Product Guide

Sustainable solutions for every laboratory

Asynt

By chemists, for chemists

About Asynt

Formed in 2003 with the aim to develop, supply and support new, sustainable and novel products central to the laboratory

Since inception, we have developed many laboratory tools to improve life in laboratories, making them safer, cleaner, and more sustainable. Many of our innovations were inspired by our DrySyn® heating blocks which provide an oil-free, energy-efficient alternative to hazardous oil baths.

Our product ranges have expanded to encompass a variety of growing chemistry branches. From photochemistry and flow chemistry to electrosynthesis, our solutions across the LightSyn, ƒReactor and ElectroReact product ranges are designed to minimise risk and ensure repeatable and reliable results.

Where off-the-shelf products may not meet your requirements, a novel solution may be the answer. With our expansive range of expertise and experience, we can offer advice on laboratory solutions encompassing numerous materials and technologies.

Contents

We also offer apparatus from complementary high-end manufacturers such as IKA, Julabo, Lauda and Vacuubrand amongst others to provide a huge range of laboratory equipment including:

- Consumables, including NMR tubes.
- Hotplates & stirrers.
- Balances & water baths.
- Temperature control units.
- Vacuum pumps & rotary evaporators.
- Freeze dryers, ovens & furnaces.
- Fridges & freezers.
- Gas generators.
- Centrifuges.
- Liquid handling systems.
- Sieves, mills & thermoshakers.
- Monitors & loggers.

IKA®

Julabo
THE TEMPERATURE CONTROL COMPANY

VACUUBRAND®

Photochemical Reactors

LightSyn Illumin8

Ideal for reaction screening, the LightSyn Illumin8 enables users to carry out eight simultaneous reactions under the same conditions. Each Illumin8 features an LED cartridge of eight x 10 W LEDS at the chosen wavelength (see below). These cartridges are interchangeable, allowing users to screen across a variety of wavelengths.

Featuring a modified DrySyn OCTO core, the LightSyn Illumin8 can run reactions under an inert atmosphere and allows sampling or addition via standard septum caps. A safety switch prevents accidental exposure by ensuring the DrySyn OCTO core is in place.

Key Features

- 8 x 6 mL working volumes.
- Stirring & heating via stirrer hotplate & stirrer bars.
- Maximum temperature 80 °C.
- Rear fan to cool electronics or prevent electronics from heating samples.
- Optional temperature control base for active temperature control from -30 °C to 80 °C.

Wavelength (nm)								
UV	UV-A	Violet	Royal Blue	Blue	Green	Yellow	Red	Deep Red
365	390 – 395	405	450	460 – 470	500 – 525	590 – 595	620 – 625	650 – 660

LightSyn Lighthouse

Designed to maximise photon flux throughout reaction mediums, the LightSyn Lighthouse uses novel technology to channel light directly into the sample. Light from a 10W LED of the chosen wavelength (see below) is directed into the sample via a quartz rod. This is ideal for running larger reactions.

The LightSyn Lighthouse features interchangeable LED modules, and can either be run individually, or via a three-position set-up. Each Lighthouse includes a hose barb for connecting to a gas supply, and two ports compatible with standard fittings for sampling / addition.

Key Features

- 18 mL working volume.
- Stirring & heating via stirrer hotplate and stirrer bar.
- Maximum temperature 80 °C.
- Optional temperature control base for active temperature control from -30 °C to 80 °C.
- Available as a single or 3-position system.
- Two types of quartz rod available, cone-ended or flat-ended.

Wavelength (nm)										
White	UV	UV-A	Violet	Blue	Green	Amber	Red	Far Red	Infrared	Infrared
-	365	390 – 395	410	460	523	590	623	740	850	940

Flow Chemistry Systems

ƒReactor Flow Chemistry Platform

Developed in conjunction with the University of Leeds, the ƒReactor Flow Chemistry Platform provides efficient mixing and heating across five CSTR modules. Ideal for multiphasic reactions, the ƒReactor works with standard hotplate stirrers and fluidic pumps (e.g. HPLC, syringe, peristaltic and gear) in a flexible arrangement.

