

# FUTURA

FROM

**ABER**

TRUSTED TECHNOLOGY



The compact lightweight biomass solution for measuring LIVE cell concentration on-line in bioreactors.

# WELCOME TO THE **FUTURA** - THE NEXT GENERATION IN BIOMASS MONITORS

The ABER Futura is the complete instrument for measuring LIVE cell concentration online – designed with all the biomass monitoring processing power in a single compact housing.



## CONFIGURABLE...

The Futura can be configured to be used in most bioreactors from research through to production. Once the correct probe size has been selected choose from a range of CONNECT hubs or a 1/4 DIN transmitter, panel mounted or in an IP65 enclosure. Choose then for optional SCADA software for calculation of additional parameters that can be used to monitor physiological changes of the cells and optional IOQ documentation for cGMP.

### PROBE(S)

#### 12mm Probe

For small bioreactors  
headplate mounting



#### 25mm Probe

For larger bioreactors  
DN25 port



### FUTURA(S)

#### Standard Remote

For restricted space



#### Standard Futura

For larger bioreactors



### TRANSMITTER(S)

#### Connect 1

Single channel, Current Loop,  
Modbus, USB



#### Connect 4

4 channel, Current Loop,  
Modbus, USB



#### Connect 8

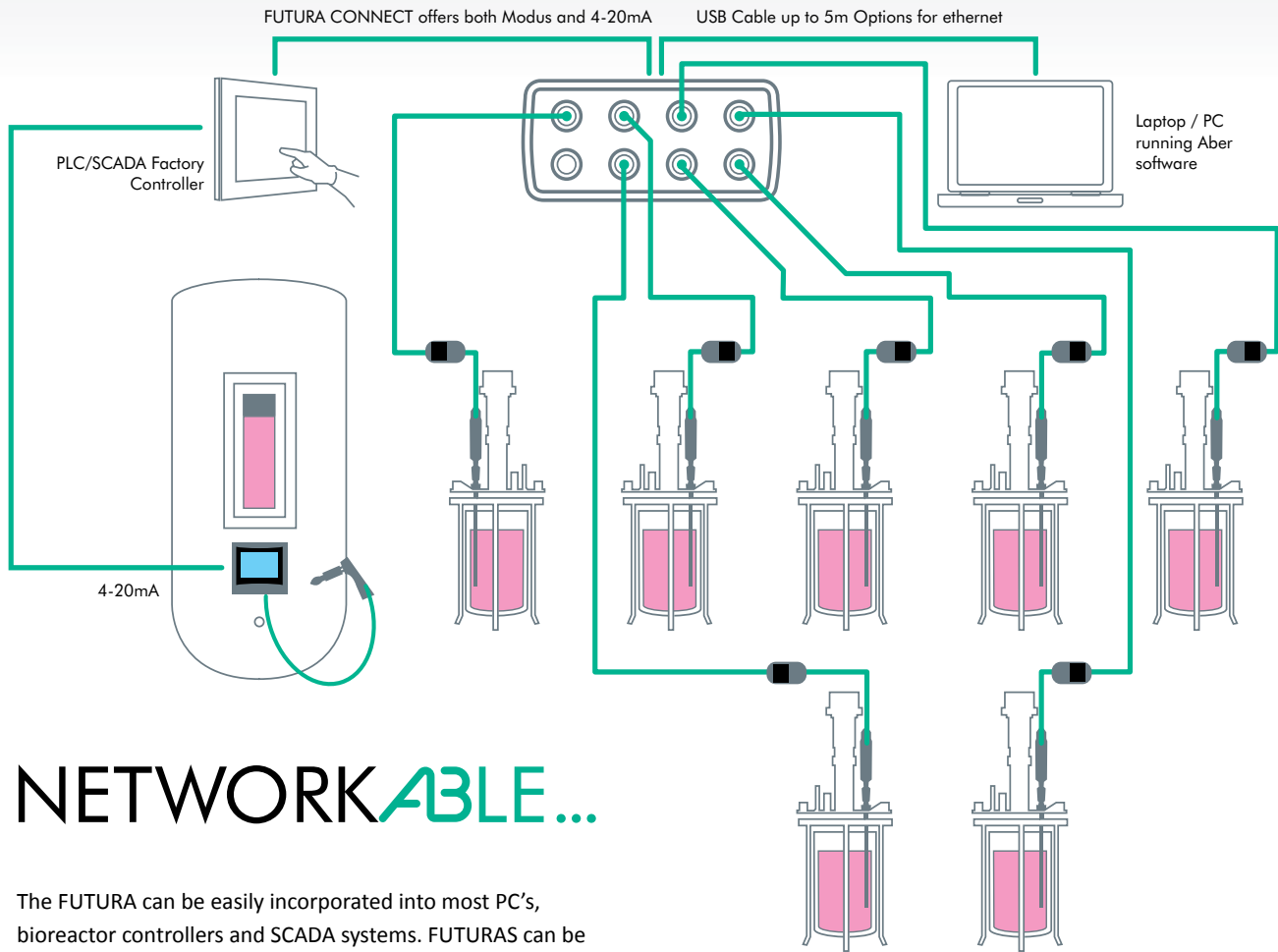
8 channel, Current Loop,  
Modbus, USB



#### V350 Touch

1 Channel Current Loop  
Colour Touch  
Screen





## NETWORKABLE...

The FUTURA can be easily incorporated into most PC's, bioreactor controllers and SCADA systems. FUTURAS can be mixed and matched and are also OPC compliant.

### OPTIONAL FUTURA SCADA

#### Futura Tool

Used to set up Futuras for connecting to the various transmitters

#### Futura Lite

Free basic logging also operates as an opc server making biomass and conductivity available as tags for a third party SCADA.

#### Futura SCADA

Multichannel central point of configuration, logging, frequency scanning derived function (Cell size etc) Calculation



### OPTIONAL IOQ PACKAGE FOR CGMP PRODUCTION

Changes are tracked with the internal 2-gigabyte memory providing a full audit trail. Full IOQ documentation is available and Futura is OPC compliant.



