



Reaction Stations

STEM Omni and RS Series

The STEM Omni series and RS series Reaction Stations enable parallel synthesis to be carried out by offering the same controlled temperature and stirring rates at several reaction positions simultaneously.

The STEM RS Reaction Stations give you a choice of:

- 6 to 50 positions
- Working sample volumes of between 10-30ml, (but up to 250ml for RS600)
- Operational temperature range of ambient to 150°C
- Optional higher temperature models for up to 300°C
- Powerful stirring rate of between 400- 2000rpm
- Wide range of accessories

The STEM Omni Reaction Stations give you a choice of:

- 6 or 10 positions
- Working sample volumes of between 2 to 250ml
- Operating temperature range of ambient to 220°C
- Temperature range may be extended down to -30°C with a cooling plug and chiller accessory
- Stirring rate of between 250 - 2000 rpm
- Wide range of accessories



STEM RS Reaction Stations

RS600, RS900, RS1000, RS2500, RS5000

Electrothermal's heating and stirring Reaction Stations can be used for a wide range of applications from simple synthesis to process optimisation. High performance magnetic stirrers beneath each sample position ensure maximum coupling between the stirrer bar in the sample and the powerful motor.

The range accommodates sample sizes from 2ml to 250ml in a wide range of vessel sizes and heating formats. Adaptor sleeves can be used to accommodate non-standard vessel sizes.

The well-insulated reaction unit keeps the casework cool-to-touch, gives quick heat-up times, excellent temperature uniformity across the block, and a thermal cut-out eliminates runaway conditions. The combination of precise electronic control and rugged design ensures operator safety, while a PTFE coating protects the block from chemical spills. (The high temperature models do not have a PTFE coating).



RS600 Reaction Station

- 6 position reaction station
- 57.5mm diameter vessels
- Can accommodate 40mm and other diameter vessels with appropriate adaptor sleeves
- Sample sizes up to 250ml
- Controlled temperature range from ambient to 250°C
- Powerful stir speed from 400 to 2,000rpm
- Bi-directional stirring option
- Manual and external control via the RS232 interface port
- Optional PC-based external control software is available to schedule stir/heat profiles over varying time delays
- Variety of accessories available including reflux and inerting head accessory, rotary evaporator adaptors, phase separation heads, filtration adaptors, glass condensers, temperature probes, and a selection of stir bars
- High temperature RS600H option with temperature range from ambient to 300°C

RS900 and RS1000 Reaction Station

- 10-position reaction station
- 24mm/25mm diameter vessels
- Can accommodate 16mm and other diameter vessels with appropriate adaptor sleeves
- Sample sizes from 10ml to 30ml
- Controlled temperature range from ambient to 150°C
- Manual and external control via the RS232 interface port
- Powerful stir speed from 400 to 2000rpm
- Compact footprint for easy integration onto a robotic platform

RS1000 Reaction Station (only)

All features of the RS900 plus:

- Manual and external control via the RS232/RS458 interface port
- High temperature RS1000H option with temperature range from ambient to 300°C

STEM RS Reaction Stations

5 models of STEM RS Reaction Stations, giving you a choice of:

- 6 to 50 positions depending upon model. (RS600 has 6 positions; RS900 and RS1000 have 10 positions; RS2500 has 25 positions and RS5000 has 50 positions)
- Working sample volumes of between 10-30ml, (but up to 250ml for RS600 only)
- RS600 model accommodates 57.5mm diameter vessels (also accommodates 40mm and other diameter vessels with appropriate adaptor sleeves)
- RS900, RS1000, RS2500, RS5000 models accommodate 4mm/25mm diameter vessels (also accommodate 16mm and other diameter vessels with appropriate adaptor sleeves)
- Operational temperature range of ambient to 150°C
- Optional higher temperature models for up to 300°C for some models (i.e. RS600H, RS1000H, RS2500H)
- Powerful stirring rate of between 400- 2000rpm, with bi-directional stirring option
- Optional PC-based external control software is available to schedule stir/heat profiles over varying time delays
- Wide range of accessories, including reflux and inerting head accessory, rotary evaporator adaptors, phase separation heads, filtration adaptors, glass condensers, temperature probes, and a selection of stir bars



