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Micro-Moduflex

Pneumatic micro-valve
modular islands

Edition : January 2008 / Catalogue no. PDE2588TCUK-ev



ENGINEERING YOUR SUCCESS.

Micro-Moduflex Valve System

The Micro-Moduflex valve islands are an innovation in the field of pneumatic micro-cylinder control :

- Compact, flexible, expandable, simple.
- A "universal" module for all required functions.
- All types of electrical controls : individual connectors, multi-connectors or a field bus.

A total solution to electro-pneumatic automation needs.



T series islands:
Individual connectors

T series

A small group of cylinders only need a short valve island.

In that case, it is simple and economic to use individual electrical connectors. The «IP67» clip-on connectors enable the valve island to be installed close to the actuators.



V series islands:
Integrated connections with multi-connector valve island head module

V series

When the module quantity increases, the V series with an integrated electrical connectors becomes necessary. The valve island can be connected to the PLC through a multi-wire cable. Equipped with an IP65 guillotine or a standard Sub-D 25 connector, the valve island is instantly connected.



V series islands :
Integrated connections with field bus communication module

V series

Compatible with all common field bus protocols, the V series, equipped with a field bus communication module, may easily be connected to any network. «IP65» protected, with up to 16 solenoid pilots (depending on protocol), a valve island may be located close to the actuators.

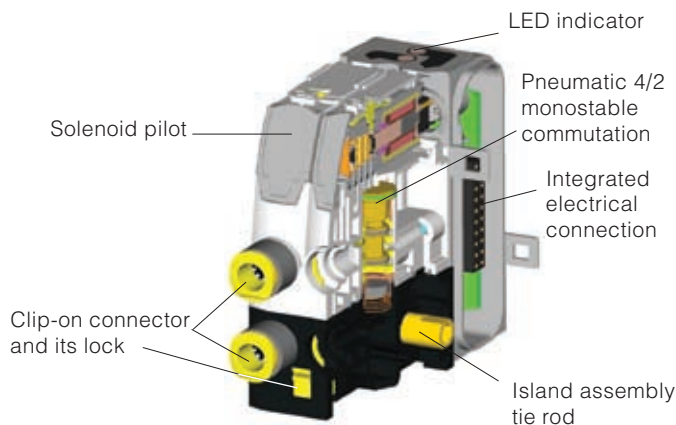
Micro-Moduflex Valve System

Micro-Moduflex valve technology : the dual 4/2 single solenoid

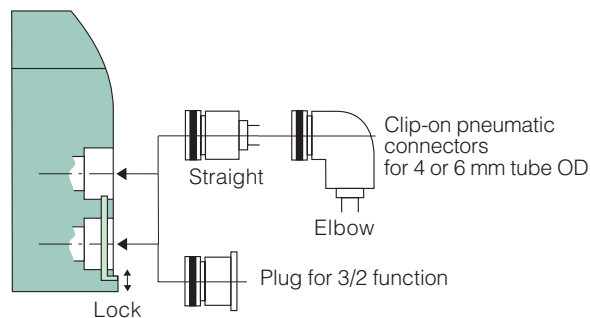
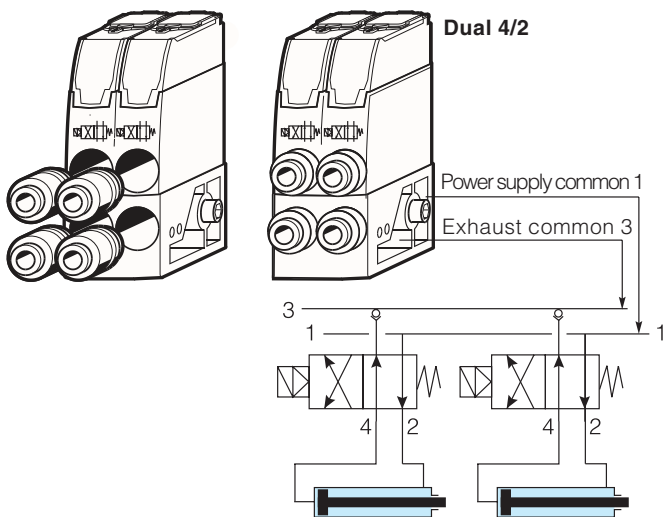
Micro-Moduflex makes benefits from Parker's long experience in differents technologies :

- auto-lubricated seals,
- pneumatic and electrical connections,
- industrial automation,
- automated production.

Micro-Moduflex resulted from the combination of such experiences, and is a significant technological advance in the electro-pneumatic automation field.



