

## Valve island system with MULTIPOL or fieldbus connection

### Series PS157



|                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Design type                   | <ul style="list-style-type: none"> <li>- compact, modular valve terminal with up to 23 modules (max. 60 pilot valves) for 2 valve stations each</li> <li>- can be individually combined with various valve functions</li> <li>- with pressure separators different operating pressures can be selected</li> <li>- the pilot valves can be easily replaced from the side</li> <li>- easily expandable or modifiable retrospectively</li> <li>- Functionality : The communication system in the valve island operates via an internal bus system with serial communication.</li> </ul> |
| 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<br>Voltage : 24VDC(±10%)                                                                                                                                                                                                                                                                                                                                                                                             |
| PS157 - FIELDBUS              | Valve island equipped with up to 23 modules (max. 60 pilot valves)<br>Protocol : optional Profinet Connection M12, Ethernet/IP Connection M12, Ethercat Connection M12<br>Voltage : 24VDC(±10%)<br>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 NI/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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |



## Type code

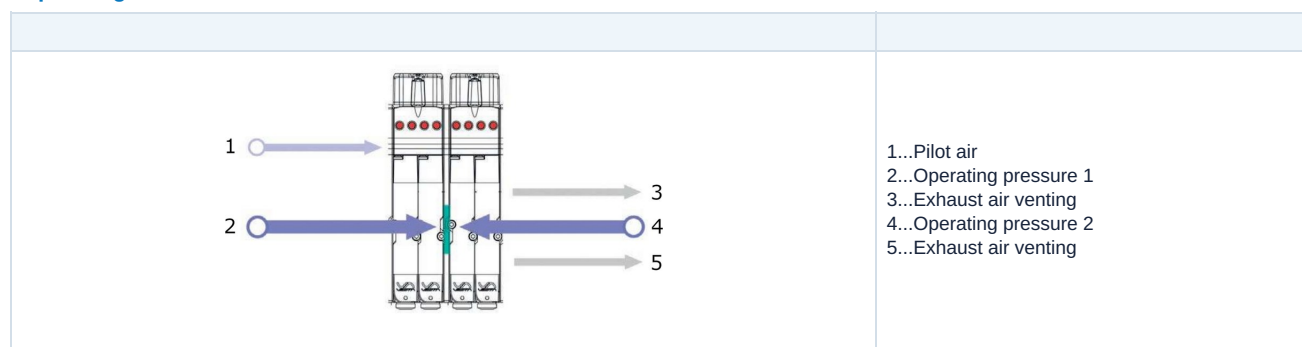
|                                 |                                                                                                               |       |   |   |      |   |        |   |     |    |    |
|---------------------------------|---------------------------------------------------------------------------------------------------------------|-------|---|---|------|---|--------|---|-----|----|----|
| PS157                           |                                                                                                               | -     | 2 | - | 1446 | - | MM-... | - | D2H | -  | 03 |
| <b>Type</b>                     | Valve manifold PS157                                                                                          | PS157 |   |   |      |   |        |   |     |    |    |
| <b>Number of valve stations</b> | 2...X                                                                                                         | 2     |   |   |      |   |        |   |     |    |    |
| <b>Air connection</b>           | 1/4"/4mm-6mm                                                                                                  | 1446  |   |   |      |   |        |   |     |    |    |
| <b>Function</b>                 | 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<br>also corresponds to 5/3-way valve center position open         | D     |   |   |      |   |        |   |     |    |    |
|                                 | 2 x 3/2-way valve NO solenoid/spring return<br>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     |   |   |      |   |        |   |     |    |    |
| <b>Connection</b>               | 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  |    |    |
| <b>Voltage</b>                  | 24VDC                                                                                                         |       |   |   |      |   |        |   |     | 03 |    |

