

Parker Moduflex Valve System

Catalogue PDE2536TCUK



ENGINEERING YOUR SUCCESS.



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Moduflex Valve System

The Moduflex Valve System redefines flexibility for pneumatic users. Whether configured from basic components or ordered as a pre-assembled and tested valve island, Moduflex flexibility is unmatched in the market place.



Innovative

The 6 patents awarded to the Moduflex Valve System reflect that innovation is core to the Parker design process. Maintaining a clear understanding of our customer's expectations has defined the individuality of the Moduflex, and clearly differentiated it as a leading automation solution.

Adaptive

No other system can be adapted so simply once specified. Unique, captive fitting release system, quick release electrical connectors and single mechanical screw connection between manifolds offer the ultimate capability for late system design changes.

Multi-Functional

From stand-alone valves to communicant ready valve islands, from cylinder flow controls to vacuum generators with integrated blow-off, the Moduflex Valve System meets the requirements of the whole automation spectrum.

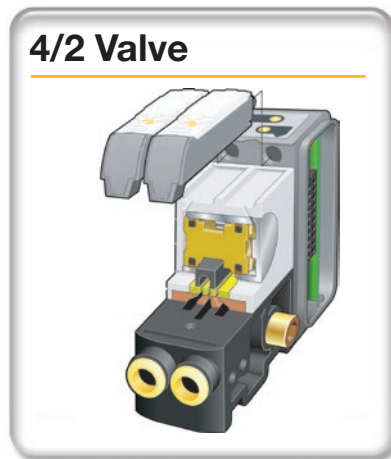
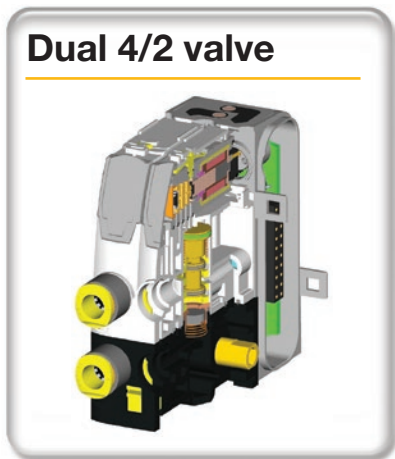
Light-weight

A communicant valve manifold with 8 pneumatic outputs weighs a mere 800grams, making the Moduflex Valve System the perfect choice for end of arm tooling application.

Moduflex Valve System - P2M

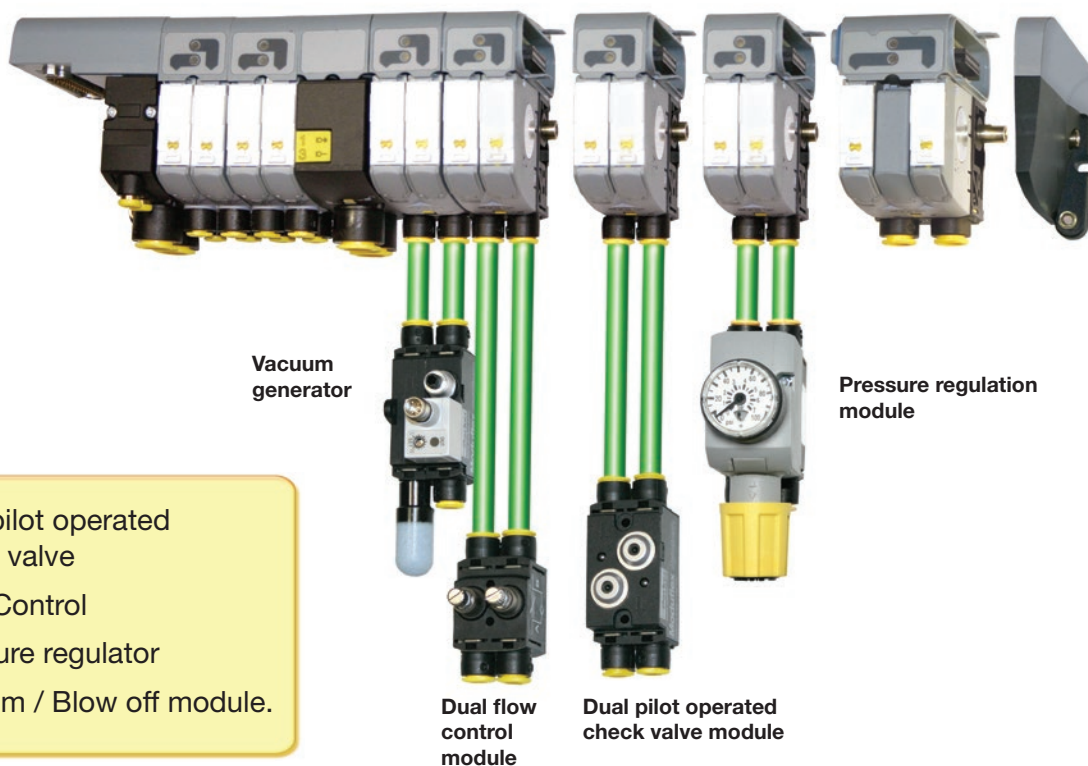
Moduflex Valve technology

Two technology platforms enable the compact design and high performance of the Moduflex Valve System. The compact dual 4/2 and 3/2 valves utilise well proven Parker seal technology. The standard 4/2 valves adopt the long life super durable ceramic switching technology.



Moduflex Complete Control

With the introduction of the dual 4/2 size 1 valves, Moduflex now offers unrivalled ability of matching valves to exact flow requirements, ensuring cost and space are minimised. In addition, Moduflex Valve System offers all the necessary control peripherals to provide a complete automation solution. Moduflex is the complete control package.



- Dual pilot operated check valve
- Flow Control
- Pressure regulator
- Vacuum / Blow off module.

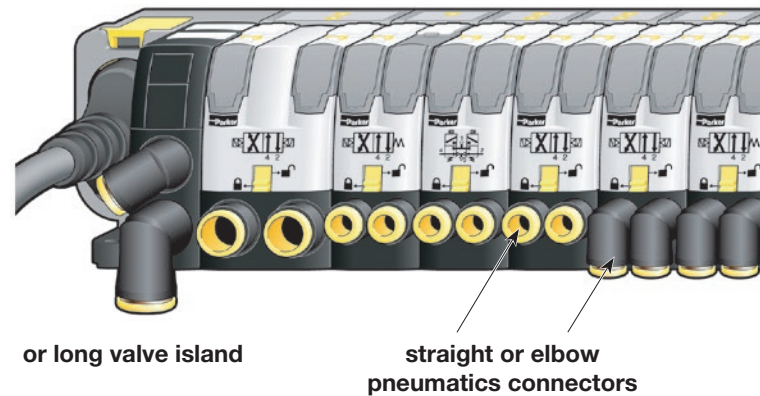
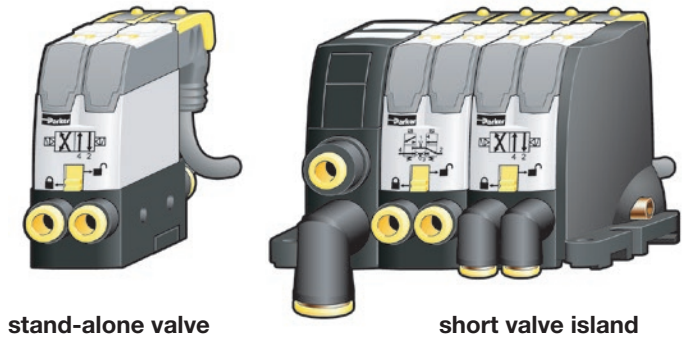
Moduflex Valve System - P2M

With high performance technology, Moduflex opens a new era in the field of electro-pneumatic automation. Valves are easily assembled into compact islands that conform to any application requirement.

Adaptive pneumatic

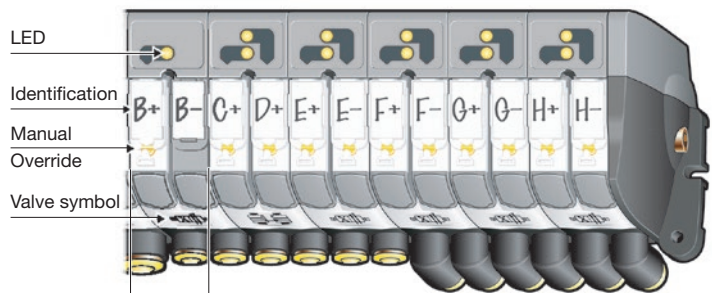
With the Moduflex Valve design, pneumatic automation is now totally flexible.

- Valves may be stand-alone or assembled into short or long islands, depending on application.
- IP 65-67 water and dust protection allows the valve to be installed near the cylinders for shorter response time and lower air consumption.
- The IP40 water and dust protection allows an optimised electrical connection for applications into cabinet or soft and none aggressive environments.
- Valve island electrical connections may be integrated.
- Push-in pneumatic connectors may be straight or elbow, for 4, 6, 8 or 10 mm OD tubes.
- A given island may incorporate different valve sizes in order to fulfill each cylinder flow requirement. A single island will accommodate all cylinders, up to 100 mm bore size.
- Island modifications are easy: add or remove a valve, change a valve function, change tubing size or change piloting in minutes.
- Manual overrides are also adaptive: locking for set up, non-locking for production.



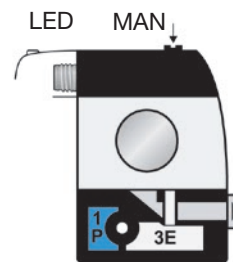
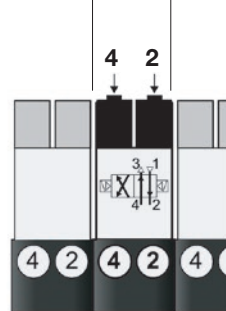
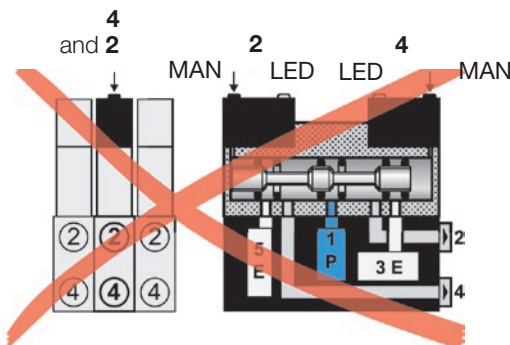
Easy man-machine dialog

- Moduflex incorporates LED indicators, manual overrides (MAN), in conjunction with valve symbols and identification.
- As compared to traditional 5/2 valve islands, Moduflex offers a more user friendly dialogue: each marking, LED and MAN are all lined up with the corresponding cylinder output.



Island with traditional 5/2 spool valves:
Before any action, LED and MAN have to be carefully related to the corresponding output.

Man-machine dialogue is difficult.



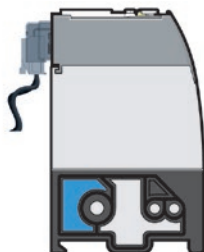
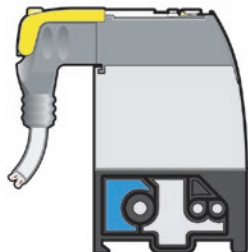
Island with Moduflex 4/2 slides valves:
Each marking, LED and MAN line up with the corresponding output.

Man-machine dialogue is easy.

Adaptive design

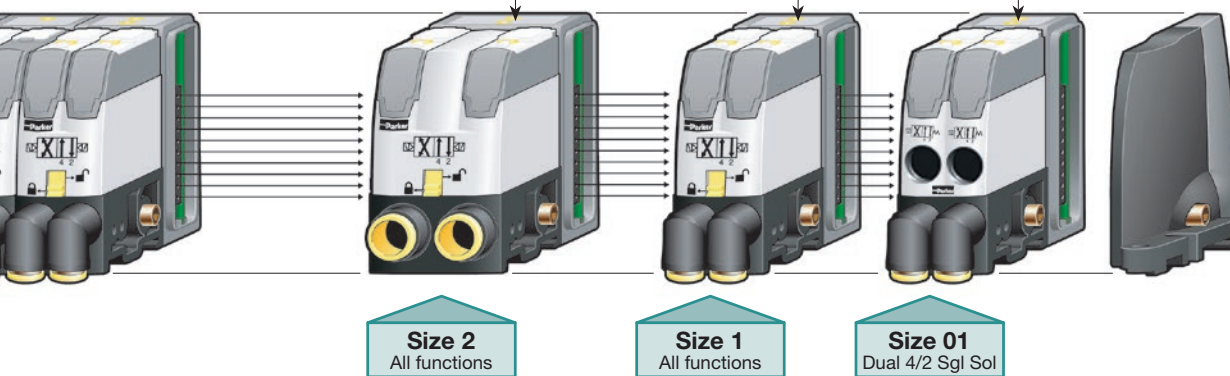
individual electrical connector
Lockable M8 Connector - IP67

or Clip Connector - IP40



or Valve Bank with integrated IP65 electrical connections

3 valves sizes in the same valve bank



Flows and tube connections



Optimal nominal section for a full flow with appropriate fitting

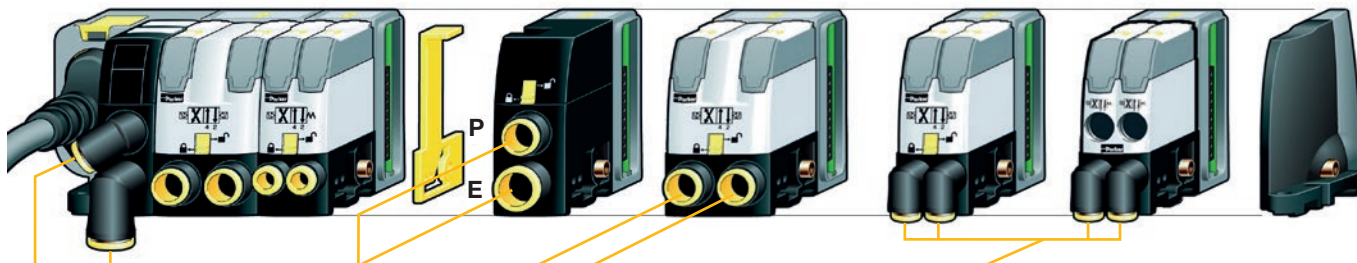
3 valve sizes lead to a global choice of tube sizes, thus covering all usual applications

Tube size to cylinder
Cylinder bore size

Size 2	
Nominal section 40 mm ²	
Qn 800 NI/mn* Qmax 1340 NI/mn*	
* For 3/2 functions Qn 450 NI/mn Qmax 805 NI/mn	
Ø Ext. 10 mm	Ø Ext. 8 mm
Ø 63 to Ø 100 mm	Ø 40 to Ø 63 mm

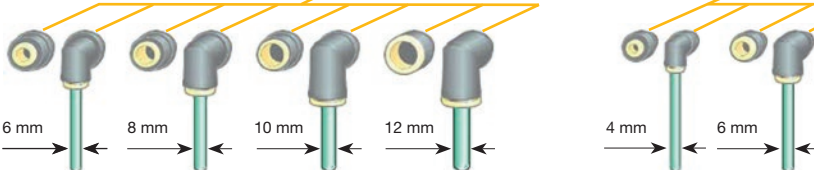
Size 1	
Nominal section 12 mm ²	
Qn 310 NI/mn* Qmax 510 NI/mn*	
* For 3/2 functions Qn 235 NI/mn Qmax 415 NI/mn	
Ø Ext. 6 mm	Ø Ext. 4 mm
Ø 25 to Ø 40 mm	Ø 6 to Ø 25 mm

Size 01	
Nominal section 4 mm ²	
Qn 165 NI/mn* Qmax 275 NI/mn*	
Ø Ext. 4 mm	
Ø 6 to Ø 25 mm	



Adaptive pneumatic connection

Valve outputs are equipped with clip-on push-in tube connectors with a choice of straight or elbow in different sizes



Typical cylinder speeds are shown on next pages. Module size, tube diameter and length, cylinder size, load and exhaust collection are taken into account.

Moduflex Valve System - P2M

Cylinder working speed charts

The charts below give the cylinder working speeds at 6 bar, under different conditions:

- non loaded or 50 % loaded double acting cylinder;
- exhaust piped through 2 m. long tubing, or exhaust muffled.

cylinder working speeds, in cm/s

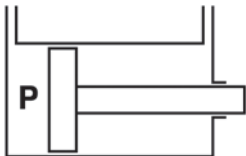
standard conditions:

- 1 double acting cylinder
- 1 working pressure: P = 6 bar

specific conditions:

- exhaust piped through tube 2 m long, with next ID above ID tube from valve to cylinder.

- non loaded cylinder



valve module	tube ID	tube OD	tube length	Cylinder bore size							
				25 mm	32 mm	40 mm	50 mm	63 mm	80 mm	100 mm	
Size 1	2 x 4 mm	4 mm	1 m.	43 cm/s	28 cm/s						
			3 m.	27	17						
	2.7 x 4 mm	4 mm	1 m.	85	52	33 cm/s					
			3 m.	55	34	21					
	4 x 6 mm	6 mm	1 m.	167	100	62	41 cm/s	27 cm/s			
			2 m.	157	86	54	37	23			
			4 m.	125	73	46	31	19			
				8 m.	94	57	36	24	14		
	Size 2	5.5 x 8 mm	8 mm	1 m.			146	102	67	40 cm/s	25 cm/s
3 m.						122	84	54	32	20	
6 x 8 mm		8 mm	1 m.				125	78	46	30	
			3 m.				105	65	39	25	
7 x 10 mm		10 mm	1 m.				135	88	53	33	
			3 m.				120	77	47	30	
8 x 10 mm		10 mm	1 m.					94	57	40	
			3 m.					85	53	37	

cylinder working speeds, in cm/s

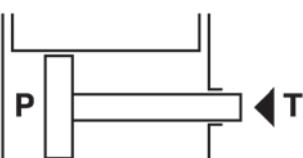
standard conditions:

- 1 double acting cylinder
- 1 working pressure: P = 6 bar

specific conditions:

- exhaust piped through tube 2 m long, with next ID above ID tube from valve to cylinder.

- 50% loaded cylinder



valve module	tube ID	tube OD	tube length	Cylinder bore size							
				25 mm	32 mm	40 mm	50 mm	63 mm	80 mm	100 mm	
Size 1	2 x 4 mm	4 mm	1 m.	32 cm/s	20 cm/s						
			3 m.	21	13						
	2.7 x 4 mm	4 mm	1 m.	65	43	25 cm/s					
			3 m.	43	27	16					
	4 x 6 mm	6 mm	1 m.	100	85	53	36 cm/s	22 cm/s			
			2 m.	93	75	44	30	19			
			4 m.	83	62	36	24	15			
				8 m.	68	46	27	18	11		
	Size 2	5.5 x 8 mm	8 mm	1 m.			83	67	44	27 cm/s	18 cm/s
3 m.						79	54	35	21	15	
6 x 8 mm		8 mm	1 m.				77	51	32	21	
			3 m.				69	43	26	17	
7 x 10 mm		10 mm	1 m.				88	59	37	24	
			3 m.				81	51	30	21	
8 x 10 mm		10 mm	1 m.					63	39	27	
			3 m.					58	35	25	

Moduflex Valve System - P2M

Field of application :

- stand-alone valve modules **S** series
- valve island modules, **T** series and **V** series

Note : a complete machine cycle includes:

- the cylinder displacement times that can be deducted from the cylinder speeds given below
- the cylinders starting times that depend on the cylinder strokes and thus could not be included in the charts below.

