Partnership. With Guarantee.

Valve island system with MULTIPOL or fieldbus connection
Series PS157





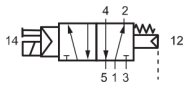
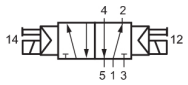
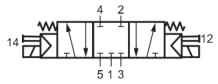
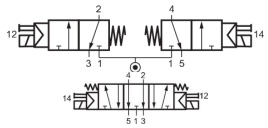
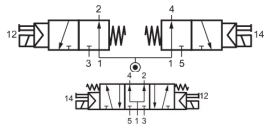
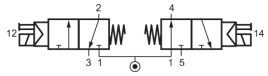
Design type	- compact, modular valve terminal with up to 23 modules (max. 60 pilot valves) for 2 valve stations each - can be individually combined with various valve functions - with pressure separators different operating pressures can be selected - the pilot valves can be easily replaced from the side - easily expandable or modifiable retrospectively - Functionality : The communication system in the valve island operates via an internal bus system with serial communication.
PS157 - MULTIPOLE	Valve manifold Multipole system optionally with 25-pin Sub-D connector with a total of max. 24 pilot valves or 44-pin Sub-D connector with max. 32 pilot valves Voltage : 24VDC(±10%)
PS157 - FIELDBUS	Valve island equipped with up to 23 modules (max. 60 pilot valves) Protocol : optional Profinet Connection M12, Ethernet/IP Connection M12, Ethercat Connection M12 Voltage : 24VDC(±10%) Current : max. 2,3A = Supply for max. 60 pilot valves
Working ports	lateral Push-in fitting Ø6mm
Solenoid coil indicator	LED
Manual emergency override	Push button
Degree of protection	IP65 according to EN 60529 (protection against dust ingress and water jets)
Mounting position	any
Medium	filtered and lubricated or non-lubricated compressed air
Flow rate	500 Nl/min
Pressure range	Operating pressure -0,9...+9bar, Control pressure 3...7bar (The valve manifolds always require an external pilot air supply of 3 to 7bar, supplied via a Ø4mm connection.)
Medium temperature	0...+40°C
Ambient temperature	-10...+50°C
Power consumption Pilot valve	1W, 100% Duty cycle (Continuous operation)
Pilot valve material	glass fibre reinforced polyamide 6.6, Insulation class H
Note	CAD files are available on request

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Type code

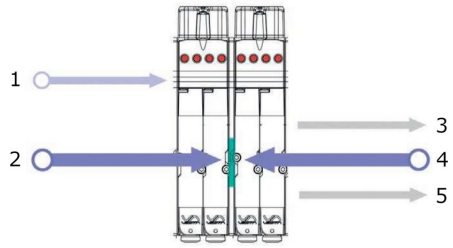
		PS157	-	2	-	1446	-	MM-...	-	D2H	-	03
Type	Valve manifold PS157	PS157										
Number of valve stations	2...X			2								
Air connection	1/4"/4mm-6mm					1446						
Function	5/2-way valve solenoid/spring-return							M				
	5/2-way valve electric/electric							B				
	5/3-way valve electric/electric, center position closed							C				
	2 x 3/2-way valve NC electric/spring-return also corresponds to 5/3-way valve center position open							D				
	2 x 3/2-way valve NO solenoid/spring return also corresponds to 5/3-way valve, centre position pressurised							E				
	2 x 3/2-way valve NC/NO solenoid/spring return							F				
	free space							V				
	Intermediate plate with additional pressure supply connection G1/8"							S				
	Intermediate plate with additional exhaust port G1/8"							O				
	Separating element between two modules							Z				
	Separating element between two valves(of the same module)							W				
	Operating pressure separator with separate pressure supply connection G1/8"							X				
Connection	D-SUB 25 horizontal									D2H		
	D-SUB 25 vertical									D2V		
	D-SUB 44 horizontal									D4H		
	D-SUB 44 vertical									D4V		
	Profinet									PF		
	Ethernet IP									ET		
	ETHERCAT									EC		
Voltage	24VDC											03

Valve stations

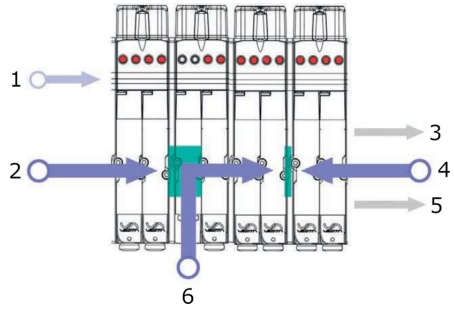
	M	5/2-way valve solenoid/spring-return
	B	5/2-way valve electric/electric
	C	5/3-way valve electric/electric, center position closed
	D	2 x 3/2-way valve NC electric/spring-return also corresponds to 5/3-way valve center position open
	E	2 x 3/2-way valve NO solenoid/spring return also corresponds to 5/3-way valve, centre position pressurised
	F	2 x 3/2-way valve NC/NO solenoid/spring return

