

PRESSURISATION

PICOCONTROL KOMPAKT

EPCK



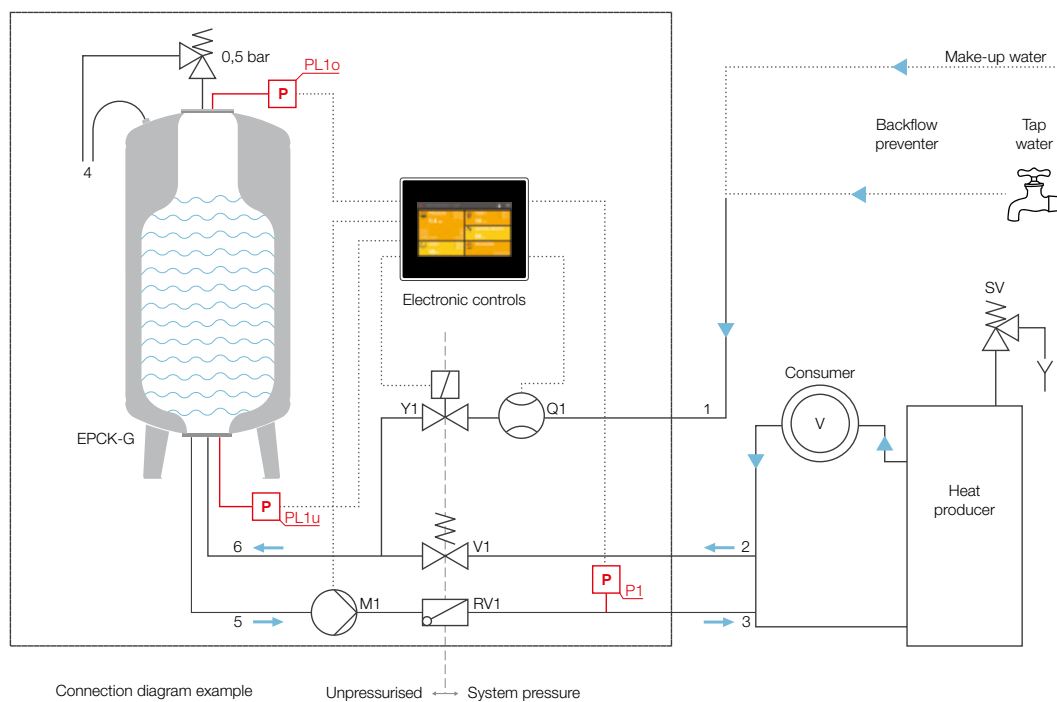
Pressurisation

Replenishment

Monitoring

SPIROEXPAND®

CONNECTION DIAGRAM FOR THE SYSTEM



LEGEND

1	Fresh water supply	4	Discharge hopper for vessel safety*
2	Expansion overflow pipe (from the system return)	5	Suction line from the expansion vessel
3	Expansion pressure line (to the system return)	6	Overflow line to the expansion vessel
M1	Pressure maintenance pump	EPCK-G	Expansion vessel
RV1	Non-return valve	PL1o	Vessel pressure transmitter top
V1	Overflow valve	PL1u	Vessel pressure transmitter bottom
Y1	Magnetic valve	P1	System pressure transmitter
Q1	Water meter	SV	System safety valve

*Possibility for on-site installation of a drain funnel.

THE PRINCIPLES BEHIND THE PICOCONTROL KOMPAKT SYSTEMS

PRESSURE MAINTENANCE AND EXPANSION

The PicoControl Kompakt is a compact pressure maintenance system and for maintaining constant pressure in closed heating and cooling systems.

It is manufactured in accordance with the Pressure Equipment Directive DGRL 2014/68/EU and complies with EN12828 and ÖNORM H12828.