Only one "universal" module for all applications

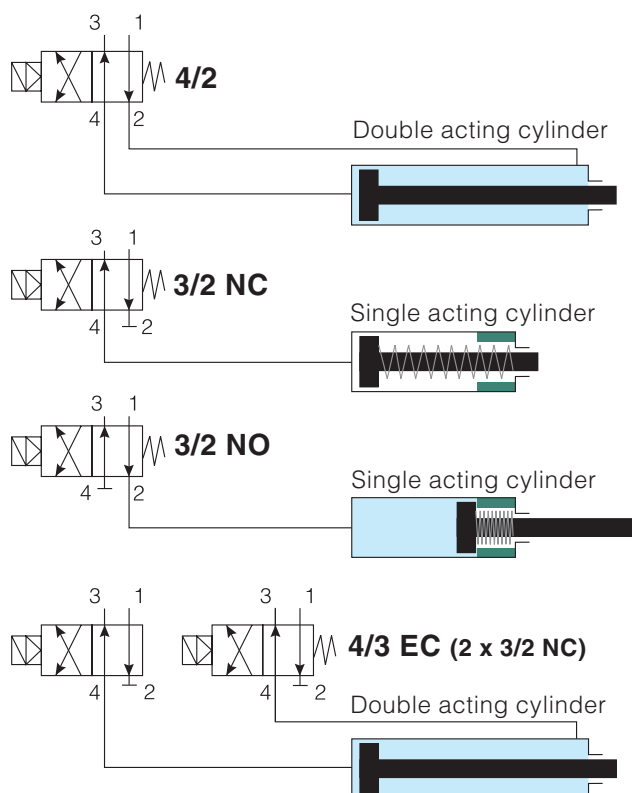


Simplicity : all islands are built with identical modules

The basic function of this dual 4/2 single solenoid module equipped with 4 clip-on pneumatic connectors enables independent piloting of 2 double acting micro-cylinders.

Additional to this initial function, the choice of clip-on connectors and plugs enables the module to be configured for others pneumatic functions required by the applications :

- Function 4/2 single solenoid for a double acting actuators control
- Function 3/2 NC or NO for a single acting actuators control
- Dual associated function 3/2 NC or NO make a 4/3 function
- Tube OD 4 or 6 mm depending on the required flow rate, straight or elbow connectors



Micro-Moduflex Valve System

Pneumatics specifications

■ General specifications

Fluid	Air, inert gas, filtered 40 µ ^① , dry ^② or lubricated ^③		
Flow at 6 bar	Q max : 275 NI/mn		
Operating pressure	- 0.9 to 8 bar		
Piloting pressure	3 to 8 bar	For operating pressure below, use external pilot supply available on all head modules	
Pilot supply	Mixed internal / external		
Exhaust collection	All exhausts are collectable, including solenoid pilot exhaust		
Life Cycle	50 million operations (with dry air, 3 Hz, 20°C, 6 bar)		
Operating temperatures	- 15°C to 60°C (with dry air, 3 Hz, 20°C, 6 bar)		
Stocking temperatures	- 40° C to 70° C		
Vibrations resistance	According to IEC 68 - 2 - 6	2G	2 to 150 Hz
Impact resistance	According to IEC 68 - 2 - 27	15G	11 ms

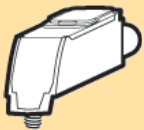
① class 5 according to ISO 8573-1

② class 4 according to ISO 8573-1

③ with lubricated air, we recommend external pilot supply with non lubricated air

■ Solenoid pilot specifications

24 V DC solenoid pilot common to all the Moduflex System



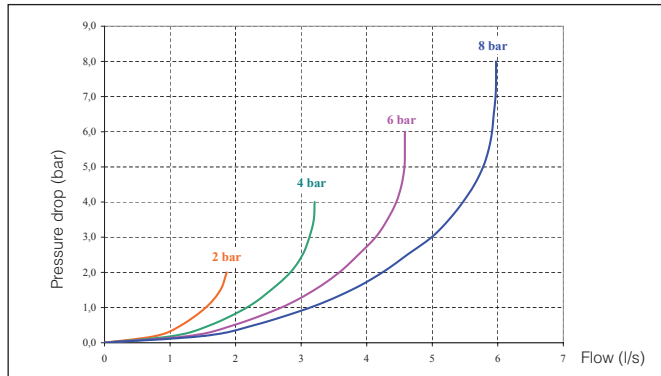
Rated coil voltage	24 V DC	
Allowable voltage fluctuation	-15% to +10% of rated voltage at 20°C	
Electrical connection	Polarity insensitive : PNP and NPN compatible	
Coil insulation type	Class B	
Power consumption	1 W (42 mA)	
Manual override	Locking or non-locking, isolated if required	
Response time of the complete valve	Set : 8 ms Reset : 14 ms	According to ISO 12238
Duty factor	100 %	
Dust and water protection	According to EN 60 529, NEMA4	T serie: IP 67 V serie V: IP 65 *

* except sub-D 25 connection : IP40

Micro-Moduflex Valve System

Flow specifications

According to ISO 6358
All pressures are effective pressures.



