2015

Sontay ... experts in field controls

Sontay®

... experts in field controls

2015
Product Catalogue

INNOVATION • QUALITY • COMMITMENT • SUPPORT

UK Tel. +44 (0) 1732 861200 · Int. Tel. +44 (0) 1732 861225 · UK Fax +44 (0) 1732 861201 · Int. Fax +44 (0) 1732 861226

Sontay®

HEAD OFFICE
Sontay Limited · Four Elms Road · Edenbridge · Kent · TN8 6AB · England

US TOLL FREE TELEPHONE
1-877-492-6398

UAE ORDER FAX
8000 440 666

BUSINESS HOURS
9:00am to 5:30pm GMT

UK TELEPHONE
+44 (0)1732 861200

UK FAX
+44 (0)1732 861201

EMAIL
sales@sontay.com

WEBSITE
www.sontay.com

Your Local Distributor:

Welcome to our 2015 Product Catalogue

... from your number one choice for all Building Measurement and Control Peripherals

Sontay's Mission

Sontay is renowned for providing the HVAC industry with high quality and reliable field peripheral devices for the sensing, measurement and control of intelligent buildings.

Our mission is to commit ourselves to continuous improvement in every aspect of our organisation. Customers come first and are the most important factor in our business. Competitive pricing, excellent customer service and technical support plus a 3 year product warranty all demonstrate our commitment to the customer experience.

Continuous innovation, investment in research and development, quality, our employees and customers together make us who we are.

Sandy Damm
Managing Director – Sontay

Dear Customer,
Thank you for choosing Sontay!

Thank you for choosing Sontay as your supplier for control peripheral products. We realise that Sontay is not the only option for supply of these products and appreciate the reasons that our customers are loyal to us. Innovative, reliable products at a competitive price as well as first class support make our service unrivalled in the industry.

The last year has seen some important milestones in the company's history. From the 40th anniversary celebrations to the launch of our new website and intuitive online customer portal, it has been a busy time! Along with our fresh new corporate design, branding of our products and the introduction of smart communication devices, you will see a lot of enhancements in the Sontay range.

I am also excited by the growth of our SonNet wireless family and its continued expansion into the retrofit and refurbishment market. You will see many references and case studies through the catalogue on where SonNet has really made a difference in applications where control would not have been possible without it.

I joined the business as Managing Director in May 2014 and have been impressed and proud of the company's achievements this year. The recognition of the brand throughout the industry is of great credit to the company and the staff who make it happen. It has also been impressive to see the company acknowledged at awards ceremonies for its incredible work in manufacturing, product development and international business. With such a strong grounding, we can only look forward to the excellent things to come in 2015.

KEiBA 2014
KENT EXCELLENCE IN BUSINESS AWARDS

Wishing you a successful 2015!

Sandy Damm · Managing Director
Tel: +44 (0)1732 861200 · Fax: +44 (0)1732 861211

New Products for 2015

Universal Sensors

Cost effective solutions for measuring individual variables

The universal sensor operates with a single output which automatically determines whether to run in current or voltage mode by detecting the controller input configuration. A wide selection of sensing variants are available including temperature, RH, IAQ and CO_2.

Smart Sensing

Intelligent sensing combining smart connectivity with measurement of multi-variables in one sensor.

BACnet

Modbus

Complete environmental sensing can be achieved with just one sensor monitoring a multitude of variables. Information can then be communicated through BACnet MS/TP ModBus RTU. Go to page 55 for more details.

SonNet Powered By SIP

Intelligent sensing combining smart connectivity with measurement of multi-variables in one sensor.

The SonNet wireless range has continued to evolve with the addition of SIP integration. The SIP interface offers simple integration between SonNet with Trend and BACnet systems. See page 55 for more information.

SonNet

Look out for the Sontay logo

From January 2015, all of our sensing products will show our Sontay logo. This stands as a mark of quality to differentiate our trusted, reliable and accurate products in the field. You can be sure of quality when you see the Sontay logo.

If for any reason you would prefer to receive your product without a logo, please add the code NOBRAND to your order.
If you have any questions on the branding of our sensor products, please contact Sales Support who will be happy to help.

Sontay® Academy

Throughout our 40 years in the industry we have gained great knowledge in products and applications. We feel it is a fantastic opportunity to pass this information on to the industry through training. Through this the Sontay Academy was born!

Our purpose built facility in Edenbridge is the perfect place to attend our CPD accredited training courses.

We offer training on all aspects of HVAC and Climate Control including:

- Wireless Sensing Systems
- Metering
- Energy Saving Through Control
- An introduction to field controls
- Power Monitoring
- Temperature & RH Sensing
- Input/Output Modules
- Pressure
- Air Quality & Gas Detection

Case Studies

Our clients talk about their experiences with Sontay

TOLCROSS SWIMMING POOL

HOME OF THE 2014 COMMONWEALTH GAMES

The recently refurbished Tollcross International Swimming Centre in Glasgow features a sophisticated building control system, which incorporates Sontay's highly successful SonNet wireless sensing technology.

GUILDHALL

SonNet SHOWCASED AT THE GUILDHALL ART GALLERY

The Guildhall Art Gallery in London is benefiting from state-of-the-art temperature and humidity monitoring thanks to Sontay's innovative SonNet wireless system.

NO. 1 KINGSWAY

SonNet LEADING AT No1 KINGSWAY

Sontay's class-leading SonNet wireless sensor system is regulating temperature and improving comfort levels for occupants at the renovated No. 1 Kingsway, Aldwych London.

UNIVERSITY HOSPITAL ST JOAN DE REUS

SPANISH HOSPITAL MEETS ENERGY EFFICIENCIES WITH SONTAY PRODUCTS

The University Hospital Sant Joan de Reus building in Reus, Spain is one of the greenest hospitals in the country and incorporates a sophisticated Building Management System (BMS) to aid energy efficiency. The new hospital building features an extensive range of building control peripherals and field device products from the market leader, Sontay.

The Sontay Difference

6 reasons why Sontay is your reliable partner for all Building Measurement and Control Peripherals

Flexibility

With our manufacturing facility in Kent, we keep close control of the quality of our product range. This also gives us flexibility to make different variations of our products as well as bespoke solutions.

Focus

Our focus on innovation, research and development ensures that our products contain the latest and most reliable technologies.

Benefit

Sontay products are designed to be robust and reliable, whilst offering extremely competitive pricing. They also benefit from many features to aid installation and save time and money on commissioning.

Support

Sales and Technical Support are renowned for giving invaluable advice and service to customers.

Worldwide

An ever growing worldwide presence with regional sales and distribution partners makes Sontay a popular choice outside of the UK. Look out for our new offices in France & Germany opening in 2015.

Manufactured in the UK

Sontay are proud to manufacture a wide range of products in the UK. Our factory facility is fully equipped with the latest technology and can offer a fast and flexible service.

SONTAY'S Sales Management Team

Our team will be pleased to hear from you whenever you require any information on our range of products and services.

