

## OEM Alpha direct Balance

The OEM Alpha direct Balance Base Station is the intelligent room-by-room temperature control for the future, ensuring maximum comfort and energy efficiency for surface heating.

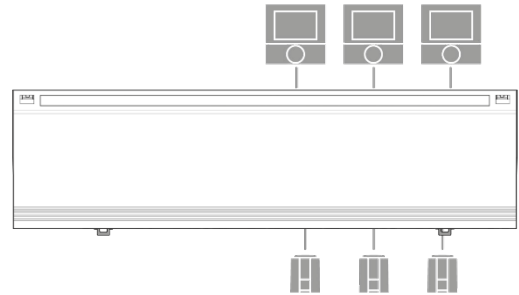
The OEM Alpha direct Balance Base Station with integrated "automatic hydraulic adjustment" performs the adjustment completely independently and without the connection of additional hardware. Due its control characteristics, the system ensures automatic balancing of the flow rate in the connected circuits.

Each time the supply voltage is switched on, a 30-minute commissioning mode is performed. During this time the controller signals are switched 1:1 through to the outputs. The pump contact uses the 2-minute switch-on delay and follow-up time.

During these 30 minutes, the input signals are analyzed and used to calculate the balancing which starts after the commissioning mode.

The controller signals are also continuously analyzed during operation; changes are implemented in the control behavior.

The heating requirements of the various circuits are picked up by the algorithm, which distributes the opening times of the thermal actuators evenly over a fixed period of time. Thus, even in hydraulically NOT balanced systems, all circuits are supplied with sufficient heat.



The circuits are not supplied with heat at the same time. This mode of operation is used only for inertial heating systems such as panel heating.

Furthermore, the OEM Alpha direct Balance Base Station also offers cooling by inverting the input signals of standard heating thermostats. Commercially available heating thermostats can be connected. The system recognizes the requirements of the thermostat and automatically adjusts to them. Thus, special heating/cooling thermostats are not necessary. Standard thermal actuators in NC design are used as actuating elements.

### 1.1 Features

- High-quality, modern OEM design
- OEM differentiation of appearance and function
- Version in 24 V 8 zones/thermostat or 230 V 8 zones/thermostat
- Integrated "automatic hydraulic adjustment"
- Meets the requirements of the Building Energy Act (GEG).
- Automatic recognition of connected thermostats
- simple, intuitive installation and operation, without flow and return sensors
- Status signaling by LEDs
- Connection of a maximum of 17 actuators
- Initial status NC
- Pump and boiler control
- Connection for dew point sensor and setback input
- proven cable guide and strain relief
- Screwless plug-in/clamping connection technique
- Clearly structured connection terminals
- High functional security
- Maintenance-free
- No initialization or calibration necessary
- Blocking of cooling possible zone by zone

### 1.2 Variants

In the basic version, the OEM Alpha direct Balance Base is delivered as neutral device without logo and in grey, with transparent cover. The subsequent list shows the available versions.

Type	Version	Operating voltage	Zones	Equipment	Scope of supply
B 41902-08N2	Balance	24 V	8	Heating / cooling, pump and boiler control, status signalling	<ul style="list-style-type: none"> <li>• OEM Alpha direct Balance in individual packaging</li> <li>• Instructions in 12 languages</li> </ul>
B 21902-08N2		230 V			

### 1.3 Optional extensions or differentiations to the basic version

Differentiation possibilities	
Packaging	Packaging can be manufactured and printed individually according to requirements.
Imprint on casing	Laser marking of the company logo and the individual type designation and your device designation
Casing	Bottom – adaptation of color, Casing cover – completely overlapping casing cover, individual color, transparency and shape
Please contact us if you have further wishes.	

