



Biotech

Instructions For Use

USD3295

Basic / Advanced Controlbox



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1. Introduction

The following instructions are provided for installation of the Basic/Advanced Controlbox. The Advanced Controlbox can be used for measurements of conductivity, pH and temperature as well as for receiving weight and agitator speed (just in case of the LevMixer® drive unit), Basic Controlbox is used for temperature, and weighing and receiving agitator speed (just in case of the LevMixer drive unit). The instructions contained in the product documentation should be read thoroughly because they contain valuable information gained by extensive experience. It is very important that all instructions are carefully followed and, where appropriate, they should be incorporated into the user's standard operating procedures. If some of the procedures do not suit your needs, please consult Pall or your local distributor before finalizing your system. Use of this product in a manner other than in accordance with Pall's current recommendations may lead to injury or product loss. Pall cannot accept liability for such injury or loss.

2. Warning



Operation outside the specifications defined in the product data sheet or with fluids incompatible with materials of construction may cause personal injury and result in damage to the equipment. Incompatible fluids are fluids that may chemically attack, soften, stress, attack or otherwise adversely affect the materials of construction. Please refer to Pall for exact limits for contact fluids and conditions.

This Basic/Advanced Controlbox must only be used by persons who have been trained and authorized to do so.

3. Receipt of Equipment

3.1 Basic/Advanced Controlbox Hardware

- Take care when removing the supplied Basic/Advanced Controlbox hardware from the shipping container. Use appropriate equipment when removing the Basic/Advanced Controlbox hardware from the shipping container
- Locate or store the hardware in an appropriate indoor location. The equipment is designed for operation in clean rooms and classified areas and as such should be maintained in a clean state and stored when not in use in an appropriate clean location free from adverse environmental conditions
- Only use Basic/Advanced Controlbox when brakes are engaged on the trolley castors
- Do not attempt to move the Basic/Advanced Controlbox during use
- Use on an even surface



CAUTION!

The User Control Interface (UCI) is configured for correct operation prior to delivery and is therefore not required to be opened during normal operation. The UCI must only be opened by a qualified servicing engineer.

The Basic/Advanced Controlbox is earthed through the mains supply cable.

3.2 Basic/Advanced Controlbox

Store the Basic/Advanced Controlbox in clean, dry conditions between 2 and 40 °C without exposure to radiation sources like direct sunlight and, wherever practical, in the packaging as delivered.

Do not remove from packaging until just before use.

Check that the packaging is undamaged prior to use.



CAUTION!

Avoid the use of sharp blades or pointed instruments that could damage the Basic/Advanced Controlbox.

Do not open the packaging by forcing any of the system components through the sealed end because this can generate particulate contaminants.

Ensure that the system selected is suitable for the application.

4. Pictures and Schematics

4.1 Basic/Advanced Controlbox

The Basic/Advanced Controlbox is a cabinet sitting on a trolley with 4 castors. Right and left on the trolley you can find a hanger for organizing the cables from the cabinet. In the front you can switch on/off the main switch. On the right side of the cabinet a plug socket is located.



Figure 4.1 : Advanced Controlbox in CE (left) the cables coming from the cabinet (right)

On the top side you can read the values from the display. In case of the basic controlbox the temperature display is the only display. In the advanced one you can also read out pH and conductivity on a second display.



Figure 4.2 : Basic Controlbox in UL

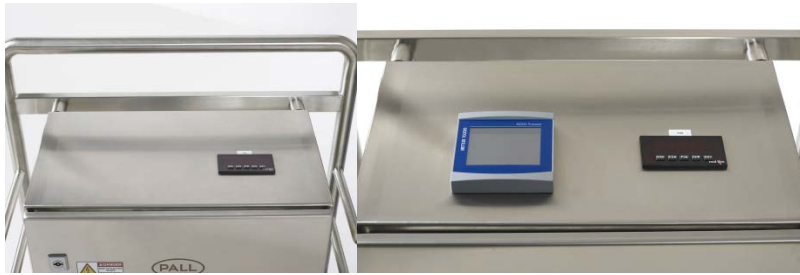


Figure 4.3 :Top view of Basic Controlbox (left) and Advanced Controlbox (right)

Under the plug socket the cables for sensors, connection cables to LevMixer/Magnetic drive unit and weighing is located. As well you can find 2 Ethernet cable connections.