Sales Support Team
+44 (0)1732 861200

UK fax +44 (0)1732 861201
International telephone +44 (0)1732 861225
Email sales@sontay.com
Website www.sontay.com

Alan Braybrook
Sales & Marketing Director

Telephone: +44 (0)1274 412455
Email: alan.braybrook@sontay.com

Stacey Lucas
Commercial Director

Telephone: +44 (0)1732 861216
Email: stacey.lucas@sontay.com

Kerima Cassim
International Sales Manager

Telephone: +44 (0)1732 861214
Email: kerima.cassim@sontay.com

John Cameron
Middle East Sales Manager

Middle East Technical Sales Office
PO Box 121760, Dubai, UAE

Telephone: +971 4 359 8106
Fax: +971 4 359 8107
Email: john.cameron@sontay.me
Web: www.sontay.me

Katie Card
Sales Support Manager

Telephone: +44 (0) 1732 861208
Email: katie.card@sontay.com

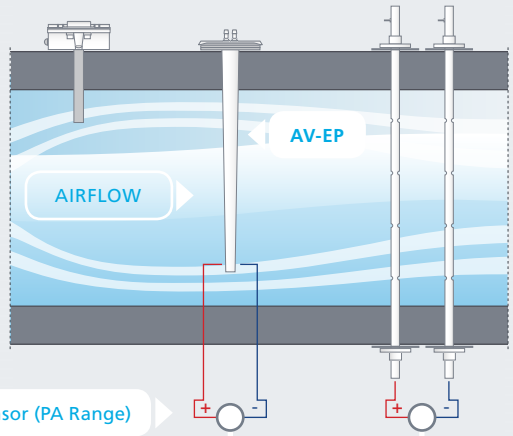
Content

Air Velocity Probes & Sensors

Accurate measurement of air flow and velocity is essential for the efficient delivery of conditioned air in a controlled environment, while monitoring air and liquid flow in heating and cooling systems is vital to the safe operation of those systems.

AV-622

Air velocity can be measured simply with a single point sensor



AV-MPS

By using multi-point air velocity probes such as the AV-EP and AV-MPS ranges when utilized with differential pressure sensors (PA Range).

Air Differential Pressure Sensor (PA Range)


PA-600


PA-650


PA-267-AH


PA-699

Air And Liquid Flow Switches

Fan Systems | Pump Systems

Air and liquid flow switches, such as the **FS and LS ranges**, provide a simple and cost-effective method of proving media flow for fan and pump systems, allowing safe interlocking of other equipment, such a heater batteries.

Liquid Level Switches And Sensors

Low Level Alarm | High Level Alarrm

Liquid level switches and sensors provide auto-filling functions and low or high level alarming for storage tanks, whether mechanical, hydrostatic, capacitive or ultrasonic.


hydrostatic
LS-712


capacitive
LS-CAP


ultrasonic
LS-MC

AV-622 Single-point Air Velocity Sensor

The AV-622 is a single-point, multi-range Air Velocity Transmitter with user selectable 0-10Vdc or 4-20mA outputs and four user selectable measurement ranges. The unit has a built-in self-test feature and the user can manually override the output to 0%, 50% or 100% of output range to aid commissioning.

FEATURES

- User selectable 0-10Vdc or 4-20mA outputs
- Built-in self-test feature
- Built-in manual override facility for 0%, 50% or 100% of output range
- Durability and resistance to chemical reagent

Part code	*Description*
AV-622	Air Velocity Sensor
	Accessory
DPA	Duct probe adjustment flange

Data sheet: AV-622.pdf

SPECIFICATION

Selectable ranges:	0 to 4 m/s, 0 to 8 m/s, 0 to 16 m/s, 0 to 32 m/s,	
	0 to 787 ft/min, 0 to 1575 ft/min, 0 to 3150 ft/min,	
Accuracy:	0 to 6299 ft/min ± 5% of ranges	
	±3% of ranges	
Output:	4-20mA into 100Ω min.	
	0-10Vdc into 4.7kΩ min.	
Supply (current output):	20 to 35Vdc for 500Ω loop resistance	
	12 to 30Vdc for 100Ω loop resistance	
Supply (voltage output):	17 to 34Vdc	
	14 to 26Vac supply into 4.7kΩ min.	
Max. current:	50mA	
Ambient temp. range:	–10 to +50°C (14 to 122°F)	
Housing:	Material	Flame retardant ABS
	Dimensions	116 x 106 x 52mm (4.57 x 4.17 x 2.05")
Probe:	Material	Delrin
	Dimensions	215 x 19mm dia. (8.46 x 0.75"dia.)
Protection:	IP65	
Weight:	280g (0.62 lb)	

Want to make this sensor wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52

AV-W Wind Speed and Direction Sensors

The AV-WS measures wind speed providing a pulsed output and is intended for applications where external weather conditions influence the building control strategy, such as for the automatic closing of windows. A mounting arm and 'U' bolts for pole mounting are included.

SPECIFICATION – AV-WS

Output:	1 contact closure per 1.493 metre (4.90 ft) (zero bounce)	
Min. start speed:	0.5 m/s (98 ft/min)	
Accuracy:	±2%	
Contact rating:	Power	50W max. (DC resistive)
	Voltage	100Vdc max.
	Current	1A max.
Weight:	1.46kg (3.22 lb)	

COMMON SPECIFICATION

Electrical conns:	Flying lead (3m long) (9.48 ft)
Ambient range:	–20 to +70°C (–4 to +158°F)
Dimensions:	Height 280mm (11.02") (max. arc 120mm) (4.72")
Protection:	IP65

SPECIFICATION – AV-WAD

Mechanical travel:	360° endless travel
Electrical travel:	357° (±2°)
Output:	0 to 1kΩ for 0 to 357° @ 80Vdc max.
Weight:	1.56kg (3.44 lb)

Part code	*Description*
AV-WS	Wind Speed Sensor
AV-WAD	Wind Speed and Direction Sensor

Data sheet: AV-W.pdf

AV-x Multi-point Air Velocity Probes

The AV-EP series of air velocity probes are available in lengths from 100 to 600mm (3.94 to 23.62") and the AV-MPS series in lengths of 700 to 2000mm (27.56 to 78.74"). They are used to ensure that recommended flow rates for public buildings and industrial plant are achieved.