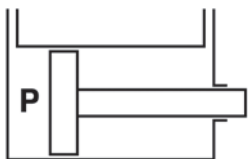
cylinder working speeds, in cm/s

standard conditions:

- 1 double acting cylinder
- 1 working pressure: P = 6 bar

specific conditions:

- muffled exhaust (non collected)
- non loaded cylinder



valve module	tube ID	tube OD	tube length	Cylinder bore size								
				25 mm	32 mm	40 mm	50 mm	63 mm	80 mm	100 mm		
Size 1	2 x 4 mm	4 mm	1 m.	43 cm/s	27 cm/s							
			3 m.	27	17							
	2.7 x 4 mm	4 mm	1 m.	88	54	34 cm/s						
			3 m.	55	34	22						
	4 x 6 mm	6 mm	1 m.	170	98	62	42 cm/s	26 cm/s				
			2 m.	150	85	55	37	23				
			4 m.	125	70	45	31	19				
				8 m.	95	56	35	24	15			
				5.5 x 8 mm	8 mm	1 m.			181	126	80	48 cm/s
3 m.								134	91	58	35	22
6 x 8 mm	8 mm	1 m.				139	89	54	34			
		3 m.				112	70	43	27			
7 x 10 mm	10 mm	1 m.				148	94	57	37			
		3 m.				125	81	49	31			
8 x 10 mm	10 mm	1 m.						102	60	42		
		3 m.						90	55	38		

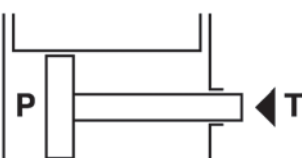
cylinder working speeds, in cm/s

standard conditions:

- 1 double acting cylinder
- 1 working pressure: P = 6 bar

specific conditions:

- muffled exhaust (non collected)
- 50% loaded cylinder




valve module	tube ID	tube OD	tube length	Cylinder bore size								
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Size 1	2 x 4 mm	4 mm	1 m.	35 cm/s	22 cm/s							
			3 m.	23	14							
	2.7 x 4 mm	4 mm	1 m.	67	44	27 cm/s						
			3 m.	44	28	17						
	4 x 6 mm	6 mm	1 m.	100	87	56	38 cm/s	23 cm/s				
			2 m.	93	77	46	31	19				
			4 m.	83	63	37	25	16				
				8 m.	69	46	28	18	12			
				5.5 x 8 mm	8 mm	1 m.			102	85	54	33 cm/s
3 m.								87	61	40	24	16
6 x 8 mm	8 mm	1 m.				91	59	37	25			
		3 m.				77	46	29	19			
7 x 10 mm	10 mm	1 m.				98	63	40	26			
		3 m.				87	54	33	22			
8 x 10 mm	10 mm	1 m.						68	43	30		
		3 m.						61	38	27		

Moduflex Valve System - P2M

Two technology platforms

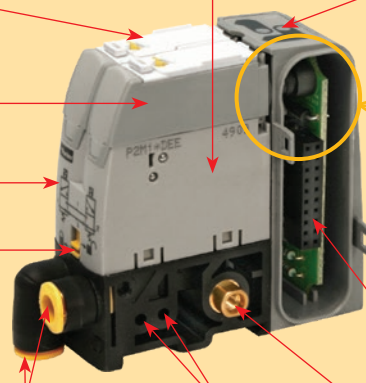
The well proven Parker seal technology



For 3/2 and dual 4/2 functions

Ceramic switching technology

For single 4/2 functions



Configurable manual override
For locking, non-locking or condemned manual override

24 V DC solenoid valve

Pneumatic symbol

Locking system for clip-on fittings

Straight or elbow clip-on push-in fittings
For size 1: 4 or 6 mm OD tubing
For size 2: from 6 to 12 mm OD tubing

Pneumatic valve body

Visualisation LED's
For easy man-machine dialog

Internal connection
Up to 19 solenoids

Auxiliary channels
Independent pilot pressure and exhaust

Associating tie-rod
For easy module assembly

Clip connector - IP40
Economic connection for traditional wiring

M8 - 3 pins for lockable connector - IP67
For traditional wiring

4 mm orientable push-in fitting
For pneumatic remote pilot

Material Specification

Plastics:	Polyamide reinforced fibreglass
Screws:	Zinc plated steel
Seals:	Nitrile rubber
Valve mechanism:	Aluminium alloy
Plate:	Ceramic

Certification

EMC / CE mark:	According to EN 61 000-6-2
Dust & water protection:	According to EN 60529 - NEMA 4
- S & T series:	M8 connector: IP67 Clip connector: IP40
- V series:	IP65*

* For 25 Pins D-Sub connection: IP40 or IP65 depending on the cable

Moduflex specifications answer most industries automation requirements.



Applications run from clean room electronic manufacturing to process industries in aggressive environments.

Pneumatic specifications

General Specification					
Fluid		Air or Inert gas, Filtered 40µ (class 5 according to ISO 8573-1) Dry (class 4 according to ISO 8573-1) or Lubricated (with lubricated air, we recommend external pilot supply with non lubricated air)			
Operating Pressure		-0,9 to 8,0 bar			
Piloting Pressure	3/2 N.C. or N.O.	3,5 to 8,0 bar			
for operating pressures below, use external pilot by configuring the head module accordingly (function available on standard head module)	4/2 single solenoid	3,0 to 8,0 bar			
	4/2 double solenoid	3,0 to 8,0 bar			
Pilot supply	S Series	Internal			
	T & V Series	Mixed internal/external (configurable on the standard head module)			
Exhaust collection		All collectable (including pilot solenoid valve exhaust)			
Life cycle (all sizes)	3/2 N.C. or N.O.	60 million operations (with dry air, 2 Hz, 20°C, 6 bar)			
	Single and Dual 4/2	100 million operations (with dry air, 2 Hz, 20°C, 6 bar)			
Operating temperatures	Clip connector	-15°C to 60°C			
	Lockable connector				
	Multiwiring connector				
	Industrial Communication	0°C to 55°C			
Stocking temperatures		-40°C to 70°C			
Vibration resistance		2G - From 2 to 150 Hz (According to IEC 68 - 2 - 6)			
Impact resistance		15G - 11 ms (According to IEC 68 - 2 - 27)			
Flow specifications		Dual 4/2	Dual 3/2	Single 3/2	Single 4/2
Size 1	Q max. (NI/mn)	275	415	415	510
	Qn (NI/mn)	165	235	235	310
Size 2	Q max. (NI/mn)	-	805	805	1340
	Qn (NI/mn)	-	450	440	800

Moduflex Valve System - P2M

Electrical specifications

Pilot solenoid Specifications			
Electric Connector		M8	Clip connector
Rated Voltage		24 Vdc	
Electric Connection		Not polarized	Polarized
Allowable voltage fluctuation		-15% to +10% (at 20°C)	+/- 10% (at 20°C)
Coil insulation type		Class B	Class F
Power consumption		Without lockable connector: 1W	1W
		With lockable connector: 1,2W	
Visualisation and surge protection		Included into lockable connector	Included on pilot solenoid
Manual override		Configurable: Locking or non-locking, isolated if required	
Response Time of the complete valve (with connector)	3/2 N.C. or N.O.	Actuating: 10 ms	
	4/2 single solenoid	Return: 15 ms	
	4/2 double solenoid	10 ms	
Duty factor		ED 100%	
Dust and Water protection	S & T Series	IP67 (with lockable connector)	IP40 (with clip connector)
	V Series	Guillotine connector: IP65 25 Pin D-SUB: IP40 or IP65 (depending on female connector) P2M Node: IP65 P2M Lite Node: IP20	



Communication module specifications

Ethernet Protocols		Profinet IO	EtherNet/IP	Modbus/TCP	EtherCAT	PowerLink	CC-Link IE
	P2M Node	✓	✓	✓	✓	✓	✓
	P2M Lite Node	✓	✓		✓		
	Ethernet specifications	According to protocol specifications					
	Speed communication	10/100 Mb - Half / Full duplex					
	Service Web Page	YES			N/A		
	Logic power supply	24 Vdc - According to protocol specifications					
	Topology (Internal 2 port switch)	Line / Ring			Line		
Valves power	Voltage	20,4 Vdc to 26,4 Vdc					
	OSSD compability	P2M Node: Test Pulsed supported P2M Lite Node: Test Pulsed not supported					
	Galvanic isolation	P2M Node: 2,5 kV (Logic and Auxiliary power) P2M Lite Node: Common power for both Logic & Valves					
Max. current limit	Total	P2M Node: 4 A P2M Lite Node: 2 A					
	Per channel	150 mA					
	Protection	Polarity inversion, short circuit and Over Temperature					
IO-Link		Standard Version			-SPC Version		
	IO-Link specifications	According to IO-Link V1.1.2					
	Speed communication	Com2 - 38 kBd					
	Logic power supply	Module powered by IO-Link master according to IO-Link V1.1.2					
Aux. power	Voltage	20,4 Vdc to 26,4 Vdc					
	OSSD compability	No			Yes (Test Pulsed supported)		
	Galvanic isolation	Yes					
Max. current limit	Total	4A			2A		
	Per channel	150 mA					
	Protection	Polarity inversion & short circuit					
All Protocols	EMC/CE mark	According to EN 61000-6-2 & EN 50081-2					

Technical characteristics

Vacuum module

Fluid
Compressed air or inert gas, filtered 40µ mini., not lubricated

Working pressure
1 to 8 bar

Working temperature
-15°C to +60°C

Materials

Body:	Polyamide 6,6 reinforced fibreglass
Poppet:	Nitrile
Nozzle:	Brass
Clip connector:	Treated steel

Pressure sensor

Fluid
Air or inert gas, filtered 40µ mini., not lubricated

Working temperature
0°C to +50°C

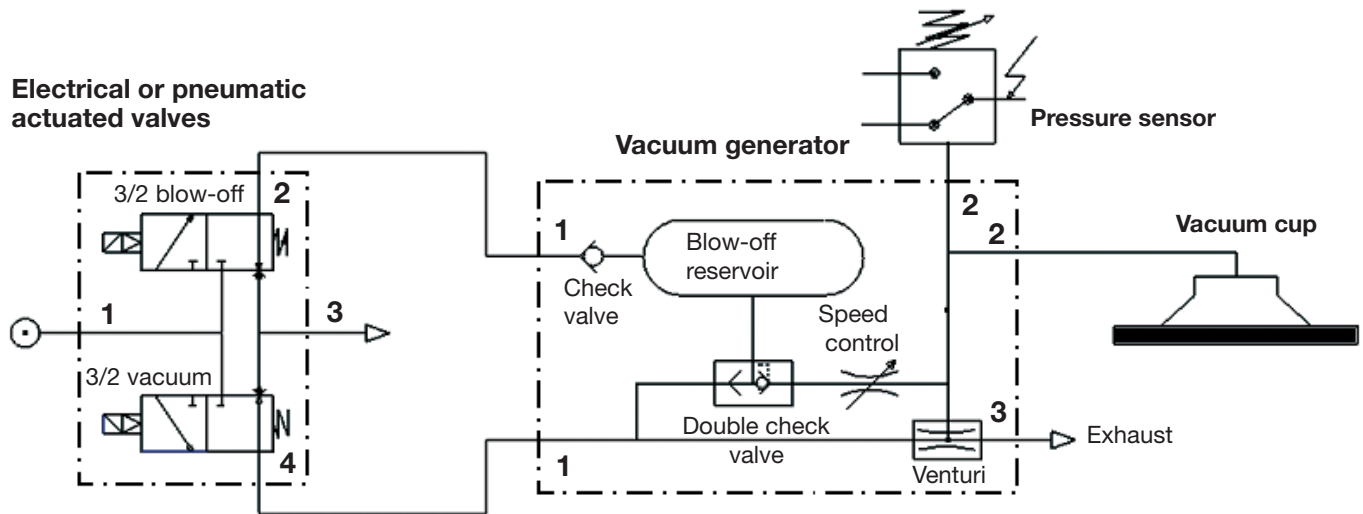
Supply
10,8 to 30 V DC

Digital output
PNP 125 mA

Materials

Body:	Polycarbonate
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Connection drawing



Specific characteristics

Maximum vacuum

Vacuum level: 90% at 6,5 bar

Air consumption

Consumption: 46 NI/min at 5 bar

Vacuum flow

Flow: 25NI/min at 0 % vacuum and 6,5 bar

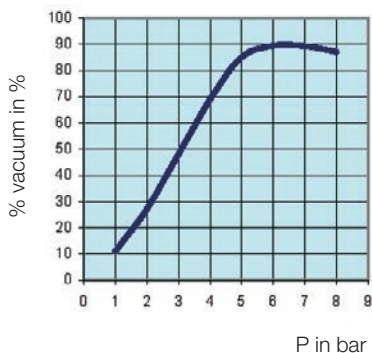
Evacuation time in s/l to reach different vacuum levels % (at P = 6,5 bar)

Vacuum %	0	10	20	30	40	50	60	70	80	90
Time in s	0,0 / 0,0	0,3 / 0,3	0,4 / 0,5	0,8 / 0,9	1,4 / 1,5	2,0 / 2,2	2,7 / 3,2	3,7 / 4,9	5,9 / 9,8	10,7 / -
Flow in NI/min	24,9 / 23,2	22,1 / 20,3	19,3 / 17,3	16,6 / 14,4	13,8 / 11,5	11,0 / 8,5	8,2 / 5,6	5,5 / 2,7	2,7 / 0,0	0,0 / -

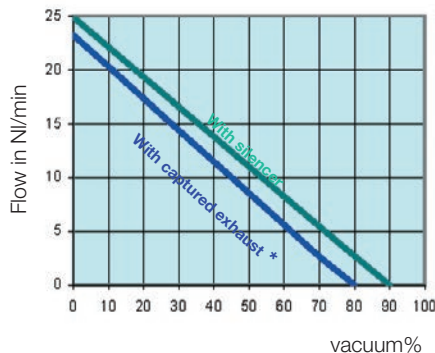
With silencer / With captured exhaust *

Performances

Vacuum level

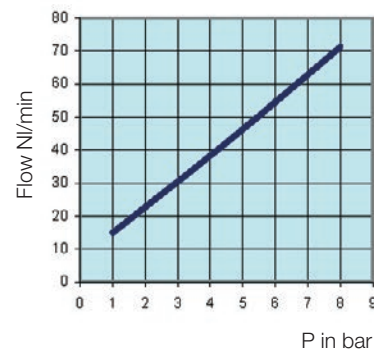


Vacuum flow



* 1 m exhaust - tube Ø6 mm
3 m exhaust - tube Ø8 mm

Air consumption



Moduflex Valve System - P2M

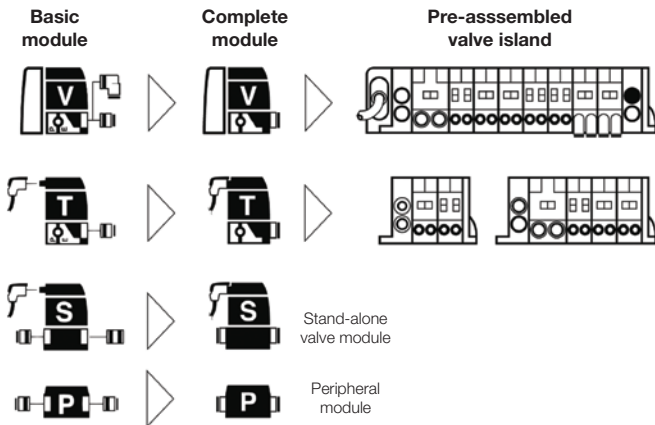
Operating information

Working pressure	-0,9 to 8 bar
Pilot pressure	3 to 8 bar *
Working temperature	-15 °C to 60 °C
Protection individual M8 connectors	IP 67 NEMA4
Protection individual clip connector	IP40
Protection integrated connectors	IP 65
Voltage	24 V DC
* Single and double 3/2	3,5 to 8 bar

		Dual 4/2	Dual 3/2	3/2	4/2
Size 1	Qmax.	275 l/min	415 l/min	415 l/min	510 l/min
	Qn	165 l/min	235 l/min	235 l/min	310 l/min
Size 2	Qmax.	-	805 l/min	805 l/min	1340 l/min
	Qn	-	450 l/min	440 l/min	800 l/min

Total ordering flexibility

In addition to the complete product adaptability, the Moduflex valve range offers ordering flexibility for V, T, S and P series with 3 different designs; from all components separately ordered (basic module) to pre-assembled and tested valve island.



Ordering options

1 - Basic modules ordering

Using this option, all basic components are separately ordered :

- Head and Tail set
- Valve modules
- Intermediate module kit
- Peripheral modules
- Pneumatic connectors, mufflers and plugs
- Electrical connection or fieldbus module

The complete bill of material needed for the valve island assembly can be easily details using page 1 of the Moduflex Valve Configurator software report.

2 - Complete modules ordering

Using this option, modules are defined, ordered and supplied, pneumatic connectors and electrical connection equipped. One part number defines:

- Function module
- Pneumatic connectors, muffler and plugs
- Electrical connection and cable

For an entire valve island configuration, the list of complete modules can be easily details using page 3 of the Moduflex Valve Configurator software report.

3 - Pre-assembled valve islands ordering

Using this option, the complete valves island configuration has to be defined, and may be ordered, delivered fully assembly and tested under one part number.

The Moduflex Valve in-line e-Configurator software is an easy way for a clear definition of the requested valve island configuration.

Moduflex Valve System - P2M

V series

Integrated connection field bus or multi-connector valve island



T series

Individual connector valve islands
Solenoid clip or lockable connector or remote air pilot



S series

Stand alone valves
Solenoid clip or lockable connector or remote air pilot



P series

Peripheral modules
Flow control, check valves, pressure regulator, vacuum



Pages 16-21



Pages 22-23



Pages 24-25



Pages 26-27



Pages 28-29

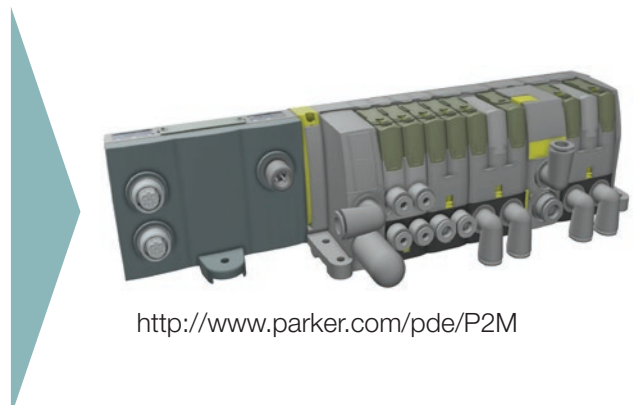
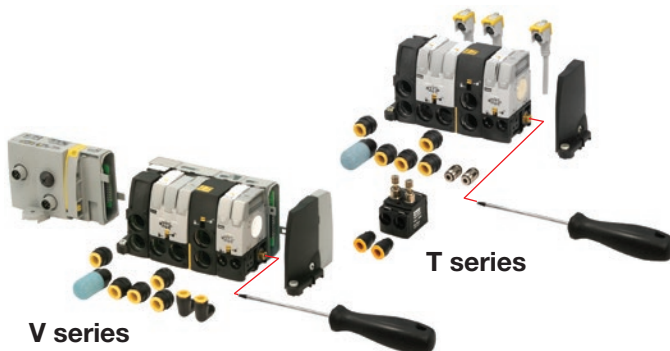


Page 30



Page 31

Moduflex Valve in-line e-Configurator



<http://www.parker.com/pde/P2M>

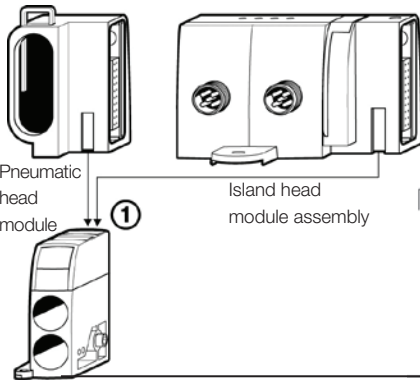
Integrated connections valve islands: V series

In a V series Moduflex valve island, electrical controls are all received by the head module and transmitted to the concerned valve modules through the modular integrated circuit.

The head node may either be a cable multi-connector or a Fieldbus communication node: the next pages show multi-connector cable and a complete choice of bus protocols.



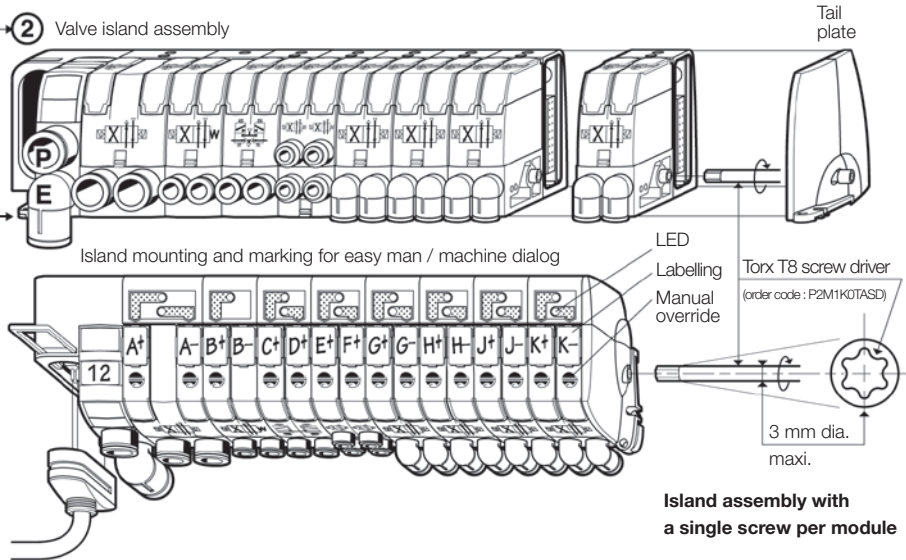
Valve island electrical head module: multi-connector or communication nodes



Valve island configuration

The following page shows all valve sizes and functions that may enter into a V series valve island and, for each valve size, a choice of clip-on pneumatic connectors: tubing size, straight, elbow etc. To receive its pressure supply and collect its exhaust, the island also requires a pneumatic head and tail module set and sometimes an

intermediate module set with 4 configuration plates for different functions. To receive its electrical controls, the island is completed by an electrical head module, either a multi-connector or by a communication node to be chosen from the next pages.