Key Features

- Made from PEEK as standard or Hastelloy for increased chemical compatibility.
- Available in classic sizes of 5 x 1.8 mL modules, or MAXI sizes of 5 x 7.5 mL modules.
- Rated for operation up to 7 bar.
- Maximum working temperature 100 °C.
- Optional temperature control base for active temperature control from -30 °C to 100 °C.

The ƒReactor Flow Chemistry Platform features toughened glass windows on each module for reaction visibility, as well as optional thermocouples for temperature monitoring and control.

Utilising standard fittings, ƒReactor is simple to operate and widely compatible, with connectivity easily achieved via 1/8" PTFE tubing.

ƒReactor isn't just about the hardware. We also offer a dedicated website to help you get started with flow chemistry and setting up your ƒReactor system: **https://www.freactor.com/**

ƒReactor PhotoFLOW

Photochemistry and flow chemistry can be combined in our ƒReactor Flow Chemistry Platform with ƒReactor PhotoFLOW modules. These LED lamps contain a 10W LED of the chosen wavelength (see below) and fit directly on top of ƒReactor tanks via a safety pin to prevent accidental exposure.

Key Features

- Suitable for heating up to 55 °C.
- Up to 5 LEDs per ƒReactor.
- Use multiple with one powerpack via splitter cables.
- Safety switches to prevent accidental exposure.

Wavelength (nm)										
White	UV	UV-A	Violet	Blue	Green	Amber	Red	Far Red	Infrared	Infrared
-	365	390 – 395	410	460	523	590	623	740	850	940

Electrochemistry Platforms

ElectroReact

Designed in conjunction with the University of Leeds, the ElectroReact electrochemistry platform is a simple to use and accessible way to conduct electrosynthesis. Made with flexibility in mind, the ElectroReact is capable of expanding alongside user requirements, and offers chemists unparalleled control over their reactions.

The ElectroReact electrochemistry platform is designed to run up to six parallel reactions in bottle reactors. All kits come with an anodised aluminium base plate that ensures equivalent positioning of all bottle reactors regardless of the volume on standard hotplate stirrers, guaranteeing equal stirring and heating.

Key Features

- Working volumes of 5 or 20 mL.
- Constant electrode distances of 6 mm.
- Interchangeable electrodes as plates or foils.
- Standard fittings enable sampling & addition.
- Connects to Schlenk lines for inert atmospheres.

A simple electrode clamping mechanism in each bottle reactor enables full flexibility of electrode materials. As well as our selection of available electrodes, chemists can use their own materials as required across plates and foils.

Designed to work with any power supply, the ElectroReact uses standard electrical cabling and can be set up in series or in parallel. Additionally, the ElectroReact is compatible with any potentiostat, making it ideal for carrying out more advanced analytical techniques.

Accessory packs for the ElectroReact include standard fittings, Luer adapters and the tubing necessary to connect to a pump or syringe, as well as hose barbs for use with a Schlenk line.

Electrode	Type	Thickness (mm)
Copper	Plate	1.5
Stainless Steel	Plate	1.5
Nickel	Plate	1
Graphite	Plate	1
Glassy Carbon	Plate	1
Platinum	Foil	0.025

There is a dedicated info-site available at **https://electroreact.com/**. Here, you'll find a wealth of information including step-by-step guides, papers made using the ElectroReact, and much more.

Benchtop Oil-Free Heating Systems

DrySyn® Heating Blocks

DrySyn allows for the complete replacement of unsafe oil baths in the lab. Whether you use round bottom flasks, tubes, or vials, either one at a time or in parallel, there are DrySyn options available for all.

Made from anodised aluminium, DrySyn is both chemically resistant and recyclable. Heat resistant handles and a low well design improve user safety and prevent cracking or jamming of glassware.

