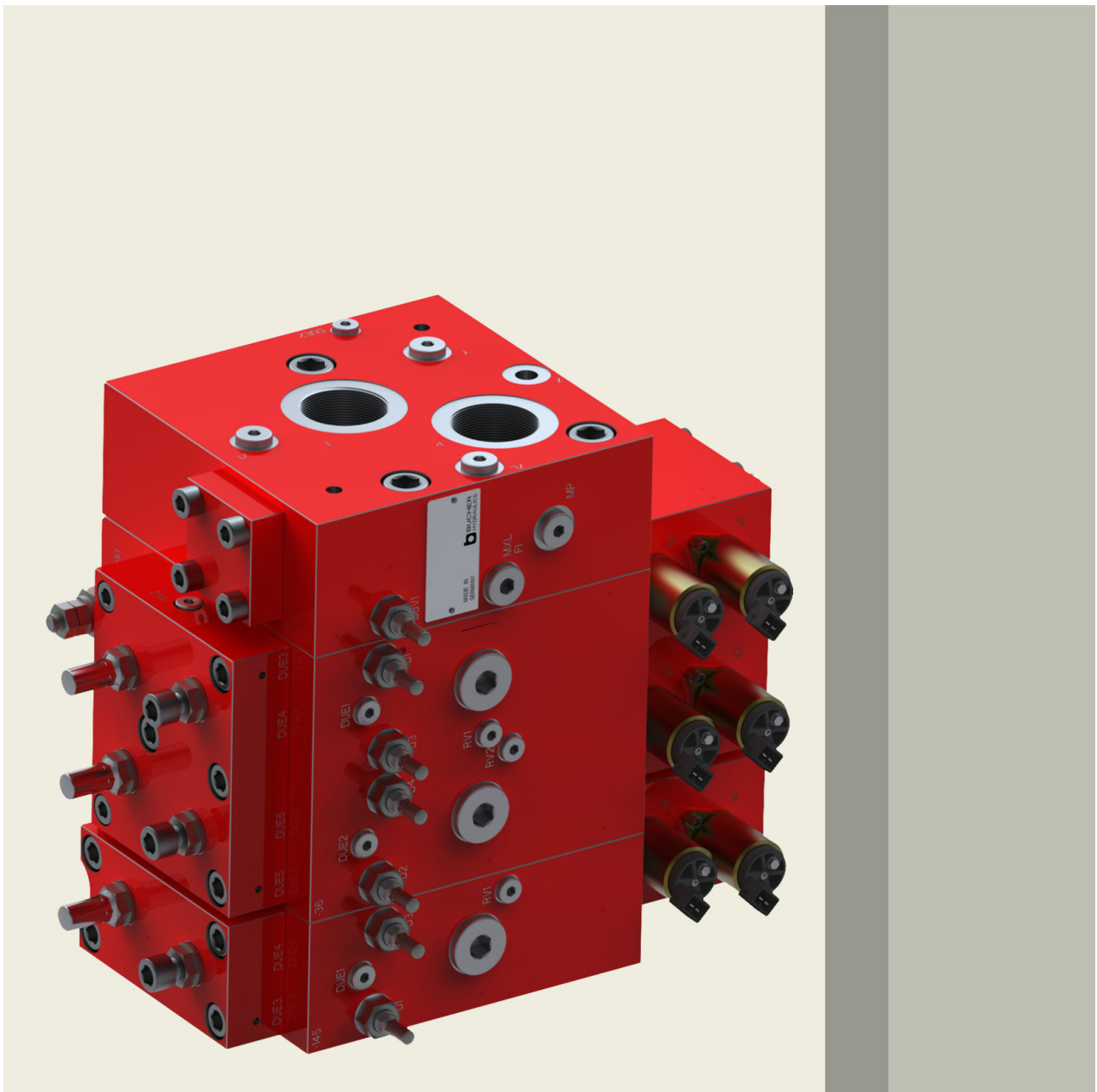


## Safety for Hydraulics

Proportional Valves, Sectional Design  
Series SVC 25



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## 1 Description

Our sectional proportional valves regulate the flow rate to the actuator by means of an internal closed-loop control system. Load-independent flow control is guaranteed by individual pressure compensators upstream of each proportional directional valve (load-sensing principle). The highly adaptable modular system consists of an inlet module, actuator modules (with up to eight sections), and an end module and is specially designed for use in mobile hydraulics. The user can be assured that the right system is always available for every application.

This is accomplished by:

- Various inlet modules
- Actuator modules with individual compensator and optional, individually adjustable, primary and secondary pressure-relief valves
- Various types of operators

Use Section 6, "Ordering code", to establish the complete valve code.

## 2 Technical data

General characteristics	Unit	Description, value
Design		proportional valves, sectional design, spool type
Types of operators		<ul style="list-style-type: none"> <li>• electro-hydraulic, proportional</li> <li>• hydraulic</li> <li>• manual</li> <li>• electro-hydraulic proportional - manual, combined</li> <li>• electro-hydraulic proportional - hydraulic, combined</li> <li>• for other types, please consult Bucher</li> </ul>
Size		port sizes to DIN 3852, DIN ISO 6162
Mounting attitude		unrestricted, but ensure good air-bleeding
Ambient temperature range	°C	-30 ... +60

Hydraulic characteristics	Unit	Description, value
Hydraulic fluid		HL and HLP mineral oil to DIN 51 524; for other fluids, please consult BUCHER
Hydraulic fluid temperature range	°C	-20 ... +80, recommended +20 ... +60
Viscosity range	mm <sup>2</sup> /s (cSt)	10...380, recommended 15...100
Minimum fluid cleanliness Cleanliness class to ISO 4406 : 1999		class 20/18/15
Maximum pump flow rate	l/min	750
Maximum actuator flow rate	l/min	500 (for 600 – consult Bucher)
Maximum pump pressure	bar	370
Maximum load pressure	bar	420
Maximum tank pressure	bar	50
Maximum tank pressure with elec. pilot stage	bar	5

Hydraulic operation	Unit	Description, value
Pilot-pressure range	bar	6 ... 20
Pressure rating of pilot circuit	bar	max. 50

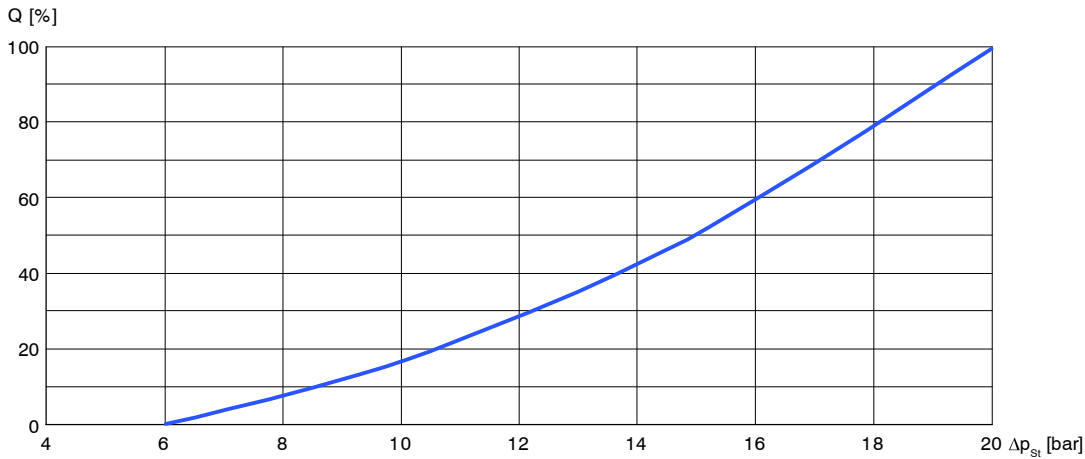
Size		Model with threaded ports	Model with SAE flanged ports
Actuator	A / B	G 1½"	SAE 1¼" 6000 PSI
Pump	P	G 1½"	SAE 1¼" 6000 PSI SAE 1½" 6000 PSI for inlet module „V“
Tank	T	G 1½"	SAE 1½" 3000 PSI
Load sensing	XL	G ¼"	G ¼"
Pump for pilot stage	X	G ¼"	G ¼"
Tank for pilot stage	Y	G ¼"	G ¼"
Test point for pump pressure	MP	G ¼"	G ¼"
Test point for tank pressure	MT	G ¾"	G ¾"