Using a PA-600, PA-650, PA-267-AH or PA-699 Air Differential Pressure Sensor of an appropriate range (please refer to data sheet on Sontay's website for further information), the output of the sensor represents the velocity pressure and is defined by the following equation:

$$\text{Velocity} = \sqrt{(2 \times \text{Velocity Pressure}) / 1.2}$$

Part code	*Description*
AV-EP-100	100mm (3.94") Multi-point Probe (ABS)
AV-EP-200	200mm (7.87") Multi-point Probe (ABS)
AV-EP-300	300mm (11.81") Multi-point Probe (ABS)
AV-EP-400	400mm (15.71") Multi-point Probe (ABS)
AV-EP-500	500mm (19.69") Multi-point Probe (ABS)
AV-EP-600	600mm (23.62") Multi-point Probe (ABS)

FEATURES

- Mounting plates included
- Double gasket seals the probe to the duct
- Push on connectors to suit PA-TUBE-8MM

SPECIFICATION

Probe Material:	AV-EP	PVC Flame retardant (VO)
	AV-MPS	316 Stainless steel
Connectors:	Nickel plated brass to suit 6mm ID PVC tubing	

Part code	*Description*
AV-MPS-700	To suit duct size of 600-700mm (23.62-27.56")
AV-MPS-800	To suit duct size of 700-800mm (27.56-31.50")
AV-MPS-1000	To suit duct size of 750-1000mm (31.50-39.37")
AV-MPS-1250	To suit duct size of 1000-1250mm (39.37-49.21")
AV-MPS-1500	To suit duct size of 1250-1500mm (49.21-59.06")
AV-MPS-1750	To suit duct size of 1500-1750mm (59.06-68.90")
AV-MPS-2000	To suit duct size of 1750-2000mm (68.90-78.74")
	Accessory
PA-TUBE-8MM	PVC tube 8mm (0.31") o/d x 1.5mm (0.06") wall, 30m (98.5 ft)

Data sheets: AV-EP.pdf · AV-MPS.pdf

FS-521 Air Flow Switch

The FS-521 paddle switch is intended to monitor air flow within a duct and provides a switched output on detection of either a specific air velocity or flow failure.

FEATURES

- Adjustable switching point
- Lid-mounting screws provide tamper proofing

Part code	Description	Volume Price Breaks
FS-521	80 x 175mm (3.15 x 6.89") Paddle Switch	*Unit Prices (5+)*

Data sheet: FS-521.pdf

SPECIFICATION

Operating temp:	Ambient	–20 to +70°C (–4 to +158°F) max.
	Media	–20 to +120°C (–4 to +248°F) max.
Materials:	Paddle	Stainless steel
	Rod	Brass
	Enclosure	ABS flame retardant (type VO)
Switch rating:	15(8)A SPDT @ 230Vac	
Protection:	IP65	
Dimensions:	Paddle	80 x 175mm, (3.15 x 6.89")
	Housing	113.5 x 65 x 62mm (4.47 x 2.56 x 2.44")
Weight:	300g (0.66 lb)	

Want to make this sensor wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52

FS-541 Liquid Flow Switches

The FS-541 of paddle switch is intended to monitor liquid flow within pipes and provides a VFC output on detection of either a specific flow rate or flow failure.

They screw directly into a 1" BSPT boss.

FEATURE

- Adjustable switching point

Part code	Description	Volume Price Breaks
FS-541	1" BSPT Flow Switch	*Unit Prices (5+)*

Data sheet: FS-541.pdf

SPECIFICATION

Operating temp:	–40 to +120°C (–40 to +248°F) (max.)	
Materials:	Paddle	Stainless steel
	Rod	Brass (S/S for FS-541S)
	Enclosure	ABS flame retardant
Switch rating:	15(8)A SPDT @ 24-250Vac, VFC	
Pipe suitability:	1" to 8"	
Protection:	IP65	
Dimensions:	Housing	113.5 x 65 x 62mm (4.47 x 2.56 x 2.44")
	Paddles	28.5, 54.5, 83.5 and 161.5mm (1.12, 2.15, 3.29 and 6.36")
Weight:	300g (0.66 lb)	

Want to make this sensor wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52

LS-541 Float Switch

The LS-541 is intended to monitor the liquid level in a tank or vessel and provides a switched output for local alarm, pump or valve control. The differential between switching is equivalent to approximately 15mm (0.59").

The unit mounts into 1" BSPT female boss. Access is not required to the inside of the tank.

Part code	Description	Volume Price Breaks
LS-541	1" BSPT Float Switch (horizontal mount)	*Unit Prices (5+)*

Data sheet: LS-541.pdf

SPECIFICATION

Mounting:	1" BSPT boss	
Media:	Non-aggressive fluids with specific gravity >0.75	
Operation:	For high or low level	
Operating temp:	Ambient –40 to +85°C (–40 to 185°F), media 85°C max. (185°F)	
Operating pressure:	5 bar max. (72.5 psi max.)	
Materials:	Float	Acrylic
	Rod	Brass
	Bellows	Phosphor bronze
	Enclosure	ABS flame retardant
Switch rating:	15(8)A SPDT @ 230Vac, VFC	
Protection:	IP65	
Dimensions:	Housing	113.5 x 65 x 62mm (4.47 x 2.56 x 2.44")
	Float & rod	200 x 26mm dia. max. (7.87 x 1.02" dia.)
Weight:	300g (0.66 lb)	

Want to make this sensor wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52

LS-712 Hydrostatic Level Transmitter

Sontay's LS-712 range of submersible water level transmitters provides continuous hydrostatic level measurement up to 10.2m (33.46ft) of water column. They are suitable for many applications such as water tanks, wells, sumps and ponds. Transmitters have a vented cable which provides an atmospheric reference for the sensor, which is necessary for ensuring repeatable, precision depth measurements under the most adverse conditions.

Part code	*Description*
LS-712-A	Hydrostatic level transmitter 0-300 mbar, 5 meter cable, 4-20mA output
LS-712-A-V	Hydrostatic level transmitter 0-300 mbar, 5 meter cable,0-10Vdc output
LS-712-B	Hydrostatic level transmitter 0-1000 mbar, 15 meter cable, 4-20mA output
LS-712-B-V	Hydrostatic level transmitter 0-1000 mbar, 15 meter cable, 0-10Vdc output

Data sheet: LS-712.pdf

FEATURES

- Compact design
- Simple installation
- Stainless steel construction

Want to make this sensor wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52

SPECIFICATION

Supply voltage:	4-20mA	10 to 30Vdc	
	0-10Vdc	12 to 30Vdc	
Measurement ranges:	LS-712-A	300mbar	3.06m (9.94ft)
	LS-712-B	1000mbar	10.2m (33.46ft)
Response time:	< 2ms		
Materials:	Case	Stainless steel	1.4404 / AISI 316L
	Cable		PE-HD
	Sealing material		EPDM
Temperature:	-40 to +80°C (-40 to +176°F)		
Protection:	IP68		
Dimensions:	Sensor	116 x 23.4mm (4.57 x 0.92")	
	Cable	5 or 15m (16.4 or 49.21ft)	
Weight:	640g (1.41 lb) max.		

Note: These are built to order and not available ex-stock.

LS-AFS Automatic Float Switch

The LS-AFS is designed for simple reliable water level control. The float switch can be used to control a pump for either tank filling or tank emptying (a high or low level cut-out). It is easily achieved by positioning the float stops on the cord. The electrical connections are easily made inside the housing, via the terminal strip. Two M20 cable glands are provided for use with suitable conduit.

