

Summary

Valvetronic	4
Presentation	5
Introduction to bus	6-9
Productrange overview	10-11
Valvetronic Solstar	
Characteristics	12
Order codes	13
Valvetronic Interface 2000	
Characteristics	14
Order codes	15-16
Connection to bus : Interbus S, Profibus DP, DeviceNet	17
Connection to ASI bus	18
ASI inputs module	19
Valvetronic PVL-B10	
Characteristics	20
Order codes	21-23
Connection to bus : Interbus S, Profibus DP, DeviceNet, FIPIO	24-25
Connection to ASI bus	26-27
Valvetronic PVL-C10	
Characteristics	28
Order codes	29-30
Connection to ASI bus	32-33
Combination of PVL-B10 and PVL-C10	31
Direct acting solenoid valves 3/2 15 mm DIN 43650 form C	34-35
Connecting leads	36-37
Dimensions	
Solstar	38
Interface 2000 and ASI input connecting module	39
PVL-B10	40
PVL-C10	41-42

Valvetronic

Valvetronic is a global concept, including mechanical, electrical, and electronic technology, which enables the connection of a group of pneumatic valves to a control system by means of either a multiwire cable or a bus.

Valvetronic PVLC10

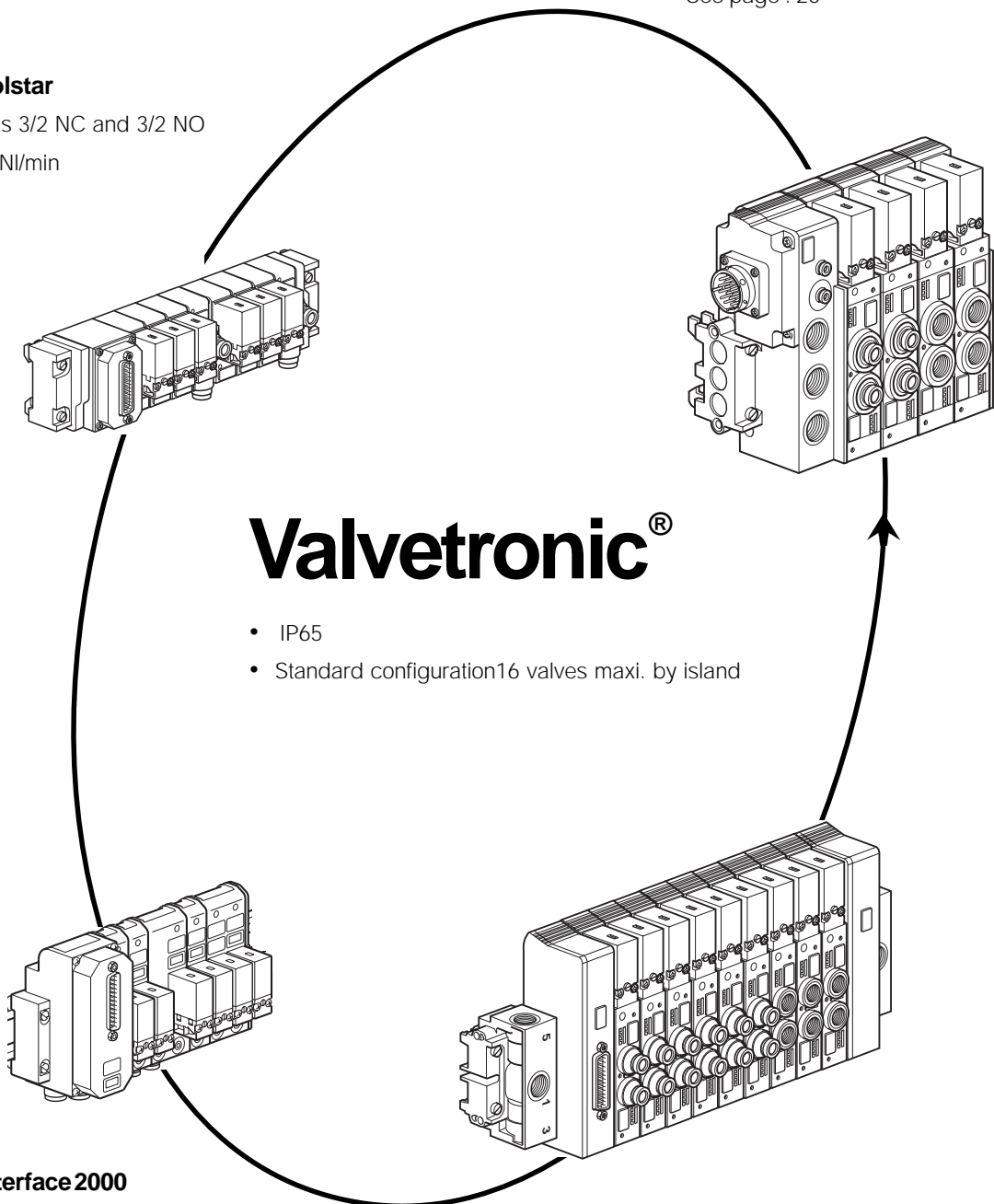
- Configurations 2 x 3/2, 5/2, 5/3
- Flow max 1800NI/min

See page : 20

Valvetronic Solstar

- Configurations 3/2 NC and 3/2 NO
- Flow max 50NI/min

See page : 12



Valvetronic Interface 2000

- Configurations 3/2 and 4/2
- Flow max 200NI/min

See page : 14

Valvetronic PVL-B10

- Configurations 2 x 3/2, 5/2, 5/3
- Flow max 900NI/min

See page : 26

Valvetronic® is a registered trademark of Parker Hannifin S.A.

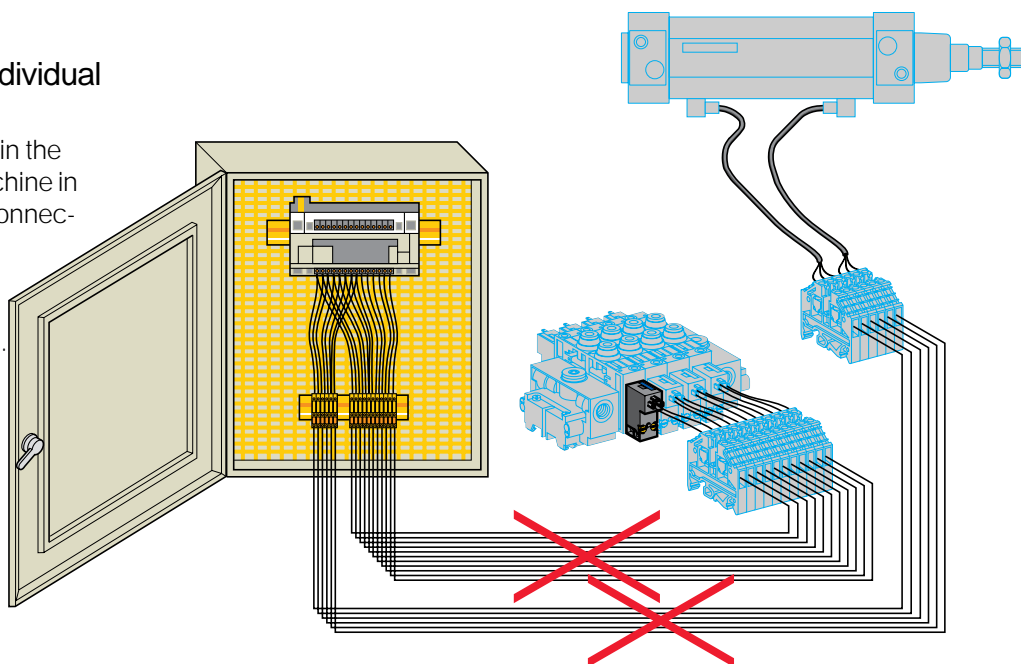
Valvetronic

Conventional solution

Multiple connection by individual wires

Use of a screw terminal block in the PLC enclosure and on the machine in order to wire all the electrical connections.

The fitter has to use terminal blocks for the link between all the common wires.

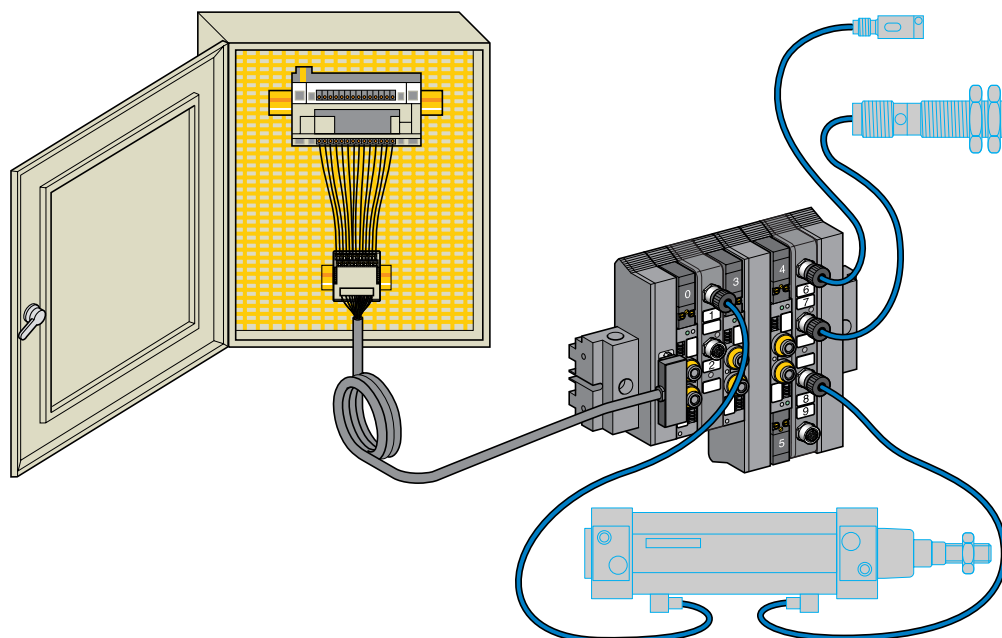


Valvetronic solution

Parallel wiring connection with centralised connector

Direct connection to the PLC, of a remote input or output device or on a special terminal block, with a multiwire cable.

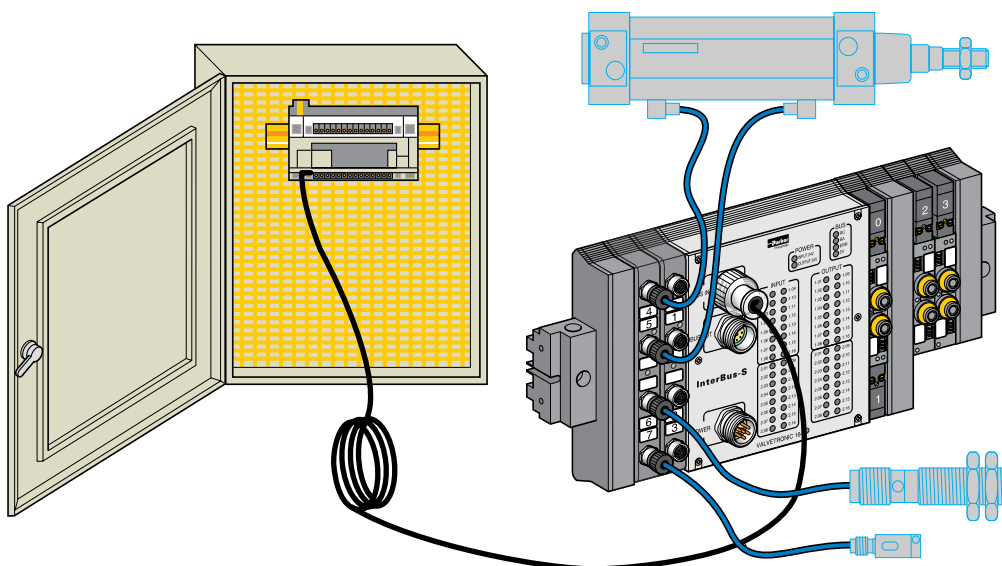
All electrical commons are prewired in the valve configuration.



Valvetronic solution

Bus connection

The connection may be further simplified by the use of bus. In this case, all the electrical information (Inputs and/ or Outputs) are coded on the wires of the physical layer of the bus.



Should I use Parallel Wiring or a Bus?

All processes whether continuous or repetitive require mechanical and systematic controls. Communication between these two disciplines is essential. Traditionally, this has been made by electric cables connecting each device, which would have meant 2 or 3 connections to control each action.

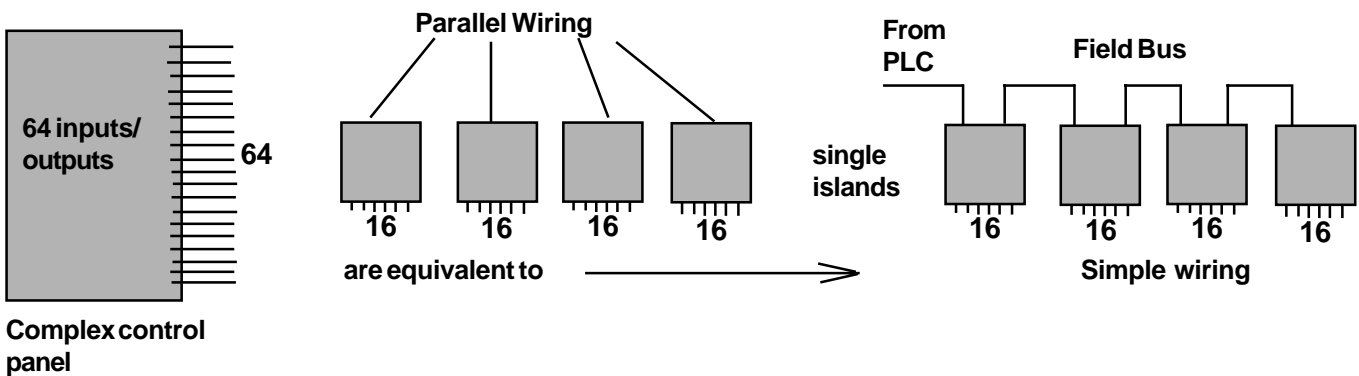
The more complex the control system becomes the more expensive the wiring becomes, documentation, identification, elimination of errors through testing, all add to the expense. Modification and extension to the wiring is difficult if not impossible which adds greatly to the overall cost of the control system.

The purpose of parallel wiring or bus is to simplify the connection between the controller and each device.

Field of application of parallel wiring and bus

Using parallel wiring with valve islands would be ideal for the smaller application where the close proximity of the valve island and sensors can be maintained.

Bus is more suitable where several valve islands and many devices are connected, typically over greater distances, additional automation products such as machine diagnostics, speed drivers, analogue sensors etc. can also be included.



Conclusion

Manufacturers of automation equipment supply a whole range of input/output modules which communicate via a field bus with the control system.

Our solution is based on a electropneumatic valve island which is able to communicate with these bus systems.

The major advantages are reduced and easier wiring from the valves to the input/output modules generating a cost saving to the end user.

Which bus to choose ?

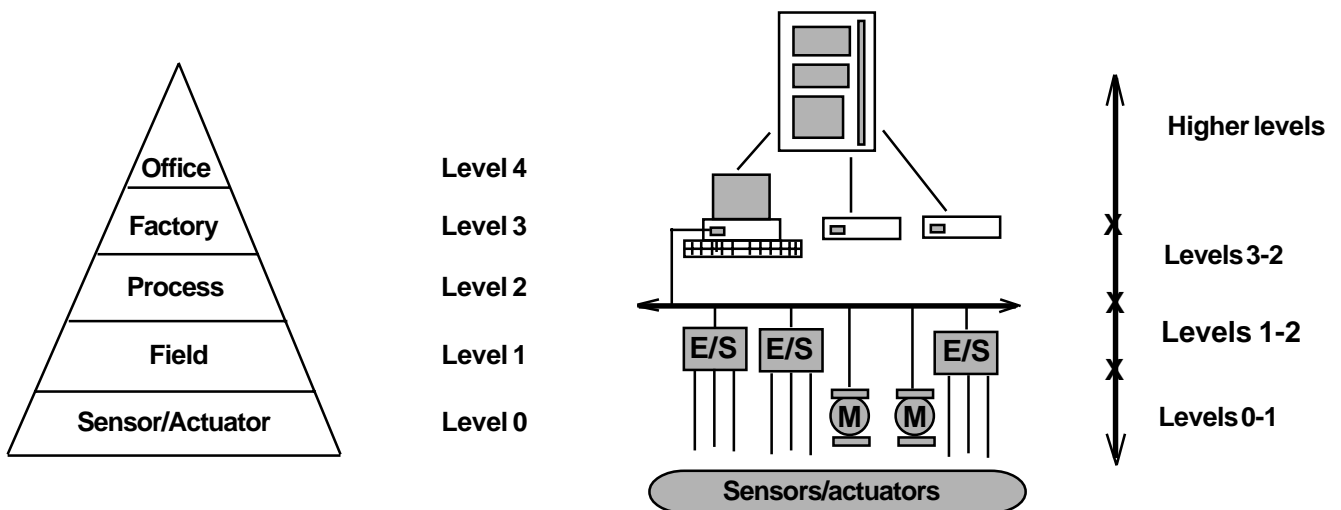
The need to communicate is not new in the work place, and local networks directly derived from the data processing network system have become more common place in industrial applications.

