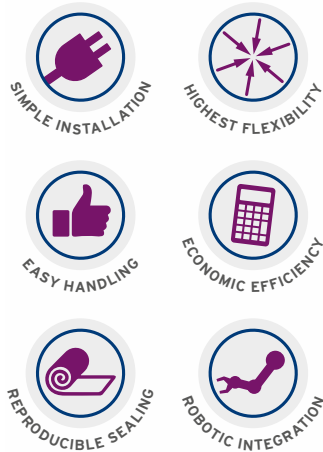


# Automatic Heat Sealer a4S

Providing the perfect solution for automated heat sealing



## Flexible – Easy – Reliable

- Unrivalled sealing performance and consistency  
5,000 perfect seals without intervention
- SiLA compatible  
Easy integration into robotic systems
- No external air supply required  
Cost-saving and compact device, simple installation

# Automatic Heat Sealer a4S

The main advantage of the a4S is that it does not require an air supply, which gives it the flexibility to be placed on a standard lab bench as a stand-alone unit, or integrated within a robotic set-up. The sealer's rapid heating element enables a fast start-up, and the stand-by function saves energy when the unit is not in use.

The a4S sealer is compatible with a wide range of SBS footprint plates, including all PCR plate formats from 96well to 1536well, assay plates, deep well storage plates and microplates. Varying plate heights, from 3mm to 60mm can be accommodated with minimal adjustments of the instrument. Plates are presented in the portrait format and the plate position on the shuttle allows good access for robotic integration.

Rolls with a width of between 75–85mm can be loaded in either of two roll positions, depending on roll length and available space, enabling the entire instrument to fit under the gantry of most liquid handling robots.

The width and length of the applied seals are set to precisely cover an SBS footprint plate without interfering with plate stacking. The seal position can be adjusted to give an overhang at one end of the plate to facilitate ease of seal removal.

## Features



### Installation

- No need for compressed air – Installation is fast and flexible
- 2 positions for different roll sizes – Increased flexibility
- Optional roll cover – Seal protection for sensitive applications



### Handling

- Colour touch screen with intuitive user interface – Ease of use
- Unlimited password protected protocols – 3 security levels save personalised and SOP set temperatures and times
- Rapid heating – Fast start up time, block uniformity is maintained to  $\pm 1^\circ\text{C}$
- Variable time/temperature controls – Adjustment of time and temperature settings enables the perfect seal to be established for any plate type
- Up to 5,000 seals without manual intervention – True walk-away-system



### Sealing

- Reproducible sealing – A fixed pressure and accurate time and temperature controls ensure consistent sealing
- High sealing pressure – Improved seal uniformity on the widest range of plates
- Sealing cycle time of less than 15sec – Time saving



### Flexibility

- Compatible with a wide range of plate types, from racked tubes to 1536well PCR plates – Highest flexibility
- Flexibility of seal material choice – 4titude® offers a wide range of sealing materials, with a variety of properties for use with the a4S
- Compatible with gas permeable heat seals – No instrument modification necessary for maximum convenience



### Economic efficiency

- Competitive pricing – Save money without compromises
- Auto standby mode – Saves energy and prolongs component life
- 2 year warranty on parts and labour
- Extended warranty and service contracts available – For peace of mind

## Plug and Play Robotic Integration

All 4titude® instruments are compliant with SiLA standards for rapid integration of automated systems ([www.sila-standard.org](http://www.sila-standard.org)). This means they can be “plug and play” connected with other instruments, such as readers, robotic arms and liquid handlers, to give a custom automated system without the need to write expensive custom drivers. The a4S heat sealer is extremely versatile leaving you the freedom to expand and configure your systems such as adding robotic plate handling.

- Full communication protocol available – Operate the instrument and record sealing conditions for each seal using the RS232 communication port
- SiLA compatible – Quick and easy integration with other SiLA compliant devices using the SiLA driver\*



**SiLA** Rapid Integration®



Colour touch screen with intuitive user interface – Ease of use



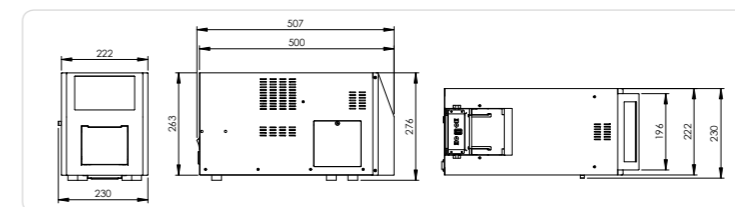
Protocol management function – Unlimited password protected protocols



Compatibility with a wide range of plate types – 2 adaptors supplied for optimal sealing results, custom adaptors available on request



Flexibility of seal material choice – 4titude® offers a wide range of sealing films and foils



2 roll positions for increased flexibility  
Small footprint due to internal compressor – Fast and flexible installation, easy integration into automated systems

\* Available at extra cost. For details please contact 4titude® or your local distributor.

