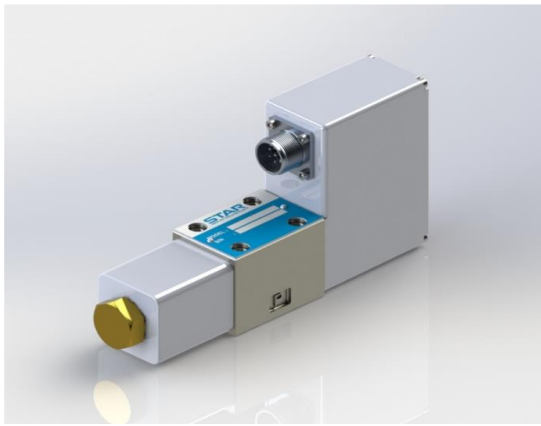


series  
**DD3**  
Servo proportional valve  
Rated flows up to 40 l/m



#### Features

- Direct drive bi-directional linear motor
- Maximum operating pressure 350 bar
- 3-way or 4-way options
- Linear & dual-gain flow curve options
- Spool in bushing design
- 3 command signal options
- High temperature version



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ST-DD3-2017.1-En

## Technical data

### Hydraulic

|                                     |                                          |                                                                                          |                        |                     |
|-------------------------------------|------------------------------------------|------------------------------------------------------------------------------------------|------------------------|---------------------|
| Nominal flow ratings [ $\pm 10\%$ ] | at 70 bar $\Delta p$                     | 1, 2, 5, 10, 20, 40 l/m                                                                  |                        |                     |
| Operating pressure (max)            | Ports                                    | P, A, B<br>350 bar                                                                       | T without Y<br>250 bar | T with Y<br>350 bar |
| Fluid viscosity range (recommended) |                                          | 10 to 360 mm <sup>2</sup> /s (cSt)                                                       |                        |                     |
| Fluid type                          |                                          | Mineral oil to ISO 11158, DIN 51524 or equivalent<br>others on request                   |                        |                     |
| Filter rating (recommended)         | Pressure line<br>Off-line                | Beta 10 = 200 (10 $\mu$ m abs), non by-pass & indicator<br>Beta 2 = 1000 (2 $\mu$ m abs) |                        |                     |
| Fluid cleanliness                   | ISO 4406: 1999<br>minimum<br>recommended | 18/ 15/ 12<br>17/ 14/ 11                                                                 |                        |                     |

### Operational parameters

|                          |                                                          |                                                       |
|--------------------------|----------------------------------------------------------|-------------------------------------------------------|
| Hysteresis               |                                                          | $\leq 0.2\%$                                          |
| Threshold                |                                                          | $\leq 0.1\%$                                          |
| Null shift               | $\Delta T$ 40 °C                                         | $\leq 1.5\%$                                          |
| Internal leakage         | 140 bar supply (0.5% overlap)<br>5, 10, 20 l/m<br>40 l/m | $\leq 0.6$ l/min<br>$\leq 1.0$ l/min                  |
| Load pressure difference | 1% input                                                 | $\geq 30\%$ of supply pressure can be as high as 100% |
| Response time            | 0-100% rated spool stroke                                | < 12 ms                                               |
| Max. valve flow          |                                                          | 75 l/m                                                |
| Mounting pattern         |                                                          | ISO 4401-03-03-0-94                                   |
| Mounting position        |                                                          | Any, fixed or movable                                 |
| Weight                   | DD3S<br>DD3T                                             | 2 kg<br>1.7 kg                                        |
| Design protection        | EN 60529                                                 | IP 67                                                 |
| Shipping protection      |                                                          | Sealed base plate                                     |
| Seal material options    |                                                          | NBR, FPM                                              |
| Temperature range        | DD3S<br>DD3T                                             | -20 to 70 °C<br>-20 to 160 °C                         |