But needs vary considerably. Functions implemented vary from supervision where a response time in the order of a second is acceptable, to remote control (job coordi-

nation) where a tenth of a second is sufficient and complex data acquisition for which a response time requirement of real time (10 ms) is indispensable.

The information transmitted also varies: from file transfer or supervision commands, variables and commands for job control, numerical variables, to analog or binary for data acquisition.

Bus hierarchy



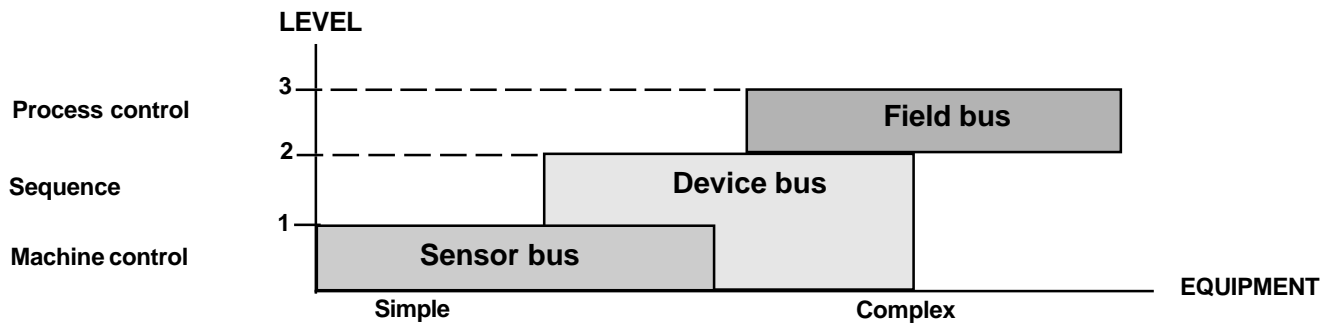
Supervisory level: messages, remote loading, production information, management, sequence supervision, alarms

Level 2-3 coordination of sequences and operations, supervision of system status (operation mode, fault indicator)

Level 1-2 determination of the total status of the automated system at any instant

Level 0-1 monitoring of a single discrete or continuous variable.

Three main categories of bus meet different needs, with regards to installation, data transmission and response times:



Field bus - For process control

- Function: coordination, remote loading, supervision etc.
- Nominal response time: 50 ms to 1 s
- Data exchange: \geq k bytes
- Distance: \geq 1 km
- Equipment connected: workstations, PC, PLC, numerically controlled equipment, intelligent peripherals ...
- Examples: Profibus FMS, World Fip, Fipway.

Device bus - For sequence

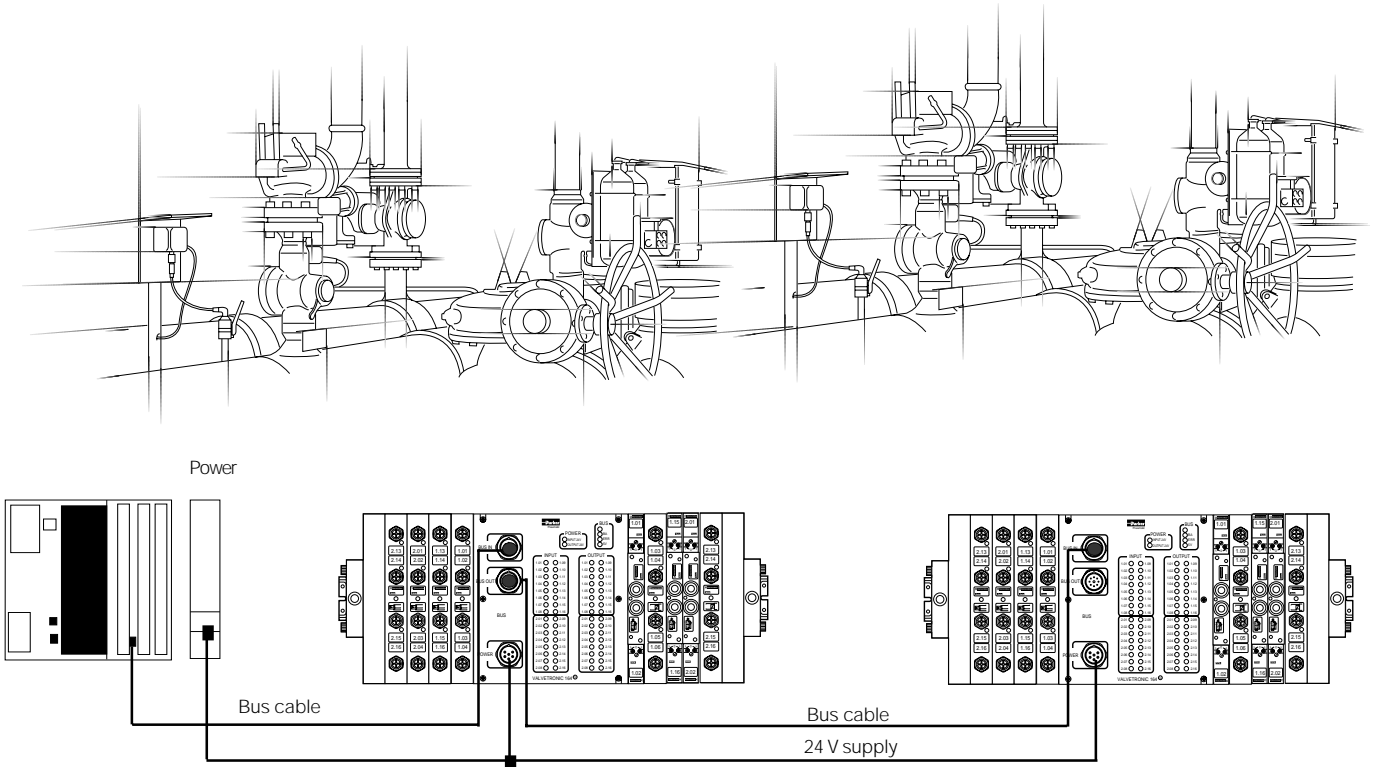
- Function: connection of intelligent I/O modules
- Nominal response time: 10 to 50 ms
- I/O: 4096 I/O (32 to 256 per node)
- Distance: less than 1 km
- Equipment connected: automatic equipment, connection boxes, machinery, variable speed controllers, intelligent sensors
- Examples: Device Net, CAN, FIPIO, Profibus DP, Interbus S, SDS.

Sensor bus - For machine control

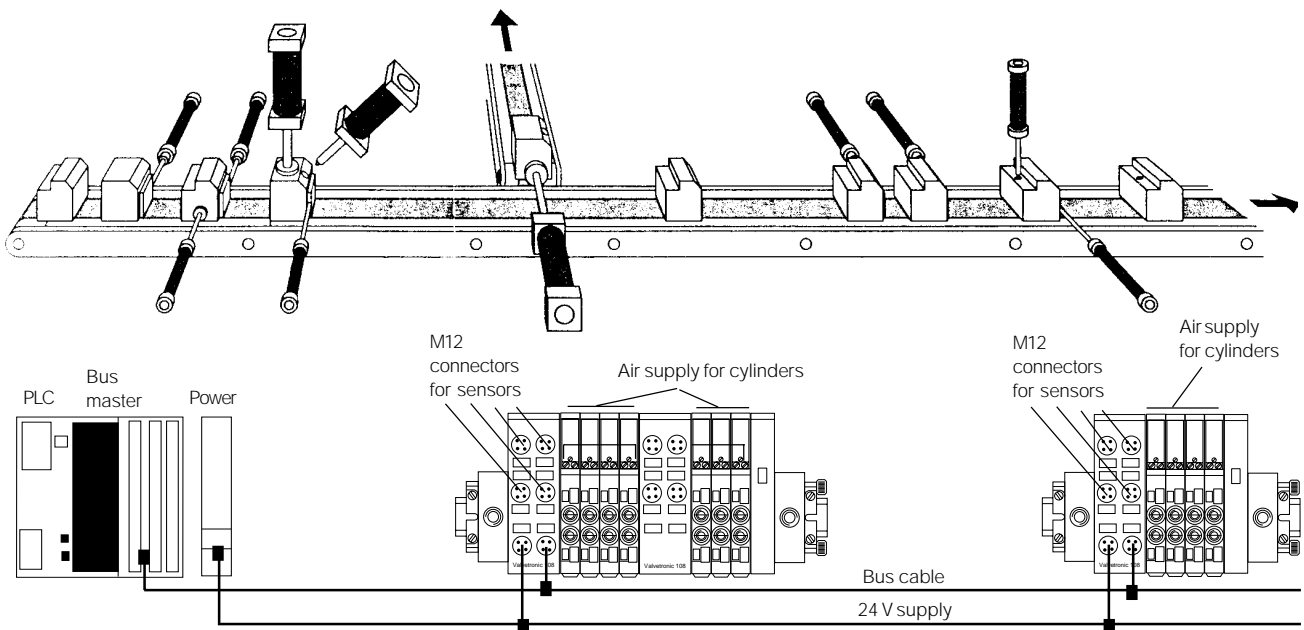
- Function: local connection of sensors and actuators.
- Nominal response time: 5 to 10 ms
- I/O: 256 I/O (8 per node)
- Distance: less than 100 m
- Equipment connected: PLC, sensors, actuators, connection boxes.
- Examples: ASI, Sensor loop, CANopen, Lon Works.

Valvetronic

Typical application of Valvetronic with device bus : several groups of I/O within less than 1 km.

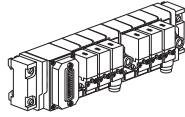


Typical application of Valvetronic system with sensor bus, cylinders distributed within less than 100 m.

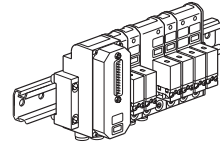


Micro valves

Modular Interface



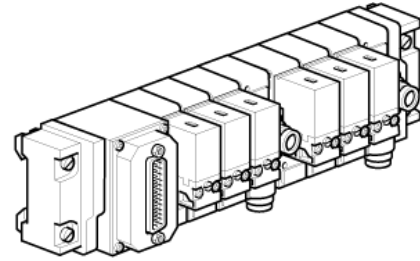
Solstar



Interface 2000

Series	P2S-HW••		P2S-EW••	
Configuration	3/2 NC	3/2 NO	3/2	4/2
Connection	Push-in Ø 4 mm		Push-in Ø 4 or 6 mm	
Flow, Qmax	50 NI/min		200 NI/min	
Material	High grade polymer		High grade polymer	
Mounting	DIN rail 35 mm		DIN rail 35 mm	
Protection	IP 65		IP 65	
Supply Voltage	12-24 V DC 24-115 V AC		12-24 V DC 24-115 V AC	
Polarity	PNP or NPN		PNP or NPN	
Electric Head connection				
Cable gland	●		●	
SubD connector	●		●	
Cylindrical connector	●		●	
Actuator Sensor Bus				
ASI			●	
Device bus				
Device Net			●	
Fipio				
Interbus S			●	
Profibus			●	
Cylinder bore, (mm)	Connexion cylinder tube, (mm)			
80-200	G3/8, 1/2, 1/4	Ø12-16		
32-80	G1/4, 3/8	Ø8-12		
20-32	G1/8, 1/4	Ø6-8		
12-20	M5, G1/8	Ø4-6		
6-12	M5	Ø4		
Refer to page	12		14	

- 3/2 Normally Closed, 3/2 Normally Open
- Push-in connection
- High performance 15 mm Solenoid valve DIN 43 650 C
- Electrical connection by Cable gland, Sub D25 or Industrial Cylindrical Connector
- Visual indication by LED with build in protection
- Mounting on DIN rail 35 mm



Dimensions see page 38

Operating information

Working pressure	0 to 10 bar	Orientation	Any plane
Working temperature	-15 °C to +60 °C	Maximum operating frequency	10 Hz
Storage temperature	-40 °C to +70 °C	Degree of protection	IP 65
Fluids	Air or gas, 50 µm filtered, lubricated or not	Duty factor	100%
Manual override	Delivered as standard with flush non locking override	Standard voltage	12 to 24 V DC 24 to 115 V AC
Change-over time	At 6 bar 10 to 15 ms	Surge suppression	Diode for DC version Varistor for AC version

Mechanical life with dry air at 6 bar, 20 °C, 1 Hz: 30 million operations

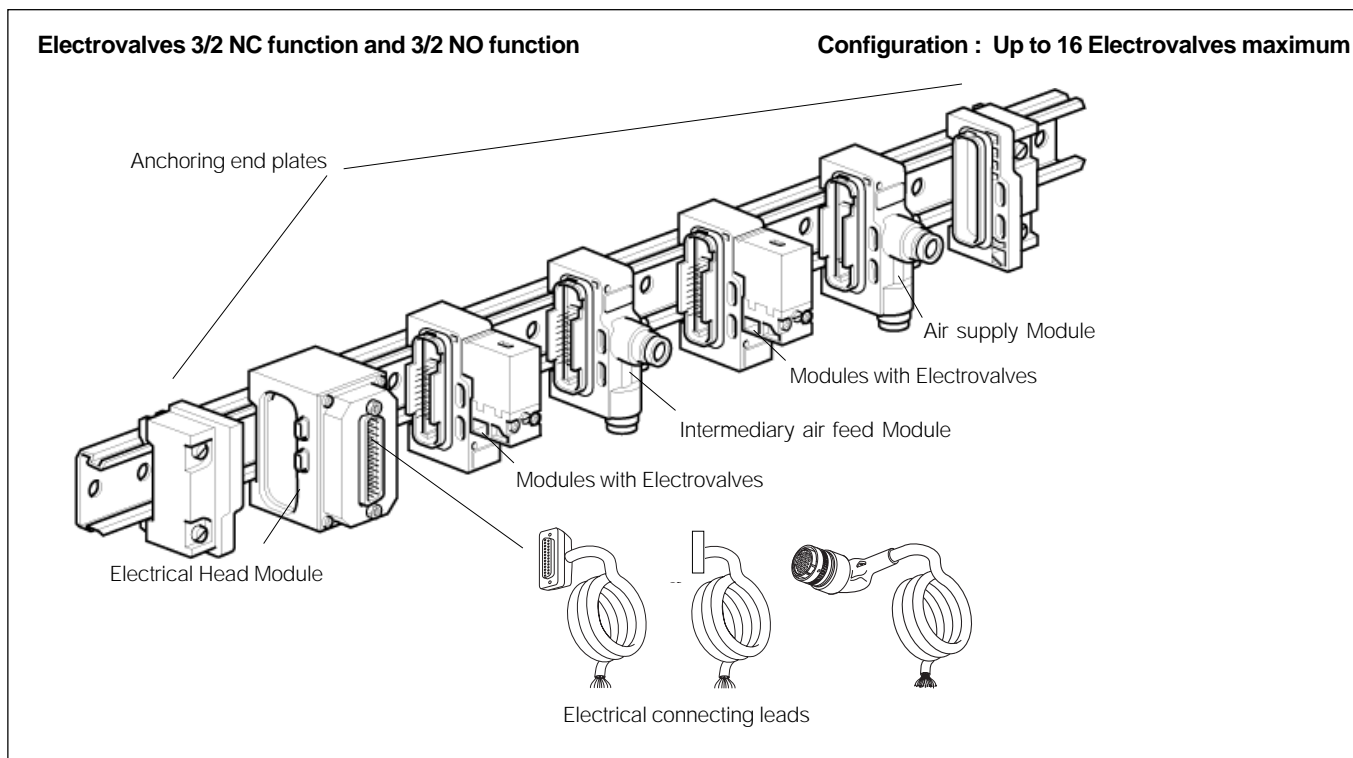
Consumption and flow

	Solenoid valve 3/2 NC Standard	Solenoid valve 3/2 NC Highflow	Solenoid valve 3/2 NO Standard
Hold	DC 1,2 W AC 1,6 VA	DC 1,8 W AC 2,4 VA	DC 1,8 W AC 2,4 VA
Inrush	DC 1,2 W AC 3,5 VA	DC 1,8 W AC 5,5 VA	DC 1,8 W AC 5,5 VA
Flow (acc. ISO 6358)	33 NI/min	50 NI/min	33 NI/min

Additional information

Modules for the DC version are protected against overvoltage up to 300 V. Protections on inductive loads connected to the same source are necessary.

Modules for the AC version fitted with a DC solenoid which is compatible with PLC control card NPN protected.