Operating pressure :	- 0.9 to 8 bar
Operating temperature :	- 15°C to + 60°C
Standard island	0°C to + 55°C
Field bus island	
Flow (according to ISO 6358)	c = 0.65 NI/s x bar b = 0.27 Qn = 2.7 l/mn Qmax = 4.6 l/mn

Materials

Body	Polyamid
Spool	Brass
Spool seal	Nitrile
Pilot seals	Polyurethane
Subbase seal	Nitrile
Sleeve	Brass
P. O. check valve	Polyurethane
Spring	Stainless steel
Assembly screw	Galvanised steel
Subbase	Polyamid
Clip	Polyamid
Plugs	Aluminium

Certifications

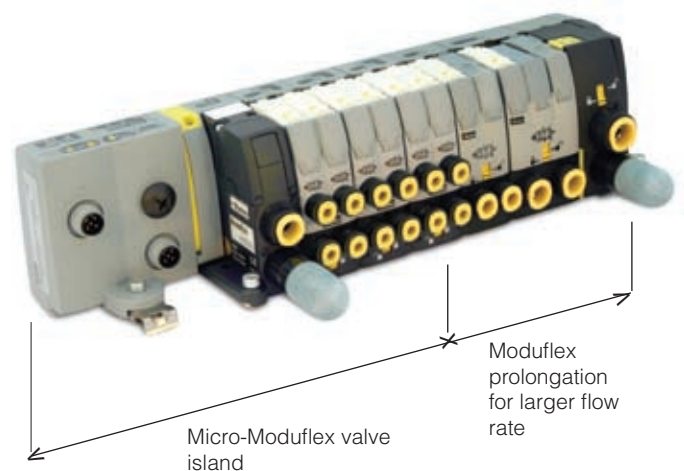
EMC / CE mark.	According to EN 61 000-6-2
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Micro-Moduflex valve island Moduflex completed

Depending on the application, above characteristics may not be sufficient for some actuators. In that case, and for all cylinders over 25 mm diameter, Micro-moduflex island may be completed with Moduflex Valve modules size 1 or size 2, 100% compatible and with a larger flow rate.

Module	Flow Qmax	Connection tube to the cylinder
Micro-Moduflex	275 NI/mn	Ø ext. 4 or 6 mm
Moduflex size 1*	510 NI/mn	Ø ext. 6, 8 or 10 mm
Moduflex size 2*	1340 NI/mn	Ø ext. 6, 8 or 10 mm

* For all complementary information, please report to the specific technical leaflet.

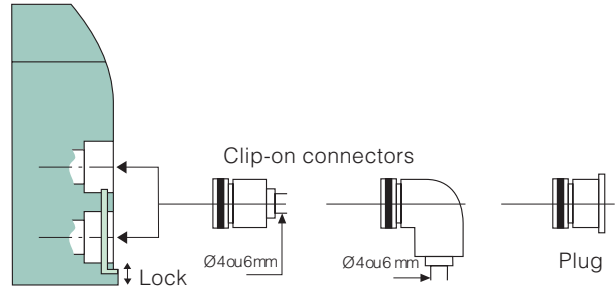
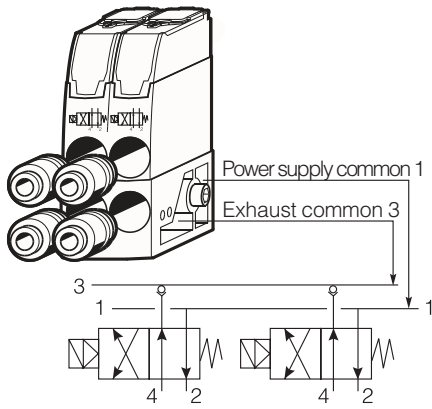


Micro-Moduflex Valve System

Dual 4/2 Valve module multi-function with clip-on connectors

For each application, the required valve functions are obtained from this unique module :

1. Valve modules are associated into a compact islands with power supply and exhaust common, individual electrical connectors, or integrated multi-connections with multiconnector or field bus communication module.
2. With the choice of diameter and form (straight or elbow), the clip-on pneumatic connectors enable the actuator connection to be oriented to suit the application and the tube OD to be optimised (4 or 6 mm).



Valve island module association

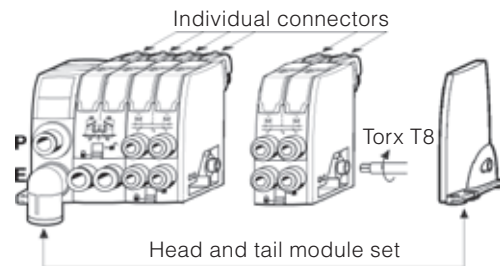
Individual connectors islands :

T series

Island assembly with a Torx T8 screw integrated into each module.

The island head module receives the pneumatic power supply P and collects the exhaust E. The tail plate closes P and E commons.

In this series, electrical connectors are individuals (see page 8).