FEATURES

- Reliable
- Easy to install
- Easy to adjust
- Simple wiring

Want to make this sensor wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52

SPECIFICATION

Max. switching voltage:	250Vac	
Current rating:	Resistive	20A
	Inductive	8A
Float operating range:	Maximum	700mm (27.56")
	Minimum	50mm (1.97")
Material:	Housing & float	Polypropylene
	Weights	Brass
	Cord	Nylon
Ambient temp. range:	0 to 50°C (32 to 122°F)	
Media temperature:	4 to 50°C (39 to 122°F)	
Protection:	IP22	
Weight:	560g (1.23 lb)	

Part code	*Description*
LS-AFS	Automatic Float switch

Data sheet: LS-AFS.pdf

LS-CAP Capacitance Level Sensors

These sensors are designed for level measurement in tanks or sumps providing a 4-20mA output relating to the level of fluid in the tank. The LS-CAP-1 is suitable for conducting liquids such as water whilst the LS-CAP-2 is designed for use with clean, low viscosity non-conducting liquids such as oil.

FEATURES

- Suitable for a wide range of media
- Easy in-situ range adjustment
- 4-20mA output
- No moving parts

SPECIFICATION

Output:	4-20mA
Supply:	20 to 38Vdc
Insertion length:	0.5 to 3m variants (1.64 to 9.84 ft)
Process connection:	1" BSP
Process temperature:	100°C max. (212°F)
Ambient temperature:	–20 to +60°C (–4 to +140°F)
Max. pressure:	20 bar @ 20°C (290 psi @ 68°F)
Electrode insulation:	Polypropylene
Termination housing:	ABS
Protection:	IP65
Weight:	8.24kg max. (18.17 lb max.)

Part code	*Description*
	Sensors for Conducting Liquids
LS-CAP-1-0.5	0.5m (1.64 ft), Probe, Sensor
LS-CAP-1-1.0	1m (3.28 ft), Probe, Sensor
LS-CAP-1-1.5	1.5m (4.92ft) Probe, Sensor
LS-CAP-1-2.0	2m (6.56 ft), Probe, Sensor
LS-CAP-1-2.5	2.5m (8.20 ft), Probe, Sensor
LS-CAP-1-3.0	3m (9.84 ft), Probe, Sensor

Part code	*Description*
	Sensors for Non-conducting Liquids
LS-CAP-2-0.5	0.5m (1.64 ft), Probe, Sensor
LS-CAP-2-1.0	1m (3.28 ft), Probe, Sensor
LS-CAP-2-1.5	1.5m (4.92ft) Probe, Sensor
LS-CAP-2-2.0	2m (6.56 ft), Probe, Sensor
LS-CAP-2-2.5	2.5m (8.20 ft), Probe, Sensor
LS-CAP-2-3.0	3m (9.84 ft), Probe, Sensor

Data sheet: LS-CAP.pdf

Want to make this sensor wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52

LS-FL Liquid Level Float Switches

The LS-FL series is a range of level switches suitable for single or multi-level applications where access is only available from the top surface or where multiple level sensing is desired from a single penetration. Units consist of a float, which is suspended from a weighted cable. As the liquid level changes, the float follows the surface level, at the same time tilting due to its weighted restraint. Inside the float are a number of micro switches which trigger as the float tips.

Want to make this sensor wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52

Part code	Description
LS-FL-1H	High Level, Alarm Switch
LS-FL-1L	Low Level, Alarm Switch
LS-FL-2H	Emptying Pump, Control Switch
LS-FL-2L	Filling Pump, Control Switch
LS-FL-2LH	High & Low Level Alarm Switch

SPECIFICATION

Switch rating:	6A @ 240Vac
Std. cable length:	5m (16.40 ft)
Min. switching level difference:	250mm (9.84”)
Max. std. switching level diff:	1200mm (47.24”)
Materials of construction:	Polypropylene & PVC
Min. fluid S.G.:	0.7
Ambient temperature:	0 to 55°C (32 to 131°F)
Max. ext. pressure:	200kPa
Protection:	IP68
Dimensions:	170 x 155mm (6.69 x 6.10”)
Weight:	1.5kg (3.31 lb)

Data sheet: LS-FL.pdf

LS-MC Ultrasonic Level Transmitter

The LS-MC is an ultrasonic level transmitter for measurement of liquids in tanks or sumps. The 4-20mA output represents the distance between the surface of the liquid being detected and the sensor. The LS-MC has an integral LCD display, three push buttons under the lid for security, and just eight parameters to set making it one of the simplest ultrasonic level transmitters to calibrate and use.

FEATURES

- IP67 housing
- Fast speed of response, as much as 10m (32.8 ft) per minute
- Locking nut supplied

Want to make this sensor wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52

SPECIFICATION

Measurement range:	0.3 to 8m (0.98 to 26.25 ft)
Output:	4-20mA
Supply:	12 to 30Vdc loop powered
Display:	Integral 4-digit LCD
Resolution:	Better than 1mm (0.04”)
Temperature range:	–20 to +70°C (–4 to +158°F)
Material:	Transducer: PVDF | Housing: Glass filled nylon
Dimensions:	205.5 x 141mm overall (8.09 x 5.55”)
Protection:	IP67
Weight:	1.25kg (2.76 lb)

Part code	Description
LS-MC	Ultrasonic Level Transmitter
	Accessories
LS-NUT	Additional fixing nut
LS-FK	Adaptor flange for LS-UL3 fixings

Data sheet: LS-MC.pdf

LS-S Compact Liquid Level Switch

A range of level switches designed for high and low liquid level detection in tanks and vessels. The LS-S types are for side mounting, type 1 switches fit from the inside of the tank and tighten on to a back nut whilst the type 2 switches mount from the outside into a tapered boss.

The LS-TM is an easy to install Top Mounting Level Switch, and has a reversible float so that it can be used for either high or low level alarms. The float is suspended from a 5 metre (16.4 ft) PVC cable with a polyethylene weight and is fully submersible and adjustable.

