

BIOTECH

Instructional Documentation



USD3516

mPath™ Control Tower and mPath Link Software

Instructions For Use

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1 What's in the Box?

| Item Description | Image | Qty |
|--|--|-----|
| mPath control tower – one of the following options: mPath control tower, PreSens pH/dissolved oxygen (DO), pumps x 3 mPath control tower, PreSens pH/DO, pumps x 0 mPath control tower, PreSens x 0, pumps x 3 mPath control tower, PreSens x 0, pumps x 0 |  | 1 |
| mPath Link Server | N/A | 1 |

2 Specifications

2.1 mPath Control Tower

Table 1

Control tower specifications

| | | |
|------------------|--|--|
| Models | KMPATHBRXPS2P3 KMPATHBRXPS2P0 KMPATHBRXPS0P3 KMPATHBRXPS0P0 | mPath control tower, PreSens pH/DO, pumps x 3 mPath control tower, PreSens pH/DO, pumps x 0 mPath control tower, PreSens x 0, pumps x 3 mPath control tower, PreSens x 0, pumps x 0 |
| | Dimensions (W x D x H) | 230 x 600 X 450 mm (590 mm with hangers attached) |
| | Weight | 20 kg |
| | Materials of construction | Polymer, stainless steel, aluminum |
| Facility | Electrical supply | Voltage: Automatically adjusted between 100 – 240 V AC Input frequency: 50 Hz/60 Hz |
| | Electrical connection | Supplied with US, EU and UK cables |
| | Power consumption | 360 W maximum |
| | Gas supply | 2.0 – 6.0 bar / 29 – 87 psi |
| | Control architecture | Beckhoff* PLC, SBC mPath Link supervisory control and data acquisition (SCADA) software |
| Utilities | Operating system | Pall Corporation SCADA mPath Link server: Microsoft* Windows* 10 Pro Control Tower: Microsoft Windows Embedded Compact Oracle* : MSSQL* and Java* |

| | | |
|----------------------|---|--|
| | Automation design | Developed and tested in accordance with GAMP 5 |
| | Electronic records and electronic signatures | Compatible with FDA 21 CFR Part 11 & EudraLex Annex 11 |
| | Network compatibility | Integrated OPC-UA server |
| | Data export/ communication | USB, OPC-UA over ethernet |
| | Remote operation | Yes, support for remote desktop and mobile clients through mPath Link SCADA software |
| Control tower | Standalone operation | No, requires mPath Link SCADA software for operation |
| | Gas connections | 6 mm push to connect fittings 6 mm outer diameter (OD) pneumatic tubing |
| | Gas flow control | 6 thermal mass flow controllers (TMFCs) |
| | Input gases supported | N ₂ , O ₂ , air and CO ₂ |
| Gas | Pressure regulation | Onboard preset regulators, inputs from 2 bar (29 psi) – 6.0 bar (87 psi) accepted |
| | Pumps (on selected models) | 3 variable speed pumps (14 - 211 rpm), control requiring speeds less than 14 rpm achieved through pulse width modulation (PWM) |
| | Compatible tubing | Up to internal diameter (ID) 8 mm and 1.6 mm wall thickness |
| | Maximal flow rate | Up to 844 mL/min (tubing with ID 8 mm and OD 11.2 mm) |
| | Flow rate with standard single-use system (SUS) | 1 line up to 844 mL/min (tubing with ID 8 mm and OD 11.2 mm) 2 lines up to 633 mL/min (tubing with ID 6.4 mm and OD 9.6 mm) |
| Pumps | External pump support | Up to 4 via user configurable I/O |
| | Single-use sensors (on selected models) | Integrated PreSens –1 pH/1 DO |
| | Temperature | Pt100 |
| | Pressure | Gas input, 4 input lines Gas output/biocontainer pressure, 2 output lines |
| Sensors | Weight | 3 biocontainer load cells; each hanging load cell can hold a maximum weight of 2 kg. A combined maximum total weight of 4.5 kg can be hung from the mPath control tower |

| | |
|--|---|
| E-stop & interlocks | Hard emergency stop on both platform and tower, soft stops on all user interfaces, programmable and preconfigured safety interlocks |
| CE marked | WEEE Directive – 2012/19/EU UL and CSA optional available |
| EMC Directive 2014/30/EU | BS EN 61326-1: 2013 |
| Low Voltage Directive (LVD) 2014/35/EU | BS EN 61010-1: 2010 |
| Machinery Directive 2006/42/EC | BS EN ISO 12100:2010 |
| RoHS Directive | 2011/65/EU |
| IP rating | IP54, IEC 60529 Ed 2.2 b 2013 |
| | Laboratory environment The ambient temperatures must be between 5 °C (41 °F) and 40 °C (104 °F). Maximum relative humidity of 80% for temperatures up to 31 °C decreasing linearly to 50% relative humidity at 40 °C. |
| Safety | Operating conditions |

2.2 mPath Link Server

2.2.1 Hardware

Table 2

Server hardware

| Item | Specification |
|--------------|--|
| Memory (RAM) | 32 GB |
| CPU | 1 x Intel® i3-8100 3.60Ghz |
| Storage | 1TB |
| Software | Ignition*, Windows 10 LTSC, MSSQL Standard |

2.2.2 Software

Table 3

Lite version

| Software License | Specification |
|------------------|---|
| Windows 10 LTSC | Win 10 IoT Ent 2019 LTSC MultiLang ESD OEI Value |
| Windows MSSQL | Microsoft® SQL Server® IoT 2019 Client Access License (1 Device) (ESD) |
| Ignition v8.1 | Ignition Perspective License (1 client) Ignition OPC UA Server Module Ignition Tag Historian License Java embedded |

Table 4

Unlimited version

| Software License | Specification |
|------------------|--|
| Windows 10 LTSC | Win 10 IoT Ent 2019 LTSC MultiLang ESD OEI Value |
| Windows MSSQL | Microsoft SQLServer IoT2019 Standard 4 Core (ESD) |
| Ignition v8.1 | Ignition Perspective License (unlimited) Ignition OPC UA Server Module Ignition Tag Historian License Java embedded |

3 Safety Symbols and Statements

3.1 Types of Safety Symbols

All safety symbols; warning, prohibition, mandatory and Globally Harmonized System (GHS) can / will be accompanied by additional text and signs to explain the reason for the warning, explain the nature of the prohibition, and explain the reason for the action.