Electrical characteristics	Unit	Description, value
Control current at opening point 24 V 12 V	mA	350 700
Control current at max. Stroke 24 V 12 V	mA	675 1350
Hysteresis with 100 Hz PWM signal (from control current at max. stroke)		± 3 %
Protection class to EN 60 529		IP 65
Insulation class to VDE 0580		H
Supply voltage	V	24 / 12
Coil resistance at 20 °C 24 V 12 V	Ω	21.2 ± 5 % 5.3 ± 5 %
Coil resistance at 60 °C 24 V 12 V	Ω	24.5 ± 5 % 6.1 ± 5 %
Power consumption at max. spool stroke (coil resistance at 60 °C)	VA	10.4
Maximum current for 100 % relative duty cycle with: 24 V 12 V	mA	750 1500

### 3 Performance graphs

#### 3.1 Control characteristics, electro-hydraulic, proportional

$Q = f(\Delta p_{st})$  Flow rate - energising signal characteristic

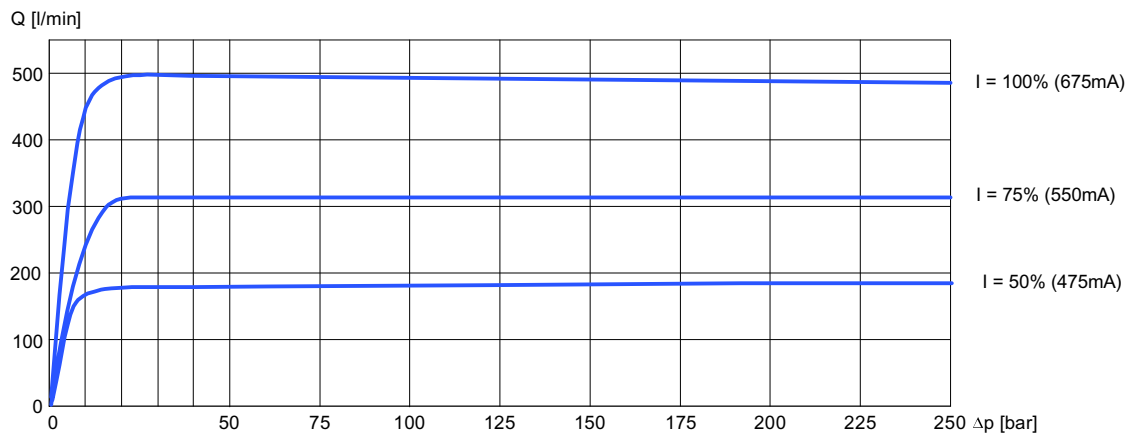


**IMPORTANT!**

The cross-sectional geometry of the spool and the pressure-differential setting are factory-set so that the valve's working range lies within the characteristic diagram.

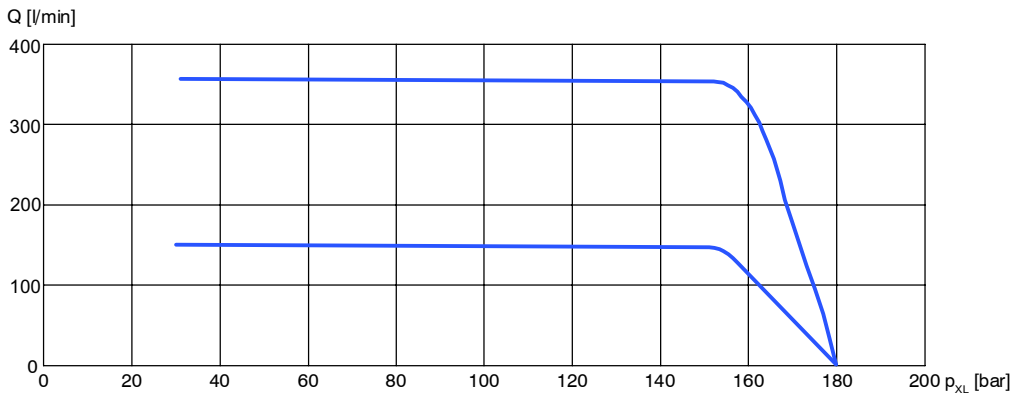
#### 3.2 Flow-control characteristics

$Q = f(\Delta p = p_{Pumpe} - p_{Last})$  Flow rate - Pressure differential characteristic



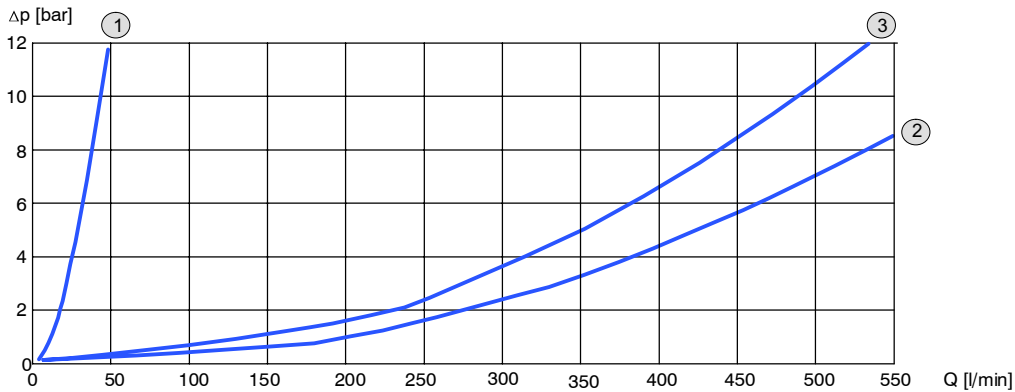
### 3.3 Primary-pressure cut-off

$Q_{A/B} = f(p_{XL})$  Actuator flow rate - Load pressure characteristic



### 3.4 Pressure differential at directional valve spool – Return

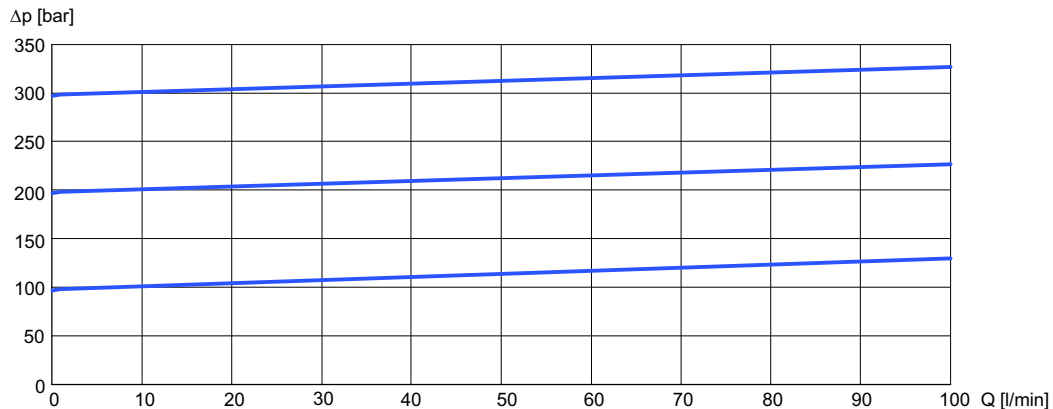
$\Delta p_{A/B \rightarrow T} = f(Q_{A/B})$  Pressure differential - Flow rate characteristic



