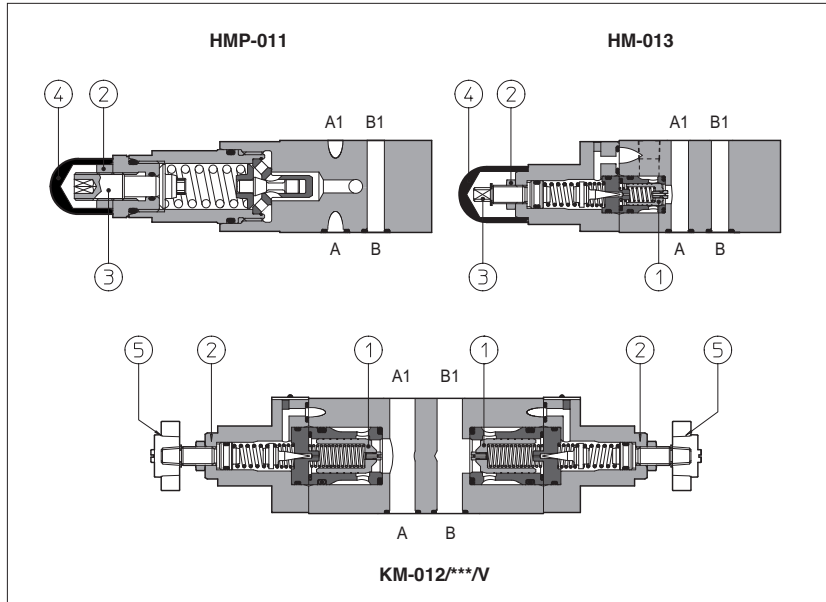


# Modular relief valves type HMP, HM, KM

ISO 4401 sizes 06 and 10



**HMP** are direct operated pressure relief valves.

**HM** and **KM** are double stage pressure relief valves with balanced poppet ①.

The pressure adjustment is operated by loosening the locking nut ② and turning the screw ③ protected by cap ④. Optional versions with setting adjustment by handwheel ⑤ instead of the screw are available on request. Clockwise rotation increases the pressure.

Valve size and max flow:

- HMP** = size 06, max flow: 35 l/min
- HM** = size 06, max flow: 60 l/min
- KM** = size 10, max flow: 120 l/min

Mounting surface: **ISO 4401 size 06, 10**  
Max pressure: up to **350 bar**

## 1 MODEL CODE

<b>HM</b>	-	<b>011</b>	/	<b>210</b>	/	<b>V</b>	/	<b>**</b>	/	<b>*</b>										
<p>Modular pressure relief valve size:  <b>HMP</b> = 06  <b>HM</b> = 06  <b>KM</b> = 10</p>																				
<p>Configuration, see section 2</p> <p><b>011</b> = single on port P, discharge to port T  <b>012</b> = double on ports A and B, discharge to port T  <b>013</b> = single on port A, discharge to port T  <b>014</b> = single on port B, discharge to port T  <b>015</b> = double on ports A and B, with the relieved pressure cross-discharged</p>																				
<p>Options:  <b>V</b> = setting adjustment by handwheel instead of a grub screw protected by cap  <b>R</b> = reduced leakage for special applications  <b>VF</b> = regulating knob  <b>VS</b> = regulating knob with safety locking</p>																				
<p>Series number</p>																				
<p>Pressure range</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;"><b>HMP:</b></td> <td style="width: 50%;"><b>HM and KM:</b></td> </tr> <tr> <td><b>50</b> = 2÷ 50 bar</td> <td><b>50</b> = 4÷ 50 bar</td> </tr> <tr> <td><b>100</b> = 3÷ 100 bar</td> <td><b>100</b> = 5÷ 100 bar</td> </tr> <tr> <td><b>210</b> = 10÷ 210 bar</td> <td><b>210</b> = 5÷ 210 bar</td> </tr> <tr> <td><b>350</b> = 15÷ 350 bar</td> <td><b>350</b> = 5÷ 350 bar</td> </tr> </table>											<b>HMP:</b>	<b>HM and KM:</b>	<b>50</b> = 2÷ 50 bar	<b>50</b> = 4÷ 50 bar	<b>100</b> = 3÷ 100 bar	<b>100</b> = 5÷ 100 bar	<b>210</b> = 10÷ 210 bar	<b>210</b> = 5÷ 210 bar	<b>350</b> = 15÷ 350 bar	<b>350</b> = 5÷ 350 bar
<b>HMP:</b>	<b>HM and KM:</b>																			
<b>50</b> = 2÷ 50 bar	<b>50</b> = 4÷ 50 bar																			
<b>100</b> = 3÷ 100 bar	<b>100</b> = 5÷ 100 bar																			
<b>210</b> = 10÷ 210 bar	<b>210</b> = 5÷ 210 bar																			
<b>350</b> = 15÷ 350 bar	<b>350</b> = 5÷ 350 bar																			
<p>Seals material, see section 3:  <b>-</b> = NBR  <b>PE</b> = FKM  <b>BT</b> = HNBR</p>																				