Figure 4.4 : Right side of the cabinet plug socket for power and 2 Ethernet cable connections

5. System Operation

5.1 Basic/Advanced Controlbox connections

POWER SOCKET



Figure 5.1 Power socket for CE (white) and UL (yellow)

One Power socket is (110V/230V/500W) laterally installed on the Basic/Advanced Controlbox for external power supply for drive unit (marked with a Mixer tag).

MAIN SWITCH

The system is equipped with one main switch installed on the Basic/Advanced Controlbox. When the main switch is off, power supply to the system is switched off.



Figure 5.2 Main switches (left UL, right CE)



Fatal electric shock!

Some spots can be live even when the main switch is switched off (refer to the wiring diagram).

Only trained personnel may work on the electrical installations of the system.

MEASUREMENT CABLES-OVERVIEW

In the following figure the different cables for the connection to the drive unit or for measurements via sensors is shown.

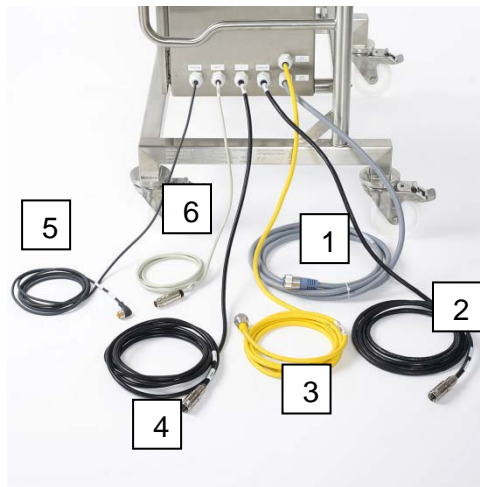


Figure 5.3: Overview Advanced Controlbox cables

- 1- STATUS cable LevMixer/Magnetic Mixer
- 2- Conductivity cable
- 3- Agitator speed cable only for LevMixer drive unit
- 4- pH cable
- 5- Temperature cable
- 6- Weighing cable to connect with counterpart on the tank with indicator

WEIGHING MEASUREMENT –Plug and Play strategy

Weighing measurement via an easy plug and play cable connection between weighing indicator (small cable with counterpart) on the tank and the Basic/Advanced Controlbox. Plug the connector to the counterpart of the indicator.

MEASUREMENTS VIA SENSOR

Temperature measurement via a cable from Basic/Advanced Controlbox with a PT100 resistance thermometer. A display is installed on the top of the Basic/Advanced Controlbox recording the values.



Figure 5.4: pH and Conductivity display (left) and Temperature display (right) Advanced Controlbox

Optional measurements as pH and Conductivity via a cable with sensor connected with the Advanced Controlbox. The multi-parameter transmitter for Conductivity and pH is installed on the top of the Advanced Controlbox.

EXTERNAL CONNECTION

The system is equipped with two Ethernet ports which can be used for:

- o Service connection to OPC Interface
- o Connecting the system to an external PLC connection



Figure 5.5 Ethernet ports (OPC Interface and External PLC Connection)

24V DC POWER

Used for supplying power to the PLC control and sensors. It is a hardwired one for the UL versions. For the CE version it is a plug and play system to allow the Controlboxes a cable plus plug for a specified country (refer to section 8).

AGITATOR SPEED

Measurement of Agitator speed via standard cable and plug and play principle just for the LevMixer drive unit applicable (yellow cable). Refer to Figure 5.6 below.

STATUS LevMixer and Magnetic Mixer

Motor start /stop, remote or local status and alarm status is read by a grey cable connected via plug and play to the LevMixer or Magnetic Mixer.



