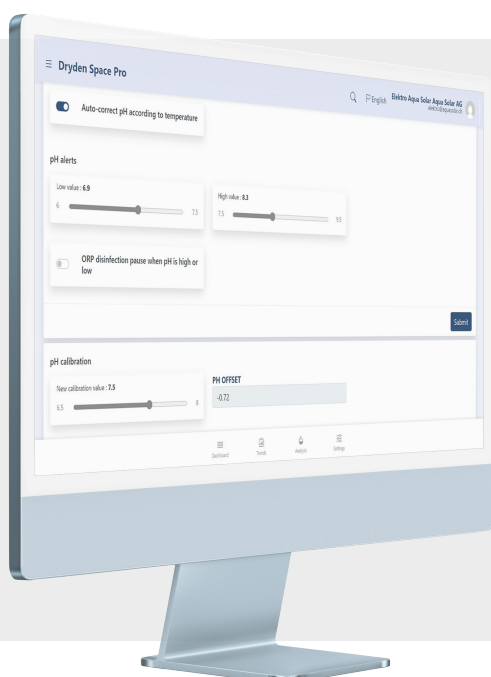


Dryden SPACE PRO 2.0

Configuration Guide



Welcome to the SPACE 2.0 Configuration Guide

This guide explains how to configure SPACE 2.0 according to Dryden Aqua's engineering philosophy and recommended best practices. Unlike a conventional software manual, this document does not simply describe which settings to select. It explains why each parameter is important, how different settings interact, and how correct configuration influences water quality, energy consumption and operational reliability. The recommendations presented in this guide are based on practical experience gained from thousands of swimming pool installations worldwide. They represent Dryden Aqua's preferred engineering methodology and should be regarded as best practice whenever site conditions permit.

CONTENT

1	INTRODUCTION	3
2	GENERAL CONFIGURATION PRINCIPLES	4
2.1	Optimise Hydraulics Before Increasing Pump Speed	4
2.2	Continuous Filtration Produces Better Water Quality	4
2.3	Flow Is More Important Than Pressure	4
2.4	Stable Water Chemistry Is Better Than Aggressive Correction	4
2.5	Automation Supports Good Engineering	4
3	POOL DATA	5
4	FILTRATION	5
4.1	Pump Data	5
4.2	Filtration Timers	7
4.3	Filter Data	9
4.4	Flowmeter	12
4.5	Circulation modes – only for overflow Pools	13
4.6	Water Level	16
5	WATER CHEMISTRY	17
5.1	pH settings	17
5.2	ORP settings (Redox Potential)	20
5.3	Conductivity settings	22
5.4	Remanent settings for Hydrogen Peroxide (H ₂ O ₂)	23
5.5	FAC settings	23
5.6	Free chlorine	23
5.7	Total chlorine	24
5.8	ACO injection	24
5.9	Rotameter	24
6	INPUTS / OUTPUTS	24
6.1	Auxiliary Outputs	25
6.2	Inputs	25
6.3	External Warning Inputs	26
7	FEATURES	26
7.1	Energymeter	26
7.2	Pool Cover	26
7.3	Counter-Current Systems	26
8	ACCESS	27
9	MAINTENANCE	27
9.1	Maintenance Settings	28
9.2	Date & Time	28
9.3	Alerting	28
9.4	Configuration Restore Points	29
9.5	Device Updates	29
10	BEST PRACTICE RECOMMENDATIONS	29
11	ENGINEERING SUMMARY	31
12	COMMISSIONING CHECKLIST	32

1 INTRODUCTION

Purpose of this Guide

This guide helps installers configure SPACE 2.0 to achieve:

- Outstanding water quality
- Reliable operation
- Minimum energy consumption
- Reduced water consumption
- Reduced chemical consumption
- Simplified maintenance

Correct configuration transforms individual components into one intelligent water treatment system.

This guide has been written for:

- Dryden Aqua distributors
- Swimming pool installers
- Service engineers
- Pool owners who wish to understand the engineering philosophy behind SPACE

How to Use This Guide

The SPACE documentation consists of several complementary documents. Each document has a specific purpose.

Document	Purpose
General Information	Safety, approvals and regulations
Installer & User Manual	Install, connect and commission the controller
Configuration Guide	Configure the system according to Dryden Aqua best practices
Wiring Reference	Electrical wiring and terminal assignments
Variable Speed Pump Guide	Pump-specific wiring and configuration



General Information



**SPACE 2.0
Installer
& User Manual**



Wiring Reference



**Variable Speed Pumps
Wiring diagrams**

2 General Configuration Principles

Correct configuration begins with understanding the swimming pool as one integrated hydraulic and water treatment system.

The following engineering principles form the basis of every successful SPACE installation and should be considered before changing individual parameters.

2.1 Optimise Hydraulics Before Increasing Pump Speed

The circulation system should always be hydraulically optimised before increasing pump speed.

Increasing pump speed rarely solves hydraulic problems. In most cases it only increases energy consumption, hydraulic losses and mechanical wear.

Dryden Aqua Recommendation

Use the lowest pump speed that consistently provides the required circulation flow.

2.2 Continuous Filtration Produces Better Water Quality

Whenever a variable-speed pump is installed, Dryden Aqua recommends **continuous filtration using Auto 24/24 mode**.

Continuous low-speed operation provides:

- Better water clarity
- More stable water chemistry
- Lower energy consumption
- Reduced noise
- Longer equipment life

2.3 Flow Is More Important Than Pressure

Modern variable-speed pumps operate over a wide flow range. For this reason, flow provides a much better indication of filter performance than pressure alone. Dryden Aqua therefore recommends using FlowVis or FlowSonic to monitor circulation and trigger backwashing based on flow reduction whenever possible. Pressure indicates resistance. Flow indicates filtration performance.

2.4 Stable Water Chemistry Is Better Than Aggressive Correction

Good water quality is achieved by maintaining stable operating conditions rather than continuously correcting large deviations. **Small, continuous chemical dosing** provides better water quality than infrequent, large corrections.

2.5 Automation Supports Good Engineering

SPACE PRO cannot compensate for poor hydraulic design. Its purpose is to automate good engineering and maintain stable operating conditions. Correct hydraulics, efficient filtration and stable water chemistry always remain the foundation of excellent pool performance.

Next Step

The following chapters explain how to configure each function according to these engineering principles.