DrySyn Prodigy

Key Features

- Removes risk of oil fires.
- No risks associated with oil spillages.
- No toxic fume emission.
- Reduction in electrical energy consumption.
- No costly maintenance or disposal of oil.

DrySyn MAXI

Iacopo Benesperi,
Monash University

"We invested in DrySyn because it is a cleaner, safer, and in the long run cheaper solution compared to oil baths. DrySyn lets you carry out synthesis with your regular hotplate equipment while at the same time providing uniform heat transfer to the flask, better temperature control compared to a heating mantle and eliminating the risk of oil spillage which is potentially harmful."

DrySyn Prodigy & Inserts

DrySyn Single Position Heating Blocks

25 mL to 5,000 mL

DrySyn single position heating blocks are a flexible option for heating a wide range of flask sizes on any hotplate. Available as a full system or just the base, DrySyn Single Position Heating Blocks each come with a range of inserts for reducing the base volume.

Each base includes two heat resistant handles and removeable feet to centralise the block on standard hotplate sizes providing maximal stirring and even heating. All bases include a space for temperature probes for precise temperature control.

Key Features

- Bases for 250 mL, 500 mL, 1000 mL, 2000 mL, 3000 mL, 5000 mL.
- Reduction inserts for each base, from volumes as low as 25 mL.

DrySyn Scholar

25 mL to 250 mL

DrySyn Prodigy

25 mL to 500 mL

DrySyn Classic

25 mL to 1000 mL

DrySyn MAXI

2000 mL to 3000 mL

DrySyn SuperMAXI

4000 mL to 5000 mL

DrySyn Scholar & Insert

Benchtop Oil-Free Heating Systems

DrySyn MULTI Position Heating Blocks

<1 mL to 500 mL

The DrySyn MULTI range enables parallel reactions with vials, tubes and flasks. Available in a range of kits, users can customise to their needs with interchangeable inserts to hold up to three round bottom flasks ranging from 5 mL to 500 mL, or up to 27 vials.

Each DrySyn MULTI base includes a heat resistant handle and removeable feet to centralise the system on standard hotplate sizes. DrySyn MULTI bases and inserts include a space for temperature probes, enabling precise temperature control.

DrySyn MULTI-S & 500 mL Inserts

MULTI-E
Up to 3 x 100 mL

MULTI-M
Up to 3 x 250 mL

MULTI-S
Up to 3 x 500 mL

DrySyn MULTI 3-position clamps

DrySyn MULTI 3-position clamps simplify clamping of three round bottom flasks for safer operation across the DrySyn MULTI range.

MULTI-E CLAMP

MULTI-M CLAMP

MULTI-S CLAMP

DrySyn Reaction Vial Inserts

Users can select from a range of vial inserts in packs of three for many popular vials. Available in a variety of kits, these inserts are ideal for producing small, focused libraries of compounds and accommodates a range of standard reaction tubes and vials of different diameters. All inserts are compatible with the full range of DrySyn MULTI bases.

DrySyn Vial Inserts

DrySyn NMR Tube Heating Block

DrySyn Parallel Synthesis Kit

Full Range of Sizes

Hole size (Ø mm)	Holes per insert	Suited for:
11.80	9	2 mL HPLC sample vials
15.00	5	1 dram vials
16.20	4	CEM microwave tubes
17.40	4	Biotage 2-5 mL microwave tubes and 2 dram vials
20.20	4	Robot tubes
24.40	4	24 mm boiling tubes
25.75	4	Wheaton 10 mL V-Vials
27.65	4	20 mL Scintillation vials
28.20	4	Biotage 10-20 mL microwave tubes
17.20	5	Biotage 0.5-2 mL microwave vials (holes are tapered)
5.5	10	NMR tubes
Custom	Custom	Customer's own vials
Custom	Custom	Schlenk tubes

Waterless Condensers

CondenSyn®

Designed to replace traditional laboratory water-based condensers, CondenSyn air-based condensers are manufactured from borosilicate glass, easy to clean, and have a non-roll feature to stop accidents when left on a bench. Sustainable and user-friendly, CondenSyn is simple to set up and provides outstanding performance, offering no compromise to converting from water condensers.