Table 5

ISO 7010 safety signs and symbols

| Color | Meaning / Purpose | Example | Description | Instruction and Information |
|--------|-------------------------|---|---|--|
| Red | Prohibition / Danger |  | Red ring and diagonal bar with black symbol on white background | Specifies behavior that is prohibited because it would result in an immediate or potential risk of personal injury or threat to health / life. |
| Yellow | Warning / Caution |  | Yellow triangle with black border and black symbol | Warns of hazards which could result in personal injury or threat to health. |
| Blue | Mandatory / Information |  | Blue circle with white symbol | Specifies an action required or informs of information to safeguard personal health and /or avoid risk of personal injury. |
| Red | GHS Hazards |  | Red diamond, white background with a black symbol | Classifies the hazards of chemical products and communicates health and safety information. |

3.2 Safety Symbols Within This IFU

Table 6

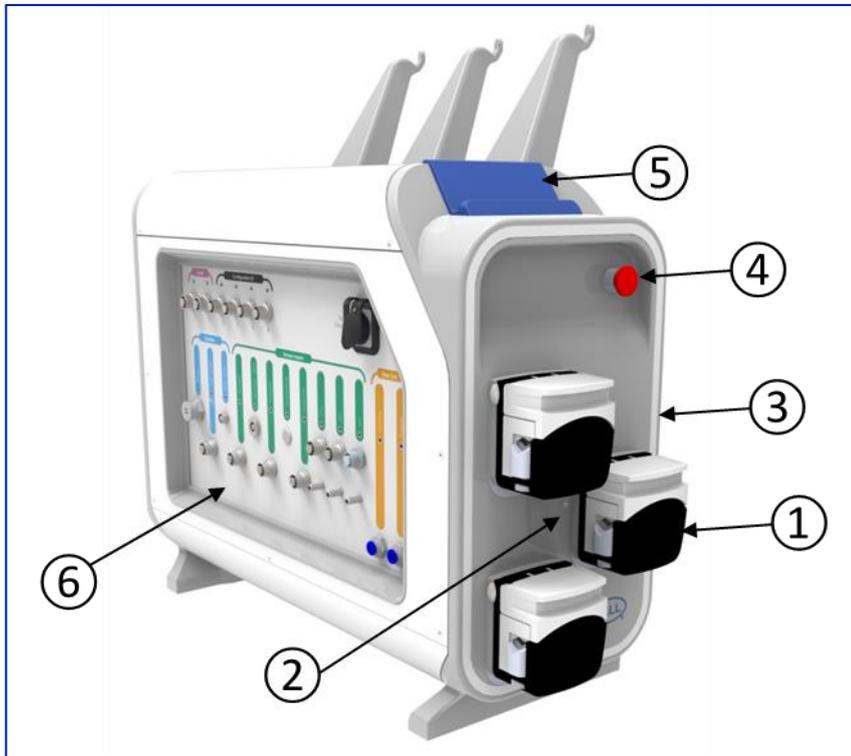
Safety signs and symbols within this document

| Symbol | Definition / Meaning |
|---|---|
|  | Prior to operating, the instructions must be read in entirety |
|  | Highlights important information regarding instructions for use |
|  | Caution potential risk to equipment |
|  | Caution possibility of electric shock |

4 Overview

Figure 1

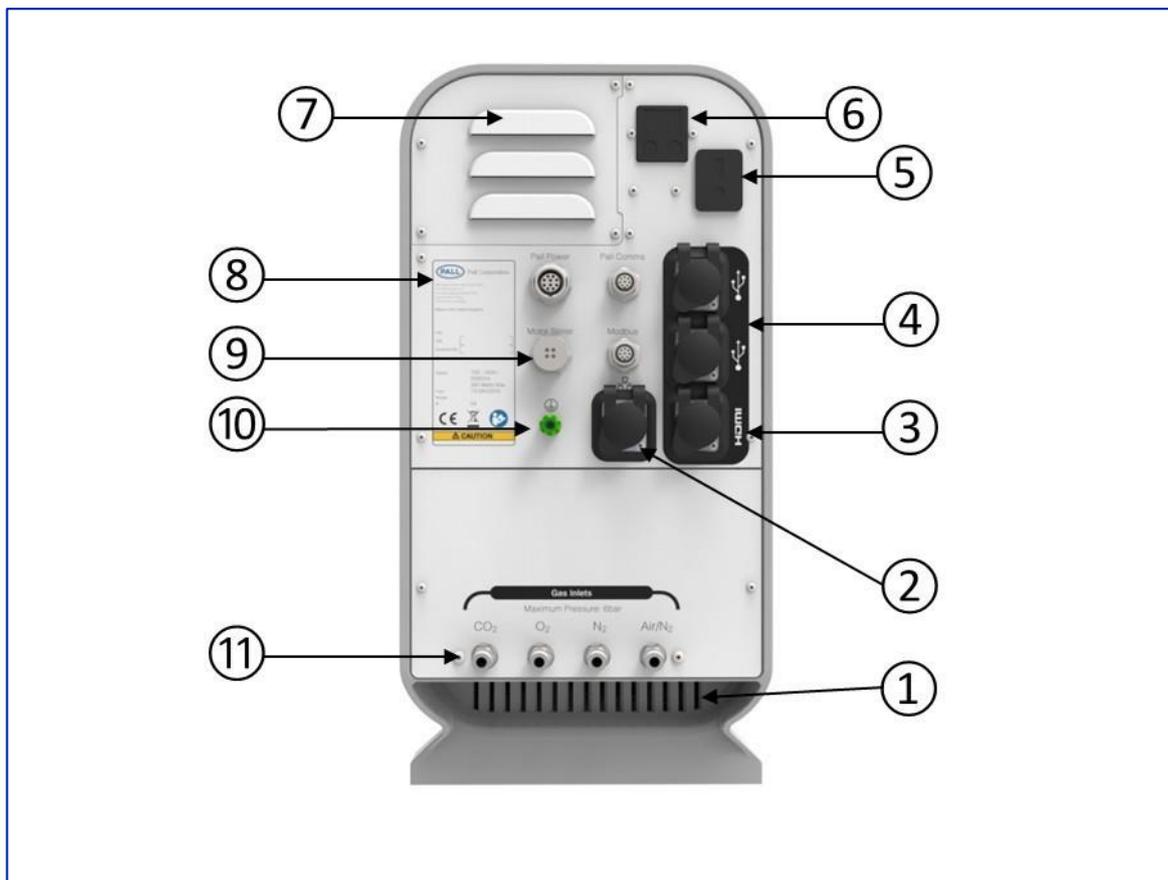
Labelled overview of mPath control tower



| No. | Item | Description |
|-----|---|--|
| 1 | Peristaltic pumps. <i>Only on part numbers:</i> MPATHBRXPS2P3 MPATHBRXPS0P3 | Three variable speed Watson-Marlow® 314D pump heads are located on the front of the control tower. These pumps are designed to operate with tubing bore sizes in the range 0.5 mm to 8 mm |
| 2 | Pump status LEDs. <i>Only on part numbers:</i> MPATHBRXPS2P3 MPATHBRXPS0P3 | Three LEDs provide the user with information on the status of the pumps |
| 3 | Status illumination | An illuminated ring is located on the front of the control tower to provide the user with general alarm status |
| 4 | Emergency stop | An E-stop is located on the front of the control tower. This is an E-stop for the control tower only! |
| 5 | Tablet dock | The user can set up recipes and monitor progress through a tablet computer or HDMI touchscreen that may be docked on top of the control tower. A charging point is available on the connector panel and an HDMI output on the rear of the instrument |
| 6 | Connector panel | The connector panel provides for a range of sensor inputs (both electrical and optical) and control outputs |