3 Pool Data

Purpose

The Pool Data menu defines the basic characteristics of the swimming pool.

These settings form the foundation for many automatic calculations performed by SPACE PRO, including circulation, water treatment and operating recommendations.

For this reason, Pool Data should always be configured before any other settings.

The screenshot shows the 'TYPE' configuration menu in SPACE PRO. It features a dropdown menu set to 'Overflow'. Below this, there are two input fields with sliders: 'Pool volume : 60 m³' with a range from 1 to 900, and 'Filtration flow rate (estimated) : 10 m³/h' with a range from 1 to 250. A toggle switch for 'Anti-freeze protection' is currently turned on. Below the toggle, there is a temperature input field set to '-5' with a slider range from -10 to 10, labeled 'Air T° to trigger anti-freeze protection :'. The interface is clean and modern, with a light blue header and white background.

Pool Type : Select the correct pool type.

Typical options include:

- Skimmer Pool
- Overflow Pool
- Spa

The selected pool type determines how SPACE PRO manages circulation, water level and hydraulic functions. **The Air T is for anti-freeze protection.** Dryden Aqua also recommends operating the pool continuously during winter at low speed in 24/7 mode. This provides excellent freezing protection, maintains good water quality and allows the pool to be recommissioned in spring without replacing the water.

4 Filtration

4.1 Pump Data

The circulation pump is one of the most important components of every swimming pool system. Its configuration directly influences filtration efficiency, water quality, energy consumption and the overall hydraulic performance of the installation.

Before configuring SPACE, verify that the selected pump has been installed and electrically connected in accordance with the manufacturer's installation instructions. Complete documentation is available for all supported pumps and should always accompany the equipment. **SPACE supports a wide range of variable-speed pumps, allowing the circulation system to be optimized for maximum efficiency under all operating conditions.**

Dryden Aqua recommends configuring three operating speeds for most private swimming pools.



	TYPICAL APPLICATION	RECOMMENDED SPEED
Speed 1	Continuous filtration (Auto 24/7)	2,000 rpm
Speed 2	Enhanced circulation	2,400 rpm
Speed 3	Filter backwash	2,850–3,000 rpm

These values should be regarded as recommended starting points. The optimum speed always depends on the hydraulic design of the installation, pipe dimensions, filter size and overall system resistance.

Example of a skimmer pool:

The screenshot shows a configuration interface for a pump system. At the top, it says 'Pump and speeds 1' and 'PUMP TYPE' with a dropdown menu set to 'Speck Badu eco Touch-pro (3 speeds)'. Below this are several sliders for different speeds: 'Speed for the 24/24h mode' (set to 1), 'Speed for cycle 1' (set to 2), 'Speed for cycle 2' (set to 1), 'Speed for cycle 3' (set to 2), 'Speed for cycle 4' (set to 1), and 'Backwash speed' (set to 3). There is also a 'Pressure' section with a 'Pump protection' toggle switch turned on. Below the toggle are two sliders: 'Low pressure start' (set to 0.2 bar) and 'Protection pressure' (set to 0.05 bar). A 'Submit' button is located at the bottom right.

The pump protection function enables the dosing of chemicals. For safety reasons, no dosing may take place whilst the pump is not delivering. You have four options for this protection function. Under 'Priming Sensor', select one of the four options

- 1. Pressure sensor
- 2. Flow sensor
- 3. Pressure sensor + flow switch
- 4. Flow sensor + flow switch

Recommendation: We recommend using the flow sensor or the flow sensor + flow switch as the protection function. Reason: Flow is a more reliable indicator than pressure.

Please note: The flow sensor and, if fitted, the flow switch must be electrically connected beforehand and configured in the settings under 4.4 Flow Meter or 6.2 Inputs, respectively, so that they appear as selectable options

Optimizing Pump Performance

The final pump speeds should always be verified by measuring the actual circulation flow.

Dryden Aqua recommends using either FlowVis or FlowSonic to determine the optimum operating point for both filtration and backwashing. The objective is to achieve the required flow rate while operating the pump at the lowest possible speed.

Lower pump speeds provide several important advantages:

- Reduced energy consumption
- Lower operating noise
- Reduced hydraulic losses
- Extended pump lifetime

Correct pump configuration is therefore not a matter of selecting the highest speed but of selecting the lowest speed that consistently provides the required hydraulic performance.

4.2 Filtration Timers

SPACE provides several filtration modes to suit different operating requirements. The selected mode has a direct influence on water quality, chemical stability and energy consumption. **Auto 24/24 Mode (Recommended)**

Dryden Aqua strongly recommends operating SPACE in Auto 24/24 Mode whenever a variable-speed circulation pump is installed.

Continuous low-speed circulation provides excellent filtration while significantly reducing electricity consumption compared with conventional timer-controlled operation. **To improve hydraulic mixing, the circulation pump should automatically operate at Speed 2 for approximately 6–8 hours per day, before returning to Speed 1 for continuous filtration.**

Example of a skimmer pool:



Note that the 24/24 Mode may look different on the screen depending on whether a pool cover and/or a Besgo suction valve is installed.

Timer Mode

SPACE allows up to four independent filtration cycles to be programmed each day. Each filtration cycle can be assigned its own pump speed, providing flexibility where continuous operation is not practical.

Please note that whenever the circulation pump is switched off:

- Water level monitoring is inactive.
- pH measurement is suspended.
- ORP measurement is suspended.
- Automatic chemical dosing is inactive.

For this reason, timer-controlled operation generally provides less stable water quality than continuous circulation.

Dryden Aqua Recommendation

Timer Mode is primarily recommended for:

- Winter operation
- Installations with fixed-speed pumps
- Applications where continuous operation is not possible

A typical winter programme consists of four filtration cycles of 2–3 hours each, providing freeze protection while maintaining water circulation.

Eco+ Mode

Dryden Aqua does not generally recommend Eco+ Mode.

Although this operating mode reduces pump running time, it also reduces water circulation, sensor measurements and overall water treatment performance. For most installations equipped with a variable-speed pump, continuous low-speed filtration provides superior water quality while achieving similar—or even lower—energy consumption.

Temporary Manual Override

The 24-hour, 48-hour and 72-hour functions allow the system to temporarily switch to continuous operation. This function is only applicable when the system is operating in Timer Mode or Eco+ Mode, since filtration is already continuous in Auto 24/7 Mode.