Figure 5.6: LevMixer/Magnetic mixer drive unit without connections with the Controlbox /MVP/SU-TFF

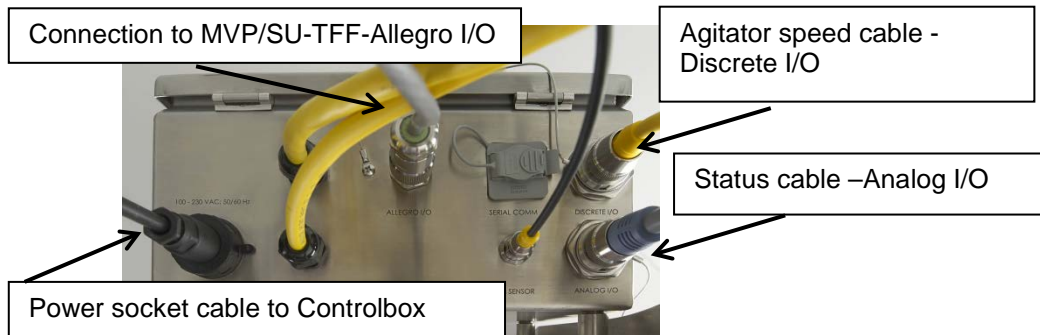

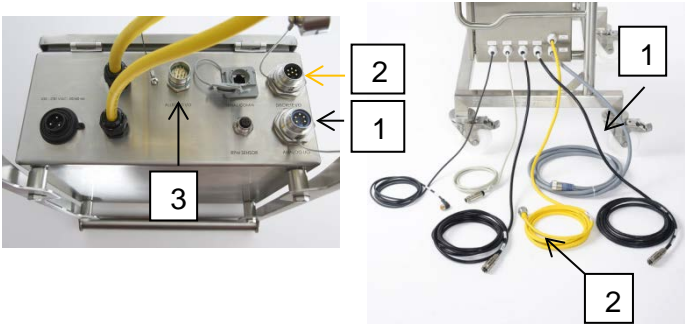



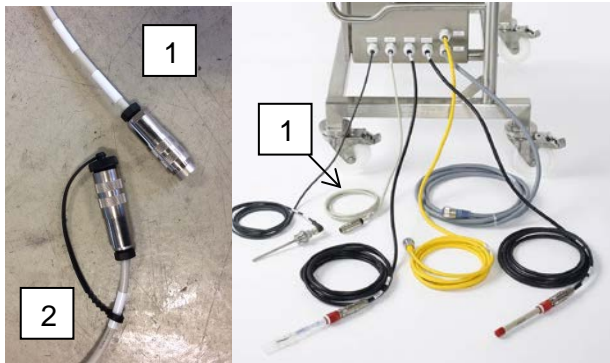



Figure 5.7 Cable connections at the bottom of a LevMixer/Magnetic mixer drive unit

5.2 Installing the System

	<p>Apply wheel locks to the trolley.</p>
	<p>Connect the Controlbox cables, Status (1) and Agitator speed cable (2), to the LevMixer drive/Magnetic drive unit. Connect the MVP/SU-TFF cable to the drive unit (3).</p>
	<p>Connect the power cable (1) from the drive unit to the Controlbox power socket.</p>
	<p>Connect the Ethernet cable. Plug the Ethernet cable in the Ethernet socket for:</p> <ul style="list-style-type: none">o Service connection to OPC Interfaceo Connecting the system to an external PLC connection e.g MVP<ul style="list-style-type: none">• Data transfer

	<p>Connect the sensors with the cables and install the sensors in the bag of the tank.</p>
	<p>Connect the weighing cable of the Basic/Advanced Controlbox (1) with the indicator cable of the weighing (2) equipped with a safety cap.</p>
	<p>Plug in the plug in the power socket of the Basic/Advanced Controlbox. Turn on power.</p>



Running the system.

On the Basic/Advanced Controlbox screen of the display you can see the values.