Figure 2

Labelled overview of mPath control tower rear panel

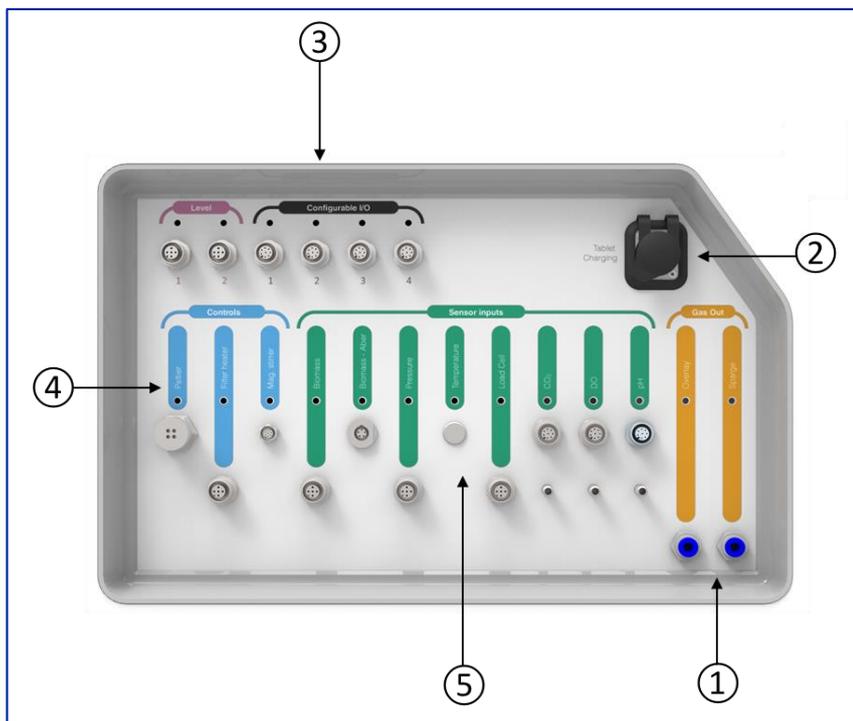


| No. | Item | Description |
|-----|-------------------------|--|
| 1 | Ventilation exhaust | To allow air used for cooling to exit the mPath control tower |
| 2 | Ethernet | Network connection |
| 3 | HDMI | Monitor connection |
| 4 | USB (x2) | Keyboard and mouse connections |
| 5 | AC power on/ off switch | The equipment can be switched on/off using the AC power on/off switch on the rear panel |
| 6 | AC Inlet and fuse | Power to the equipment is provided through the AC inlet using one of the three supplied detachable power cords (UK, EU or US power plugs) |
| 7 | Ventilation inlet | To allow external air to be drawn into the mPath control tower for cooling |
| 8 | Product label | Product and safety information |
| 9 | Bioreactor connections | Connectors that allow a variety of Pall range laboratory scale bioreactors to interface with the mPath control tower |
| 10 | Ground | For peripheral equipment requiring a ground connection |
| 11 | Gas inlets | Four 6 mm quick-fit connectors that can be connected to pressurised supplies of air, nitrogen, carbon dioxide and oxygen, 2 (29 psi) - 6 bar (87 psi) supply pressure. |

Figure 3
Product safety label

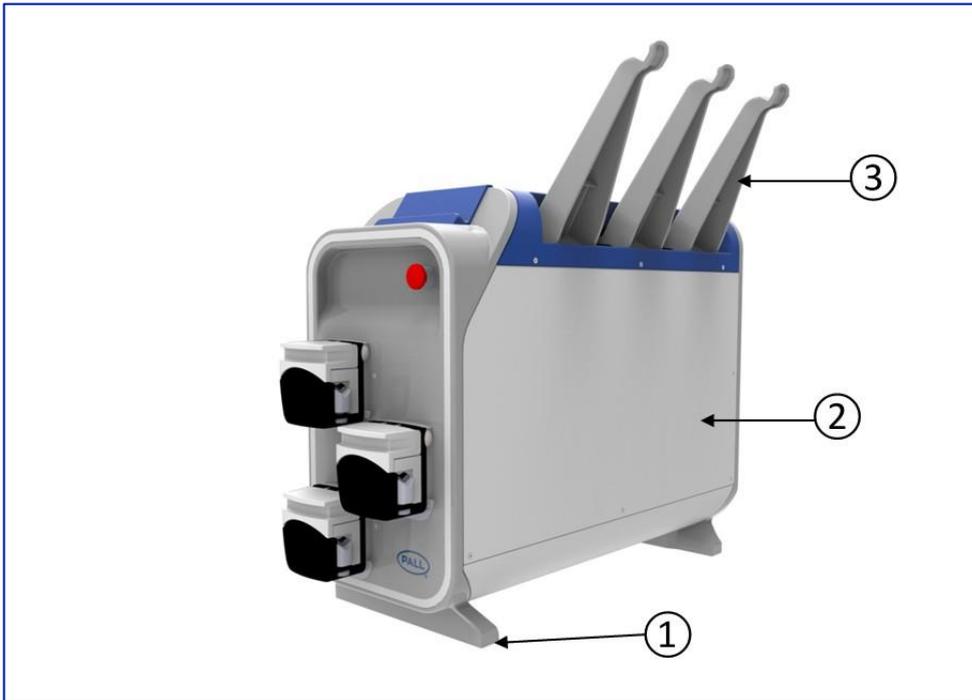


Figure 4
mPath control tower left side panel



| No. | Item | Description |
|-----|--------------------------------|---|
| 1 | Gas outlets | The control tower provides two gas outlets (Primary and Secondary) which provide a controlled flow/mixture of the inlet gases: Primary provides gas mixes of CO ₂ , Air/N ₂ , N ₂ and O ₂ Secondary provides gas mixes of CO ₂ and Air/N ₂ |
| 2 | Tablet charging connection | A USB charging port that can be used to charge a docked tablet is also provided (No data transfer capability) |
| 3 | Configurable I/O | The control tower provides four M12 A-coded 8-way female connectors that offer a range of I/O signals |
| 4 | Bioreactor control connections | Electrical connections that control bioreactor functions such as heaters and stirring systems Mag Stirrer – 2mag [♦] bioMIX drive stirrer connection Filter Heater - M12, A-coded, 5-way, female connector, 0 - 24 V Peltier - controllable supply for Peltier heater/cooler or resistive heater - output is presented on an M12 T-coded 4-way female connector, 0 to ±21 V, 0 to ±4 A |
| 5 | Bioreactor sensor connections | Electrical and optical connections pH and DO – electrochemical and fiber optic CO ₂ – electrochemical Load Cell – M12, A-coded, 5-way, female connector, 24 V supply, 1 x 0 - 20 mA input. Temperature – PT 100 Pressure – M12, A-coded, 5-way, female connector, 24 V supply, 1 x 0 - 20 mA input or 1 x 0 - 10 V input Biomass – M12, A-coded, 5-way, female connector, 0 - 20 mA. Biomass – Aber [♦] biomass Modbus communication |