## Technical data - Electrical details

### Model DD3S

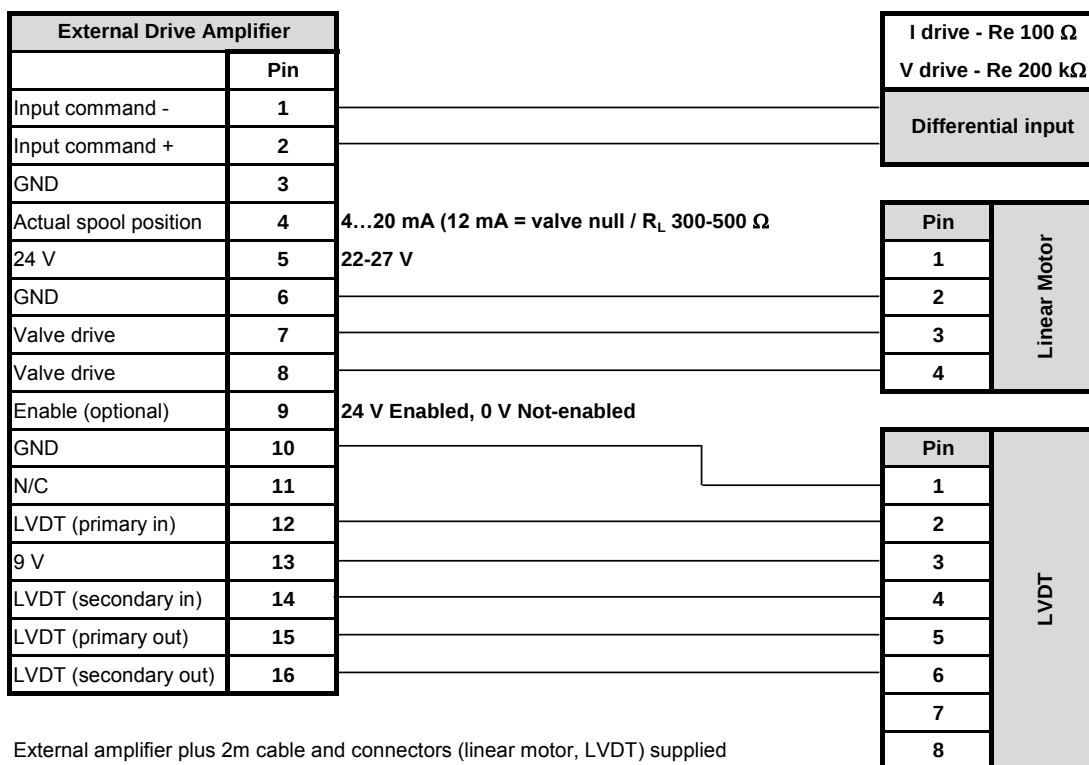
Factory set options are as follows

| Pin | Function                                | Values                   |
|-----|-----------------------------------------|--------------------------|
| A   | Supply                                  | 24 Vdc (22...27 Vdc)     |
| B   | GND                                     | 0 V                      |
| C   | Not used                                |                          |
| D   | Input rated command (differential)      | ±10 V, ±10 mA, 4...20 mA |
| E   | <i>Inverse bi-polar command signals</i> |                          |
| F   | Actual spool position                   | 4...20 mA                |
| PE  | Protective earth                        |                          |