Series with 15 mm Solenoid valve DIN 43 560 form C

Type	Symbol	Actuator	Return	Flow	Voltage	Pneumatical connection	Order code
		Electric	Spring	33 NI/mn	24 VDC	Ø 4 mm	P2S-KW3442CR
		3/2 NC (1)		50 NI/mn	24 VDC	Ø 4 mm	P2S-HW3442CR
		Electric	Spring	33 NI/mn	24VDC	Ø 4 mm	P2S-KW1442CR
		3/2 NO (1)					

(1) With override locking flush

Series delivered without Solenoid valve*

Type	Symbol	Actuator	Return	Flow	Voltage	Pneumatical connection	Order code
		Electric	Spring	33 or 50 NI/mn	12-48 VDC	Ø 4 mm	P2S-HW3445
		3/2 NF or NO		according the electrovalve selected	24-120 VAC	Ø 4 mm	P2S-HW3444

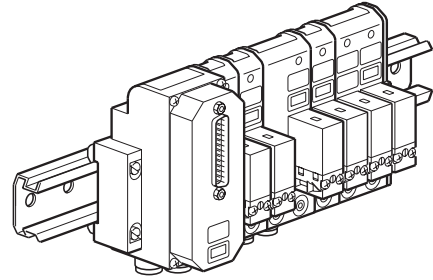
* To select and order Solenoid valve, please se page 34

Electrical and pneumatic head and tail module

Description	Electrical connection	Components	Pneumatical connection	Order code
Electrical head module	HE10 20 pins with cable gland	including : 1 electrical module 1 air supply module ** 1kit of anchoring end plates	Ø6 mm	P2S-HA146H20A
	Sub D 25 on the top		Ø6 mm	P2S-HA146D25A
	Cylindrical connection 19 pins		Ø6 mm	P2S-HA146C19A
Air supply module or intermediary air feed module			Ø6 mm G1/8	P2S-HA246 P2S-HA211

** The air supply module must be placed on the right, at the end.

- 3/2 and 4/2 module poppet valves
- Push-in connection
- High performance 15 mm solenoid DIN 43 650 C
- Electrical connection by Cable gland, Sub D25 or Industrial Cylindrical Connector
- Visual indication by LED with build in surge suppression
- Compatible with sensor and device bus



Dimensions see page 39

Operating information

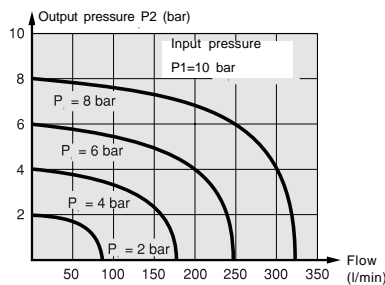
Working pressure	3 to 8 bar	Duty factor	100%
Working temperature	-15 °C to +60 °C	Standard Voltage	12 to 48 V DC 24 to 115 V AC
Storage temperature	-40 °C to +70 °C	Surge suppression	Diode for DC version Varistor for AC version
Fluids	Air or gas, 50 µm filtered, lubricated or not	Consumption	1,2 W 1,6 VA hold 1,2 W 3,5 VA inrush
Response time	10 to 15 ms	Flow:	Qn=1,7 NI/s (100 NI/min) Qmax=3,4 NI/s (200 NI/min) Cv=0,14 kv=2
Mechanical life with dry air at 6 bar, 20 °C, 1 Hz:	30 million cycles		
Orientation	Any plane	(acc. ISO 6358)	
Maximum operating frequency	10 Hz		
Degree of protection	IP 65		

Additional information

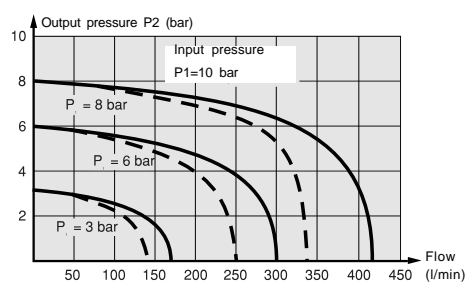
Modules for the DC version are protected against overvoltage up to 300 V. Protections on inductive loads connected to the same source are necessary.

Modules for the AC version fitted with a DC solenoid are compatible with PLC control card NPN protected.

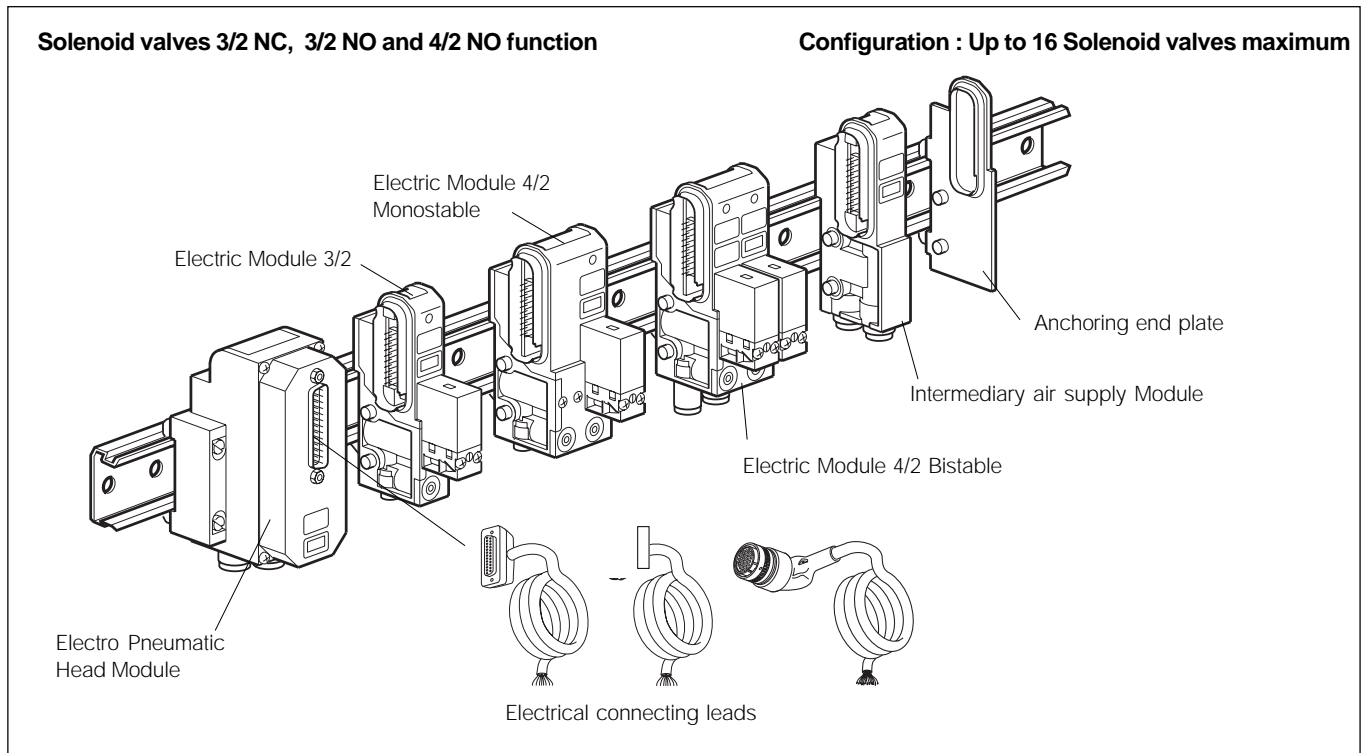
3/2 valve



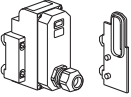
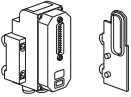
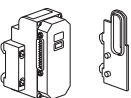
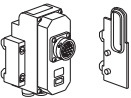
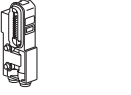

4/2 valve




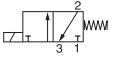

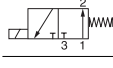

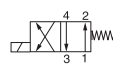

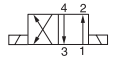
The Interface valves are of a poppet design, therefore they are unsuitable for use with Soft Start valves. When pressure is applied, the bistable interface takes a pre determined position (non activated). In the absence of electrical signal, output 2 (yellow indicator) is activated, output 4 (red indicator) is not activated. Bistable version is delivered as standard with non locking flush override, and monostable version with locking flush override.



Head and tail sets, intermediate air supply module

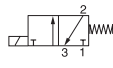

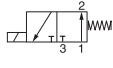


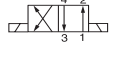
	Description	Electrical connection	Pneumatical connection	Weight kg	Order code
	Pneumatical and electrical head and tail	HE10 20 pins with cable gland	Ø6	0,170	P2S-EA146H20A
			Ø8	0,180	P2S-EA148H20A
		Cable gland and 5 m flying lead	Ø6		P2S-EA146H20A5
			Ø8		P2S-EA148H20A5
		Sub D25 on the top	Ø6	0,175	P2S-EA146D25AT
			Ø8	0,185	P2S-EA148D25AT
		Sub D25 on the side	Ø6	0,175	P2S-EA146D25AS
			Ø8	0,185	P2S-EA148D25AS
		Cylindrical 19 pins connection	Ø6	0,175	P2S-EA146C19A
			Ø8	0,185	P2S-EA148C19A
	Intermediary air supply module		Ø6	0,060	P2S-EA246
			Ø8	0,070	P2S-EA248

Electro-Pneumatic module with DIN 43 650 form C pin spacing Solenoid

Type	Symbol	Actuator	Return	Push-in fittings mm	LED indicator and surge suppressor	Weight kg	Voltage	Order code
		Electric 3/2 NC (2)	Spring	Ø4	Yes	0,095	24 VDC	P2S-EW344ES2CR
				Ø6	No	0,095		P2S-EW344ES2CL
		Electric 3/2 NO (2)	Spring	Ø4	Yes	0,095	24 VDC	P2S-EW144ES2CR
				Ø6	No	0,095		P2S-EW144ES2CL
		Electric 4/2 Monostable (2)	Spring	Ø4	Yes	0,150	24 VDC	P2S-EW444ES2CR
				Ø6	No	0,150		P2S-EW444ES2CL
		Electric 4/2 Bistable (1)	Electric	Ø4	Yes	0,180	24 VDC	P2S-EW444EE2CQ
				Ø6	No	0,180		P2S-EW444EE2CN
				Ø6	Yes	0,190	24 VDC	P2S-EW446EE2CQ
					No	0,190		P2S-EW446EE2CN

(1) With override non locking flush
 (2) With override locking flush

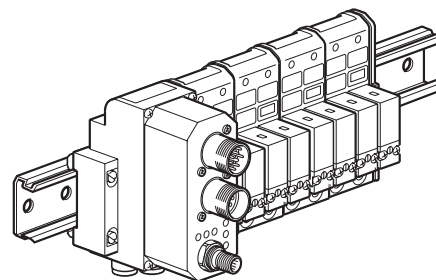
Electro-Pneumatic module without solenoid**

Type	Symbol	Actuator	Return	Push-in fittings mm	LED indicator and surge suppressor	Weight kg	Voltage*	Order code
		Electric 3/2 NC	Spring	Ø4	No	0,060	-	P2S-EW344ES
					Yes	0,060	AC	P2S-EW344ES4
					Yes	0,060	DC	P2S-EW344ES5
		Electric 3/2 NO	Spring	Ø4	No	0,070	-	P2S-EW346ES
					Yes	0,070	AC	P2S-EW346ES4
					Yes	0,070	DC	P2S-EW346ES5
		Electric 4/2 Monostable	Spring	Ø4	No	0,115	-	P2S-EW444ES
					Yes	0,115	AC	P2S-EW444ES4
					Yes	0,115	DC	P2S-EW444ES5
		Electric 4/2 Bistable	Electric	Ø4	No	0,125	-	P2S-EW446ES
					Yes	0,125	AC	P2S-EW446ES4
					Yes	0,125	DC	P2S-EW446ES5
		Electric 4/2 Bistable	Electric	Ø6	No	0,115	-	P2S-EW444EE
					Yes	0,115	AC	P2S-EW444EE4
					Yes	0,115	DC	P2S-EW444EE5
		Electric 4/2 Bistable	Electric	Ø6	No	0,125	-	P2S-EW446EE
					Yes	0,125	AC	P2S-EW446EE4
					Yes	0,125	DC	P2S-EW446EE5

* Voltages
 DC voltage 12-48 VDC
 AC voltage 24-115 VAC

** To select and order Solenoid Type P2E-KS refer to page 34

- IP 65 Module for up to 16 interface valves
- Interface valves 3/2 or 4/2, 24 V DC with LED
- Bus diagnostic visualisation by LED
- Interbus S
- Profibus DP
- DeviceNet



Dimensions see page 39

Operating information

Protection level	IP 65
Diagnostic Bus	3 to 4 LED
Diagnostic voltage	2 LED
Vibrations	IEC 68-2-6 1g
Shocks	IEC 68-2-7 15 g 11 ms
EMC Protection	EN55011, level B EN61000-4-2, level B EN61000-4-3, level A EN61000-4-4, level B EN61000-4-6, level A
Working temperature	0 °C to 55 °C
Storage temperature	-40 °C to +70 °C
Bus supply voltage	20,4 to 30 V DC
Solenoid supply voltage	21,6 to 26,4 V DC

Additional information

Electrical power supply connection on head module

Connector M12 male 5 pins
(common to all Field Bus)

Bus connection on head module

Interbus S

Connector M23 male 9 pins (Bus IN)*
Connector M23 female 9 pins (Bus Out)*

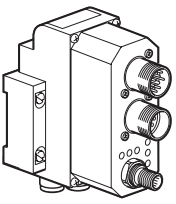
Profibus DP

Connector M12 male 5 pins (Bus IN)
Connector M12 female 5 pins (Bus Out)

DeviceNet

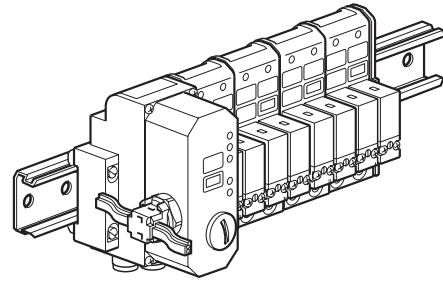
Connector M12 male 5 pins (Bus)

Main data for Device Bus - Interbus S - Profibus D.P. - DeviceNet

	Description	Connection	Maximum output	Weight kg	Order code
	Interbus S module unit	Ø6 mm	16	0,365	P2S-EA146BS16A
	built in air feed connection Ø8 mm		16	0,370	P2S-EA148BS16A
	Profibus DP module unit	Ø6 mm	16	0,280	P2S-EA146BP16A
	built in air feed connection Ø8 mm		16	0,290	P2S-EA148BP16A
	DeviceNet module unit	Ø6 mm	16	0,280	P2S-EA146BD16A
	built in air feed connection Ø8 mm		16	0,290	P2S-EA148BD16A
	Elbow connector (non shielded) Connection to be made up	Male 5 pins	5 pin -	0,025	P8C-S1205M
	Elbow connector (non shielded) Connection to be made up	Female	5 pin -	0,025	P8C-S1205R
	Terminal bus Profibus	Female	5 pins	0,025	P8B-PA001
	Installation Diskett Profibus DP or Device Net				P8B-PDISK

* We recommend to use connecting leads which conform to Interbus S such as Phoenix contact or equivalent.

- Integrated ASI Module up to 8 interface monostable valves or 4 interface bistable valves
- Connection by vampire plug
- ASI diagnostic by LED
- Protection level IP65
- DIN rail 35 mm mounting

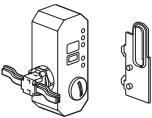



Dimensions see page 39

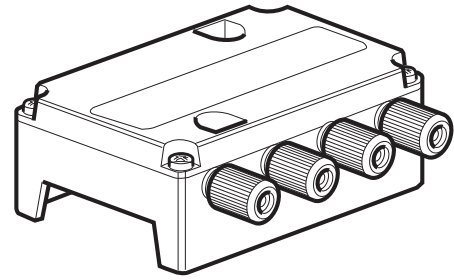
Operating information

Protection level	IP 65
Operating voltages	26,9 to 31,6 V (conform ASI)
ASI diagnostic	By double LED
Vibration	IEC 68-2-6 1g
Shocks	IEC 68-2-27 15g 11 ms
Short circuit protection	Diagnostic by LED
EMC protection	IEC 801-2 level 3 IEC 801-3 level 3 IEC 801-4 level 3
Working temperature	0 °C to 55 °C
Storage temperature	-40 °C to +70 °C
Solenoids supply voltage	From ASI module
Bus connections	Vampire plug
Consumption per solenoid	55 mA
Available current	500 mA
Identification code	8.F.
Mounting	DIN rail, height 15 mm

Main data for ASI - Actuator Sensor Interface Bus

	Description	Pneumatical connection mm	Number Outputs	Weight kg	Order code
	ASI module unit	Ø 6	4	0,230	P2S-EA146BA4V
	built in air feed connection	Ø 6	8	0,230	P2S-EA146BA8V
		Ø 8	8	0,230	P2S-EA148BA8V
	Spare Vampire plug cover clip			0,050	P8B-AVMP2 Sold by lot of 5
	Connecting lead for the addressing terminal				P8L-MH02B1

- 4 inputs
- Suitable for 3 wires sensors (2 wires Sensors according types)
- Spring loaded quick connection
- Surface or DIN rail 35 mm mounting
- Protection level IP65



Dimensions see page 39

Operating information

BUS

Voltage range	26,9 to 31,6 VDC
Consumption	≤ 220 mA
Protection against reverse polarity	Yes
I/O configurations	0 Hex
ID code	F Hex / 0 Hex
Indication ASI voltage	Green LED

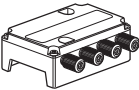
Inputs

Supply connection	Directly from ASI yellow wire
Power supply for 3 wires detectors	25 - 30 V DC by spring terminal block
Protection against short-circuits	Yes
Total detectors current	200 mA
Inputs polarity	PNP
Input current State 1 / State 0	≥ 1,5 mA / ≤ 0,5 mA
Input voltage State 1 / State 0	> 10 V DC / < 5 V DC
Inputs indication	yellow LED
Cable	Ø 2,8 to 6 mm

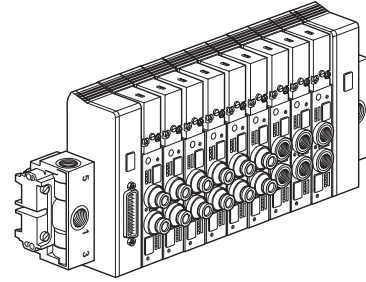
Technical characteristics

Degree of protection	IP 65 (with E PDM cable)
Operating temperature	-25 °C to +70 °C
EMC. protection	IEC 801-2 level 3 IEC 801-3 level 3 IEC 801-4 level 3 / A, 3/B
Mounting	DIN rail / screw