### Valve stations

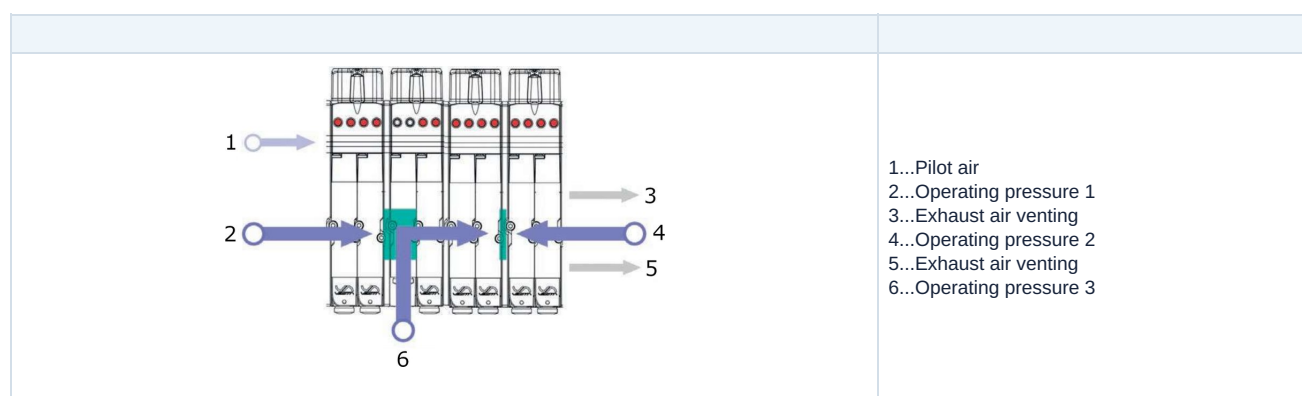
|  |   |                                                                                                               |
|--|---|---------------------------------------------------------------------------------------------------------------|
|  | M | 5/2-way valve solenoid/spring-return                                                                          |
|  | 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<br>also corresponds to 5/3-way valve center position open         |
|  | E | 2 x 3/2-way valve NO solenoid/spring return<br>also corresponds to 5/3-way valve, centre position pressurised |
|  | F | 2 x 3/2-way valve NC/NO solenoid/spring return                                                                |



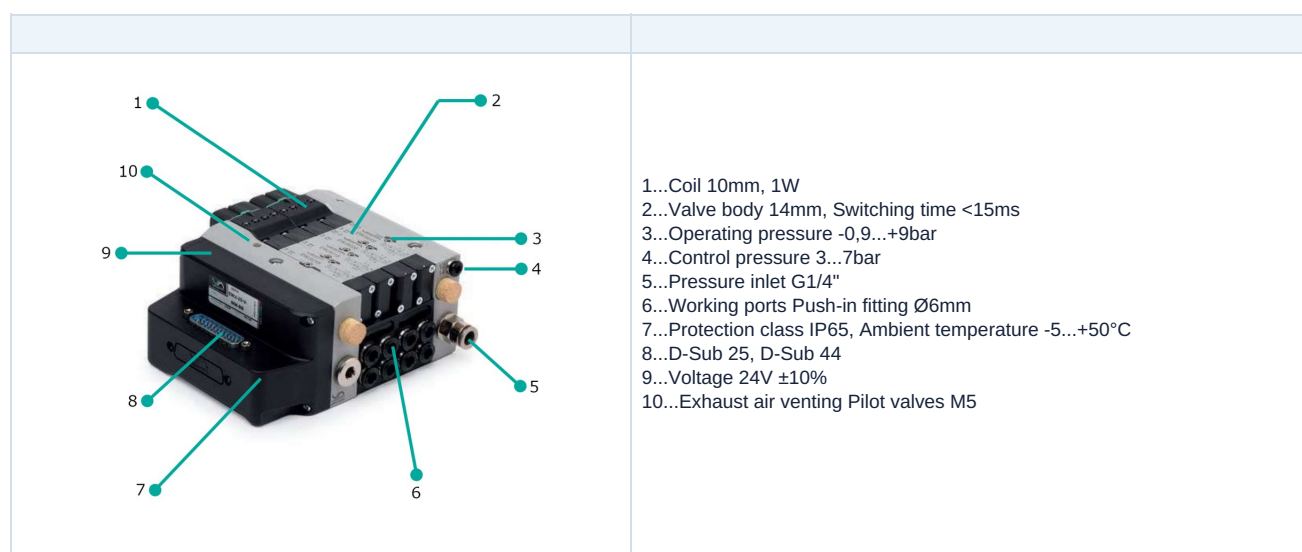
## 2 Different operating pressures Separating element between two modules Function Z



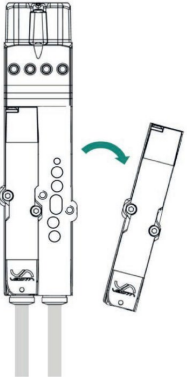
## 3 Different operating pressures Operating pressure separator with separate pressure supply connection Function X and Separating element between two modules Function Z



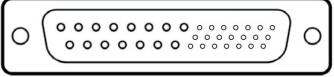
## General characteristics



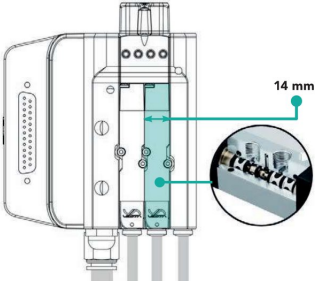
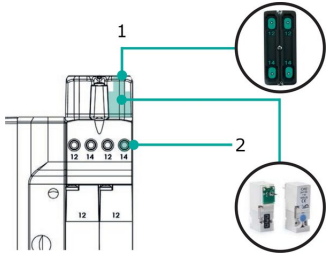
High modularity