Valve connector type MIL-C-5015 or DIN 43563 6+PE

Mating connector not supplied

### Model DD3T

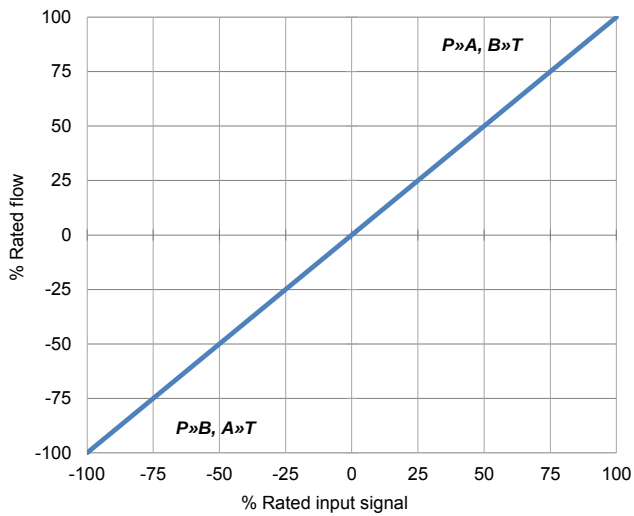


### Power supply

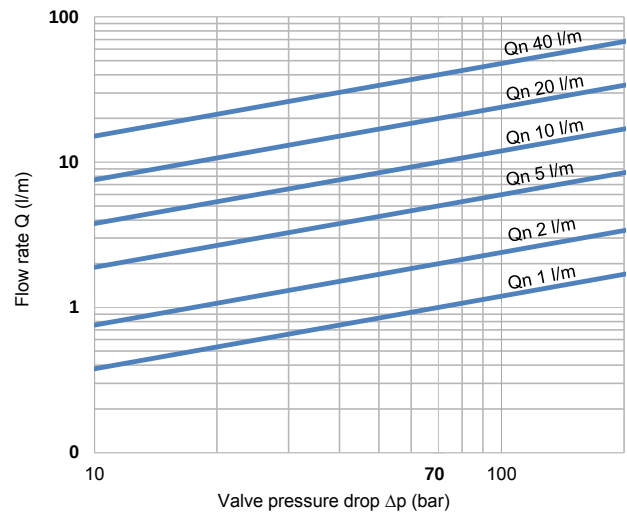
Current consumption (max.) 1.8 A

## Technical data

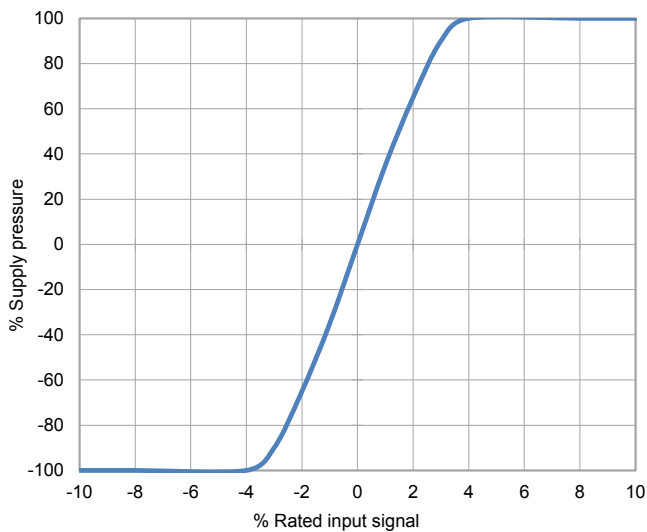
Output Polarity (per std wiring)



Flow for 100% input as a function of valve pressure drop



Typical Load Pressure Difference v Input Signal



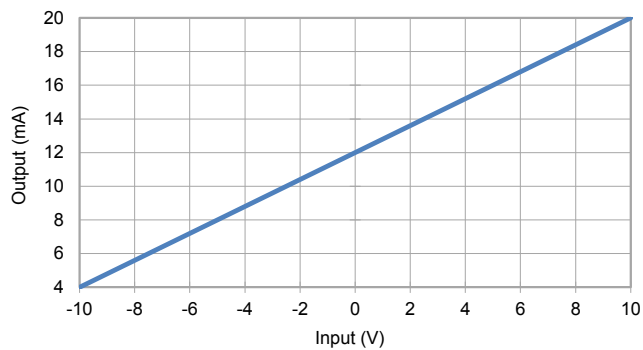
The flow tolerance for standard servovalves is  $\pm 10\%$  of the rated flow at 100% rated input signal.

Rated Signal [In] is the specified input voltage or current of either polarity to produce rated flow. Rated input does not include null bias values.

