

## IPH-PPCD04

### Integrated Pilot Head Proportional Valve



Proportional  
valves

Directional  
valves

Smart  
products

Special  
designs

### Product classification

| Name          | Max volume flow @ 6 bar dp |                   |
|---------------|----------------------------|-------------------|
| PPCD03        | 1,25 l/min                 | Direct controlled |
| <b>PPCD04</b> | <b>2,5 l/min</b>           |                   |
| PPCD05        | 10 l/min                   |                   |
| PPCD06        | 15 l/min                   |                   |
| PPCD08        | 20 l/min                   |                   |
| PPCD09        | 30 l/min                   |                   |
| PPCP09        | 35 l/min                   | Pilot operated    |
| PPCP13        | 72 l/min                   |                   |

### Benefits

#### **Robustness:**

-  Excellent resistance to contamination due to less friction points
-  No water ingress into the coil thanks to an additional sealing lip
-  Filter protection on all ports

#### **Assembly:** Simple and secure enabled by a flat interface

#### **Space-saving:** Reduced installation height thanks to elimination of the external valve sleeve



## Hydraulic Data

|                         |                                                         |
|-------------------------|---------------------------------------------------------|
| Max pressure pump       | $P_p = 45 \text{ bar}$                                  |
| Max pressure tank       | $P_t = 10 \text{ bar}$                                  |
| Max pressure work       | $P_A = 25 \text{ or } 30 \text{ bar}$                   |
| Hysteresis              | Typical 0,5 - 1,2 bar<br>(depending on control signal)  |
| Contamination level     | Min. Filtration: 20/18/15<br>According to ISO 4406      |
| Fluid                   | Mineral Oil According to DIN 51524                      |
| Temperature range fluid | -30 °C to +90 °C                                        |
| Leakage (internal)*     | < 0,06 l/min (de-energized)<br>< 0,15 l/min (energized) |
| Filterscreen size       | 200 $\mu\text{m}$ (all ports)                           |

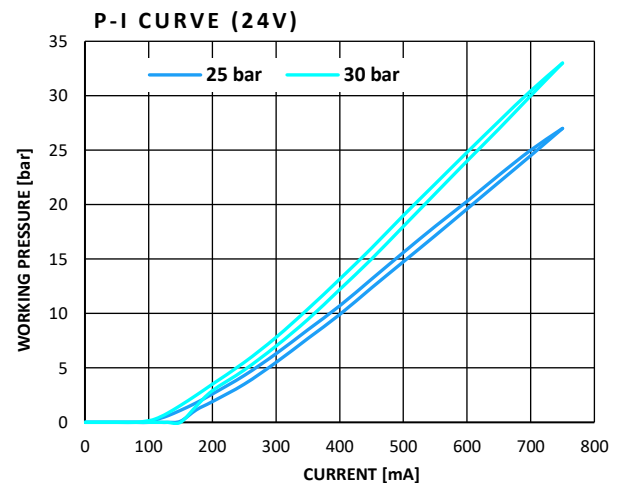
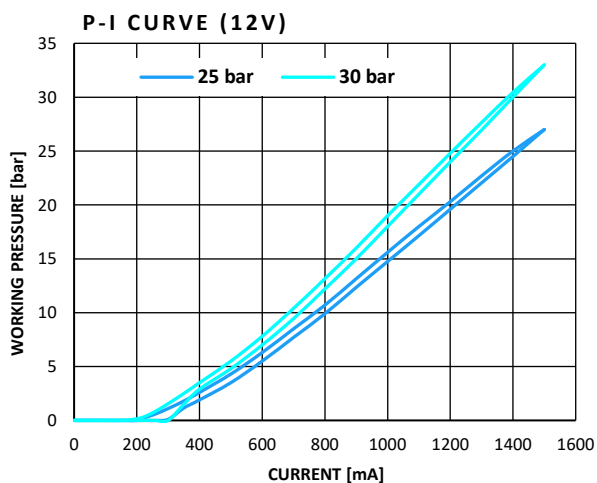
\* The reported data are measured @  $P_p = 45 \text{ bar}$ , oil viscosity of 32 cSt