Main data for ASI Module with connection for 4 inputs

	Description	Number Inputs	Weight kg	Order code
	ASI input connecting module for PNP sensor	4	0,140	P8B-A04V
	Connecting accessory for the addressing terminal		0,050	P8B-AVMP1

- High flow, compact, light weight
- Push-in or threaded pneumatic connections
- High performance 15 mm solenoid DIN 43 650 C
- 2 x 3/2 - 5/2 - 5/3 functions
- Electrical head connection by Sub D 25 or Industrial Cylindrical Connection
- Surface or DIN rail 35 mm mounting



Dimensions see page 40

Operating information

PVL-B10 valves

Protection level	IP 65
Working Pressure	2 to 10 bar (3 to 10 bar for Monostable)
Storage temperature	-40 °C to +70 °C
Working temperature	-15 °C to +60 °C
Fluids	Air or neutral gas, 50 µm filtered, lubricated or not
Mechanical life with dry air at 6 bar, 20 °C, 1 Hz:	30 million cycles
Duty factor	100 %
Maximum operating frequency	10 Hz bistable
Solenoid voltage	12 to 48 V DC 24 to 115 V AC
Power consumption	1,2 W 1,6 VA Hold 1,2 W 3,5 VA Inrush
Orientation	Any plane
Visualisation	LED indicator
Surge suppression	Diode for DC version Varistor for AC version
Inverting commutation time	12 to 40 ms, according types

Input modules

Protection level	IP65
Voltage and type of output	PNP 24 V CC
Normal current	100 mA
Maxi. available current island	1 A for all the outputs

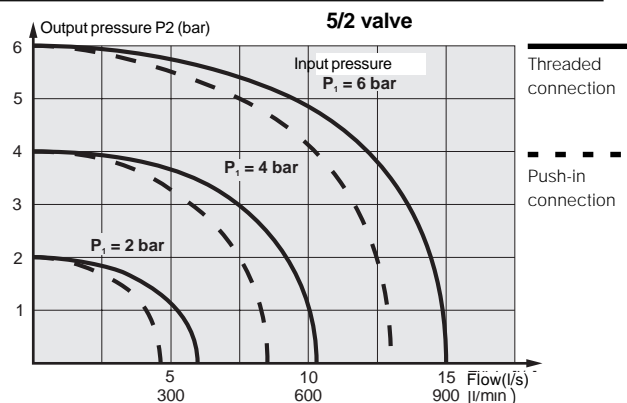
Output modules

Protection level	IP65
Type and output voltage	PNP 24 V CC
Normal current	100 mA
Maxi. available current island	1 A for all the inputs

Additional information

Modules for the DC version are protected against overvoltage up to 300 V. Protections on inductive loads connected to the same source are necessary.

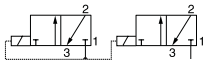

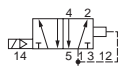

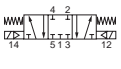
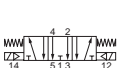
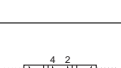
Modules for the AC version are fitted with a DC solenoid are compatible with PLC control card NPN protected.



Flow characteristics

	Type 2 x 3/2 G1/8 threaded	Type 2 x 3/2 Push in Ø6 mm	Type 5/2 G1/8 threaded	Type 5/2 Push in Ø6 mm
Qn	7,33 l/s (440 l/min)	5,83 l/s (350 l/min)	9 l/s (540 l/min)	7,5 l/s (450 l/min)
Qmax	12,5 l/s (750 l/min)	10 l/s (600 l/min)	15 l/s (900 l/min)	12,9 l/s (775 l/min)
Cv	0,45	0,36	0,56	0,42
Kv	6,4	5,1	8	6
	Type 5/3 closed centre G1/8 threaded	Type 5/3 closed centre Push in Ø6 mm	Type 5/3 vented centre G1/8 threaded	Type 5/3 vented centre Push in Ø6 mm
Qn	6,16 l/s (370 l/min)	4,83 l/s (290 l/min)	9 l/s (540 l/min)	7,5 l/s (450 l/min)
Qmax	10,83 l/s (650 l/min)	8,33 l/s (500 l/min)	15 l/s (900 l/min)	12,9 l/s (775 l/min)
Cv	0,38	0,29	0,56	0,46
Kv	5,4	4,2	8	6,5

Main data for PVL-B

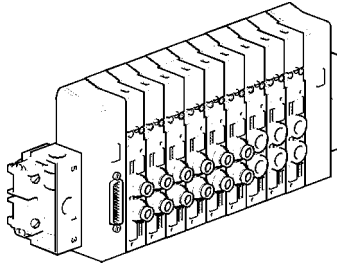
Symbol	Actuator	Return	Solenoid Pilot	Pneumatic Connection	Weight kg	Voltage	Order code				
	Electric double 3/2 NC (2)	Internal air	With	Ø6 G1/8	0,240 0,240	24 VDC 24 VDC	PVL-B10560652B PVL-B10561852B				
			Without	Ø6 Ø6 G1/8 G1/8	0,150 0,150 0,150 0,150	DC AC DC AC	PVL-B105606W2 PVL-B105606W1 PVL-B105618W2 PVL-B105618W1				
			Electric 5/2 (2)	Spring	With	Ø6 G1/8	0,170 0,170	24 VDC 24 VDC	PVL-B10160652B PVL-B10161852B		
					Without	Ø6 Ø6 G1/8 G1/8	0,125 0,125 0,125 0,125	DC AC DC AC	PVL-B101606W2 PVL-B101606W1 PVL-B101618W2 PVL-B101618W1		
					Electric 5/2 (2)	Internal air	With	Ø6 G1/8	0,170 0,170	24 VDC 24 VDC	PVL-B10360652B PVL-B10361852B
							Without	Ø6 Ø6 G1/8 G1/8	0,125 0,125 0,125 0,125	DC AC DC DC	PVL-B103606W2 PVL-B103618W2
	Electric 5/2 (1)					Electric	With	Ø6 G1/8	0,240 0,240	24 VDC 24 VDC	PVL-B10260602B PVL-B10261802B
							Without	Ø6 Ø6 G1/8 G1/8	0,150 0,150 0,150 0,150	DC AC DC AC	PVL-B102606W2 PVL-B102606W1 PVL-B102618W2 PVL-B102618W1
			Electric 5/3 Closed Centre position* (1)			Electric Self centring	With	Ø6 G1/8	0,240 0,240	24 VDC 24 VDC	PVL-B10760602B PVL-B10761802B
							Without	Ø6 Ø6 G1/8 G1/8	0,150 0,150 0,150 0,150	DC AC DC AC	PVL-B107606W2 PVL-B107606W1 PVL-B107618W2 PVL-B107618W1
					Electric 5/3 Vented Centre position* (1)	Electric Self centring	With	Ø6 G1/8	0,240 0,240	24 VDC 24 VDC	PVL-B10860602B PVL-B10861802B
							Without	Ø6 Ø6 G1/8 G1/8	0,150 0,150 0,150 0,150	DC AC DC AC	PVL-B108606W2 PVL-B108606W1 PVL-B108618W2 PVL-B108618W1
	Electric 5/3 Pressurised Centre position* (1)					Electric Self centring	With	Ø6 G1/8	0,240 0,240	24 VDC 24 VDC	PVL-B10960602B PVL-B10961802B
							Without	Ø6 Ø6 G1/8 G1/8	0,150 0,150 0,150 0,150	DC AC DC AC	PVL-B109606W2 PVL-B109606W1 PVL-B109618W2 PVL-B109618W1

* Available December 99

- (1) With override non locking flush
- (2) With override locking flush

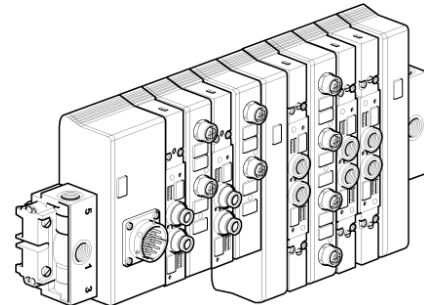
Configuration : Up to 16 valves or 32 I/O maximum

Monostable



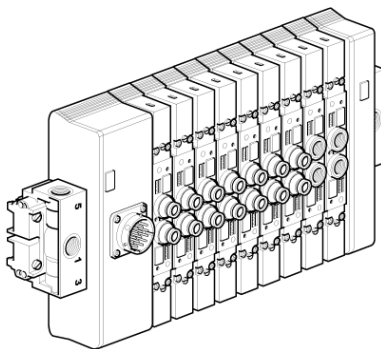
With SubD25 or cylindrical 19 pins connector
 ⇒ 16 valves or 16 I/O

Monostable + Bistable



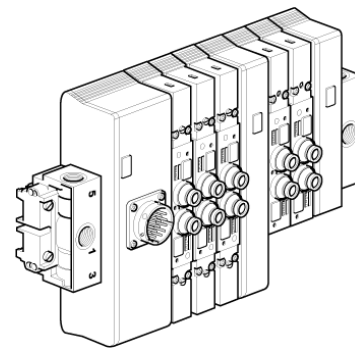
With SubD25 or cylindrical 19 pins connector
 ⇒ 16 valves or 16 I/O

Bistable



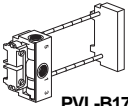
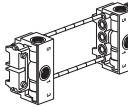

With SubD25 connector
 ⇒ 10 valves or 20 I/O
With cylindrical 35 pins connector
 ⇒ 16 valves or 32 I/O

Bistable + Monostable


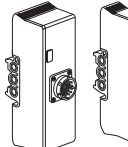


With SubD25 connector
 ⇒ 16 valves or 21 I/O
With cylindrical 35 pins connector
 ⇒ 16 valves or 32 I/O


Pneumatic head and tail sets

	Type of mounting	Description	Valve size	Pneumatic connection	Weight kg	Order code
 <p>PVL-B1719</p>	DIN rail mounting	Single supply head and tail set	1/8"	G1/4	0,175	PVL-B1719
		Dual air supply head and tail set	1/8"	G1/4	0,245	PVL-B1729
 <p>PVL-B1729</p>	Surface mounting	Single air supply head and tail set	1/8"	G1/8	0,200	PVL-B1818
		Dual air supply head and tail set	1/8"	G1/8	0,260	PVL-B1828
		Pressure isolating disc		G1/8		PVL-B1902 Sold by lot of 10

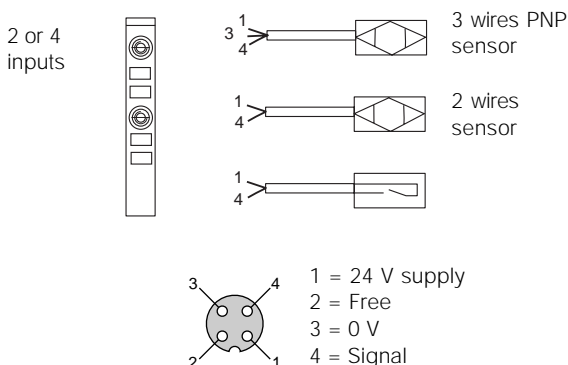
Electrical head and tail sets

	Description	Valves configuration	Type of connector	Weight kg	Order code
 <p>PVL-B191125</p>	Head and tail sets	Monostable	Sub-D25	0,220	PVL-B191125
			Cylindrical 19-pins	0,250	PVL-B191219
		Bistable	Sub-D25	0,220	PVL-B192125
			Cylindrical 35-pins	0,250	PVL-B192235
 <p>PVL-B192235</p>	Head and tail sets	Bistable then monostable	Sub-D25	0,370	PVL-B194125
			Cylindrical 35-pins	0,420	PVL-B194235
		Monostable then bistable	Sub-D25	0,320	PVL-B193125
			Cylindrical 19-pins	0,350	PVL-B193219
	Transferring module	Bistable then monostable		0,220	PVL-B1940
		Monostable then bistable		0,240	PVL-B1930

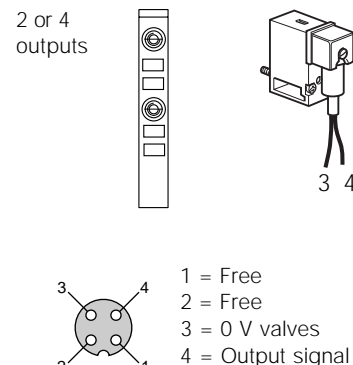
Electrical modules for external connection

	Description	Type	Connection	Weight kg	Order code
 <p>PVL-B1E1302</p>	Input module	PVL-B monostable	2 Inputs	0,180	PVL-B1E1302
		PVL-B bistable	4 Inputs	0,240	PVL-B1E2304
	Output module	PVL-B monostable	2 Outputs	0,180	PVL-B1S1302
		PVL-B bistable	4 Outputs	0,240	PVL-B1S2304

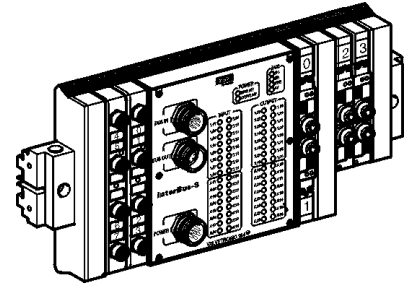
External input module connection



External output module connection



- Interbus S - Profibus DP - DeviceNet - FIPIO
- 2 x 3/2 - 5/2 - 5/3 valves 24 V DC with LEDs
- Protection level IP 65
- Up to 32 inputs and 32 outputs
- Visual indication Bus diagnostic by LEDs
- Output Module for driving external valves



Dimensions see page 40

Operating information

Bus Head Modules

Protection level	IP 65
Diagnostic Bus	3 to 4 LED
Diagnostic voltage	2 LED
Short circuit protection	Diagnostic by LED on Outputs
Vibrations	IEC 68-2-6 1g
Shock	IEC 68-2-27 15 g 11 ms
EMC Protection	IEC 801-2 level 3 IEC 801-3 level 3 IEC 801-4 level 3
Working temperature	0 °C to 55 °C, 75% duty factor 0 °C to 40 °C, 100% duty factor
Storage temperature	-40 °C to +70 °C
Bus voltage	20,6 to 30 V DC
Solenoid voltage	21,6 to 26,4 V DC
Mounting	DIN rail 35 mm surface

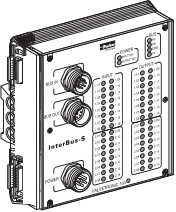
Input modules

Protection level	IP 65
Type and input voltage	PNP 24 V DC
Maxi. available current island	1,5 A for all inputs
Normal current input at state 1	15 mA
Maximum current input state 0	3 mA
Minimum voltage input state 1	11 VDC

Output modules

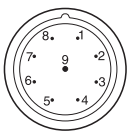

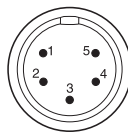
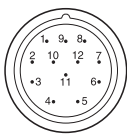
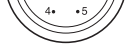
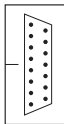
Protection level	IP 65
Type and output voltage	PNP 24 V DC
Normal current	100 mA
Maxi. available current island	1,5 A for all outputs

Main data for Bus Head Module

Description	Type	Connection	Weight kg	Order code
 Bus Module*	Interbus	32 Inputs 32 Outputs	1,770	PVL-B1BS3232A
	Profibus DP	32 Inputs 32 Outputs	1,770	PVL-B1BP3232A
	DeviceNet	32 Inputs 32 Outputs	1,750	PVL-B1BD3232A
	FIPIO	32 Inputs 32 Outputs	1,700	PVL-B1BF3232A
Head and tails pneumatical module	Bistable then Monostable	G1/4	0,740	PVL-B194729
- air feed/anchoring blocks - transfer module	Bistable	G1/4	0,740	PVL-B192729
Connector	M23 female 6 pins power	Supply	0,030	P8C-MC06B
	M23 female 12 pins	Profibus	0,030	P8C-MC12BP
Plug	M23, IP 65	Bus Out	0,015	P8C-PB1
Installation Diskett	Profibus and DeviceNet		0,030	P8B-PDISK
Input Module	PVL-B Monostable	2 Input	0,180	PVL-B1E1302
	PVL-B Bistable	4 Input	0,240	PVL-B1E2304
Output Module	PVL-B Monostable	2 Output	0,180	PVL-B1S1302
	PVL-B Bistable	4 Output	0,240	PVL-B1S2304