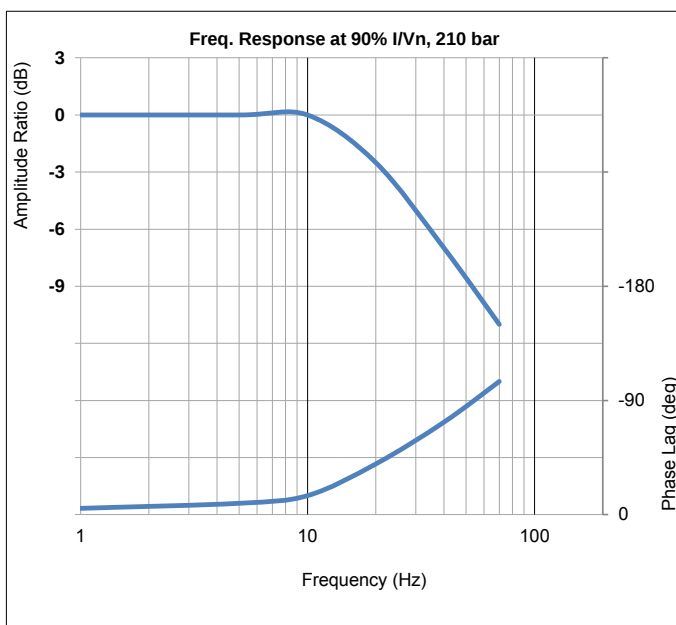
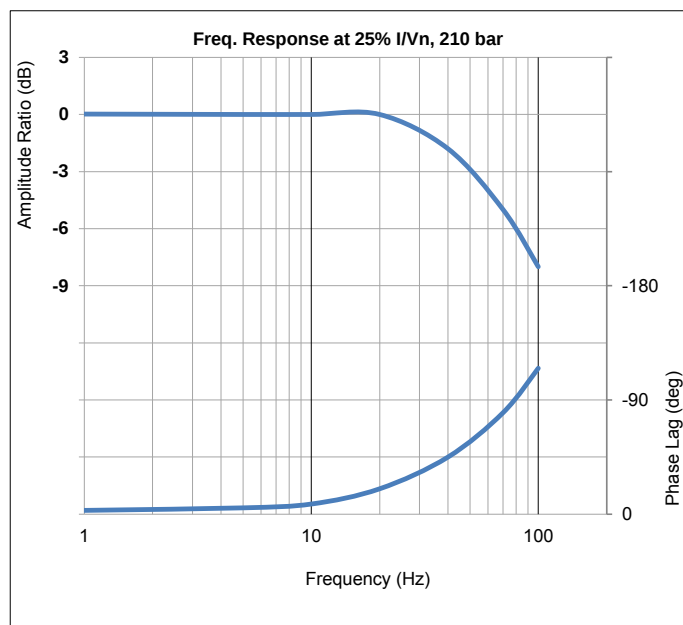
Rated flow corresponds to the flow at rated input at 10 bar or 70 bar, with no load, therefore in 4-way valves there will be a pressure drop of 5 bar or 35 bar respectively across each land.