Valve island assembly

The above illustration presents:

- **Step ①** : the electrical head module is engaged into the pneumatic head module ;
- **Step ②** : valve modules are one by one screwed onto each other starting from the head module. For this task, the single integrated screw is tightened with a torx T8 standard screwdriver.

The pneumatic connectors may be clipped or unclipped at any stage.

With a LED, a manual override and a labelling for each valve pilot (see illustration), the island front face eases the "man / machine" dialogue.

The resulting valve island length is expressed by the drawing below, while further size details and mountings are presented on the dimensions pages.

Modules and island ordering

Choice between 3 approaches:

1 - Basic modules ordering:

The following page shows these modules supplied without connector, together with the choice of clip-on connectors separately supplied (10 units packs). This approach gives the maximum flexibility.

2 - Complete modules ordering:

Page 31 shows the ordering chart for modules supplied with their connectors.

3 - Assembled island ordering:

An In-Line configurator, available from the product web-page "http://www.parker.com/pde/P2M", allows to specify a valve island that may be delivered assembled.

Communication node:

- Ethernet nodes, width: 126 mm
- IO-Link, width: 94 mm

Multi-connector head module:

- guillotine, width: 47 mm
- sub-D 25, width: 56 mm

Valve modules

- size 1:
- width: 25 mm

Valve module

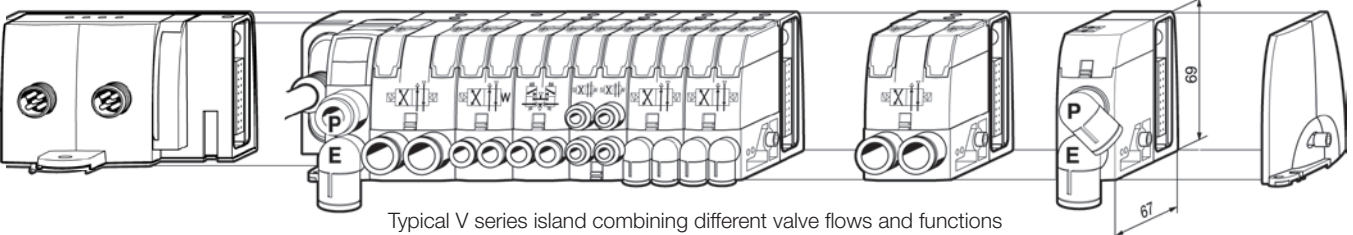
- size 2:
- width: 37.5 mm

Intermediate










- module:
- width: 25 mm

Tail



- plate:
- width: 16 mm






Basic modules (without connector)

Valve Modules		Size 1			Size 2	
Size 1	Symbol	Description	Weight [g]	Order code	Weight [g]	Order code
		4/2 Solenoid spring	94	P2M1V4ES2CV	100	P2M2V4ES2CV
		4/2 Double solenoid	103	P2M1V4EE2CV	110	P2M2V4EE2CV
		2 x 3/2 NC + NC with exhaust check valves	106	P2M1VDEE2CV	115	P2M2VDEE2CV
		2 x 3/2 NO + NO with exhaust check valves	106	P2M1VCEE2CV	115	P2M2VCEE2CV
		2 x 3/2 NC + NO with exhaust check valves	106	P2M1VEEE2CV	115	P2M2VEEE2CV
		2 x 4/2 Solenoid spring with exhaust check valves	114	P2M1VJEE2CV		
		3/2 NC with exhaust check valves	102	P2M1V3ES2CV	110	P2M2V3ES2CV
		4/3 Centre exhaust 2 x 3/2 NC + NC without exhaust check valves	106	P2M1VGEE2CV		P2M2VGEE2CV

Island head and intermediate module sets

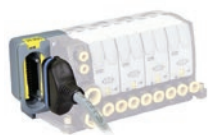

Valve Modules		Description	Weight [g]	Order code
 		Valve island pneumatic head and tail module set	64	P2M2HXT01
		Valve island intermediate supply module with a set of 4 configuration plates	68	P2M2BXV0A

Clip-On pneumatic connectors *

Valve Modules		Size 1		Size 2		
Description	Tube OD	Weight [g]	Order code	Weight [g]	Order code	
	Straight connector	G1/8"	2	FMDG1-1		
			2	FMD04-1		
			3	FMD06-1		
					3	FMD06-2
					4	FMD08-2
					5	FMD10-2
	Elbow connector	G1/8"	3	CMDG1-1		
			3	CMD04-1		
			5	CMD06-1		
					5	CMD06-2
					6	CMD08-2
	Silencer			7	CMD10-2	
				8	CMD12-2	
				5	MMDVA2	
				5	PMDXX2	
	Plug					

* Fittings and plugs pack quantity: 10

V series valve island: Electrical multi-connector head module

Description	Protection	Cable length	Weight [g]	Order code		
	Multi-connection head module		38	P2M2HEV0A		
		Guillotine connector with flying leads multi-cable	IP65	2 m	335	P8LMH20M2A
				5 m	802	P8LMH20M5A
	Multi-connection head module		60	P2M2HEV0D		
		Sub-D 25 connector with flying leads multi-cable	IP40	3 m	435	P8LMH25M3A
				9 m	1425	P8LMH25M9A
			IP65	9 m	1425	P8LMH25B9A

Valve Island V Series with IO-Link connection

The P2M Moduflex IO-Link 24 DO node allows a very simple and cost efficient connection to any IO-Link master, centralised into the PLC or decentralised through an industrial Ethernet network.

Designed in both Class A and Class B versions with an isolated auxiliary power, it can easily be adapted to all power supply architectures and follow machine directives

IO-Link



P2M IO-link 24 DO Class A node with independent Auxiliary Power Supply



The P2M IO-Link 24 DO Class A node can handle a Moduflex Valve bank having up to 19 pilot solenoid valves.

Thanks to its 2 x M12 A coded male connectors, it can be connected to any IO-Link Class A masters and separately receive its auxiliary power supply for valves from an independent source.

The P2M IO-Link 24 DO Class A node exists in 3 versions with the Auxiliary Power M12 connector pin out adapted to any sourcing through a standard M12 cable:

- P2M2HBVL12400A13 / -SPC version: 24 Vdc / 0 Vdc on pins 1 & 3 – Standard version
- P2M2HBVL12400A43 / -SPC version: 24 Vdc / 0 Vdc on pins 4 & 3 – Compatible with Siemens wiring
- P2M2HBVL12400A42 / -SPC version: 24 Vdc / 0 Vdc on pins 4 & 2 – Compatible with Rockwell wiring

P2M IO-link 24 DO Class B node



The P2M IO-Link 24 DO Class B node can handle a Moduflex Valve bank having up to 19 pilot solenoid valves.

Thanks to its single M12 A coded male connectors, it can be connected to any IO-Link Class B masters receiving its auxiliary power supply for valves on pins 2 & 5 from the only cable simplifying the connection.

Diagnostic



The P2M IO-Link 24 DO node offers a local diagnostic through 4 LED's located on the visible top side, showing:

- IO-Link com status
- Node error
- Output error
- Auxiliary power

Additional useful diagnostic information can be read by the PLC through the network simplifying diagnostic and allowing predictive maintenance (all details in the user manual)

Safe Power Capable version (-SPC)

Auxiliary power of -SPC version of P2M IO-Link 24 DO node can be supplied from a safe output device following machinery directives. This includes:

- Output Signal Switch Device (OSSD) test pulse compatible
- Galvanic isolation between 0 Vdc Logic and Aux power
- PP or PM cabling modes

For more details, refer to the "Communication nodes – connection and configuration" section.

V series valve island: Communication node for IO-Link

Communication node for 19 outputs (Moduflex Pilot Valves)
 (The last 5 outputs of this 24 DO node can't be used with Moduflex Valve)



Description	IO-Link Class	M12 A coded Connector connection			Weight (g)	Order code
		IO-Link	Aux. Power	Aux. Power Pinout		
P2M IO-Link Communication Node	Class A	3 Pin's	3 Pin's	1 & 3	160	P2M2HBVL12400A13
		3 Pin's	3 Pin's	4 & 3	160	P2M2HBVL12400A43
		3 Pin's	5 Pin's	4 & 2	160	P2M2HBVL12400A42
	Class B	5 Pin's		2 & 5	140	P2M2HBVL12400B25
P2M IO-Link Communication Node Safe Power Capable	Class A	3 Pin's	3 Pin's	1 & 3	165	P2M2HBVL12400A13-SPC
		3 Pin's	3 Pin's	4 & 3	165	P2M2HBVL12400A43-SPC
		3 Pin's	5 Pin's	4 & 2	165	P2M2HBVL12400A42-SPC
	Class B	5 Pin's		2 & 5	145	P2M2HBVL12400B25-SPC

IODD file can be downloaded from IODD Finder or the Moduflex web site:
<https://ioddfinder.io-link.com>
www.parker.com/pde/io-link

Accessories

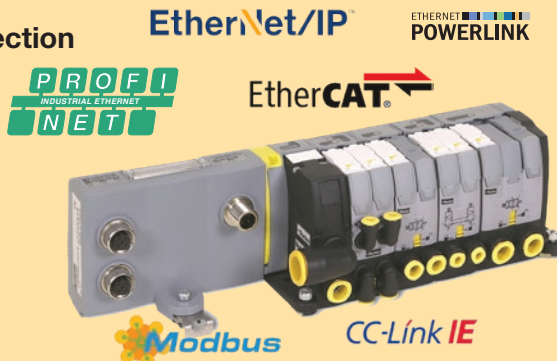



Description	Connector type	Weight (g)	Order code
Quick connect straight connector for both IO-Link communication and auxiliary power supply	M12 - 5 Pin's Female - A Coding	25	P8CS1205AA

Valve Island V Series with Industrial Ethernet connection

The P2M Industrial Ethernet 24 DO node allows a very simple and cost efficient connection to the most popular Industrial Ethernet networks.

Designed with an isolated auxiliary power, it can easily be adapted to all power supply architectures and follow machine directives.





Product Set-Up



The P2M Industrial Ethernet 24 DO node offers an IP addressing through 3 rotary switches located on the top side.

The 3 rotary switches allow also a Factory Reset, IP address storage, and DHCP mode addressing.

As soon as supported by protocol, this IP address can be modified through an imbedded web page.



For an application requiring a regular disconnection / reconnection of the node, Profinet and EtherNet/IP protocols allow respectively a Fast Start-Up (FSU) and Quick Connect mode. This mode can be enable or disable .

Technology / Integrated Ethernet Switch



The P2M Industrial Ethernet 24 DO node offers 2 Ethernet ports allowing a line topology without external switch. The Ring topology can also be supported (enable/disable) for Profinet, EtherNet/IP and Modbus TCP/IP.

The integrated Ethernet switch support Class C Services allowing used in an isochronous real time (IRT) structure.

Diagnostic



The P2M Industrial Ethernet 24 DO node offers a local diagnostic through 7 LED's located on the visible top side, showing:

- Logic status
- Ethernet activity on both ports
- Standard Status due to protocol
- Output error / Auxiliary power



This local information as well as trouble shooting and predictive maintenance diagnostics (Power monitoring, Life cycle counting, ...) are available in PLC through the network and reported on imbedded web page.

When PLC is in "STOP", the web page allows to force ON/OFF solenoids state. This function has a password protection.

Safe Power Capable

Auxiliary power of P2M Industrial Ethernet 24 DO node can be supplied from a safe output device following machinery directives. This includes:

- Output Signal Switch Device (OSSD) test pulse compatible
- Galvanic isolation between 0 Vdc Logic and Aux power
- PP or PM cabling modes

For more details, refer to the "Communication nodes – connection and configuration" section.

Moduflex Valve System - P2M

V series valve island: Communication node for Industrial Ethernet

Industrial Ethernet node for 19 outputs (Moduflex Pilot Valves)
(The last 5 outputs of this 24 DO node can't be used with Moduflex Valve)



Description	Protocol	Eth. ports	Aux. Power	Weight (g)	Order code
P2M industrial Ethernet Communication Node	Profinet IO	2 x M12 D-coded	M12 A-coded	190	P2M2HBVN12400
	EtherNet/IP	2 x M12 D-coded	M12 A-coded	190	P2M2HBVE12400
	EtherCAT	2 x M12 D-coded	M12 A-coded	190	P2M2HBVT12400
	PowerLink	2 x M12 D-coded	M12 A-coded	190	P2M2HBVW12400
	Modbus /TCP	2 x M12 D-coded	M12 A-coded	190	P2M2HBVM12400
	CC-Link IE	2 x M12 X-coded	M12 A-coded	190	P2M2HBVK12400*

*) Coming soon

Configuration file can be download from the dedicated product web page:

www.parker.com/pde/P2M_IE

Accessories



Description	Connector type	Weight (g)	Order code
Quick connect straight connector for module power supply	M12 - 5 Pin's Female - A Coding	25	P8CS1205AA

Valve Island V Series with Industrial Ethernet connection **EtherNet/IP™**

The P2M Industrial Ethernet Lite node 24DO allows a very simple and cost efficient connection to the most popular Industrial Ethernet networks.

In its compact IP40 version equipped with two RJ45 Ethernet ports, it saves size in cabinet applications and offers an easy connection to the network in a line topology.



Product Set-Up



The P2M Lite Node 24DO is by default in DHCP mode. The module must be assigned to a static IP-Address in order to be controlled via the network.

The Network Configuration settings can be done through the embedded web server of the node as well as "IPconfig", "TIA Portal" or similar methods.

For an application requiring a regular disconnection / reconnection of the node, Profinet and EtherNet/IP protocols allow respectively a Fast Start-Up (FSU) and Quick Connect mode. This mode can be enable or disable .

Technology / Integrated Ethernet Switch



The P2M Industrial Ethernet Lite node 24DO offers 2 RJ45 ports allowing a line topology without external switch. The Ring topology can also be supported (enable/disable) for Profinet and EtherNet/IP.

The integrated Ethernet switch support Class C Services allowing used in an isochronous real time (IRT) structure.

Diagnostic



The P2M Industrial Ethernet Lite node 24DO offers a local diagnostic through 5 LED's located on the visible top side and 4 additional on both Ethernet connectors showing:

- Logic status
- Ethernet activity on both ports
- Standard Status due to protocol
- Output error / Power Supply

This local information as well as trouble shooting and predictive maintenance diagnostics (Power monitoring, Life cycle counting, ...) are available in PLC through the network and reported on imbedded web page.

When PLC is in "STOP", the web page allows to force ON/OFF solenoids state. This function has a password protection.

V series valve island: Communication node for Industrial Ethernet

P2M Lite Industrial Ethernet node for 19 outputs (Moduflex Pilot Valves)
 (The last 5 outputs of this 24 DO node can't be used with Moduflex Valve)



Description	Protocol	Eth. ports	Power	Weight (g)	Order code
P2M Industrial Ethernet Communication Node	Profinet IO	2 x RJ45	3 PIN's male*	190	P2M2HBVN12400RJ
	EtherNet/IP	2 x RJ45	3 PIN's male*	190	P2M2HBVE12400RJ
	EtherCAT	2 x RJ45	3 PIN's male*	190	P2M2HBVT12400RJ

*) Female 3,81 mm pitch connector included

Configuration file can be download from the dedicated product web page:

www.parker.com/pde/P2M_IE

Individual connection valve islands: T series

In a T series valve island, electrical controls are individually connected to each valve module, onto its solenoid pilot.

As an alternative, air pilot valve modules are also available, to be controlled by individual pneumatic signals.



Valve island assembly

As shown by the above illustration, the valve modules are one by one screwed onto each other, starting from the head module. For this task, the single integrated screw is tightened with a torx T8 standard screwdriver.

The pneumatic connectors may be clipped or unclipped at any stage.

With a LED, a manual override and a labelling for each valve pilot (see above illustration), the island front face eases the "man / machine" dialogue.

The resulting valve island length is expressed by the drawing below, while further size details and mountings are presented on dimensions pages.

Valve island configuration

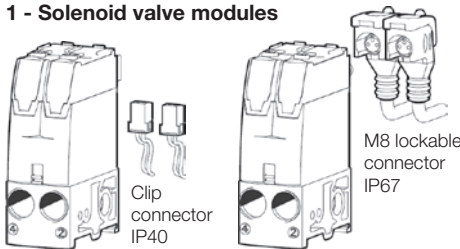
The following page presents all valve sizes and functions that may enter into a T series valve island and, for each valve size, a choice of clip-on pneumatic connectors: tubing size, straight, elbow etc."

To receive its pressure supply and collect its exhaust, the island also requires a

pneumatic head and tail module set and sometimes an intermediate module set including 4 configuration plates for different functions. Valve modules may either be solenoid versions or air pilot versions. Mixing both versions into the same valve island is possible.

Valve pilot connections

1 - Solenoid valve modules



In its IP40 version, each solenoid shows Clip connection integrating LED and voltage surge protection. The clip connector with flying leads may be ordered separately with independent or interconnected common.

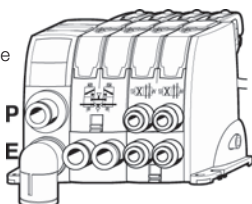
In its IP67 version, each solenoid shows a M8 connection. Lockable connectors, IP67 protected, with LED voltage surge protection and flying lead cable may be ordered for the required length.

2 - Air pilot valve modules

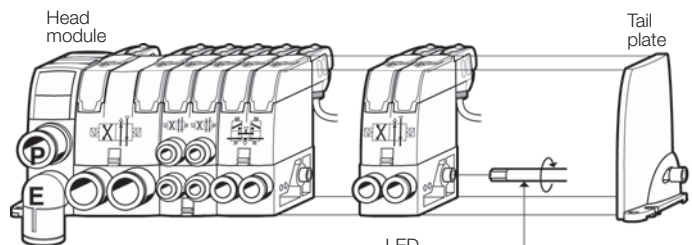


No connector has to be ordered: each pneumatic pilot port includes its integrated movable elbow 4 mm OD tube push-in connector.

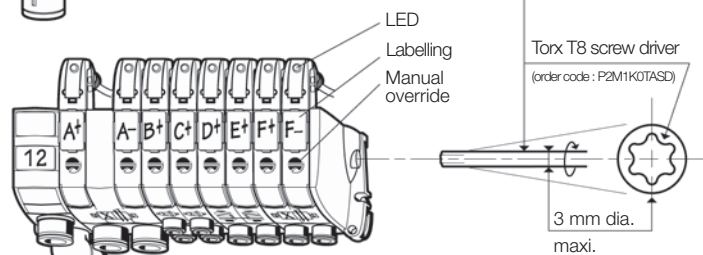
Typical T series short island for single or double acting small cylinders.



Valve island assembly



Island mounting and marking for easy man / machine dialog



Island assembly with a single screw per module

Modules and island ordering

Choice between 3 approaches:

1 - Basic modules ordering:

The following page shows these modules supplied without connector, together with the choice of clip-on connectors separately supplied (10 units packs). This approach gives the maximum flexibility.

2 - Complete modules ordering:

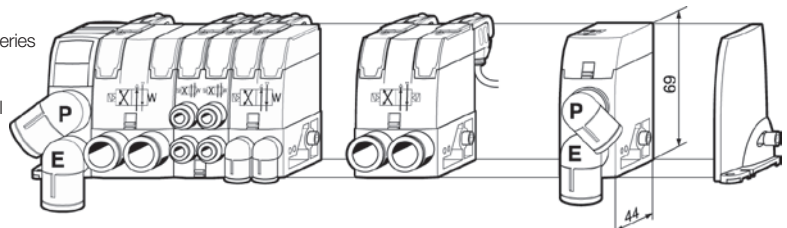
Page 27 shows the ordering chart for modules supplied with their connectors.

3 - Assembled island ordering:

Page 30 shows the valve island configurator CD-Rom to specify a valve island that may be delivered assembled.












Pneumatic head module: ■ width: 32 mm	Valve module size 1: ■ width: 25 mm	Valve module size 2: ■ width: 37.5 mm	Intermediate module: ■ width: 25 mm	Tail plate: ■ width: 16 mm
--	--	--	--	-------------------------------

Typical T series high flow island for both small and large cylinders.