Part code	Description
	Polypropylene Float Switches
LS-SN-1	Internal fixing to M16 back nut
LS-SN-2	½” NPT external fixing
	Stainless Steel Float Switches
LS-SS-1	Internal fixing to M16 back nut
LS-SS-2	½” PF external fixing
	Top Mounting Reversible Float Switch
LS-TM	Top Mounting Level Switch

Data sheets: LS-S.pdf · LS-TM.pdf

FEATURES

- Low cost solution
- Easy to install
- Reliable switching

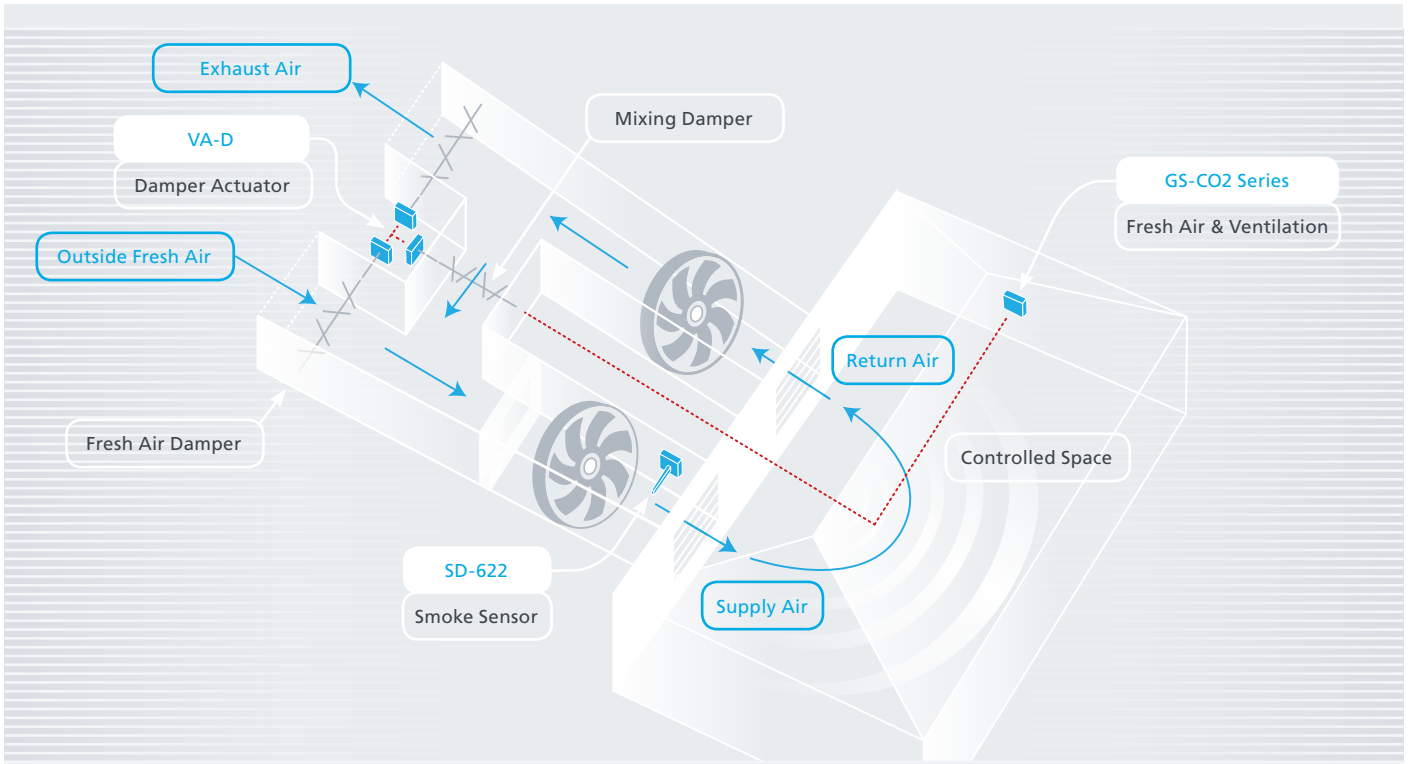
SPECIFICATION

Switch rating:	LS-SN	230Vac/200Vdc @ 0.5A max.
	LS-SS	300Vac/350Vdc @1A max.
	LS-TM	240Vac/200Vdc @ 0.5A max.
Contact (LS-TM):	N/O, reversible to N/C	
Material:	LS-SN	Polypropylene
	LS-SS	Stainless steel 316
	LS-TM	Cable PVC (5 metres / 16.4 ft)
		Float Nylon
		Weight Polypropylene
Tank fixing:	LS-SN-1 & SS-1	M16 back nut
	LS-SN-2	½” NPT
	LS-SS-2	½” PF
	LS-TM	1¼” BSP
Operating range:	LS-SN & LS-TM	–20 to +80°C (–4 to +176°F)
	LS-SS	–20 to +120°C (–4 to +248°F)
Dimensions:	115 x 65mm (4.53 x 2.56”)	
Weight:	280g max. (0.62 lb)	

Want to make this sensor wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52

Air Quality & Gas Sensing

Sontay offer a wide range of air sensing products



UK Tel. +44 (0) 1732 861200 · Int. Tel. +44 (0) 1732 861225 · UK Fax +44 (0) 1732 861201 · Int. Fax +44 (0) 1732 861226

GS-AQ Space & Duct Air Quality Sensors

The Sontay GS-AQ series of air quality transmitters are designed for use with the control of fresh air for ventilation purposes. They determine the air quality through measurement of Volatile Organic Compounds (VOC's) and other mixed gases, based on the tried and tested SnO_2 sensor technology. The sensor element responds to a broad range of contaminants, such as Ammonia (NH_3) and Hydrogen Sulphide (H_2S), generated from waste materials in office and home environments. It also has high sensitivity to low concentrations of VOCs such as toluene emitted from wood finishing and construction products. This signal can be used to control fresh air fans and dampers according to the ventilation load.

FEATURES

- Selectable 0-10Vdc, 0-5Vdc or 4-20mA output
- Fully configurable LCD display option

INTERFACE RESTRICTIONS (wall types only)

- SP only
- MS only
- SP-MS only
- SP-FS only

Want to make this sensor wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52

SPECIFICATION

Active Outputs:		Voltage	0-10Vdc or 0-5Vdc
		Current	4-20mA (3-wire)
Optional Passive Outputs:		Thermistor	Any Sontay thermistor type*
		Setpoint**	11-1kΩ/0-10kΩ, linear
		Override**	VFC
		Fan Speed**	Resistive
Power Supply:		0-10Vdc	12 - 26Vac or 16 - 26Vdc
		4-20mA	20 - 26Vdc only
Ambient (Temperature):		Wall Types	0°C to 50°C (32 to 122°F)
		Duct Types	-30°C to +70°C (-22 to 158°F)
		RH	0 to 95% RH, non-condensing
Housing	(Wall Types):		115 x 85 x 28mm (4.53 x 3.35 x 1.10")
	(Duct Types):		116 x 106 x 52mm (4.57 x 4.17 x 2.05")
Probe:			215 x 19mm dia. (8.46 x 0.75")
Material:			ABS (flame retardant)
Protection	(Wall Types):		IP30
	(Duct Types):		IP65
Weight	(Wall Types):		180g (0.40 lb)
	(Duct Types):		240g (0.53 lb)

Notes:

1. *-T version uses a thermistor element for direct measurement of temperature. Please specify thermistor type when ordering.
2. Please see page 90 for Thermistor Types and Compatibility Chart.