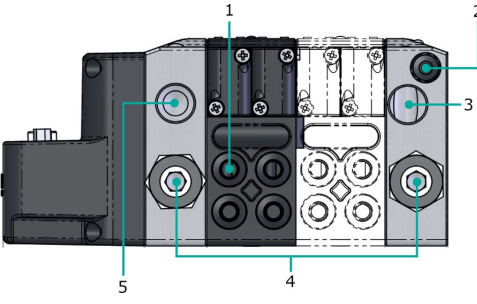
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|                                                                                                                                                                                                                                                                                                                                                                                                |  |
| <p>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.</p> |  |

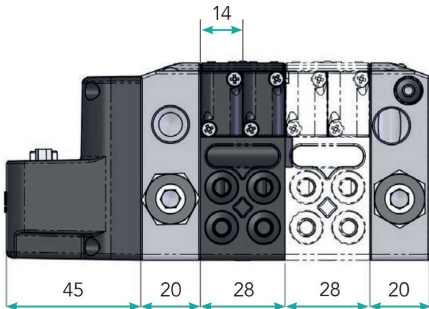
Auto-configuration

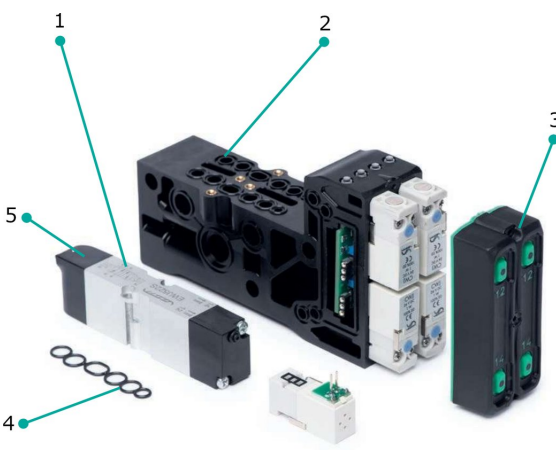
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                        |                                                   |
| <p>A completely new valve manifold concept:<br/>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.<br/>When first powered on and addressed, the valve island performs a rapid self-configuration of the installed coil stations.<br/>Empty stations are skipped in the process.<br/>A simple reset enables a new configuration at any time.</p> |                                                   |
| D-SUB 25<br>max. 24 coils<br>available (possible)                                                                                                                                                                                                                                                                                                                                                                                                                       | D-SUB 44<br>max. 32 coils<br>available (possible) |

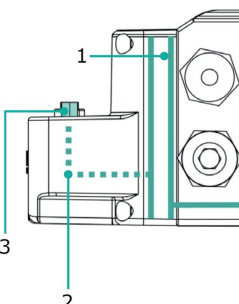
Components

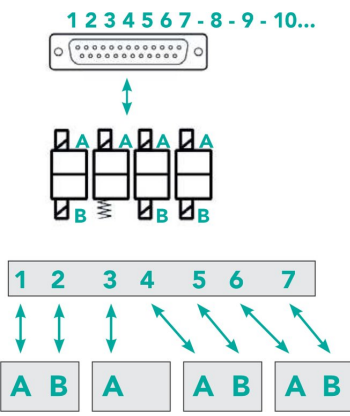
| pneumatic valve                                                                     | Pilot valve                                                                          |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|  |  |
| <p>1...Protective cap with manual emergency actuation<br/>2...Pilot valve</p>       |                                                                                      |

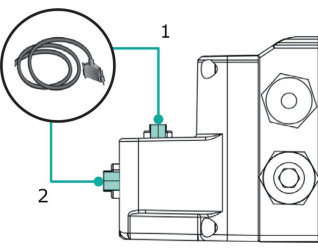
| Air connections                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>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.</p> <p>1...Working ports Push-in fitting Ø6mm<br/>2...Pilot air Push-in fitting Ø4mm<br/>3...Exhaust air venting G1/4"<br/>4...Pressure inlets G1/4"<br/>5...Exhaust air venting G1/4"</p> |

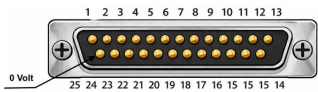
| Module Dimensions                                                                 |                                                                                                                                                                                                                       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