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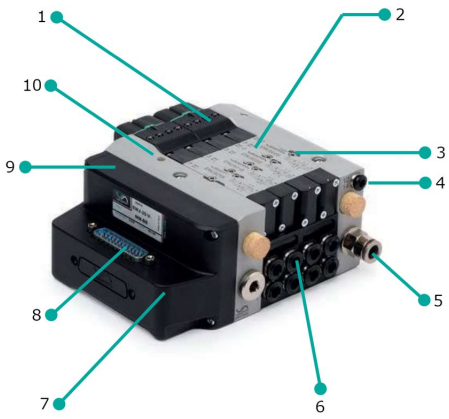
2 Different operating pressures
Separating element between two modules Function Z

	1...Pilot air 2...Operating pressure 1 3...Exhaust air venting 4...Operating pressure 2 5...Exhaust air venting

3 Different operating pressures
Operating pressure separator with separate pressure supply connection Function X and Separating element between two modules Function Z

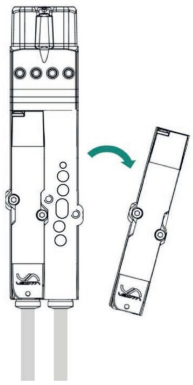
	1...Pilot air 2...Operating pressure 1 3...Exhaust air venting 4...Operating pressure 2 5...Exhaust air venting 6...Operating pressure 3

General characteristics

	1...Coil 10mm, 1W 2...Valve body 14mm, Switching time <15ms 3...Operating pressure -0,9...+9bar 4...Control pressure 3...7bar 5...Pressure inlet G1/4" 6...Working ports Push-in fitting Ø6mm 7...Protection class IP65, Ambient temperature -5...+50°C 8...D-Sub 25, D-Sub 44 9...Voltage 24V ±10% 10...Exhaust air venting Pilot valves M5

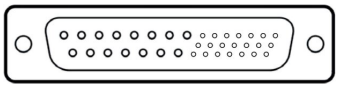
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High modularity



The PS157 valves and pilot valves are mounted independently of each other. This allows pneumatic components – i.e. valve body and pilot valve – to be installed or replaced without disconnecting an electrical connection.
Only two screws are required to mount the valve. The pilot valves can be mounted after simply opening a plastic cover. This allows switching from one pilot valve to a second pilot valve (and vice versa) at any time without any problems.

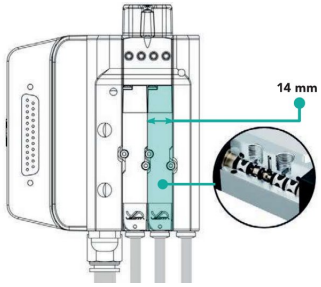
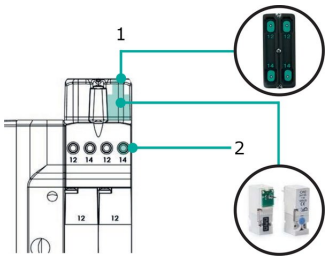
Auto-configuration

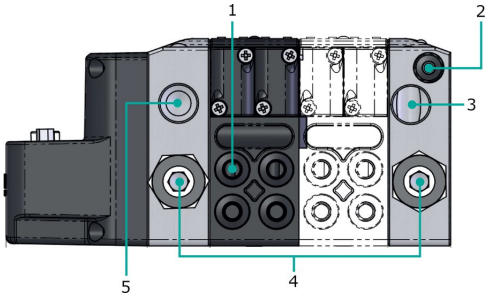


A completely new valve manifold concept:
An internal bus system connects all solenoid coils via serial communication – without physical pin-to-pin connections. The power supply is provided via the signal itself.
When first powered on and addressed, the valve island performs a rapid self-configuration of the installed coil stations.
Empty stations are skipped in the process.
A simple reset enables a new configuration at any time.