Typical T series islands combining different valve flows and functions



Basic modules (without connector)

Valve Modules		Size 1				Size 2		
Symbol	Description	Actuator	Pilot connector	W (g)	Order code	W (g)	Order code	
 <p>Size 1 Dual 4/2</p>	 <p>4/2 Spring return</p>	Solenoid	M8 Lockable	68	P2M1T4ES2C	74	P2M2T4ES2C	
		Air pilot	Clip	68	P2M1T4ES2CW	74	P2M2T4ES2CW	
	 <p>4/2 Double pilot</p>	Solenoid	M8 Lockable	77	P2M1T4EE2C	83	P2M2T4EE2C	
		Air pilot	Clip	77	P2M1T4EE2CW	83	P2M2T4EE2CW	
	 <p>Size 1</p>	 <p>2 x 3/2 NC + NC with exhaust check valves</p>	Solenoid	M8 Lockable	80	P2M1TDEE2C	94	P2M2TDEE2C
			Air pilot	Clip	80	P2M1TDEE2CW	94	P2M2TDEE2CW
 <p>2 x 3/2 NO + NO with exhaust check valves</p>		Solenoid	M8 Lockable	80	P2M1TCEE2C	94	P2M2TCEE2C	
		Air pilot	Clip	80	P2M1TCEE2CW	94	P2M2TCEE2CW	
 <p>2 x 3/2 NC + NO with exhaust check valves</p>		Solenoid	M8 Lockable	80	P2M1TEEE2C	94	P2M2TEEE2C	
		Air pilot	Clip	80	P2M1TEEE2CW	94	P2M2TEEE2CW	
 <p>Size 2</p>	 <p>2 x 4/2 Spring return with exhaust check valves</p>	Solenoid	M8 Lockable	88	P2M1TJEE2C			
		Air pilot	Clip	88	P2M1TJEE2CW			
	 <p>3/2 NC with exhaust check valves</p>	Solenoid	M8 Lockable	76	P2M1T3ES2C	90	P2M2T3ES2C	
		Air pilot	Clip	76	P2M1T3ES2CW	90	P2M2T3ES2CW	
	 <p>4/3 Centre exhaust 2 x 3/2 NC + NC without exhaust check valves</p>	Solenoid	M8 Lockable	80	P2M1TGEE2C	94	P2M2TGEE2C	
		Air pilot	Clip	80	P2M1TGEE2CW	94	P2M2TGEE2CW	
		Air pilot		70	P2M1TGPP	84	P2M2TGPP	



Island head and intermediate module sets

Valve Modules		Size 2	
Description		W (g)	Order code
 <p>P2M2HXT01</p>	Valve island pneumatic head and tail module set	64	P2M2HXT01
 <p>P2M2BXT0A</p>	Valve island intermediate supply module with a set of 4 configuration plates	64	P2M2BXT0A

Clip-On pneumatic connectors *

Valve Modules		Size 1		Size 2	
Description	Tube OD	W (g)	Order code	W (g)	Order code
	G1/8"	2	FMDG1-1		
	4 mm	2	FMD04-1		
	6 mm	3	FMD06-1	3	FMD06-2
	8 mm			4	FMD08-2
	10 mm			5	FMD10-2
	12 mm			6	FMD12-2
	G1/8"	3	CMDG1-1		
	4 mm	3	CMD04-1		
	6 mm	5	CMD06-1	5	CMD06-2
	8 mm			6	CMD08-2
	10 mm			7	CMD10-2
	12 mm			8	CMD12-2
Silencer				5	MMDVA2
Plug		3	PMDXX1	5	PMDXX2

Electrical connectors

Description	Connector type	Cable length	W (g)	Order code
 <p>M8 lockable connector</p>	Individual lockable connector – IP67 Including LED and surge protection 2 Flying leads	2 meters	62	P8LS08L226C
		5 meters	155	P8LS08L526C
		9 meters	180	P8LS08L926C
		1 meter	8	P8LW021C
 <p>Clip connector</p>	Clip connector – IP40 Individual: Including 2 flying leads Multiple: Including 1 common (0 Vdc) and 1 flying lead per connector	2 meter	12	P8LW022C
		1 meter	12	P8LW021C02
		1 meter	20	P8LW021C04
		1 meter	36	P8LW021C08
		Straight cable quick connect to thread connector, IP67 protected	M8	
M12			15	P8CS1204J

Stand-Alone Valve Modules: S series

Very useful to control isolated cylinders, these stand-alone valves module are compact and easy to mount on the machines with neat electrical and pneumatic connections.

As an alternative to electrical controls, valves with air pilots are also available, to be controlled by individual pneumatic signals.

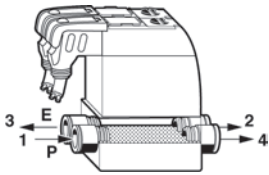


Valve functions

The following page shows all valve sizes and functions and, for each valve size, a choice of clip-on pneumatic connectors: tubing size, straight, elbow etc."

Valve main connections

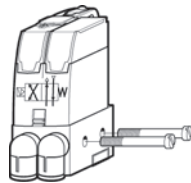
- Outlets to cylinders (ports 2 and 4) on one side.
- Supply P (port 1) and exhaust E (port 3) on the other side. At port 3, exhaust may be collected or receive a clip-on muffler.



Valve mounting

All valves may be mounted either with side screws or with their integrated retractable brackets.

Side screw mounting



The brackets are then retracted.

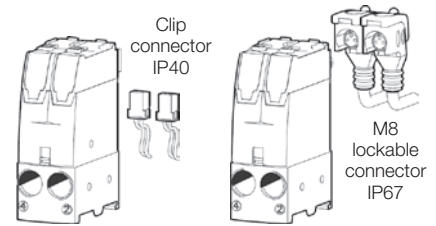
Optional foot mounting



The brackets are then extended.

Valve pilot connections

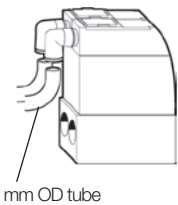
1- Solenoid valve modules



In its IP40 version, each solenoid shows Clip connection integrating LED and voltage surge protection. The clip connector with flying leads may be ordered separately with independent or interconnected common. In its IP67 version, each solenoid shows a M8 connection. Lockable connectors, IP67 protected, with LED voltage surge protection and flying lead cable may be ordered for the required length.

2- Air pilot valve modules

No connector has to be ordered : each pneumatic pilot port includes its integrated movable elbow 4 mm OD tube push-in connector.



Modules and island ordering

Choice between 2 approaches:

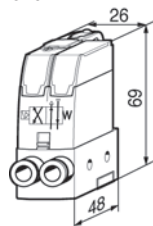
1 - Basic modules ordering:

The following page shows these modules supplied without connector, together with the choice of clip-on connectors separately supplied (10 units packs). This approach gives the maximum flexibility.

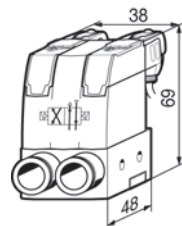
2 - Complete modules ordering:

Page 28 shows the ordering chart for modules supplied with their pneumatic and electrical connectors and muffler.










Valve module size 1





Valve module size 2



Basic modules (without connector)


Valve Modules		Size 1			Size 2		
Symbol	Description	Actuator	Pilot connector	W (g)	Order code	W (g)	Order code
 <p>Size 1</p>	 <p>4/2 Spring return</p>	Solenoid	M8 Lockable	72	P2M1S4ES2C	78	P2M2S4ES2C
		Air pilot	Clip	72	P2M1S4ES2CW	78	P2M2S4ES2CW
	 <p>4/2 Double pilot</p>	Solenoid	M8 Lockable	87	P2M1S4EE2C	93	P2M2S4EE2C
		Air pilot	Clip	87	P2M1S4EE2CW	93	P2M2S4EE2CW
	 <p>2 x 3/2 NC + NC with exhaust check valves</p>	Solenoid	M8 Lockable	85	P2M1SDEE2C	91	P2M2SDEE2C
		Air pilot	Clip	85	P2M1SDEE2CW	91	P2M2SDEE2CW
Solenoid		M8 Lockable	85	P2M1SDPP	81	P2M2SDPP	
Air pilot		Clip	75	P2M1SDPP	81	P2M2SDPP	
 <p>2 x 3/2 NO + NO with exhaust check valves</p>	Solenoid	M8 Lockable	85	P2M1SCEE2C	91	P2M2SCEE2C	
	Air pilot	Clip	85	P2M1SCEE2CW	91	P2M2SCEE2CW	
	Solenoid	M8 Lockable	85	P2M1SCPP	81	P2M2SCPP	
	Air pilot	Clip	75	P2M1SCPP	81	P2M2SCPP	
 <p>Size 2</p>	 <p>2 x 3/2 NC + NO with exhaust check valves</p>	Solenoid	M8 Lockable	85	P2M1SEEE2C	91	P2M2SEEE2C
		Air pilot	Clip	85	P2M1SEEE2CW	91	P2M2SEEE2CW
	 <p>3/2 NC with exhaust check valves</p>	Solenoid	M8 Lockable	80	P2M1S3ES2C	86	P2M2S3ES2C
		Air pilot	Clip	80	P2M1S3ES2CW	86	P2M2S3ES2CW
	 <p>4/3 Centre exhaust</p>	Solenoid	M8 Lockable	85	P2M1SGEE2C	91	P2M2SGEE2C
		2 x 3/2 NC + NC without exhaust check valves	Air pilot	Clip	75	P2M1SGPP	81

Clip-On pneumatic connectors *

Valve Modules		Size 1			Size 2		
Description	Tube OD	W (g)	Order code	W (g)	Order code	Order code	
 <p>Straight connector</p>	G1/8"	2	FMDG1-1				
	4 mm	2	FMD04-1				
	6 mm	3	FMD06-1	3	FMD06-2		
	8 mm			4	FMD08-2		
	10 mm			5	FMD10-2		
	12 mm			6	FMD12-2		
 <p>Elbow connector</p>	G1/8"	3	CMDG1-1				
	4 mm	3	CMD04-1				
	6 mm	5	CMD06-1	5	CMD06-2		
	8 mm			6	CMD08-2		
	10 mm			7	CMD10-2		
	12 mm			8	CMD12-2		
Silencer		3	MMDVA1	5	MMDVA2		
Plug		3	PMDXX1	5	PMDXX2		

* Fittings and plugs pack quantity: 10

Electrical connectors

Description	Connector type	Cable length	W (g)	Order code	
 <p>M8 lockable connector</p>	Individual lockable connector – IP67 Including LED and surge protection	2 meters	62	P8LS08L226C	
		5 meters	155	P8LS08L526C	
		9 meters	180	P8LS08L926C	
	Clip connector – IP40	1 x Clip connector	1 meter	8	P8LW021C
		Individual: Including 2 flying leads	2 meter	12	P8LW022C
		Multiple: Including 1 common (0 Vdc) and 1 flying lead per connector	2 x Clip connectors	1 meter	12
Straight cable quick connect to thread connector, IP67 protected	4 x Clip connectors	1 meter	20	P8LW021C04	
	8 x Clip connectors	1 meter	36	P8LW021C08	
	M8		12	P8CS0803J	
	M12		15	P8CS1204J	

Peripheral Valve Modules: P series

Four additional peripheral modules complete the valve system in order to facilitate the installation of specific cylinder controls:

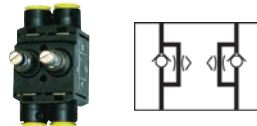
- Dual flow control, for cylinder speed adjusting;
- Dual pilot operated check valve, for cylinder positioning;
- Pressure regulator, for cylinder thrust adjusting;
- Vacuum generator, for vacuum pad controls.



Module function selection

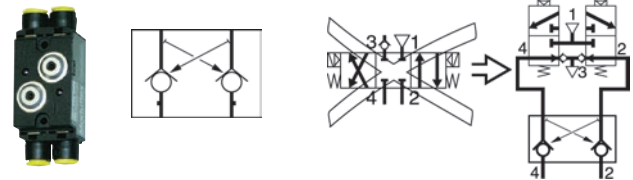
Dual flow control

By controlling the exhaust flows of a double acting cylinder, this module can adjust both speeds: forwards and backwards.



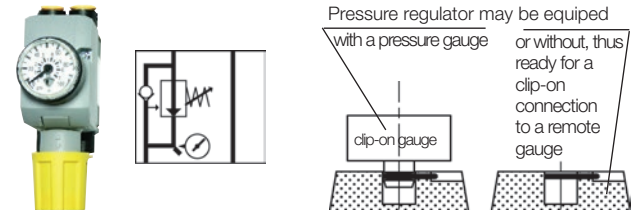
Dual pilot operated check valve

Combined with a double 3/2 NC + NC valve, this module will block flows and stop cylinder movement as soon as the valve outputs are both exhausted. Better than a 3 position closed centre valve, it provides accurate positioning when mounted close to the cylinder.



Pressure regulator

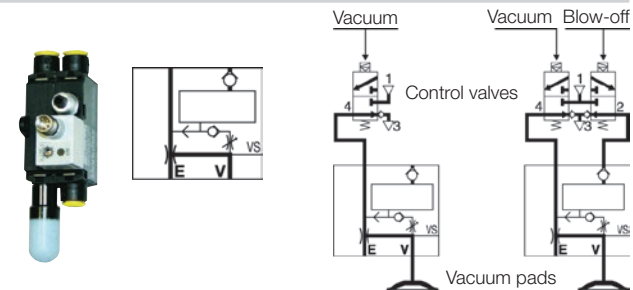
The thrust developed by a cylinder often requires adjustment by controlling the pressure to the front or back of the piston. This pressure regulator module enables manual adjustment of pressure on one side of the piston, with visual indication provided by the pressure gauge.



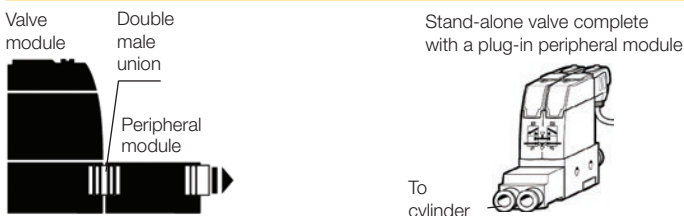
Vacuum generator

This multi-purpose module controls vacuum pads with a choice between two basics schematics:

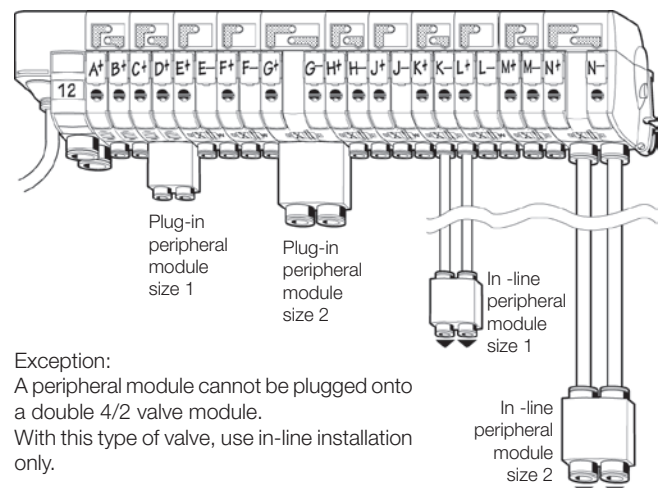
- Controlled with only one 3/2 NC valve, the vacuum generator provides vacuum to the pads during valve actuation and then blow-off supplied from an integrated chamber.
- Controlled with a double 3/2 NC + NC, the vacuum generator provides vacuum during the first valve actuation, and then strong blow-off from the second valve.



Module installation selection

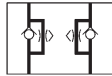
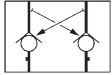
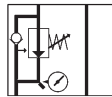
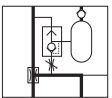


- Peripheral modules may either be mounted:
- Plugged into the valve module through double male unions;
 - Or in line, close to the cylinder to control it better.






Exception:
A peripheral module cannot be plugged onto a double 4/2 valve module. With this type of valve, use in-line installation only.

Basic peripheral modules (without connector)




Peripheral Modules		Size 1		Size 2			
Symbol	Description	Weight (g)	Order code	Weight (g)	Order code		
	Dual flow control	50	P2M1PXFA	50	P2M2PXFA		
	Dual P.O. check valve	50	P2M1PXCA	50	P2M2PXCA		
	Pressure regulator	Pressure range	Gauge				
		0 - 2 bar	0 - 4 bar	135	P2M1PXSR	135	P2M2PXSR
			Without	105	P2M1PXST	165	P2M2PXST
		0 - 4 bar	0 - 7 bar	135	P2M1PXSM	135	P2M2PXSM
			Without	105	P2M1PXSL	165	P2M2PXSL
		0 - 8 bar	0 - 11 bar	135	P2M1PXSG	135	P2M2PXSG
	Without	105	P2M1PXSN	165	P2M2PXSN		
	90% Vacuum generator	30	P2M1PXVA				

Clip-On pneumatic connectors *

Valve Modules		Size 1		Size 2		
Description	Tube OD	Weight (g)	Order code	Weight (g)	Order code	
	Straight connector	G1/8"	2	FMDG1-1		
		4 mm	2	FMD04-1		
		6 mm	3	FMD06-1	3	FMD06-2
		8 mm			4	FMD08-2
		10 mm			5	FMD10-2
		12 mm			6	FMD12-2
	Elbow connector	G1/8"	3	CMDG1-1		
		4 mm	3	CMD04-1		
		6 mm	5	CMD06-1	5	CMD06-2
		8 mm			6	CMD08-2
		10 mm			7	CMD10-2
		12 mm			8	CMD12-2
	Double male union	5	HMDXX1	8	HMDXX2	
	Silencer	3	MMDVA1			
	Plug	3	PMDXX1	5	PMDXX2	

* Fittings and plugs pack quantity: 10

Clip-on accessories

Description	Connection	Pressure range	Weight (g)	Order code
	Clip-on	0 to 4 bar	30	P2M1K0GT
		0 to 7 bar	30	P2M1K0GL
		0 to 11 bar	30	P2M1K0GN
 Analog (1 - 5 Vdc) Vacuum Sensor Flying lead 2 meter cable	Diam. 4 mm tube	0 to -1 bar	25	MPS-V8T4-AG
	Diam. 6 mm tube	0 to -1 bar	25	MPS-V8T-AG
 Dig. PNP / Ana (4 - 20 mA) Vacuum Sensor 15 cm cable - M8 4 pin's connector	G 1/8" male	0 to -1 bar	45	MPS-V34G-PCI

Complete module ordering, as compared to basic module ordering

Complete modules

Ordered from the following pages, the complete modules are supplied all equipped with their electrical and pneumatic connectors. Only one order line is necessary, and each module comes complete, with just the necessary chosen connectors.



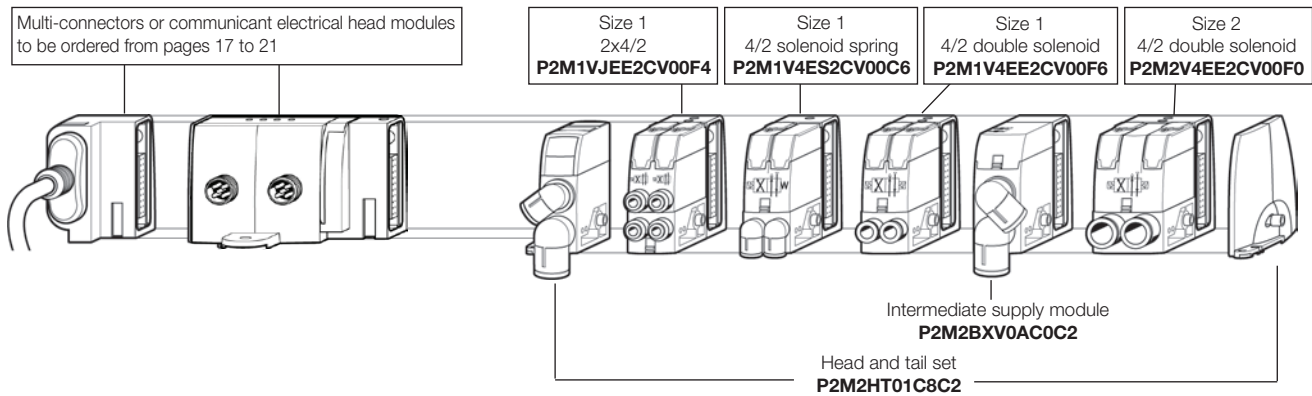
Basic modules

Ordered from the previous pages, the basic modules are to be equipped with their connectors. The clip-on assembly to the module is easy. The main advantage is flexibility : connector type and size may be chosen at the last moment, to better fit the machine needs.