# Heat Sealing Applications

Heat sealing is the gold standard method for plate sealing. Not only does it minimise sample loss but also maximises sample security for PCR, qPCR, storage and other applications. **Three typical applications** for automated heat sealing are outlined below. Please also see our website for the entire portfolio of heat seals.

## qPCR Reduce evaporation and save money

The optimised sealing performance of the a4S heat sealer prevents reagent volume loss by evaporation.

Up to a fivefold reduction in the costs of sealing can be achieved when heat sealing with the a4S compared to using caps or adhesive seals – Reliable qPCR results and significant reagent savings.

- [Clear Seal \(4ti-0540\)](#) and [Clear Weld Seal Mark II \(4ti-0573\)](#) are widely used for qPCR.
- [Clear Weld Seal Mark II](#) is particularly designed for Hydrocyclers.

## Cell assays and Cell culture Increase cell viability and assay performance

Heat sealing is the optimal method for cell based assay plates and cell culture plates. It is a proven method for compound storage, particularly in protective gases such as Argon and CO<sub>2</sub>.

- [Black Seal \(4ti-0525\)](#)  
Foil based heat seal, coated on the sealing surface with a low fluorescence black pigment. Ideal for automated handling of light-sensitive samples, e.g. for fluorescence and luminescence detection.
- [Gas Permeable Seal Mark II \(4ti-0598\)](#)  
Perfect choice for cell culture – allows for optimized gaseous exchange, whilst limiting evaporation.

## Sample Storage Strongest resistance against organic solvents

Essential requirements for long term storage include maintaining sample integrity and minimising the risks of sample degradation.

- E.g. [Foil Seal \(4ti-0535\)](#), [Pierce Seal \(4ti-0530\)](#), and [DMSO Resistant Peel Seal \(4ti-0585\)](#)  
These seals when applied using the a4S heat sealer demonstrate the highest performance in compound storage, drug screening and subsequent sample retrieval.
- [DMSO Resistant Peel Seal](#)  
The first 100% DMSO resistant seal. Pure DMSO can be stored at room temperature for 12 months with this seal with no deterioration of the seal quality.

## Challenge us – Tailor-made solutions

4titude® stocks one of the widest ranges of sealing solutions for varying applications. We can also design and manufacture custom solutions for specific non-standard sealing requirements. This service includes custom sealer blocks for the a4S and 4S3 heat sealers as well as custom size and specification seal material. Contact us at [info@4ti.co.uk](mailto:info@4ti.co.uk).

### Technical Specifications

Parameter	Specification
Dimension (W x L x H)	230 x 507 x 276 mm <i>Please note: Additional space is required if large seal rolls are used</i>
Sealing temperature range	100 – 200°C
Sealing time range	0.1 – 10 sec
Weight (without roll)	27 kg
Power supply	V in: AC 100 – 240 V V out: DC 24 V 320 W
Power consumption	600 W (max)
Power saving mode	< 20 W
Working temperature range	10 – 30°C
Operating humidity (RH)	0 – 85%
Connection	RS-232 serial port, USB port

### Ordering Information

Code	Description
4ti-0665	<b>a4S Automatic Heat Sealer</b> Includes: Universal power supply, power cord, manual, plate adaptor, 2 year warranty
4ti-0665-1	Seal Loading Tool
4ti-0665-2	Plate Support Adaptor A
4ti-0665-3	Plate Support Adaptor B
4ti-0665-4	Roll Holder
4ti-0665-5	Vacuum Cups, front (clear)
4ti-0665-6	Vacuum Cups, rear (black)
4ti-0665-7	Plastic Tweezers
4ti-0665-8	Clear Plastic Dust Cover for enclosing the sealing roll <i>Please Note: Only applicable for smaller rolls (product code 4ti-xxxx/80, /100, /122)</i>

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