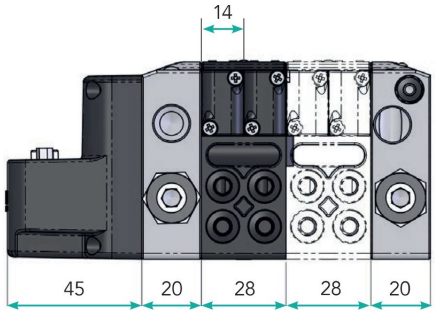
D-SUB 25 max. 24 coils available (possible)	D-SUB 44 max. 32 coils available (possible)

Components

pneumatic valve	Pilot valve
	
	1...Protective cap with manual emergency actuation 2...Pilot valve

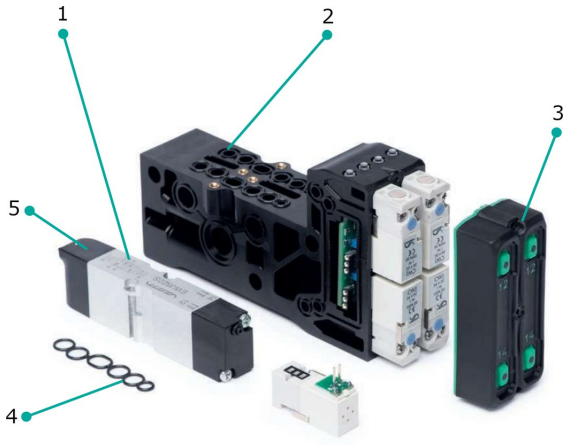
Air connections	
	The valve manifolds always require an external pilot air supply of 3 to 7bar, supplied via a Ø4mm connection. This allows the valve manifold to operate at working pressures from –0.9 to 9 bar without impairing the function of the pilot valves.. The pilot valve vents independently. 1...Working ports Push-in fitting Ø6mm 2...Pilot air Push-in fitting Ø4mm 3...Exhaust air venting G1/4" 4...Pressure inlets G1/4" 5...Exhaust air venting G1/4"

Module Dimensions



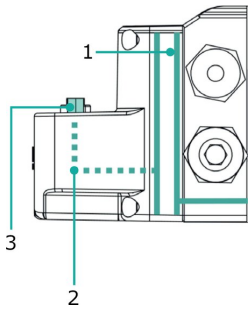
The 28 mm modules are designed for 2 valves, 4 coils and 4 working ports Ø6 mm.
The valve body itself is 14 mm wide.
Mounting is simple via 3 through holes and O-rings.
The modules are made of a temperature-resistant technopolymer with 50% glass fiber.

Materials



1...Aluminium
2...Technopolymer with 50% glass fiber
3...Soft PU and POM
4...NBR
5...POM

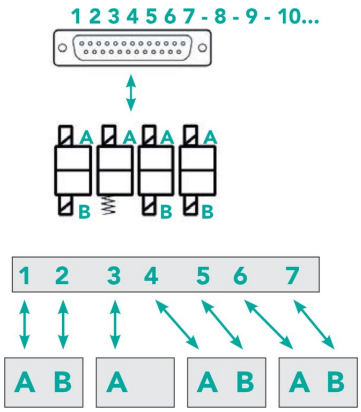
Microprocessor



Base and valve modules are equipped with microprocessor-controlled electronics.
This solution optimizes the multiple connections via D-SUB 25 (up to 24 coils, 0V on pin 25) and D-SUB 44 (up to 32 coils).
The valve terminal does not require an external power supply.
The pin that drives the coil also supplies the electronics.
The power consumption of the electronics is so low that the coil current remains unaffected.

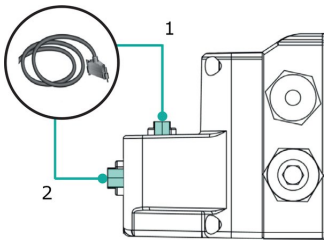
1...Aluminium
2...Flat ribbon cable
3...D-SUB 25 or D-SUB 44

Configuration



The electronics simplify the assignment between pin number and coil.
The module sequence is independent of the electrical connection.
Empty stations remain unassigned. Each signal controls only coils that are actually present.
During the first activation, each pin is automatically assigned to the next available coil – this configuration is saved.
If a new configuration is to be created, it can simply be reset using the reset button.
Reset button can be ordered on request.

Multipole connectors



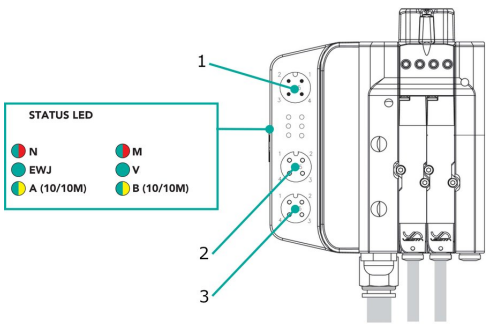
PS157 offers two plug-in variants: vertical and horizontal, to optimally adapt to different installation situations and minimize the space required for wiring.
Both connection types are available for both D-SUB 25 and D-SUB 44.