Figure 5
mPath control tower right side



| No. | Item | Description |
|-----|------------------------------|---|
| 1 | Instrument feet | The instrument is mounted on feet that elevate the instrument to allow access to all surfaces for cleaning and for convenience in routing control cables to bioreactor vessels placed on the opposite side of the control tower |
| 2 | Maintenance access panel | Pall qualified service engineers can access the control tower through removable panels on both sides |
| 3 | Biocontainer weighing system | The weighing system consists of load cells within the instrument and removable hangers that provide a method for monitoring the weight of up to 3 biocontainers – maximum volume 2 liter per biocontainer hanger – maximum total volume 4.5 liters. |

5 Abbreviations and Key Phrases

The abbreviations / key phrases below will appear throughout the document.

Table 7

Abbreviations and key phrases

| Abbreviation / Key Phrase | Definition |
|---------------------------|--|
| IFU | Instructions for use |
| OS | Operating system |
| DO | Dissolved oxygen |
| Unit | Connected unit operation to mPath control tower (e.g. Allegro™ XRS or Xpansion® bioreactors) |
| OD | Outer Diameter |
| I/O | Inputs and outputs (e.g. connected hardware, sensors and gases) |



6 Step by Step Guide

Step 1.

1. Connect the power.
2. Use the Ethernet port on the rear of the mPath control tower and connect it to the appropriate network point via a CAT6 Ethernet patch cable or directly connect to the mPath Link server.
3. Perform the same task with the mPath Link server. Connect CAT6 Ethernet patch cable to the Ethernet port located at the rear of the unit to the appropriate network point.
4. The Pall bioreactor installation specialist will refer to Pall IT Technical Advisory Note reference USD 3222, to use the IP address set by your IT department to configure the mPath bioreactor control tower.

6.1 Control Tower Connections



Rear panel Ethernet connection

Step 2.

1. Using 6 mm OD, 6 bar rated pneumatic tubing and tubing connectors, gases should be connected from the utilities gas regulators (2 - 6 bar) to the rear panel gas connections on the control tower and from the control tower to the bioreactor.
2. Connect the primary and secondary outlet ports, if required, from the left-hand side of the mPath bioreactor control tower to the bioreactor in use with 6 mm OD pneumatic tubing.
 - Primary provides gas mixes of CO₂, air/N₂, N₂ and O₂.
 - Secondary provides gas mixes of CO₂ and air/N₂.
3. To safely connect gas outlets to the bioreactor gas inlet line, a push-to-connect to ¼ in. hose barb should be used.

6.2 Gas Connections



Step 3.

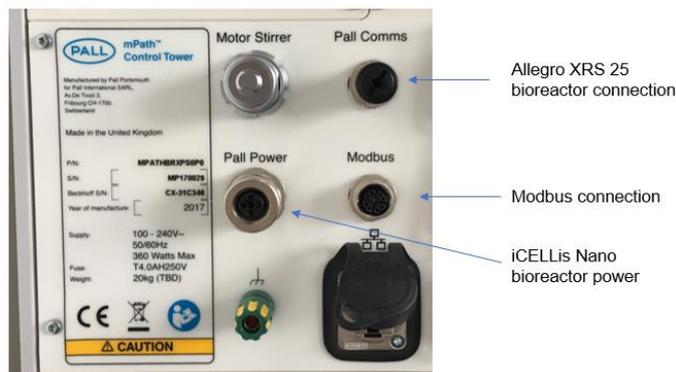
Certain permanent connections to the chosen bioreactor are located on the rear panel of the tower. Connect these as shown in the image.

Points to note:

- **Allegro XRS 25 bioreactor** – Ensure the bioreactor is powered off before making any connections.
- **iCELLis® Nano bioreactor** – Connect the docking station power cable to the 'Pall Power' port and connect the Modbus cable to the 'Modbus' port on the rear panel of the mPath control tower.
- **Xpansion bioreactor** – No connections from the rear of the bioreactor are made.

! The iCELLis Nano bioreactor docking station does not have a power button. It will power on once the mPath control tower is powered on.

6.3 Bioreactor Connections



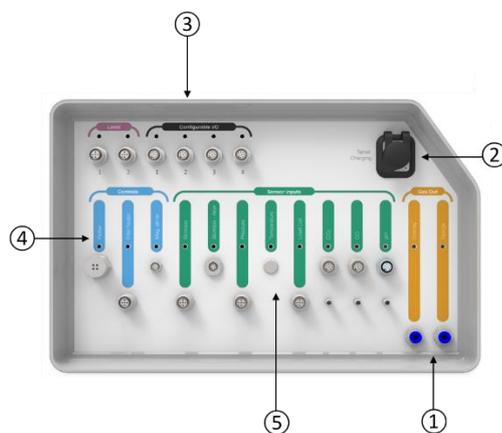
Step 4.

Ensure the single-use bioreactor vessel is installed before proceeding. Please refer to the respective product installation guide for detailed instructions on the required connections.

Connect all required inputs and outputs at this point:

1. Gas outlets
2. Tablet charging connection
3. Configurable I/O
4. Bioreactor control connections
5. Bioreactor sensor connections

6.4 Side Panel Connections



Step 5.



1. Connect the control tower AC inlet to an AC power supply (preferably an uninterruptible power supply) using one of the supplied detachable power cords (UK, EU or US power plugs).
2. Once the control tower is connected, switch on the power via the AC power on/ off switch shown in Step 1.
3. The status ring on the front of the control tower will flash blue when the control tower is switched on. After approximately 40 seconds the status ring will display a solid blue color or flashing magenta.
4. If the status ring does not show a solid blue color or flashing magenta after approximately 40 seconds, refer to the troubleshooting section in the manual USD3517 .
5. The iCELLis Nano bioreactor and docking station will power on together with the control tower. The Allegro XRS 25 bioreactor should now be powered on via the bioreactor power switch (see the product user manuals).

