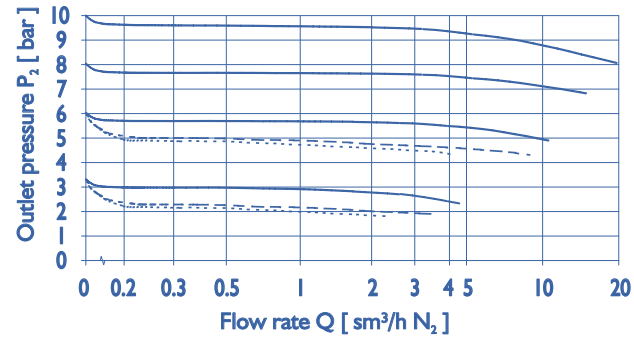


# MP Series Pressure Control Panels



## Flow curves for E 61 Series Pressure Regulators



Inlet pressure  $p_i$ :

...  $P_i=7$  bar    --  $P_i=13$  bar    —  $P_i=21$  bar

**Technical Data** Regulator: Valves:

### Materials:

Body and gas- SS 1.4404 ESU/VAR

wetted parts: (SS 316L remelted)

Diaphragms: Hastelloy C276

Valve seat: PCTFE

Valve stem: - PCTFE

**Surface roughness:**  $R_a \leq 0,25 \mu\text{m}$  (standard)  
optional:  $R_a \leq 0,18 \mu\text{m}$  (e-polished)

### Leak rates:

to atmosphere:  $< 1 \times 10^{-9}$  mbar l/s He

via seat:  $< 1 \times 10^{-6}$  mbar l/s He

### Flow rate:

s. Flow curves  $c_v = 0,24$

**Temperature range:**  $-20 \text{ }^\circ\text{C}$  to  $+70 \text{ }^\circ\text{C}$

Customized configurations upon request!

Ordering information:  
MP Series Pressure Control Panels

**MP 3 - E 60 - V - 10 - options - DIN 6**

Please specify gas type with your order (valve seat material)

### Panel type

- 1 - MPI (s. page 3)
- 2 - MP2 (s. page 3)
- 3 - MP3 (s. page 3)

### Regulator model

- 0 - Regulator E61
- M - Regulator E61-M
- PS - Regulator E61-PS
- V - Regulator E61-V

**Regulator E61-V:**  
Only  $P_{2 \text{ max}} = 1.5$  bar available!

### Cylinder connection

Detailed description of cylinder connection

### Options

s. page 2

### Max. outlet pressure $P_2$

- 10 - up to 10 bar
- 4 - up to 4 bar
- 1.5 - up to 1.5 bar

### Specifications

- SPECTROPUR - components guarantee maximum quality by using high grade materials
- All parts which come into contact with the medium are cleaned in an ultrasonic cleaning system (CFC-free) with the special cleaning process SPECTROCLEAN® and are then baked out. They then undergo the MEGACLEAN® process in a cleanroom class 100/10, are assembled and packed in PE foil under an atmosphere of inert gas.
- SPECTROPUR - components undergo a 100% He-leak-test and optionally a particle test acc. to SEMASPEC®.
- Analysis of the metallic surfaces by the methods AES, ESCA and SEM (scanning electron microscopy) are available upon request.

### Pressure indication

- All pressure regulators can be equipped with pressure gauges, contact pressure gauges or pressure transducers.

### Important note regarding component selection

- In order to assure safe operation it is essential to take the configuration of the whole system into account when selecting a pressure control panel.
- The function of pressure regulator and valves, the compatibility of the materials, correlating temperature ranges, correct installation, operation and maintenance in accordance with the relevant regulations are the responsibility of the system designer and the user.