Typical applications include:

- Heavy pool usage
- Pool parties
- Severe weather
- Shock chlorination
- Initial commissioning

Once the selected period has elapsed, SPACE automatically returns to the previously configured operating mode.

4.3 Filter Data

1. General Principles

Correct filter configuration is essential for maintaining excellent water quality, reducing operating costs and ensuring reliable long-term performance. The recommendations in this chapter apply primarily to pressure filters filled with AFM®. Although SPACE supports different filter media, Dryden Aqua recommends AFM® as the preferred filter media for all new installations, because of its superior filtration performance, excellent backwash efficiency, resistance to biofilm formation and long-term stability.

Example of a skimmer pool:

Filter 1

TYPE

Pressure

Backwash

BACKWASH VALVE TYPE

Besgo

i Requires Module 1, wiring on Aux3

Backwash duration :

160 Seconds
10 600

☐ Use pressure to initiate a backwash

☐ Use flowrate to initiate a backwash

Maximal interval between backwashes :

7 Days
0 250

BACKWASH MODE

Automatic

BACKWASH TIME

09:00

2. Configuration Steps

1. Select the filter type: Pressure, suction or no filter.
2. Select the backwash valve type : Besgo or no valve.
3. Select the backwash mode: Automatic, Manual or Inhibited.
4. Configure the backwash duration and maximum interval between backwashes.
5. Select the backwash trigger.

Dryden Aqua recommends a combination of:

- Time
- Flow

See the recommendations below.

6. Configure the suction valve (overflow pools only).
Dryden Aqua recommends backwashing from the main drains (bottom suction).
7. Specify whether a rinse valve is installed.
8. Configure flocculant dosing (if installed).

Example of an overflow pool:

Filter 1

TYPE

Pressure

Backwash

BACKWASH VALVE TYPE

Besgo

Requires Module 1, wiring on Aux3

Backwash duration :

160

Seconds

10

600



Use pressure to initiate a backwash



Use flowrate to initiate a backwash

Backwash pressure :

1

bar

0.1

1.9

Backwash flow rate :

7

m³/h

2.2

25

Pump reference speed :

2

1

3

Maximal interval between backwashes :

7

Days

0

250

BACKWASH MODE

Automatic

BACKWASH TIME

09:00



Rinsing

RINSING VALVE

No valve



Requires Module 2, wiring on Aux1

Suction

SUCTION VALVE

Besgo

CLEANING VIA

Bottom



Requires Module 1, wiring on Aux2

For overflow pools, Dryden Aqua recommends backwashing through the main drains using a Besgo suction valve. Reasons:

1. The cleanest water in the system is located at the bottom of the pool.
2. The balance tank can be significantly smaller because it does not need to store the backwash water. This reduces installation costs considerably.

Backwash Duration

The filter bed requires sufficient time to expand fully and release accumulated contaminants during backwashing. Backwash periods that are too short prevent proper cleaning of the filter media and gradually reduce filtration performance. Dryden Aqua recommends the following settings:

	RECOMMENDED VALUE
Minimum backwash duration	90 seconds
Preferred backwash duration	120–180 seconds
Deep-bed filters (1,000 mm media depth)	Minimum 180 seconds



These values should be regarded as the minimum requirements for effective filter cleaning.

Backwash Velocity

Effective backwashing depends not only on the duration but also on the correct backwash velocity.

Dryden Aqua recommends a backwash velocity of approximately: **50 m/h**

The backwash velocity is calculated as follows:

$$\text{Backwash Velocity (m/h)} = \text{Backwash Flow Rate (m}^3\text{/h)} \div \text{Filter Surface Area (m}^2\text{)}$$

Example

Filter diameter: 720 mm

Filter surface area: 0.40 m²

Backwash flow: 20 m³/h

Calculation: $20 \div 0.40 = 50 \text{ m/h}$

Whenever possible, adjust the pump speed until the recommended backwash velocity is achieved.

Scheduled Backwashing

For most private swimming pools, regular time-controlled backwashing provides reliable long-term operation.

Dryden Aqua recommends:

Pool Type	Backwash Interval
Outdoor pools	Every 7 days
Indoor pools	Every 14 days

Regular backwashing prevents excessive contamination of the filter media and helps maintain stable hydraulic performance.

Pressure-Controlled Backwashing

Although SPACE supports pressure-controlled backwashing, Dryden Aqua generally does not recommend pressure as the primary trigger. Reason: Modern variable-speed pumps maintain a relatively constant pressure over a wide operating range. Consequently, even a pressure increase of only 0.10–0.15 bar may already result in a substantial reduction in circulation flow while producing only a small change in pressure. Pressure alone is therefore not a reliable indicator of filter loading.

Flow-Controlled Backwashing (Best Practice)

Dryden Aqua recommends initiating backwashing based on flow reduction rather than pressure increase. Flow is a considerably more accurate indication of filter condition because it directly reflects the hydraulic performance of the complete circulation system.

Recommended Procedure

1. Perform a complete backwash.
2. Operate the circulation pump at the normal filtration speed.
3. Record the clean-filter flow rate.
4. Configure the backwash trigger when the measured flow decreases by approximately 20–30%.

Example:

If clean filter flow:	10.0 m ³ /h
Backwash trigger:	7.5 m ³ /h

This method ensures that the filter is cleaned only when necessary while maintaining optimum filtration performance and minimising unnecessary water consumption.

Dryden Aqua Recommendation

Whenever a FlowVis® or FlowSonic® flow meter is installed, flow-controlled backwashing should be used as the primary trigger. For additional operational security, Dryden Aqua also recommends configuring a maximum backwash interval of 7 days for outdoor pools and 14 days for indoor pools. This ensures that the filter is cleaned periodically, even if the flow reduction threshold is not reached.

Rinse

The rinse cycle is optional and depends on the filter media installed. For most AFM® filtration systems, Dryden Aqua does not recommend a rinse cycle after backwashing. AFM® resettles rapidly after backwashing, and returning directly to filtration provides excellent performance while avoiding unnecessary water loss.

Dryden Aqua Recommendation

For filters filled entirely with AFM®, the rinse cycle should normally be disabled. This reduces water consumption and shortens the complete backwash sequence without compromising filtration performance. A rinse cycle is recommended only when the filter contains an activated carbon (GAC) layer above the AFM®.