1	Spool type C in neutral position
2	Spool type C at 100% energisation
3	Spool type A at 100% energisation

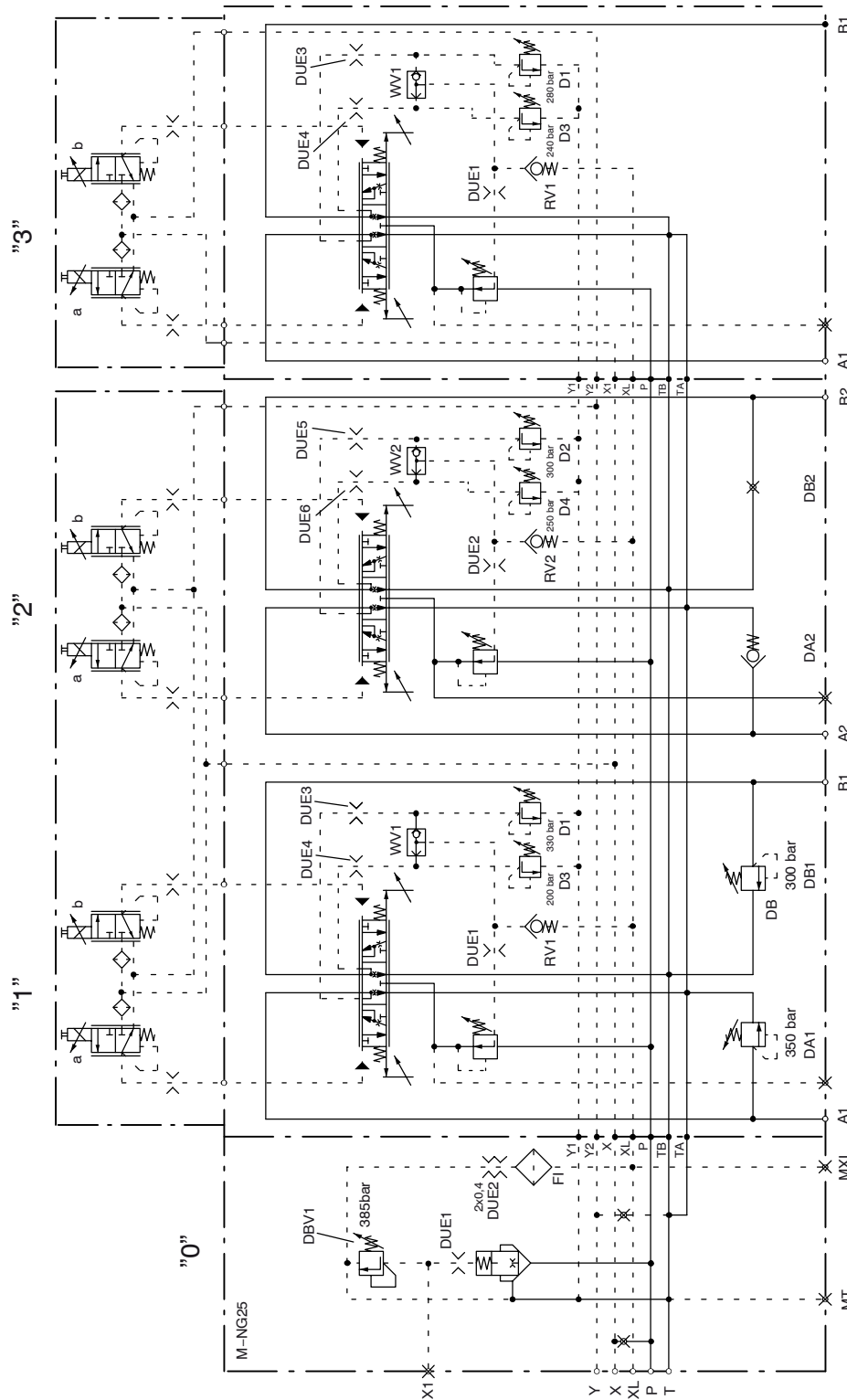
### 3.5 Secondary pressure relief (optional)

$p_{A/B} - p_T = f(Q_{A/B \rightarrow T})$  Secondary pressure - flow rate characteristic