RS2500 Reaction Station

- 25 position reaction station
- 24mm/25mm diameter vessels
- Can accommodate 16mm and other diameter vessels with appropriate adaptor sleeves
- Sample sizes from 10ml to 30ml
- Controlled temperature range from ambient to 250°C
- Powerful stir speed from 400 to 2,000rpm
- Manual, and external control via the RS232/RS485 interface port
- Compact footprint for easy integration onto a robotic platform
- High temperature RS2500H option with temperature range from ambient to 300°C

RS5000 Reaction Station

- 50 position reaction station
- 24mm/25mm diameter vessels
- Can accommodate 16mm and other diameter vessels with appropriate adaptor sleeves
- Sample sizes from 10ml to 30ml
- Controlled temperature range from ambient to 150°C
- Powerful stir speed from 400 to 2,000rpm

For more information, please visit: <http://www.electrothermal.com/category.asp?dsl=743&mnu=232>



STEM Omni Reaction Stations

Parallel synthesis

The STEM Omni Reaction Stations enable you to conduct parallel synthesis for either 6 or 10 reactions simultaneously.

They offer a modular design which enables you to build up your own parallel synthesis system in 5 steps, by ordering your choice of:

Step

- 1 Omni Controller (same for all Omni range)
- 2 Omni heater cartridge
- 3 Omni cooling plug
- 4 Omni reaction vessels
- 5 Omni reflux head

The Omni Controller base unit remains the same for all Omni models, and one base unit can accommodate sample volumes from 2ml to 250ml. All heating blocks, glassware and reflux heads are interchangeable. The Omni Reaction Station footprint is compact and can be placed into any fume hood, or within a small bench space.



For more information, please visit: <http://www.electrothermal.com/category.asp?dsl=744&mnu=233>

Omni 1000 and 6000 Series

OS1025, OS6050, OS6100, OS6250

You have a choice of either 10 or 6 places within your Omni Reaction Station:

- 10 place unit allows up to 10 reactors with a working volume of:

Working volume	Omni Model
2 -25ml	OS1025

- 6 place units allow up to 6 reactors with working volumes of:

Working volume	Omni Model
5- 50ml	OS6050
50- 100ml	OS6100
100- 250ml	OS6250

With the exception of different volumes, all of the models within the Omni 1000 and 6000 series Reaction Stations offer the same outstanding performance features:

- Stirring stability and speeds of 250 - 2000 rpm
- Simple menus and touch pad interface
- Ease of menu navigation to view of system performance
- All heater cartridges are equipped with "in block heaters" that allow temperatures up to 220°C
- High level of stability ($\pm 1.5^\circ\text{C}$) across the heater cartridge itself
- An external temperature probe for temperature "control by contents" which increases accuracy to $\pm 0.5^\circ\text{C}$
- An outer casing to retain the "cool to touch" safety feature that so many of our customers value
- Select cartridges can also be used in conjunction with a cooling plug to extend the temperature range from - 30°C to 220°C

Key features

Omni Temperature Sensor

1

For fast and more precise temperature control, the temperature probe can be inserted either into a machined pocket in the reaction block or via a thermocouple pocket directly in one of the reaction vessels. The temperature sensor attaches directly into the Omni Controller.

Omni Gas-tight PTFE caps

2

By using a simple bi-directional open/close lever, each reaction vessel can be controlled separately. Each vessel cap has a septum to allow sampling at each vessel position.

Omni Reflux Head

3

Efficient condensing and refluxing, for samples up to 25ml, is provided through the use of a liquid-cooled aluminium reflux head. Cooling is introduced through the inlet/outlet ports. Individual reaction positions are numbered (1-10) for simplified tube and sample identification. A central gas inlet/outlet port, combined with the gas-tight PTFE caps allows for a vacuum to be pulled and/or inert gas (nitrogen) to be ported into each individual tube.

Omni Reaction Vessels

4

24mm and 25mm x 150mm threaded glass reaction vessels which can handle volumes from 2 – 250ml. Solutions can be added and removed through the top of the reaction vessel.

Omni Cooling Plug

5

Allows unit to cool down to -30°C, greatly expanding the types of chemistry you can perform with this equipment. The cooling plug is simple to use: Insert the cooling plug into the reaction unit and attach cooling lines to the inlet/outlet via quick disconnects. Melting ice is no longer a problem with the cooling plug.

Omni Heater Cartridge

6

Encased reaction unit ensures accurate temperature uniformity across the unit. Unique air flow design through ventilation slots beneath and around the rim of the case ensures a cool case temperature, allowing it to be safe to touch.