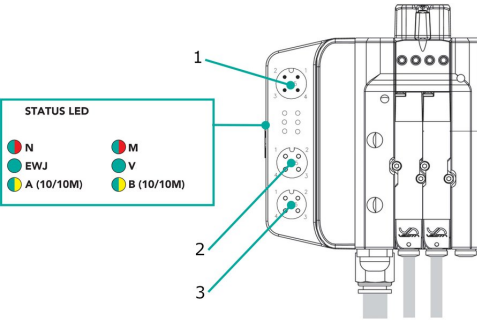
| Materials                                                                          |                                                                                                                     |
|------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
|  | <p>1...Aluminium<br/> 2...Technopolymer with 50% glass fiber<br/> 3...Soft PU and POM<br/> 4...NBR<br/> 5...POM</p> |

| Microprocessor                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>Base and valve modules are equipped with microprocessor-controlled electronics.<br/> 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).<br/> The valve terminal does not require an external power supply.<br/> The pin that drives the coil also supplies the electronics.<br/> The power consumption of the electronics is so low that the coil current remains unaffected.</p> <p>1...Aluminium<br/> 2...Flat ribbon cable<br/> 3...D-SUB 25 or D-SUB 44</p> |

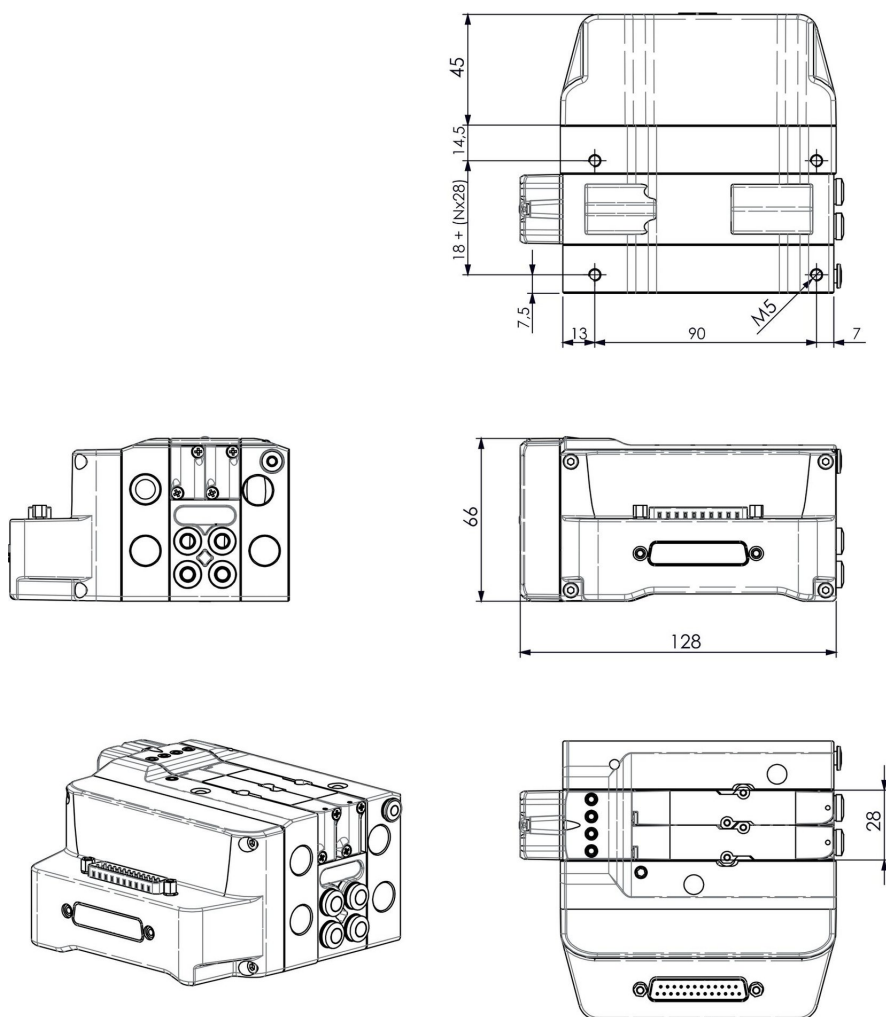
| Configuration                                                                     |                                                                                                                                                                                                                       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