## 4 Circuit diagram

### 4.1 Proportional valve with an inlet module, one dual actuator module and an end module



#### Bestellbeispiel / Ordering Example

"0" = SVC25 – M01 – G04 – 385 – 00 – 00 – 0 – B

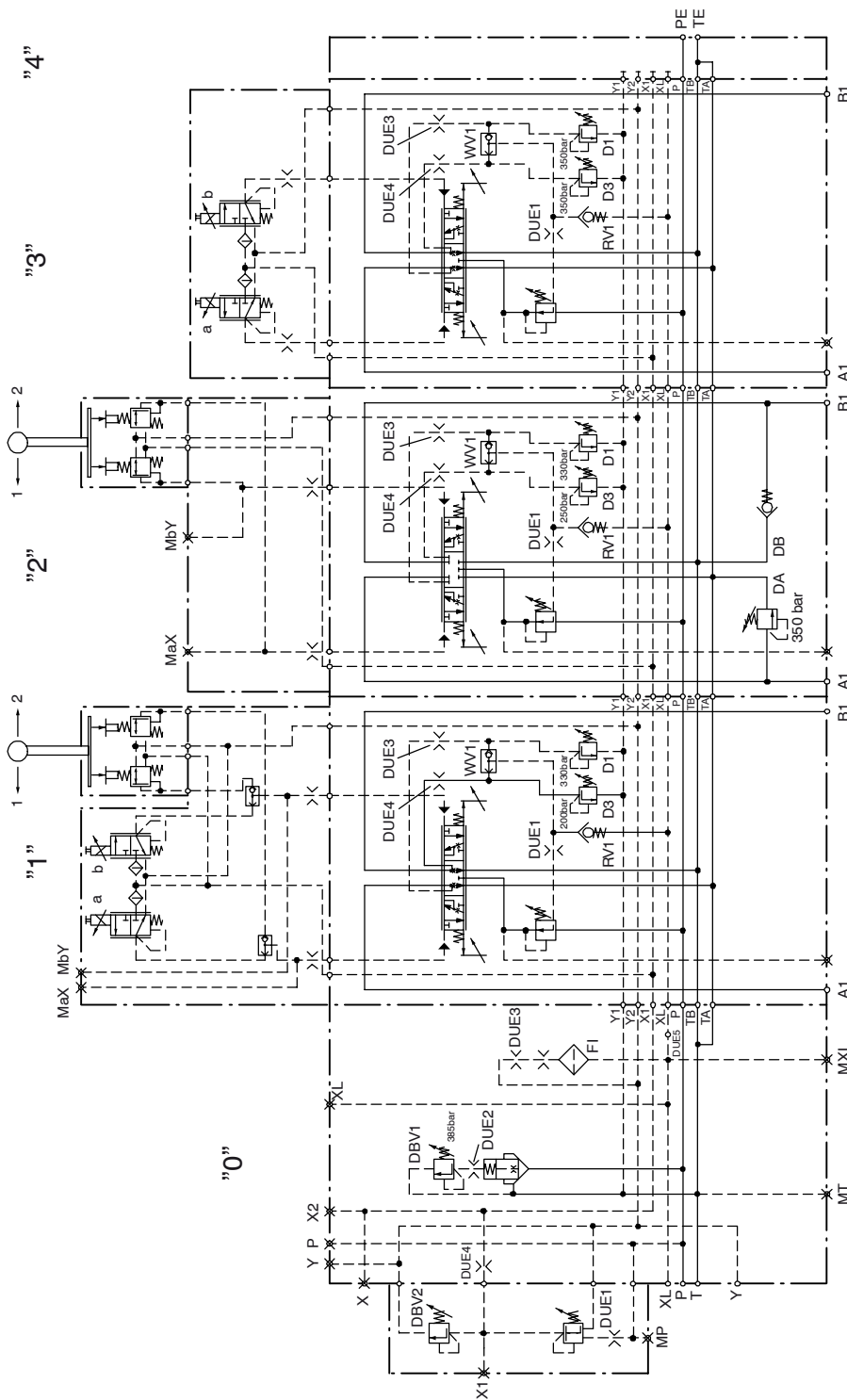
"1" = SVC25 – 1 – 1Y1X – 330/200 – C500/500 – E20 – GX0 – D350/D300 – B

"2" = SVC25 – 2 – 2Y1X – 300/250 – C420/200 – E20 – GX0 – N000/S000 – B

"3" = SVC25 – 3 – 0D00 – 100/250 – C290/290 – E20 – X11 – S000/S000 – A SVC25 – 3 – 0D0X – 280/240 – C420/250 – E20 – GX0 – S000/S000 – B

Hinweis: Wenn Magnet "a" angesteuert wird, öffnet das Ventil von "P" nach "B" / Note: when solenoid "A" is energised, the valve opens from "P" to "B".

## 4.2 Proportional valve with an inlet module, three single actuator modules and an end module.



### Bestellbeispiel / Ordering Example

"0" = SVC25 - M01 - G04 - 385 - 00 - 00 - 0 - B SVC25 - L01 - F02 - 385 - 00 - 00 - 0 - B

"1" = SVC25 - 1 - 0Y0X - 330/200 - C500/500 - K2F - FX0 - S000/S000 - B

"2" = SVC25 - 2 - 0Y1X - 330/250 - A420/200 - H9F - FX0 - D350/N000 - B

"3" = SVC25 - 3 - 0Y0X - 350/350 - C400/400 - E20 - FX0 - S000/S000 - B

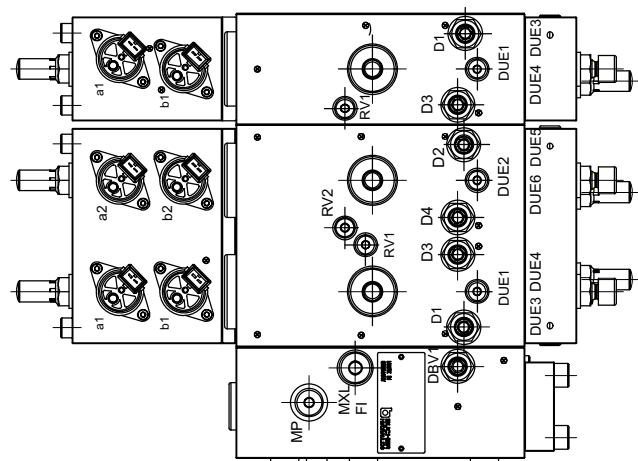
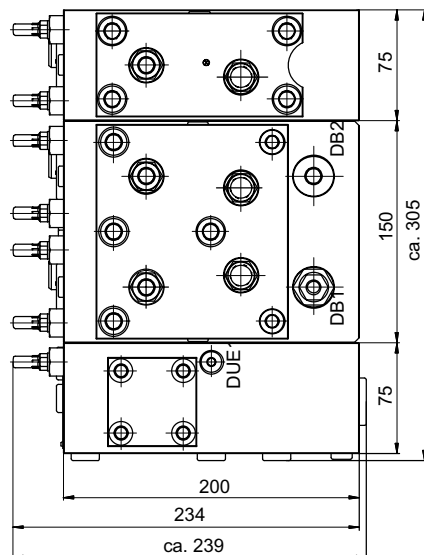
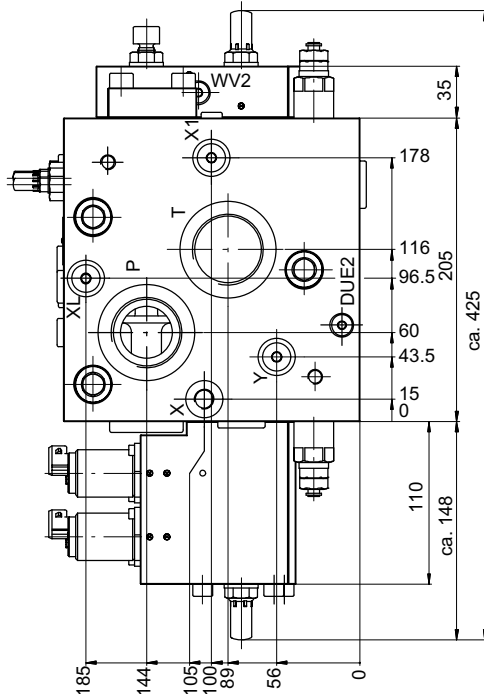
"4" = SVC25 - E22 - 000 - B