Omni Controller

7

Used to control both temperature and stirring speed, the Omni Controller is easy to operate. Temperature and speed can be separately enabled to provide complete control of reactions. Both temperature and speed are individually adjustable by touching the up/down keys on the interface. The control panel (on the controller) has 3 indicator lights: "Power On", "Heater On" and "Stirrer On", so that you can closely view the performance of your system. A 3-digit display indicates the actual temperature from -30°C to 220°C. Stirring speed is reflected by simply touching the stirrer speed key.

Key differences between the three Reaction Station Series

RS, OMNI and Integrity series

Since the OMNI and RS series Reaction Stations provide the same controlled temperature and stir rate to all reaction vessels, they offer direct comparison between different reagent compositions in each flask under the same operating conditions.

In contrast, the Integrity 10 Reaction Station offers precise and individual control of temperature and stirring rate at each of its 10 positions. (Details of the

Integrity 10 Reaction Station are available in another brochure available on the Electrothermal website www.electrothermal.com).

Thus, the STEM Omni and RS series Reaction Stations both complement (and could potentially follow-on from) screening reactions carried out in the STEM Integrity 10 Reaction Station.

	RS series	Omni series	Integrity 10
	RS600, RS900, RS1000, RS2500, RS5000	Omni 1050, Omni 6050, Omni 6100, Omni 6250	
Temp control	Same at all positions	Same at all positions	Can be different and precisely selected for each position
Stirring rate	Same at all positions	Same at all positions	Can be different and precisely selected for each position
Stirring rate	400-2000 rpm	250 - 2000 rpm	350- 1200 rpm
No. of positions	6, 10, 25 or 50	6 or 10	10
Cooling capability	No	Yes to -30°C	Yes to -30°C
Temperature range	Ambient to 150°C Up to 300°C for high temp model	-30°C to 220°C	-30°C to 150°C
Sample volumes	10-30ml; up to 250ml	2-25ml; 5-50ml; 50-100ml; 100-250ml	2 -25ml

RS Reaction Stations

Technical specifications



Cat No	PS80034	PS80067	PS80010	PS80025	PS80055
Model	RS600	RS900	RS1000	RS2500	RS5000
Higher temperature model	RS600H		RS1000H	RS2500H	
Stirred positions	6	10	10	25	50
Tube Diameter	57.5 mm	24 or 25mm	24 or 25mm	24 or 25mm	24 or 25mm
Tube diameter with sleeves	40mm	16mm, 20mm	16mm, 20mm	16mm, 20mm	16mm, 20mm
Sample volume	Up to 250ml	10- 30ml	10- 30ml	10-30ml	10-30ml
Stir speed range	400- 2000rpm	400- 2000rpm	400- 2000rpm	400- 2000rpm	400- 2000rpm
Soft start (to full ramp)	Adjustable 0 – 10 mins	Adjustable 0 – 10 mins	Adjustable 0 – 10 mins	Adjustable 0 – 10 mins	Adjustable 0 – 10 mins
Temperature Range (ambient)	Ambient to 150°C Ambient to 300°C for RS600H	Ambient to 150°C	Ambient to 150°C Ambient to 300°C for RS1000H	Ambient to 150°C	Ambient to 150°C Ambient to 300°C for RS2500H
Temp Stability	± 0.5°C	± 0.5°C	± 0.5°C	± 0.5°C	± 0.5°C
Time to max/min temp	15 min	15 min	15 min	30 min	30 min
Interface port	RS232 & manual	RS232 & manual	RS232/RS485 & manual	RS232 & manual	RS232 & manual
Dimensions, W x H x D, mm	244 x 135 x 310	160 x 135 x 244	79 x 140 x 300	243 x 135 x 310	1422 x 135 x 455
Shipping Weight	10kg	5.5kg	4.5kg	10kg	15kg

OMNI Reaction Stations



Technical specifications

Cat. No.	OS1025	OS6050	OS6100	OS6250
Model	Series 1025	Series 6050	Series 6100	Series 6250
Voltage	230 & 115 V*	230 & 115 V*	230 & 115 V*	230 & 115 V*
Number of positions	10	6	6	6
Well diameter	24.5/ 25.5mm	40.5mm	56.5 mm	56.5 mm
Working volume	2- 25 ml	5- 50ml	50- 100ml	100- 250ml
Temperature range	Ambient to 220°C	Ambient to 220°C	Ambient to 220°C	Ambient to 220°C
Temperature range using cooling plug and chiller	-30°C to 220°C	-30°C to 220°C	-30°C to 220°C	-30°C to 220°C
Stir speed range rpm	250 - 2000 rpm	250 - 2000 rpm	250 - 2000 rpm	250 - 2000 rpm
Dimensions (W x D x H), mm	300 x 300 x 300	300 x 300 x 450	300 x 300 x 450	300 x 500 x 550
Shipping Weight (kit)	10kg	10kg	10kg	10kg