## 2 HYDRAULIC CHARACTERISTICS

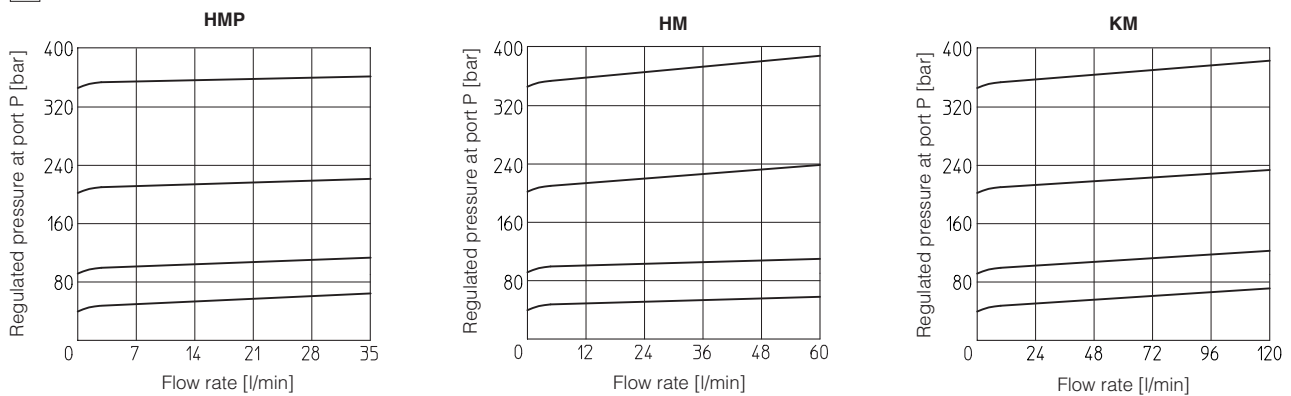
Hydraulic configuration

Valve model		<b>HMP</b>	<b>HM</b>	<b>KM</b>
Max flow	[l/min]	35	60	120
Pressure range	[bar]	2÷50; 3÷100; 10÷210; 15÷350	4÷50; 5÷100; 5÷210; 5÷350	5÷210; 5÷350

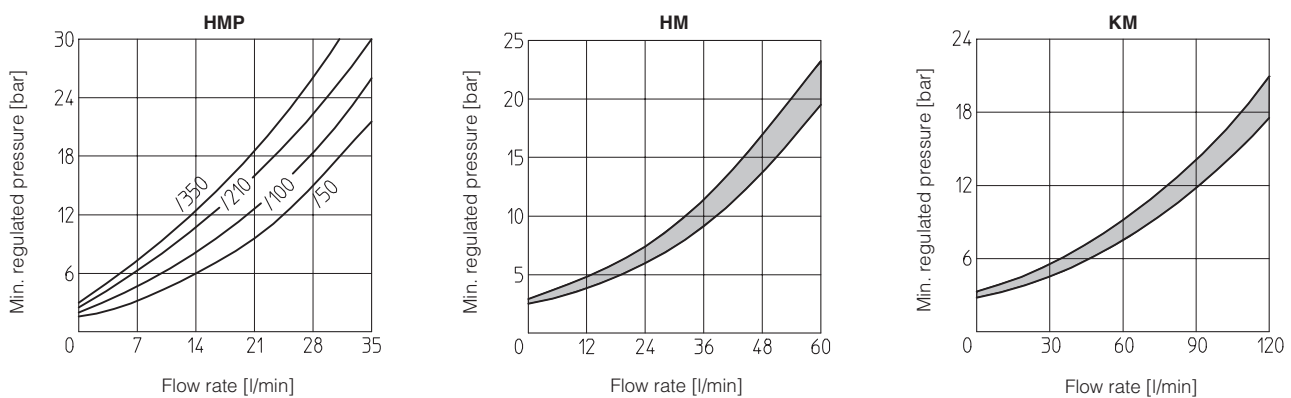
**3 MAIN CHARACTERISTICS, SEALS and HYDRAULIC FLUIDS** - for other fluids not included in below table, consult our technical office