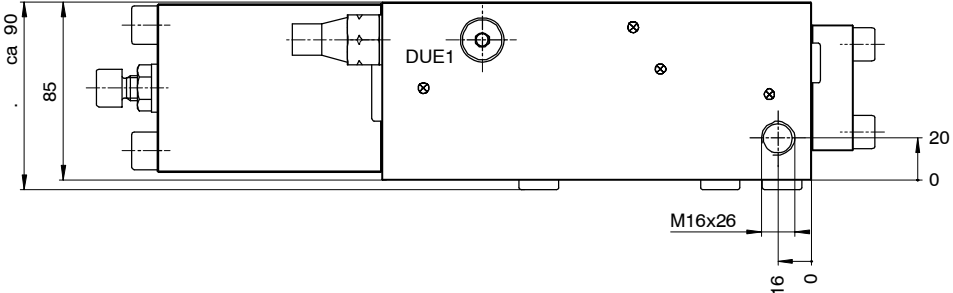
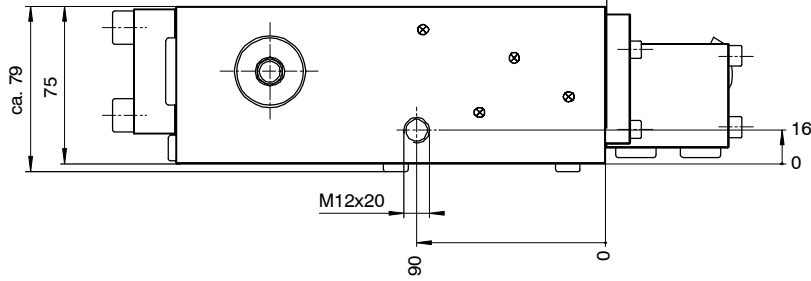
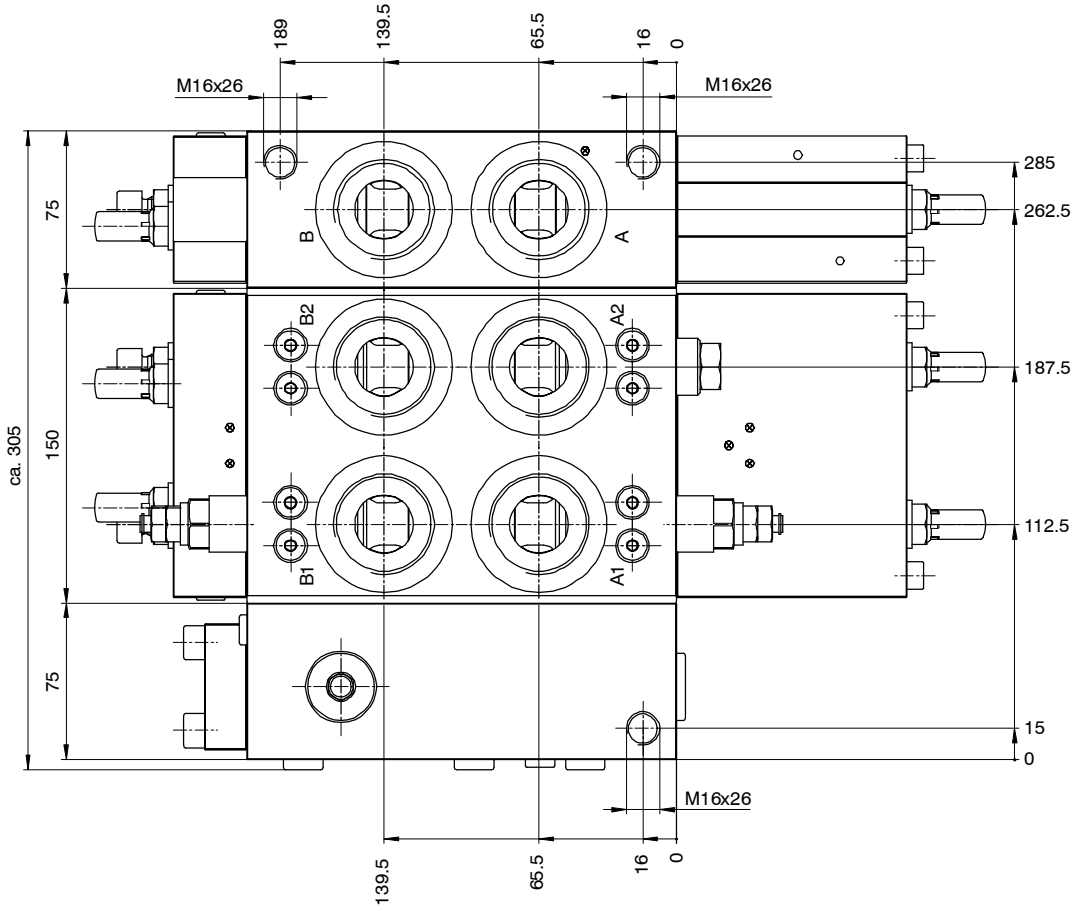
Hinweis: Wenn Magnet "a" angesteuert wird, öffnet das Ventil von "P" nach "B" / Note: when solenoid "A" is energised, the valve opens from "P" to "B".