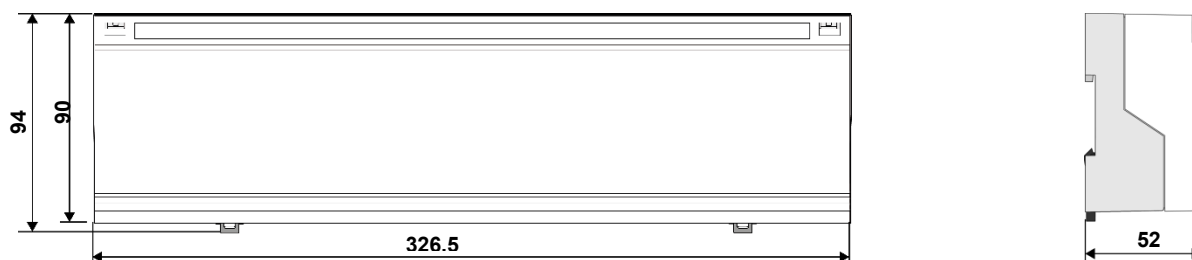
Extension options	
DIN rail	The scope of delivery is extended by a DIN rail for installation in the heating circuit distributor

## 2 Technical data

Type		B 41902-08N2		B 21902-08N2	
Operating voltage		24 V / ±20% / 50 Hz		230 V / ±10% / 50 Hz	
Power input (without pump/boiler)		max. 50 VA			
Power consumption (idle)		<1 W			
Fuse		T2A		T4AH	
Number of heating zones (HZ)		8			
Switching power per heating zone		max. 1 A			
Max. number of actuators		17 (1x5 + 1x4 + 2x2 + 4x1)			
Switching current per actuator				max. 500 mA	
Nominal load of all actuators		max. 24 W			
Control direction normally closed (NC)/normally open (NO)		NC			
Pump connection		Closing contact (monopolar switching)			
Lead time/follow-up time		2 minutes			
Switching power		2 A, 200 VA inductive			
Boiler connection		Closing contact (monopolar switching)			
Lead time/follow-up time		2 minutes			
Switching power		2 A, 200 VA inductive			
Pump protection function		3 days / 5 min			
Valve protection function		16 days / 5 min			
Ambient temperature		0 ... 50 °C			
Storage/transport temperature		-20 °C ... +70 °C			
Ambient humidity		5 ... 80%, not condensing			
ERP class acc. to EU 811/2013		1=1 %			
Contamination degree		2			
Protection class		III		II	
Protection type		IP20			
Function		Type 1		Type 1.C	
Switching element design		Relay			
Overcharge protection		Current limitation via device fuse			
Setback input		Switchable via potential-free contact			
CO input		Switchable via potential-free contact			
Temperature limiter or dew point sensor		Switchable via potential-free normally closed contact			
Cover latch		Double latching of cover on casing, not to be opened without tools			
Connection terminals		Plug-in terminal contact			
Cable cross-section: massive		0.2 ... 1.5 mm²			
Cable cross-section: finely stranded with wire end ferrule without plastic collar		max. 1.0 mm²			
cable cross-section: finely stranded with wire end ferrule with plastic collar		max. 0.75 mm²			
Wire stripping length		8 ... 9 mm			
Temperature for cone pressure test		550 °C			
Rated surge voltage		1500 V			
Standards and regulations		EN 60730-1 / EN60730-2-9 / ElektroG resp. RoHS compliant			
Mains connection design		NYM connection terminals 3 x 1.5 mm²			
Strain relief		Integrated			
Material		ABS			
Type of installation		Wall installation/DIN rail (TS35/35 x 7.5 mm)			
Color of casing		RAL7035 (light grey)			
Color of cover		Transparent, polished in the area of the LEDs			
Outer dimensions		90 × 326.5 × 52 mm			
Weight		465 g		600g	
LED	Heating zones	green (one LED for each HZ)			
	Fuse	red			
	Power	green			
	Pump	green			
	Boiler	green			
	Heating/cooling	blue			

## 2.1 Dimensions

### 2.1.1 8 zone Base Station



All indications in mm

## 2.2 Approvals and certificates

All Möhlenhoff products are extensively tested and certified by independent testing institutes.



The CE identification documents that the products that the products placed on the market comply with the applicable requirements of the EU Directives.



The product is certified by TÜV Rheinland.

### \* Technical note

Controllers with a cycle time of more than 30 minutes are not suitable for comparison with the Alpha direct Balance System. When using such controllers, the base station switches the controller signal through to the actuator 1:1. The corresponding heating zone does not take part in the adjustment. Commercially available controllers use a cycle time of less than 30 minutes.