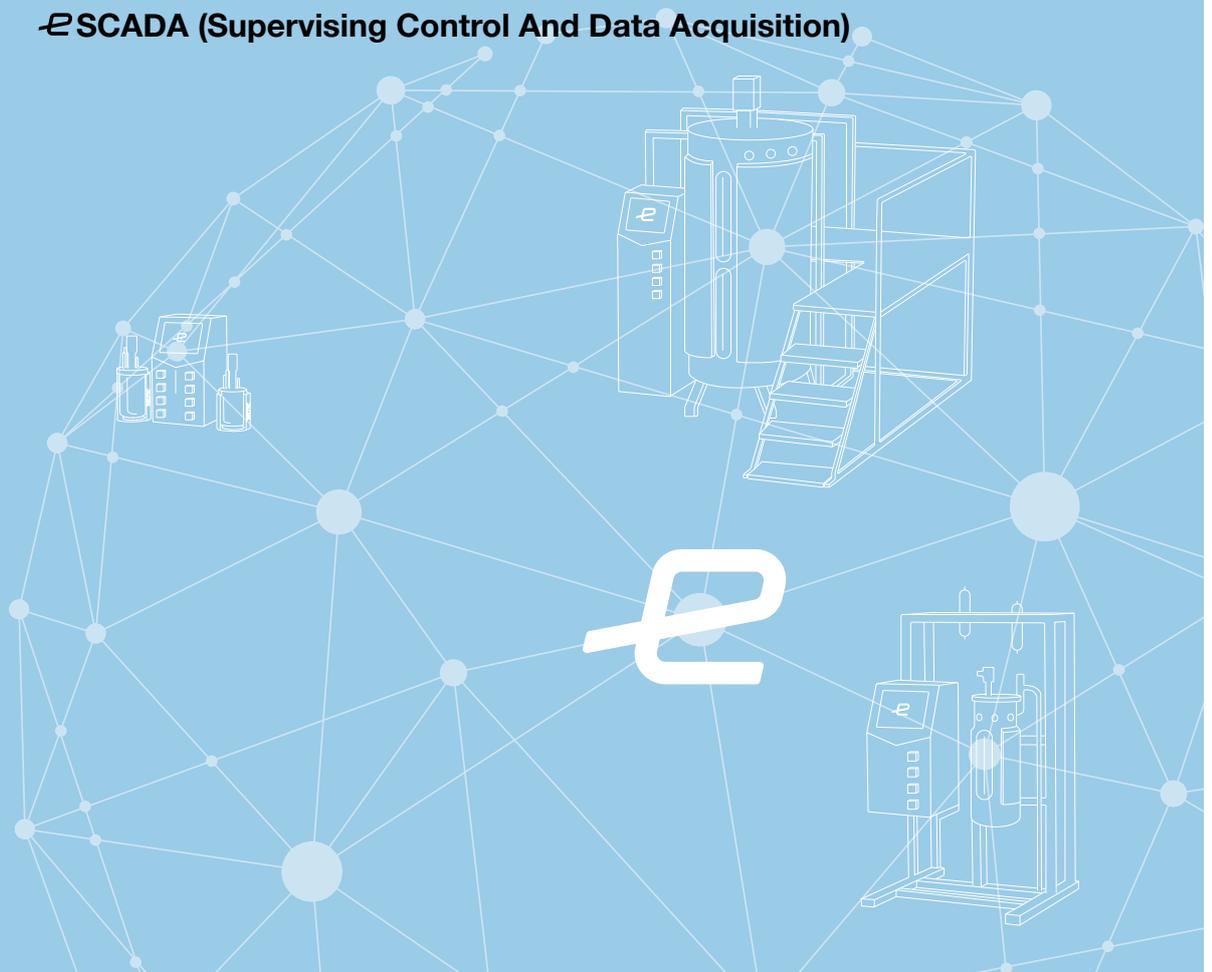


TECNIC

BIOPROCESS EQUIPMENT MANUFACTURING

SCADA (Supervising Control And Data Acquisition)



The entire range of TECNIC products and equipment incorporates eSCADA custom control software. Based on a Supervising Control And Data Acquisition (SCADA) type system and built of the Wonderware System Platform architecture, this software allows the management of basic process control parameters up to advanced recipes and report management.