Assembly position / location	Any position		
Subplate surface finishing	Roughness index Ra 0,4 - flatness ratio 0,01/100 (ISO 1101)		
MTTFd values according to EN ISO 13849	150 years, for further details see technical table P007		
Ambient temperature	Standard execution = -30°C ÷ +70°C /PE option = -20°C ÷ +70°C /BT option = -40°C ÷ +70°C		
Seals, recommended fluid temperature	NBR seals (standard) = -20°C ÷ +60°C, with HFC hydraulic fluids = -20°C ÷ +50°C FKM seals (/PE option)= -20°C ÷ +80°C HNBR seals (/BT option)= -40°C ÷ +60°C, with HFC hydraulic fluids = -40°C ÷ +50°C		
Recommended viscosity	15÷100 mm <sup>2</sup> /s - max allowed range 2.8 ÷ 500 mm <sup>2</sup> /s		
Fluid contamination class	ISO 4406 class 21/19/16 NAS 1638 class 10, in line filters of 25 µm (β <sub>25</sub> ≥75 recommended)		
<b>Hydraulic fluid</b>	<b>Suitable seals type</b>	<b>Classification</b>	<b>Ref. Standard</b>
Mineral oils	NBR, FKM, HNBR	HL, HLP, HLPD, HVLP, HVLDP	DIN 51524
Flame resistant without water	FKM	HFDU, HFDR	ISO 12922
Flame resistant with water	NBR, HNBR	HFC	

**4 REGULATED PRESSURE VERSUS FLOW DIAGRAMS** (Based on mineral oil ISO VG 46 at 50°C)

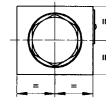
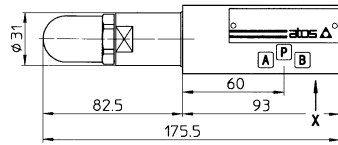
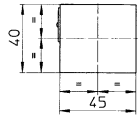


**5 MINIMUM PRESSURE VERSUS FLOW DIAGRAMS** (Based on fluid viscosity of 25 mm<sup>2</sup>/s at 40°C)



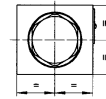
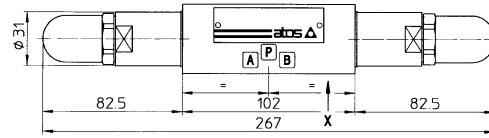
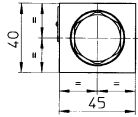
**6 INSTALLATION DIMENSIONS OF HMP VALVES [mm]**

**HMP-011**



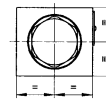
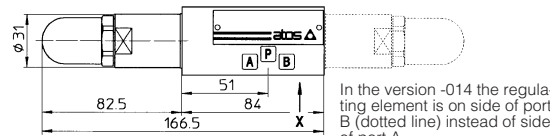
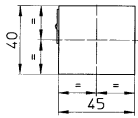
Mass: 1,4 Kg

**HMP-012**



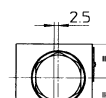
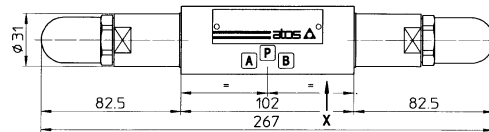
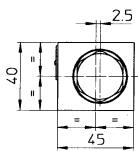
Mass: 1,7 Kg

**HMP-013  
HMP-014**



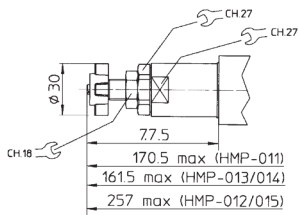
Mass: 1,2 Kg

**HMP-015**



Mass: 1,7 Kg

**Adjustment device for option /V**

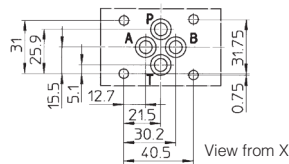


**ISO 4401: 2005**

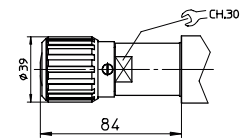
**Mounting surface: 4401-03-02-0-05**

Diameter of ports A, B, P, T:  $\varnothing = 7,5$  mm

Seals: 4 OR 108



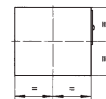
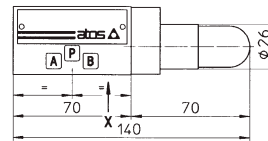
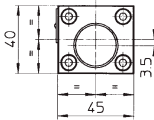
**Adjustment device for option /VF and /VS**



Fastening bolts: n° 4 socket head screws M5. The length depends on number and type of modular elements associated.