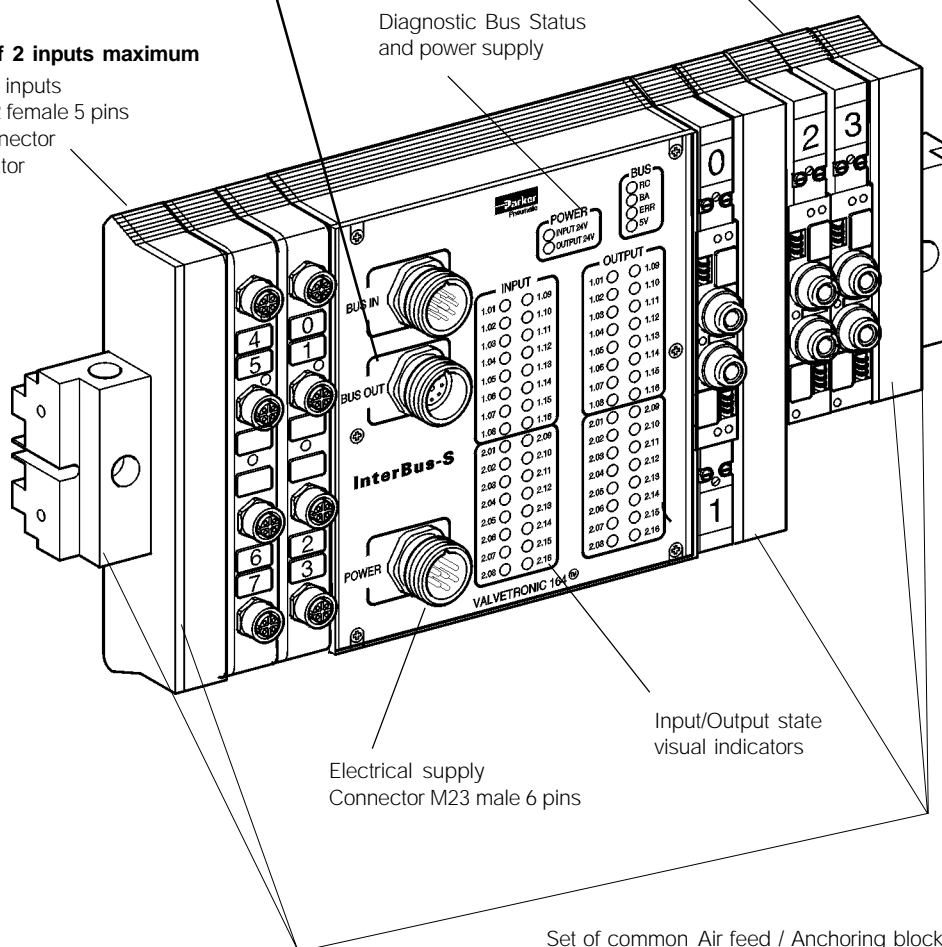
* Spare front panel are available for replacements, Order code PVL-B••DEP

Connection on the Bus

Interbus S compatible Bus In  M23 male 9 pins* Bus Out  M23 female 9 pins*		DeviceNet compatible Bus  M18 male 5 pins*	
Profibus DP Compatible Bus In  M23 female 12 pins Bus Out  M23 female 12 pins		FIPIO compatible Bus  Sub D 15 pins compatible with Schneider connector TSX-BLP10	

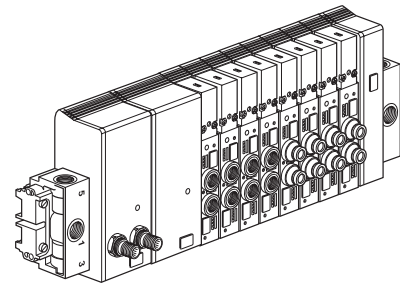
**32 Inputs or
16 modules of 2 inputs maximum**
 8 Modules of 4 inputs
 Connector M12 female 5 pins
 1 input per connector
 with LED indicator

16 valves PVL-B10 or 32 outputs maximum
 Monostable or bistable
 32 pilot Solenoids or external outputs



* We recommend to use connecting leads which conform to Interbus S such as Phoenix contact or equivalent.

- Total compatibility with ASI Bus
- Islands from 4 to 16 valves output
- Modularity of 4 outputs
- Protection level IP 65
- One single connection ASI
- One single connection Valve supply 24 V DC



Dimensions see page 40

Operating information

ASI Bus Module characteristics

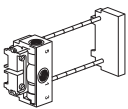
Protection level	IP 65
ASI operating voltage	26,9 to 31,6 V
Solenoid voltage	24 V DC $\pm 10\%$
Operating voltage	0 to 55 °C
Vibrations	IEC 68-2-6 1g
Shock	IEC 68-2-27 15 g 11 ms
EMC Protection	IEC 801-2 level 3 IEC 801-3 level 3 IEC 801-4 level 3
Working temperature	0 °C to 55 °C
Identification code	8.F
Mounting	DIN rail

ASI Network characteristics

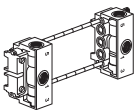
Maximum length	100 m
Maximum length with duplicator	200 m
Node capacity	4 inputs and 4 outputs
Total capacity	124 Inputs and 124 output
Number of nodes	1 to 31
Response time	5 ms maxi
Nodes supply	Through the Bus
Total available current	2 A or 5 A

Main data for ASI Bus Modules - Outputs version

Description	Valves configuration	Connection	Weight kg	Order code
Head module*	Monostable valves	M12 ASI and valves supply	0,460	P2S-BA1BA40
Head* and transfer module	Monostable then bistable valves	M12 ASI and valves supply	0,560	P2S-BA3BA40
Head module*	Bistables valves	M12 ASI and valves supply	0,510	P2S-BA2BA40
Head* and transfer module	Bistable then monostable valves	M12 ASI and valves supply	0,610	P2S-BA3BA40
Transfer module	Monostable valves	-	0,410	P2S-BA5BA40
	Bistable valves	-	0,460	P2S-BA6BA40
Air supply module	DIN rail mounting	Single air supply G1/4	0,175	PVL-B1719
		Dual air supply G1/4	0,245	PVL-B1729
	Surface mounting	Single air supply G1/8	0,200	PVL-B1818
		Dual air supply G1/8	0,260	PVL-B1828
Connecting lead to the ASI module addressing terminal (type P2S-BA...)			0,15	P8L-MH02B1



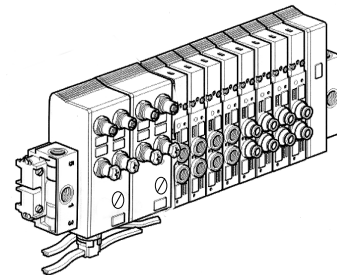
PVL-B1719



PVL-B1729

* Head module = with ASI, and supply 24V DC connection

- Total compatibility with ASI Bus
- Islands from 4 to 16 valves output and 4 or 16 inputs
- Protection level IP 65
- Connection M12 or Vampire plug
- ASI visualisation and 24 V supply diagnostic by LED
- Inputs visualisation by LED



Dimensions see page 40

Operating information

ASI Bus Module Characteristics

Protection level	IP 65
ASI operating voltage	26,9 to 31,6 V
Solenoid voltage	24 VDC ±10%
Isolation voltage	1500 V
Vibrations	IEC 68-2-6 1g
Shock	IEC 68-2-27 15 g 11 ms
EMC Protection	IEC 801-2 level 3 IEC 801-3 level 3 IEC 801-4 level 3
Bus diagnostic	2 LED, red and green
Solenoid voltage visualisation	By LED
Short circuit protection	Diagnostic by LED
Working temperature	0 °C to 55 °C
Storage temperature	-40 °C to 70 °C
Solenoid voltage	ASI Vampire plug or M12

Identification code	7.F
Bus connection	ASI Vampire plug or M12 Connector
Available current on inputs	200 mA
Compatibility with sensors or photo-cells	2 or 3 wires technology
Inputs	PNP type

ASI Network characteristics

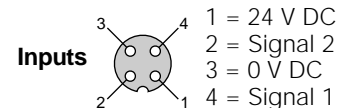
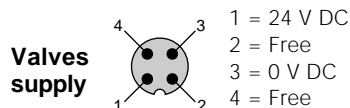
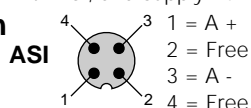
Maximum length	100 m
Maximum length with duplicator	200 m
Node capacity	4 inputs and 4 outputs
Total capacity	124 Inputs and 124 output
Number of nodes	1 to 31
Response time	5 ms maxi
Nodes supply	Through the Bus
Total available current	2 A or 5 A

Main data for ASI Bus Modules - Inputs and Outputs version

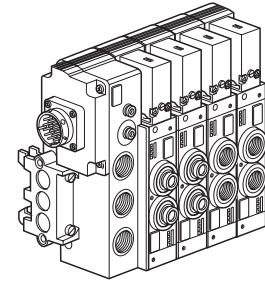
Description	Valves configuration	Connection	Weight kg	Order code
Head module*	Monostable valves	M12 ASI and valves supply	0,460	PVL-BA1BA44
		Vampire ASI and valves supply	0,460	PVL-BA1BA44V
Head module*	Monostable then bistable valves	M12 ASI and valves supply	0,560	PVL-BA3BA44
		Vampire ASI and valves supply	0,560	PVL-BA3BA44V
Transfer module	Monostable or bistable valves	-	0,400	PVL-BA5BA44
Air supply module	DIN rail mounting	Single air supply G1/4	0,175	PVL-B1719
		Dual air supply G1/4	0,245	PVL-B1729
	Surface mounting	Single air supply G1/8	0,200	PVL-B1818
		Dual air supply G1/8	0,260	PVL-B1828
Spare Vampire cover dip		Sold by lot of 5		P8B-AVMP2
Connecting lead to the ASI module addressing terminal (type PVL-BA...)				P8B-AJACK

* Head module = with ASI, and supply 24V DC connection

Connection



- High flow, compact, light weight
- Push-in or threaded pneumatic outlets
- High performance 15 mm solenoid DIN 43 650 C
- DIN rail or surface mounting
- Electrical head connection by Cable gland, Sub D 25 or Industrial Cylindrical Connection



Dimensions see pages 41 - 42

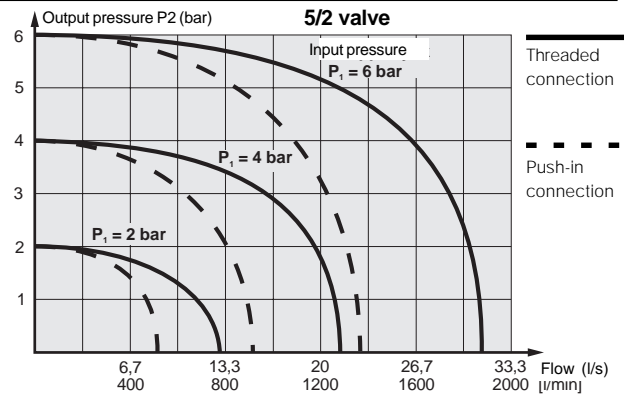
Operating information

Protection level	IP 65	Solenoid voltage	12 to 48 V DC
Working Pressure	2 to 10 bar (3 to 10 bar for Monostable)		24 to 115 V AC (other voltages available as option)
Working temperature	-15 °C to 60 °C	Surge consumption	1,2 W 1,6 VA Hold
Storage temperature	-40 °C to 70 °C		1,2 W 3,5 VA Inrush
Fluids	Air or gas, 50 µm filtered, lubricated or not	Orientation	Any plane
		Surge suppression	Diode for DC version Varistor for AC version
Mechanical life with dry air at 6 bar, 20 °C, 1 Hz:	30 million cycles	Inverting commutation time	15 to 112 ms, according types
Duty factor	100 %		
Maximum operating frequency	10 Hz bistable		

Additional information

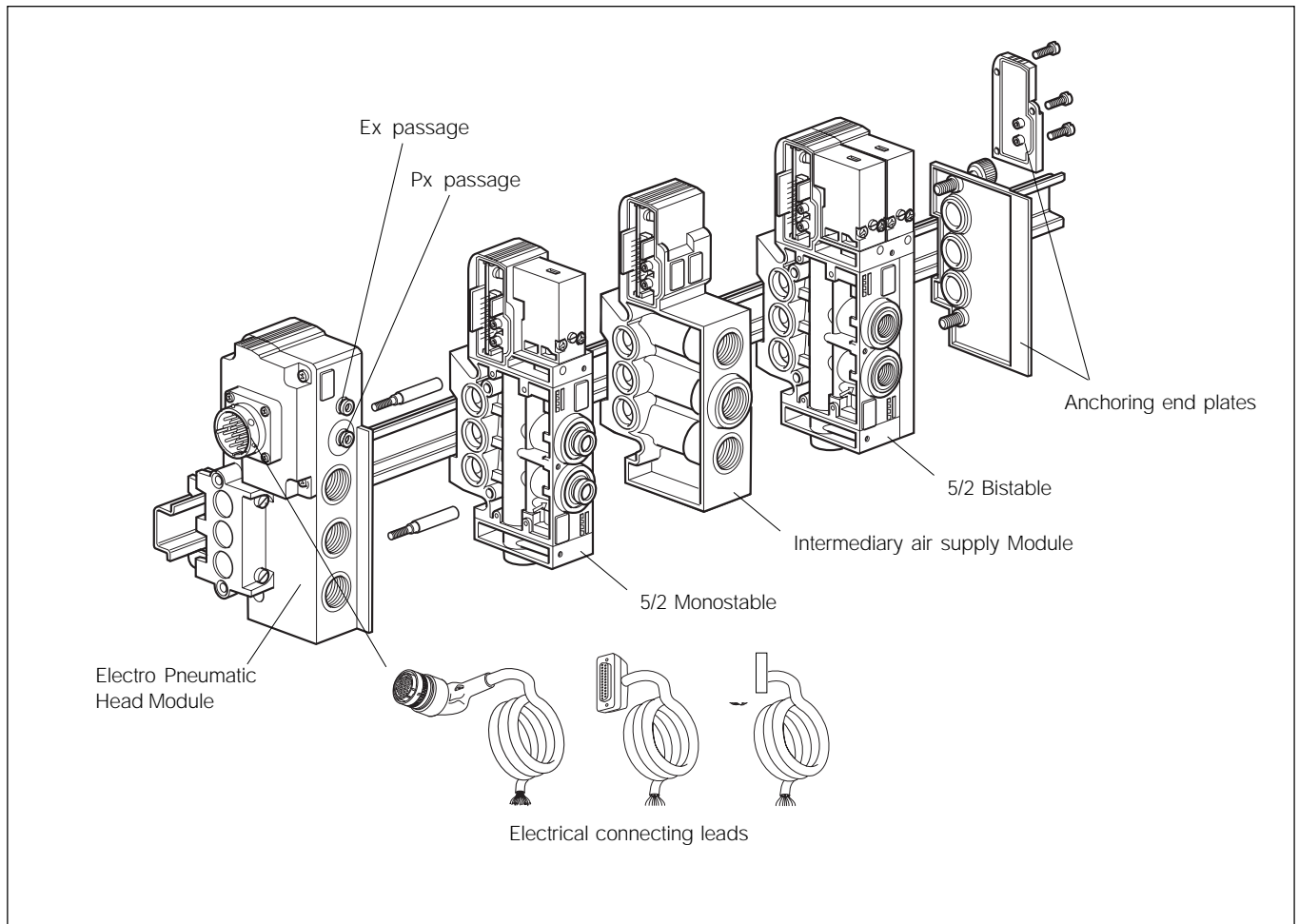
Modules for the DC version are protected against overvoltage up to 300 V. Protections on inductive loads connected to the same source are necessary.

Modules for the AC version fitted with a DC solenoid are compatible with PLC control card NPN protected.

