient temperature:** from -20 °C to +80 °C



Code	Voltage
PBP.00.Y024	24V
PBP.00.Y115	115V
PBP.00.Y230	230V













**BSG Kuhnke Solutions S.r.l.**

Via R. Colpi, 38  
35010 Limena (PD) - Italy

Tel. +39 049 86 57 711  
Fax +39 049 88 41 571

[sales@bsgkuhnkesolutions.com](mailto:sales@bsgkuhnkesolutions.com)  
[www.bsgkuhnkesolutions.com](http://www.bsgkuhnkesolutions.com)