The enclosed unit is designed based on the ELKO MAT patent as a self-supporting, sound-insulated construction with an attached, pressure-free expansion vessel that is 100% usable. To ensure optimal separation between the system medium and the atmosphere, a high-quality, double-flanged, replaceable full-vessel membrane is used. The tank level measurement is performed using two precision pressure transmitters located at the vessel flanges. The 0.5 bar safety valve ensures atmospheric separation of the closed, pressure-free vessel.

The integrated control unit is designed as a compact hydraulic system. It includes a low-noise, compact pressure maintenance pump with a high-quality mechanical seal and a pressure-proportional, continuously regulating, mechanically preset overflow valve.

The hydraulic connections, including the necessary shut-off valves and system separation capability, are factory-mounted on the right side. The temperature of the system medium entering the vessel is continuously monitored.

WATER TREATMENT

If no standardised water is available for make-up water, a water treatment make-up module can also be combined, in accordance with **VDI2035** using **SpiroPure** demineralisation units.

If the capacity of the ion exchanger resin runs out, the electronic monitoring system stops the make-up and prompts you to replace the ion exchanger cartridge.

LOW-PRESSURE DEGASSING

The automatic low-pressure degassing is integrated as standard.

This process reduces the gas content in the system medium based on Henry's Law of Absorption, which states that the solubility of gases in water decreases as pressure drops.

Considering the guidelines VDI 4708 and VDI 2035, Spirotech recommends using a separate vacuum degasser to ensure optimal degassing performance in heating and cooling systems.

Refilling

An optional refilling module is available for automatic replenishment of the tank level. The tank level is measured using two pressure sensors, located at the top and bottom inside the tank membrane.

The refilled quantity is measured with litre precision by the Q1 water meter and compared to the adjustable maximum refill quantity.

If ordered simultaneously, this module is factory-installed.

CONTROL AND MONITORING

The control unit consists of a housing unit with a capacitive touchscreen and an integrated computing unit with user software that enables full device functionality. The compact measurement and switching unit is designed as a fully wired, enclosed switch cabinet. The basic configuration already includes three potential-free signal contacts (Fault, Warning, Refilling in progress). Remote monitoring of the device is possible via a MultiControl bus module and web module. A retrofit option is also available.



TOUCHSCREEN WITH USER-FRIENDLY INTERFACE



The 5-inch touchscreen provides a user-friendly interface that makes it easy to operate and monitor the device. With its clear graphics and intuitive touch controls, it enables simple configuration and real-time monitoring of the operating status. This makes operation easy to understand.