By means of loops, this software allows to control variables such as pH (acid, base, CO₂), pO₂ (up to 3 cascades including gases and agitation), temperature and antifoaming, as well as the prediction of cell behaviour at metabolic level with in-situ cell viability sensors.

The robustness of this software makes it possible to work both on a small scale with our eLAB equipment and on an industrial scale with the ePROD range, which guarantees good process scalability and reproducible results.

There are three different options for the software eSCADA: the Basic, the R&D+ and the Advanced (table 1).

This software is available in all the equipments from TECNIC, but not all the option are available for each equipment (table 2).

DIFFERENCES BETWEEN EACH SOFTWARE

Table 1: Differences between each software

eSCADA	BASIC	R&D	ADVANCED
Type	MB/CC	MB/CC	MB/CC
User Management	Basic (Guest/Admin)	Basic (Guest/Admin)	Advanced (Multiple Users)
CFR21 Part 11	-	-	Yes
Recipes Management	-	Open recipe	Close recipe
Addition profiles	Manual	Automatic	Manual
Reports	Basic	Advanced (recipes included)	Advanced (recipes included)

SOFTWARE FOR EACH EQUIPMENT

Table 2: Software for each equipment

eSCADA	BASIC	R&D	ADVANCED
Bioreactor	●	○	○
Tangential Flow Filtration	○	—	●
Media Preparation	●	—	○
Reactor/ Fermenter/Mixer	●	—	○
Cleaning Systems (CIP)	●	—	○

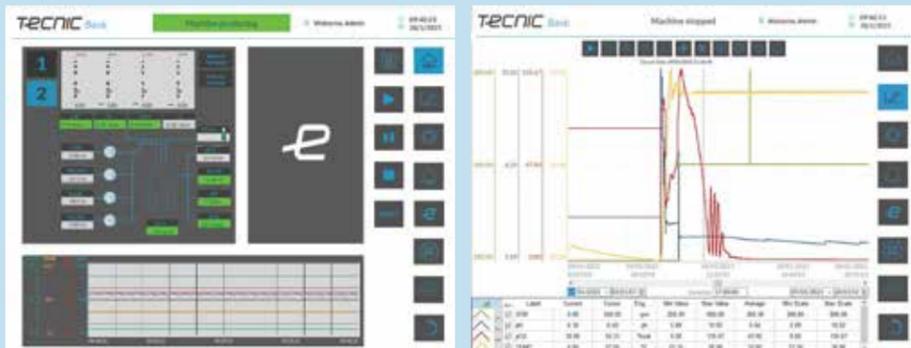
● STD
○ OPT

eSCADA BASIC

eSCADA Basic not only allows you to control and analyse the process, but also to visualise the experiment in real time, modify control loops, manage alarms and monitor the actions carried out during the process.

All of this is recorded in a report in pdf format that can be printed or checked on the software.

The construction of this software in SCADA allows the indexing of the results in a database to have the process saved from start to finish.



eSCADA R&D+

eSCADA R&D+ is designed for trial and error processes, especially for R&D laboratories.

This software is not CFR21.11 compliant, so modifications to recipes or feeding profiles are changed in real time, without having to stop and start a new experiment with the relevant data logging.

For ease of use, the user management contains a view-only user and an administrator.



eSCADA ADVANCED

This software, governed by CFR21.11 regulations, allows the generation of recipes by means of different types of phases (automatic, manual, interconnection between equipment) and their relevant transitions for phase hopping.

The internal calculation allows exponential, linear or constant addition of solutions, as well as the regulation of variables such as pH and pO₂ by means of time-varying point additions.

In this version, the resulting report also includes the actions performed on the recipes.