spectro pur

# Spectropur



## MP Series Pressure Control Panels



# Recommendations / Options

spectro pur

Gas types (other gas types upon request)	Chem. formula	Cyl. connection acc. to DIN 477	Properties	Liquefied gas (scale recommended)	Cyl. pressure @ 20°C (bar)	Spectropur - Pressure Control Panels			
						MP1-E60	MP2-E60	MP3-E60	MP3-E60V
Ammonia	NH <sub>3</sub>	6	G/B	X	8.6			X	
Argon	Ar	6		-	200	X			
Arsine	AsH <sub>3</sub>	1	G/B	X	15.15			X	
Hydrogen bromide	HBr	8	G/K	X	20.0			X	
Boron trichloride	BCl <sub>3</sub>	8	G/K	X	1.6				X
Chlorine	Cl <sub>2</sub>	8	G/K	X	6.7			X	
Chlorine trifluoride	ClF <sub>3</sub>		G/K	X	1.42				X
Hydrogen chloride	HCl	8	G/K	X	42.6			X	
Dichlorosilane	SiH <sub>2</sub> Cl <sub>2</sub>	5	G/K/B	X	1.67				X
Nitrous oxide	N <sub>2</sub> O	11		X	50.6		X		
Germane	GeH <sub>4</sub>	1	G/B	X	40.0			X	
Helium	He	6		-	200	X			
Halocarbon 116	C <sub>2</sub> F <sub>6</sub>	6		-	135	X	X		
Carbon monoxide	CO	5	G/B	-	200			X	
Octafluorocyclobutane	C <sub>4</sub> F <sub>8</sub>	6		X	2.7		X		
Phosphine	PH <sub>3</sub>	1	G/B	X	34.6			X	
Sulfur hexafluoride	SF <sub>6</sub>	6		X	21.1		X		
Hydrogen sulfide	H <sub>2</sub> S	5	G/K/B	X	18.2			X	
Silane	SiH <sub>4</sub>	1	G/B	-	100			X	
Silicon tetrafluoride	SiF <sub>4</sub>	8	G/K	-	70			X	
Nitrogen	N <sub>2</sub>	10		-	200	X			
Nitrogen trifluoride	NF <sub>3</sub>	8	G	-	165			X	
Halocarbon 14	CF <sub>4</sub>	6		-	118	X	X		
Halocarbon 23	CHF <sub>3</sub>	6		X	41.8	X	X		
Hydrogen	H <sub>2</sub>	1	B	-	200	X	X		
Tungsten hexafluoride	WF <sub>6</sub>	8	G/K	X	1.13				X
<b>Gas mixtures<sup>1)</sup></b>									
Arsine <sup>2)</sup>	AsH <sub>3</sub>	1	G/B	-	150			X	
Diborane <sup>2)</sup>	B <sub>2</sub> H <sub>6</sub>	1	G/B	-	150			X	
Fluorine <sup>2)</sup>	F <sub>2</sub>	8	G/B	-	150			X	
Phosphine <sup>2)</sup>	PH <sub>3</sub>	1	G/B	-	150			X	
Silane <sup>2)</sup>	SiH <sub>4</sub>	1	G/B	-	150			X	

Gas properties: B = flammable G = toxic K = corrosive

<sup>1)</sup> Balance gases: Argon, Nitrogen, Hydrogen, Helium

<sup>2)</sup> Contents

No.	Option	MP1-E60	MP2-E60	MP3-E60	MP3-E60V
1	Process gas valve (V5)	+	S	S	S
2	System purge valve (V6)	+	+	S	S
3	Vacuum port (VC1) and shut-off-valve (V7)	-	+	S	S
4	pneumatic EMO-valve	+	+	S	S
5	Burst disc monitoring (PIAH3+RV1)	+	+	S	
6	Contact gauge	+	+	+	+
7	Pressure transducer	+	+	+	+
8	Valve for vacuum port (VC1)	-	+	+	+
9	Vacuum venturi and propellant gas shut-off valve	-	+	+	+
10	Relief valve instead of burst disc	+	+	-	-

