

# Biogas Test Plant BTP2 - control

## Including comprehensive range of on-line measuring equipment

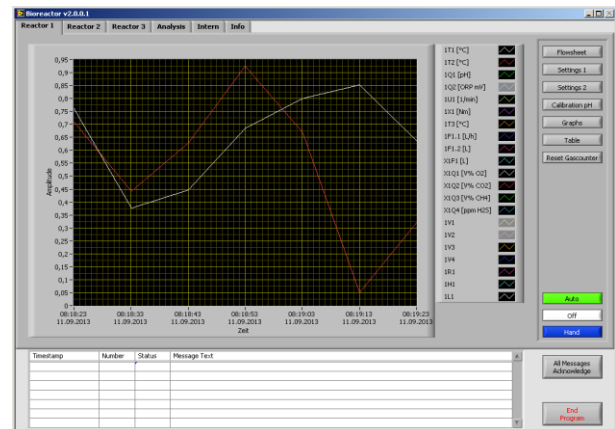
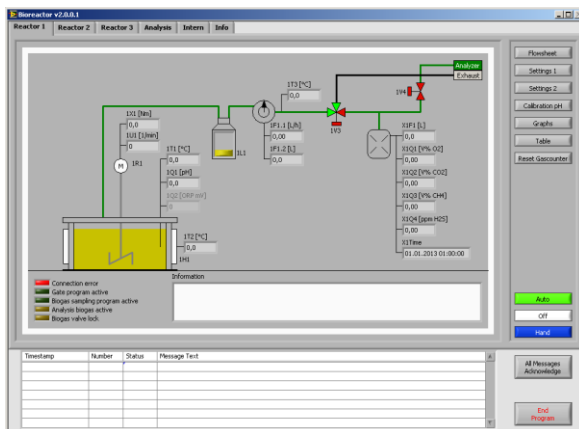


### Fields of application:

- Research
- Fermentation revenue test
- Optimization of gas output

### Advantages:

- On-line measuring equipment
- System expandable up to 10 reactor units
- Integrated gas analysis
- Data storage and visualization



Software Biogas-control

### Possible configurations of BTP2-control

- Bio reactor with various ports
- Silicon – heater band
- Feeding system
- Stirrer including speed adjustment and display of torque
- Gas tight shaft feed through
- Gas bag for gas sampling
- Assembly frame
- pH-measuring equipment
- Temperature measuring equipment
- Redox measuring equipment
- Recording of gas quantities through gas meters
- Automatic gas analysis system
- Automatic gauge head selector switch
- Software package Biogas-control

The detailed scope of supply will be defined within the quotation.

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| <b>Bio reactor</b>                                  |   |
|---|---|
| Dimension:  | Volume approx. 15 liter; outer diameter: 270 mm, wall thickness: 9 mm, height: 350 mm   |
| Material/ configuration:                            | For measuring equipment   |
| Max. allowed temperature:                           | 60°C  |
| Feeding:  | Feeding funnel (stainless steel) including dipped duct and sealing plug   |
| Shaft feed through                                  | Variant 1: dipped duct<br>Variant 2: surge tank   |
| Heating:  | Silicon-heater band incl. Temperature sensor,<br>Height of heater band: 200 mm; max. input power for heating: 500 W<br>Adjustment of heating system through central control unit Biogas-control |
| <b>Measuring equipment for bio reactor</b>          |   |
| pH  | Measuring range: 1-14; Length: 300 mm, PG 13,5 screw-in thread  |
| Redox potential                                     | Measuring range: - 2000...+2000 mV; length: 300 mm, PG 13,5 screw-in thread   |
| Temperature   | Measuring range: 0...100°C, resolution: 0,1 °C, sensor screwed-in   |
| <b>Stirrer/ stirrer tools</b>                       |   |
| Performance:  | 140 W   |
| Speed range:  | 12 – 400 rpm and 60 – 2000 rpm  |
| Torque:   | 200 Ncm/ temporary 400 Ncm  |
| Display:  | Speed and torque  |
| Stirrer tools:                                      | 2 levels with propeller shaped stirrers and anchor shaped stirrers  |
| <b>Gas counter/ Gas bag</b>                         |   |
| Measuring range:                                    | 1...60 l/h; resolution: 2,5 ml  |
| Gas bag:  | Volume 10 liter as sample for gas quality measurement   |
| <b>Gas quality measurement system</b>               |   |
| CH <sub>4</sub> :                                   | Range: 0...100 Vol. %; measuring principle: IR  |
| CO <sub>2</sub> :                                   | Range: 0...100 Vol. %; measuring principle: IR  |
| H <sub>2</sub> S:                                   | Range: 0...5000 ppm; principle: electro-chemical measuring cell   |
| O <sub>2</sub> :                                    | Range: 0...25 Vol. %; principle: electro-chemical measuring cell  |
| H <sub>2</sub> : - without dilution                 | Range: 0...2000 ppm, principle: electro-chemical measuring cell   |
| H <sub>2</sub> : - with dilution                    | Range: 0...100 Vol. % through dilution of measuring gas, principle: electro-chemical measuring cell   |
| Feature:  | Gas cooler  |
| <b>Software features</b>                            |   |
| Software:   | Biogas-control  |
| <b>Space requirements</b>                           |   |
| BTP2-Module:  | Width: 50 cm; depth: 65 cm; height: 240 cm – for each module  |
| Central gas quality measurement module including PC | Width: 115 cm; depth: 65 cm; height: 240 cm   |

Modifications due to technical progress are subject to change without notice.



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