STATUS INFORMATION

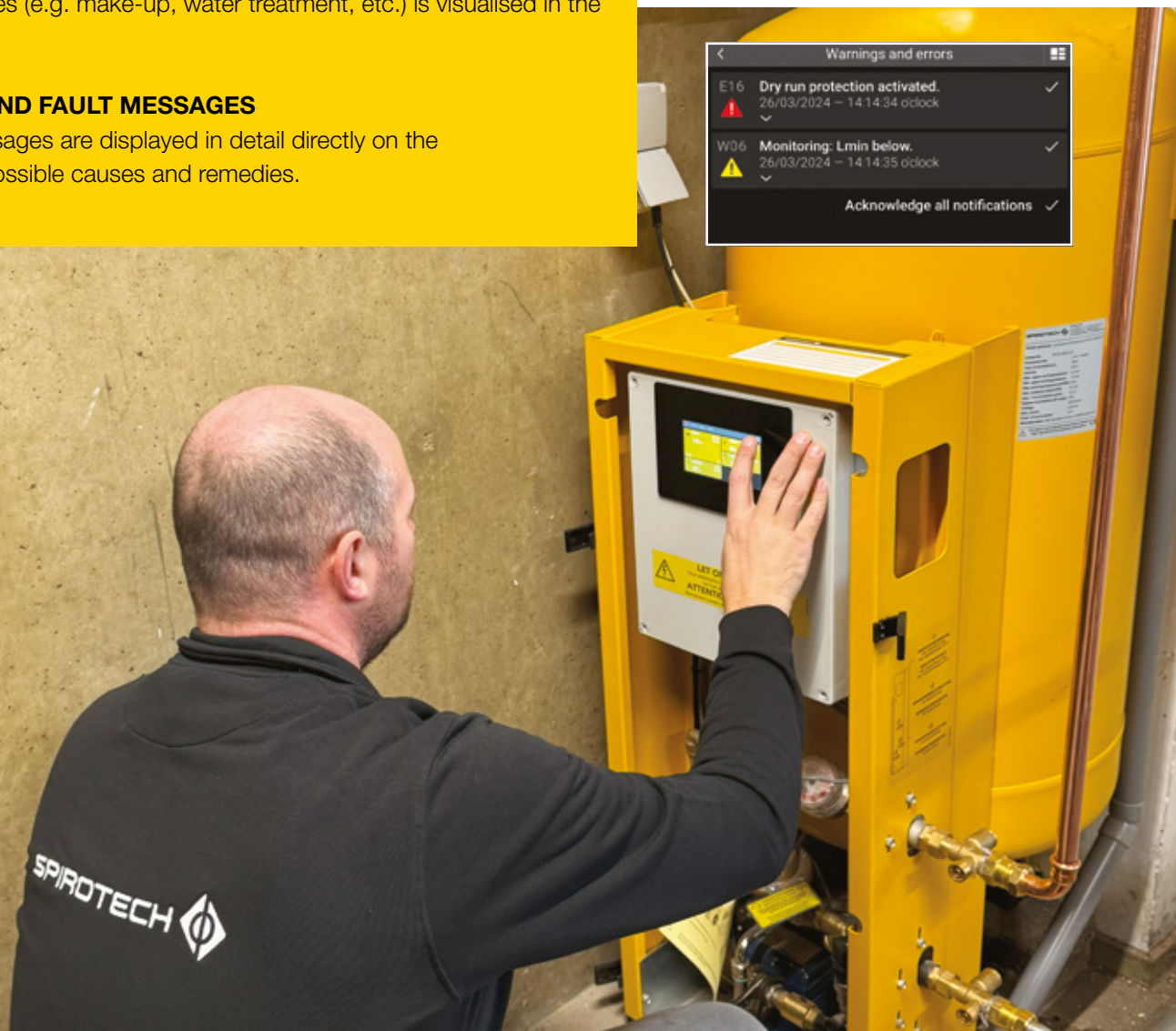
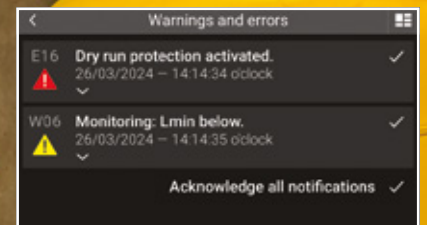
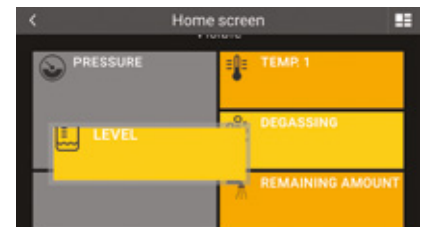
Current status information is visible at first glance even when the screen saver is active.

BASIC DISPLAY

The factory-defined basic display can be individually adapted to the requirements of the system operator. Furthermore, the current status of the accessories (e.g. make-up, water treatment, etc.) is visualised in the basic display.

WARNING AND FAULT MESSAGES

Warning messages are displayed in detail directly on the device with possible causes and remedies.