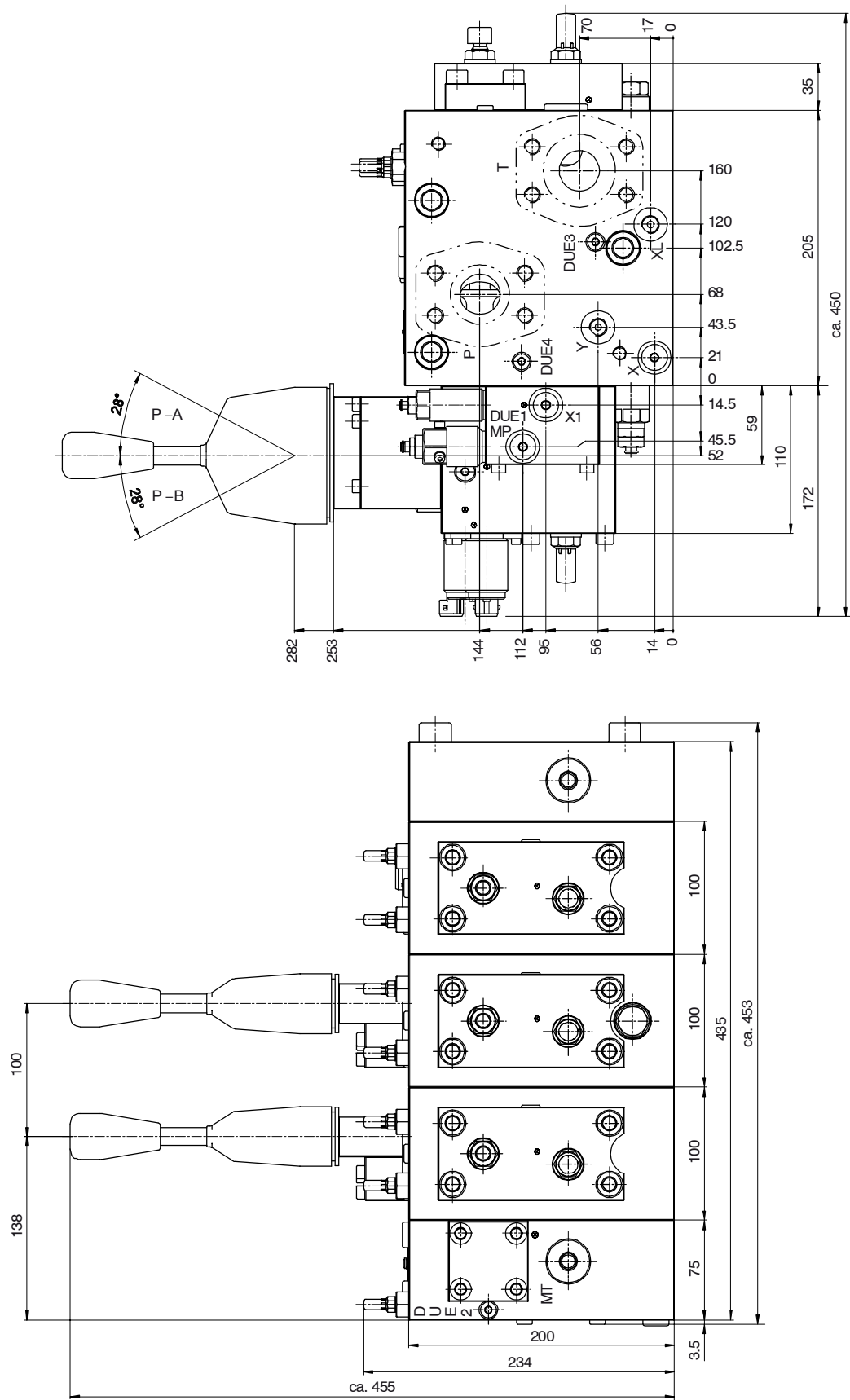
## 5 Dimensions

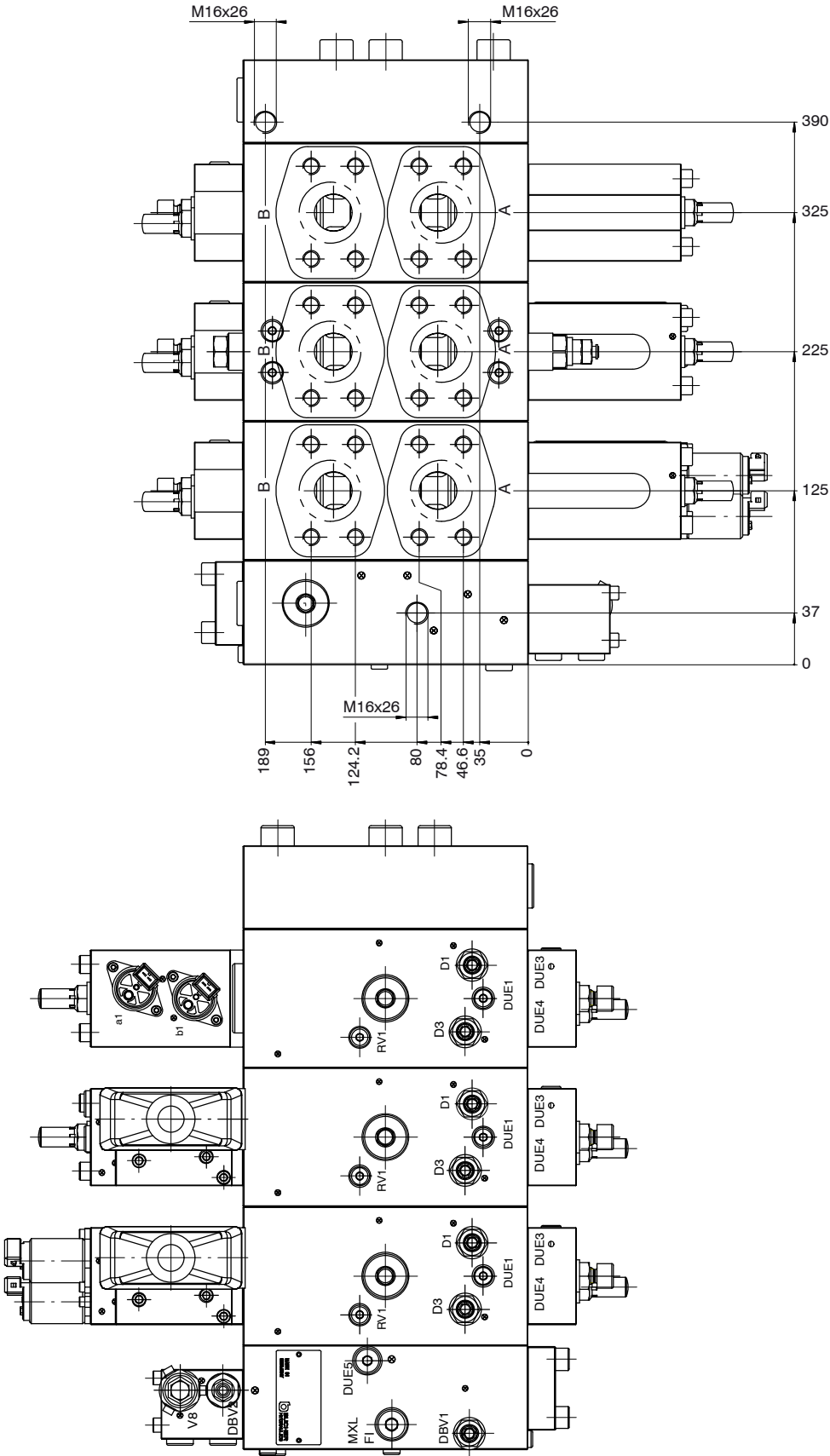
### 5.1 Complete valve with threaded ports





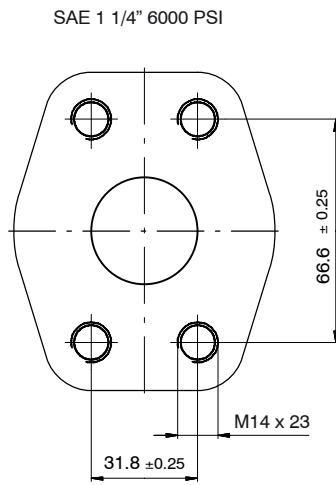
5.2 Complete valve with SAE flanged ports



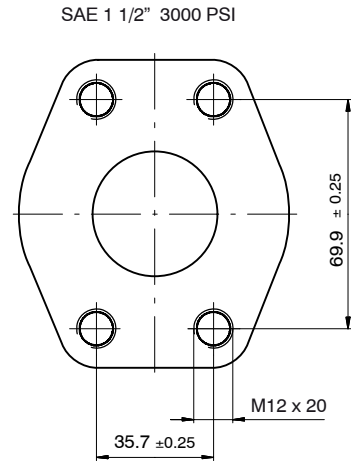


### 5.3 SAE flanged ports

#### 5.3.1 Ports A, B, P, PE



#### 5.3.2 Ports T, TE



### 6 Ordering code

#### 6.1 Inlet module

SVC 25 - M 0 1 - G 0 4 - 385 - 00 - 00 - 0 - B - Z

SVC = proportional valve in sectional design

25 = nominal size

Circuit options: see Section LEERER MERKER

G = without aux. valve

M = with system pressure relief

L = with system pressure relief, pilot-pressure conditioning (pressure reducing and pressure relief)

V = 3-way pressure compensator

0 = without ports for external pilot-oil filtration (standard)

1 = with ports for external pilot-oil filtration

1 = with LS unloading (standard)

0 = without LS unloading

Connection method:

G = pipe threads

F = SAE flanges

0 = without pressure-peak reducing valve 50 bar

1 = with pressure-peak reducing valve 50 bar

1 = pilot-pressure supply "X" internal / pilot-pressure drain "y" internal

2 = pilot-pressure supply "X" internal / pilot-pressure drain "y" external

3 = pilot-pressure supply "X" external / pilot-pressure drain "y" internal

4 = pilot-pressure supply "X" external / pilot-pressure drain "y" external

... = system pressure relief in bar

000 = with circuit option G

... = pilot-pressure reducing in bar

00 = with circuit options G, M and V

... = pilot-pressure relief in bar

00 = with circuit options G, M and V

0 = without AVR (standard)

1 = with AVR (automatic flow reduction)\*

... = series identifier (e.g. B)

... = special feature as per description (e.g. Z)