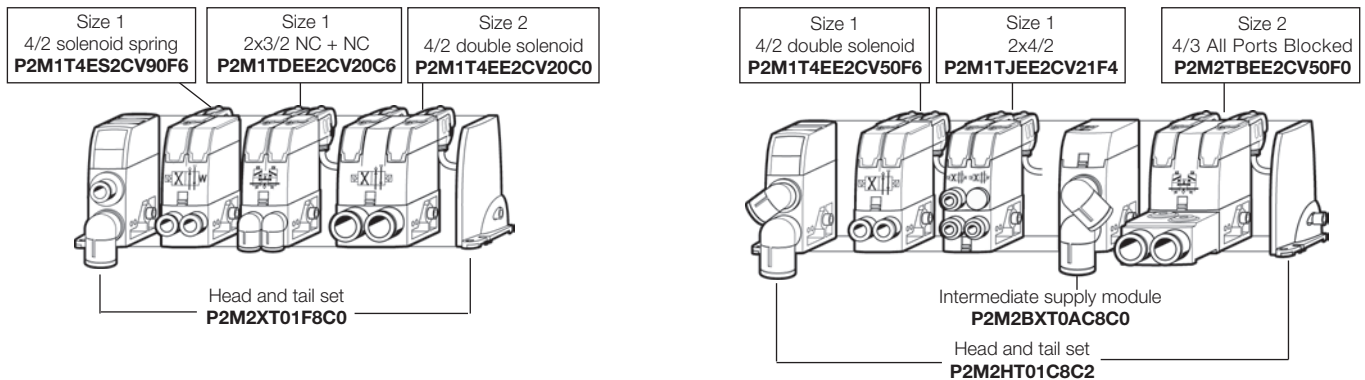
V series

See opposite page for complete module order code chart



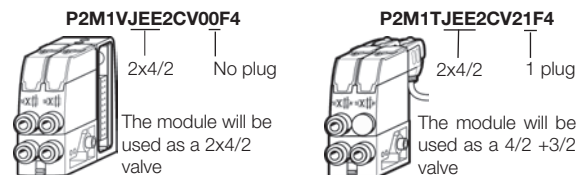
T series

See opposite page for complete module order code chart



Special case : the 2 x 4/2 mini-module plug configuration

For micro-cylinders, this very compact 2 x 4/2 module (order code. JEE) may also be used to obtain 3/2 valves, either Normally Closed or Normally Open. To do so, the complete module may be supplied with plugs that may replace some of the plug-in connectors. To order, use the top chart from opposite page.



S and P series

See page 28 and 29 for complete module order code charts.

Complete Moduflex modules, equipped with their electrical and pneumatic connectors, may be ordered. To do so, use the below chart to define the complete module order codes.

Valve modules

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

P 2 M 1 V 4 E E 2 C V 0 0 F 6

Minimum ordering quantity: 10 pieces

Voltage	
00	Pneumatic pilot
2C	24VDC

Pilot Connection & Cable Length	
Valvetronic V Series IP65	
V 0	V Series - Integrated Valvetronic Gallery
T Series - M8 Connector	
0 0	No cable (also for pneumatic remote pilot)
V 2	2 meter cable - M8 connector
V 5	5 meter cable - M8 connector
V 9	10 meter cable - M8 connector
T Series - Clip Connector	
W 0	No cable
W 1	1 meter cable - Clip connector
W 2	2 meter cable - Clip connector
T Series - Pneumatic Remote Pilot	
0 0	4 mm OD tubing

Pneumatic connectors Ports 2 & 4	
Size 1 modules	
F4	Straight 4 mm OD
C4	Elbow 4 mm OD
Size 2 modules	
F6	Straight 6 mm OD
C6	Elbow 6 mm OD
F8	Straight 8 mm OD
C8	Elbow 8 mm OD
F0	Straight 10 mm OD
C0	Elbow 10 mm OD

Size	
1	Size 1
2	Size 2

Series	
V	Integrated connections
T	Individual connectors

Valve Function - Solenoid Versions *	
4 ES	4/2 Solenoid spring
4 EE	4/2 Double solenoid
D EE	2 x 3/2NC + NC (with exhaust check valve)
C EE	2 x 3/2 NO + NO (with exhaust check valve)
E EE	2 x 3/2 NC + NO (with exhaust check valve)
3 ES	3/2 NC (with exhaust check valve)
G EE	4/3 centre exhaust (= 2x3/2 without exhaust check valve)
B EE	2x3/2 + clipped dual PO check (= 4/3 APB)

Plug configurations	
0	No plug

Only for JEE 2x4/2 modules (1)	
0	0 plug (2x 4/2)
1	1 plug (4/2 + 3/2)
2	2 plugs (2x3/2 or 1x4/2)
3	3 plugs (1x3/2)

Valve Function - Solenoid Versions *	
4 ES	4/2 Solenoid spring
4 EE	4/2 Double solenoid
D EE	2 x 3/2NC + NC (with exhaust check valve)
C EE	2 x 3/2 NO + NO (with exhaust check valve)
E EE	2 x 3/2 NC + NO (with exhaust check valve)
3 ES	3/2 NC (with exhaust check valve)
G EE	4/3 centre exhaust (= 2x3/2 without exhaust check valve)
B EE	2x3/2 + clipped dual PO check (= 4/3 APB)

Size 1 only	
J EE	2x4/2 with exhaust check valve with plug configuration

* For T Series - Pneumatic Pilot: Replace "ES" or "EE" by "PS" or "PP"

Head/Tail & Intermediate Modules

Minimum ordering quantity: 10 pieces

1 2 3 4 5 6 7 8 9 10 11 12 13

P 2 M 2 H X T 0 1 F 0 C 2

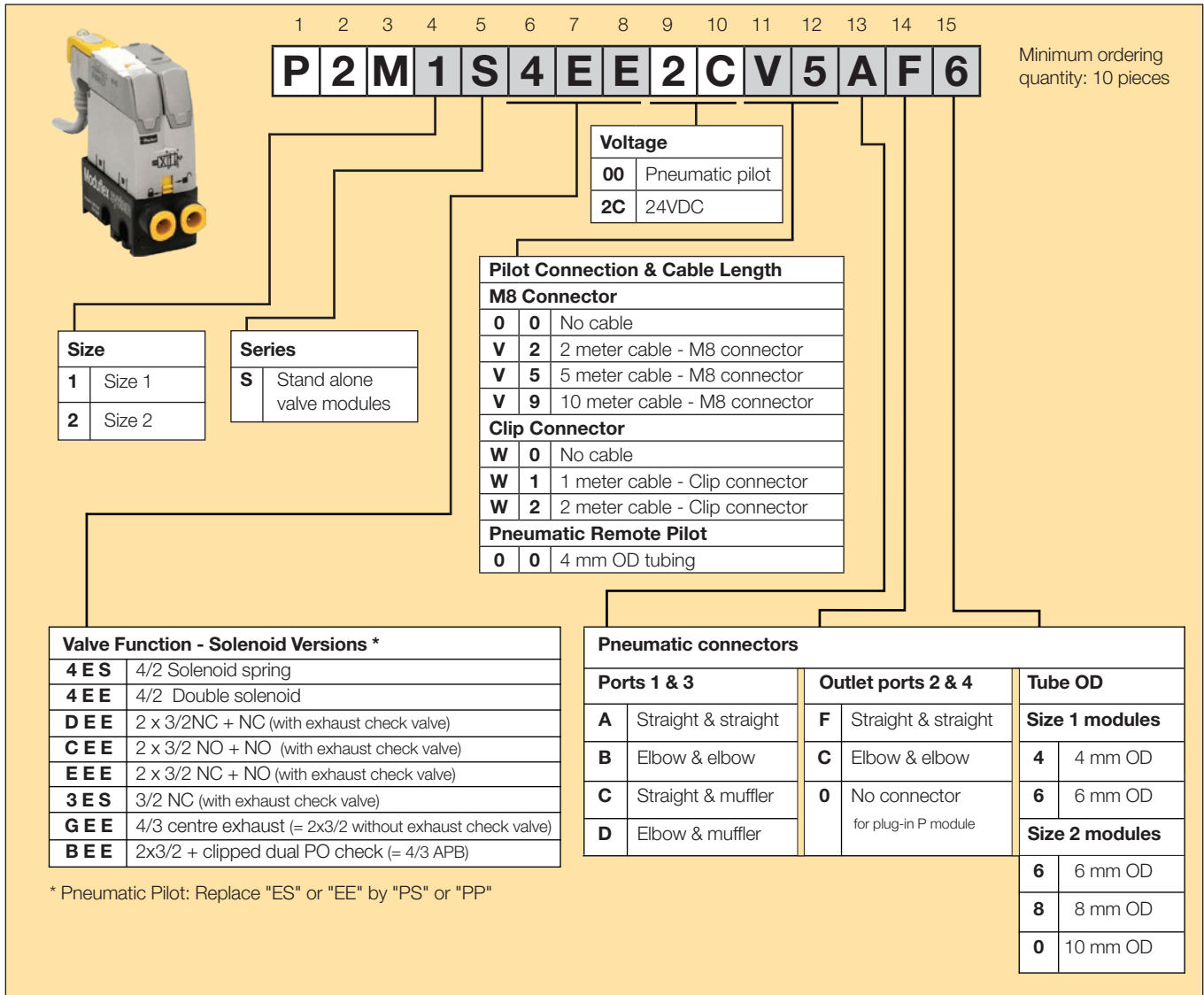
Head and intermediate module	
	HXT01 V and T series Pneumatic head and tail set
	BXV0A V series intermediate supply module with a set of 4 configuration plates
	BXT0A T series intermediate supply module with a set of 4 configuration plates

Pressure port connector	
F6	Straight 6 mm OD
C6	Elbow 6 mm OD
F8	Straight 8 mm OD
C8	Elbow 8 mm OD
F0	Straight 10 mm OD
C0	Elbow 10 mm OD
F2	Straight 12 mm OD
C2	Elbow 12 mm OD
PP	Plug
MM	Muffler

Exhaust port connector	
F6	Straight 6 mm OD
C6	Elbow 6 mm OD
F8	Straight 8 mm OD
C8	Elbow 8 mm OD
F0	Straight 10 mm OD
C0	Elbow 10 mm OD
F2	Straight 12 mm OD
C2	Elbow 12 mm OD
PP	Plug
MM	Muffler

Complete Moduflex stand alone valves, equipped with their electrical and pneumatic connectors, may be ordered. To do so, use the below chart to define the complete module order codes.

Stand alone valve modules



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

P 2 M 1 S 4 E E 2 C V 5 A F 6

Minimum ordering quantity: 10 pieces

Voltage	
00	Pneumatic pilot
2C	24VDC

Pilot Connection & Cable Length		
M8 Connector		
0	0	No cable
V	2	2 meter cable - M8 connector
V	5	5 meter cable - M8 connector
V	9	10 meter cable - M8 connector
Clip Connector		
W	0	No cable
W	1	1 meter cable - Clip connector
W	2	2 meter cable - Clip connector
Pneumatic Remote Pilot		
0	0	4 mm OD tubing

Size	
1	Size 1
2	Size 2

Series	
S	Stand alone valve modules

Valve Function - Solenoid Versions *	
4 ES	4/2 Solenoid spring
4 EE	4/2 Double solenoid
DEE	2 x 3/2NC + NC (with exhaust check valve)
CEE	2 x 3/2 NO + NO (with exhaust check valve)
EEE	2 x 3/2 NC + NO (with exhaust check valve)
3 ES	3/2 NC (with exhaust check valve)
GEE	4/3 centre exhaust (= 2x3/2 without exhaust check valve)
BEE	2x3/2 + clipped dual PO check (= 4/3 APB)

Pneumatic connectors		
Ports 1 & 3	Outlet ports 2 & 4	Tube OD
A	F	Straight & straight
B	C	
C	0	No connector for plug-in P module
D		
		Size 1 modules
		4
		6
		Size 2 modules
		6
		8
		0

* Pneumatic Pilot: Replace "ES" or "EE" by "PS" or "PP"

Size 1
4/2 solenoid spring
P2M1S4ES2CV5CC6



Size 1
2x3/2 NC + NC
P2M1SDDEE2CV2BC6



Size 2
4/2 double solenoid
P2M2S4EE2CV9CC8



Size 2
2x3/2 NC + NC
P2M2SDDEE2CV2CC0



Size 2
4/3 All Ports Blocked
P2M2SBEE2CV2AF0



Complete Moduflex peripheral module, equipped with their pneumatic connectors, may be ordered. To do so, use the below chart to define the complete module order codes.

Dual flow control, dual pilot operated check valve, and pressure regulator peripheral modules

Minimum ordering quantity: 10 pieces

Order Code: **P 2 M 1 P X F A J J F 6**

Size	1	Size 1
2	Size 2	

Peripheral module function	
F A	Dual flow control
C A	Dual P.O. check valve
Pressure regulators	
S R	0-2 bar, with pressure gauge
S M	0-4 bar, with pressure gauge
S G	0-8 bar, with pressure gauge

Inlet port pneumatic connectors	
Size 1 modules	
F4	Straight 4 mm OD
C4	Elbow 4 mm OD
F6	Straight 6 mm OD
C6	Elbow 6 mm OD
Size 2 modules	
F6	Straight 6 mm OD
C6	Elbow 6 mm OD
F8	Straight 8 mm OD
C8	Elbow 8 mm OD
F0	Straight 10 mm OD
C0	Elbow 10 mm OD

Outlet port pneumatic connectors	
Size 1 modules	
F4	Straight 4 mm OD
C4	Elbow 4 mm OD
F6	Straight 6 mm OD
C6	Elbow 6 mm OD
Size 2 modules	
F6	Straight 6 mm OD
C6	Elbow 6 mm OD
F8	Straight 8 mm OD
C8	Elbow 8 mm OD
F0	Straight 10 mm OD
C0	Elbow 10 mm OD

Vacuum generator peripheral module

Minimum ordering quantity: 10 pieces

Order Code: **P 2 M 1 P X V A F 6 A F 6 C M A**

Size	1	Size 1
------	---	--------

Peripheral module function	
V A	Vacuum generator

Exhaust port (3) *	
F4	Straight 4 mm OD
C4	Elbow 4 mm OD
F6	Straight 6 mm OD
C6	Elbow 6 mm OD
MA	Clip-on muffler

Pressure & Blow-off port connectors	
JJ	Clip-on double male union
F4	Straight 4 mm OD
C4	Elbow 4 mm OD
F6	Straight 6 mm OD
C6	Elbow 6 mm OD
F1	Straight threaded 1/8"
C1	Elbow threaded 1/8"

Vacuum and Vacuum Sensor port connectors	
F4	Straight 4 mm OD
C4	Elbow 4 mm OD
F6	Straight 6 mm OD
C6	Elbow 6 mm OD
F1	Straight threaded 1/8"
C1	Elbow threaded 1/8"

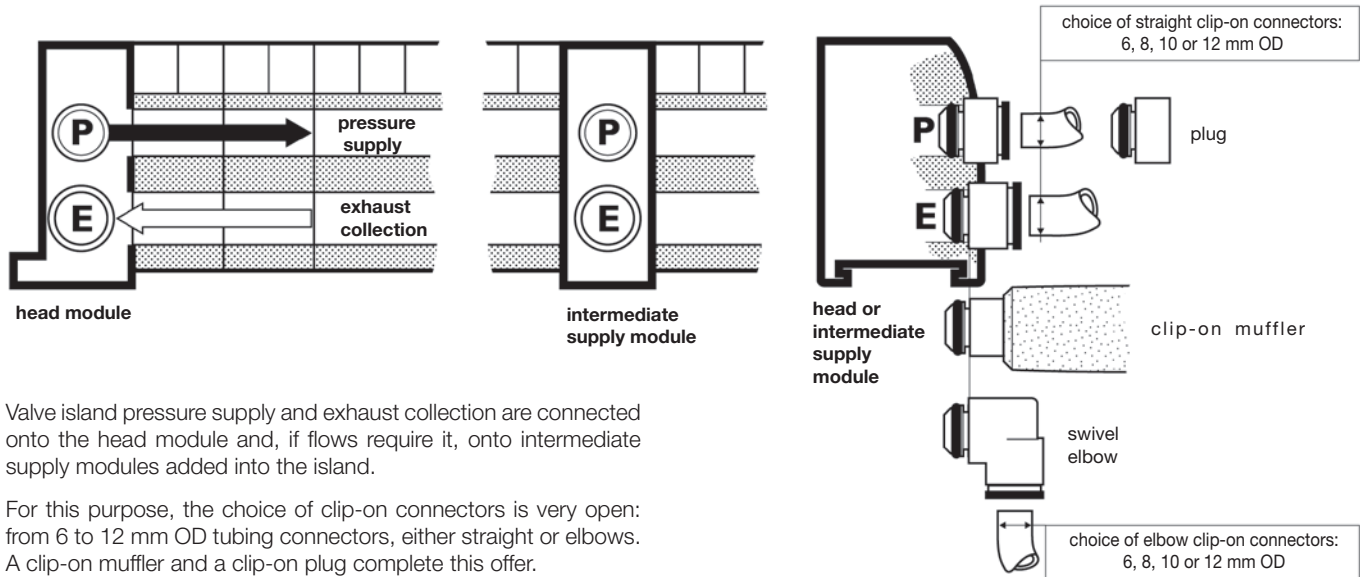
A	2 similar connectors
B	1 connector on vacuum port 1 plug on vacuum sensor port
D	1 Connector on Vacuum Port 1 Dig/Ana Vacuum Sensor MPS-V34G-PCI
E	1 Connector on Vacuum Port 1 Analog Vacuum Sensor MPS-V8T-AG

Moduflex Valve System - P2M

Island head module port sizing

Moduflex is totally flexible: islands may have up to 19 valves for the V Series and is not limited for the T series with a choice of 3 valve sizes, depending on the required flow. Thus, each island has specific needs for the size of its pressure supply and its exhaust collection.

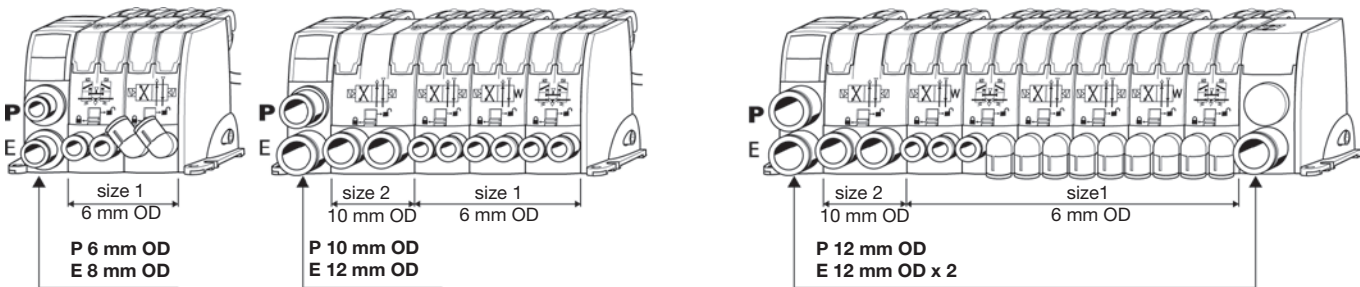
Choice of connections to an island P and E ports



Valve island pressure supply and exhaust collection are connected onto the head module and, if flows require it, onto intermediate supply modules added into the island.

For this purpose, the choice of clip-on connectors is very open: from 6 to 12 mm OD tubing connectors, either straight or elbows. A clip-on muffler and a clip-on plug complete this offer.

Sizing recommendations



The 3 valve islands above present typical situations for sizing islands pressure supply and exhaust collection.

In a given island, valves do not deliver their flow at the same moment. Thus, the number of valves in an island is not the major factor to consider. More important is the size of the largest valve and of the largest output tubes to the cylinders.

ID section areas of standard tubings			
2 x 4 mm:	3 mm ²	5.5 x 8 mm:	24 mm ²
2.7 x 4 mm:	6 mm ²	6 x 8 mm:	28 mm ²
4 x 6 mm:	12 mm ²	7 x 10 mm:	40 mm ²
		8 x 10 mm:	50 mm ²
		muffler:	100 mm ²
			equivalent

We would recommend the following:

- air supply connection at least equivalent to largest output tube to cylinders;
- exhaust collection at least twice the section area of the largest output tube to cylinders.

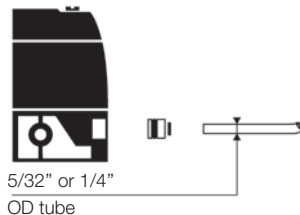
For islands with high flows, the following options are possible:

- use tubes up to 12 mm OD or mufflers providing exhaust collection is not necessary;
- provide additional P and/or E connection ports by inclusion of intermediate supply modules, thus keeping tube size small.

At the machine commissioning stage, the supply and exhaust connections can be easily modified until the required performance is achieved.

Recommendations for building machines with imperial OD tubes (US usual standard)

size 1 modules



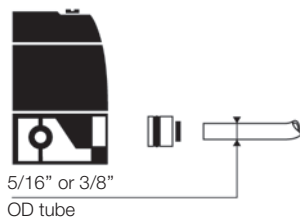
Moduflex is a global product available in the US with the two standards that are commonly used in this country:

- metric OD tubes with the metric connectors shown in this catalogue,
- imperial OD tubes with specific connectors for the US.

Machine builders exporting to the US may propose to their clients one of the following solutions.

- Machines equipped with Moduflex components connected with metric tubes found in this catalogue. Parker will provide products locally for maintenance.
- Or machines equipped with Moduflex components connected with imperial size OD tubes. In this case, use the following procedure to order Moduflex and to build the machine.