CondenSyn Waterless Condensers are available in a range of standard joint sizes from B14 to B45 as well as A14 to A45 and can be used for distillation with the CondenSyn Distillation Adapter

Joshua Moore,
University of Manchester

"Since I'm not having to disconnect and drain a condenser, I can get my reactions off or running in much less time, with much less wasted time connecting pipework. I don't have to worry about pressure changes in the building's water supply flooding my fume hood overnight either."

Recommended Sizes*

CondenSyn® length (mm)	Maximum Flask Volume (mL)
200	100
350	500
450	1000

* For flasks not more than half full

CondenSyn Distillation Adapter

CondenSyn MAXI

The CondenSyn MAXI condenser is the latest addition to the CondenSyn range, specifically designed for use with larger volumes of solvent over 1L. Available in reflux and distillation configurations, the CondenSyn MAXI replaces water-based condensers in larger scale reactions to remove the risk of flooding.

Key Features

- For condensing volumes 1 L & above.
- Reflux & distillation versions.
- B34 fittings as standard.
- Available in 350 mm & 450 mm sizes.
- Suitable for use under vacuum.
- Easy to clean & store.
- Safe & tidy setup, clear visibility of reflux.
- No water leakage or potential flooding.
- Reduced environmental impact & costs associated with water usage.

CondenSyn is protected under UK & European Registered Designs:

Registered in UK:
Registered Design Number: 90029643610001
Registered Design Number: 90029643610002

Registered in Europe:
Registered Design Number: 002964361-0001
Registered Design Number: 002964361-0002

Benchtop Evaporation & Synthesis Tools

DrySyn Vortex

The DrySyn Vortex offers our customers the ability to work with more viscous materials in parallel where magnetic stirring is not strong enough or where materials could be damaged by the grinding effect of a magnetic stirrer bar.

A mechanical gearbox converts the drive of one standard overhead stirrer motor into three shafts for powerful overhead stirring, with heating provided by any standard laboratory heating plate.

Key Features

- Perform multiple reactions with one overhead stirrer, whilst maintaining a compact footprint.
- Accommodates up to 3 x round bottom flasks, up to 500 mL each.
- Temperature range: up to 200 °C.
- Speed range: 50 – 500 rpm.
- Optional temperature control base for active temperature control from -30 °C to 150 °C.

DrySyn Vortex Blend

The DrySyn Vortex Blend overhead stirrer has been developed specifically to cater for the requirements of scientists who need to test new formulations and blends of ingredients in parallel in beakers.

Capable of holding up to three 600 mL beakers, the base features interchangeable flask spacers that allow the base to be adapted to suit 150 mL, 250 mL and 400 mL beakers, ensuring a secure fit.

250 mL Flask Spacer

Dr. Paul Findlay,
Chief Technology Officer, Polymer Mimetics

"As some of our polymerisation reactions involve viscous solutions, Asynt's DrySyn Vortex overhead stirrer platform enabled us to efficiently agitate and heat multiple viscous reactions in parallel, under inert atmospheres."

Benchtop Evaporation & Synthesis Tools

DrySyn OCTO Reaction Station

The DrySyn OCTO Reaction Station allows powerful magnetic stirring, heating, controlled atmosphere, and reflux, all with a tiny footprint. Capable of running eight simultaneous reactions, three DrySyn OCTOs can be combined on one hotplate to enable up to 24 reactions, each with working volumes from 2 to 10 mL.

DrySyn OCTO-PLUS Reaction Station

Key Features

- Gas tight seal for all reaction tubes.
- Individual addition & sampling whilst under an inert atmosphere.
- Suitable for gentle reflux with air condensing.
- Works with any hotplate stirrer for powerful magnetic stirring in each tube.
- Low running costs with universally available consumables.