*Note: for 115V model, add x1 to the catalogue number. For example OS1025X1

OMNI Reaction Stations - Accessories

Cat no	Description	Cat no	Description
ATS10075	Test tubes 24x150mm 22 thread (10x)	ATS10111	Dean & Stark R45 reducer column (2x)
ATS10377	Inerting cap + probe hole (10 x)	ATS10116	Reflux/Inerting head. 6 x 56
AZS4206	Sir bars 10x6 oval R/E (10x)	ATS10108	50ml Round Bottom flask ,40mm OD,R45, (6x)
OSD1025	Block cartridge 10x25 230V	ATS10092	100ml Round Bottom flask R45 (6x)
ATS10115	Reflux/inert head 10x25mm	ATS10094	250ml Round Bottom flask (6x)
ATS10031	Stir bar retriever	ATS10110	Reducer sleeves 56-40mm (6x)
ATS10063	Temperature probe 5 pin PT100	ATS10141	Inerting cap 22mm, (6x)
ATS10075	Test tubes 24x150mm 22thread (10x)	ATS10143	Inerting caps, 22SVL Twin septum (6x)
ATS10076	Test tubes 24x150 22thread pocket (10x)	ATS10097	Stir bar 15X10 Elip, rare earth
ATS10077	Dean & Stark 24x150 22 thread (10x)	ATS10186	Stir bars 25X14 ELIP RE (6x)
ATS10079	Phase separation head 22SVL (2x)	OSD656	Block cartridge 6 X 56, 230V
ATS10080	Mini condenser 22svl (2x)	ATS10095	Condenser Rotavis (1 off)
ATS10081	Filtration adaptor/tap 9.5dia (2x)	ATS10112	Cooling plug OM 6x56mm
ATS10082	Rotary Evap. Ad.Plain A24-22mm,(2x)	ATS10145	50ml Round Bottom flask,40OD,Baf,R45, (2x)
ATS10083	Rotary Evap. HiBoil A24-22mm (2x)	ATS10148	50ml Round Bottom flask,40OD,Crys,R45, (2x)
ATS10084	Rotary Evap. Plain B34-22,(2x)	ATS10146	100ml Round Bottom flask,56OD,Baf,R45, (2x)
ATS10085	Rotary Evap. Adaptor ,HiBoil B34-22 (2x)	ATS10149	100ml Round Bottom flask,56OD,Cry,R45, (2x)
ATS10086	Rotary Evap. Adaptor, Filtr B34-22 (2x)	ATS10147	250ml Round Bottom flask,56OD,Baf,R45, (2x)
ATS10087	Rotary Evap. Adaptor Plain B29-22 (2x)	ATS10150	250ml Round Bottom flask,56OD,Cry,R45, (2x)
ATS10088	Rotary Evap Adap HiBoil B29-22, (2x)	ATS10157	Rot Evap,Plain,A24 Rodav45, (2x)
ATS10089	Rotary Evap Adap Filtr B29-22, (2x)	ATS10158	Rot Evap,HiBoil,A24 Roda45, (2x)
ATS10090	Rotary Evap ad.Filt,A24-22mm, (2x)	ATS10159	Rot Evap,Filtrd,A24 Roda45, (2x)
ATS10118	Cap Pressure Reaction 24/25OD	ATS10160	Plain B34 to Rotavis 45 rotary evaporator (2x)
ATS10119	Pressurised Vessel 24mm (1x)	ATS10161	Plain B29 to Rotavis 45 rotary evaporator (2x)
ATS10134	RV small 24mm crystal (10x)	ATS10162	Rotary evap. B34 hiboil Rod45 (2x)
ATS10135	RV large 24mm crystal (10x)	ATS10163	Rotary evap. B29 HiBoil Rod45 (2x)
ATS10137	Stir-Bar,D-Cross,13x17D, RE, 20P	ATS10164	Rotary evap. Filtered Plain B34 to Rodaviss 45 (2x)
ATS10144	Inerting Caps 22SVL Twin septum (10x)	ATS10165	Rotary evap. Filtered Plain B29 to Rodiviss 45 (2x)
OSCA	Omni-Station Controller, 240V	ATS10169	Nitrogen bubbler (2x)
ATS10096	Reducing column R45 22SVL (6x)	ATS10170	Dropping funnel, cranked, 50ml