Part code	*Description*
	Wall Mounting Sensors
GS-AQ1000	Space Air Quality Transmitter
	Suffixes (add to part code) - Wall Mounting Sensors
-T	Direct resistive temperature output *
-SP	2-wire, 11-1kΩ/0-10kΩ setpoint
-MS	Momentary switch
-FS3	3-speed fan switch (1, 2, 3)
-FS4	4-speed fan switch (off,1, 2, 3,)
-FS5	5-speed fan switch (off,1, 2, 3, auto)
-LCD	Integral LCD display
-TR	Custom temperature output range
-ACT	Active Output-Temperature
	Accessories
DECOR	Decorators trim plate
GASKET	Insulating gasket (pack of 10)

Part code	*Description*
	Duct Mounting Sensors
GS-AQ622	Duct Air Quality Transmitter
	Suffixes (add to part code) - Duct Mounting Sensors
-ACT	Active temperature output
-TR	Custom temperature output range
-T	Direct resistive temperature output*
-LCD	Integral LCD display

Data sheets: GS-AQ1000.pdf · GS-AQ622.pdf

GS-AQxx-UN — Space & Duct Air Quality Transmitter, Single Analogue Universal Sensor

A totally new sensor to the Sontay range the GS-AQxx-UN has a single output which automatically determines whether to run in current or voltage output mode by detecting the controller input configuration. No more jumpers or switches to worry about.
All the normal passive options are available on space versions, such as fan speed switch, set point adjustment and override switch. A single 0-10Vdc input can be used to signal 'Override' on the optional LCD display.

FEATURES

- Self-detecting output
- Direct thermistor temperature options available
- Fully configurable LCD display option

Interface restrictions (wall types only)

- SP only
- MS only
- SP-MS only
- SP-FS only

Part code	*Description*
	Wall Mounting Sensors
GS-AQ1000-UN	Space Air Quality Transmitter Single Analogue Output
-T	Direct resistive temperature output*
-SP	Set point
-MS	Momentary switch
-FS3	3-speed fan switch (1, 2, 3)
-FS4	4-speed fan switch (off, 1, 2, 3)
-FS5	5-speed fan switch (off, 1, 2, 3, auto)
LCD	Integral LCD display
	Accessories
DECOR	Decorators trim plate
GASKET	Insulating gasket (pack of 10)

Part code	*Description*
	Duct Mounting Sensors
GS-AQ622-UN	Duct Air Quality Transmitter Single Analogue Output
-T	Direct resistive temperature output*
-LCD	Integral LCD display

Data sheets UN-1000.pdf - UN-600.pdf

SPECIFICATION

Outputs:	0-10Vdc or 4-20mA (not loop powered), self-detecting	
Power supply:	24Vac/dc	
Measurement range:	Simple 0 to 10 indices value	
Optional passive outputs (space types only):		
	Set point	1kΩ to 11kΩ linear
	Override	24Vac/dc @ 500mA max
	Fan speed;	
	Auto	Open circuit
	3	22.7KΩ
	2	26KΩ
	1	29.3KΩ
	Off	32.6KΩ
Other Options:		
	-T	Passive thermistor output
	-LCD	Customizable LCD display
Ambient:		
	Temperature	
	Wall types	0°C to 50°C (32 to 122°F)
	Duct types	-30°C to +70°C (-22 to 158°F)
	RH- 0 to 95% RH, non-condensing	
Housing:		
	Wall types	115 x 85 x 28mm (4353 x 3.35 x 1.1")
	Duct types	116 x 106 x 52mm (4257 x 4.17 x 2.05")
	Probe	215 x 19mm dia. (8.46 x 0.75")
Material:	ABS (flame retardant)	
Protection:		
	Wall types	IP30
	Duct types	IP65
Weight:		
	Wall types	180g (0.40 lb)
	Duct types	240g (0.53 lb)

* Notes:
1. -T version uses a thermistor element for direct measurement of temperature. Please specify thermistor type when ordering.
2. Please see page 90 for Thermistor Types and Compatibility Chart.
3. When using the -T option, they are not compensated for internal heating.

Want to make this sensor wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52.

GL-CO Gas Leak Alarm Systems

A range of stand-alone gas leak alarm Systems for use in commercial / industrial gas installations to provide safety alarm and shutdown facilities on detection of gas leakage.

FEATURES

- 1, 2 & 3 channel options
- Audio and visual alarms
- Adjustable alarm sensitivity
- Relay output for gas shut-off valves
- Relay output for remote alarms
- Auto or manual reset selectable
- Self-diagnosis fault system

SPECIFICATION

Power supply:	230Vac ±10% @ 50/60Hz or 12V ±10%	
Relay output(s):	GL-CO-RFG-361	SPDT, 250V @ 5(1)A
	GL-CO-RFG-65x	2 x SPDT, 250V @ 5(1)A
Materials:	Base	Nylon
	Cover	ABS
Ambient:	Storage temp.	–25 to +60°C (–13 to +140°F)
	Operating temp.	0 to 45°C (32 to 113°F)
	Relative humidity	Class F DIN 40040
Protection:	IP40	
Weight:	GL-CO-RFG-361	250g (0.55 lb)
	GL-CO-RFG-65x	600g (1.32 lb)

SENSOR TYPES

Natural Gas Sensor:	GL-CO-SRS-150
Propane Sensor:	GL-CO-SRS-250
Carbon Monoxide Sensor:	GL-CO-SRS-350

Part code	*Description*
	Controllers (DIN-rail mount)
GL-CO-RFG-361	1-channel, 1 x SPDT
GL-CO-RFG-651	1-channel, 2 x SPDT
GL-CO-RFG-652	2-channel, 2 x SPDT
GL-CO-RFG-653	3-channel, 2 x SPDT
	Options
GL-CO-RFG-FMK3	Panel door mounting kit for RFG361
GL-CO-RFG-FMK6	Panel door mounting kit for RFG65x
GL-CO-RFG-WMK6	Wall mounting kit for RFG65x
	Sensors
GL-CO-SRS-150	Combustibles Sensor (natural gas)
GL-CO-SRS-250	Propane/LPG Sensor
GL-CO-SRS-350	Carbon Monoxide Sensor

Data sheets: GL-CO-RFG361.pdf · GL-CO-RFG65x.pdf

GS-CO2 Carbon Dioxide Sensors

GS-CO2-D types

GS-CO2-W types

GS-CO2-W-LED types

This GS-CO_2 series uses a non-dispersive infrared sensor for measuring CO_2 concentrations, utilising microprocessor based electronics and a unique self-calibration algorithm to improve long-term stability and accuracy.

The sensor can be used to ensure adequate ventilation while maximising energy savings by ventilating at the optimum level, making these ideal for all types of ventilation in commercial buildings, industrial plants, laboratories and public spaces, such as schools.

