



2.4

## PILOT CONTROL DEVICE IN PEDAL DESIGN

Type: PVH1, PVH2, PVH3, PVH4



PVH1  
Hydraulic control



PVH2  
Electro-hydraulic  
control



PVH3  
Electric control



PVH4  
Hydraulic control

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## Features

### 1. Function:

- Precise linear control
- Perfect adjustment characteristic
- Easy and flexible operation
- Built-in buffering
- Ergonomic shape
- Diverse modular design
- Reliable dustproof and waterproof performance

### 2. Applications



Excavator



Tractor loader backhoes



Wheel loaders



Drilling rigs

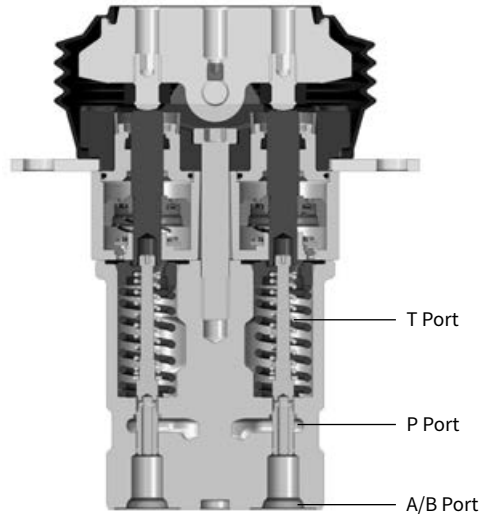
## Function description, section view

### · Working principle of proportional pressure reducing function:

The hydraulic pressure acting on the lower end of the spool (A/B port) can reach a dynamic balance with the force of the pressure regulating spring to achieve a proportional pressure reducing function.

### · Working principle of buffer function:

When a force suddenly works on the pedal, the steel ball inside the buffer will seal the oil return port, thus the hydraulic oil can only flow from the orifice into the upper chamber. With this kind of design, the operation force can be increased and also the manual misoperation for travelling due to bumps can be effectively reduced and finally realizes a buffer function.



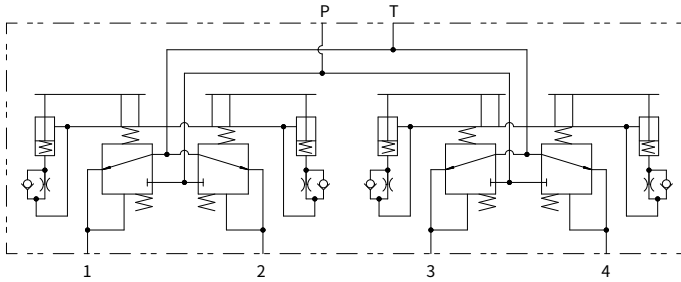
### · PVH1、PVH4 Hydraulic control PVH2 Electro-hydraulic control

## Technical data

Type		PVH1 Hydraulic control	PVH2 Electro-hydraulic control	PVH4 Hydraulic control
Inlet pressure	bar	Up to 60		Up to 80
Back pressure at port T	bar	Up to 3		
Control fluid flow ( P to 1-2 )	L/min	Up to 20		
Hysteresis	bar	Up to 1		
Pressure fluid	<sup>1)</sup> suitable for NBR seals <sup>2)</sup> suitable for FKM seals	Mineral oil (HL, HLP) <sup>1)</sup> to DIN 51524 Phosphate ester (HFD-R) <sup>2)</sup>		
Pressure fluid temperature range	°C	-20 to +80		
Viscosity range	cSt	10 to 380		
Degree of pressure fluid contamination		Maximum permissible degree of contamination of the pressure. Fluid is to NAS 1638 Class 9. We, therefore, recommend a filter with a minimum retention rate of $\beta_{10} \geq 75$ fluid is to NAS 1638 Class 9. We, therefore, recommend a filter with a minimum retention rate of $\beta_{10} \geq 75$ .		
Max. permissible operating torque at lever	Nm	10 in operation		
Weight	kg	3.8	1.5	4.7