Electrical connection



PS125 multipole has no predefined wiring – it is generated automatically during assembly.
Each coil occupies the next available pin.
The return line (0V) is on pin 25.
The circuit diagram for D-SUB 44 is available on request.

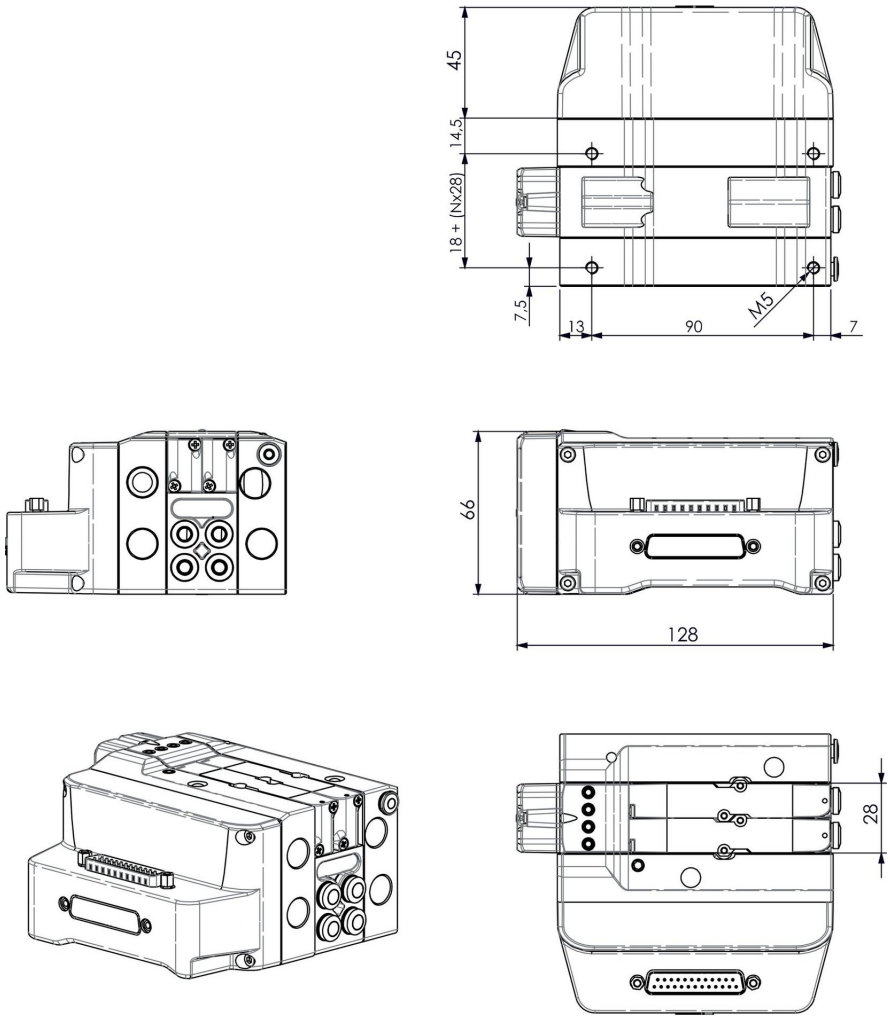
Fieldbus Diagnostics



PS157 extends the innovative concept to the fieldbus connections as well.
Ethernet diagnostics is performed on three levels:
1. Visual inspection of the status LEDs on the device.
2. Communication via RS232 interface using special USB cable at the PWR-M12 connection.
3. Web server in the module, accessible via the network (PORT 1 – M12).

The PWR-M12 port thus serves both for power supply (24VDC) and for serial diagnostics.
Two cables are available: WPC-M12-PWR for power supply and WPC-M12-USB for serial diagnostics.
Network communication is via a standard M12 Ethernet cable (WPC-M12-ETH).
Documentation on addressing and diagnostics is available.
1...Power supply M12 connector, 5-pin, A-coded
2...Port 1, M12 socket, 4-pin, D-coded
3...Port 2, M12 socket, 4-pin, D-coded