4.4 Flowmeter

Accurate flow measurement is one of the most powerful tools for optimising swimming pool performance. Unlike pressure, flow directly indicates the hydraulic performance of the complete circulation system. It enables SPACE to optimise filtration, reduce energy consumption and initiate backwashing only when required. **Dryden Aqua therefore strongly recommends installing a FlowVis® or FlowSonic® flow meter whenever possible.**

Sensor Selection

SPACE supports both FlowVis® mechanical flow meters and FlowSonic® ultrasonic flow sensors. Select the appropriate flow meter according to the pipe diameter and hydraulic design of the installation. For accurate measurement, always follow the installation instructions supplied with the selected flow meter, particularly regarding the required straight pipe lengths upstream and downstream of the measuring point.

Dryden Aqua Recommendation

Install the flow meter before the filter. This allows SPACE to measure the circulation flow during both filtration and backwashing, providing the information required to optimise pump speeds and trigger flow-controlled backwashing.

Filter 1 flowmeter

This entry can only be used for filter's 1 flowmeter.

TYPE
Flowvis 2

Low : 4.8 m³/h
2.2

High : 22.7 m³/h
4.8 25

Submit

Alarm Thresholds

Upper and lower flow alarm thresholds should be configured with sufficient tolerance to prevent unnecessary alarm messages during normal operation. This is particularly important during:

- Filter backwashing
- Automatic pump speed changes

Flow Monitoring

Continuous flow monitoring provides valuable information about the hydraulic condition of the complete circulation system.

Typical indications include:

- Dirty filter
- Blocked skimmer baskets
- Closed valves
- Pump performance changes
- Hydraulic restrictions
- Air entering the circulation system

Unlike pressure measurements, flow measurements provide a direct indication of the actual hydraulic performance of the installation.

Engineering Insight

Flow is one of the few measurements that reflects the performance of the entire hydraulic system. A reduction in flow may indicate a dirty filter, blocked pipework, air ingress or reduced pump performance long before these problems become visible elsewhere. For this reason, Dryden Aqua regards flow as one of the most important operating parameters for optimising filtration, energy consumption and automatic backwashing. Every new swimming pool should be equipped with a permanent flow meter. Knowing the actual flow rate simplifies commissioning, optimises energy consumption, improves troubleshooting and enables condition-based backwashing.

You cannot optimise what you do not measure.

4.5 Circulation modes – only for overflow Pools

Introduction

Overflow pools provide the highest water quality because floating contaminants are continuously removed from the water surface. However, continuous overflow operation also increases evaporation, heat loss and energy consumption.

SPACE allows the installer to intelligently alternate between surface suction (overflow) and bottom suction (drain) to achieve the optimum balance between water quality and energy efficiency.

Why Overflow Cycles Are Required?

For overflow pools, Dryden Aqua recommends programming at least one overflow cycle every day. As a general recommendation, configure one or more overflow cycles with a total overflow time of approximately 6 hours per day.

There are three reasons:

1. The water in the balance tank must be circulated and treated regularly.
2. The water level is measured in the balance tank.
3. Surface contaminants such as oils, sunscreen and floating debris are removed most effectively during overflow operation.

Outdoor Pools

For outdoor overflow pools, Dryden Aqua recommends programming one or more overflow cycles with a total duration of approximately 6 hours per day.

This normally provides at least one complete surface turnover while reducing unnecessary evaporation and energy consumption.

In overflow pools you must program at least 1 cycle of overflow times. There are 3 reasons:

1. We need to treat regularly the water in the balance tank
2. We only measure the water level in the balance tank
3. Hydraulic performance is significantly improved during overflow operation because surface contaminants are continuously removed.

Example: Outdoor overflow pool

The screenshot displays the configuration interface for an outdoor overflow pool. It includes the following elements:

- Circulation timers:** A section with five rows, each containing a label and two time input fields with clock icons.
 - Bottom cycle ON/OFF: 00:00, 00:00
 - Surface cycle 1 ON/OFF: 12:00, 18:00
 - Surface cycle 2 ON/OFF: 00:00, 00:00
 - Surface cycle 3 ON/OFF: 00:00, 00:00
 - Surface cycle 4 ON/OFF: 00:00, 00:00
- ECO MODE:** A toggle switch labeled "Enabled".
- Min temperature:** A slider control with a value of 20 °C, ranging from 0 to 50.
- Information box:** A note stating: "This mode saves heating costs. The optimization of water circulation makes it possible to avoid heat losses and also to maximize the energy contributions under the cover. This mode only applies for overflow pools with cover configured."

ECO Mode (Outdoor Pools)

ECO Mode is available only for outdoor overflow pools equipped with an automatic pool cover.

When the pool cover is closed, SPACE automatically changes between bottom suction and overflow operation according to the outside air temperature.

Below the selected air temperature, suction is taken from the bottom drain to minimise evaporation and heat loss.

If the air temperature rises above the configured setpoint (and all filtration conditions are satisfied), SPACE automatically returns to overflow operation.

Indoor Pools

Indoor pools operate under different conditions. Because evaporation directly increases dehumidification and heating costs, Dryden Aqua recommends minimising overflow operation while maintaining sufficient surface cleaning.

As a general recommendation, configure four overflow cycles per day, each lasting approximately 1–2 hours, depending on pool usage.

Circulation timers

Bottom cycle ON/OFF	00:00	00:00
Surface cycle 1 ON/OFF	06:00	07:30
Surface cycle 2 ON/OFF	12:00	13:30
Surface cycle 3 ON/OFF	18:00	19:30
Surface cycle 4 ON/OFF	00:00	01:30

ECO MODE

☒ Enabled

i This mode saves heating costs. The optimization of water circulation makes it possible to avoid heat losses and also to maximize the energy contributions under the cover. This mode only applies for overflow pools with cover configured.

Important Notes

- Never configure an overflow cycle shorter than 30 minutes, as the water level is measured only every 20 minutes.
- Bottom suction reduces evaporation and makes the pool noticeably quieter.
- Overflow operation significantly improves the removal of floating contaminants.
- Overflow can be activated or stopped manually at any time using the SPACE App.

Suction Valve Priority

The suction valve is automatically controlled according to the priority rules configured within SPACE.