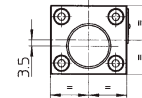
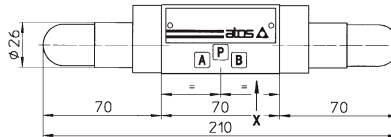
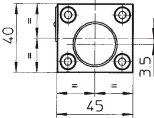
**7 INSTALLATION DIMENSIONS OF HM VALVES [mm]**

**HM-011  
HM-014**



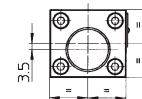
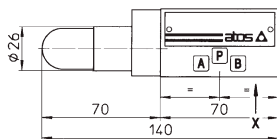
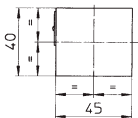
Mass: 1,1 Kg

**HM-012  
HM-015**



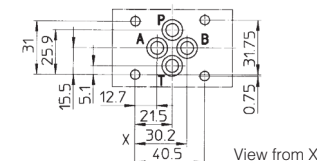
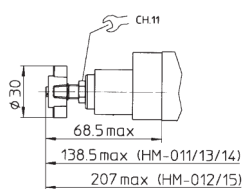
Mass: 1,3 Kg

**HM-013**



Mass: 1,1 Kg

**Adjustment device for option /V**



**ISO 4401: 2005**

**Mounting surface: 4401-03-02-0-05**

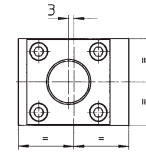
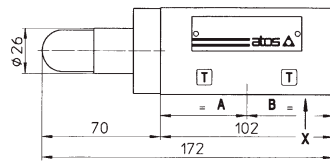
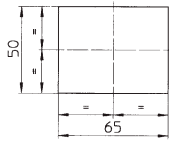
Diameter of ports A, B, P, T:  $\varnothing = 7,5$  mm

Seals: 4 OR 108

Fastening bolts: n° 4 socket head screws M5. The length depends on number and type of modular elements associated.

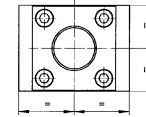
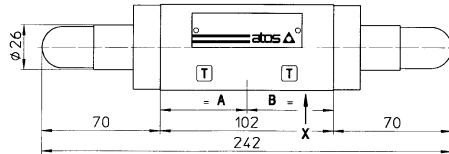
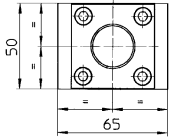
8 INSTALLATION DIMENSIONS OF KM VALVES [mm]

KM-011



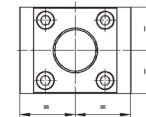
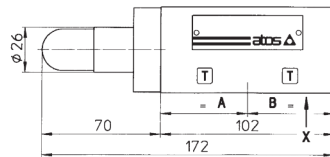
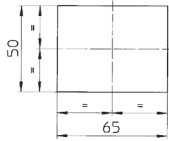
Mass: 2,5 Kg

KM-012



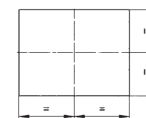
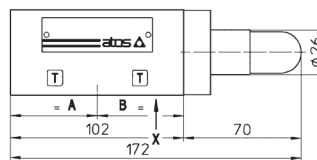
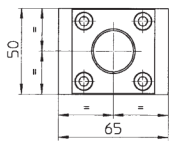
Mass: 2,8 Kg

KM-013



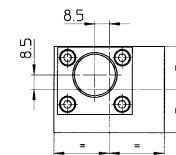
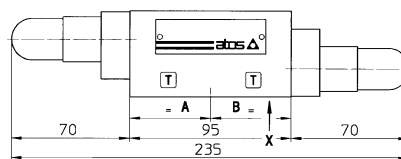
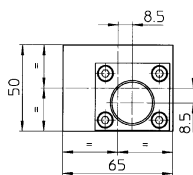
Mass: 2,5 Kg

KM-014



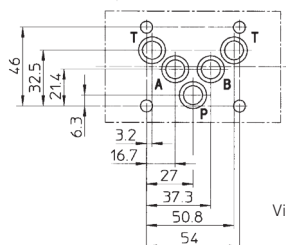
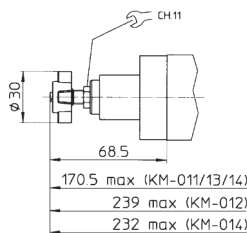
Mass: 2,5 Kg

KM-015



Mass: 2,5 Kg

Adjustement device for option /V



View from X

ISO 4401: 2005

Mounting surface: 4401-05-04-0-05

Diameter of ports A, B, P, T:  $\varnothing = 11,2$  mm

Seals: 5 OR 2050

Fastening bolts: n° 4 socket head screws M6. The lenght depends on number and type of modular elements associated.