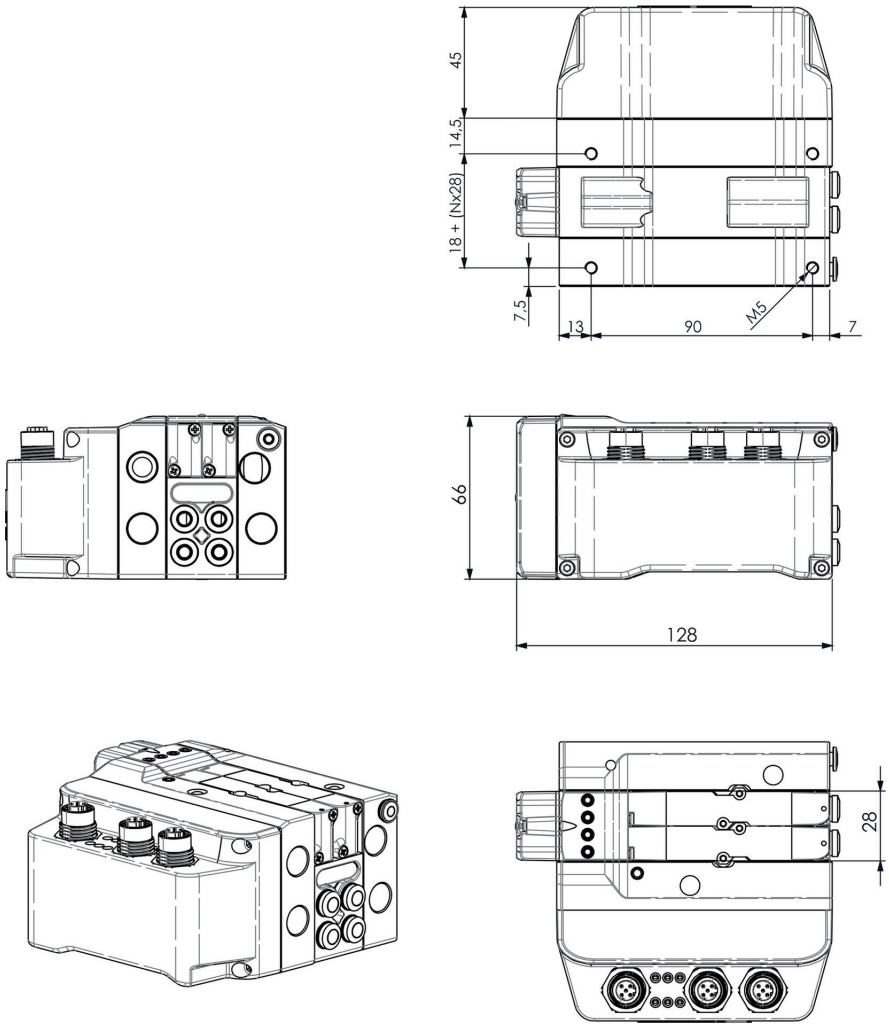
Dimensions PS157 MULTIPOLE



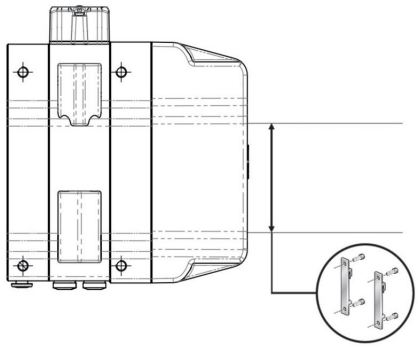
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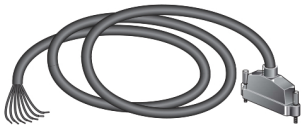
Dimensions PS157 Fieldbus



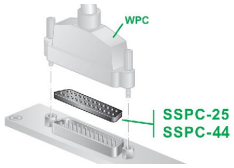
MKD-PS157 Mounting kit according to DIN RAIL EN 50022



WPC- .. - ... Connection cable for multipole connector



WPC-25-025 SUB D 25, Length 2,5 m
WPC-25-050 SUB D 25, Length 5,0 m
WPC-44-025 SUB D 37, Length 2,5 m
WPC-44-050 SUB D 37, Length 5,0 m



SSPC-25 D-SUB 25
SSPC-44 D-SUB 44
Seal for protection class IP65

Pin assignment Connection cable WPC-25(WPC-44 on request

Connection	Connection	Connection	Color	Connection	Color	Connection	Color
1	white	8	red	15	white yellow	22	brown blue
2	brown	9	black	16	yellow brown	23	white red
3	green	10	violet	17	white grey	24	brown red
4	yellow	11	grey pink	18	grey brown	25	white black
5	grey	12	red blue	19	white pink		
6	pink	13	white green	20	pink brown		
7	blue	14	brown green	21	white blue		

WPC-M12 - ... Connection cable for fieldbus



WPC-M12-PWR , Power supply cable Length 2,5m
WPC-M12-USB, Serial diagnostic cable, Length 2,5m
WPC-M12-ETH , Standard M12 Ethernet cable Length 2,5m

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