

# PICOCONTROL KOMPAKT

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## PRESSURE MAINTENANCE



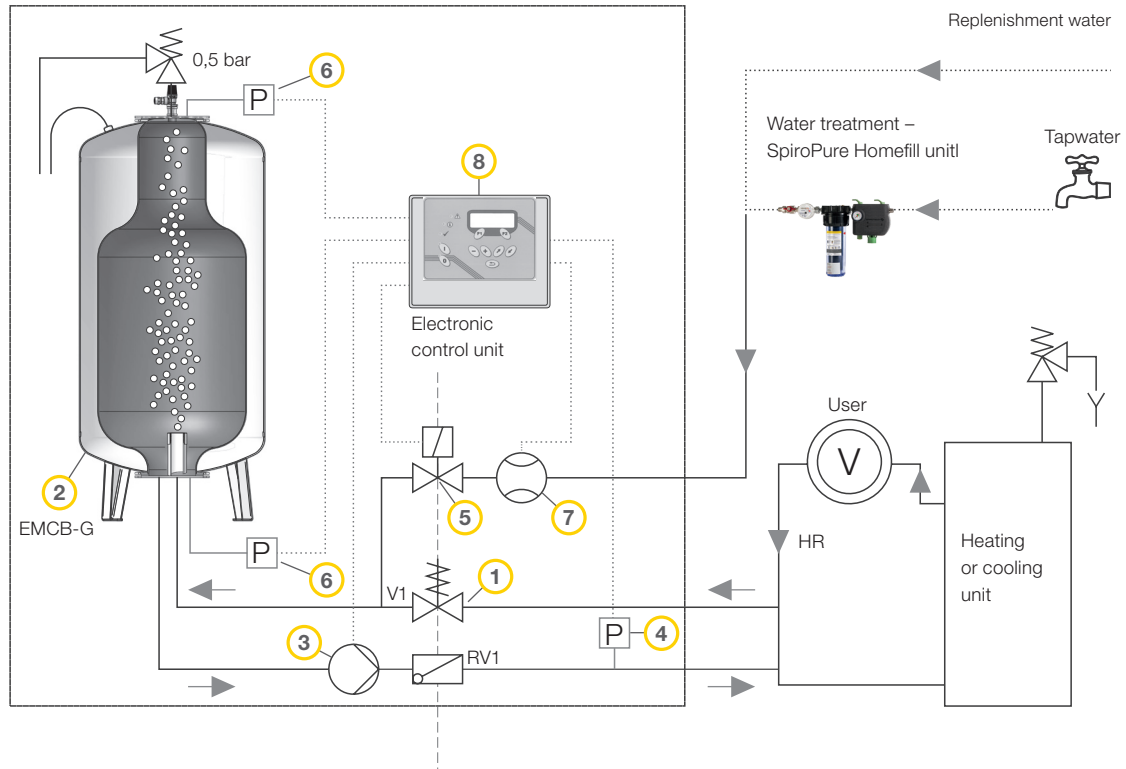
**SPIROEXPAND®**

Pressure maintenance

Replenishment

Monitoring

# CONNECTION DIAGRAM FOR THE SYSTEM



- 1 Pressure maintenance valve
- 2 Expansion tank with replaceable membrane
- 3 Pressure maintenance pump
- 4 Pressure sensor
- 5 Water replenishment / solenoid valve
- 6 Tank pressure gauge top / bottom
- 7 Water meter
- 8 Switch / control unit

## BENEFITS OF SPIROEXPAND

Spirotech's concept of pressure maintenance, replenishment and monitoring is combined with air removal and dirt separation. Operators and owners enjoy the following advantages:

- Improved efficiency of the system in the transfer of energy (heating and cooling)
- Considerable reduction in maintenance and operating costs for pumps, control valves, heat exchangers and the distribution system for heating or cooling
- Longer life span for piping and components in the building, increasing the value of the building

# THE PRINCIPLES BEHIND THE PICOCONTROL SYSTEM

## PRESSURE MAINTENANCE AND EXPANSION

The SpiroExpand PicoControl Kompakt is a pressure maintenance unit with a compact design which enables all of the expansion volume to be used and which maintains constant pressure in heating, cooling and air-conditioning systems.

This compact unit is designed in accordance with the regulations set out in EN12828 / VDI 4708. It is a self-contained unit, with a self-supporting and sound-absorbing construction and with a fitted, unpressurised expansion tank. The volume in the tank can be used to its full capacity.

A high-quality tank membrane ensures the optimal separation of system water and the atmosphere. This membrane is flanged on both sides and can be replaced if necessary. The measurement of the tank level is carried out by two pressure transmitters positioned at the flanges of the tank.

Further features: 0.5 bar safety valve to protect the tank, control unit using compact hydraulics, with a single low-noise pressure maintenance pump, which works as a centrifugal pump with high-quality mechanical shaft seals, mechanical pressure release, which continually reacts to the pressure.



EPCK-S

The ex-works hydraulic connections are fitted on the right-hand side and feature the necessary shut-offs and the possibility for separation from the rest of the system. The temperature of the water entering the tank is monitored.

## DEGASSING

An automatic basic low-pressure degassing is built in as standard. It works according to the principle of partial pressure (Henry's law).

**Considering the VDI4708 and VDI2035-2 guidelines, Spirotech recommends the use of a separate vacuum degasser, which ensures the best possible degassing performance in heating and cooling systems.**

## WATER REPLENISHMENT

A refill module to control the exact level of the make-up water can be supplied as an option. This can be combined with water treatment to conform to the official standards for replenishment water (the SpiroPure range for water treatment). The maximum pressure of water entering the system is 4.0 bar, and the maximum temperature for this water is 70°C.