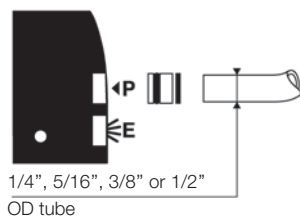
size 2 modules



Imperial OD tube and metric OD tube comparison

metric standard tube OD	imperial US standard tube OD	metric equivalent	Moduflex clip-on connectors
4 mm	5/32"	4 mm	imperial and metric connectors identical
6 mm	1/4"	6,35 mm	specific imperial connector
8 mm	5/16"	8 mm	imperial and metric connectors identical
10 mm	3/8"	9,53 mm	specific imperial connector
12 mm	1/2"	12,7 mm	specific imperial connector

head and intermediate island modules



Moduflex selection for imperial size OD tubes

Such components will easily be obtained with the following procedure:

- 1 - select the required basic modules (with no connector).

- 2 - Select from the list below the clip-on connectors for the required imperial OD tubes.

- 3 - Push-in the connectors into the basic modules 3 - ports in order to obtain complete modules.

FMD04-1 FMD07-1



pneumatic connectors for size 1 modules

clip-on tube push-in connector 5/32"= 4 mm OD Pack Quant. Weight (g) per unit elbow version Order code straight version Weight (g) per unit Order code

10 5 **CMD04-1** 2 **FMD04-1**

CMD04-1 FMD07-1



10 5 **CMD07-1** 3 **FMD07-1**

FMD07-2 FMD13-2



pneumatic connectors for size 2 modules head and intermediate island modules

clip-on tube push-in connector 1/4"OD Pack Quant. Weight (g) per unit elbow version Order code straight version Weight (g) per unit Order code

10 5 **CMD07-2** 3 **FMD07-2**

10 6 **CMD08-2** 4 **FMD08-2**

10 7 **CMD09-2** 5 **FMD09-2**

10 8 **CMD13-2** 6 **FMD13-2**

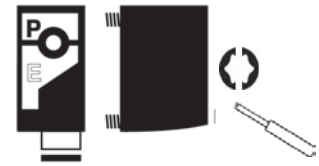
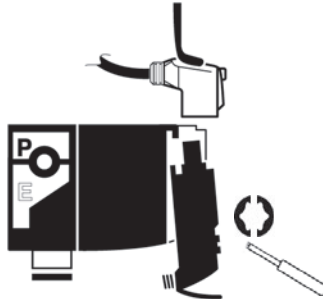


Maintenance procedure

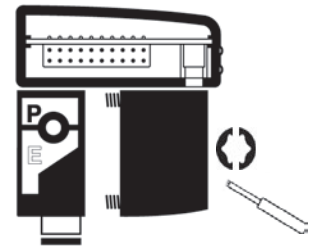
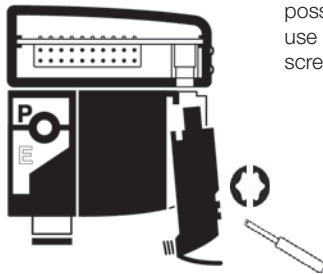
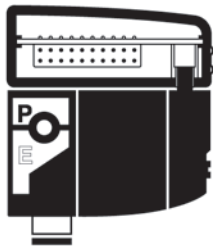
The latest generations of compact pneumatic valves have a life expectancy which generally exceeds the equipment they control. Therefore, although maintenance is seldom required,

when necessary the solenoid pilot, valve or connector can be easily replaced without removing the island base, as shown below.

S and T series



V series



Please, use a Torx T8 screw driver. Also possible to use a 3.5 mm screwdriver.

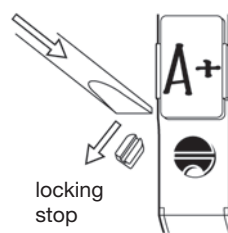
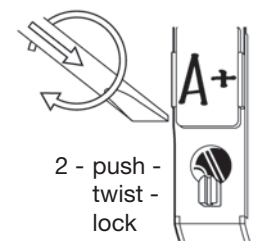
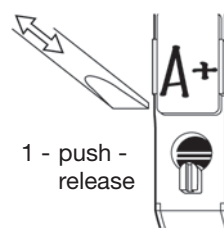
With only one universal solenoid pilot for all configurations, maintenance is simple

24V DC is now a global standard for all machines.

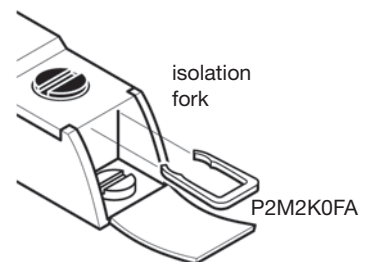
The Moduflex 24V DC unique solenoid pilot is supplied with the multi-function manual override that can be adapted to all requirements, as explained by the drawings.

Because all Moduflex valve and island configurations are supplied with this unique solenoid pilot, maintenance operations remain very simple.

Multi-function adaptable manual override






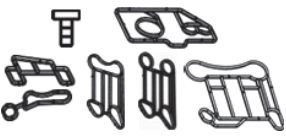




3 - remove lock capability



4 - manual override is totally isolated

Maintenance components

	Valve pilot	Connection	Weight (g)	Order code
 P2D8V32C5  P2D2W3226C5  P2M2K0PA	Solenoid pilot	M8 - 3 Pins - IP67	15	P2D8V32C5
		Clip connector - 2 pins - IP40 With LED and voltage surge suppression	15	P2D2W3226C5
	Pneumatic pilot	4 mm OD tubing push-in elbow fitting	10	P2M2K0PA
size 1 valve modules without solenoid pilot and without sub-base			Weight (g)	Order code
 P2M1X4EE	4/2	monostable	26	P2M1X4ES
		bistable	25	P2M1X4EE
	3/2	double NC + NC	28	P2M1XDEE
		double NO + NO	28	P2M1XCEE
		double NC + NO	28	P2M1XEEE
		single NC	25	P2M1X3ES
	4/3 CE	double 3/2 NC + NC without exhaust check valve	28	P2M1XGEE
size 2 valve modules without solenoid pilot and without sub-base			Weight (g)	Order code
 P2M2X4EE	4/2	monostable	28	P2M2X4ES
		bistable	30	P2M2X4EE
	3/2	double NC + NC	32	P2M2XDEE
		double NO + NO	32	P2M2XCEE
		double NC + NO	32	P2M2XEEE
		single NC	28	P2M2X3ES
	4/3 CE	double 3/2 NC + NC without exhaust check valve	32	P2M2XGEE
Set of maintenance parts			Weight (g)	Order code
  	Seals	Set of various seals: 3 under solenoid pilot seals 3 inter island base seals 2 for dual 4/2 valves (2 parts) 2 for single and dual 3/2 – Size 1 – valves 2 for single 4/2 – Size 1 – valves 2 for size 2 valves (all functions)	8	P2M2K0JA
	Fitting locking clips	Set of 14 clips: 4 for dual 4/2 valves 6 for size 1 valves 2 for size 2 valves 2 for intermediate supply modules	10	P2M2K0CA
	Manual override forks	Set of 10 isolating forks for pilot solenoid manual override	8	P2M2K0FA

1 - Multi-connector or sub-D 25 valve island

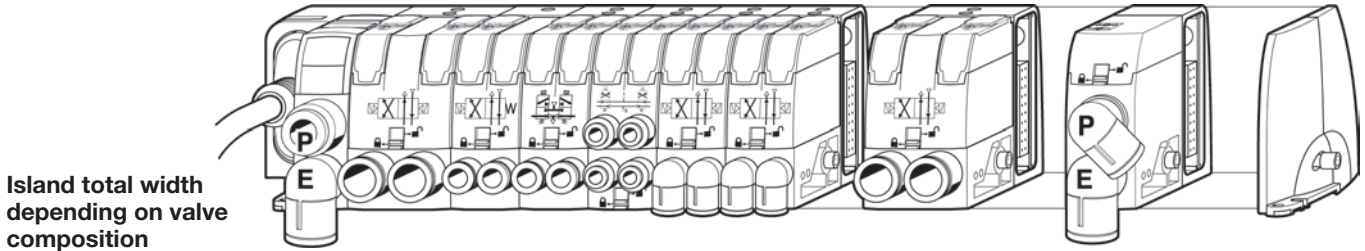
Multi-connector or sub-D 25 electrical head module width: 15 mm

Head and tail pneumatic module set width: 48 mm

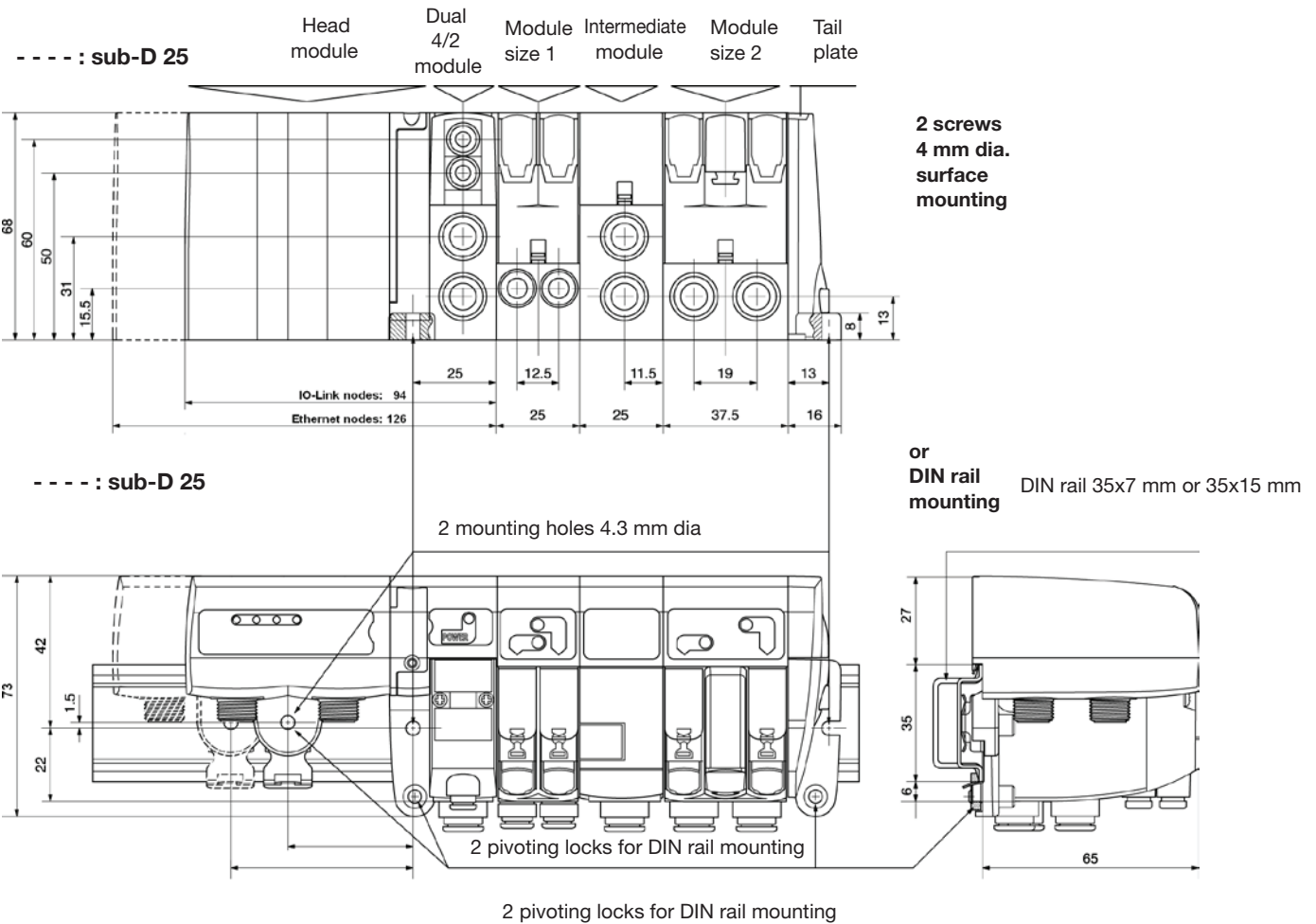
Modules size 1 width: 25 mm

Modules size 2 width: 37.5 mm

Intermediate module width: 25 mm



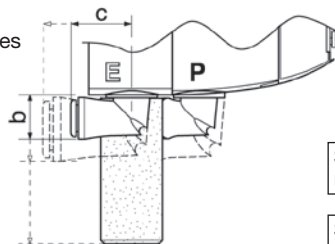
Island total width depending on valve composition



Special case: 4/3 closed centre function within island version: Add the dimensions of the dual P.O. check valve module plugged into the island. See pages 39 and 40 for dimensions.

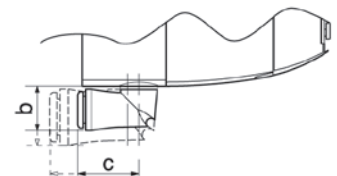
Island head and intermediate modules

	a	b	c
6 mm tube OD	8	13	16
8 mm tube OD	9	16	19
10 mm tube OD	13	18	22
12 mm tube OD	13	19	25
Muffler		40	



Island valves modules

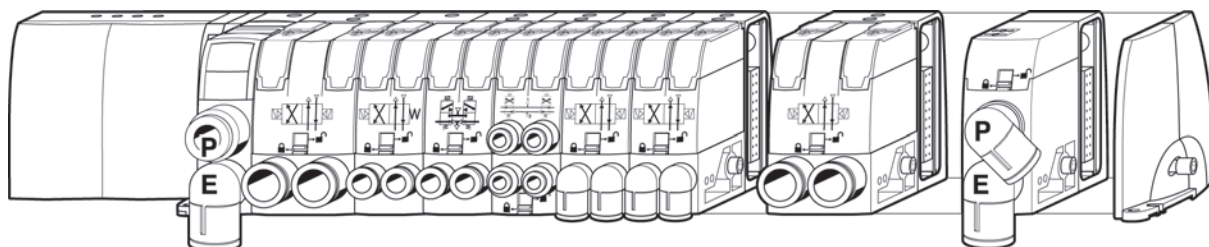
	OD tube	a	b	c
Size 1 modules	4 mm	8	10	12
	6 mm	8	13	16
Size 2 modules	8 mm	9	16	19
	10 mm	13	18	22



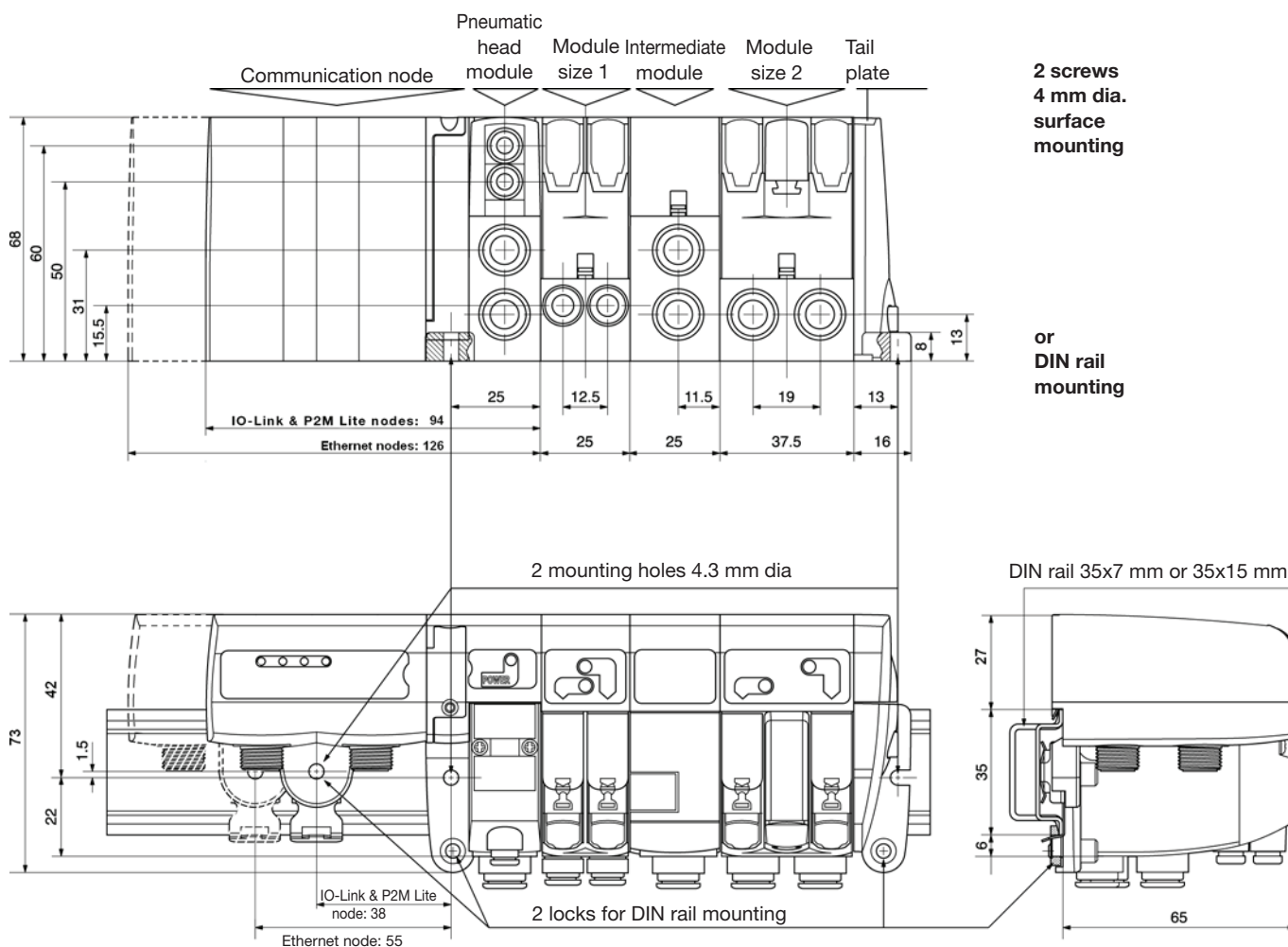
2 - Industrial Communication Valve Islands

Island total width depending on valve composition

Communication nodes IO-Link & P2M Lite: width 62 mm Ethernet nodes: width 94 mm	Head and tail pneumatic module set width: 48 mm	Modules size 1 width: 25 mm	Modules size 2 width: 37.5 mm	Intermediate module width: 25 mm
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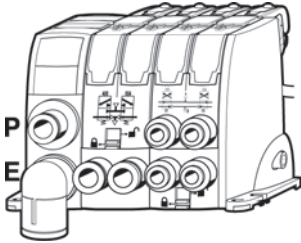


Moduflex Valve island with Ethernet & IO-Link communication node

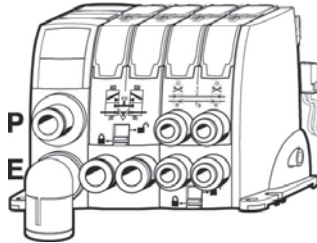


Island total width depending on valve composition

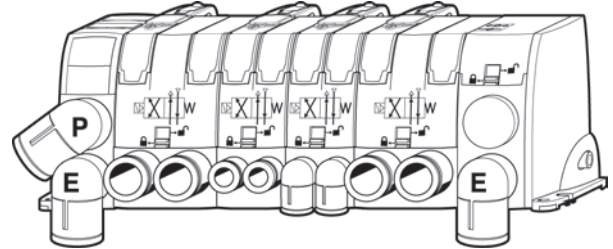
With IP67 Lockable connector



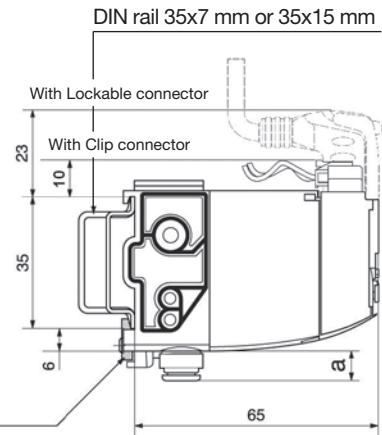
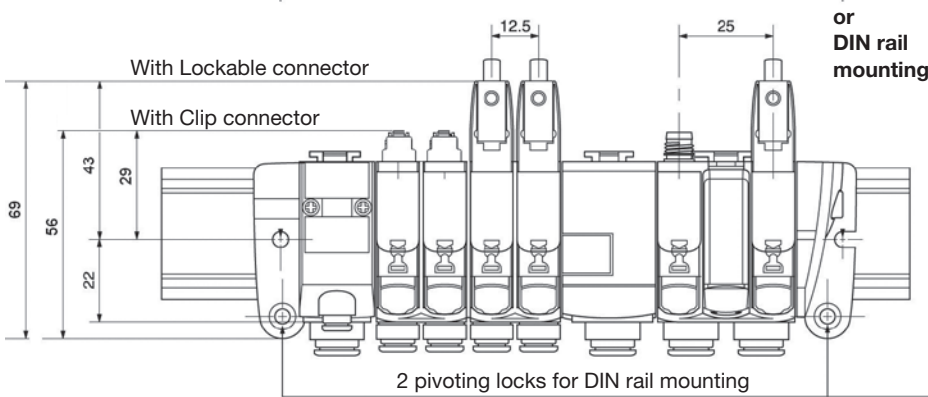
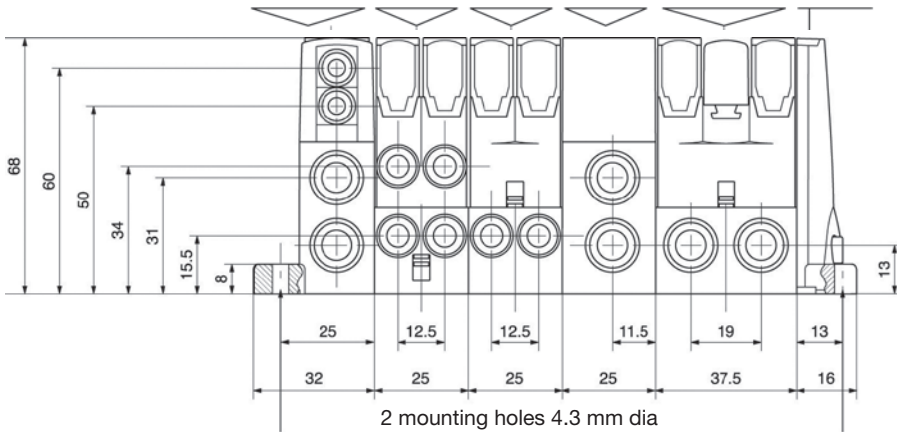
With IP40 Clip connector



Pneumatic head and tail module width ⇒ 48 mm
 Modules size 1 25 mm
 Modules size 2 37.5 mm
 Intermediate module 25 mm



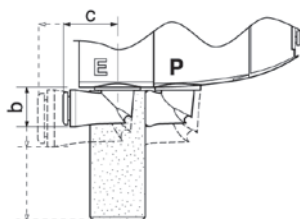
Pneumatic head module Dual 4/2 module Module size 1 Intermediate module Module size 2 Tail plate



Special case : 4/3 closed centre function within island version:
 Add the dimensions of the dual P.O. check valve module plugged into the island.