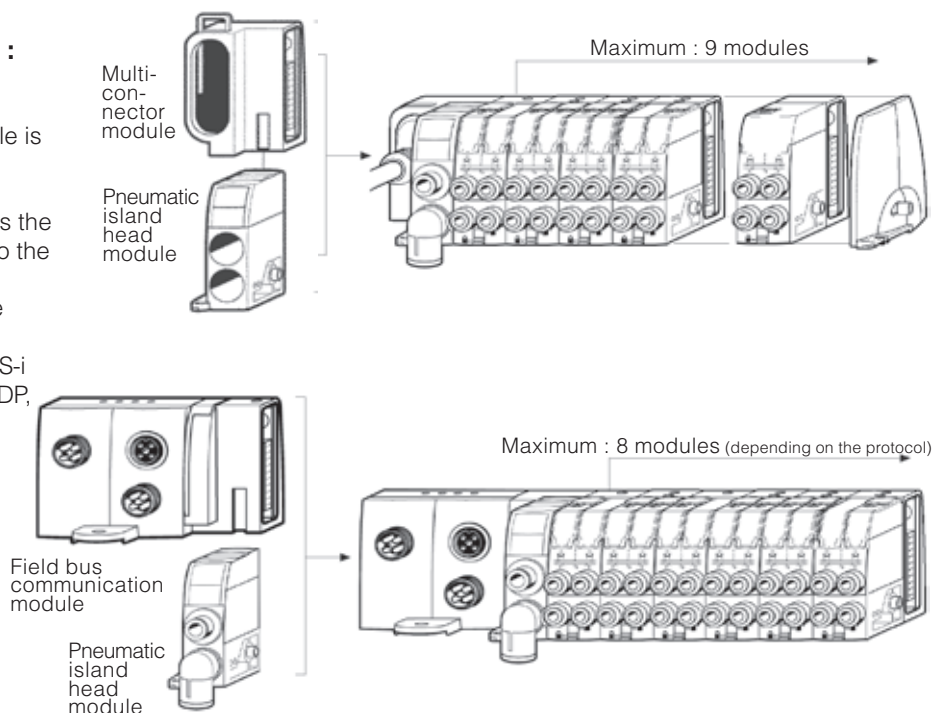
Integrated multi-connection islands :

V series

At the island's head, an electrical module is clipped on the pneumatic head module.

The island assembly automatically builds the integrated electrical circuit connected to the head module that can be :

- A multi-connector either guillotine type (IP65) or Sub-D25 type (IP40)
- Or a field bus communication module AS-i (standard or extended version), Profibus DP, DeviceNet, CANopen or InterBus-S.

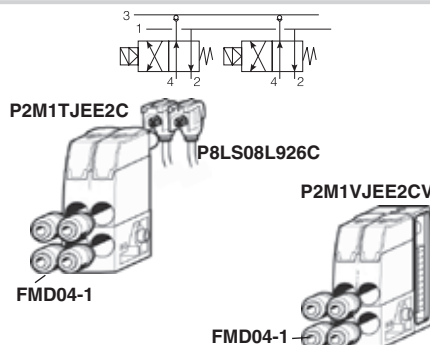


Micro-Moduflex Valve System

Basic module (without connector) and corresponding clip-on pneumatic connectors

Dual 4/2 multi-function valve module

Description	Weight (g)	Order code
Module for T series island with individual connectors	88	P2M1TJEE2C *
Module for V series island with integrated connection	114	P2M1VJEE2CV
* Pneumatic pilot version (on request)		P2M1TJPP



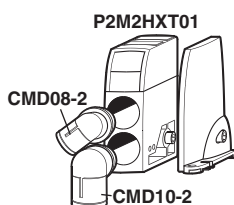
Pneumatic clip-on connectors

Description	Tube OD*	Weight (g)	Order code
Straight	4 mm	2	FMD04-1
	6 mm	3	FMD06-1
Elbow	4 mm	5	CMD04-1
	6 mm	3	CMD06-1
Plug		3	PMDXX1

* Pack quantity : 10

Valve island head and tail module set

Description	Weight (g)	Order code
Pneumatic head and tail Module set	64	P2M2HXT01



Indicates stocked product.

Pneumatic clip-on connectors

Description	Tube OD*	Weight (g)	Order code
Straight	6 mm	3	FMD06-2
	8 mm	4	FMD08-2
	10 mm	5	FMD10-2
Elbow	6 mm	5	CMD06-2
	8 mm	6	CMD08-2
	10 mm	7	CMD10-2
Muffler		5	MMDVA2

* Pack quantity : 10

Complete modules (with connectors) : ordering guide

Dual 4/2 multi-function valve module




P 2 M 1 V J E E 2 C V 0 1 F 6											
Series			Electrical connectors			Clip-on plugs			Pneumatic connectors		
T		Individual connector	0	T or V series, without cable		0	0 plug → dual 4/2		F4	Straight Ø 4 mm	
		Integrated connection	2	T series, 2 m cable		1	1 plug → 4/2 + 3/2 (NC or NO)		F6	Straight Ø 6 mm	
			5	T series, 5 m cable		2	2 plugs → dual 3/2 or single 4/2		C4	Elbow Ø 4 mm	
			9	T series, 9 m cable		3	3 plugs → single 3/2 (NF or NO)		C6	Elbow Ø 6 mm	

Head and tail module set



P 2 M 2 H X T 0 1 F 6 C 8												
Island head and tail module set				Pressure port connector				Exhaust port connector				
HXT01		Valve island pneumatic head and tail set		F6	Straight Ø 6 mm		C6	Elbow Ø 6 mm		F6	Straight Ø 6 mm	
				F8	Straight Ø 8 mm		C8	Elbow Ø 8 mm		F8	Straight Ø 8 mm	
				F0	Straight Ø 10 mm		C0	Elbow Ø 10 mm		F0	Straight Ø 10 mm	
				MM	Muffler					MM	Muffler	

