

## Alpha IP: Multi-IO Box

The OEM Alpha IP Multi-IO Box (MIOB) serves for the functional extension of the Alpha IP indoor environment solution for surface heating.

This extension can increase the energy efficiency and the comfort, but also the safety of the room-by-room temperature control system. The MIOB offers several connection options for the demand-oriented and energy-efficient operation of pumps and boilers, for the change-over between heating and cooling operation, for dew point monitoring, dehumidifier control, and overtemperature limitation in the overall system.

Installation is performed flexibly and freely placeable on the wall by screws or on DIN rail.



### 1.1 Features

- 230 V version
- Functional extension for Alpha IP indoor environment solution
- Direct connection of pumps/boilers
- CO input for heating/cooling change-over
- Dew point monitoring
- Operation and function displays via LED
- Flexible wall installation
- Pre-configured for stand-alone solution
- Compatible to Homematic IP
- Encryption and authentication of all data packets according to safety standards as e. g. AES-128 and CCM/RFC3610
- In conjunction with HAP, all IO ports can be parametrised individually. The following connection options are available, for example:
  - Dehumidifier control
  - Change-over output (CO pilot)
  - External timer
  - Target temperature limitation
  - General switching output for Homematic IP

The Möhlenhoff OEM product quality ensures easy, intuitive installation, operation and maintenance of the entire system.

### 1.2 Version

In the respective basic version, the OEM Alpha IP Multi-IO Box (MIOB) will be delivered as neutral devices without logo and in white.

Type designation	Designation	Scope of supply
<b>MIOB 21001-N1</b>	MIOB 230 V, neutral, white	<ul style="list-style-type: none"> <li>• Alpha IP MIOB 230 V</li> <li>• Operating instructions in 12 languages</li> <li>• 4 x Screws 4,0 x 40 mm</li> <li>• 4 x Dowels 6 mm</li> </ul>

**1.3 Optional extensions or differentiations to the basic version****Extension options**

Instructions, language set 1	The scope of delivery is extended by a detailed instruction for the Multi-IO box in the following languages (otherwise it is available for download under <a href="http://www.alphaip.de">www.alphaip.de</a> ).	German
		English
		French
		Dutch
		Italian
Instructions, language set 2	The scope of delivery is extended by a detailed instruction for the Multi-IO box in the following languages (otherwise it is available for download under <a href="http://www.alphaip.de">www.alphaip.de</a> ).	Spanish
		English
		Danish/Norwegian
		Finnish
		Swedish
		Polish
		Russian

**Differentiation possibilities**

Packaging	Individual printing and manufacturing of packaging
Casing	Individual colour
Casing printing	Laser marking of the company logo on the casing, and the individual type designation and the device designation
Installation bottom	Individual colour
Please contact us if you have further wishes.	

**Accessories**

Adapter plate	For the installation to a DIN rail
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## 2 Technical Data

<b>Type designations</b>	<b>MIOB 21001-N1</b>
Operating voltage	230 V / $\pm 10\%$ / 50 Hz
Power consumption	max. 16 A
Power consumption in idle operation	<0.35 W
Radio technology	Radio, 868.3 and 869.525 MHz SRD band, category 2
Communication protocol	Homematic IP
Typical radio free-field range	375 m (in open air)
Degree / class of protection	IP20 / I
Admissible ambient temperature	0 °C to 50 °C
Admissible ambient humidity	5 to 80 %, not condensing
Storage/transport temperature	-20 °C to +50 °C
Standards and regulations	2014/53/EU Radio Installations; 2014/30/EU EMC; 2011/65/EU RoHS; 2014/35/EU Low Voltage Directive
Material	Casing made of PC
Colour	RAL 9003 (signal white)
Exterior dimensions (W x H x D)	199 x 156 x 34 mm
Weight	365 g
Packaging dimensions	278 x 182 x 48 mm

	<b>Out 0</b>	<b>Out 1</b>	<b>DIN 0</b>	<b>DIN 1</b>	<b>Aout</b>
	Output 230 V / 8A	Output 230 V / 16 A	Digital input	Digital input	Analog output 0 - 10 V
Connections	3	2	2	2	2
Maximum switching power	1840 W, $\cos\phi \geq 0.95$ (potential-free)	3680 W, $\cos\phi \geq 0.95$ (potential-free)	-	-	20 mW
Minimum switching power / load	1 W	1 W	-	-	1 mW
Load type	Resistive load	Resistive load	-	-	Resistive load
<b>Connection terminals</b>					
Line cross-section: massive	0,2 – 4 mm <sup>2</sup>	0,2 – 4 mm <sup>2</sup>	0,2 mm <sup>2</sup> bis 1,5 mm <sup>2</sup>	0,2 mm <sup>2</sup> bis 1,5 mm <sup>2</sup>	0,2 mm <sup>2</sup> bis 1,5 mm <sup>2</sup>
Conductor section: Finely stranded with ADH without plastic sleeve	0,2 – 2,5 mm <sup>2</sup>	0,2 – 2,5 mm <sup>2</sup>	max. 0,75 mm <sup>2</sup>	max. 0,75 mm <sup>2</sup>	max. 0,75 mm <sup>2</sup>
Conductor section: Finely stranded with ADH with plastic sleeve	0,2 – 2,5 mm <sup>2</sup>	0,2 – 2,5 mm <sup>2</sup>	max. 0,75 mm <sup>2</sup>	max. 0,75 mm <sup>2</sup>	max. 0,75 mm <sup>2</sup>
Wire stripping length	8 mm	8 mm	10 mm	10 mm	10 mm
<b>Default operating mode</b>					
Pump control	Pump control	Boiler control	Change over signal	Dew point monitoring	Deactivated
Lead time/follow-up time	2 min	0 min	-	-	-
Pump protection	1 minute every 14 days / 6 min.	-	-	-	-
<b>Connection to HAP</b>					
Option 1	Parametrisable	Parametrisable	Parametrisable	Parametrisable	-
Option 2	Dehumidifier	Dehumidifier	Temperature limiter	Temperature limiter	-
Option 3	Change-over output	Change-over output	External timer	External timer	-
Option 3	Switching output HmIP	Switching output HmIP	Switching input HmIP	Switching input HmIP	-

### 2.1 Approvals & certificates



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