The priorities are:

1. Pump stopped or not primed.
2. Filter backwashing.
3. Low water level.
4. Scheduled surface cycle.
5. High water level.
6. Manual overflow request.
7. Bottom cycle.
8. ECO Mode logic.

No additional configuration is normally required.

Engineering Insight

The objective is not to maximise overflow operation.

The objective is to use just enough overflow to maintain excellent surface water quality while minimising evaporation, heat loss and operating costs. This intelligent balance is one of the key advantages of SPACE for overflow pools.

4.6 Water Level

Maintaining the correct water level is essential for reliable circulation, protecting the circulation pump and ensuring stable operation of the complete water treatment system.

SPACE automatically monitors the pool water level and controls make-up water whenever required.

The water level is measured approximately every 20 minutes, even when the pump is stopped in Timer Mode. Water level monitoring is only disabled when the filtration mode is set to Stop.

Skimmer Pools with Emergency Overflow

For skimmer pools equipped with an emergency overflow, Dryden Aqua generally recommends disabling automatic water level reduction.

Any excess rainwater can already leave the pool through the emergency overflow. Automatic water reduction therefore provides little additional benefit and may lead to unnecessary filling and draining cycles.

☒ Water level probe installed

Refill

☒ Can refill

Max fill duration : 180 minutes

Reduce

☐ Can reduce

REDUCTION THRESHOLD: Very high

Draining duration : 90 seconds

Skimmer Pools without Emergency Overflow

Where no emergency overflow is available, Dryden Aqua recommends enabling automatic water level reduction. This helps prevent flooding after heavy rainfall and maintains the correct operating water level.

Overflow Pools

Water level is measured in the balance tank, not in the swimming pool itself. Therefore, correct operation depends on proper circulation between the pool and the balance tank.

In overflow pools, SPACE automatically refills the balance tank when the water level falls below Level 2 (Normal) and stops filling when Level 3 (High) is reached.

If the water level falls below Level 2, the suction valve automatically switches to bottom suction to protect the circulation pump from running dry.

☒ Water level probe installed

Refill

☒ Can refill

Max fill duration : 180 minutes

Reduce

☒ Can reduce

REDUCTION THRESHOLD: Very high

Draining duration : 90 seconds

Automatic Water Reduction

For outdoor overflow pools, Dryden Aqua recommends enabling automatic water reduction. During periods of heavy rainfall, particularly when the pool water is warm and the outside temperature is low, the balance tank can overflow. This results in unnecessary heat loss and increased energy consumption. When automatic water reduction is enabled, SPACE removes a programmed quantity of water by initiating a short backwash cycle before overflow occurs.

If the programmed duration is 90 seconds or longer, this water reduction also performs a complete filter backwash, helping to maintain filter performance while preventing unnecessary overflow.

Dryden Aqua Recommendation

For outdoor overflow pools, enable automatic water reduction and configure a duration of 90 seconds. This protects against rain-induced overflow while simultaneously providing an effective filter backwash.

Rain Delay

SPACE can postpone automatic backwashing when rainfall is forecast. This optional cloud function reduces unnecessary water replacement immediately before natural dilution by rain, helping to minimise water consumption. Cloud connectivity is required to use this feature.

5 Water Chemistry

Water chemistry has the greatest influence on bathing comfort, disinfection efficiency, equipment protection and the long-term stability of the swimming pool.

SPACE continuously monitors the most important water quality parameters and automatically adjusts chemical dosing where required to maintain stable operating conditions.

Unlike conventional pool controllers that simply react to changing water conditions, SPACE has been designed to maintain a stable water balance with the minimum possible consumption of chemicals, water and energy.

Dryden Aqua recommends configuring all water treatment parameters carefully during commissioning and verifying sensor calibration regularly during operation.

Engineering Principle

Stable water chemistry is always preferable to aggressive chemical correction. Small, continuous adjustments provide better water quality, improve bather comfort and reduce chemical consumption.

5.1 pH settings

The pH value is one of the most important parameters for maintaining water quality.

It directly influences:

- Disinfection efficiency
- Bather comfort
- Scaling tendency
- Corrosion risk
- Chemical consumption

SPACE automatically measures the pH value every 60 minutes.

Chemical Dosing

For safety reasons, pH correction and disinfectant dosing are never carried out simultaneously. Only one dosing process is active at any given time.

This prevents unwanted chemical reactions inside the circulation system and provides more stable and reliable water treatment.

pH Setpoint

Dryden Aqua generally recommends maintaining the pH between 7.2 and 7.4.

The screenshot shows a configuration interface for pH control. At the top, a toggle switch labeled 'Device is installed' is turned on. Below this, the 'pH control' section has a 'MODE' dropdown menu set to 'pH-'. The 'pH set point' section contains two sliders: 'Set point :' with a value of 7.5 (range 6.5 to 8) and 'Injection duration :' with a value of 8 minutes (range 1 to 15). Below the sliders, there is a toggle switch for 'Auto-correct pH according to temperature' which is turned on, and a 'TARGETED PH' display showing 7.4. The 'pH alerts' section has two sliders: 'Low value :' with a value of 6.7 (range 6 to 7.5) and 'High value :' with a value of 8.2 (range 7.5 to 9.5). At the bottom, there is a toggle switch for 'ORP disinfection pause when pH is high or low' which is turned off.

Dosing Duration

The Injection Duration determines the maximum time that the dosing pump may operate during a single dosing cycle. If configured correctly, the SPACE control algorithm will often calculate a shorter dosing time. This parameter therefore defines the maximum permitted dosing period rather than the normal operating time.

The dosing duration can be used to fine-tune the control behaviour:

- If the pH repeatedly overshoots the setpoint, reduce the dosing duration.
- If the pH approaches the target too slowly, the dosing duration may be increased.

Additional optimisation can also be achieved by adjusting the operating speed of the Stenner VX dosing pump.

Dosing Capacity

The required dosing capacity depends on:

- Pool volume
- Alkalinity
- Acid demand

Large swimming pools may require a higher dosing capacity than can be achieved using the standard dosing tube.

Dosing Tube	Capacity
Tube B	0.3–2.2 l/h
Tube C	0.7–6.1 l/h

Where higher dosing rates are required, Dryden Aqua recommends replacing Tube B with Tube C rather than unnecessarily increasing the dosing duration.

This provides faster correction while maintaining accurate dosing control.

Alarm Thresholds

Upper and lower pH alarm thresholds should be configured with adequate tolerance.