+ = optional - = not available

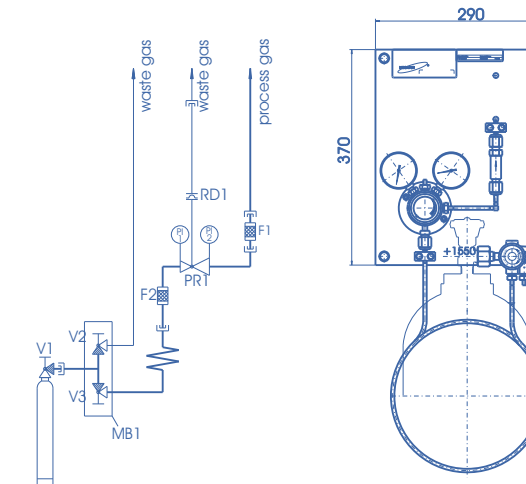
S = standard

# Standard - Configurations

spectro pur

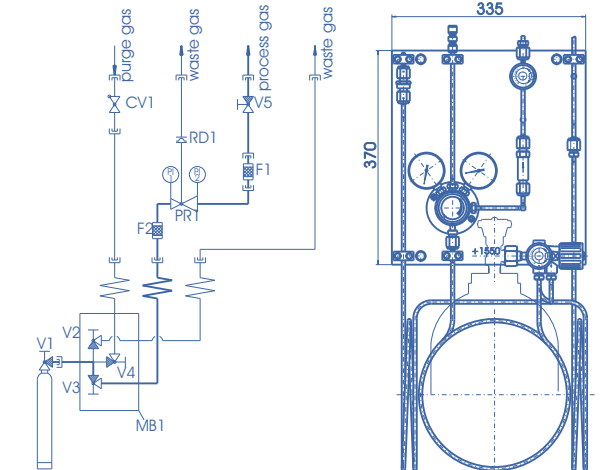
## Pressure Control Panel MP1 - E60

Standard configuration



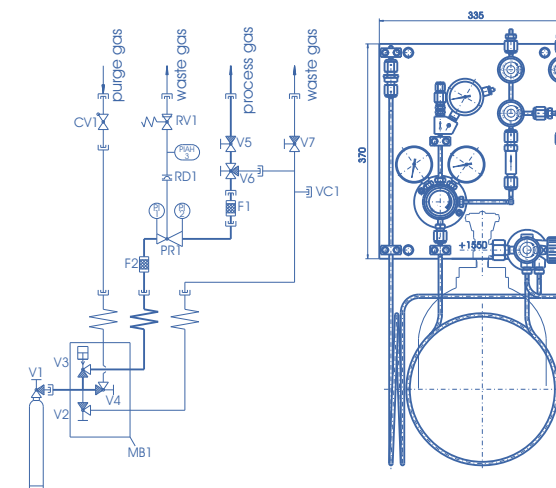
## Pressure Control Panel MP2 - E60

Standard configuration



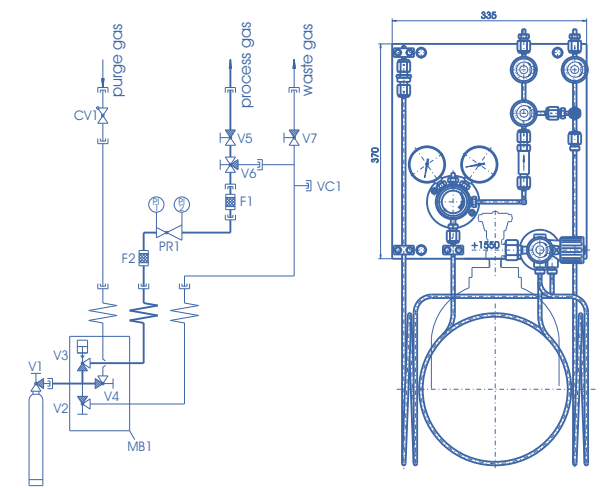
## Pressure Control Panel MP3 - E60

Standard configuration



## Pressure Control Panel MP3 - E60 V

Standard configuration



### Legend Spectropur - Pressure Control Panels

- CV1 Check valve - prevents process gas from flowing back into the purge gas line
- F1 Filter - for particle-free process gas supply - retention rate of 0,003 µm
- MB1 Purge block SBE/2-MV1 with two integrated valves (V2, V3) or Purge block SBE/3-MV1 with three integrated valves (V2, V3, V4)
- PI1 Pressure gauge for high pressure
- PI2 Pressure gauge for low pressure
- PIAH3 Contact gauge for burst disc monitoring
- PR1 (Vacuum) Pressure regulator E61(V) - reduces the inlet pressure to the required outlet pressure

- F2 Pre-filter
- RD1 Burst disc - protects the low pressure from an increased line pressure
- RV1 Relief valve - for limitation of process gas vented in case of a broken burst disc
- V1 Process gas cylinder valve
- V2 Waste gas valve
- V3 Manual (pneumatic) process gas (EMO-) valve
- V4 Purge gas valve
- V5 Process gas line shut-off valve
- V6 System (low pressure) vent valve
- V7 Shut-off valve for Leak-test or vacuum tests
- VC1 Vacuum connector