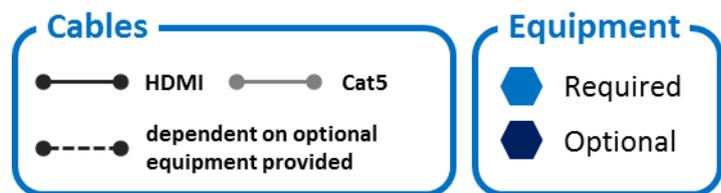
6.5 Power on Control Tower



Step 6.

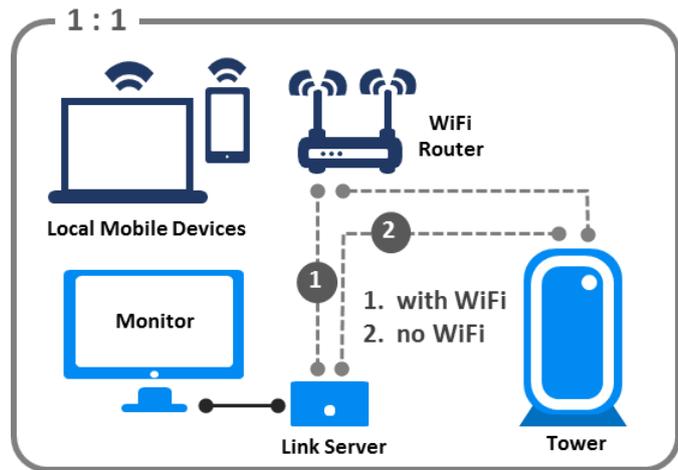
1. The Pall installation engineer will assist during the following steps to ensure that the mPath bioreactor control tower and the mPath Link server are communicating via the IP addresses provided on the network configuration you have chosen.
2. Connect a monitor to the HDMI port on the mPath Link server along with a keyboard and mouse.
3. Power on the mPath Link computer by ensuring the power cord is connected to an electricity supply, preferably on an uninterruptible power supply, then press the power button located on the front. The power button should light blue when powered on.

6.6 Network Connections



4. Connect a monitor or touch screen to the HDMI port on the rear of the bioreactor control tower. It is important to plug the keyboard and mouse in first before making the HDMI connection otherwise the screen may not display.
5. The Pall engineer will plug the keyboard and mouse back into the mPath control tower and using their unique passcodes, will set the IP address and Sub Net mask for the mPath control tower that you have provided. The screen, mouse and keyboard can then be connected back up to the mPath Link computer.
6. The Pall engineer will then ensure the mPath Link server is set with the IP address provided.

! Contact your Pall representative to ensure you have read the Pall IT Technical Advisory Note reference USD 3222 before proceeding. The image provided details only one potential set up



Step 7.

1. Three user groups with varying levels of privileges will be available: operator, supervisor and administrator.
2. User groups are handled in Windows OS for increased security (see manual for full details). Logging in to the PC can be done with the username "mPathLink" and password "mPathLink".

! This is only applicable when using the Pall supplied PC.

3. Logging in to the mPath Link application can be carried out as an administrator with username "PallAdmin" and password "mPathLinkAdmin".
4. User privileges can be viewed and edited by navigating to the "Settings" icon followed by "Users".

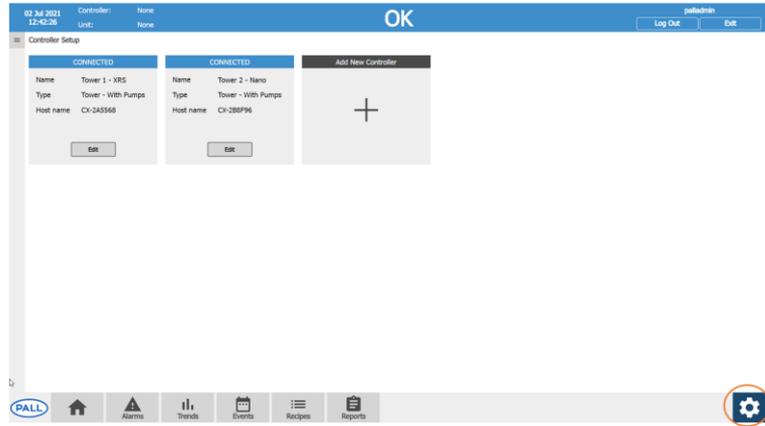
6.7 User Management



Step 8.

1. Once logged into the mPath Link application, navigate to the "Settings" icon at the bottom right of the screen, select "Control tower Setup" and then "Add New Control tower".
2. Select the type of control tower and enter unique name followed by the static IP address generated by your IT department for the control tower.
3. Pressing the "Help" icon will advise how to find the OPC-UA hostname and the control tower can then be created.
4. After selecting "Add", the control tower status will show as "CONNECTED". (If connected does not show, go to the troubleshooting section of the mPath Link manual USD3517 for more information.)

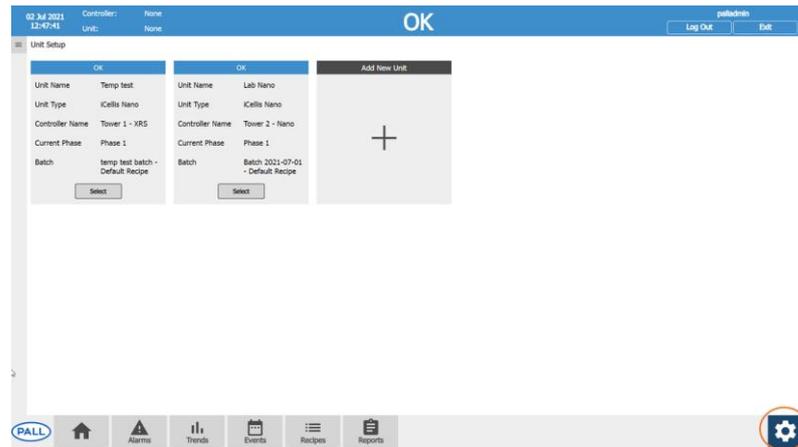
6.8 Adding a New Control Tower



Step 9.

1. Navigate to the "Settings" icon at the bottom right of the screen, select "Unit Setup" and then "Add New Unit".
2. Select the control tower from the drop-down list, enter a unique unit name and select the unit type. Note: unit is the term used to refer to a connected system e.g. Allegro XRS or Xpansion bioreactors
3. If required, a password or user restrictions can be added.
4. Define the I/O and user configurable I/O required. (Note that there is a default configuration for each unit type if no adjustments are required).
5. From the summary screen, the user can "Save" the unit to complete set up or "Cancel". (Note "Save & Run" is an additional option where a batch will be started immediately (further detail in Section 6.12).