Very narrow alarm limits often generate unnecessary warning messages without improving operational safety.

Automatic Temperature Compensation

SPACE can automatically adjust the pH setpoint according to the water temperature.

Dryden Aqua recommends enabling this function whenever possible.

Temperature compensation helps maintain a more stable Langelier Saturation Index (LSI) throughout seasonal temperature variations and therefore reduces the risk of scaling and corrosion.

Disinfection Lockout

SPACE can suspend disinfectant production whenever the measured pH falls outside the permitted operating range.

Although this function provides an additional level of protection, Dryden Aqua generally considers it unnecessary for correctly configured installations.

The function remains available whenever additional operational safety is required or specified by the operator.

Dryden Aqua Recommendation

For optimum performance:

- Maintain a stable pH between 7.2 and 7.4.
- Use the smallest dosing capacity that reliably maintains the setpoint.
- Calibrate the pH before calibrating the ORP.

5.2 ORP settings (Redox Potential)

Unlike pH, the ORP (Oxidation Reduction Potential) is measured continuously. ORP represents the disinfecting potential of the pool water and is one of the principal control parameters for automatic disinfection.

ORP is influenced by several factors, including:

- Free chlorine concentration
- pH value
- Water temperature
- Water contamination
- Cyanuric acid concentration

For this reason, ORP should always be considered together with the overall water balance.

ORP Setpoint

Dryden Aqua generally recommends an ORP setpoint between 650 and 750 mV.

The screenshot displays the ORP settings interface, which is organized into several sections. At the top, a toggle switch labeled "Device is installed" is turned on. Below this, the "Set point" is configured with a slider ranging from 300 to 990 mV, currently set at 730 mV. Adjacent to this are two alert settings: "Low alert" with a slider from 100 to 990 mV set at 520 mV, and "High alert" with a slider from 100 to 990 mV set at 800 mV. A "Submit" button is located at the bottom right of this section. The next section, "ORP Calibration", features a "Calibration value" slider from 400 to 900 mV, currently set at 720 mV, with its own "Submit" button. The "Disinfection control" section contains two dropdown menus: "TYPE" set to "DA-GEN" and "MODE" set to "Via ORP and free chlorine (Aseko)". Below these, the "Disinfection minimal temperature" is set via a slider from 0 to 18 °C, currently at 7 °C. The final section, "Polarity inversion", includes a "Duration" slider from 60 to 720 min set at 240 min, and a "Production" slider from 10 to 100 % set at 100 %.

ORP Calibration

Regular calibration is essential to maintain accurate measurements.

SPACE allows the calibration value of the ORP sensor to be adjusted using a certified ORP calibration solution.

Dryden Aqua recommends:

- Calibrating the ORP sensor every 3 months for private pools.
- More frequent calibration for heavily used commercial pools.
- Cleaning the sensor before calibration if deposits are visible.

Always calibrate the pH first, followed by the ORP.

Alarm Thresholds

Upper and lower ORP alarm limits should be configured with sufficient tolerance.

This recommendation is particularly important for salt chlorination systems, where chlorine production reacts more slowly than liquid dosing systems.

Generous alarm thresholds reduce nuisance alarms while maintaining safe operation.

Disinfection System Selection

SPACE supports several disinfection systems.

Select the correct system during commissioning.

Available options include:

- Read Only
- Liquid Chlorine
- Salt Chlorination
- Bromine
- Ocean®
- DAGEN®
- DA-SPACE
- Aquark

Selecting the correct disinfection system ensures that SPACE applies the appropriate control strategy and operating parameters.

Minimum Water Temperature

For electrolysis systems, SPACE allows a minimum operating temperature to be defined.

Below this temperature, chlorine production is automatically suspended to protect the electrolytic cell and to prevent inefficient operation.

Dryden Aqua recommends stopping the disinfection system below 10 °C.

Modbus Integration

Ocean®, DAGEN®, DA-SPACE and Aquark systems communicate directly with SPACE via Modbus.

This enables the operator to monitor and adjust:

- Maximum production capacity
- Cell polarity reversal
- Operating status

All parameters can be configured directly within the SPACE App.

Polarity Inversion

Electrolysis cells gradually accumulate calcium deposits during operation. SPACE automatically reverses the polarity of the cell at programmable intervals to minimise scale formation and maintain efficient chlorine production. Reducing the polarity-reversal interval minimises the risk of scaling but may shorten the service life of the cell.

Disinfection Control Modes

When a Free Chlorine sensor is installed, SPACE provides three independent control strategies:

1. ORP Control
2. Free Chlorine Control
3. Combined Free Chlorine and ORP Control

Dryden Aqua strongly recommends the Combined Free Chlorine + ORP Control mode whenever both sensors are available.

Free Chlorine measures the actual disinfectant concentration, while ORP measures its disinfecting effectiveness. Using both parameters provides the highest level of operational safety and the most stable water quality.

5.3 Conductivity settings

Electrical conductivity is continuously measured by the multifunction sensor (rotameter) and provides valuable information about the concentration of dissolved salts in the pool water.

Conductivity monitoring is particularly important in swimming pools equipped with salt chlorination systems, where maintaining the correct salt concentration is essential for efficient chlorine production.

Alarm Thresholds

Configure the upper and lower conductivity alarm thresholds according to the recommended operating range of the installed salt chlorination system.

The alarm limits should be set with sufficient tolerance to detect significant changes in salt concentration while avoiding unnecessary warning messages caused by normal operating fluctuations.

Conductivity Alerts

Low alert :

 μS

High alert :

 μS

10 20000

10 20000

Submit

5.4 Remanent settings for Hydrogen Peroxide (H₂O₂)

SPACE supports hydrogen peroxide dosing where required. Dryden Aqua does not generally recommend this method of disinfection as the primary disinfectant because reliable automatic control is not possible. For this reason, hydrogen peroxide dosing should only be used where specifically required by the customer.

Free Chlorine Sensors

SPACE supports two different technologies for measuring free chlorine.

The appropriate sensor should be selected according to the pool chemistry and the presence or absence of cyanuric acid. We recommend using ACO instead of cyanuric acid because ACO does not reduce the oxidation potential.

5.5 FAC settings

The FAC (Free Available Chlorine) sensor is designed for installations where cyanuric acid is present. This sensor is compatible with Prominent technology.

