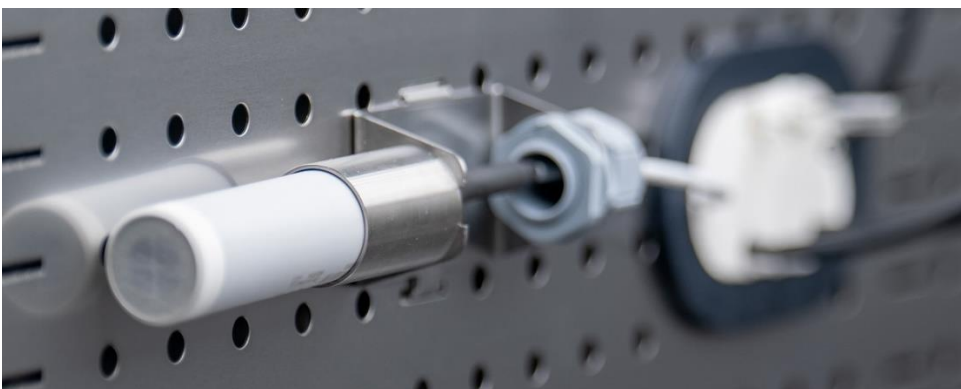


## BINDER CO<sub>2</sub> Control Module

The CO<sub>2</sub> control module was developed for use in the latest generation of BINDER cooling incubators and constant climate chambers (E7). Installation can be easily carried out by the customer on site but a BINDER service is also available.

All floor-standing models are prepared for mounting the supply module on the left-hand side of the unit and the module package contains all the necessary fastening elements. The CO<sub>2</sub> sensor is fed into the interior through the large standard access port and clipped in there. The gassing hose also runs through this access port, which is sealed with dedicated silicone foam plugs.

A data cable connects the module to the climate chamber, whose controller is used to adjust the CO<sub>2</sub> settings. The module also has an analog output with the standard 4-20 mA interface for external processing of the measured CO<sub>2</sub> concentration value.



## Compatibility with BINDER Cooling incubators and Climate chambers E7

Series	Model	Temperature range	Humidity range
<b>KB PRO</b>	260, 470, 720, 1060, 1600	-20 ... 100 °C	uncontrolled
<b>KBF</b>	260, 470, 720, 1060, 1600	0 ... 70 °C	20 ... 80 % RH
<b>KBF PRO</b>	260, 470, 720, 1060, 1600	-20 ... 100 °C	10 ... 98 % RH

### Control range variants

Two different module variants are available for different applications. The **0...1 vol.-% CO<sub>2</sub>** variant is suitable for plant growth. This allows the CO<sub>2</sub> concentration to be raised from atmospheric 0.04 Vol.% to up to 1 Vol.% to accelerate plant growth. With the **0-20 Vol.% CO<sub>2</sub> variant**, a BINDER climate chamber of the KBF PRO series can be upgraded to a reach-in CO<sub>2</sub> incubator for cell cultures. Both module variants are identical except for the sensor head. This means that an existing module can be used with an additional CO<sub>2</sub> sensor for the alternative CO<sub>2</sub> range. However, CO<sub>2</sub> calibration is recommended when replacing the sensor.

#### CO<sub>2</sub> Control range **0...1 Vol.%**

- CO<sub>2</sub> Supply box with 4-20 mA analog output
- **CO<sub>2</sub> sensor head 0...1 Vol.%**
- Sensor holder
- Gassing hose
- Power supply unit
- Data cable
- 2 Silicone foam plugs
- User manual

#### CO<sub>2</sub> Control range **0...20 Vol.%**

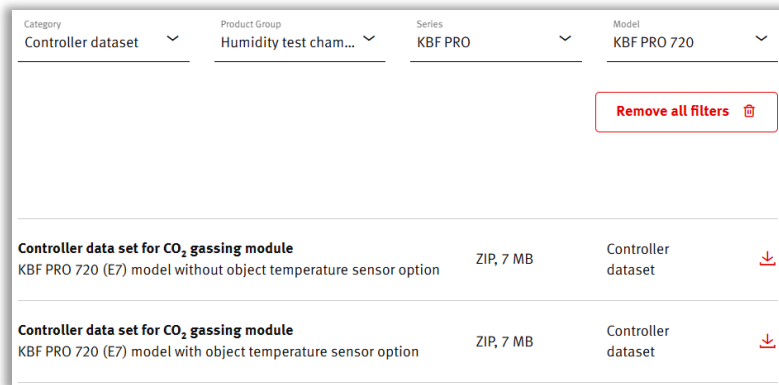
- CO<sub>2</sub> Supply box with 4-20 mA analog output
- **CO<sub>2</sub> sensor head 0...20 Vol.%**
- Sensor holder
- Gassing hose
- Power supply unit
- Data cable
- 2 Silicone foam plugs
- User manual

### CO<sub>2</sub> recovery time after 30 sec door opening

Model	<b>0...1 % CO<sub>2</sub></b> @ 0.5 Vol.%	<b>0...20 % CO<sub>2</sub></b> @ 5.0 Vol.%
260	8 min	7 min
470	12 min	8 min
720	14 min	11 min
1060	20 min	15 min
1600	28 min	19 min

## Controller data set update

The CO<sub>2</sub> control modules only work in conjunction with the chamber's controller. To activate the CO<sub>2</sub> control function on the controller, a new controller data set must be installed. The update file can be downloaded from the BINDER website in the download area and transferred to the controller using a USB stick.



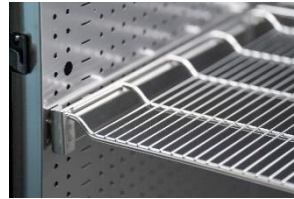
## Services for the installation and calibration

We offer an installation service for the CO<sub>2</sub> Control module. It is also recommended to carry out a CO<sub>2</sub> calibration at the same time. We offer an additional service for this for each variant.

Art. No.	Designation	Description
DL10-0130	Installation CO <sub>2</sub> control module	Installation of the BINDER CO <sub>2</sub> control module (0-1% oder 0-20%), Mounting the supply box, inserting the CO <sub>2</sub> sensor and the gas hose into the interior, sealing the access port, connecting the box to an existing CO <sub>2</sub> gas supply, updating the controller data set, function check
DL30-0404	Calibration CO <sub>2</sub> control 0-1%	Calibration of the CO <sub>2</sub> concentration at 0.5 Vol.% with analyzed test gas, including certificate
DL30-0405	Calibration CO <sub>2</sub> control 0-20%	Calibration of the CO <sub>2</sub> concentration at 5.0 Vol.% with analyzed test gas, including certificate

## Recommended BINDER accessories

- Grid shelf sets with telescopic rails
  - Size 260/470 8012-2384
  - Size 720 8012-2385
  - Size 1060 8012-2386
  - Size 1600 8012-2387
  
- Grid shelf sets with U-rails
  - Größen 260/470 8012-2390
  - Größe 720 8012-2391
  - Größe 1060 8012-2392
  - Größe 1600 8012-2393
  
- BINDER PureAqua (desalination system)
  - System 8012-0759
  - Replacement cartridge 8012-0165
  
- Water supply set (canister solution)
  - for KBF 8012-2592
  - for KBF PRO 8012-2592



The water supply system consists of a 20 L freshwater canister with level sensor, a water pump with magnetic holder for fresh water and a 20 L waste water canister