6.9 Adding a New Unit



Step 10.

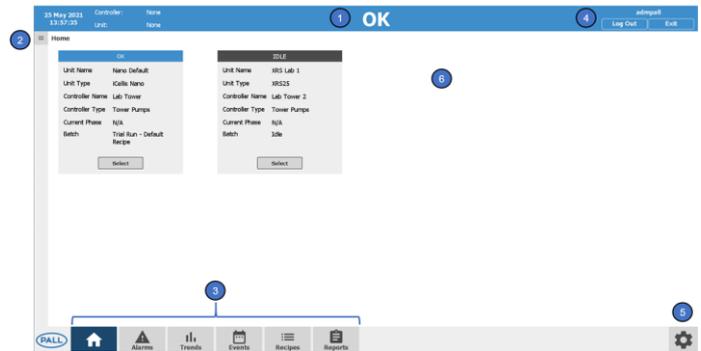
The image details key areas of the mPath Link software screen that are always present:

1. Status bar – Will show the alarm status for a given unit in addition to the name of the selected control tower, unit and batch.
2. Side navigation bar – “Burger menu” button can be popped out to view all connected units. Clicking on the unit name will navigate to the home screen of the selected unit.

! When “System > Dashboard” is selected, screens navigated to will relate to all connected units. When a unit is selected, screens will display unit specific content. Any units in alarm will be displayed beneath the “burger menu”.

3. Main Navigation – Allows the user to navigate to the desired area of the application.
4. User Display – Shows the currently logged in user with an option to log out.
5. Settings Icon – Allows the user to access system level settings.
6. Content Area – Displays information relating to the selected screen.

6.10 User Interface Overview



Step 11.

1. Navigating to “Recipes > Manage” allows the user to edit, copy, retire or remove the selected recipe.
2. Each configured unit will automatically have a default recipe created with a set of default, control loops, phases, parameters and trends.
3. Default recipes for each unit type can be edited by navigating to the settings icon and selecting unit defaults. This will allow parameters and control loops in the default to be changed which will be seen in the default recipe when a new unit is added. *Note that changing the unit defaults will not impact previously created units.*

6.11 Recipes



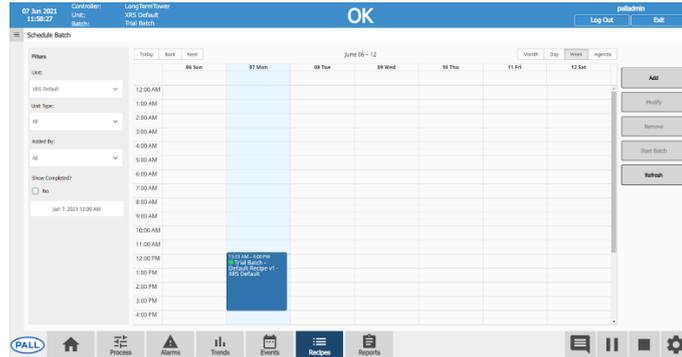
Step 12.

1. Navigating to "Recipes > Schedule" allows the user to view the schedule and select the "Add" button to add a batch.
2. Starting a batch will run the parameters defined in a recipe for the desired unit.
3. Inputting the recipe, batch name and start/finish date will add the batch to the schedule.

! This will not automatically start the batch; the schedule is a visual planner only).

4. Selecting the batch from the schedule will give the user the options to modify, remove or start the batch. Selecting "Start Batch" will bring the user to a summary screen from which the user can select "Begin phase 1" to start the batch.
5. Once the batch has commenced, the recipe parameters will be downloaded, and the unit status will change from Idle to OK.

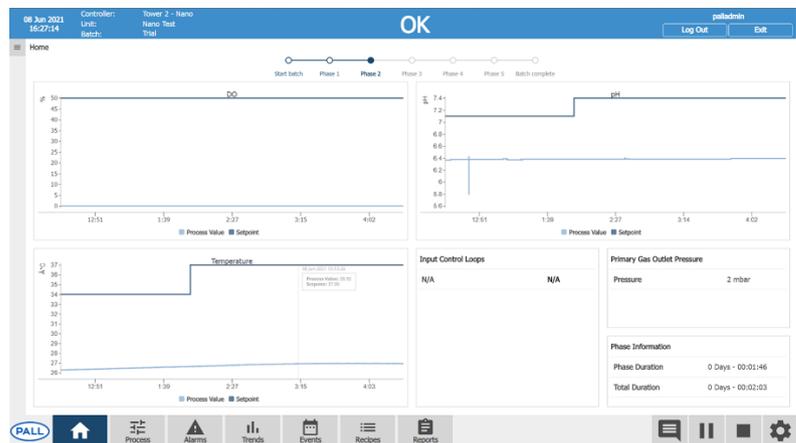
6.12 Scheduling and Running a Batch



Step 13.

1. When "System > Dashboard" is selected from the left side bar, the home icon can be selected to display details of all connected units.
2. When a unit is selected from the left side bar, the home screen will display a unit specific dashboard.
3. The user will see a batch progress tracker to detail the current phase, overview trends for pH, DO and temperature, overview of control loops, primary gas pressure and details of the current phase.

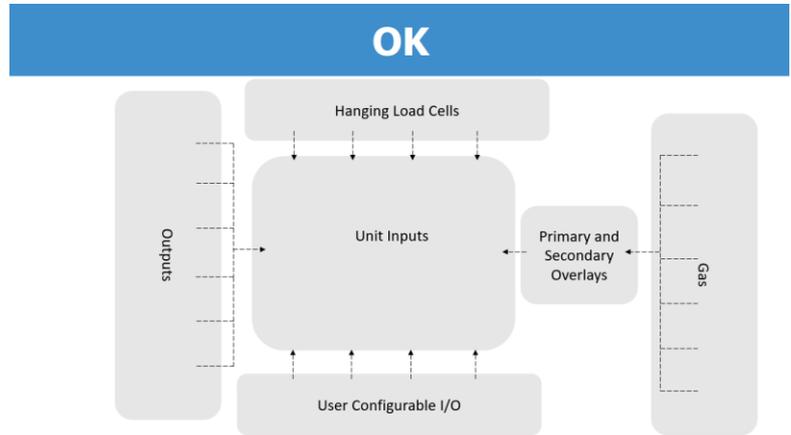
6.13 Home Screen



Step 14.

6.14 Process Screen

1. A unit specific process overview screen can be navigated to for a visual representation of the process by selecting "Process > Overview".
2. There is an icon for each parameter with a slider bar representing, set point, alarm limits and process value. The icon border will display amber or red for parameters in alarm.
3. Selecting an icon will take the user to the faceplate for that specific parameter.
4. From the faceplate, the user has full control over the specified parameter. Several things can be edited including setpoints, alarm parameters, control loops and calibration. See the manual USD3517 for full details.
5. At the top right of the screen, the user can select between a control loop view and a tabular view dependent on preference.