## Hydraulic operating diagram

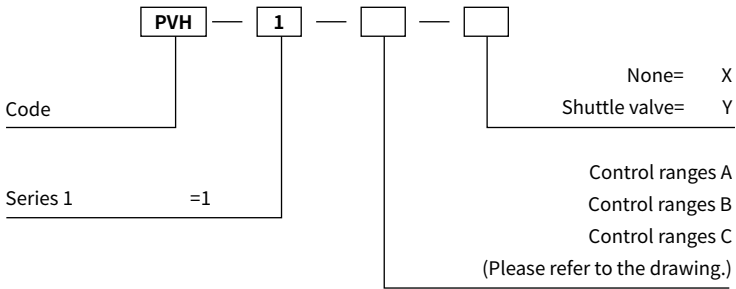
### • PVH1 Hydraulic control



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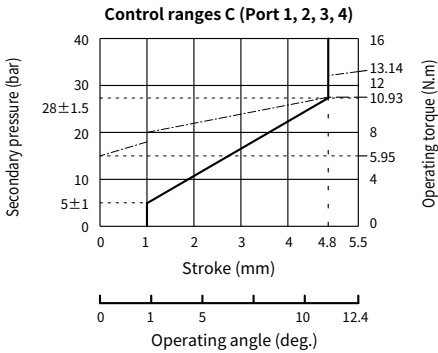
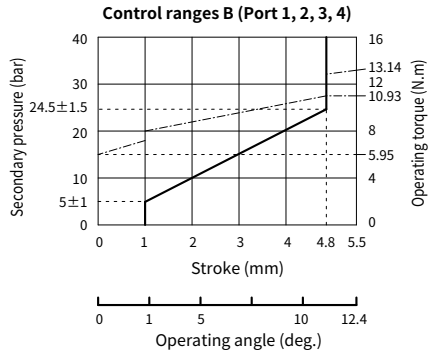
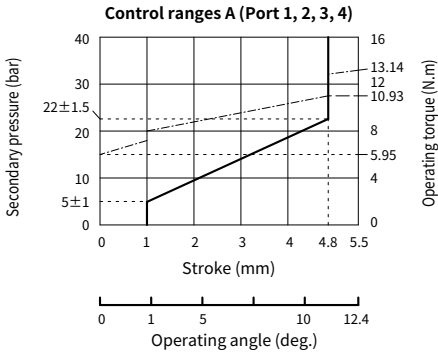
## Ordering code

### • PVH1 Hydraulic control



# Control curves

## • PVH1 Hydraulic control

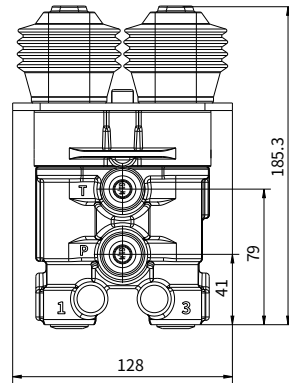
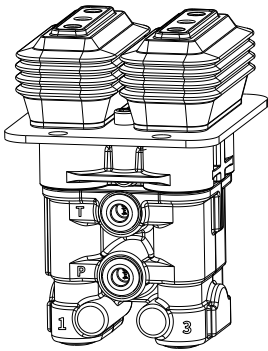
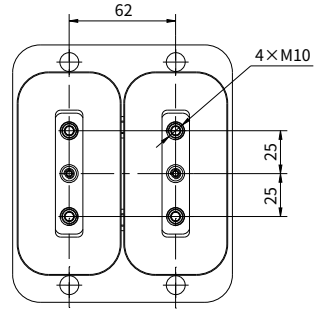
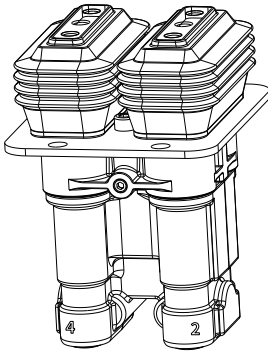


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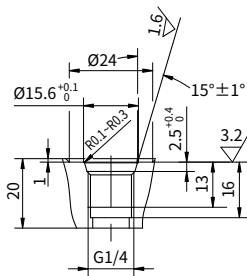
# Unit dimensions

(dimensions in mm )