Micro-Moduflex Valve System

T series valve island : individual electrical connectors





Description	Weight (g)	Order code
  <p>M8 connector with LED, voltage surge protection and flying lead cable IP67 protected</p>	2 m cable	62 P8LS08L226C
	5 m cable	155 P8LS08L526C
	9 m cable	280 P8LS08L926C
 <p>Quick connection connector Clip-on or screw IP67 protected</p>	M8	12 P8CS0803J
	M12	15 P8CS1204J


V series valve island : Electrical multi-connector head module

Description	Weight (g)	Order code
 <p>Electrical head module Guillotine type</p>	<p>P2M2HEV0A</p> <p>IP65 Guillotine type Multi-connector head module</p>	38 P2M2HEV0A
	<p>Connectors with flying leads multi-cable (Other length on request)</p>	<p>2 m cable 335 P8LMH20M2A</p> <p>5 m cable 802 P8LMH20M5A</p> <p>9 m cable 1425 P8LMH20M9A</p>
	<p>P8LMH20M2A</p>	
 <p>Electrical head module Sub-D 25 type</p>	<p>P2M2HEV0D</p> <p>Sub-S 25 standard multi-connector head module</p>	60 P2M2HEV0D
	<p>Sub-D 25 connectors with flying leads multi-cable</p>	<p>3 m cable 435 P8LMH25M3A</p>
	P8LMH25M3A	

V series valve island : Electrical field bus head modules for AS-i protocol



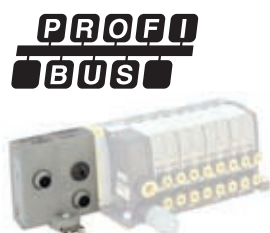
Description	Weight (g)	Order code
 <p>Standard AS-i protocol (up to 31 nodes)</p> <p>Electrical module for 8 outputs max.</p> <ul style="list-style-type: none"> V series island may have up to 8 solenoid pilots 2 nodes per module, 4I / 4O per node 	<p>Input connections</p>	
	No input	150 P2M2HBVA10800
	8 M8 inputs	200 P2M2HBVA10808A
	8 inputs on 4 M12	200 P2M2HBVA10808B
 <p>Electrical module for 4 outputs max.</p> <ul style="list-style-type: none"> V series island may have up to 4 solenoid pilots 1 node per module, 4I / 4O 	<p>Input connections</p>	
	No input	150 P2M2HBVA10400
	4 inputs on 4 M12	200 P2M2HBVA10404B
 <p>AS-i version 2.1 protocol (up to 62 nodes)</p> <p>Electrical module for 6 outputs max.</p> <ul style="list-style-type: none"> V series island may have up to 6 solenoid pilots 2 nodes per module, 4I / 3O per node 	<p>Input connections</p>	
	No input	150 P2M2HBVA20600
	8 M8 inputs	200 P2M2HBVA20608A
	8 inputs on 4 M12	200 P2M2HBVA20608B
 <p>AS-i head module accessories</p> <p>M12 cable with jack for addressing</p>	Length 1 m	100 P8LS12JACK

 Indicates stocked product.

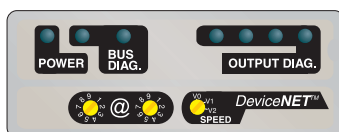
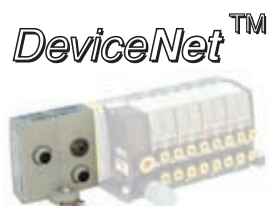
Micro-Moduflex Valve System

V series valve island : Electrical field bus head modules for device bus

Electrical modules for 16 outputs
(The V series modules may have up to 16 solenoid pilot valves)



Bus protocol	Weight (g)	Order code
Profibus DP	250	P2M2HBVP11600



Bus protocol	Weight (g)	Order code
DeviceNet	250	P2M2HBVD11600



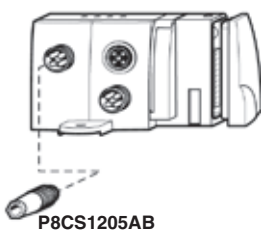
Bus protocol	Weight (g)	Order code
CANopen	250	P2M2HBVC11600



Bus protocol	Weight (g)	Order code
InterBus-S	300	P2M2HBVS11600

Device bus accessories

P2M2HBVP11600



	Bus protocol	Connector type	Weight (g)	Order code
Power supply female straight connector	Profibus DP InterBus-S	M12 type A	25	P8CS1205AA
	DeviceNet CANopen	M12 type B	25	P8CS1205AB

Note :
For field bus connections, use the standard cables and connectors available from your usual electrical supplier.