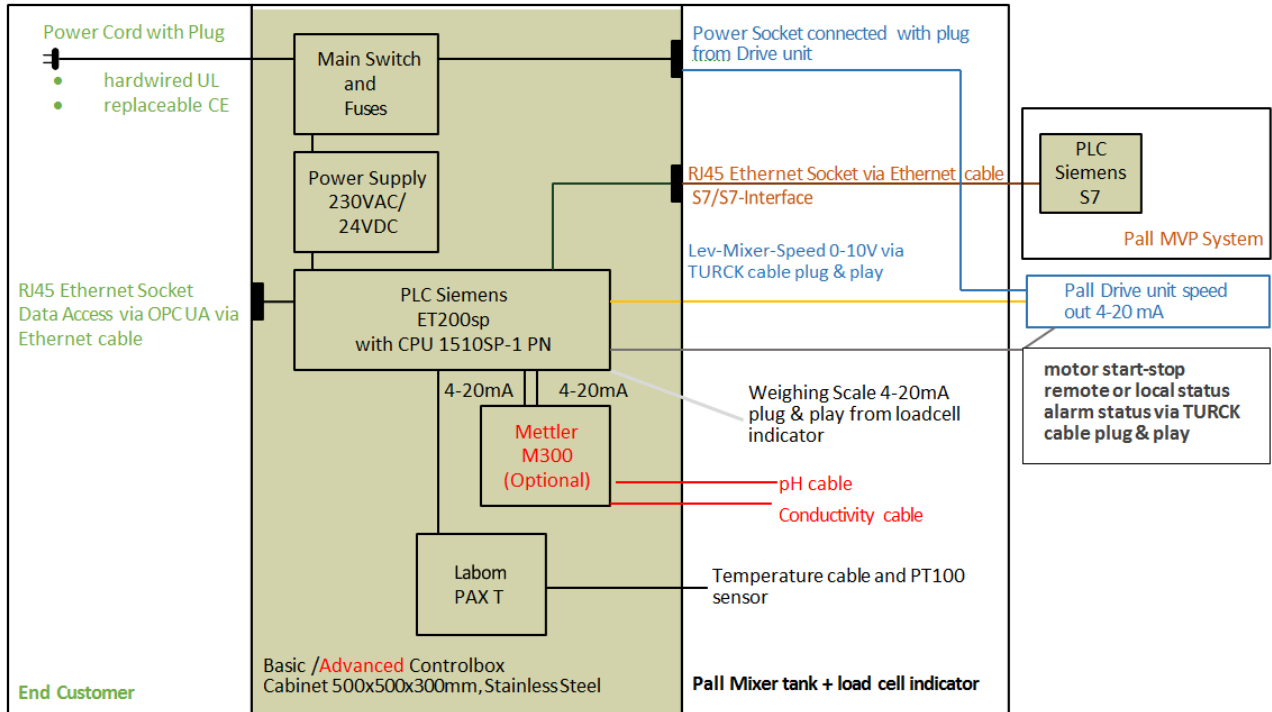
After your measurement is over, you reinstall your probes from the Mixer bag, disconnect the weighing cable and switch the main power of.

6. Specifications

6.1 Schematic System Overview

On the following schematic the dependences are shown.

It is divided in the end customer part, the Controlbox section and the Pall mixer tank section as well as the Pall drive unit and MVP section.



6.2 Specification overview

	Basic Controlbox CE	Advanced Controlbox CE	Basic Controlbox UL	Advanced Controlbox UL
Electical supply				
230 Vac PN	CBG401B	CBG401A	N/A	N/A
120 Vac PN	N/A	N/A	CBG402B	CBG402A
Power socket	Mennekes	Mennekes	Hubbell	Hubbell
Power cord with plug	Bulgin 3pole panel mount connector and replaceable power cord	Bulgin 3pole panel mount connector and replaceable power cord	Nema 5-15	Nema 5-15
IP rating	IP54	IP54	IP54	IP54
External Connections (Ethernet cable)				
to MVP via	S7/S7	S7/S7	S7/S7	S7/S7
to 3 rd party (DCS/PCS) via	OPC-UA	OPC-UA	OPC-UA	OPC-UA
Measuring				
Temperature via	PT100 sensor/ display	PT100 sensor/ display	PT100 sensor/ display	PT100 sensor/ display
Weighing via	Plug and play Binder connection (male 3 pole)	Plug and play Binder connection (male 3 pole)	Plug and play Binder connection (male 3 pole)	Plug and play Binder connection (male 3 pole)
LevMixer Mixer speed via	Turck cable (yellow)	Turck cable (yellow)	Turck cable (yellow)	Turck cable (yellow)
Lev- Mixer/Magnetic Mixer status of motor start/stop/ remote or local/alarms	Turck cable (grey)	Turck cable (grey)	Turck cable (grey)	Turck cable (grey)
Optional				
pH via	N/A	sensor /display	N/A	sensor /display
Conductivity via	N/A	sensor /display	N/A	sensor /display
Hardware Specifications				
Weight (kg)	Approx. 50 kg	Approx. 50kg	Approx. 50 kg	Approx. 50 kg
Dimensions in mm (L x H x W)				
Exclusive trolley	500 x 500 x 300	500 x 500 x 300	500 x 500 x 300	500 x 500 x 300
Inclusive trolley	558 x 541 x 749	558 x 541 x 749	558 x 541 x 749	558 x 541 x 749
Materials of Construction				
Trolleys Frame	304 stainless steel	304 stainless steel	304 stainless steel	304 stainless steel
Wheels	Polyamide 6	Polyamide 6	Polyamide 6	Polyamide 6