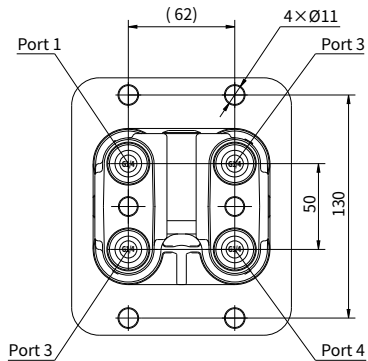
## • PVH1 Hydraulic control



3D Reference Picture

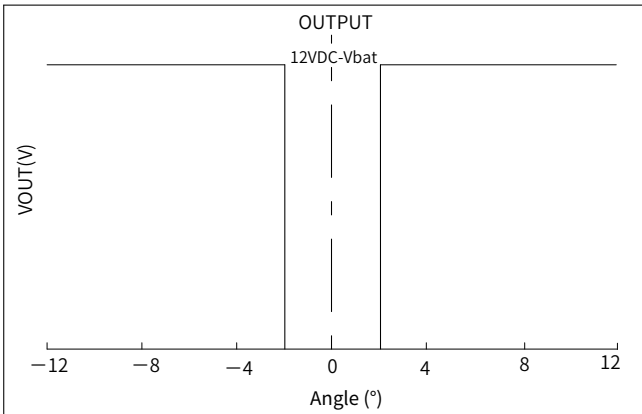
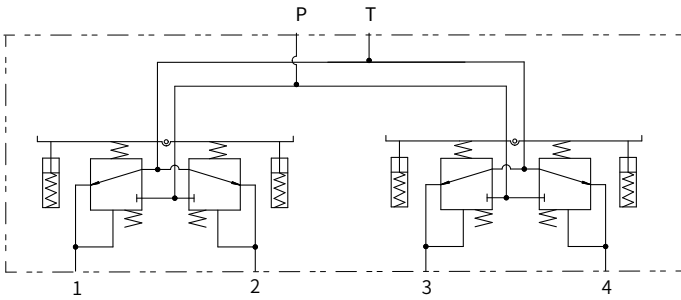


Port: P, T, 1, 2, 3, 4



## Hydraulic operating diagram

### • PVH2 Electro-hydraulic control



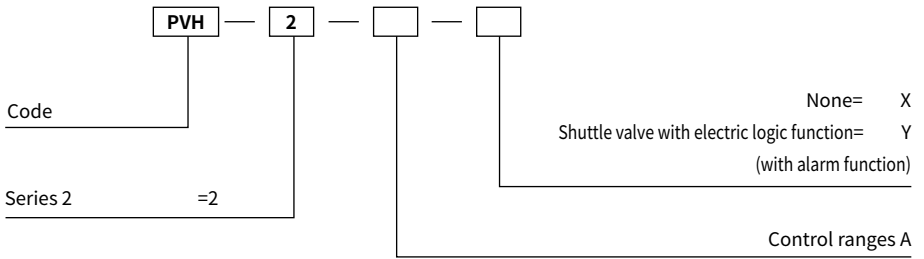
Electrical parameters

1. Rated voltage: 12VDC
2. Maximum current: 1500mA



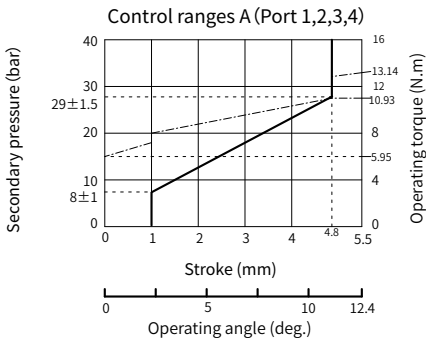
## Ordering code

### • PVH2 Electro-hydraulic control



## Control curves

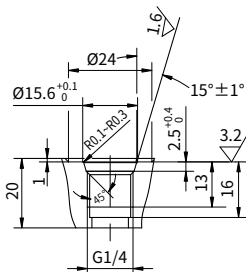
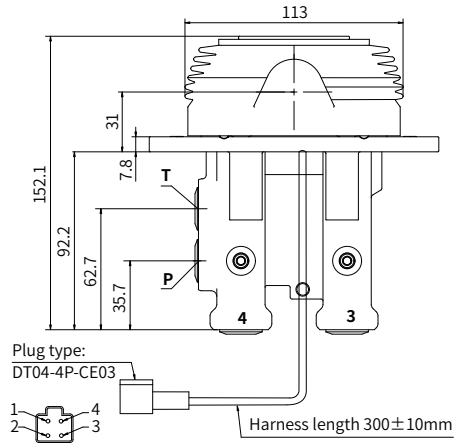
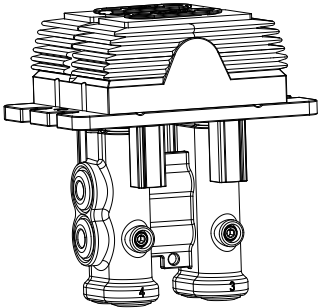
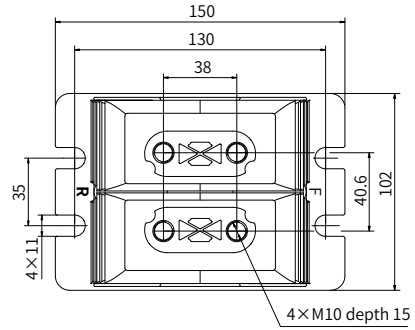
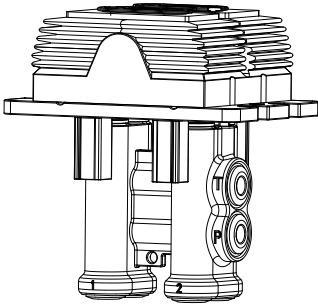
### • PVH2 Electro-hydraulic control