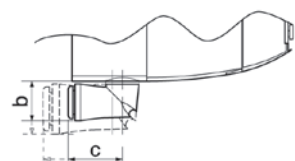
Island head and intermediate modules

	a	b	c
6 mm tube OD	8	13	16
8 mm tube OD	9	16	19
10 mm tube OD	13	18	22
12 mm tube OD	13	19	25
Muffler		40	



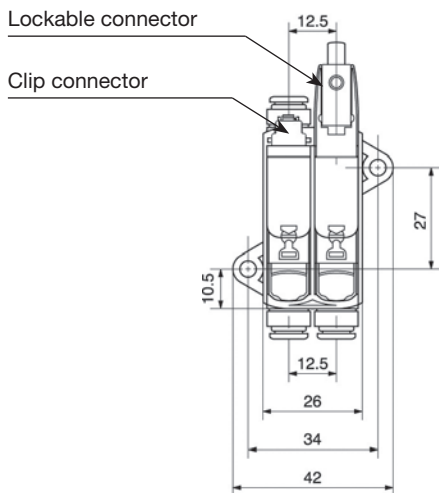
Island valves modules

	OD tube	a	b	c
Size 1 modules	4 mm	8	10	12
	6 mm	8	13	16
Size 2 modules	8 mm	9	16	19
	10 mm	13	18	22

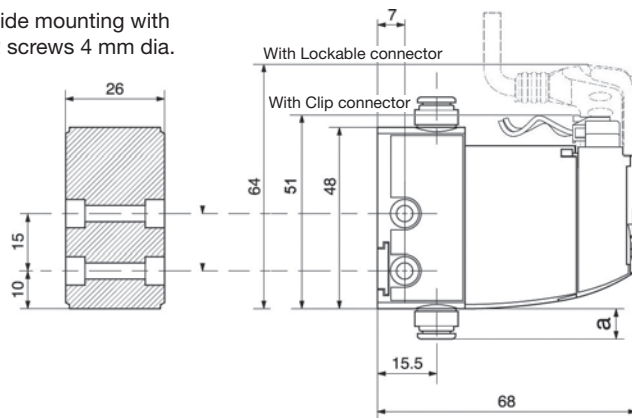


Stand-alone valve size 1

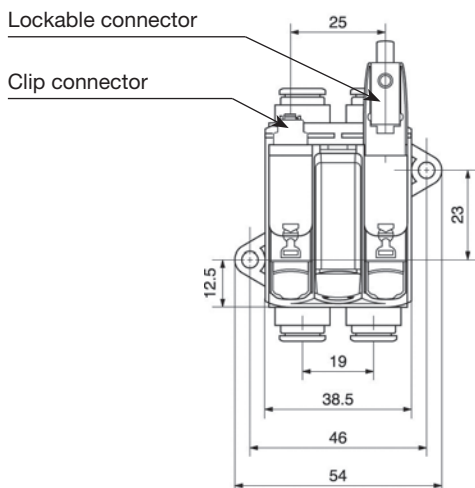
surface mounting with screws
4 mm dia. into retractable brackets 3 mm thick



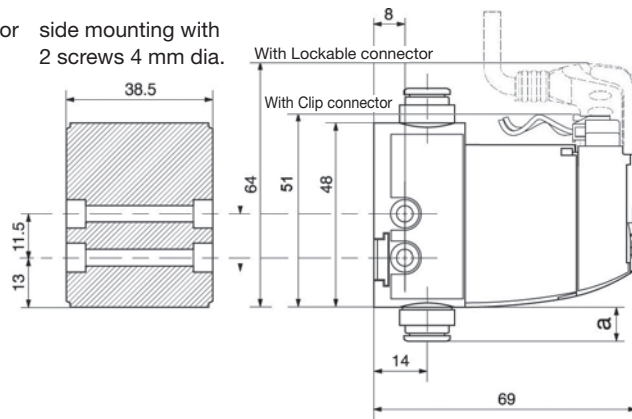
or side mounting with 2 screws 4 mm dia.



Stand-alone valve size 2



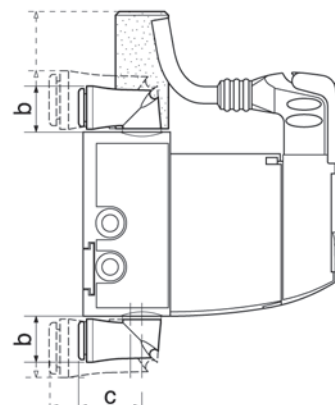
or side mounting with 2 screws 4 mm dia.



Dimensions and mountings of the stand-alone valves 4/2, double and single 3/2, 4/3 vented centre and 4/3 pressure centre.

Special case : 4/3 closed centre. Add the dual P.O. check valve module that has been plugged in the basic valve.

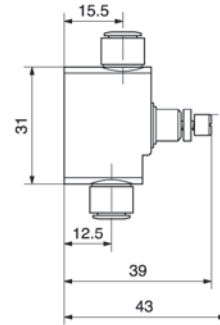
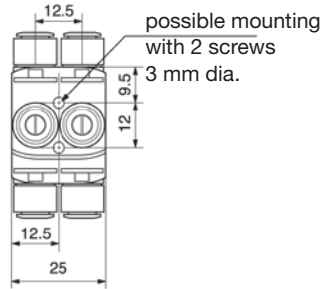
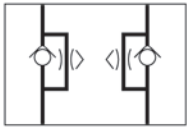
		a	b	c
Size 1 modules	4 mm tube OD	8	10	12
	6 mm tube OD	8	13	16
	Muffler		31	
Size 2 modules	8 mm tube OD	9	16	19
	10 mm tube OD	13	18	22
	Muffler		40	



Reminder: peripheral modules may either be plugged in the valve output ports or mounted in line separate from the valve

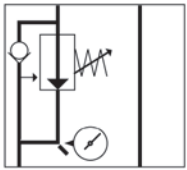


Dual flow control module size 1

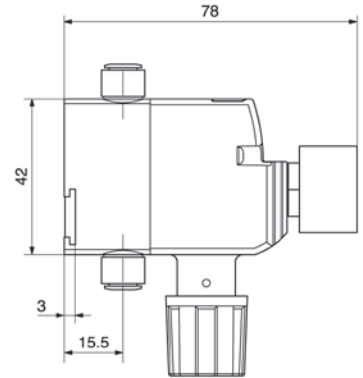
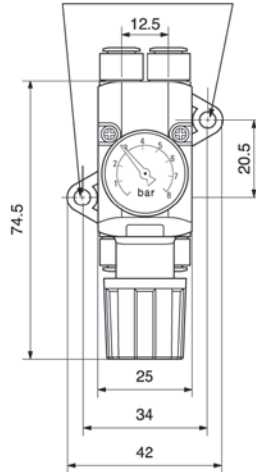


Pressure regulation module size 1

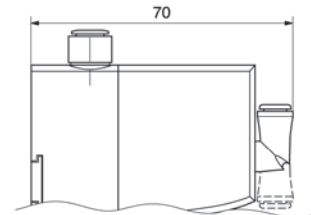
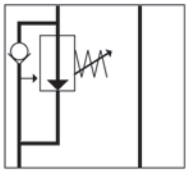
- with gauge



mounting with 2 screws 4 mm dia. on retractable brackets

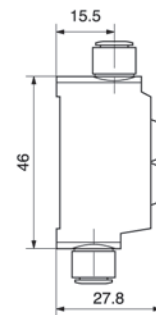
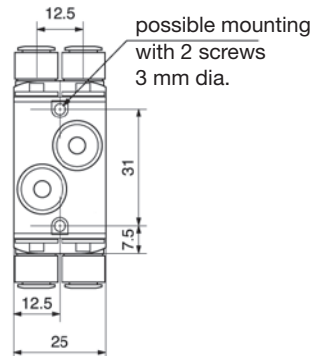
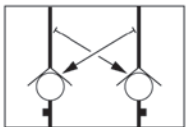


- without gauge

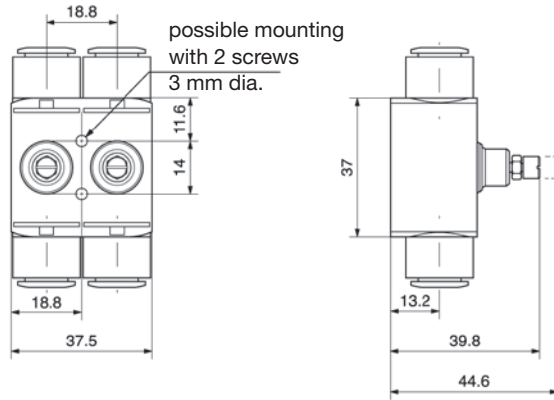
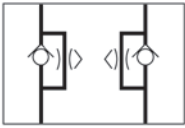


swivel elbow push-in connector 4 mm OD tube

Dual P.O. check valve module size 1

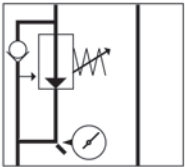


Dual flow control module size 2

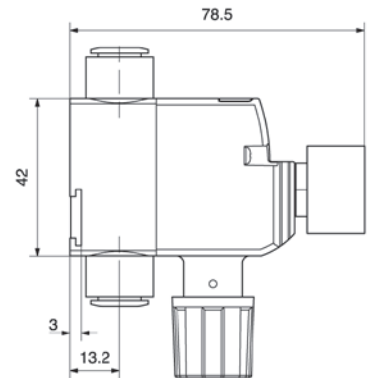
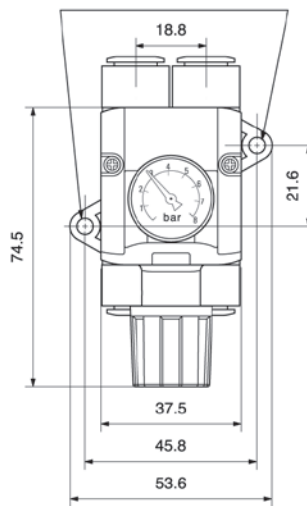


Pressure regulation module size 2

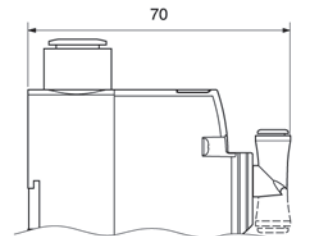
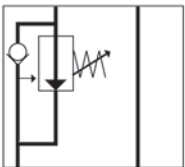
- with gauge



mounting with 2 screws 4 mm dia.
on retractable brackets

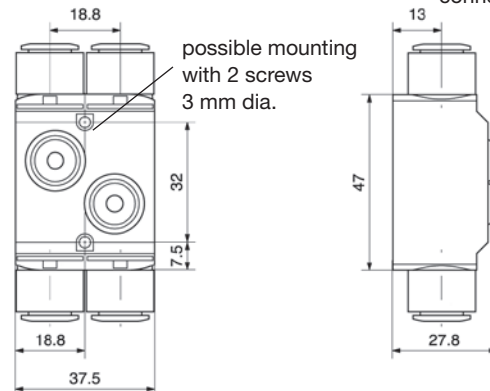
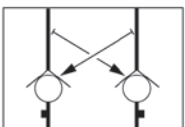


- without gauge



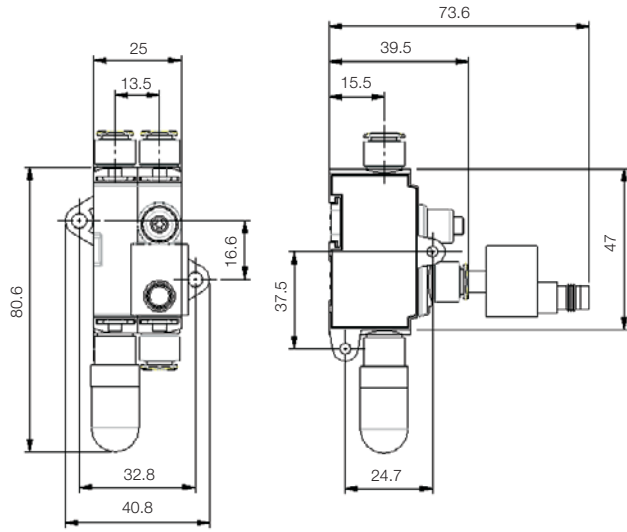
swivel elbow push-in
connector 4 mm OD tube

Dual P.O. check valve module size 2

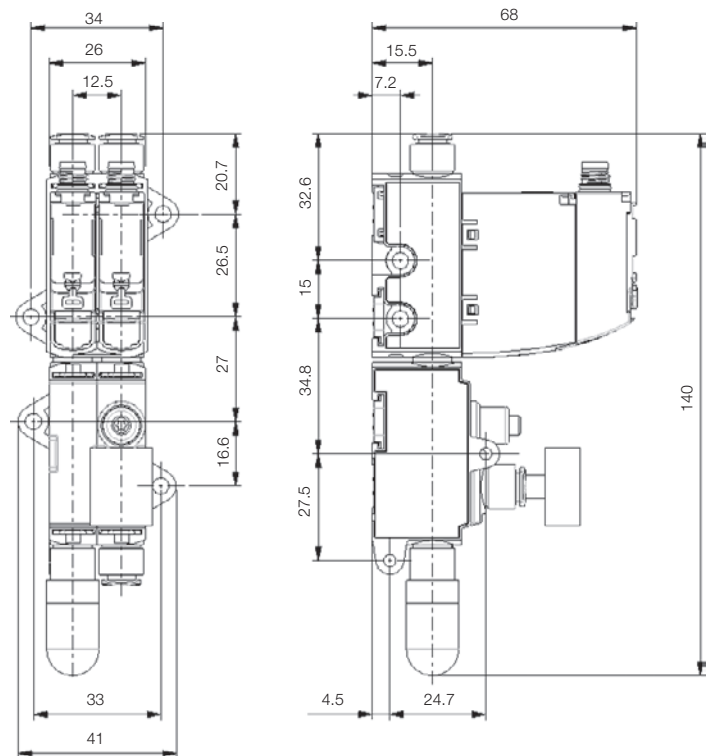


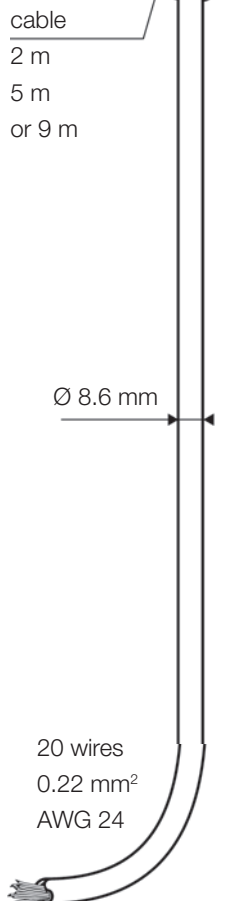
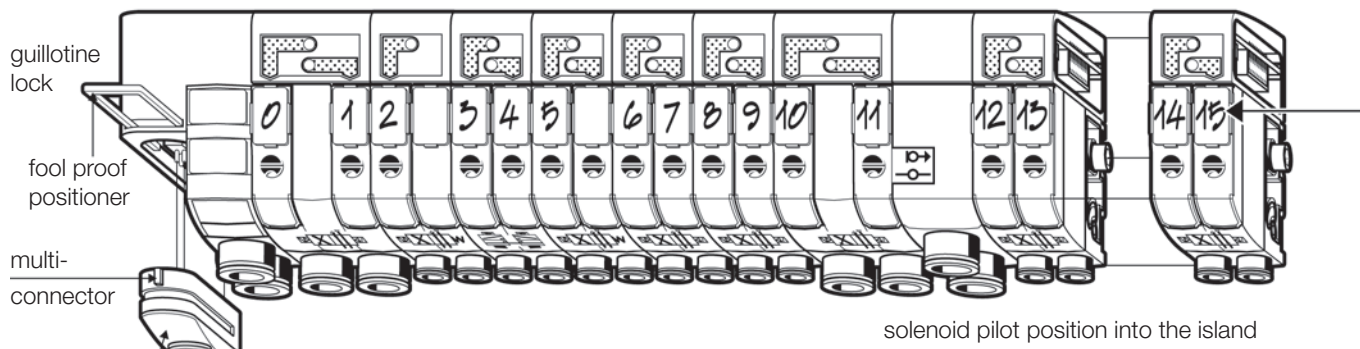
Vacuum generator module

In-line



With Moduflex valve





The valve island head multi-connector

On the island head module, the multi-connector integrates the HE10 connector standard in its 20 pin version. Its plug-in function is secured in position with a guillotine lock with easy access from the front of the island. Just like the whole island, the multi-connector follows the IP65 protection standard.

Cable specification:

8,6 mm dia., UL, 20 wires, 0.22 mm², AWG 24.

Minimum static radius : 6.5 mm.

Available with 2 m, 5 m and 9 m lengths.

Multi-connector addressing

When assembling a V series island, modules are automatically connected to the head module through the modular principle of the integrated electrical connections.

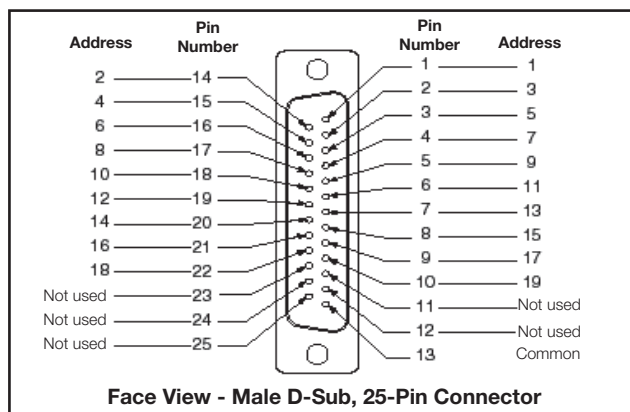
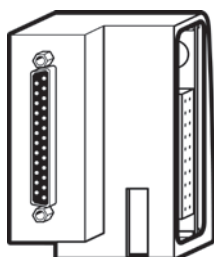
The colour code addressing given below conforms to the DIN 47100 standard.