7. General Maintenance

It is recommended that the Basic/Advanced Controlbox is serviced on an annual basis. Pall Advanced Separation Systems (PASS) Servicing Group can provide this as a service. Please contact your Pall representative for further details.

The following checks should be carried out on a regular basis:

- Inspect power cables to ensure they are intact and undamaged. Do not use the Basic/Advanced Controlbox if damage is found
- Check the operation of the main power isolation switch

If any damage is found or any part of the product is not functioning normally then do not continue using the product and contact Pall for help and advice. This Basic/Advanced Controlbox does not contain any user-serviceable parts.

Optional Parts List

ID	Partnumber	Description
1	N/A	Ethernet cable for Connection to MVP System
2	N/A	Ethernet cable for Connection to 3 rd party DCS/PCS
3	EU: LT-SVSP366	Replaceable power cord, Connection to power supply via power cables
4	UK :LT-SVSP369	Replaceable power cord ,Connection to power supply via power cables
5	SW: LT-SVSP368	Replaceable power cord ,Connection to power supply via power cables
6	AU: LT-SVSP367	Replaceable power cord ,Connection to power supply via power cables

8. WEEE Declaration

The presence of this label on a product means that the product contains electrical or electronic materials and therefore should not be disposed of as unsorted waste but instead treated separately. The presence of these materials may, if not disposed of properly, have potential adverse effects on the environment and human health. Within the European Union users are urged to recycle such products when being replaced with a newer version or when they have outlived their useful lives. However as the legislation and facilities vary throughout the member states, please contact your local Pall sales office or distributor to discuss the available options for correctly disposing of this product.

9. Warranty

Pall warrants that Allegro hardware and systems manufactured by Pall, when properly stored and installed, and operated at ratings, specifications and design conditions, will be free from defects in material and workmanship during their shelf life.

Pall liability under any warranty is limited solely to replacing, or issuing credit for the Basic/Advanced Controlbox that may become defective during the Warranty Period.

10. Cleaning Recommendations

The frame, stainless steel components and UCI can be cleaned using a soft cloth and a neutral detergent or alcohol solution. Do not use abrasive cleaning agents.