Line termination	Profibus DP	M12 type B	25	P8BPA00MB
	DeviceNet CANopen	M12 type A	25	P8BPA00MA

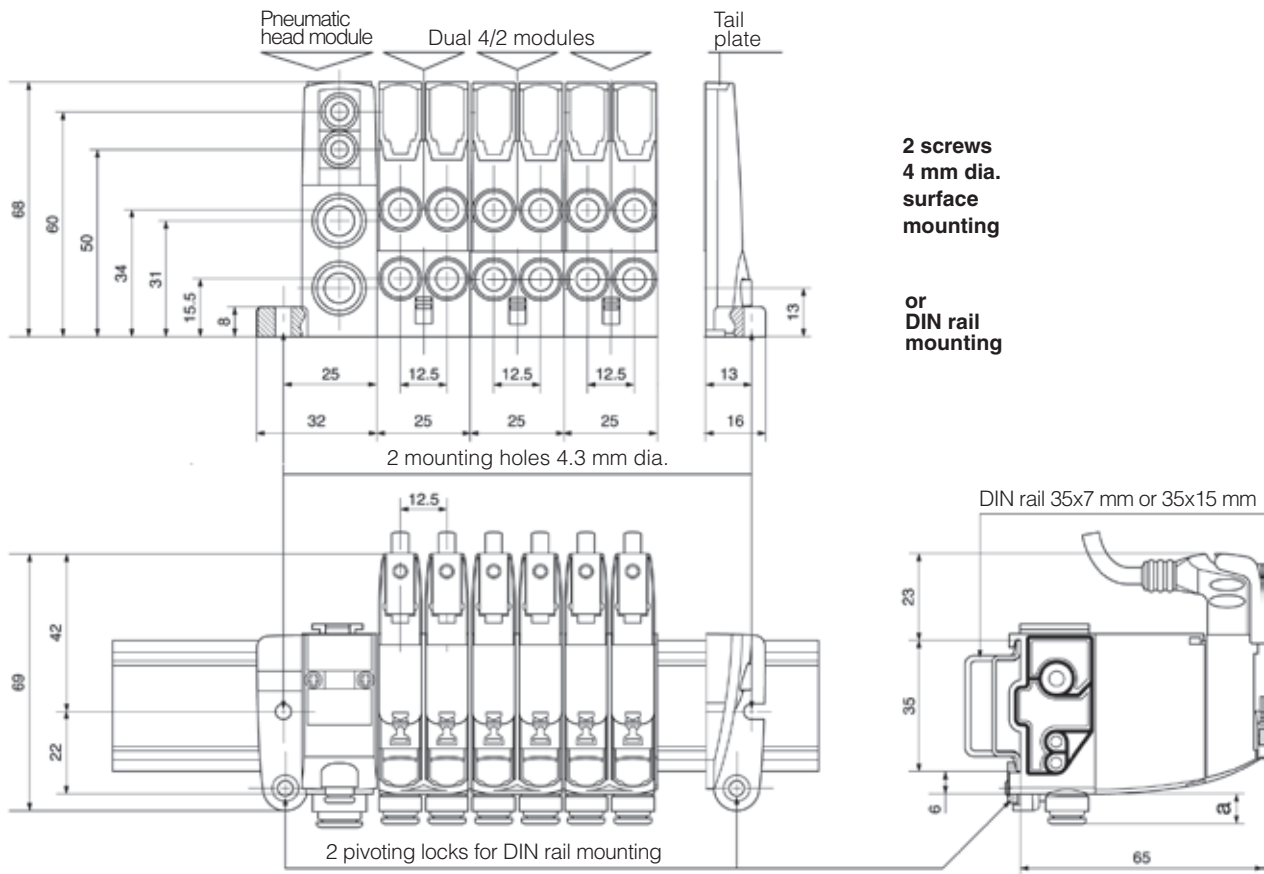
Disk for configuration files	Profibus DP DeviceNet CANopen		25	P8BPDISK
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Also available on :
<http://www.parker.com/moduflex>

Indicates stocked product.