FEATURES

- Real-time detecting CO_2 levels
- Self-calibration algorithm
- User selectable outputs with ModBus option
- 3-colour 'traffic light' LED sets for CO_2 levels

Output:	4-20mA, 0-10Vdc (jumper selectable) or ModBus		
ModBus RS485:	19200bps, 15kV antistatic protection		
Power supply:	4-20mA		24Vdc ±10%
	0-10Vdc		24Vac/dc ±10%
Max. current:	67mA		
Accuracy:	±40ppm +3% of reading @ 25°C (77°F)		
Stability:	<2% over sensor life		
Non-linearity:	<1% of FS		
Sensor life:	15 years, typical		
Duct air velocity:	0 to 450m/min (1476 ft/min) (-D types only)		
LED indication:	3-colour sets, indicating CO_2 levels		
	Green - optimal, Yellow - moderate, Red - poor		
Ambient range:	Temperature		0 to 50°C (32 to 122°F)
	RH		0 to 95% non-condensing
Housing material:	Flame retardant ABS		
Dimensions:	Duct types	Housing	100 x 80 x 50mm
			(3.94 x 3.15 x 1.97")
		Probe	125.5 x 40mm
			(4.94 x 1.57")
	Wall types	Housing	100 x 80 x 28mm
			(3.94 x 3.15 x 1.10")
Protection:	Duct types	IP54	
	Wall types	IP30	
Weight:	Duct types	360g (0.79 lb)	
	Wall types	140g (0.31 lb)	

Part code	*Description*
	Wall Mounting Sensors
GS-CO2-W	CO_2 Sensor
GS-CO2-W-M	CO_2 Sensor with ModBus Output
GS-CO2-W-LED	CO_2 Sensor with LED level indication
GS-CO2-W-LED-M	CO_2 Sensor with LED indication and ModBus Output
GS-CO2-W-LED-B	CO_2 Sensor with LED indication and override button

Part code	*Description*
	Duct Mounting Sensors
GS-CO2-D	CO_2 Sensor
GS-CO2-D-M	CO_2 Sensor with ModBus Output

Data sheets: GS-CO2-D.pdf · GS-CO2-W.pdf · GS-CO2-W-LED.pdf

Want to make this sensor wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52

GS-CO2-x — Space & Duct Mounted CO_2, Temperature & RH Sensors

Using a non-dispersive infrared sensor for measuring CO_2 concentrations and utilizing microprocessor based electronics, the unique self-calibration algorithm offers long-term stability and accuracy. They are also fitted with a temperature output or RH & temperature output. A directly connected passive resistive temperature output is also available, as an alternative to the standard active temperature output.

The sensor can be used to ensure adequate ventilation while maximizing energy savings by ventilating at the optimum level, making these ideal for all types of ventilation in commercial buildings, industrial plants, laboratories and public spaces, such as schools.

USE THE CODE NOBRAND ON YOUR ORDER IF THE SONTAY LOGO IS NOT REQUIRED

FEATURES

- CO_2 Self-calibration algorithm
- Selectable 0-10Vdc, 0-5Vdc or 4-20mA output
- Direct thermistor options available
- LCD display option
- "Traffic Light" LED CO_2 indication option

INTERFACE RESTRICTIONS (wall types only)

- SP only
- MS only
- SP-MS only
- SP-FS only

SPECIFICATION

Active outputs:	Voltage	0-10Vdc or 0-5Vdc
	Current	4-20mA
Optional		
Passive Outputs:	Thermistor	Any Sontay thermistor type*
	Setpoint**	11-1kΩ/0-10kΩ, linear
	Override**	VFC
	Fan Speed	Resistive
Power supply:	0-10Vdc, 0-5Vdc	12 - 26Vac or 16 - 26Vdc
	4-20mA	20 - 26Vdc only
Output ranges:	CO_2	0 to 2000ppm
	Temperature:	
	Wall Types	0 to 40°C (32 to 104°F)
	Duct types	-20 to +50°C (-22 to 158°F)
Optional:	-RHT	0 to 100%
	-HR	0 to 5000ppm
	-T	PTC/NTC Element Any Sontay resistive type
	-TR	Custom temperature output range
LED indication:	3-colours, indicating CO_2 levels	
	Green	optimal
	Yellow	moderate,
	Red	poor
Ambient (Temperature):	Wall Types	0 to 40°C (32 to 104°F)
	Duct types	-30°C to +70°C (-22 to 158°F)
	RH	0 to 95% RH, non-condensing
Housing		
(Wall Types):	115 x 85 x 28mm (4.53 x 3.35 x 1.10")	
(Duct types):	116 x 106 x 52mm (4.57 x 4.17 x 2.05")	
(Probe):	215 x 19mm dia. (8.46 x 0.75")	
Material:	ABS (flame retardant)	
Protection:	Wall Types	IP30
	Duct Types	IP65
Weights:	Wall Types	200g (0.44lb)
	Duct Types	250g (0.55lb)

Part code	*Description*
	Wall Mounting Sensors
GS-CO2-1001	Space CO_2 and Temperature transmitter 0-2000ppm
GS-CO2-RHT-1001	Space CO_2 and RH & Temperature transmitter 0-2000ppm
	Suffix (add to part code)
-T	Direct resistive temperature output
-SP	2-wire, 11-1kΩ/0-10kΩ setpoint
-MS	Momentary switch
-FS3	3-Speed fan switch (1, 2, 3)
-FS4	4-Speed fan switch (off, 1, 2, 3)
-FS5	5-Speed fan switch off, (1, 2, 3, auto)
-HR	0-5000ppm CO_2 range
-LCD	Integral LCD display
-LED	3-colour LED indication for CO_2
-TR	Custom temperature output range
	Accessories
DECOR	Decorators trim plate
GASKET	Insulating gasket (pack 10)

Part code	*Description*
	Duct Mounting Sensors
GS-CO2-622	Duct CO_2 and Temperature transmitter 0-2000ppm
GS-CO2-RHT-622	Duct CO_2 and RH & Temperature transmitter 0-2000ppm
	Suffix (add to part code)
-T	Direct resistive temperature output*
-HR	0-5000ppm CO_2 range
-LCD	Integral LCD display
-LED	3-colour LED indication for CO_2
-TR	Custom temperature output range

Data sheets: GS-CO2-1001.pdf · GS-CO2-622.pdf

Notes:

1. * -T version uses a thermistor element for direct measurement of temperature. Please specify thermistor type when ordering.

2. Please see page 76 for Thermistor Types and Compatibility Chart.

SonNet® WIRELESS TECHNOLOGY

Did you know we also sell wireless CO2 sensors in our SonNet range? Go to page 52 for more details.