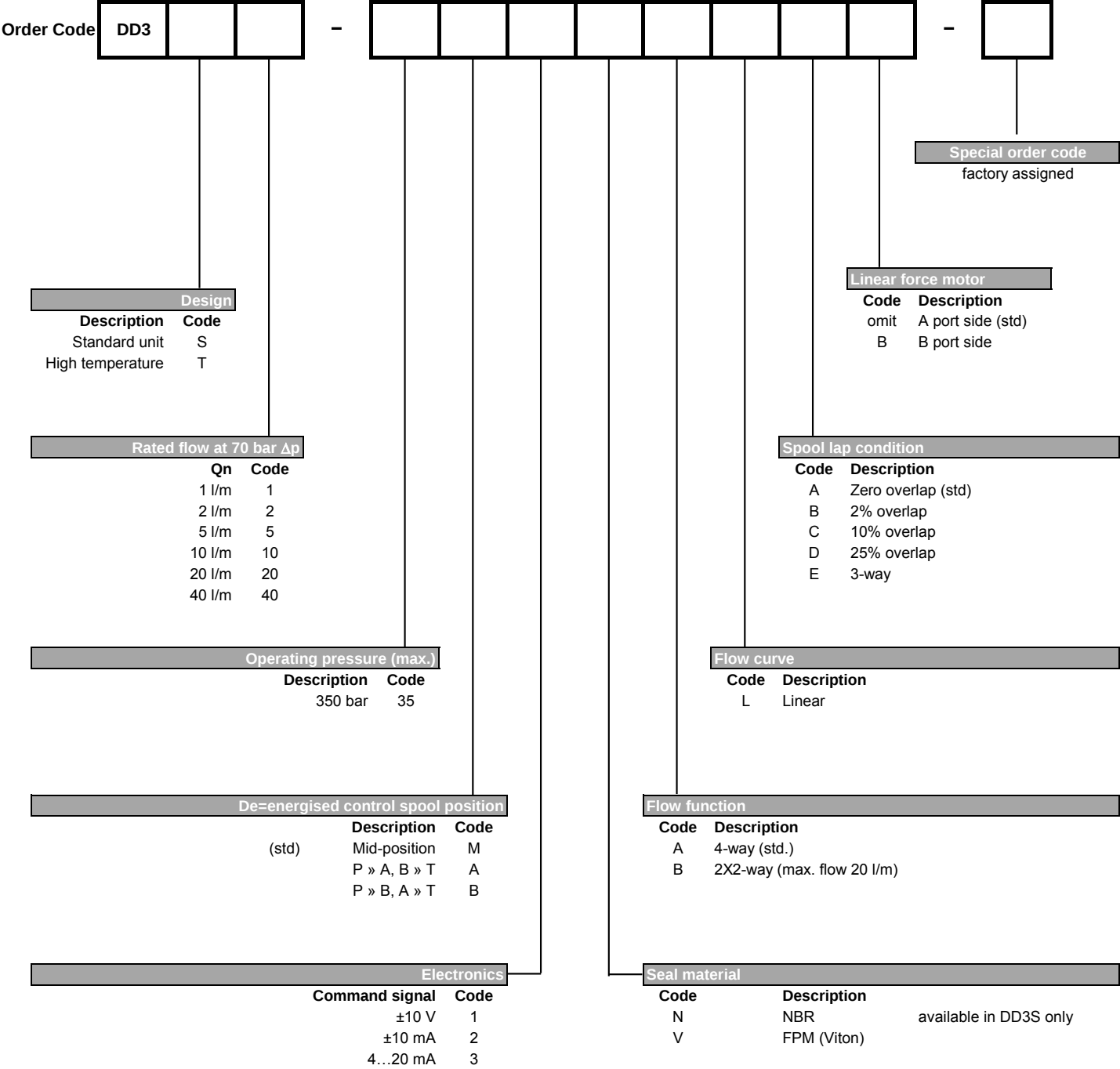
Load pressure difference versus input signal indicates typical differential pressure gain between ports A and B for standard lap spools. Positive overlap changes this characteristic significantly.