Dr Sarah Cleary,
Chief Scientific Officer at HydRegen

"It has definitely helped expedite our results and we are confident in those results thanks to the ability to carry out processes in triplicate under identical conditions in the OCTO."

DrySyn OCTO Mini

The DrySyn OCTO Mini features shorter tubes to allow for easy sampling with disposable needles. Available separately, or via a conversion kit from the DrySyn OCTO.

DrySyn Spiral Evaporator

Achieve parallel evaporation of high boiling solvents in one compact unit.

The DrySyn Spiral Evaporator offers fast and effective parallel evaporation for up to four vials without solvent bumping. The system is used to rapidly concentrate high boiling solvents in vials and tubes without the need for high temperatures. This is all achieved through the unique "Spiral Plug" technology.

Key Features

- Up to 4 samples at a time without bumping.
- Glass enclosure allows nitrogen purging for air sensitive samples.
- Use with house vacuum or suitable vacuum pump.
- Spiral Evaporator plugs to suit tube neck diameters from 4 – 24 mm.

DrySyn Spiral Evaporator

Total Evaporation Times (Minutes)

Solvent (5 mL in 20 mL vial)	Flow Rate per Tube (m^3/h)	DrySyn Block Temperature		
		26 °C	40 °C	70 °C
Hexane	1	5	3	3
Acetone	1	7	4	3
Ethyl Acetate	1	9	6	5
Acetonitrile	1	18	9	8
Methanol	1	31	10	6
Ethanol	1	31	10	6
Deionized Water*	2	95	49	28
DMF*	2	68	43	24
DMSO*	2	241	195	69
NMP*	2	N/A	N/A	71

* Gas purge data

Sub-Ambient Temperature Control

DrySyn Snowstorm

DrySyn SnowStorm enables temperature control in both vials and flasks via a heater / chiller, allowing the user to perform both cooled and heated reactions in a compact, versatile system. Weights and seals prevent ice formation on round bottom flasks to reduce glassware breakages in the lab.

Key Features

- Precise temperature control between -30 °C to +150 °C.
- Allows extended, unattended operation at low temperatures.
- Mount on any magnetic stirring plate.
- Compatible with any refrigerated / heating circulator.

DrySyn SnowStorm ONE

The DrySyn SnowStorm ONE uses a range of inserts to enable temperature control of round bottom flasks ranging from 50 mL to 1000 mL. Optional insulation improves performance when maintaining sub-zero temperatures.

Prof. Jason E. Bara,
University of Alabama

"We use SnowStorm ONE with all sizes of flask from 100 – 1000 mL and it's been a huge benefit to know we are maintaining consistent heat removal and constant temperatures over the course of a reaction – no need to pour out water / add ice."

DrySyn SnowStorm MULTI

The DrySyn SnowStorm MULTI holds up to three round bottom flasks from 25 mL to 100 mL. Compatible with 8 mm ID tubing, the SnowStorm MULTI comes with 9.5 mm OD hose-barbs as standard. Optional M16 connectors are available.

DrySyn SnowStorm Reactor

The DrySyn SnowStorm Reactor is suitable for flasks and vials, holding up to three round bottom flasks from 25 mL to 100 mL or up to 27 vials using DrySyn Reaction Vial Inserts. A glass dome enables purging with nitrogen to prevent ice formation on glassware.

FroSyn

Designed in partnership with Julabo, the FroSyn is designed to achieve precise temperature control as low as -60 °C in conjunction with a custom Julabo FT900.

Suitable for flasks up to 500 mL and a range of vials, the FroSyn features a glass dome to protect glassware from ice formation via nitrogen purging.

Julabo
THE TEMPERATURE CONTROL COMPANY

Pressure Reactors

From single position to 10-position, Asynt pressure reactors are designed to enable your chemistry safely. All vessels come with a pressure gauge and pressure relief valve as standard, with options for additional safety features.