The screenshot shows a control interface for a pH sensor. The top right corner displays "pH". The interface is divided into three main sections: "General", "Units: (pH)", and "Object Details".

- General:** A vertical list of tabs including Notes, Alarms, Trends, Loop Config, Calibration, Advanced, and Misc.
- Units: (pH):** Contains a slider bar with a current value of 7.87. Below the slider are five input fields for calibration: Set Point (7.20), Critical Low (7.12), Warning Low (7.13), Warning High (7.28), and Critical High (7.30).
- Object Details:** A text box stating "No object specific settings exist for this IO type."
- Control:** A section with a "Control Mode" toggle (Off/On) and three output fields: "Output:" (0.00 %), "Output (+):" (0.00 %), and "Output (-):" (0.00 %).

At the bottom right, there are three buttons: "Apply", "Save", and "Cancel".

Step 15.



- For displaying the progress of a running batch, the user can navigate to "Process > Batch".
- Batch, trend and control loop details are given in addition to the phase details. The currently running phase is defined along with the duration and the transition details required to be met to move into the next phase.
- Two action icons are available:
 - Pause:** Will stop the batch from progressing to the next phase even if the transition criteria have been met. The batch will instead continue in the current phase. When un-paused, the batch will move to the next phase if the transition criteria have been met.
 - Skip icon:** Will move to the next phase regardless of if the transition criteria has been met. The batch will start running the parameters from the new phase it enters as defined in the recipe.

! If a phase is skipped it is not possible to return to the previous phase.

6.16 Alarms

Step 16.

Three types of alarms are present in the system in order of priority:

- Critical – Red
- System – Pink
- Warning – Amber

In the event of an alarm, the light ring on the front of the control tower will flash in addition to the top banner.

- If the top banner is selected, the user will navigate to the "Alarms" screen where the alarms will be listed from top to bottom in order of priority. They will have the option to disable and/or acknowledge the alarm.
- Once acknowledged, color will be removed from the row and the alarm will show as acknowledged. Disabling will change the alarm status to cleared.
- A list of historical alarms is available by switching to the historical tab.
- Alarm set points can be configured either through the faceplate for a specific parameter or by navigating to the "Settings" icon and selecting "Alarm Configuration".

| Status | Description | Date/Time | Disable | Ack |
|------------------------|--------------------------|----------------------|---------|-------------|
| Active, Unacknowledged | Temperature Critical Low | 15 Jun 2021 13:21:56 | Disable | Acknowledge |
| Active, Unacknowledged | pH Warning Low | 15 Jun 2021 13:22:04 | Disable | Acknowledge |
| Active, Unacknowledged | Temperature Warning Low | 15 Jun 2021 13:21:56 | Disable | Acknowledge |

6.17 Trends

Step 17.

Navigating to "Trends" with a unit selected will bring the user to the active trends screen where data from the current batch can be trended. With "System" selected from the left side bar, the user will be navigated to the batch trend screen where past batches can be trended.

1. Use list to select parameters that can be added to the trend.
2. Trend configurations can be saved and edited
3. General trend controls. More details of each button can be found by pressing the "Trend Help" icon
4. Brings up chart control settings for detailed configuration to axes, pens and plots.
5. Can drag regions on the range selector to change the time period on the x axis.

Selecting compare will allow the user to trend data from previously completed batches on the same plot.

! If a unit is selected from the side bar when the "Trends" icon is pressed, only trends relating to the selected unit can be configured.



6.18 Events

Step 18.

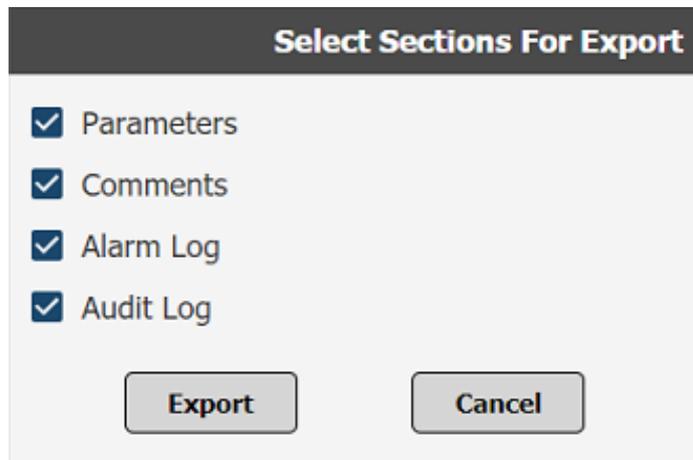
The Events screen displays in a tabular format, all actions made by the user.

Selecting the export icon allows the user to export a PDF version of the event log.

| Date/Time | User | Unit | Description | Previous Value | New Value | Device |
|----------------------|-----------------|------|----------------|----------------|-----------|-------------|
| 09 Jun 2021 11:17:57 | pallAdmin | | Login Success | | | 0:0:0:0:0:1 |
| 09 Jun 2021 11:17:48 | Unauthenticated | | Login Request | | | 0:0:0:0:0:1 |
| 09 Jun 2021 10:51:52 | Unauthenticated | | Logout Success | | | 0:0:0:0:0:1 |
| 09 Jun 2021 09:52:19 | pallAdmin | | Login Success | | | 0:0:0:0:0:1 |
| 09 Jun 2021 09:52:02 | Unauthenticated | | Login Request | | | 0:0:0:0:0:1 |
| 09 Jun 2021 09:51:51 | Unauthenticated | | Logout Success | | | 0:0:0:0:0:1 |
| 09 Jun 2021 09:46:11 | Unauthenticated | | Login Request | | | 0:0:0:0:0:1 |
| 08 Jun 2021 13:53:24 | Unauthenticated | | Logout Success | | | 0:0:0:0:0:1 |
| 08 Jun 2021 13:30:10 | pallAdmin | | Login Success | | | 0:0:0:0:0:1 |
| 08 Jun 2021 13:30:04 | Unauthenticated | | Login Request | | | 0:0:0:0:0:1 |
| 08 Jun 2021 13:29:18 | Unauthenticated | | Logout Success | | | 0:0:0:0:0:1 |
| 08 Jun 2021 13:06:24 | pallAdmin | | Login Success | | | 0:0:0:0:0:1 |
| 08 Jun 2021 13:06:17 | Unauthenticated | | Login Request | | | 0:0:0:0:0:1 |
| 08 Jun 2021 12:50:49 | Unauthenticated | | Logout Success | | | 0:0:0:0:0:1 |
| 08 Jun 2021 11:59:06 | pallAdmin | | Login Success | | | 0:0:0:0:0:1 |
| 08 Jun 2021 11:54:58 | Unauthenticated | | Login Request | | | 0:0:0:0:0:1 |
| 08 Jun 2021 11:54:51 | Unauthenticated | | Logout Success | | | 0:0:0:0:0:1 |
| 08 Jun 2021 11:37:25 | pallAdmin | | Login Success | | | 0:0:0:0:0:1 |
| 08 Jun 2021 11:36:56 | Unauthenticated | | Login Request | | | 0:0:0:0:0:1 |
| 08 Jun 2021 11:32:18 | Unauthenticated | | Logout Success | | | 0:0:0:0:0:1 |

Step 19.