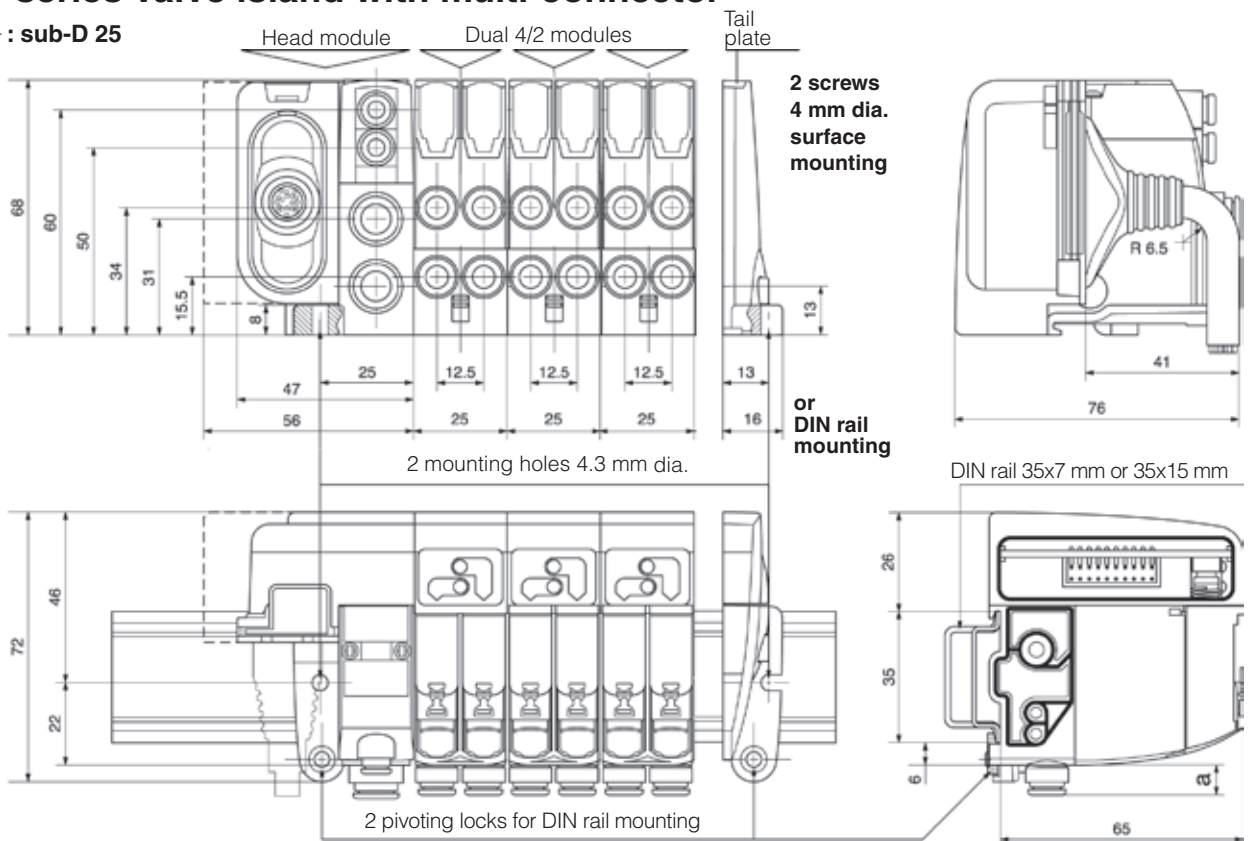
Micro-Moduflex Valve System - Dimensions

1. T series valve island with individual electrical connectors



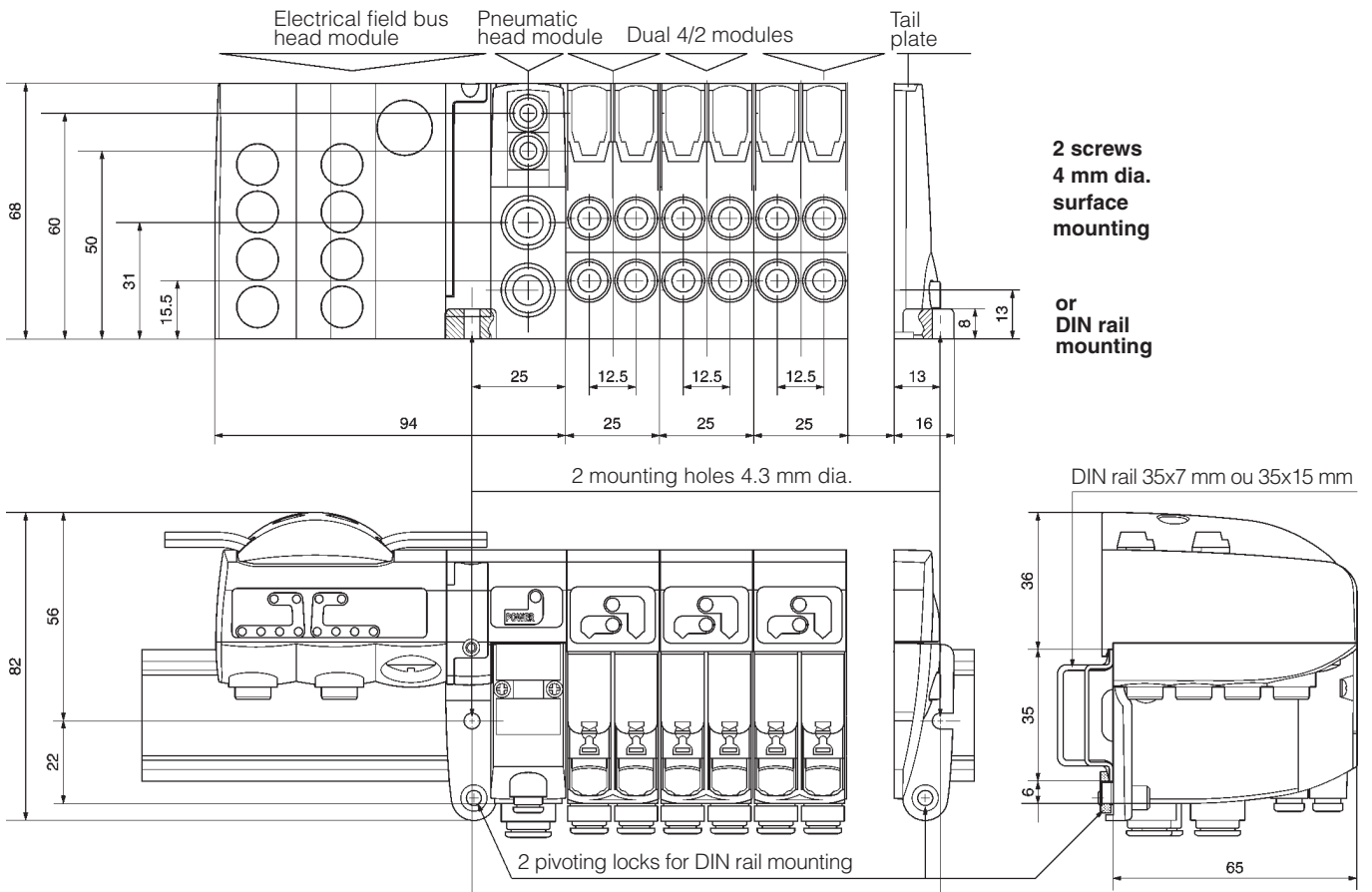
2. V series valve island with multi-connector