FEATURES OF EPCK

Control panel with 5-inch touchscreen

Electronic unit with the option to install various communication modules: web module, bus module

3 potential-free signal contacts always included:

1. Fault
2. Warning
3. Refilling in progress

Connection for refilling module EPCF-1 (already installed in the illustration)

Continuous temperature monitoring

Precision system pressure transmitter

Device connections, designed as maintenance units with integrated shut-off and the option for bypass installation

Tank overflow with the option to install a drain funnel (on-site installation)

Precision pressure transmitter for differential pressure measurement (top and bottom)



TECHNICAL DATA

EPCK

SPIROEXPAND PICOCONTROL KOMPAKT (EPCK)

Type	A	B	C	D	E	F	Connections				W x H x D [mm]	Weight [kg]
							1	2	3	4 [mm]		
EPCK-S45-4.0	6	70	1375	230V 50 Hz	0,22	10	Rp $\frac{3}{4}$	Rp $\frac{3}{4}$	Rp $\frac{3}{4}$	PA-Schlauch 15 x 12,5 mm	505 x 1351 x 505	57
EPCK-S75-4.0			1383								505 x 1351 x 585	66,5
EPCK-S125-4.0			1418								555 x 1369 x 715	70
EPCK-S200-4.0			1522								555 x 1478 x 715	83,5
EPCK-S300-4.0			1602								605 x 1548 x 805	85
EPCK-S500-4.0			2197								605 x 2157 x 805	114



Upper working pressure range
1 - 4 bar

LEGEND

A Max. operating pressure device (PN) [bar]
B Max. temperature at connection point [°C]
C Tilt dimension [mm]

D Voltage [V/Hz]
E Max. power [kW]
F Fuse protection [A]

1 Make-up line
2 Expansion overflow line

3 Expansion pressure line
4 Safety valve discharge line size

Technical changes reserved!

OTHER PRODUCTS FROM THE SPIROEXPAND RANGE

- **Pressure maintenance systems:**
MultiControl Kompakt (EMCK), MultiControl Modular (EMCM), TopControl Modular (ETCM), MultiControl Cool (EMCC)
- **Automatic make-up units:**
MultiControl Autofill (EMCA)

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ACCESSORIES

EPCK

	Description	Art. - Nr
	PicoControl post-feed module 1/2" Expansion module for installation in EPCK	EPCF-1
	SpiroPure Filling unit for the complete desalination of the replenishment water	
	MultiControl webmodule Monitoring and remote observation of the pressurization system via Internet web browser. Information, fault and warning messages by e-mail.	EMCWE
	Intermediate cooling vessels in various sizes To bring the temperature within acceptable values at high return temperatures so that the expansion vessel is protected against this. (> 70 °C to 110 °C). Vessel sizes from 100 to 3,000 litres, depending on requirements. Custom vessels also possible.	ET0100T1 - ET3000T1
	Bus modules To connect the pressure maintenance unit with an external control unit and enable the exchange of data.	
	MultiControl Busmodule Modbus TCP	EMCMO-TCP
	MultiControl Busmodule Modbus RTU RS485	EMCMO
	MultiControl Busmodule Profibus-Standard DP-V0	EMCPB
	MultiControl Busmodule Profinet IO-Device	EMCPN
	MultiControl contact temperature sensor Including tightening strap (diameter 15 – 40 mm).	E51950
	MultiControl cable temperature sensor Cable 10 m, including immersion sleeve G 1/2", PN10.	E51951



MAXIMISING PERFORMANCE FOR YOU

Spirotech is a leading expert in improving the efficiency of heating and cooling systems. Our family business has over 60 years of experience in developing solutions for removing and preventing the accumulation of air and sludge deposits in energy systems. Our products save energy, increase comfort, avoid wear and tear and maximise operating periods. Reliable and customer-oriented products that help you get top performance and protect investment in capital assets. We develop high-value solutions with our partners and suppliers that improve the operation of residential and commercial properties. Our comprehensive network of selected importers in over 70 countries means there is always a Spirotech expert near to you.

Heating and cooling systems are highly complex, particularly when they are run in conjunction with other systems and installations. So locating and analysing faults when they occur is never easy, especially with the clock ticking in the event of a system failure. Spirotech is here to support you with practical advice and solutions, helping you to pinpoint causes and rectify them. Please feel free to contact us.

**IF YOU WOULD LIKE TO KNOW
MORE ABOUT OUR SOLUTIONS,
PLEASE VISIT OUR WEBSITE
WWW.SPIROTECH.COM OR
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