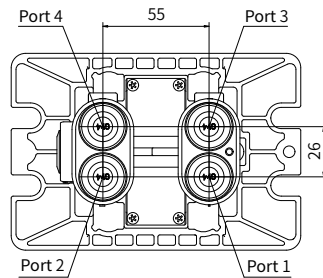
## Unit dimensions

(dimensions in mm)

### • PVH2 Electro-hydraulic control

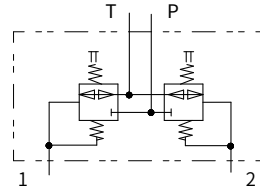


Port: P, T, 1, 2, 3, 4



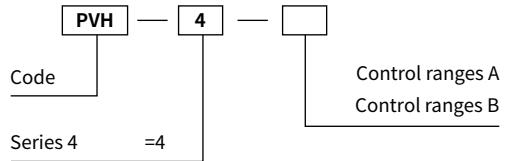
## Hydraulic operating diagram

- PVH4 Hydraulic control



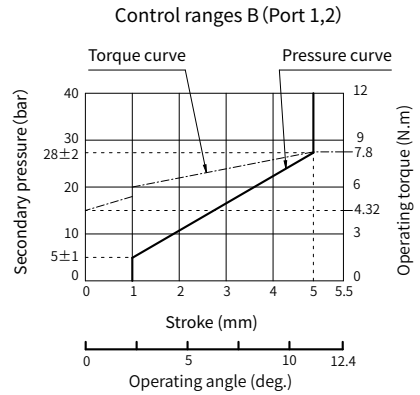
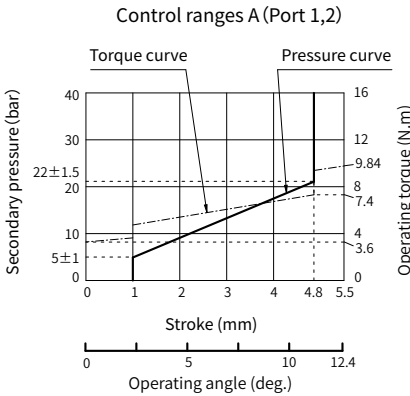
## Ordering code

- PVH4 Hydraulic control



## Control curves

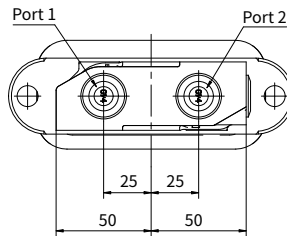
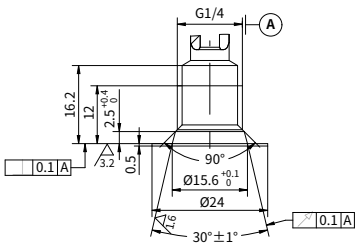
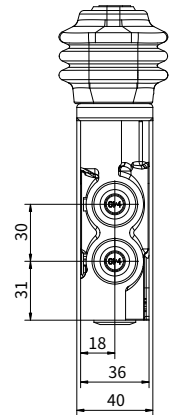
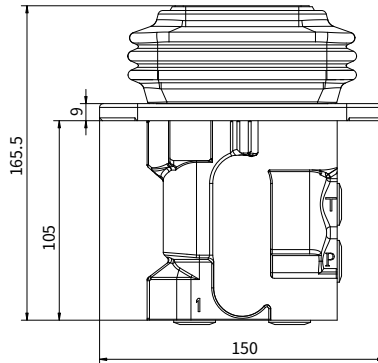
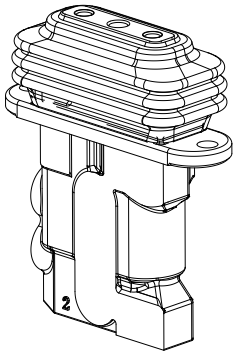
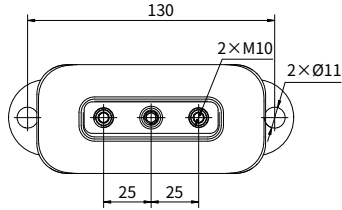
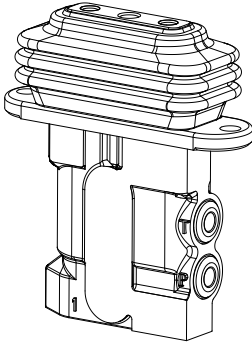
- PVH4 Hydraulic control