11. Manufacturer Details

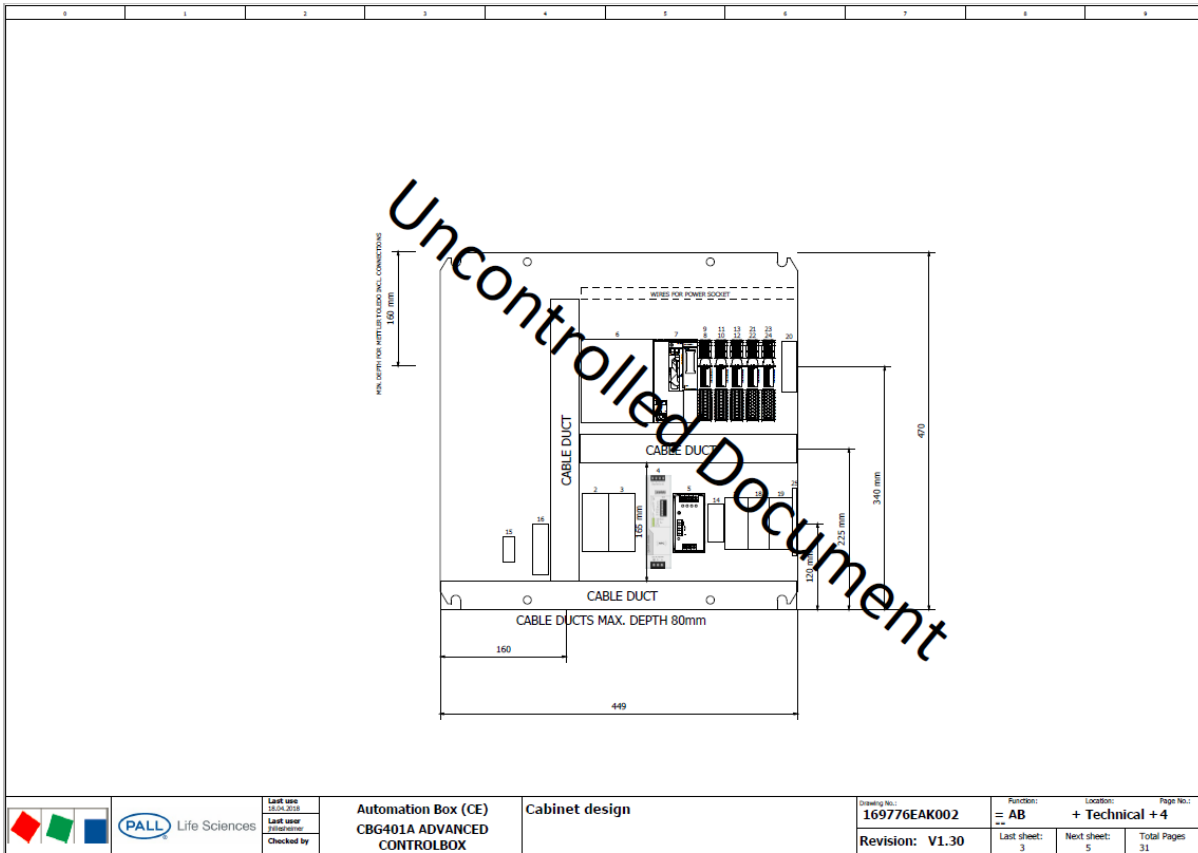
The Basic/Advanced Controlbox is manufactured
by: Pall GmbH

Philipp-Reis-Str. 6

63303 Dreieich

Germany

12. Appendix 1: Wiring diagram



13. Appendix 2: cable drawings


Wires for cabling electrical cabinets

Main power circuit

Phase L1, L2, L3 (regardless of voltage)	: black	BK
Neutral Conductor (regardless of voltage)	: light blue	BU
Zero conductor, protective earth	: green/yellow	GN/YE
Grounding conductor (shielded, separating ground)	: green (if used)	GN
Circuits (Regardless of voltage). Powerd from external sources that remain under voltage when disconnecting device is open	: orange	OG
Remark: Power circuit conductors (400V) shall not be smaller than 2,5 mm ²		

Control circuit

Control voltage 110V/120VAC, 220V/230VAC, grounded	: red	RD
Control voltage 24VDC, grounded	: dark blue, blue white	BU, BUWH
Measurement circuits (voltmeter ammeter, analog circuits 0-10V, 4-20mA)	: white (both wires +/-/~)	WH
Circuits (Regardless of voltage). Powerd from external sources that remain under voltage when disconnecting device is open	: orange	OG
Remark: Control circuit conductors shall not be smaller than 0,75 mm ²		

	Last use 07/28/2015	Automation Box (CE) CBG401A ADVANCED CONTROLBOX	Wires for cabling electrical cabinets	Drawing No.: 169776EAK002	Function: AB	Location: + Technical + 2	Page No.: 2
	Last user JHNS			Revision: V1.30	Last sheet: 1	Next sheet: 3	Total Pages 31
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Biotech

Corporate Headquarters

Port Washington, NY, USA
+1.800.717.7255 toll free (USA)
+1.516.484.5400 phone

European Headquarters

Fribourg, Switzerland
+41 (0)26 350 53 00 phone

Asia-Pacific Headquarters

Singapore
+65 6389 6500 phone


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