Recommended maintenance: Calibration every 30 days

5.6 Free chlorine

The FC (Free Chlorine) sensor is intended for swimming pools operating without cyanuric acid. This sensor is compatible with Aseko technology.

Recommended maintenance: Calibration every three months

Dryden Aqua recommends this measurement even for private pools because it provides valuable information about the disinfectant concentration (free chlorine) and effectiveness of the disinfection (ORP). When both Free Chlorine and ORP are monitored simultaneously, two control parameters are available, providing considerably greater operational safety.

5.7 Total chlorine

Total Chlorine monitoring is primarily intended for public swimming pools operating without cyanuric acid. SPACE automatically records total chlorine values up to four times per day, creating a complete operating logbook without manual measurements. This function provides valuable documentation for regulatory compliance and routine water quality management.

Maintenance

To ensure reliable operation:

- **Calibrate the sensor every three weeks.**
 - Replace the electrolyte during each calibration interval.
- Regular maintenance is essential to maintain accurate measurement performance.

5.8 ACO injection

SPACE supports automatic dosing of ACO where installed.

For most private swimming pools, Dryden Aqua recommends manual dosing approximately every two months. A correctly applied initial dose generally provides better long-term protection than frequent automatic additions. Shake the container thoroughly before dosing to ensure uniform mixing of the product.

5.9 Rotameter

The multifunction rotameter provides several important measurements within a single assembly.

It continuously measures:

- Water flow
- Water temperature
- Electrical conductivity

6 Input & Outputs

SPACE provides a flexible range of programmable inputs and outputs that allow the controller to manage additional pool equipment from a single central platform.

Depending on the hardware configuration, SPACE can control and monitor a wide variety of external devices, enabling complete pool automation.

The following sections explain the available I/O functions.

6.1 Auxiliary Outputs

SPACE provides up to 15 programmable auxiliary outputs (AUX 1–15). Each output can be freely assigned to the required function during configuration.

Typical applications include:

- Besgo automatic backwash valve
- Besgo suction valve
- APF dosing
- Heating systems
- Pool lighting
- Water features
- Overflow transfer pump
- External equipment
- Alarm outputs

When used together with the Pilot Expansion Module, the number of programmable outputs can be increased to 32.

Dryden Aqua Recommendation

Configure only the outputs required for the installation. Clear naming and correct assignment simplify commissioning and future servicing.

6.2 Inputs

SPACE supports up to 12 programmable digital inputs (potential-free contacts).

Typical applications include:

- Chemical level monitoring
- Pool cover position
- Flow switch
- Flood detection
- Filtration stop
- Counter-current activation
- External emergency stop
- Safety interlocks

Each input can be configured as either:

- Normally Open (NO)
- Normally Closed (NC)

Individual warning messages can also be assigned to each input, allowing operators to quickly identify the source of an alarm.

Dryden Aqua Recommendation

Always verify the operation of every configured input during commissioning.

6.3 External Warning Inputs

The external warning consist of two outputs that transmit alarm signals to third-party equipment.

Typical applications include:

- Freeking risk
- External safety devices
- Plant alarms
- Building management systems
- Additional monitoring equipment

These functions are primarily intended for larger or more complex installations and are generally not required for standard private swimming pools. The Configuration Guide explains engineering decisions—not every button in the software.

7 Features

The Features menu contains optional functions that can be enabled depending on the installed equipment and project requirements.

Some functions require additional hardware or software options and may not be available on every installation.

7.1 Energymeter

The Energy Meter is primarily intended for monitoring electrical consumption. At present, this function provides useful operational information but has limited influence on automatic control strategies.

Dryden Aqua expects the functionality of energy monitoring to be expanded through future software updates.

7.2 Pool Cover

SPACE can monitor and control an automatic pool cover when connected to the appropriate input and output. The controller automatically recognises whether the cover is open or closed and adjusts the operation of the swimming pool accordingly.

For overflow pools, the pool cover also enables ECO Mode, allowing SPACE to optimise overflow operation and reduce evaporation and heat loss. Remote operation of the pool cover is available through the SPACE App, provided that the installation has been configured accordingly.

Dryden Aqua Recommendation

For safety reasons, always ensure that the swimming pool is clearly visible before operating the pool cover remotely.

7.3 Counter-Current Systems

SPACE can control compatible counter-current systems.

The system can be activated either locally or via the SPACE App, depending on the installation and the selected configuration.

Following installation, verify that the counter-current system starts and stops correctly and that all safety functions operate as intended.

8 Access

The Access menu allows the owner to manage who can access and operate the SPACE system. Different access levels can be assigned depending on the user's role, ensuring that each person has access only to the functions required.

Typical user roles include:

- Device Owner – Full administrative access to all functions and settings.
- Pool Manager – Access for service companies or maintenance personnel responsible for the operation of the pool.
- Pool Guest – Limited access to selected operating functions.
- Pool Tags – Used to organise and identify multiple pools within the SPACE Cloud.
- PIN Code – Additional local security for access to the controller.

 Access	
Device owner	→
Pool managers	→
Pool guests	→
Pool Tags	→
Pin code	→

Dryden Aqua Recommendation

Only grant administrative access to authorised persons. Assign service companies as Pool Managers rather than Device Owners to maintain full ownership and control of the installation

9 Maintenance

The Maintenance menu contains all functions required for servicing, calibration and maintaining the SPACE controller. These functions are primarily intended for installers and service engineers.

 Maintenance	
Maintenance settings	→
Date & time	→
Alerting	→
Restore point	→
Device update	→

9.1 Maintenance Settings

The Maintenance Settings menu allows installers to calibrate sensors and safely perform service work. When Service Mode is enabled:

- Automatic pump operation is disabled.
- Automatic chemical dosing is disabled.
- Automatic control functions are suspended.
- Manual operation remains available for testing and commissioning.

For example, the circulation pump can still be started manually to verify correct operation after installation or maintenance.

Sensor Calibration

The following sensors can be calibrated in this menu:

- Water temperature
- Air temperature

Dryden Aqua Recommendation

Always activate Maintenance Mode before servicing the installation or calibrating sensors. This prevents automatic control actions during maintenance and improves operational safety.

9.2 Date & Time

When SPACE is connected to the Cloud, the date and time are synchronised automatically. If no Cloud connection is available, they can be adjusted manually.