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

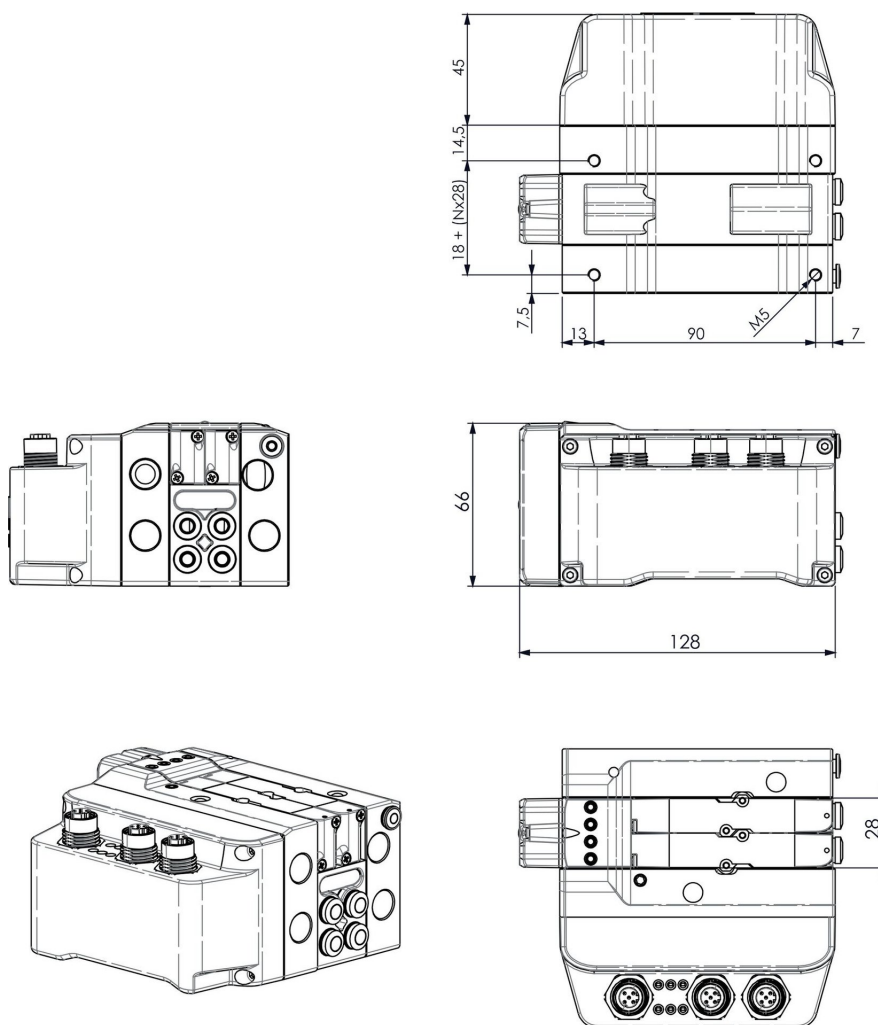
| Electrical connection                                                               |                                                                                                                                                                                                                     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

| Fieldbus Diagnostics                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>PS157 extends the innovative concept to the fieldbus connections as well.<br/>Ethernet diagnostics is performed on three levels:</p> <ol style="list-style-type: none"> <li>1. Visual inspection of the status LEDs on the device.</li> <li>2. Communication via RS232 interface using special USB cable at the PWR-M12 connection.</li> <li>3. Web server in the module, accessible via the network (PORT 1 – M12).</li> </ol> <p>The PWR-M12 port thus serves both for power supply (24VDC) and for serial diagnostics.<br/>Two cables are available: WPC-M12-PWR for power supply and WPC-M12-USB for serial diagnostics.<br/>Network communication is via a standard M12 Ethernet cable (WPC-M12-ETH).<br/>Documentation on addressing and diagnostics is available.</p> <ol style="list-style-type: none"> <li>1...Power supply M12 connector, 5-pin, A-coded</li> <li>2...Port 1, M12 socket, 4-pin, D-coded</li> <li>3...Port 2, M12 socket, 4-pin, D-coded</li> </ol> |

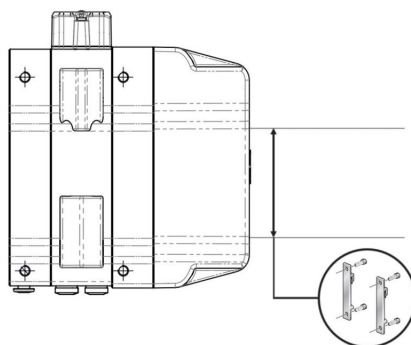
## Dimensions PS157 MULTIPOLE



## Dimensions PS157 Fieldbus



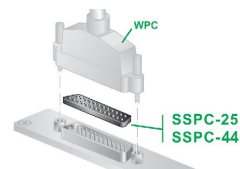
## MKD-PS157 Mounting kit according to DIN RAIL EN 50022



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

Illustrations non-binding  
Design, dimensional and material changes reserved