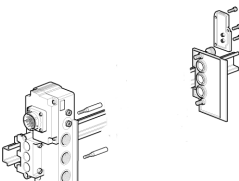
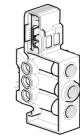


Flow characteristics

	Type 2 x 3/2 G1/8 threaded	Type 2 x 3/2 Push in Ø8 mm	Type 5/2 G1/4 threaded	Type 5/2 Push in Ø8 mm
Qn	9,5 l/s (570 l/min)	9 l/s (540 l/min)	18,33 l/s (1100 l/min)	14 l/s (840 l/min)
Qmax	15,8 l/s (950 l/min)	15 l/s (900 l/min)	30,83 l/s (1850 l/min)	23,3 l/s (1400 l/min)
Cv	0,58	0,55	1,11	0,86
Kv	8,3	7,8	16	12,2
	Type 5/3 closed centre G1/4 threaded	Type 5/3 closed centre Push in Ø8 mm	Type 5/3 vented centre G1/4 threaded	Type 5/3 vented centre Push in Ø8 mm
Qn	13 l/s (780 l/min)	11,6 l/s (700 l/min)	18,33 l/s (1100 l/min)	14 l/s (840 l/min)
Qmax	21,66 l/s (1300 l/min)	19,5 l/s (1170 l/min)	30,83 l/s (1850 l/min)	23,3 l/s (1400 l/min)
Cv	0,79	0,71	1,11	0,86
Kv	11,3	10,2	16	12,2
	Type 5/3 pressurised centre G1/4 threaded	Type 5/3 pressurised centre Push in Ø8 mm		
Qn	11 l/s (660 l/min)	10,5 l/s (630 l/min)		
Qmax	18,33 l/s (1100 l/min)	17,5 l/s (1050 l/min)		
Cv	0,67	0,64		
Kv	9,6	9,2		



Main data for Head and tail Electro-pneumatic modules

	Description	Auxiliary Pressure Px	Electrical Connection	Pneumatic Connection	Order code
	Head modules	Without Px*	HE10 with cable gland	G3/8	PVL-C1713H20A
			Sub D 25	G3/8	PVL-C1713D25A
			Cylindrical connection 19 pins	G3/8	PVL-C1713C19A
	With Px *	HE10 with cable gland	G3/8	PVL-C2713H20A	
		Sub D 25	G3/8	PVL-C2713D25A	
		Cylindrical connection 19 pins	G3/8	PVL-C2713C19A	
	Tail air feed Module	-	-	G3/8	PVU-LC213 **
	Intermediary air supply module	-	-	G3/8	PVU-LC213E ***
	Pressure isolating discs	-	-	G1/4	PVL-C1902 Sold by lot of 10

Ex = to collect the exhausts of the solenoids

* Px = auxiliary air supply for solenoids, separately from the main valves air supply

** To be mounted at the end of the island valves for dual air supply (without electrical connections)

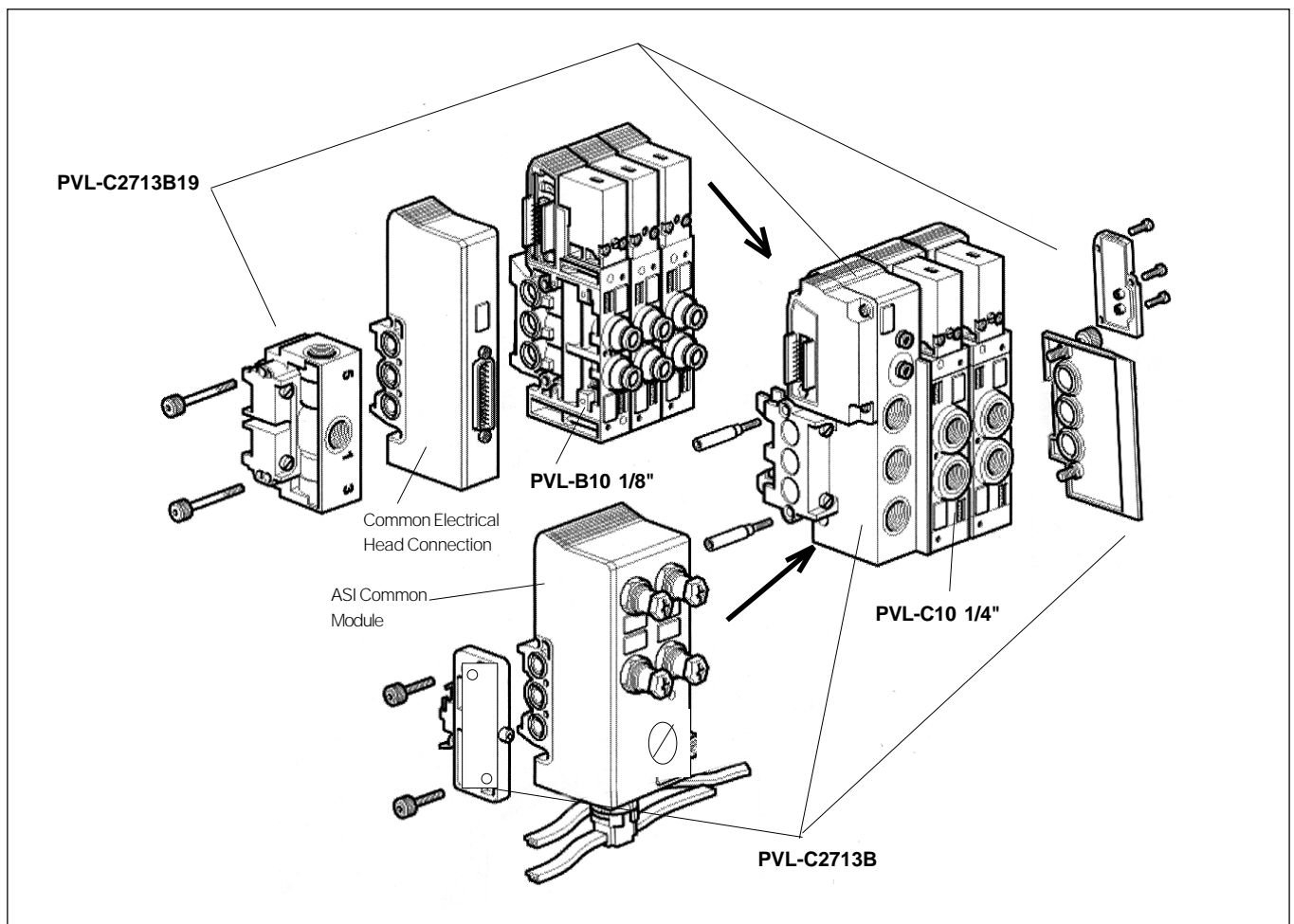
*** For dual air supply ou different supplies, with no defined location in the island valves (with connections fitted)

Main data for PVL-C

Symbol	Actuator	Return	Solenoid Pilot	Pneumatical connection	Weight kg	Voltage	Order code
	Electric double 3/2 NC (2)	Internal air	With	Ø8 G1/4	0,240 0,240	24 VDC 24 VDC	PVL-C10560852B PVL-C10561952B
			Without	Ø8 G1/4 G1/4 G1/4	0,150 0,150 0,150 0,150	DC AC DC AC	PVL-C105608W2 PVL-C105608W1 PVL-C105619W2 PVL-C105619W1
		Spring	With	Ø8 G1/4	0,170 0,170	24 VDC 24 VDC	PVL-C10160852B PVL-C10161952B
			Without	Ø8 Ø8 G1/4 G1/4	0,125 0,125 0,125 0,125	DC AC DC AC	PVL-C101608W2 PVL-C101608W1 PVL-C101619W2 PVL-C101619W1
	Electric 5/2 (2)	Internal air	With	Ø8 G1/4	0,170 0,170	24 VDC 24 VDC	PVL-C10360852B PVL-C10361952B
			Without	Ø8 G1/4	0,125 0,125	DC DC	PVL-C103608W2 PVL-C103619W2
	Electric 5/2 (1)	Electric	With	Ø8 G1/4	0,240 0,240	24 VDC 24 VDC	PVL-C10260802B PVL-C10261902B
			Without	Ø8 Ø8 G1/4 G1/4	0,150 0,150 0,150 0,150	DC AC DC AC	PVL-C102608W2 PVL-C102608W1 PVL-C102619W2 PVL-C102619W1
		Self centring	With	Ø8 G1/4	0,240 0,240	24 VDC 24 VDC	PVL-C10760802B PVL-C10761902B
			Without	Ø8 Ø8 G1/4 G1/4	0,150 0,150 0,150 0,150	DC AC DC AC	PVL-C107608W2 PVL-C107608W1 PVL-C107619W2 PVL-C107619W1
	Electric 5/3 Closed Centre position (1)	Self centring	With	Ø8 G1/4	0,240 0,240	24 VDC 24 VDC	PVL-C10860802B PVL-C10861902B
			Without	Ø8 Ø8 G1/4 G1/4	0,150 0,150 0,150 0,150	DC AC DC AC	PVL-C108608W2 PVL-C108608W1 PVL-C108619W2 PVL-C108619W1
		Self centring	With	Ø8 G1/4	0,240 0,240	24 VDC 24 VDC	PVL-C10960802B PVL-C10961902B
			Without	Ø8 Ø8 G1/4 G1/4	0,150 0,150 0,150 0,150	DC AC DC AC	PVL-C109608W2 PVL-C109608W1 PVL-C109619W2 PVL-C109619W1

(1) With override non locking flush (version with solenoid fitted)
 (2) With override locking flush (version with solenoid fitted)

- One common Electrical Head Connection for both sizes
- Two separated air feeds 1/4 and 1/8 for dual air supply
- Simple connection of 1/8 and 1/4 sizes (wire free connecting system)
- Up to 21 Pilot Solenoids (Sub D 25 version)
- Up to 32 Pilot Solenoids (Cylindrical 35 version)

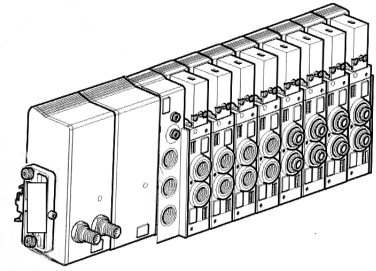


Main data for Combination Kits PVL-B10/PVL-C10

Type of combination module		Connection	Weight kg	Order code
Combination PVL-B10/PVL-C10	Without Px version*	G 1/4 and G 3/8	0,450	PVL-C1713B19
	With Px version(Ø4 mm) *	G 1/4 and G 3/8	0,460	PVL-C2713B19
Combination bus ASI/PVL-C10	Without Px version*	G 3/8	0,380	PVL-C1713B
	With Px version(Ø4 mm) *	G 3/8	0,390	PVL-C2713B

* Px = auxiliary air supply for solenoids, separately from the main valves air supply.

- Total compatibility with ASI Bus
- Islands from 4 to 16 valves output
- Modularity of 4 Outputs
- Protection level IP 65
- One single connection ASI
- One single connection Valve supply 24 V DC



Dimensions see pages 41 - 42

Operating information

ASI Bus Module characteristics

Protection level	IP 65
ASI operating voltage	26,9 to 31,6 V
Solenoid voltage	24 V DC $\pm 10\%$
Operating voltage	0 to 55 °C
Vibrations	IEC 68-2-6 1g
Shock	IEC 68-2-27 15 g 11 ms
EMC Protection	IEC 801-2 level 3 IEC 801-3 level 3 IEC 801-4 level 3
Working temperature	0 °C to 55 °C
Identification code	8.F
Mounting	DIN rail

ASI Network characteristics

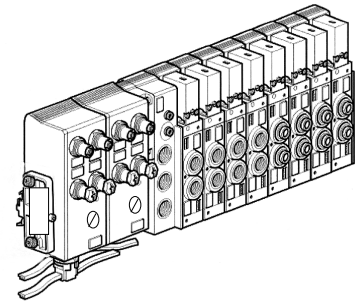
Maximum length	100 m
Maximum length with duplicator	200 m
Node capacity	4 inputs and 4 outputs
Total capacity	124 Inputs and 124 output
Number of nodes	1 to 31
Response time	5 ms maxi
Nodes supply	From the Bus
Total available current	2 A or 5 A

Main data for ASI Bus Modules - Outputs version

Description		Connection	Weight kg	Order code
Head module		M12 ASI and valves supply	0,460	P2S-BA1BA40
Intermediary air feed module		-	0,410	P2S-BA5BA40
Associating module on ASI Bus with	Without Px version*	G 3/8	0,305	PVL-C1713B
air supply	With Px version ($\varnothing 4$ mm) *	G 3/8	0,310	PVL-C2713B
Connecting lead to the ASI module addressing terminal		-	0,150	P8L-MH02B1

* Px = auxiliary air supply for solenoids, separately from the main valves air supply.

- Total compatibility with ASI Bus
- Islands from 4 to 16 valves output and 4 to 16 inputs
- Protection level IP 65
- Connection M12 or Vampire plug
- ASI indication and 24 V supply diagnostic by LED
- Inputs indication by LED



Dimensions see pages 41 - 42

Operating information

ASI Bus Module characteristics

Protection level	IP 65
ASI operating voltage	26,9 to 31,6 V
Solenoid voltage	24 V DC ±10%
Isolation voltage	1500 V
Vibrations	IEC 68-2-6 1g
Shock	IEC 68-2-27 15 g 11 ms
EMC Protection	IEC 801-2 level 3 IEC 801-3 level 3 IEC 801-4 level 3
Bus diagnostic	2 LED, red and green
Solenoid voltage indication	By LED
Short circuit protection	Diagnostic by LED
Working temperature	0 °C to 55 °C
Storage temperature	-40 °C to 70 °C
Solenoid voltage	ASI Vampire plug or M12

Identification code	7.F
Bus connection	ASI Vampire plug or M12 Connector
Available current on inputs	200 mA
Compatibility with sensors or photo-cells	2 or 3 wires technology
Inputs	PNP type

ASI Network characteristics

Maximum length	100 m
Maximum length with duplicator	200 m
Node capacity	4 inputs and 4 outputs
Total capacity	124 Inputs and 124 output
Number of nodes	1 to 31
Response time	5 ms maxi
Nodes supply	Through the Bus
Total available current	2 A or 5 A

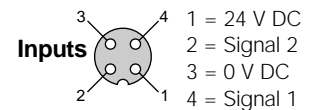
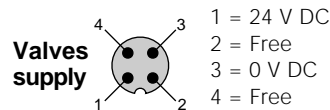
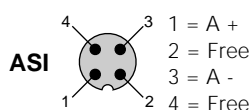
Main data for ASI Bus Modules - Inputs and Outputs version

Description	Connection	Weight kg	Order code
Head module	M12 ASI and valves air supply	0,460	PVL-BA1BA44
	Vampire ASI and valves air supply	0,460	PVL-BA1BA44V
Intermediary air feed module	-	0,400	PVL-BA5BA44
Associating module on ASI Bus with air supply	Without Px version*	0,305	PVL-C1713B
	With Px version (Ø4 mm) *	0,310	PVL-C2713B
Connecting lead to the ASI module addressing terminal	-	0,150	P8B-AJACK
Spare Vampire cover clip	-	0,150	P8B-AVMP2

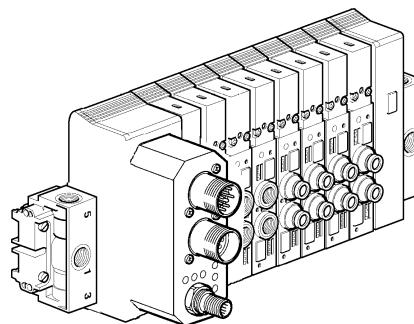
Sold by lot of 5

* Px = auxiliary air supply for solenoids, separately from the main valves air supply.

Connection



- Interbus S - Profibus DP - DeviceNet
- Up to 16 outputs
- Simple connections to PVL-B (1/8") and/or PVL-C (1/4")
- Protection level IP 65
- Bus diagnostic visualisation by LED



Dimensions see pages 41 - 42

Operating information

Protection level	IP 65
Diagnostic Bus	3 to 4 LED
Diagnostic voltage	2 LED
Vibrations	IEC 68-2-6 1g
Shocks	IEC 68-2-7 15 g 11 ms
EMC Protection	EN55011, level B EN61000-4-2, level B EN61000-4-3, level A EN61000-4-4, level B EN61000-4-6, level A
Working temperature	0 °C to 55 °C
Storage temperature	-40 °C to +70 °C
Bus supply voltage	20,4 to 30 V DC
Solenoid supply voltage	21,6 to 26,4 V DC

Additional information

Electrical power supply connection on head module

Connector M12 male 5 pins
(common to all Field Bus)

Bus connection on head module

Interbus S

Connector M23 male 9 pins (Bus IN)
Connector M23 female 9 pins (Bus Out)

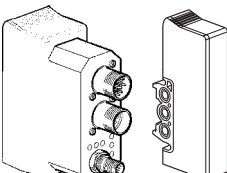
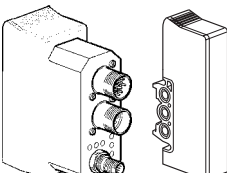
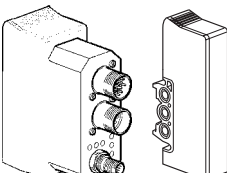
Profibus DP

Connector M12 male 5 pins (Bus IN)
Connector M12 female 5 pins (Bus Out)



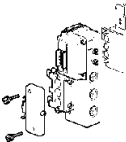
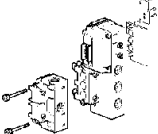
DeviceNet

Connector M12 male 5 pins (Bus)

Main data for 16 outputs Device bus Modules (Interbus S - Profibus DP - DeviceNet)

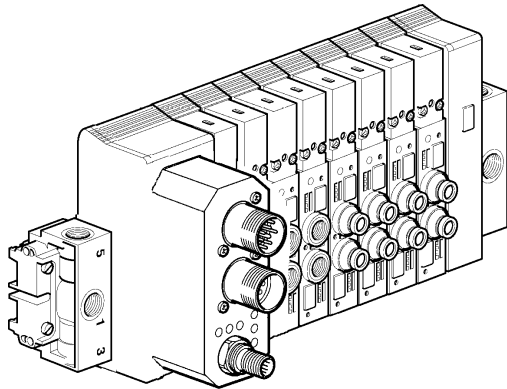
Description	Connection	Weight kg	Order code
 Interbus S module	-	0,560	PVL-B1BS1600A
 Profibus DP module	-	0,490	PVL-B1BP1600A
 DeviceNet module	-	0,490	PVL-B1BD1600A

Mounting accessories for 16 outputs Device bus Modules

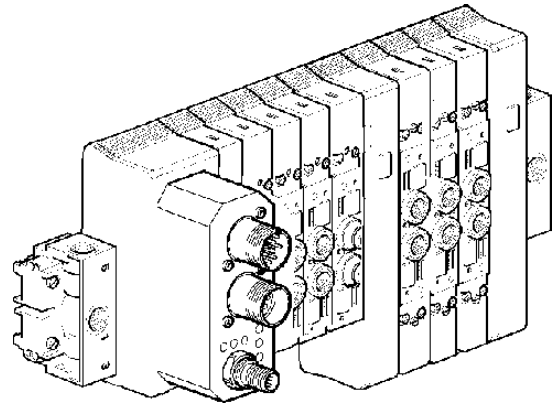
 PVL-B1729	PVL-B10 supply module	Single air supply G1/4	0,175	PVL-B1719
		Dual air supply G1/4	0,245	PVL-B1729
	Kit for bistable PVL-B mounting (or transfert mono-bistable)		0,240	PVL-B1930
	PVL-C air supply module	G 3/8 (without Px version)	0,380	PVL-C1713B
		G 3/8 (with Px version)	0,390	PVL-C2713B
	Kit for PVL-B and PVL-C mixing including PVL-B and PVL-C air supply	G 1/4 and G 3/8 (without Px on PVL-C)	0,450	PVL-C1713B19
		G 1/4 and G 3/8 (with Px on PVL-C)	0,460	PVL-C2713B19

Note : for bus connectors and installation diskett, use the same as for interface 2000 (see page 17).