\* Consult Bucher / configuration by Technical Sales

## 6.2 End module

SVC 25 - E 1 1 - 1 0 0 - B - Z

SVC = proportional valve in sectional design

25 = nominal size

E = end plate

**P-port**

1 = with P-port (standard)

2 = SAE flanges

0 = without

**T-port**

1 = with T-port (standard)

2 = SAE flanges

0 = without

0 = without XL-port (standard)

1 = with XL-port

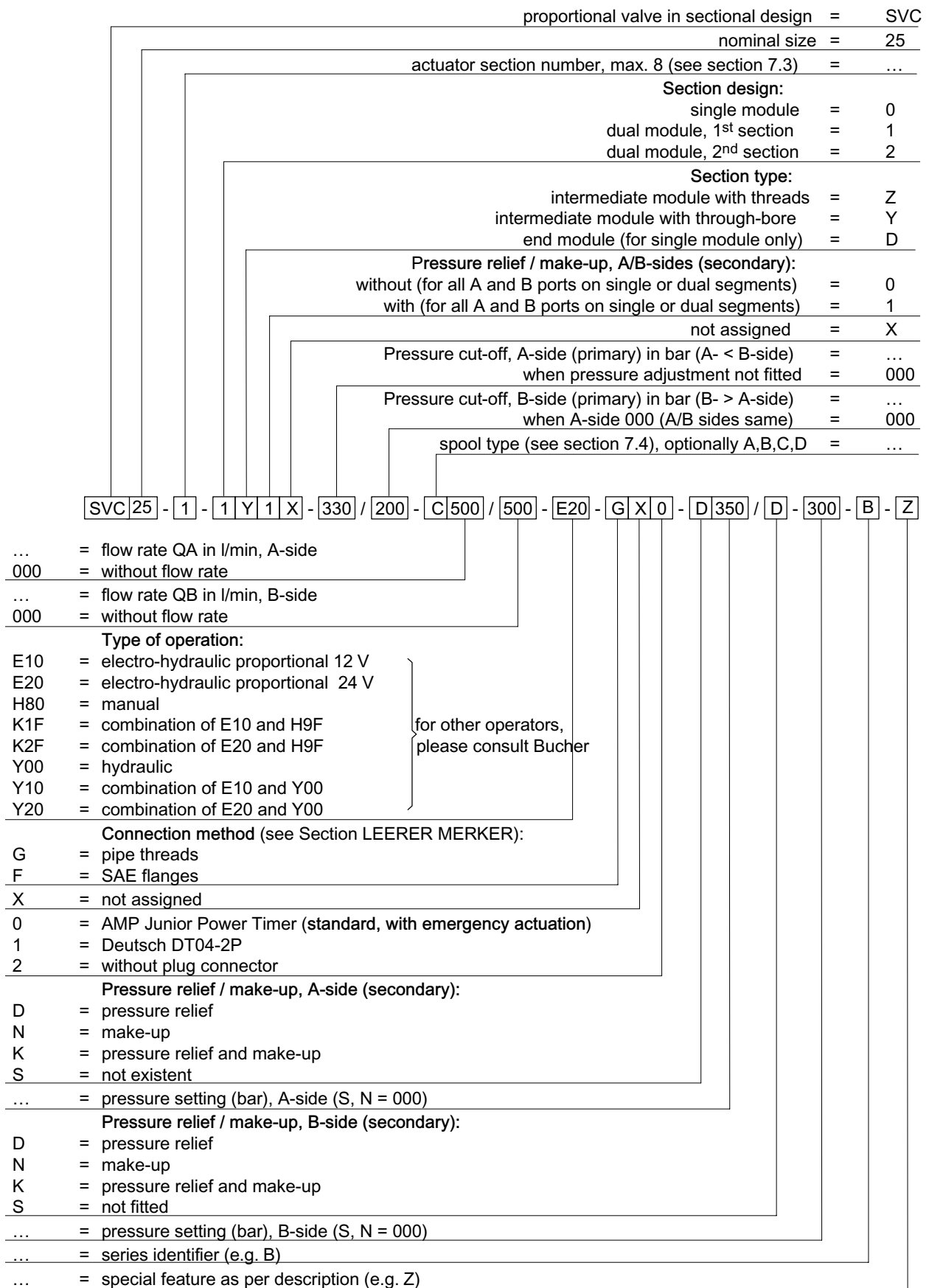
0 = without pilot-oil supply

0 = without pilot-oil drain

... = series identifier (e.g. B)

... = special feature as per description (e.g. Z)

### 6.3 Actuator module

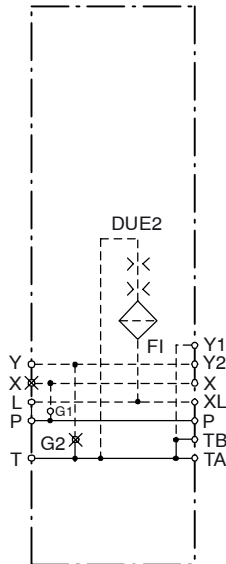




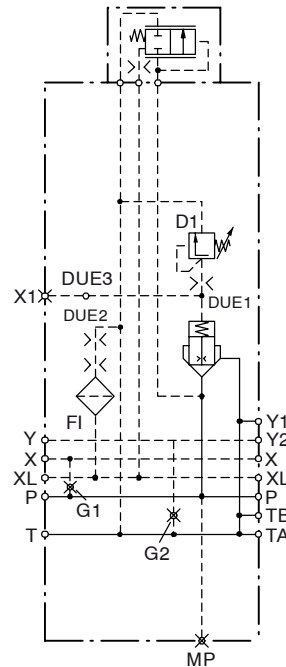
## 7 Modules

### 7.1 Inlet modules

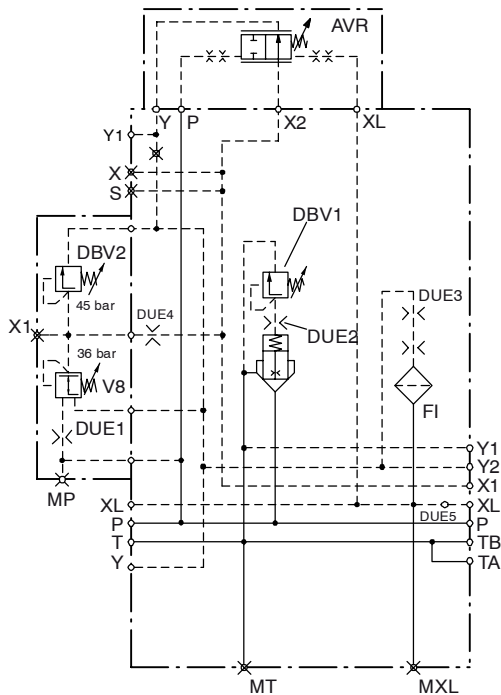
7.1.1 SVC25 - G01



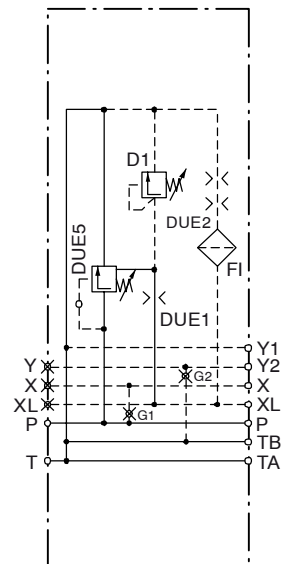
7.1.2 SVC25 - M01 - \_ 1 \_ - ...