## CONTROL AND MONITORING

Microprocessors are utilised for the electronic control of all operational processes. The control panel is ergonomically designed, with an illuminated and easily-legible 4-line display. The easy-to-follow instructions are available in many languages. The compact measuring and switch unit has its own casing and is supplied with connection wiring. In the basic version, two status messages (malfunction and warning) are available. Remote monitoring is possible using the MultiControl text message module, the MultiControl bus module or the MultiControl web module. Other possibilities for monitoring and checking are also available.

The **PicoControl Kompakt** comes in six possible versions (45, 75, 125, 200, 300 or 500 litres). Operating pressure up to 4.0 bar is possible.

- Maximum safety temperature in the system: 110°C (with auxiliary tank)
- Maximum temperature at point of connection: 70°C
- Maximum operating pressure (PN): 4 bar

# FUNCTIONS OF PICOCONTROL

## No need for any parts assembly:

just put it in position - connect it - start it up

Compact, ready-to-use unit, including an expansion tank and all necessary (and optional) parts

### Optimal utilisation of the tank volume

The expansion tank can be used to its full capacity

### Prevention of unwanted oxygen intake

Deaeration using a safety valve ( 0.5 bar)

### Control panel with a 4-line, easy-to-read, illuminated display

### Different possibilities for remote monitoring

Bus modules (Profi bus, Modbus, Profi net), web module, text message module, remote documentation

### Differential pressure measurement

Avoids incorrect measurements caused by ambient conditions (e.g. uneven floors), simple replacement of pressure sensors

### Optimal separation of system water from the atmosphere

High-quality, replaceable tank membrane, flanged on both sides / unpressurised storage of system water

### No need for official testing of the pressure tank since it conforms to all regulations

Unpressurised expansion tank (max. 0.5 bar)

### Avoidance of pressure surges

Excellent regulation ability using a mechanical pressure release valve, which continually reacts to the pressure

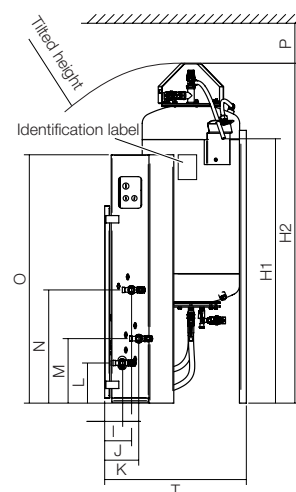
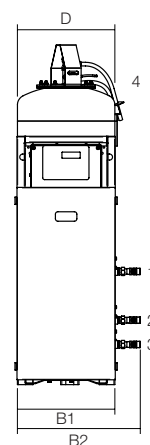
### Maintenance-friendly connection points (integrated shut-off, hydraulic separation)

### Low-noise pressure maintenance pump (centrifugal pump) with high-quality mechanical shaft seals

### Precise pressure measurement and temperature control (protects the membrane)



		PicoControl Kompakt					
		EPCK-S 45-4.0	EPCK-S 75-4.0	EPCK-S 125-4.0	EPCK-S 200-4.0	EPCK-S 300-4.0	EPCK-S 500-4.0
Nominal capacity [l]		45	75	125	200	300	500
Max. operating pressure for the unit (PN) [bar]		4					
Max. operating pressure for the tank (PN) [bar]		0,5					
Max. temperature at point of connection [°C]		70					
Tilted height for installation [mm]		1.500	1.500	1.500	1.630	1.700	2.250
Voltage [V/Hz]		230/50					
Max. performance [kW]		0,22					
Fuse protection [A]		10 A träge					
Dimensions [mm]	B1	400					
	B2	505					
	D	400		500		600	
	H1	1.070	1.090	1.070	1.190	1.215	1.770
	H2	1.375	1.375	1.405	1.515	1.577	2.130
	T	505	585	715	715	805	805
	I	72					
	J	110					
	K	140					
	L	165					
	M	265					
	N	465					
	O	1.070					
	P	500					
Weight [kg]		62	65	69	89	103	118
Connections							
Replenishment water	1	R ¾"					
Pressure relief pipe	2	R ¾"					
Expansion pressure pipe	3	R ¾"					
Tank overflow	4	PA tube 15 x 12,5 mm					



# ACCESSORIES

	Type	Article number
	<b>SpiroPure Homefill</b> Filling unit for the complete desalination of the replenishment water	G61.556
	<b>Bus modules</b> To connect the pressure maintenance unit with an external control unit and enable the exchange of data	
	<b>MultiControl Busmodul Profibus</b> Profibus-Standard DP-V0	EMCPB
	<b>MultiControl Busmodul Modbus</b> RTU RS485	EMCMO
	<b>MultiControl Busmodul Profinet</b> Profinet IO-Device	EMCPN
	<b>MultiControl text message module</b> Notification of malfunctions and warnings by text message to as many as five telephone numbers. It is also possible to choose the type of operation programme, and to get a record of malfunction and warning notifications.	EMCSM
	<b>MultiControl web module</b> Web-based control and monitoring of the pressure maintenance system. Email notifications of system information, malfunctions and warnings.	EMCWB
	<b>Auxiliary tanks in various sizes</b> To regulate the temperature and to protect the system from unacceptable temperature ranges (> 70 °C to 110 °C)	
	<b>EV 100-10-110</b> Volume 100 litres, PN10, 110 °C	ET0100T1
	<b>EV 150-10-110</b> Volume 150 litres, PN10, 110 °C	ET0150T1
	<b>EV 200-10-110</b> Volume 200 litres, PN10, 110 °C	ET0200T1
	<b>Draining funnel</b> Fitting DN 50 mm	E90916