Asynt can also work with you to design large scale / fully bespoke laboratory pressure reactor systems to suit your chemistry.

Single Position Pressure Reactors

Single position reactors come with thermowells for solution-based temperature control via PT100 temperature probes and a centralising DrySyn Heating Block for uniform heating and stirring via standard laboratory hotplates.

Available across a range of volumes, our single position reactors come in standard configurations or can be customised to suit your reaction. Optional capabilities include sampling under pressure, overhead stirring and more.

Key Features

- Stainless steel or Hastelloy construction.
- Vessel capacities from 50 mL to 1,000 mL.
- Maximum working pressure of 50 or 180 bar for standard vessels.
- Maximum working temperature of 250 °C for standard vessels.

PressureSyn

PressureSyn

Designed in conjunction with the University of Nottingham, the PressureSyn maximises user safety with a unique safety key & locking clamp mechanism that prevents accidental opening of the vessel under residual pressure.

Key Features

- Stainless steel construction.
- 125 mL vessel capacity.
- Maximum working pressure 200 bar.
- Maximum working temperature 200 °C.
- Burst disk included as well as pressure relief valve.

Multi Position Pressure Reactors

Quadracell

Our four-position standard reactor, the Quadracell, is ideal for low volume screening in a compact footprint. Designed to be used with our DrySyn Reaction Vial Inserts, the Quadracell can be temperature controlled using standard hotplate stirrers.

Key Features

- Stainless steel or Hastelloy construction.
- Vessel capacity of 4 x 10 mL.
- Maximum working pressure of 50, 100, or 200 bar.
- Maximum working temperature of 250 °C.

Multicell

The Multicell parallel pressure reactor is a flexible system for up to 10 parallel reactions within the footprint of a standard hotplate stirrer.

Key Features

- Stainless steel or Hastelloy construction (other materials also available).
- Vessel capacities from 10 x 30 mL to 4 x 150 mL.
- Maximum working pressure of 50, 100, or 200 bar.
- Maximum working temperature of 200 or 350 °C.
- Optional upgrades include internal thermocouples and electrical controllers, liquid charging / sampling systems, electrical heating, motor driven stirring and more.

Multicell-PLUS

The Multicell-PLUS enables comprehensive customisability and provides greater access to features through an increased footprint and lifting system. Ideal for individual cell pressure and temperature control. Contact us to discuss your requirements.

Jacketed Laboratory Reactors

ReactoMate

Available as a range of preconfigured kits, ReactoMate Jacketed Reactor laboratory systems offer users a simple and flexible solution for their chemistry from 50 mL to 50,000 mL.

Featuring unhindered access to the vessel, ReactoMate provides a simple and easy user experience, with robust mechanisms for mounting and alignment.

Key Features

- Full compatibility with all leading brands of overhead stirrer & refrigerated / heating circulator.
- Bespoke vessels made to order with customisable side-arms, drain valves, & more.
- Integration with automation software.

Benchtop Scale

The ReactoMate DATUM supports single jacketed vessels up to 5,000 mL, and vacuum jacketed vessels up to 3,000 mL. Featuring a "clip-&-click" support system, vessel mounting is quick and secure, ideal for swapping vessels regularly.

Process Scale

The ReactoMate ATOM supports single jacketed vessels up to 50,000 mL and vacuum jacketed vessels up to 20,000 mL. Adjustable vessel height improves access to the vessel while robust alignment mechanisms make set-up simple and secure.

ReactoMate DATUM

ReactoMate ATOM

ReactoMate Accessories

We can tailor your ReactoMate system to suit your requirements.

Bespoke vessels

Choose the jacket configuration, geometry, flange side, side-arms, & more to make the vessel you need.

Vessel fittings

Fit your vessel with side arm adapters, outlet valves, & o-rings to suit your chemistry.