Correct date and time settings are important for:

- Filtration timers
- Event logging
- Alarm history
- Configuration backups

9.3 Alerting

SPACE continuously monitors the operating condition of the complete installation. Whenever a configured operating limit is exceeded, SPACE automatically generates an alarm to notify the operator.

Typical alerts include:

- Low flow
- High or low pH
- High or low ORP
- Water level alarms
- Sensor failures
- Chemical level warnings

When connected to the Cloud, alarm notifications can also be sent automatically by e-mail.

Dryden Aqua Recommendation

Configure only those alarms that are relevant to the installation. Appropriate alarm limits provide early warning without generating unnecessary notifications.

9.4 Configuration Restore Points

SPACE automatically creates restore points to protect the controller configuration against accidental changes.

The controller stores:

- One daily backup
- One weekly backup

Additional restore points can be created manually at any time.

Typical examples include:

- Summer operation
- Winter operation
- Holiday mode
- Demonstration mode

If required, a previous configuration can be restored quickly without manually re-entering all settings.

Dryden Aqua Recommendation

Always create a manual restore point immediately after commissioning and before making major configuration changes.

9.5 Device Updates

Dryden Aqua continuously develops SPACE by introducing new functions, performance improvements and software enhancements. Whenever possible, automatic software updates should be enabled.

Keeping the controller up to date provides:

- Improved system stability
- New functions
- Enhanced cybersecurity
- Improved hardware compatibility
- Performance improvements

The installed software version can be viewed directly in the SPACE App.

Dryden Aqua Recommendation

Keep the controller updated to the latest software version to benefit from new features, improvements and security updates.

10 Best Practice Recommendations

The following recommendations summarise Dryden Aqua's preferred engineering practices for configuring SPACE. Applying these recommendations will help achieve excellent water quality, reliable operation and minimum consumption of energy, water and chemicals.

Circulation

- Operate the circulation pump continuously using Auto 24/7 Mode whenever a variable-speed pump is installed.
- Select the lowest pump speed that consistently provides the required circulation flow.
- Increase pump speed only when additional circulation or filter backwashing is required.

Filtration

- Use AFM® filter media.
- Configure flow-controlled backwashing whenever a FlowVis® or FlowSonic® flow meter is installed.
- As an additional safety measure, always configure a maximum backwash interval of 7 days for outdoor pools and 14 days for indoor pools.
- Verify the backwash velocity during commissioning.

Water Treatment

- Maintain a stable pH before adjusting disinfectant production.
- Enable automatic pH temperature compensation whenever possible.
- Use Combined Free Chlorine + ORP Control whenever both sensors are installed.
- Configure alarm thresholds with sufficient tolerance to avoid unnecessary warning messages.

Sensors

- Operate the pool for at least 24 hours before performing the initial calibration.
- Calibrate sensors at the recommended intervals.
- Keep the prefilter before the multifunction flow cell clean.
- Replace sensors when measurement stability begins to decline.

Energy Efficiency

- Optimise the hydraulic system before increasing pump speed.
- Minimise unnecessary backwashing.
- For overflow pools, use the available circulation modes to reduce evaporation and improve energy efficiency.
- Whenever possible, install an automatic pool cover.

Dryden Aqua Recommendation

Excellent water quality is achieved by combining:

- Correct hydraulic design
- Efficient filtration
- Stable water chemistry
- Intelligent automation
- Regular maintenance

SPACE supports these engineering principles by helping maintain stable operating conditions with minimum energy, water and chemical consumption.

11 Engineering Summary

SPACE is more than a pool controller. It is an integrated automation platform designed to optimise hydraulics, filtration, water treatment and energy management as one complete system.

Correct configuration is essential to achieve the best possible performance. The recommendations presented in this guide are based on Dryden Aqua's engineering philosophy and practical experience gained from thousands of swimming pool installations worldwide.

Excellent water quality is achieved by combining:

- Correct hydraulic design
- Efficient filtration
- Stable water chemistry
- Intelligent automation
- Proper commissioning

No controller can compensate for poor hydraulic design or incorrect installation. However, when the hydraulic system is correctly designed and SPACE is configured according to the recommendations in this guide, the result is:

- Outstanding water quality
- Reduced energy consumption
- Lower water consumption
- Reduced chemical consumption
- Simplified maintenance
- Reliable long-term operation

Dryden Aqua Engineering Principle

Good engineering creates excellent water quality.
SPACE simply makes good engineering easier.

Appendix A – Recommended Default Configuration

Parameter	Recommended Setting
Operating Mode	Auto 24/7
Pump Speed 1	2,000 rpm (typical)
Pump Speed 2	2,400 rpm (typical)
Pump Speed 3	2,850–3,000 rpm
Backwash Trigger	Flow (preferred) + Time
Outdoor Backwash	Every 7 days (maximum interval)
Indoor Backwash	Every 14 days (maximum interval)
pH	7.2–7.4
ORP	650–750 mV
Software Updates	Automatic
Flow Meter	FlowVis® or FlowSonic® recommended

12 Commissioning Checklist

The following checklist helps ensure that the SPACE installation has been correctly commissioned and that all major functions have been tested before handing the installation over to the customer. Dryden Aqua recommends completing this checklist for every new installation.

Hydraulic System

- ☐ Pump correctly connected
- ☐ Pump speeds configured
- ☐ Required circulation flow verified
- ☐ Flow meter correctly installed

Filtration

- ☐ Filter type configured
- ☐ Backwash duration configured
- ☐ Backwash trigger configured
- ☐ Automatic backwash tested

Water Level

- ☐ Automatic filling tested
- ☐ Automatic water reduction tested (if enabled)
- ☐ Overflow and bottom suction operation verified (overflow pools)

Water Treatment

- ☐ pH/ORP sensor calibrated
- ☐ Free Chlorine sensor calibrated (if installed)
- ☐ Total Chlorine sensor calibrated (if installed)
- ☐ Dosing pumps tested
- ☐ Alarm thresholds configured

Inputs & Outputs

- ☐ Auxiliary outputs tested
- ☐ Digital inputs tested
- ☐ External warning inputs tested (if used)

Maintenance

- ☐ Manual restore point created
- ☐ Automatic software updates enabled

Customer Handover

- ☐ Customer account created
- ☐ Customer instructed in daily operation
- ☐ Configuration saved
- ☐ Documentation handed over