## Electrical Data

|                                      |                                                                                                                                                                                                                                                                       |                       |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| Voltage                              | 12 V                                                                                                                                                                                                                                                                  | 24 V                  |
| Max current                          | 1500 mA                                                                                                                                                                                                                                                               | 750 mA                |
| Resistance                           | 4,72 $\Omega \pm 5\%$                                                                                                                                                                                                                                                 | 20,8 $\Omega \pm 5\%$ |
| Type of control**<br>(possibilities) | <ul style="list-style-type: none"> <li>PWM: 100 - 280 Hz</li> <li>Superimposed Dither: 100 - 250 Hz<br/>(100 mA - 200mA amplitude p-to-p)<br/>(Ground PWM &gt; 1000Hz)</li> <li>Recommended: Dither 100 Hz<br/>(Amplitude: 200 mA @ 12V,<br/>100 mA @ 24V)</li> </ul> |                       |
| Connector                            | AMP Junior Timer<br>Deutsch Connector DT04-2P                                                                                                                                                                                                                         |                       |
| Protection class                     | Up to IP6K6 / IPX7 / IPX9K                                                                                                                                                                                                                                            |                       |
| Switching time                       | $t_{on} < 40 \text{ ms}$ (pA = 0% to 90%)<br>$t_{off} < 40 \text{ ms}$ (pA = 100% to 10%)                                                                                                                                                                             |                       |

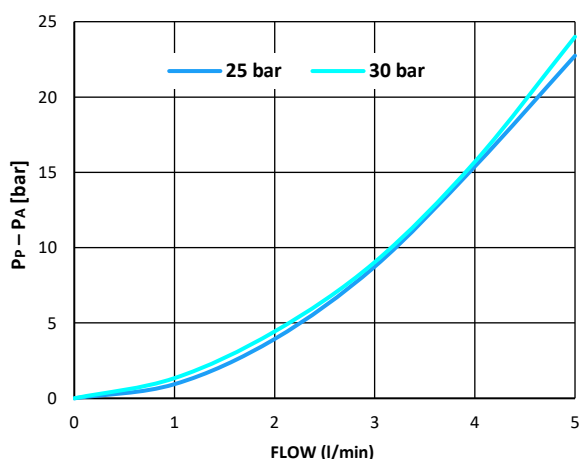
\*\* System performance can be optimized due to pilot valve control signal. Evaluation on system necessary.

