

Algae production around the clock

Trend-setting production plant for microalgae



Phyox d.d. in Novskas, Croatia, produces microalgae on the basis technology of the closed photobio-reactor (PBR) under fully controlled and sterile conditions. The combination of innovative photobio-reactors and process solutions enables Phyox to operate 365 days a year - around the clock - under ideal conditions to produce microalgae.

"Endress+Hauser has supported us in the implementation of our idea from the very beginning, starting with planning and development of prototypes all the way to industrial application."

Bernd Herrmann
CEO (Chief Executive Officer)
Phyox d.d.
Novska, Croatia



Near the Croatian capital Zagreb, Phyox has built a trend-setting production plant for microalgae. Since the end of 2021, algae have been produced there on a commercial scale. As a partner with know-how, Endress+Hauser supplied not only the process instrumentation, but also the automation technology.

Customer challenge Ensure high plant availability and a stable production process with consistently high product quality, and preferably around the clock.

Realization In order to reliably control the growth and production process, all relevant process parameters must be monitored continuously and precisely. The combination of Phyox's patented technology with Endress+Hauser's reliable instrumentation ensures smooth production around the clock.

Our solution

- CO₂ concentration is monitored indirectly with the measurement of the pH value using Memosens CPS71E
- Cell concentration is monitored with Memosens turbidity sensor Turbimax CUS52D
- Conductivity is measured with Memosens CLS82D
- Multichannel transmitter Liquiline CM444 to connect up to four Memosens sensors
- Flow rate monitoring using Proline Promag 10D electromagnetic flowmeter
- Control fill levels using two Liquiphant FTL31 level switches
- Fresh water supply from an osmosis system and dosing fertilizer are fully automated
- Control cabinet containing operation panel, control technology and DSL modem for remote access



The Promag 10D electromagnetic flowmeter monitors the speed of the algae suspension as it circulates through the system.



The Liquiline CM444 transmitter collects the pH, conductivity, and turbidity values.

Customer values

- Algae production at any time of day or night, 365 days a year
- Consistently high product quality through continuous monitoring of all relevant process parameters
- Permanent monitoring of the process - even from another location
- Maximum process operation time thanks to pre-calibration in the lab and quick on-site sensor replacement



Thanks to the Memosens technology, the same instrumentation can be used in the lab and the production line.

www.addresses.endress.com

C501771B/60/EN/01.23