To each wire colour code corresponds a solenoid pilot position in the island.

solenoid pilot position into the island

colour code		colour code		colour code	
0	pink - brown	7	white - green	14	grey
1	white - pink	8	red - blue	15	yellow
2	grey - brown	9	grey - pink	16	green
3	white - grey	10	violet	17	brown
4	yellow - brown	11	red	18	white
5	white - yellow	12	blue		
6	brown - green	13	pink	common:	black

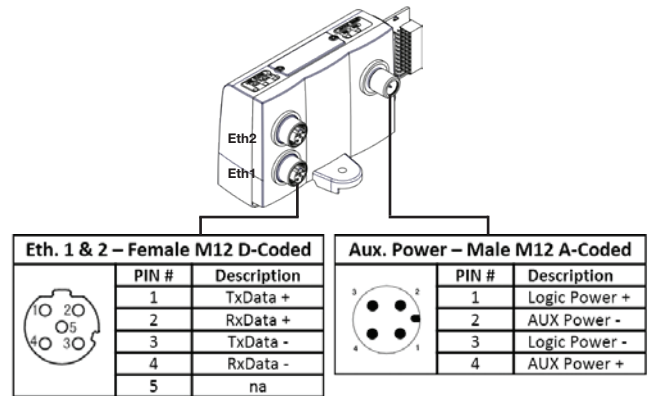
Sub-D 25 addressing



Industrial Ethernet node connection and diagnostic functions

Ethernet Ports and Auxiliary Power Connection

Ethernet ports: 2 x Standard Female M12 D-Coded – 5 pins
 Auxiliary Power: Standard Male M12 A-Coded – 4 pins.
 Usage of standard manufactured cables available from your usual electrical supplier is recommended.



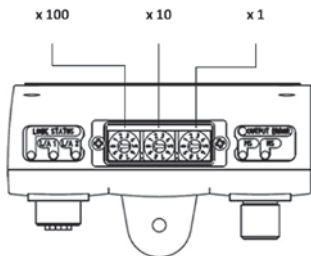
Configuration File

The configuration files can be download from the product web page: www.parker.com/pde/P2M_IE.

IP Address Setting

The IP-Address of the device can be assigned via:

- Rotary Switches, DHCP, Web page, Ipconfig Tool or TCP/IP Interface Object, depending on protocol version:



Description	EtherNet/IP Profinet IO Modbus TCP/IP	Ethernet PowerLink	EtherCAT	CC-Link IE
IP-Address setting stored into the NV-memory of the P2M node	000	000	N/A	000
IP-Address setting determined by the 3 rotary switches:				
• IP Address: 192.168.1.xxx				
• Subnet Mask: 255.255.255.0	001 – 254	001 – 239	N/A	001 – 120
• Default Gateway for 001: 192.168.1.2				
• Default Gateway for 002 - 254: 192.168.1.1				
The device will obtains its address via DHCP	888	N/A	N/A	N/A
Reset to factory status	999	999	999	999
Invalid. The module will not start (see Local Visual Diagnostic section for details)	All others	All others	All others	All others

Case of Use with SAFE Power Source for Valve Control

The P2M Industrial Ethernet 24 DO nodes can support a SAFE OSSD power source for valve control (Aux + / Aux -). It can also be connected in both PP or PM mode.

For further details, please refer to the Ethernet node user manual available from the product web page:

- www.parker.com/pde/P2M_IE

Local and network diagnostic functions

Local diagnostic

The P2M Industrial Ethernet node offers a local diagnostic via 7 LED's. Pls refer to user manual with interpretation given by this table.

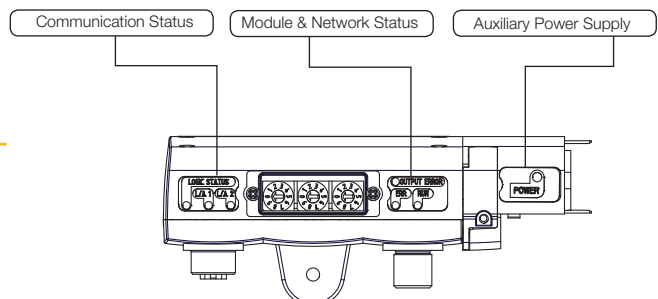
Network diagnostic

The P2M Industrial Ethernet node offers additional useful module status information:

- Pilot overload or short circuit
- Auxiliary Voltage out of tolerance
- Cycle counter for every pilot
- Module temperature
- ...

For deeper information on product technical information and a complete interpretation of node diagnostic functionalities, please refer to the User Manual available from the product web page:

www.parker.com/pde/P2M_IE



EtherNet/IP™

PROFI
INDUSTRIAL ETHERNET
NET

Modbus

EtherCAT®

ETHERNET
POWERLINK

Industrial Ethernet Lite Node connections and diagnostic functions

Ethernet and Power Connections

Network Communication Ports:

2 x Standard RJ45 Female connectors

Usage of standard manufactured cables available from your usual electrical supplier is recommended.

Power Supply:

Standard 3-Pin' Male Connector - 3,81 mm pitch

Working mode selector:

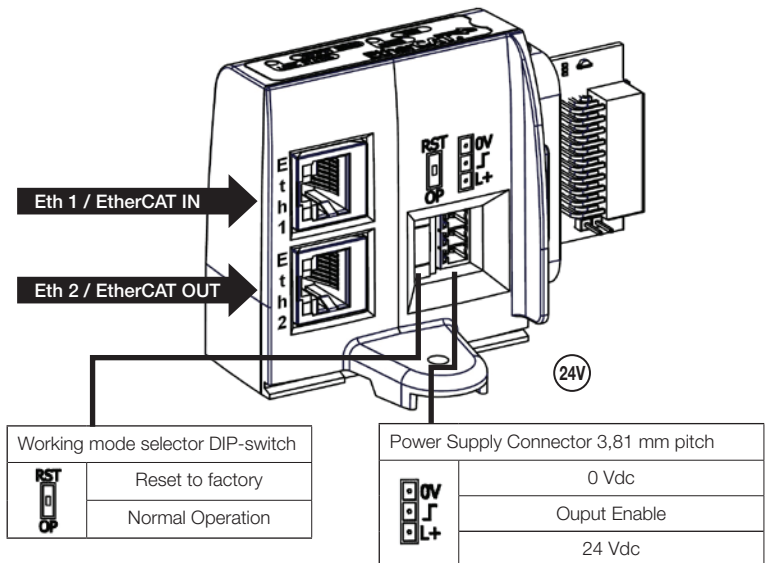
DIP-switch

Configuration Files

The configuration files can be download from the product web page: www.parker.com/pde/P2M_IE

IP Address Setting

For both Profinet IO and EtherNet/IP protocols, the P2M Lite 24DO Node is by default in DHCP mode. The module must be assigned to a static IP-Address in order to be controlled via network. Please, refer to the user manual for IP-Address assignment process.



Local and Network diagnostic functions

Local diagnostic

The P2M Lite 24DO node offers a local diagnostic via 9 LED's. Please refer to user manual with interpretation table.

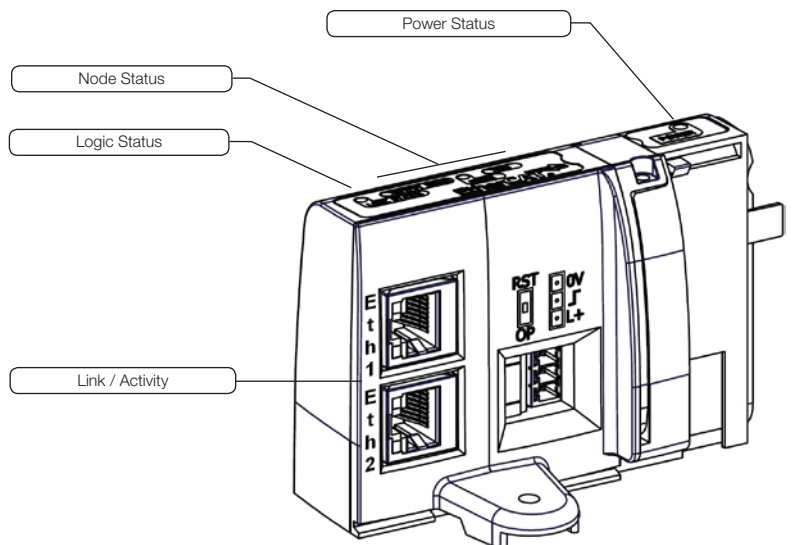
Network diagnostic

The P2M Lite 24DO Node offers additional useful module status information:

- Pilot overload or short circuit
- Power Voltage out of tolerance
- Cycle counter for every pilot
- Module temperature
- ...

For detailed technical information on the P2M Lite 24DO Node and a complete interpretation of node's diagnostic functionalities, please refer to the User Manual available from the product web page:

www.parker.com/pde/P2M_IE



EtherNet/IP™

**PROFI®
INDUSTRIAL ETHERNET
NET**

EtherCAT®

IO-Link module connection and diagnostic functions



IO-Link module connection

Standard male M12 – type A

Usage of standard manufactured cables available from your usual electrical supplier is recommended.

Note: Auxiliary power for solenoids can be wired separately allowing users to turn outputs off while the communications remains active.

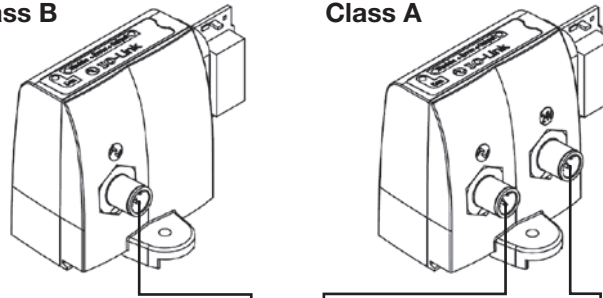
Configuration

IODD file can be downloaded from IODD Finder or the Moduflex web site:

<https://ioddfinder.io-link.com>
www.parker.com/pde/io-link

Class B

Class A



Legend

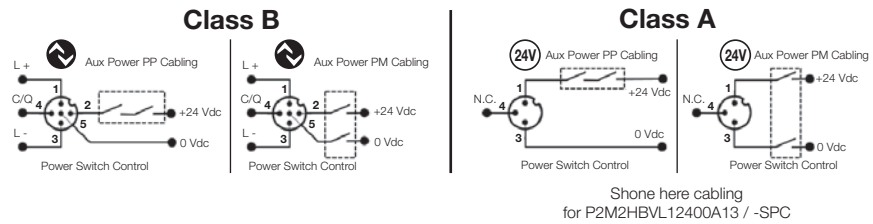
Symbol	Description
L+	IO-Link Power Supply "+"
L-	IO-Link Power Supply "-"
C/Q	IO-Link communication
Aux +	Auxiliary Power Supply 24 Vdc
Aux -	Auxiliary Power Supply 0 Vdc

M12 Pin's	Class A		
	3 Pin's	P2M...A13	P2M...A42
1	Aux +	Not used	Not used
2	-	-	Aux -
3	Aux -	Aux -	Not used
4	n.c.	Aux +	Aux +
5	-	-	Not used

Case of use with SAFE cabling

The Moduflex IO-Link Module can be powered from a 24Vdc auxiliary source in PP or PM mode as grounds are isolated.

IO-Link nodes Class A & B -SPC version are compatible with SAFE OSSD power source for valve control (Aux + / Aux -). For further details, please refer to the user manual N. 30048690201W05.



IO-Link module diagnostic functions

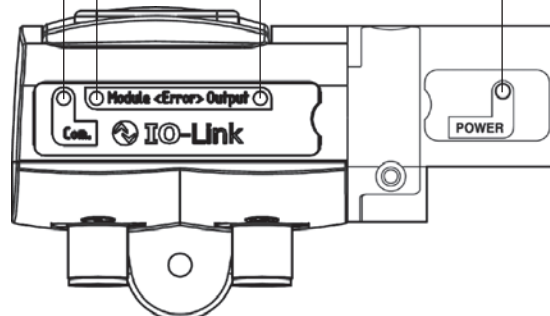
The P2M IO-Link node offers additional useful module status information:

- Pilot overload or short circuit
- Auxiliary Voltage out of tolerance
- Cycle counter for every pilot
- Module temperature

For deeper information on product technical information and node diagnostic functionalities, please refer to the User Manual available from the product web page:

www.parker.com/pde/io-link

COM Green LED			Module -Error Red LED			Error - Output Red LED			POWER Green LED		
LED Status	Description	Solving	LED Status	Description	Solving	LED Status	Description	Solving	LED Status	Description	Solving
OFF	IO-Link L+ / L- not powered	Check connection	OFF	Standard mode	NA	OFF	Standard mode	NA	OFF	AUX power failure	Check Auxiliary Power Supply
ON	IO-Link L+ / L- powered IO mode	Set IO-Link mode in IO-Link master	ON	24 Vdc AUX power missing or any active malfunction	Check power supply or change module	ON	Any driver error (overload, over temperature, etc.)	Fix solenoid issue then acknowledge error	ON	Standard	NA
Blinking	IO-Link communication active	NA							Blinking	Aux Power is out of range, alarm level	Check Auxiliary Power Supply



Moduflex Valve System



V series

Integrated connection industrial comms or multi-connector valve island



T series

Individual connector valve islands Solenoid clip or lockable connector or remote air pilot



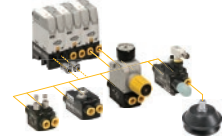
S series

Stand alone valves Solenoid clip or lockable connector or remote air pilot



P series

Peripheral modules Flow control, check valves, pressure regulator, vacuum



1

Industrial communication node head module

Protocol	IO-Link	IP65	Nb of DO's	
			Class A - Power 1 - 3	24 DO* P2M2HBVL12400A13 / -SPC
Industrial Ethernet <td rowspan="3">IP20</td> <td rowspan="3">IP65</td> <td>Class A - Power 4 - 2</td> <td>24 DO* P2M2HBVL12400A42 / -SPC</td>	IP20	IP65	Class A - Power 4 - 2	24 DO* P2M2HBVL12400A42 / -SPC
			Class A - Power 4 - 3	24 DO* P2M2HBVL12400A43 / -SPC
			Class B - Power 2 - 5	24 DO* P2M2HBVL12400B25 / -SPC
Industrial Ethernet	IP65	IP65	Prolinet IO	24 DO* P2M2HBVN12400RJ
			EtherNet/IP	24 DO* P2M2HBVE12400RJ
			EtherCAT	24 DO* P2M2HBVT12400RJ
			Prolinet IO	24 DO* P2M2HBVN12400
			EtherNet/IP	24 DO* P2M2HBVE12400
			EtherCAT	24 DO* P2M2HBVT12400
			Powerlink	24 DO* P2M2HBVM12400
Modbus TCP/IP	24 DO* P2M2HBVM12400			
CC-Link IE	24 DO* Coming soon			

* Only the first 19 DO usable with Moduflex Valve

Electrical multi-connector head module

Description	Protection	Cable length	P2M2HEV0A
Guillotine type	IP65	Multi-connection head module	P2M2HEV0A
		Guillotine connector with flying leads multi-cable	P2M2HEV0A
		2 m	P2M2HEV0A
Standard Sub-D 25 type	IP65	Multi-connection head module	P2M2HEV0D
		Sub-D 25 connector with flying leads multi-cable	P2M2HEV0D
		3 m	P2M2HEV0D
		9 m	P2M2HEV0D

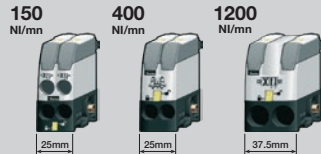
Island head and intermediate module sets

Description	Size 2	
	V series	T series
Valve island pneumatic head and tail module set	P2M2HXT01	P2M2HXT01
Valve island intermediate supply module with a set of 4 configuration plates	P2M2BXV0A	P2M2BXT0A

Electrical connectors

Description	Connector type	Cable length		
M8 lockable connector	M8 / 2 x Flying leads	2 m	P8LS08L226C	
		5 m	P8LS08L526C	
		9 m	P8LS08L926C	
Clip connector - IP40	1 x Clip connector	1 m	P8LW021C	
		2 x Clip connectors	1 m	P8LW021C02
		4 x Clip connectors	1 m	P8LW021C04
		8 x Clip connector	1 m	P8LW021C08
		1 flying lead per connector	1 m	P8CS0803J
Straight cable quick connect to thread connector, IP67 protected	M8		P8CS0803J	
		M12	P8CS1204J	
		M12 Male - 2 x M12 Female	P8CSY1212A	

2



Protection	Size 1					Size 2					
	IP65	IP67	IP40	T	S	IP65	IP67	IP40	T	S	
4/2		P2M1V4ES2CV	P2M1T4ES2C	P2M1S4ES2C	P2M1T4ES2CW	P2M1S4ES2CW	P2M2V4ES2CV	P2M2T4ES2C	P2M2S4ES2C	P2M2T4ES2CW	P2M2S4ES2CW
		P2M1V4EE2CV	P2M1T4EE2C	P2M1S4EE2C	P2M1T4EE2CW	P2M1S4EE2CW	P2M2V4EE2CV	P2M2T4EE2C	P2M2S4EE2C	P2M2T4EE2CW	P2M2S4EE2CW
		P2M1VJEE2CV	P2M1TJEE2C	P2M1SJEE2C	P2M1TJEE2CW	P2M1SJEE2CW	P2M2VJEE2CV	P2M2TJEE2C	P2M2SJEE2C	P2M2TJEE2CW	P2M2SJEE2CW
3/2		P2M1VDEE2CV	P2M1TDEE2C	P2M1SDEE2C	P2M1TDEE2CW	P2M1SDEE2CW	P2M2VDEE2CV	P2M2TDEE2C	P2M2SDEE2C	P2M2TDEE2CW	P2M2SDEE2CW
		P2M1VCEE2CV	P2M1TCEE2C	P2M1SCEE2C	P2M1TCEE2CW	P2M1SCEE2CW	P2M2VCEE2CV	P2M2TCEE2C	P2M2SCEE2C	P2M2TCEE2CW	P2M2SCEE2CW
		P2M1VEE2CV	P2M1TEE2C	P2M1SEEE2C	P2M1TEE2CW	P2M1SEEE2CW	P2M2VEE2CV	P2M2TEE2C	P2M2SEEE2C	P2M2TEE2CW	P2M2SEEE2CW
		P2M1V3ES2CV	P2M1T3ES2C	P2M1S3ES2C	P2M1T3ES2CW	P2M1S3ES2CW	P2M2V3ES2CV	P2M2T3ES2C	P2M2S3ES2C	P2M2T3ES2CW	P2M2S3ES2CW

3

Optimal nominal section for a full flow with appropriate fitting

3 valve sizes lead to a global choice of tube sizes, thus covering all usual applications

Size 2	Size 1	Size 01
Nominal section 40 mm ² Qn 1000 Nl/min* P=10 bar	Nominal section 10 mm ² Qn 400 Nl/min* P=10 bar	Nominal section 6 mm ² Qn 150 Nl/min* P=10 bar
Tube OD: 10 mm, 8 mm, 6 mm, 4 mm, 3 mm, 2.5 mm	Tube OD: 4 mm, 3 mm, 2.5 mm, 2 mm, 1.5 mm	Tube OD: 2 mm, 1.5 mm, 1 mm, 0.8 mm, 0.6 mm, 0.5 mm

Adaptive pneumatic connection

Valve outputs are equipped with clip-on push-in tube connectors with a choice of straight or elbow in different sizes

Clip-On pneumatic connectors

Connector type	Tube OD	Size 1	Size 2
Straight connector	G1/8	FMDG1-1	
	4mm	FMD04-1	
	6mm	FMD06-1	FMD06-2
	8mm		FMD08-2
	10mm		FMD10-2
	12mm		FMD12-2
Elbow connector	G1/8	CMDG1-1	
	4mm	CMD04-1	
	6mm	CMD06-1	CMD06-2
	8mm		CMD08-2
	10mm		CMD10-2
	12mm		CMD12-2
Double male union		HMDXX1	HMDXX2
Silencer		MMDVA1	MMDVA2
Plug		PMDXX1	PMDXX2

4

Basic peripheral modules (without connector)	Size 1	Size 2		
	Dual flow control	P2M1PXFA	P2M2PXFA	
Dual P.O. check valve	P2M1PXCA	P2M2PXCA		
Pressure regulator	Pressure range	0 - 2 bar	P2M1PXSR	P2M2PXSR
		Gauge	0 - 4 bar	P2M1PXST
	Without	0 - 4 bar	P2M1PXSM	P2M2PXSM
		0 - 7 bar	P2M1PXSL	P2M2PXSL
	With	0 - 11 bar	P2M1PXSG	P2M2PXSG
		Without	P2M1PXSN	P2M2PXSN
90% Vacuum generator	P2M1PXVA			

Clip-on accessories

Description	Connection	Pressure range	
Clip-on pressure gauge for pressure regulator modules, size 1 or size 2	Clip-on	0 to 4 bar	P2M1K0GT
		0 - 7 bar	P2M1K0GL
		0 - 11 bar	P2M1K0GN
Analog (1 - 5 Vdc) Vacuum Sensor	4 mm tube	0 to -1 bar	MPS-V8T4-AG
	6 mm tube	0 to -1 bar	MPS-V8T-AG
Dig. PNP / Ana (4 - 20 mA) Vacuum Sensor 15 cm cable - M8 4 pin's connector	G1/8" male	0 to -1 bar	MPS-V34G-PCI

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European Product Information Centre

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