*Add X1 for 115V model

*Add X1 for 115V model

RS Reaction Stations - Accessories

Cat no	Description	Cat no	Description
AT60067	Stir bar PTFE coated 15mmx4mm	AZS4192	RS600 Motor
ATS10101	Adaptor sleeve 11mm -25mm (10x)	AZ4194	RS600 M2 PT100 PCB
ATS10210	Adaptor sleeve 12-25 (10x)	AZ4195	RS600 Transformer
ATS10211	Adaptor Sleeve 25-23mm (10x)	ATS10056	Adaptor sleeve 24mm to 16mm (10x)
ATS10212	Adaptor Sleeve 25-18/16mm (10x)	ATS10201	Adaptor sleeve H/Pres RS600 (6x)
PS80087	Temperature probe	ATS10240	Adaptor sleeve 56mm to 28mm (6x)
PS80155	Adaptor sleeve RS900 25 to 22mm (10x)	ATS10240	Adaptor sleeve 56mm to 28mm (6x)
AZ6745	Power cable without plug	ATS10242	Adaptor sleeve 44mm to 26mm dia. (1x)
AZ6746	110V Power cable with US plug	ATS10381	Adaptor sleeve 56mm to 24mm (6x)
AZ6747	230V Power cable with EU plug	PS80011	Adaptor sleeve 24mm to 20mm tubes (10x)
AZS4024	Fuse 8A SLO BLO	PS80011A	Adaptor sleeve 25mm to 20mm (10x)
AZS4010	Motor	PS80012	Adaptor sleeve 24mm to 16mm (10x)
AZS4100	PCB Display	PS80012A	Adaptor sleeve 25mm to 16mm tubes (10x)
AZS4101	PCB Microprocessor	PS80013	Adaptor sleeve 24mm to 20mm tubes (10x)
AZS4186	RS1000 front fascia label	PS80013A	Adaptor sleeve 25mm to 20mm tubes (25x)
AZS4189	RS1000 110V power PCB assembly	PS80014	Adaptor sleeve 24mm to 16mm tubes (25x)
AZS4310	Adaptor sleeve 25 to 24mm dia (25x)	PS80014A	Adaptor sleeve 25mm to 16mm (25x)
ATS10031	Stir bar retriever	PS80015A	Adaptor sleeves 25mm to 18mm (10x)
ATS10019	Inerting cap without valve (6x)	PS80016	Adaptor sleeve 24mm to 20mm tubes
ATS10020	Inerting cap assembly (6x)	PS80016A	Adaptor sleeve 25mm to 20mm tubes
ATS10025	Temp probe inerting caps (6x)	PS80017	Adaptor sleeve 24mm to 16mm tubes
ATS10026	Spare plug for ATS10025 (6x)	PS80017A	Adaptor sleeve 25mm to 16mm TU tubes BES
ATS10028	Large elliptical mag bar (20x)	PS80018	Adaptor sleeve VE Liquid reflux 24-25mm tubes
ATS10029	Large octagonal mag bar (20x)	PS80041	Adaptor sleeve 56mm to 47mm bottles (6x)
ATS10030	Cross shape mag bar medium (20x)	PS80081	Adaptor sleeve 25mm to 24mm tubes (10x)
ATS10033	Octagonal stir bar small (40x)	PS80156	Adaptor sleeve 25mm to 17mm (50x)
ATS10034	Cross stir bar – small (40x)	PS80126	Adaptor sleeves 25 to 20mm reflux unit (50x)
ATS10035	Elliptical stir bar – small (40x)	PS80131	Adaptor sleeve 57.5mm to 25mm (6x)
PS80088	Reaction pot	PS80133	Adaptor sleeve 57.5mm to 45mm (6x)
PS80013	PTFE caps sili septa to fit 80112 (10x)	PS80134	Adaptor sleeve. 57.5mm to 35mm (6x)
PS80134	Adaptor sleeve 57.5mm to 35mm (6x)	PS80142	Adaptor sleeves 57.5mm to 50.5mm (6x)
PS80142	Adaptor sleeve 57.5mm to 50.5mm (6x)		



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