## Current vs. Pressure (Average characteristic)

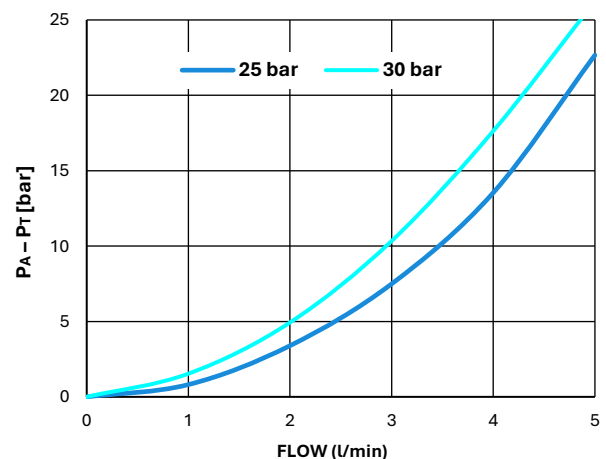


## Flow characteristics (Average characteristic)

**PRESSURE DROP PUMP TO CONTROL PORT (P→A)**  
Valve only

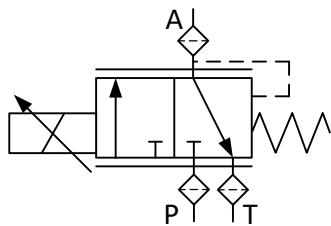


**PRESSURE DROP CONTROL PORT TO TANK (A→T)**  
Valve only





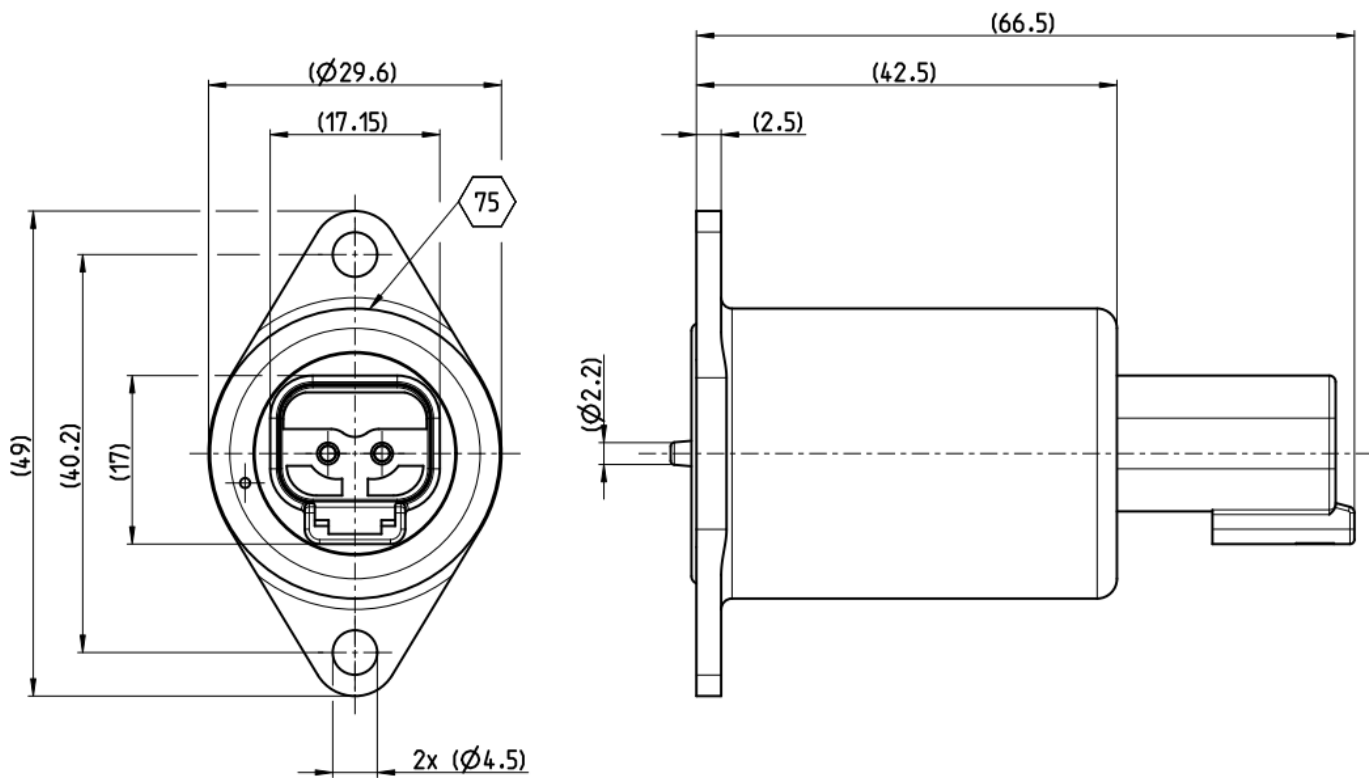
Hydraulic schematic



Additional data

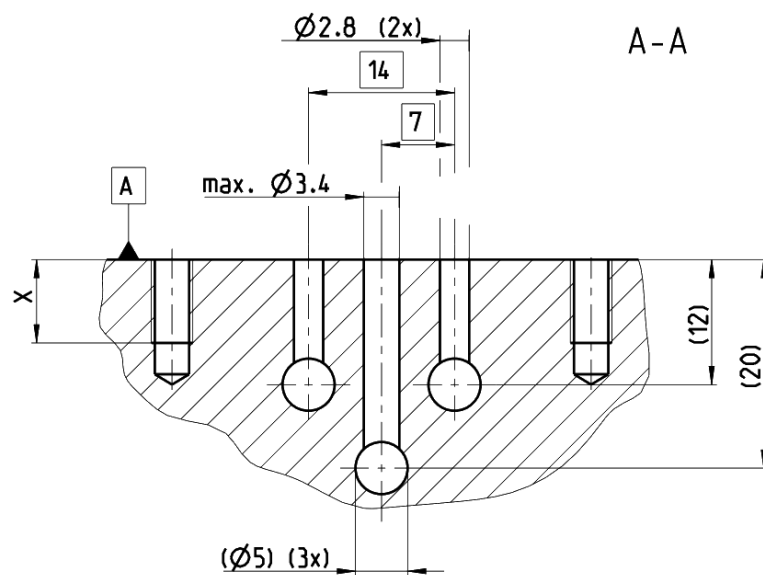
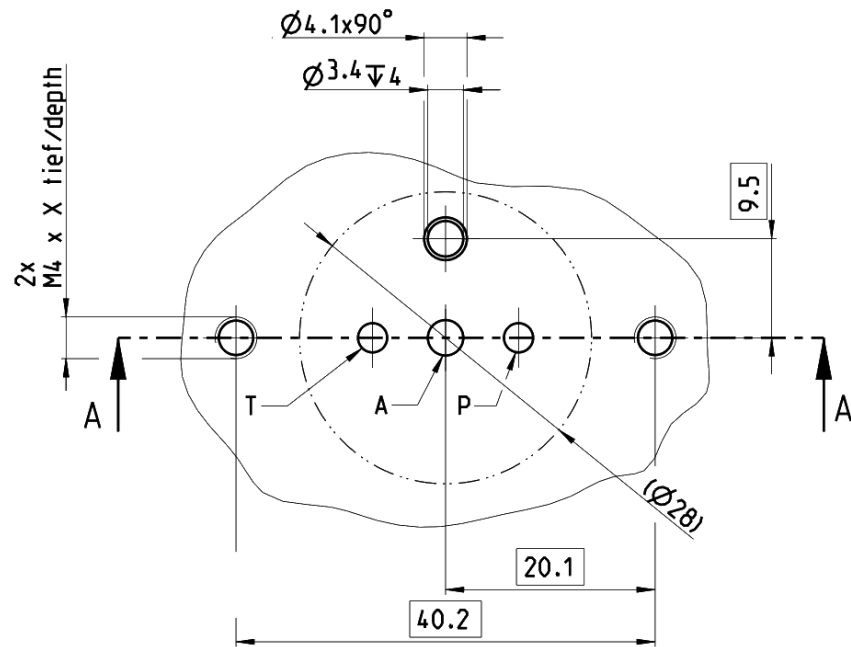
|                              |                                                   |
|------------------------------|---------------------------------------------------|
| Weight                       | 155 g                                             |
| Mounting position            | any                                               |
| Switching cycles (life time) | 5 Mio.                                            |
| MTTFd-value                  | 150 years<br>According to ISO 13849-2 C1, C2      |
| Reference                    | Valve specification according to<br>Thomas LHP 97 |

Dimensions with Deutsch Connector [mm]





## Cavity Dimensions (All dimensions in mm)





Model Code

| PPCD04        | -001 | -a | -r | -25                                                        | -12 | -J | -H                       | -W                         |
|---------------|------|----|----|------------------------------------------------------------|-----|----|--------------------------|----------------------------|
|               |      |    |    | -30                                                        | -24 | -D |                          |                            |
| Valve style   |      |    |    |                                                            |     |    |                          |                            |
| Version       |      |    |    |                                                            |     |    |                          |                            |
| Solenoid type |      |    |    |                                                            |     |    |                          |                            |
| Cavity type   |      |    |    |                                                            |     |    |                          |                            |
|               |      |    |    | Control pressure range:<br>25 or 30 bar                    |     |    |                          |                            |
|               |      |    |    | Voltage: 12 V or 24 V                                      |     |    |                          |                            |
|               |      |    |    | Connector:<br>J AMP Jr Power Timer or<br>D Deutsch DT04-2P |     |    |                          |                            |
|               |      |    |    |                                                            |     |    | Sealing material: H HNBR |                            |
|               |      |    |    |                                                            |     |    |                          | Manual override: W without |

- Defined by Thomas
- Customers choice

DISCLAIMER



The presented information is based on current knowledge and provides only non-binding information to the customer. Any liability in connection with this information is excluded. It is the responsibility of the customer to determine the suitability and appropriateness of the product for his intended purpose. We reserve the right to change the product with regard to technical progress and new developments.

CONTACT DETAILS



Thomas GmbH

Innomotion Park 3  
57562 Herdorf  
Germany

Sales:  
[sales@thomas-group.com](mailto:sales@thomas-group.com)  
Technical support:  
[TECsupport@thomas-group.com](mailto:TECsupport@thomas-group.com)