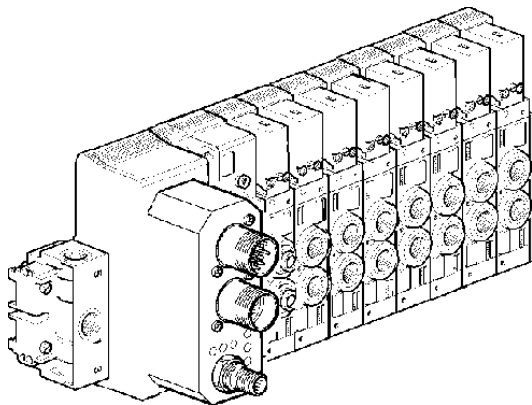
16 outputs Device bus module with PVL-B monostable valves



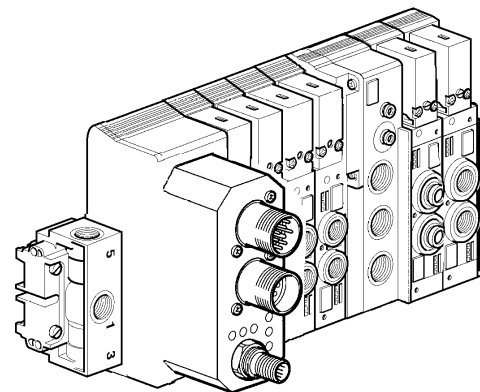
16 outputs Device bus module with PVL-B monostable and bistable valves



16 outputs Device bus module with PVL-C monostable or bistable valves

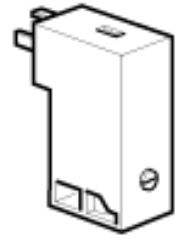


16 outputs Device bus module with PVL-B and PVL-C valves



Valvetronic Solenoid valves 3/2 15 mm DIN 43 650 form C

- High performance and flow
- 8 mm Pin spacing
- UL Listed (according types)
- IP 65 Encapsulated coil (connected)
- Full compliance with European Directives 73/23/EEC "Low Voltage"
89/336/EEC "Electro-Magnetic Compability"



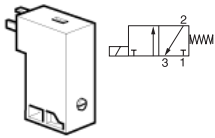
Operating information

	NC, Standard flow	NO, Standard flow	NC, High flow
Working pressure	0 to 10 bar	0 to 10 bar	0 to 10 bar
Working temperature	-15 °C to +60 °C	-15 °C to +50 °C	-15 °C to +50 °C
Orifice diameter	1,0 mm	1,1 mm	1,4 mm
Flow Qmax	33 NI/min	33 NI/min	50 NI/min
Power, Hold	DC1,2 W / AC1,6 VA	DC1,8 W / AC 2,4 VA	DC1,8 W / AC 2,4 VA
Power, Inrush	1,2 W / AC 3,5 VA	1,8 W / AC 5,5 VA	1,8 W / AC 5,5 VA
Voltage range	+ 10 %, -15 %	+ 10 %, -15 %	+ 10 %, -15 %

Note! Solenoids are supplied without screws, to select and order suitable screws please refer to page : 35

Solenoid 15 mm NC Standard flow

(electrical interface same side as pneumatic interface)



Voltage	Weight kg	Order code Without manual override	Weight kg	Order code With manual override Non locking flush	Weight kg	Order code With manual override Locking flush
12 VDC	0,038	P2E-KS32B0	0,038	P2E-KS32B1	0,038	P2E-KS32B2
24 VDC	0,038	P2E-KS32C0	0,038	P2E-KS32C1	0,038	P2E-KS32C2
48 VDC	0,038	P2E-KS32D0	0,038	P2E-KS32D1	0,038	P2E-KS32D2
24 VAC 50Hz	0,038	P2E-KS31C0	0,038	P2E-KS31C1	0,038	P2E-KS31C2
48 VAC 50/60Hz	0,038	P2E-KS34D0	0,038	P2E-KS34D1	0,038	P2E-KS34D2
115 VAC 50Hz/ 120 VAC 60Hz	0,038	P2E-KS31F0	0,038	P2E-KS31F1	0,038	P2E-KS31F2

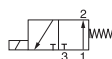
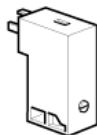
Voltage	Weight kg	Order code With manual override Extended non locking	Weight kg	Order code With manual override Extended locking
24 VDC	0,038	P2E-KS32C3	0,038	P2E-KS32C4
24 VAC 50Hz	0,038	P2E-KS31C3	0,038	P2E-KS31C4

Solenoid 15 mm NO Standard flow

(electrical interface same side as pneumatic interface)

Voltage	Weight kg	Order code Without manual override	Weight kg	Order code		Weight kg	Order code	
				Override Non locking flush	Override Locking flush		Override Non locking flush	Override Locking flush
24 VDC	0,038	P2E-KS12C0	0,038	P2E-KS12C1	0,038	P2E-KS12C2		
24 VAC 50Hz	0,038	P2E-KS11C0	0,038	P2E-KS11C1	0,038	P2E-KS11C2		

Voltage	Weight kg	Order code		Weight kg	Order code	
		Override extended non locking	Override extended locking		Override extended non locking	Override extended locking
24 VDC	0,038	P2E-KS12C3	0,038	P2E-KS12C4		
24 VAC 50Hz	0,038	P2E-KS11C3	0,038	P2E-KS11C4		

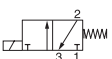
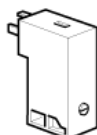


Solenoid 15 mm NC High flow

(electrical interface same side as pneumatic interface)

Voltage	Weight kg	Order code Without manual override	Weight kg	Order code		Weight kg	Order code	
				Override flush Non locking	Override flush Locking		Override flush Non locking	Override flush Locking
24 VDC	0,038	P2E-HS32C0	0,038	P2E-HS32C1	0,038	P2E-HS32C2		
24 VAC 50Hz	0,038	P2E-HS31C0	0,038	P2E-HS31C1	0,038	P2E-HS31C2		
48 VDC	0,038	P2E-HS32D0	0,038	P2E-HS32D1	0,038	P2E-HS32D2		
115 V 50Hz / 120 V 60Hz	0,038	P2E-HS31F0	0,038	P2E-HS31F1	0,038	P2E-HS31F2		

Voltage	Weight kg	Order code		Weight kg	Order code	
		Override extended non locking	Override extended locking		Override extended non locking	Override extended locking
24 VDC	0,038	P2E-HS32C3	0,038	P2E-HS32C4		
24 VAC 50Hz	0,038	P2E-HS31C3	0,038	P2E-HS31C4		
48 VDC	0,038	P2E-HS32D3	0,038	P2E-HS32D4		
115 V 50Hz / 120 V 60Hz	0,038	P2E-HS31F3	0,038	P2E-HS31F4		



Main data for spare set of Solenoids Mounting screws

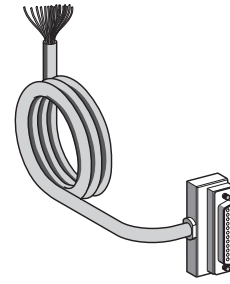
Kit	Type	Material	Ø mm	Length mm	Weight kg	Order code
	Metric	Steel, passivated	M3	26	0,02	P2E-KP026PM3*
	Self tapping	Steel, passivated	Ø 3 mm	25	0,02	P2E-KP025PS3*

*Sold by lot of 10

Correspondence table between screws and Valves Series

Valvetronic Series	Description	Mounting screw length	Order code Mounting screw kit
P2S-HW	Valvetronic Solstar	25 mm	P2E-KP025PS3
P2S-EW	Interface 2000	26 mm	P2E-KP026PM3
PVL-B10	Valvetronic 1/8"	26mm	P2E-KP026PM3
PVL-C10	Valvetronic 1/4"	26 mm	P2E-KP026PM3

- Leads and connector (plugged in)
- Protection level IP 65
- Suitable for use across the Valvetronic Modular program
- HE 10 for budget cable gland version
- Sub D 25 for compact version
- Cylindrical 19 or 35 pins for heavy duty industrial



General characteristics

Working temperature	-15 °C to 60 °C
Working current:	
AWG20	5 A
AWG24	2,5 A
AWG28	1 A

Main data for Connecting leads for Head module with cover gland (HE10)

Type	Connection to valve island	Connection to the control system	Lenght m	Weight kg	Order code
	HE10/HE14 female	20 coloured wires AWG 24	5,0	0,510	P8L-MH20A5
			9,9	1,010	P8L-MH20A9
		HE10 20 pins for direct	1,5	0,160	P8L-MH20A1BH20A
		plug-in connection on PLC AWG24	3,0	0,310	P8L-MH20A3BH20A
			5,0	0,510	P8L-MH20A5BH20A
			9,9	1,010	P8L-MH20A9BH20A

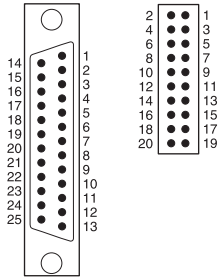
Main data for Connecting leads for Head module with Sub D 25

Type	Connection to valve island	Connection to the control system	Lenght m	Weight kg	Order code
	Leads for head module with Sub D 25 female	20 coloured wires AWG 24	5,0	0,540	P8L-MD25A5B
			9,9	1,040	P8L-MD25A9B
			15,0	1,540	P8L-MD25ACB
		25 wires roles flat ribbon AWG 28	5,0	0,540	P8L-MD25A5
			9,9	0,540	P8L-MD25A9
		HE10 20 pins for direct plug-in connection on PLC	1,5	0,160	P8L-MD25A1BH20A
	3,0	0,310	P8L-MD25A3BH20A		
	5,0	0,510	P8L-MD25A5BH20A		
	9,9	1,010	P8L-MD25A9BH20A		

Main data for Connecting leads for Head module with Cylindrical Heavy duty connector

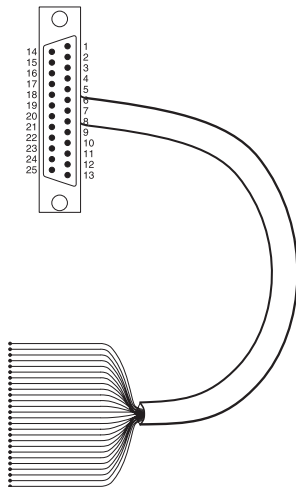
Type	Connection to valve island	Connection to the control system	Lenght m	Weight kg	Order code
	Cylindric connector	19 pins max. Ø cable = 16 mm	To be wired	0,060	P8C-MC19A
		35 pins max. Ø cable = 22 mm	To be wired	0,090	P8C-MC35A
	Leads with cylindric Connection	19 coloured wires AWG 20 (16 outputs) max. Ø cable = 12 mm	5,0		P8L-MC19A5
			9,9		P8L-MC19A9
	Connection	35 coloured wires AWG 20 (32 outputs) max. Ø cable = 15 mm	5,0		P8L-MC35A5
			9,9		P8L-MC35A9

Wiring connection for cable gland and Sub D 25 with AWG 24 wire



Colour	Input or Output N°	Sub D 25 Pin Nr	HE10 Pin Nr	Colour	Input or Output Nr	Sub D 25 Pin Nr	HE10 Pin Nr
Green	0	13	1	Orange	13	19	14
Tranparent	1	25	2	White	14	6	15
Dark blue	2	12	3	Grey	15	18	16
Light blue	3	24	4	Red/Black	Free	5	17
Pink	4	11	5	Red	24 V	17	17
Purple	5	23	6	Brown	0 V	4	18
Dark green/Black	6	10	7	Black	0 V	16	18
Yellow	7	22	8		16	3	-
Light green/Black	8	9	9		17	15	-
Yellow/black	9	21	10		18	2	-
Blue/Black	10	8	11		19	14	-
White/Black	11	20	12	*	20	1	-
Khaki	12	7	13	* Red wire for flat ribbon cable			

Wiring connection for Sub D 25 with rolled flat ribbon AWG 28 wires



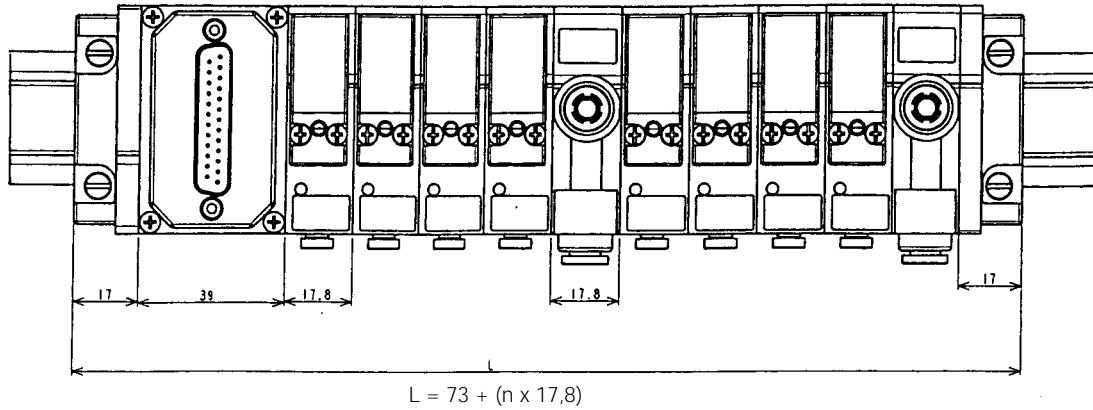
Colour	Nr of Ribbon wires after red wire	Sub D Pin Nr	Input/ Output Nr	Colour	Nr of Ribbon wires after red wire	Sub D Pin Nr	Input/ Output Nr
Grey	24	13	0	Grey	11	19	13
Grey	23	25	1	Grey	10	6	14
Grey	22	12	2	Grey	9	18	15
Grey	21	24	3	Grey	8	5	Free
Grey	20	11	4	Grey	7	17	24 V
Grey	19	23	5	Grey	6	4	0 V Inputs
Grey	18	10	6	Grey	5	16	0V Valves
Grey	17	22	7	Grey	4	3	16
Grey	16	9	8	Grey	3	15	17
Grey	15	21	9	Grey	2	2	18
Grey	14	8	10	Grey	1	14	19
Grey	13	20	11	Red	0 (Red wire)	1	20
Grey	12	7	12				

Wiring connection for cylindrical 19 or 35 pins with AWG 20 wires

I/O Nr	Colour	Connector 19 Pin Nr	Connector 35 Pin Nr	I/O Nr	Colour	Connector 19 Pin Nr	Connector 35 Pin Nr	I/O Nr	Colour	Connector 19 Pin Nr	Connector 35 Pin Nr	I/O Nr	Colour	Connector 19 Pin Nr	Connector 35 Pin Nr
0	Pink-Brown	A	A	9	Violet	K	K	18	White-Black	-	V	27	Yellow-Grey	-	e
1	White-Green	B	B	10	Blue	L	L	19	Brown-Blue	-	W	28	Yellow-Pink	-	f
2	White-Yellow	C	C	11	Pink	M	M	20	Brown-Red	-	X	29	Yellow-Blue	-	g
3	White-Grey	D	D	12	Grey	N	N	21	Brown-Black	-	Y	30	Yellow-Red	-	h
4	White-Pink	E	E	13	Yellow	P	P	22	Grey-Green	-	Z	31	Yellow-Black	-	i
5	Brown-Green	F	F	14	White	R	R	23	Pink-Green	-	a	0 V valves	Black	T	j
6	Red-Blue	G	G	15	Green	S	S	24	Green-Blue	-	b	0 V inputs	Brown	U	k
7	Grey-Pink	H	H	16	White-Blue	-	T	25	Green-Red	-	c	24 V inputs	Red	V	m
8	Yellow-Brown	J	J	17	White-Red	-	U	26	Green-Black	-	d				

Dimensions, Valvetronic Solstar

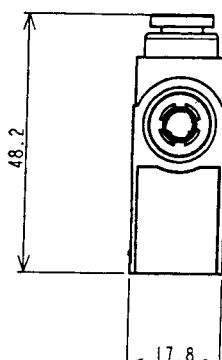
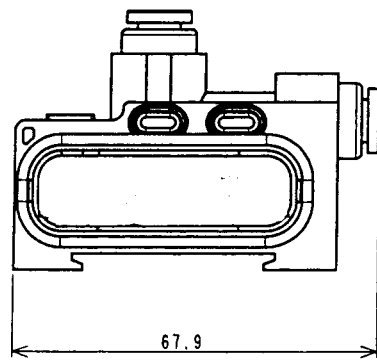
Configuration Solstar with intermediary air feed module



n = number of valves

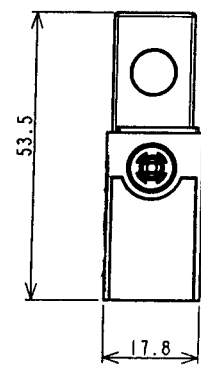
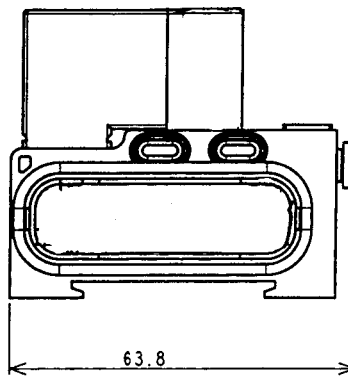
P2S-HA246