1. Reports are automatically generated upon completion of a batch
2. Selecting the "View" icon allows the user to view different details of the batch relating to general details, phases, trends, comments, alarm and audit logs.
3. Selecting the "Export" icon allows the user to export a PDF. Several tick boxes can be selected allowing the user to define the content of the report:
 - **All unticked:** Trend of the process value for each parameter in addition to any alarms or comments linked to each parameter.
 - **Parameters:** Adds into the report the values set for all parameters in each phase of the batch. Will include set points, alarms and advanced settings.
 - **Comments:** Adds into the report any comments linked to the batch.
 - **Alarm Log:** Adds into the report a table of any alarms triggered during the batch in addition to the parameter alarms in the standard report.
 - **Audit Log:** Adds into the report a table of all audited actions during the batch.



Select Sections For Export

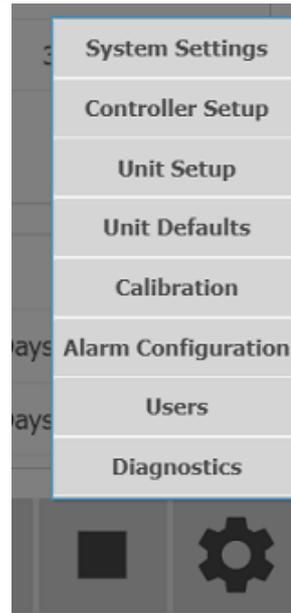
- Parameters
- Comments
- Alarm Log
- Audit Log

Export **Cancel**

Step 20.

6.20 Settings

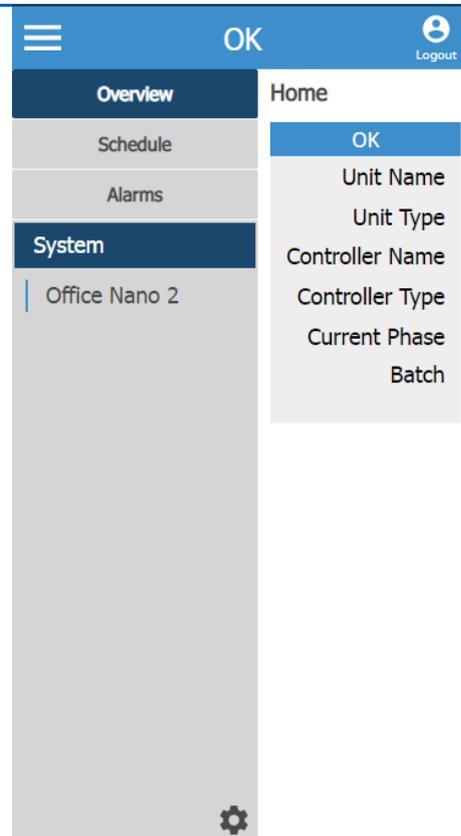
1. From the “Settings” icon at the bottom right of the screen, the user has access to a number of configuration screens.
2. Controller Setup: Control towers can be added or removed
3. Unit Setup: Units can be added or removed
4. Unit Defaults: Default parameters for each unit can be viewed and edited
5. Calibration: All connected sensors can be calibrated. Note this is also possible from the individual faceplate
6. Alarm Configuration: All alarm parameters can be configured
7. Users: Users can be viewed and access levels for each user can be edited
8. Diagnostics: System information can be viewed



Step 21.

6.21 Mobile Application

1. A mobile application can be downloaded from Android or IOS app stores to run the mPath Link software. (Full details of installation in the product manual USD3517)
2. The mobile application allows viewing and controlling units as per the desktop/tablet applications but with a reduced functionality set
3. The mobile application will allow for setpoints and alarm parameters to be changed in addition to viewing the batch schedule
4. Mobile gestures such as swiping and pinching are implemented to aid usability.



7 Pall Service

If any problems occur with your Pall hardware, do not attempt to perform any service on it. Unauthorized servicing may void the warranty.

To schedule a service or request a quote for repair, please visit the web address below or contact your Pall representative. Please refer to the model number, the manufacturing part number, and serial number of the equipment.

Pall Equipment Support Hotline

1-855-920-PALL (1-855-920-7255) USA & Canada

00800 Pall TECH (008007255 8324) EMEA

apac_services@ap.pall.com Asia Pacific

Or

- Contact your local Pall representative
- Visit the support section on www.pall.com
- E-mail your enquiry to lapplsupport@pall.com

7.1 Trouble Shooting Contact

The mPath control tower is manufactured by:

Pall Portsmouth for Pall international SARL, Avenue de Tivoli 3, 1700 Fribourg Switzerland.

For technical assistance, please contact:

Corporate Headquarters

25 Harbor Park Drive
Port Washington, NY 11050, USA
+1.800.717.7255 toll free (USA)
+1.516.484.5400
biopharm@pall.com

European Headquarters

Avenue de Tivoli 3, 1700 Fribourg,
Switzerland
+41 (0)26 350 53 00
LifeSciences.EU@pall.com

Asia-Pacific Headquarters

1 Science Park Road, #05-09/15 East Wing,
The Capricorn, Singapore Science Park II,
Singapore, 117528.
+65 6389 6500
sgcustomerservice@pall.com

Or

- Contact your local Pall representative
- Visit the support section on www.pall.com
- E-mail your enquiry to lapplsupport@pall.com

8 End of Life Disposal

In order to dispose of the mPath control tower, the relevant local legal regulations must be observed. Within the European Community, as of August 2017 the disposal of electrical devices is regulated by national regulations based on EU directive 2012/19/EU pertaining to waste electrical and electronic equipment (WEEE). According to these regulations, any device supplied after August 13, 2005, in the business-to-business sphere (to which this product is assigned), may no longer be disposed of in municipal or domestic waste. To document this, they have been marked with the following symbol.



Please visit our website for more information and local instructions on disposing of the product at <https://www.pall.com/en/about-pall/corporate-sustainability/weee-compliance.html>.



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Contact us at www.pall.com/contact

Pall Corporation has offices and plants throughout the world. To locate the Pall office or distributor nearest you, visit www.pall.com/contact.

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