7.1.3 SVC25 - L11 - \_ 0 \_ - ...

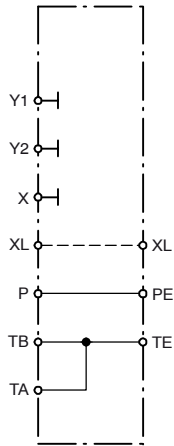


7.1.4 SVC25 - V01

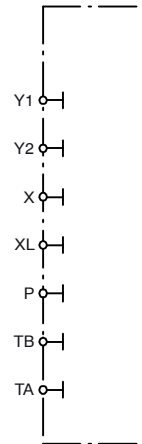


## 7.2 End modules: no actuator section

7.2.1 SVC25 - E11 - 100

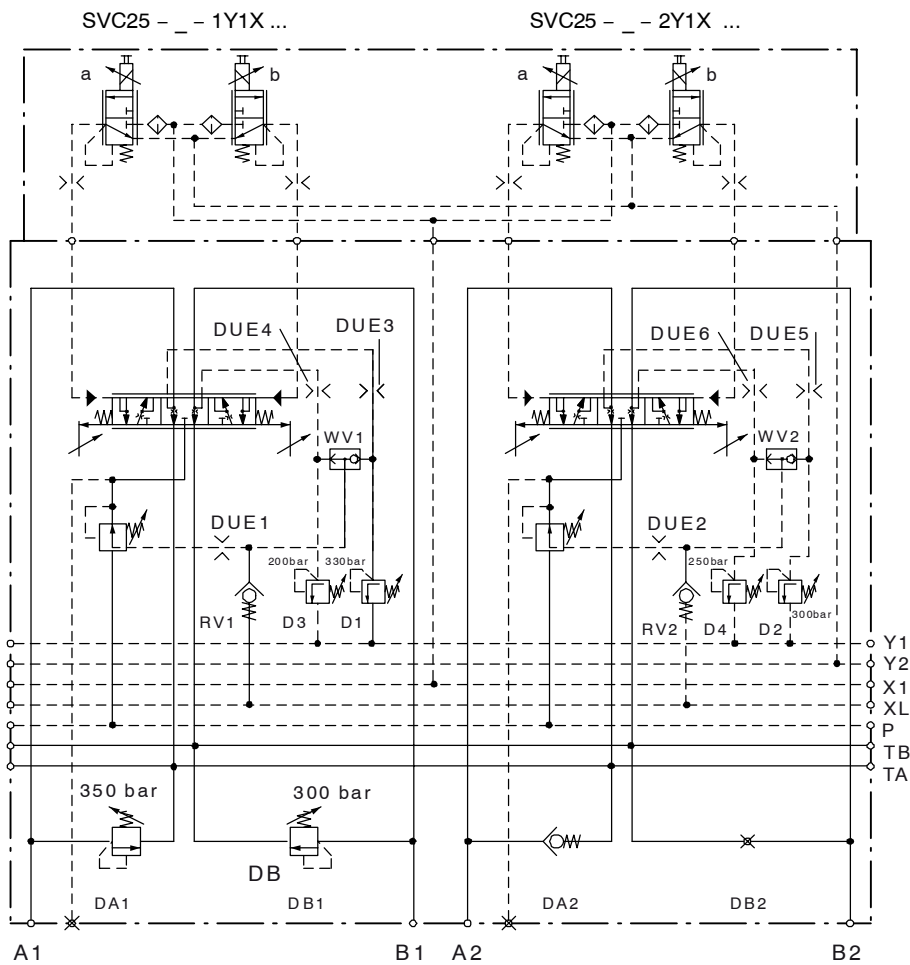


7.2.2 SVC25 - E00 - 000

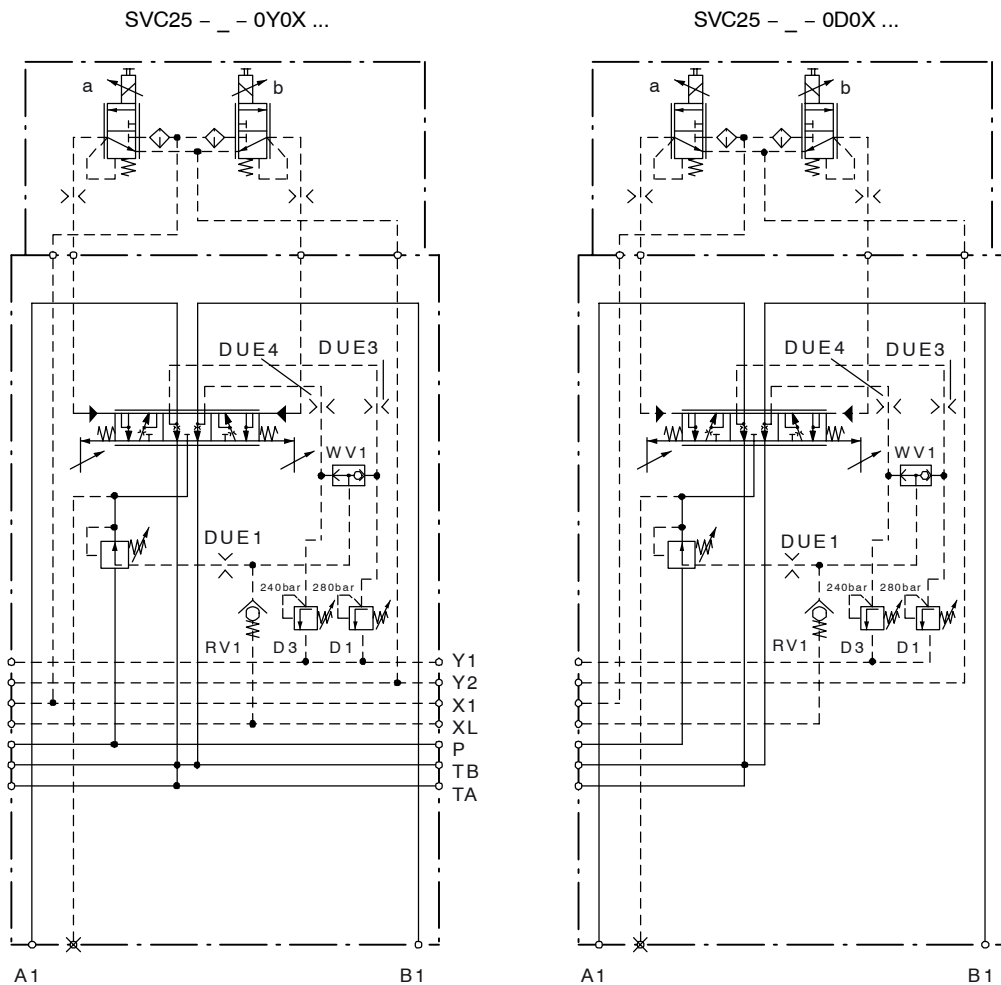


## 7.3 Actuator modules

7.3.1 Two actuator sections in one intermediate module



7.3.2 One actuator section as intermediate module or end module



7.4 Spool type / Symbol

5/3 way functions	Description for ordering code
	A
	B
	C
	D

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[www.bucherhydraulics.com](http://www.bucherhydraulics.com)

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Classification: 430.300.