

Automatic Heat Sealer a4S

Providing the perfect solution for automated heat sealing
from medium to high-throughput and manual fully automated applications



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

Crucially the a4S does not require an air supply, allowing for its flexible use on standard lab benches as a stand-alone unit, or integrated within a robotic set-up. The sealer has a rapid heating element, for fast start-up, and has a stand-by function, to save energy when not in use.

The a4S sealer is compatible with a wide range of SBS footprint plates, including all format PCR plates from 1536well to 24well, 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 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 gantree of most liquid handling robots.

The width and length of the applied seal 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, an internal compressor ensures reproducibility of sealing
- 2 roll positions available, dependent roll size chosen – 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 set time and temperature can ensure a consistent seal is applied every time
- 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 1536 well PCR plates – Highest flexibility
- Flexibility of seal material choice – 4titude® offers a wide range of sealing materials, with differing properties, for use with the a4S
- Compatible with gas permeable heat seals – No instrument modification necessary for maximum convenience



Economic efficiency

- Attractive 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). 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 and future proof leaving you 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



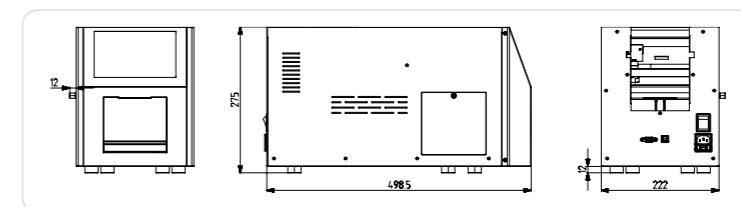
Protocol management function – Unlimited password protected protocols



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. It minimises sample loss and maximises sample security for PCR, qPCR, storage and other applications. Below please find **three typical applications** for automated heat sealing. Please also see our website for the entire portfolio of heat seals.

qPCR Reduce evaporation and save money

The optimized 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 method of choice 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 CO₂.

- [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, but limits 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 no deterioration of the seal quality.

Challenge us – Tailor-made solutions

4titude® stocks one of the broadest 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.

Technical Specifications

Parameter	Specification
Dimension (W x L x H)	22 x 45 x 26 cm <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	a4S Automatic Heat Sealer 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/122)</i>



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