## Unit dimensions

(dimensions in mm)

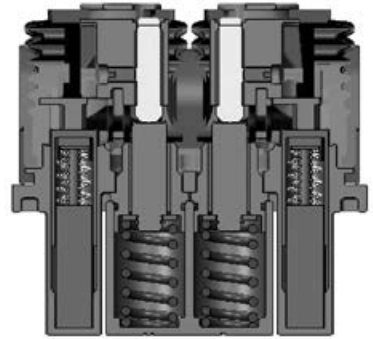
### • PVH4 Hydraulic control



## Function description, section view

### Working principle:

When there is no operation, the electric pedal is kept in the middle position by the return spring, and there is no signal output; During operation, the Hall angle sensor generates an angle signal and outputs it through the CAN loop.



· PVH3 Electric control

### Function:

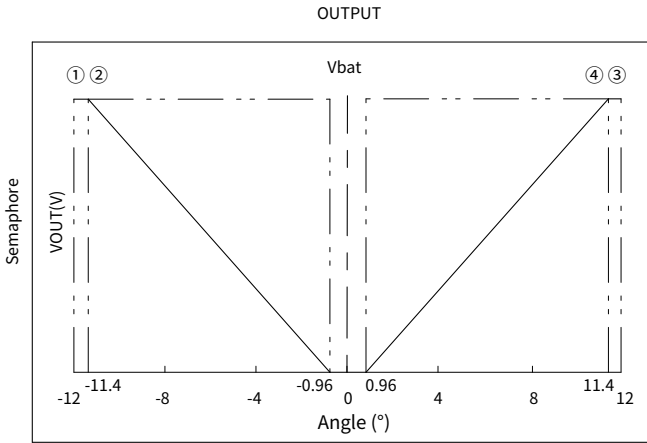
1. Hall angle sensor is adopted;
2. The output is proportional to the angle, and the overall control accuracy is 2% FS;
3. Angle sensor has more than 10 million cycles, with protection grade of IP67;
4. One PCB core board is integrated to realize CAN bus output;
5. Two CAN signals can be output to improve reliability

## Technical data

Type	PVH3 Electric control	
Supply voltage	VDC	7-36
Baud rate	KBds	250
Operating angle	°	±12
Degree of protection	IP67 below mounting plate	
	IP65 below mounting plate	
Temperature	°C	-20 to 65
Weight	kg	1.2

# Hydraulic operating diagram

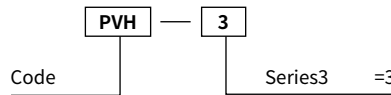
·PVH3 Electric control



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## Ordering code

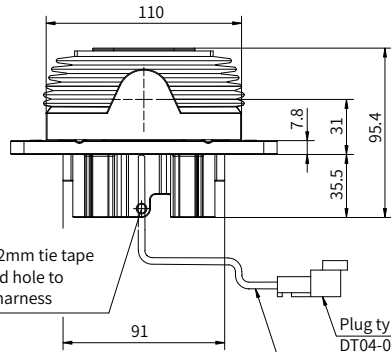
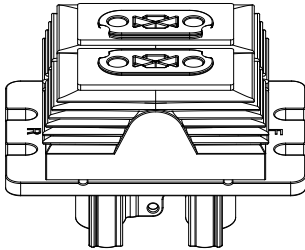
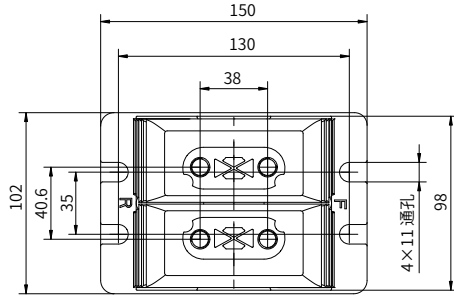
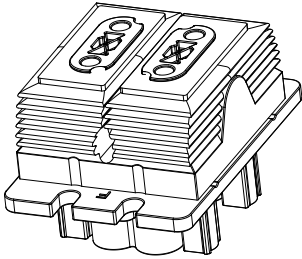
·PVH3 Electric control



# Unit dimensions

(dimensions in mm )

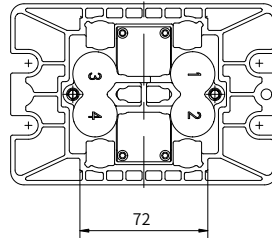
## ·PVH3 Electric control



Use about 2mm tie tape at the round hole to fasten the harness

Plug type:  
DT04-06P-CE03

Harness length  
300±10mm



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