Intermediary air feed module



P2S-KW**

Basic module with Solenoid valve

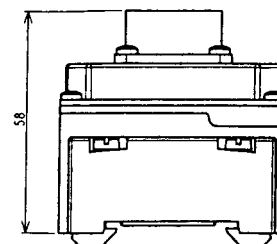
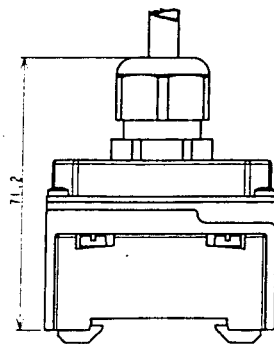
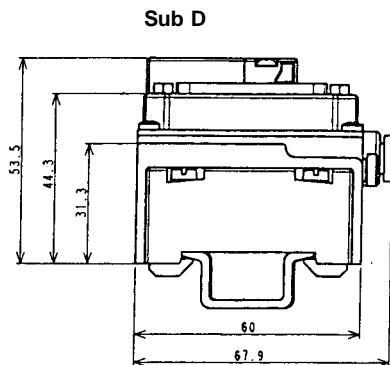


Head modules :

P2S-HA146C13A
SubD25

P2S-KA146H20A
Cable gland

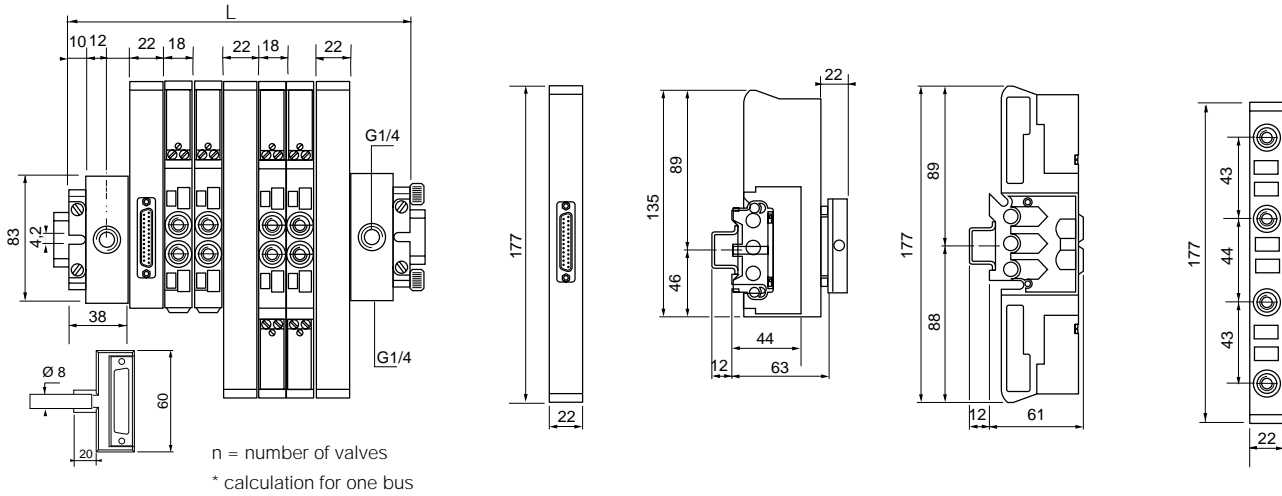
P2S-KA146d25A
Cylindrical



Dimensions, Valvetronic PVL-B10

Uniform configuration $L = 120 + (n \times 18)^*$

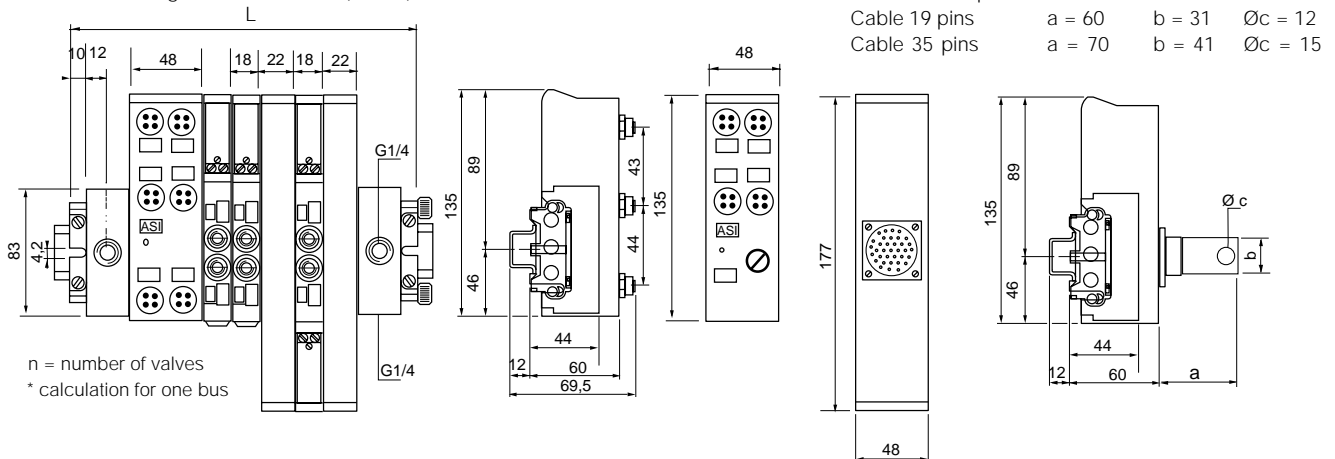
Mixed configuration $L = 142 + (n \times 18)^*$



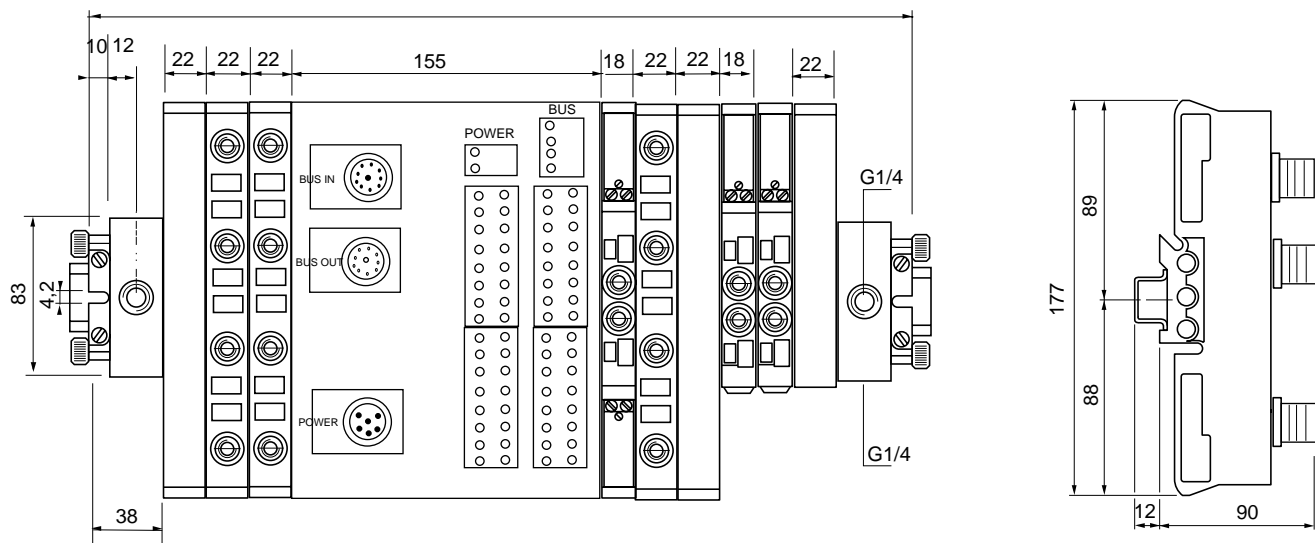
ASI Bus

Uniform configuration $L = 146 + (n \times 18)^*$

Mixed configuration $L = 168 + (n \times 18)^*$

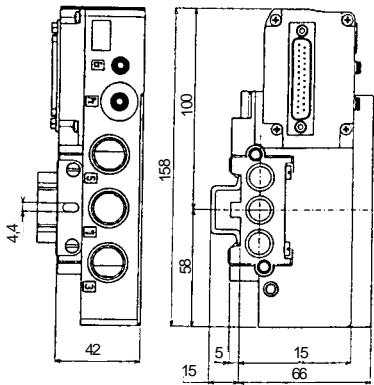


DeviceNet, Profibus DP, Interbus S, FIPIO

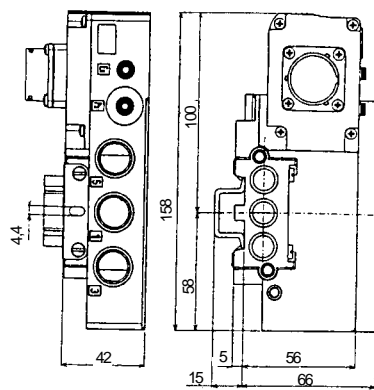


Dimensions, Valvetronic PVL-C10

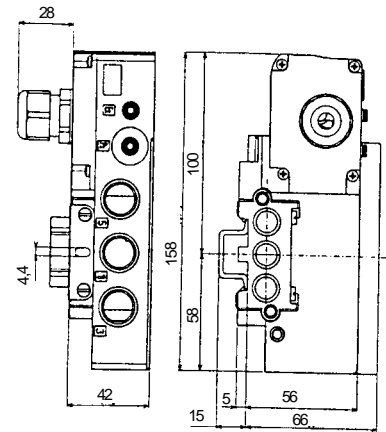
Head modules : SubD25 connector



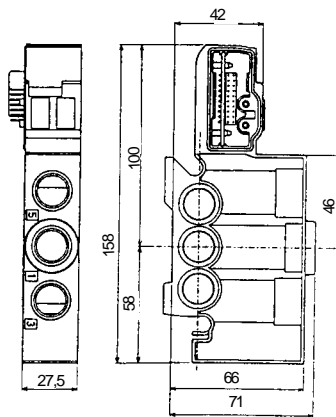
Cylindrical connector



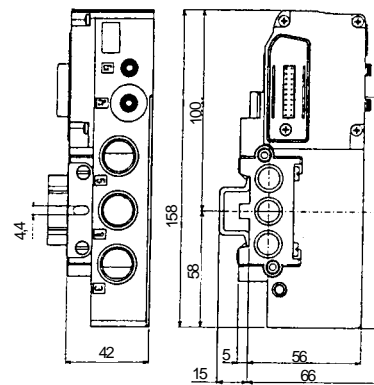
Cable gland



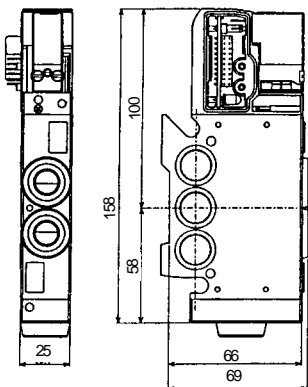
Intermediary air supply module



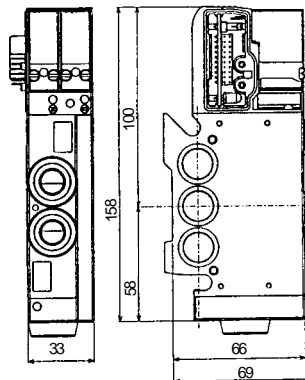
Transfer Module from PVL-B10/PVL-C10 and Head
ASI bus / Air feed module PVL-C10



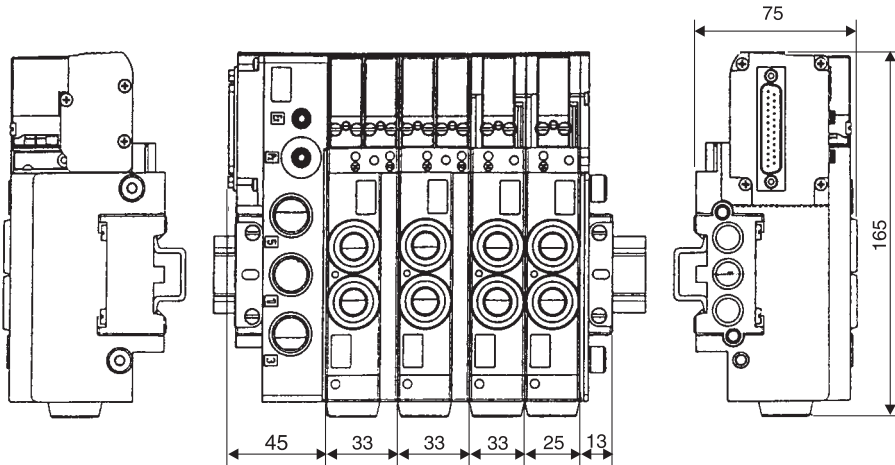
Valve 5/2 monostable



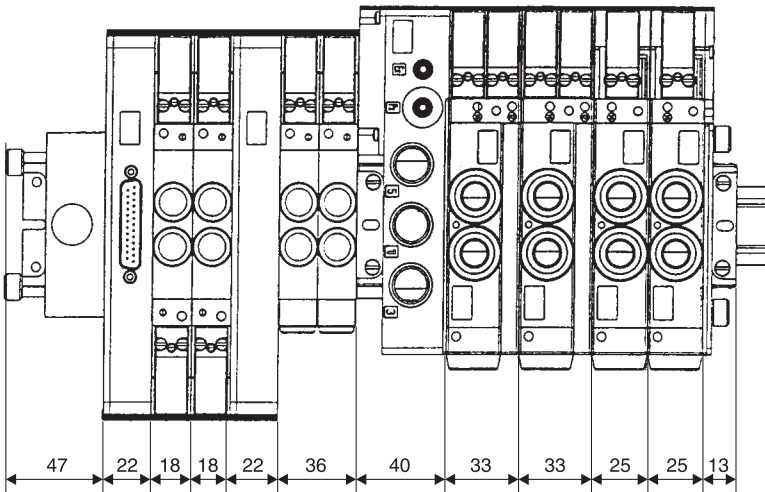
Valve 5/2 bistable - 2x3/2 - 5/3



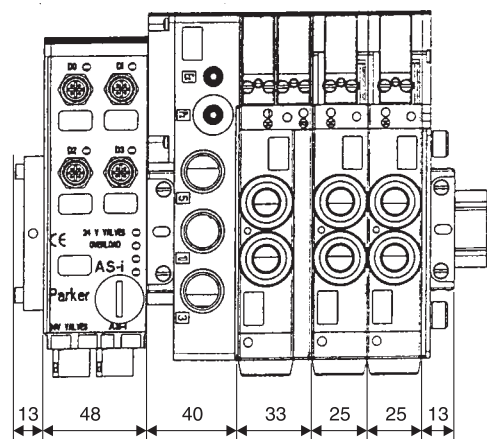
Dimensions, Valvetronic PVL-C10



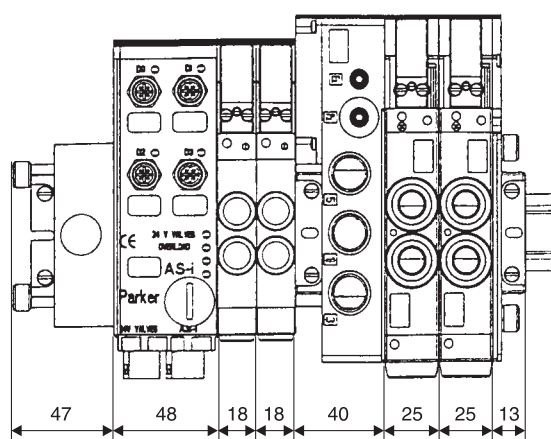
Association PVL-B10 G1/8 and PVL-C10 G1/4



Association ASI and PVL-C10



Association ASI and PVL-B10 and PVL-C10



Pneumatic Division Sales Offices

Cannock - England
Tel: +44 1543 456000
Fax: +44 1543 456001

Prague - Czech Republic
Tel: +42 2 6134 1701
Fax: +42 2 6134 1703

Evreux - France
Tel: +33 2 32 233400
Fax: +33 2 32 289807

Ishøj - Denmark
Tel: +45 43 560400
Fax: +45 43 733107

Mettman - Germany
Tel: +49 2104 1370
Fax: +49 2104 137500

Madrid - Spain
Tel: +34 91 675 7300
Fax: +34 91 675 7711

Switzerland
Tel: +41 32 3653711
Fax: +41 32 3653730

Vantaa - Finland
Tel: +358 9 4767 31
Fax: +358 9 4767 3201

Ulricehamn - Sweden
Tel: +46 321 285 00
Fax: +46 321 179 25

Corsico, Milan - Italy
Tel: +39 02 45192206
Fax: +39 02 4479340

Brussels - Belgium
Tel: +32 2 762 18 00
Fax: +32 2 762 33 30

Budapest - Hungary
Tel: +36 1 252 8137
Fax: +36 1 252 8129

Langhus - Norway
Tel: +47 64 867760
Fax: +47 64 866888

Oldenzaal - Netherlands
Tel: +31 541 585000
Fax: +31 541 585459

Warsaw - Poland
Tel: +48 22 8634942
Fax: +48 22 8634944

Neustadt - Austria
Tel: +43 1 892 4545
Fax: +43 1 892 4546



Parker Hannifin plc
Pneumatic Division
Walkmill Lane, Bridgtown,
Cannock, Staffs. WS11 3LR. U.K.

We reserve the right to make
alterations without prior notification.
Edition 2000.05