Lids

Choose from standard PTFE lids with interchangeable ports or glass lids made to your specification.

Overhead stirring

Select from a variety of PTFE stirrer shafts including anchor, screw propeller, & retreat curve rotors.

Baffles

Add as permanent vessel baffles or as removable PTFE accessories.

Temperature control

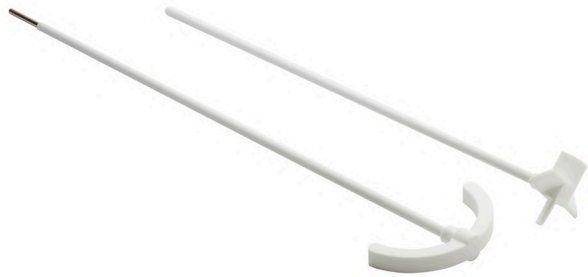
Meet your requirements with a circulator from your preferred manufacturer.

Automation

Program your reactions to save time in the lab.

Asynt Jacketed Reactors

PTFE & Glass Reactor Lids



Anchor & Screw Propeller Stirrer Shafts

PTFE Coated PT100 Temperature Probe

Global Network

To find your local Asynt distribution partner:

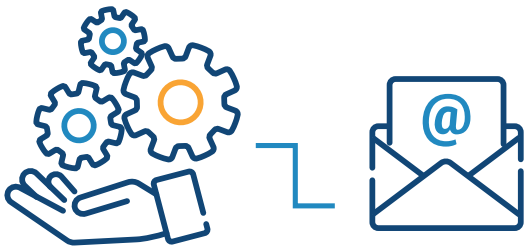
At Asynt, we are committed to delivering new technologies that respond to the real demands of industry and academia. Through our distributors, we offer a wealth of local knowledge and product expertise to chemists across the globe. Asynt distributors are supported by our technical team to provide off-the-shelf or bespoke solutions.

Visit **www.asynt.com/distributors/**

Contact Us

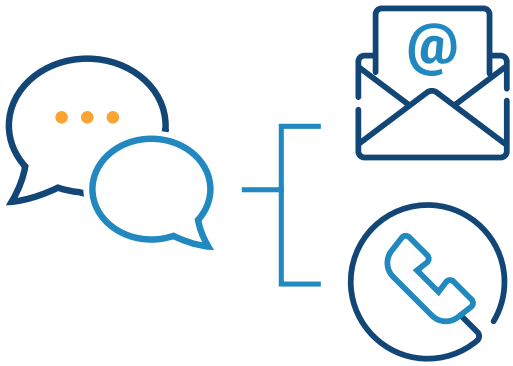
If you'd like to find out more about any of the products detailed then please get in touch using the information below:

For technical support or for pricing:



Please email **enquiries@asynt.com**

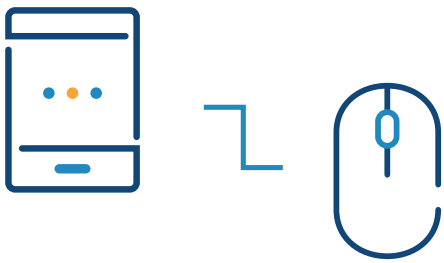
For general enquiries:



Please email **enquiries@asynt.com**
USA customers email **info@asynt.com**

Telephone us on **+44 (0)1638 781 709**
USA customers phone **502-593-0726**

Subscribe to our monthly newsletter:



Packed full of useful information & offers not available elsewhere:

Visit **www.asynt.com/newsletter**

Asynt Ltd
Hall Barn Road Industrial Estate
Isleham, Cambridgeshire
CB7 5RJ
United Kingdom
www.asynt.com
enquiries@asynt.com
+44 (0)1638 781 709

Asynt Inc
211 Hudson Bay,
Alameda, CA 94502
USA
www.asynt.com
info@asynt.com
502-593-0726

MADE IN BRITAIN

2.0 04-2024