## How the ABER biomass monitor works

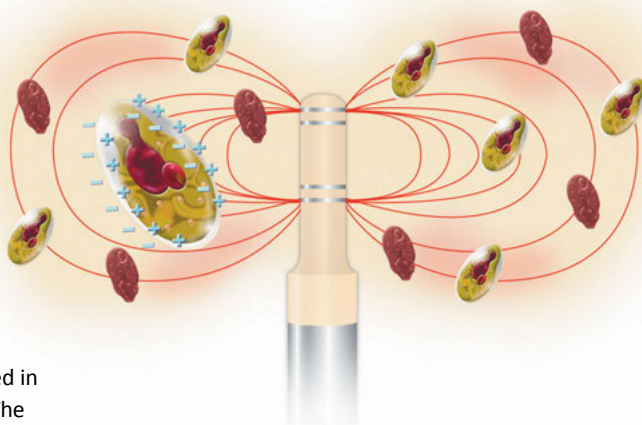
### Real time means real savings

Cells with intact plasma membranes in a fermenter can be considered to act as tiny capacitors under the influence of an electric field. The non-conducting nature of the plasma membrane allows a build up of charge.

The resulting capacitance can be measured: it is dependent upon the cell type and is directly proportional to the membrane bound volume of these viable cells.

### A unique range of probes

Choose from a range of *in situ* steam sterilisable probes manufactured in robust materials that conform to FDA requirements & USP Class VI. The smooth, annular ring electrode arrangement provides a surface free of areas of entrapment and large EVEN electric field; ideal for many cell culture applications where cells will collect in any well or crevice. For production applications ABER offers a highly robust 25mm probe with flush electrodes- a design that is often used in cGMP bioreactors for cell culture. ABER can also provide probes that can be gamma irradiated for single use bioreactors. Option for a range of probes for single use bioreactors including single use, sterilisable and flow through cell.



## FLEX<sup>ABLE</sup>...

### Other products from ABER instruments

Compact yeast monitor and lab yeast analyzer for breweries

Single use biomass probe



For more information on these products contact **ABER Instruments Ltd**

## KNOWLEDGE<sup>ABLE</sup>...

### We invented the technology...

We have led the development of radio frequency biomass measurement techniques for over 20 years. Over 1000 ABER systems are now installed around the globe, all providing on-line measurement of viable biomass and helping to reduce risk and maximise productivity in a bioreactor. Many of the systems are now used in cGMP cell culture processes with some customers using over 50 instruments as a key part of their manufacturing facility.

We have pioneered a new generation of instruments that are small in size, light in weight, strong in power, flexible in implementation.



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