

Wireless Sensors

We have a range of wireless sensors that can be used with the Synapse wireless data system

Temperature and Humidity (Internal) - Part number SYNSENI0

A high precision sensor is located internal to the wireless device in a high air flow port to provide good reading response while maintaining internal sealing integrity. The sensor is of monolithic design to provide the ultimate in accuracy for both temperature and humidity measurements.



Temperature	
Type	Digital
Range	0 – +40C
Resolution	Measured 0.04C Indicated 0.1C
Repeatability	+/- 0.1C
Accuracy	+/- 0.5C @ 25.0C
Response time 1/e(63%)	5 minutes
Humidity	
Type	Digital
Range	0 – 100%
Resolution	measured 0.03% Indicated 0.1%
Repeatability	+/- 0.1%
Accuracy	+/- 2%
Accuracy Uncertainty	< 10% > 90% = +/- 4% max
Linearity	< 1%
Response time 1/e(63%)	4 seconds (slowly moving air)
Hysteresis	+/- 1%
Long term stability	< 1%/yr

Temperature and Humidity - Part number SYNSENE0

The probe sensor element is fitted in a metal housing on a 2 meter lead which allows the sensor element to be located either directly in the area to be monitored or passed through a seal to monitor through a cabinet wall while allowing the wireless unit to be located outside the cabinet.



Temperature	
Type	Digital
Range	-40 – +123C
Resolution	Measured 0.04C Indicated 0.1C
Repeatability	+/- 0.1C
Accuracy	+/- 0.5C @ 25.0C
Response time 1/e(63%)	5 minutes
Humidity	
Type	Digital
Range	0 – 100%
Resolution	measured 0.03% Indicated 0.1%
Repeatability	+/- 0.1%
Accuracy	+/- 2%
Accuracy Uncertainty	< 10% > 90% = +/- 4% max
Linearity	< 1%
Response time 1/e(63%)	4 seconds (slowly moving air)
Hysteresis	+/- 1%
Long term stability	< 1%/yr

Temperature Sensor - Extended Range - Part number SYNSENE1

A high precision PT100 probe with a stainless steel housing can be used in ultra low temperature applications such as Liquid Nitrogen storage dewars and low temperature -80 freezers. We can also use PT100 probe types of your own preference such as specially housed units for particular applications



Type	PT100
Range	-200 – +200C
Resolution	Measured 0.05C Indicated 0.1C
Repeatability	+/- 0.1C
Accuracy	+/- 0.5C @ 25.0C
Response time 1/e(63%)	20 seconds (depending on structure)

Ethylene - Part number SYNSENE3

Used primarily in food applications



Type	Proprietary
Range	0 – 25ppm
Resolution	0.1ppm
Repeatability	0.1ppm
Accuracy	+/- 0.2ppm
Response time 1/e(63%)	3 minutes

Differential Pressure - Pascals - Part number SYNSENE4

A high accuracy differential pressure sensor primarily intended for use in 'clean air' applications to monitor clean room air pressures

Image not yet available

Type	Proprietary
Range	-250 – +250 Pascals
Resolution	0.1Pa
Repeatability	0.1Pa
Accuracy	+/- 0.5Pa
Response time 1/e(63%)	0.1 Second
Non Linearity	+/- 0.25% FSS

Carbon Dioxide (CO2) - Part number SYNSENE5

This is a high quality probe which can be used for any number of applications. The probe sensor can be replaced separately to minimise maintenance costs



Type	Proprietary
Range	0 – 20%
Resolution	0.1%
Repeatability	0.01%
Accuracy	< +/-0.02% + 2%
	Displayed value (@ normal atmosphere)
Response time 1/e(63%)	30 seconds
Power	Mains power pack (included)

Light Level - Part number SYNSENE7

The sensor is located internal to the wireless device with a forward facing window



Type	Proprietary
Range	0 – 1000 lux
Resolution	1 lux
Repeatability	2 lux
Accuracy	+/- 1%
Response time 1/e(63%)	0.5 Second

Differential Pressure - millibars - Part number SYNSENE8

A high accuracy differential pressure sensor primarily intended for use in 'clean air' applications to monitor clean room air pressures

Image not yet available

Type	Proprietary
Range	-12.5 - + 12.5mb
Resolution	0.1mb
Repeatability	0.1mb
Accuracy	+/- 0.3mb
Response time 1/e(63%)	0.1 Second
Non Linearity	+/- 0.25% FSS

Temperature (External) - Part number SYNSENE9

Temperature only sensor fitted with a 2 meter lead. This sensor is intended for general applications such as fridge and incubator monitoring. The small size of the probe body make it easy to fit into tight spaces.

We can supply sensors with longer leads if required for applications such as cold room monitoring.



Type	Digital
Range	-40 – +80C
Resolution	Measured 0.1C Indicated 0.1C
Repeatability	+/- 0.2C
Accuracy	+/- 0.5C @ 25.0C
Response time 1/e(63%)	20 seconds

Temperature - Dual Probe - Part number SYNSENE10

A dual temperature probe intended for applications where multiple measurements are required in a single cabinet such as blood banks.

Each probe provides independent temperature measurement data while using a single wireless unit to minimise installation cost.

This probe also allows for the attachment of one or more door sensors to provide door open alarms.

Generally intended for use in blood banks one or both probes can be fitted with one of our thermal loads to allow simultaneous indications of both cabinet air temperature and stored product temperature.

Probe 1 - Air	
Type	Digital
Range	-40 – +80C
Resolution	Measured 0.1C Indicated 0.1C
Repeatability	+/- 0.2C
Accuracy	+/- 0.5C @ 25.0C
Response time 1/e(63%)	20 seconds
Probe 2 - Load	
Type	Digital
Range	-40 – +80C
Resolution	Measured 0.1C Indicated 0.1C
Repeatability	+/- 0.2C
Accuracy	+/- 0.5C @ 25.0C
Response time 1/e(63%)	20 seconds
Door Switch	
Type	Magnetic Proximity



Contacts Normally Closed

Note: Data is not logged for the door switch

Thermal Loads



Atlas Technology can supply any sized thermal load for all external temperature only probes

When installing temperature probes into storage cabinets such as fridges, freezers and blood banks it may be more useful to monitor actual product temperature instead of cabinet internal air temperature.

Fitting a suitable thermal load to the measuring probe can provide data values that are more indicative of the stored product temperature instead of the cabinet temperature.

Our thermal loads are manufactured to suit your application to ensure good thermal matching between the measurement probe and the stored product.

Manufactured from high grade aluminium they are very robust and maintenance free unlike loads made from liquid filled containers. There is no need to top them up and there is no danger of them freezing and providing false results.

We can calculate the thermal mass of the load to suit any requirement.