----- : sub-D 25

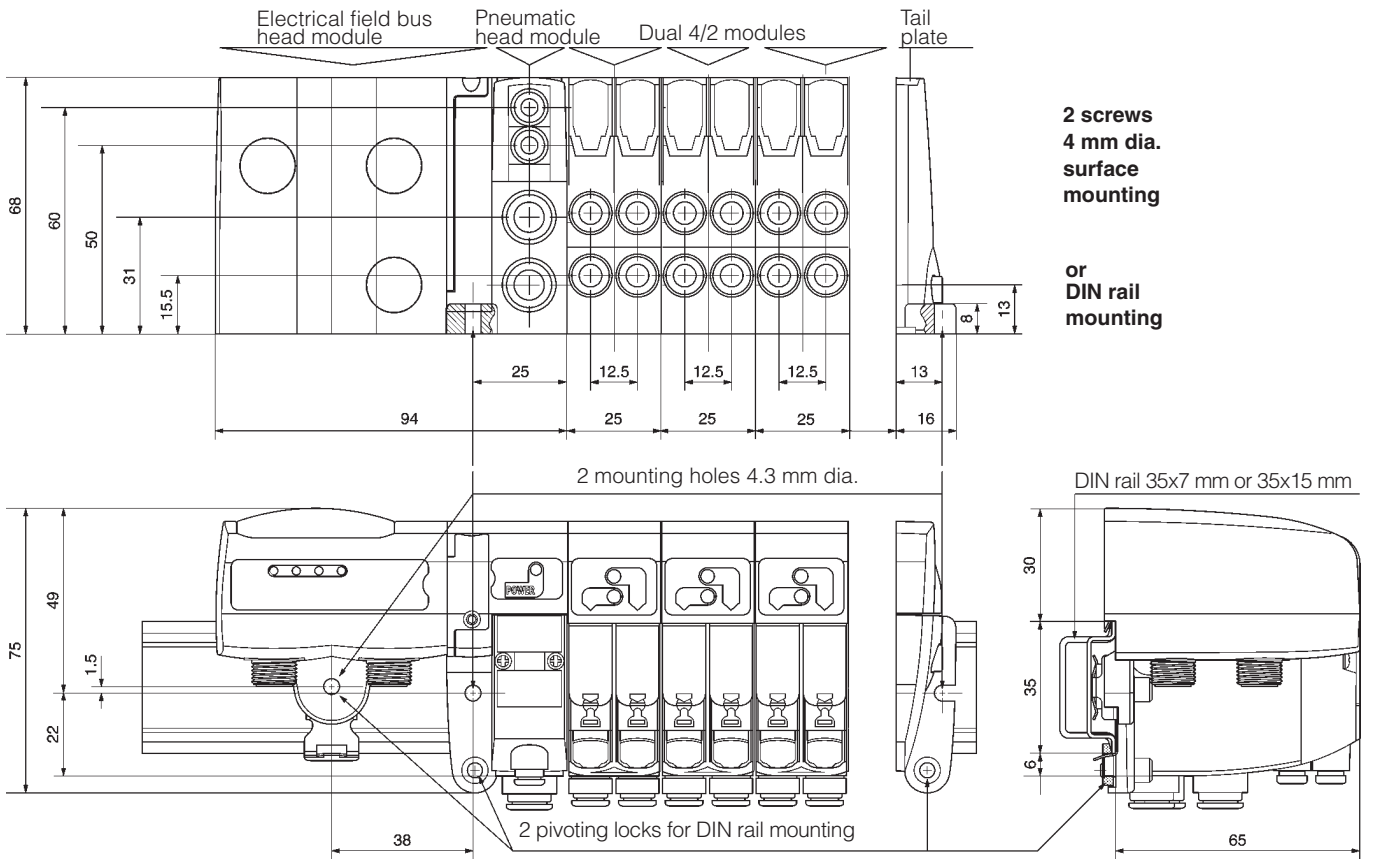


Micro-Moduflex Valve System - Dimensions

3. V series valve island with AS-i bus module



4. V series valve island with field bus module



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