Actual spool position output



## Technical data

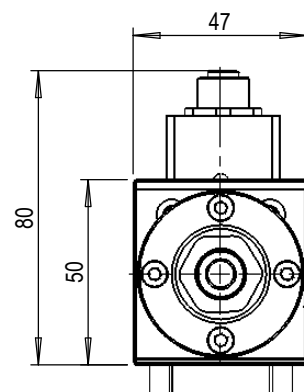
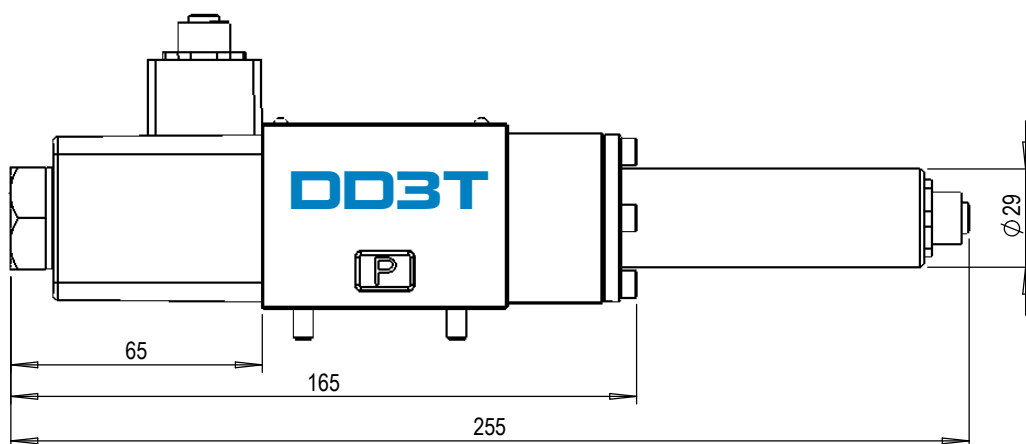
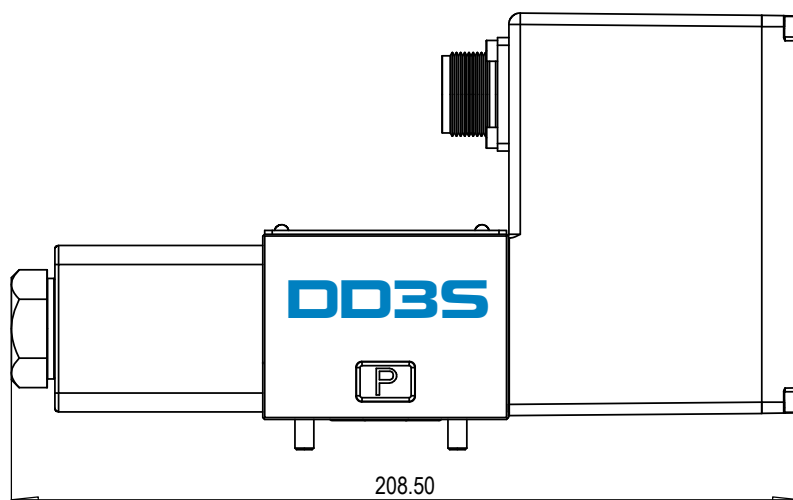
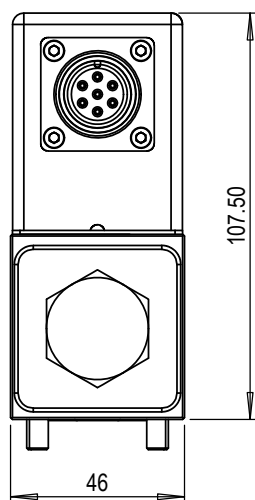




# DD3S & DD3T series INSTALLATION DETAILS

# STAR

|                 |                                                                                 |
|-----------------|---------------------------------------------------------------------------------|
| Mounting screws | Skt head cap screws M5 x 50 ISO 4762                                            |
| Porting details | P, A, B, R ports $\varnothing 7.5$ , $\sqcap$ $\varnothing 11.10$ $\nabla 1.40$ |
| Interface seals | Ports P, A, B, T - ID 8.0 x $\varnothing 1.5$ O-Ring                            |



| Mounting interface conforms to ISO 4401-03-03-0-94 (G not required)   |                   |                   |                   |                   |    |       |       |    |
|-----------------------------------------------------------------------|-------------------|-------------------|-------------------|-------------------|----|-------|-------|----|
|                                                                       | P                 | A                 | B                 | R                 | F1 | F2    | F3    | F4 |
| size                                                                  | $\varnothing 7.5$ | $\varnothing 7.5$ | $\varnothing 7.5$ | $\varnothing 7.5$ | M5 | M5    | M5    | M5 |
| x                                                                     | 21.50             | 30.20             | 12.70             | 21.50             | 0  | 40.50 | 40.50 | 0  |
| y                                                                     | 5.10              | 15.50             | 15.50             | 25.90             | 0  | -0.75 | 31.75 | 31 |
| Surface flat within 0.01 / 100 : finish better than 0.8 $\mu\text{m}$ |                   |                   |                   |                   |    |       |       |    |