GS-CO2xx-UN — Space & Duct CO_2 Transmitter, Single Analogue Universal Sensor

A totally new sensor to the Sontay range
The GS-CO2-xx-UN has a single output which automatically determines whether to run in current or voltage output mode by detecting the controller input configuration. No more jumpers or switches to worry about.
All the normal passive options are available on space versions, such as fan speed switch, set point adjustment and override switch. A single 0-10Vdc input can be used to signal 'Override' on the optional LCD display

FEATURES

- Self-detecting output
- CO_2 Self-calibration algorithm
- Direct thermistor temperature options available
- Fully configurable LCD display option

Interface restrictions (wall types only)

- SP only
- MS only
- SP-MS only
- SP-FS only

Part code	*Description*
	Wall Mounting Sensors
GS-CO2-1000-UN	Space CO_2 Transmitter Single Analogue Output
	Suffixes (add to part code)
-T	Direct resistive temperature output*
-SP	Set point
-MS	Momentary switch
-FS3	3-speed fan switch (1, 2, 3)
-FS4	4-speed fan switch (off, 1, 2, 3)
-FS5	5-speed fan switch (off, 1, 2, 3, auto)
-HR	0-5000ppm CO_2 range
-LCD	Integral LCD display
-LED	3-colour LED indication for CO_2
	Accessories
DECOR	Decorators trim plate
GASKET	Insulating gasket (pack of 10)

Part code	*Description*
	Duct Mounting Sensors
GS-CO2-622-UN	Duct CO_2 Transmitter Single Analogue Output
-T	Direct resistive temperature output*
-HR	0-5000ppm CO_2 range
-LCD	Integral LCD display
-LED	3-colour LED indication for CO_2

Data sheets: UN-1000.pdf UN-600.pdf

SPECIFICATION

Outputs:	0-10Vdc or 4-20mA (not loop powered), self-detecting	
Power supply:	24Vac/dc	
Measurement range:	0 to 2000ppm, or 0 to 5000ppm	
Measurement accuracy:	±70ppm, or as dictated by the selected CO_2 element	
Stability:	<2% of FS over sensor life	
Optional passive outputs (space types only):		
	Set point	1kΩ to 11k0Ω linear
	Override	24Vac/dc @ 500mA max
	Fan speed;	
	Auto	Open circuit
	3	22.7KΩ
	2	26KΩ
	1	29.3KΩ
	Off	32.6KΩ
Other Options:		
	-HR	0-5000ppm CO_2 range
	-T	Passive thermistor output
	-LCD	Customizable LCD display
	-LED	3-colour, indicating CO_2 levels
Ambient:		
	Temperature	
	Wall types	0°C to 50°C (32 to 122°F)
	Duct types	-30°C to +70°C (-22 to 158°F)
	RH	0 to 95% RH, non-condensing
Housing:		
	Wall types	115 x 85 x 28mm (4353 x 3.35 x 1.1")
	Duct types	116 x 106 x 52mm (4257 x 4.17 x 2.05")
	Probe	215 x 19mm dia. (8.46 x 0.75")
Material:	ABS (flame retardant)	
Protection:		
	Wall types	IP30
	Duct types	IP65
Weight:		
	Wall types	180g (0.40 lb)
	Duct types	240g (0.53 lb)

* Notes:
1. -T version uses a thermistor element for direct measurement of temperature. Please specify thermistor type when ordering.
2. Please see page 90 for Thermistor Types and Compatibility Chart.
3. When using the -T option, they are not compensated for internal heating.

Want to make this sensor wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52.

GS-CO2-RHT Carbon Dioxide, RH & T Sensors

GS-CO2-RHT-D types

GS-CO2-RHT-W-LCD types

Using a non-dispersive infrared sensor for measuring CO_2 concentrations and utilising microprocessor based electronics, the unique self-calibration algorithm offers long-term stability and accuracy. They are also fitted with a RH and temperature output, and have an LCD with 3-colour 'traffic light' status indication.

The sensor can be used to ensure adequate ventilation while maximising energy savings by ventilating at the optimum level, making these ideal for all types of ventilation in commercial buildings, industrial plants, laboratories and public spaces, such as schools.

FEATURES

- Real-time detecting CO_2 levels
- Self-calibration algorithm
- User selectable outputs with ModBus option
- 3-colour 'traffic light' LCD status for CO_2 levels

SPECIFICATION

Output:	4-20mA, 0-10Vdc (jumper selectable) or ModBus		
ModBus RS485:	19200bps, 15kV antistatic protection		
Power supply:	4-20mA	24Vdc ±10%	
	0-10Vdc	24Vac/dc ±10%	
Max. current:	146mA		
Sensor life:	15 years (-D types), 10 years (-W types), typical		
Duct air velocity:	0 to 450m/min (0 to 1476 ft/min) (-D types only)		
Accuracy:	CO_2	±40ppm +3% of reading @ 22°C (72°F)	
	RH	< ±3% @ 25°C (77°F)	
	Temperature	±0.4°C (-D types), ±0.5°C (-W types)	
Stability:	CO_2	±40ppm +3% of reading @ 22°C (72°F)	
	RH	< ±3% @ 25°C (77°F)	
	Temperature	±0.4°C (-D types), ±0.5°C (-W types)	
LCD indication:	3-colour, indicating CO_2, RH & Temp. levels		
	Green	optimal (<1000ppm)	
	Yellow	moderate (1001 to 1400ppm)	
	Red	poor (>1400ppm)	
Ambient range:	Temperature	0 to 50°C (32 to 122°F)	
	RH	0 to 95% non-condensing	
Housing material:	Flame retardant ABS		
Dimensions:	Duct types	Housing	100 x 80 x 50mm
			(3.94 x 3.15 x 1.97")
		Probe	125.5 x 40mm
			(4.94 x 1.57")
	Wall types	Housing	130 x 85 x 36.5mm
			5.12 x 3.35 x 1.44")
Protection:	Duct types	IP54	
	Wall types	IP30	
Weight:	Duct types	360g (0.79 lb)	
	Wall types	260g (0.57 lb)	

Want to make this sensor wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52.

Part code	Description
	Wall Mounting Sensors
GS-CO2-RHT-W-LCD	CO_2 / RH / T Sensor with LCD Display
GS-CO2-RHT-W-M-LCD	CO_2 / RH / T Sensor with ModBus Output and LCD Display

Data sheet: GS-CO2-RHT-W.pdf

Part code	Description
	Duct Mounting Sensors
GS-CO2-RHT-D-LCD	CO_2 / RH / T Sensor with LCD display
GS-CO2-RHT-D-M-LCD	CO_2 / RH / T Sensor with ModBus Output and LCD Display

Data sheet: GS-CO2-RHT-D.pdf

GS-S Gas Sensors

The GS-S range of 4-20mA loop powered gas sensors are fitted into a robust housing, to detect the following gases:

- Nitrogen dioxide (NO_2)
- Oxygen (O_2)
- Sulphur dioxide (SO_2)

FEATURES

- 4-20mA output
- Wide supply voltage range (7.5 to 35Vdc)
- Excellent long term stability
- Accuracy unaffected by position

SPECIFICATION

Temp. range:	–30 to +50°C (–22 to +122°F)
RH range:	15 to 90% non-condensing
Output:	4-20mA
Supply:	7.5 to 35Vdc
Output impedance:	825Ω
Housing material:	ABS (flame retardant)
Protection:	IP65 (housing only, suitable for internal mounting only)
Dimensions:	95 x 90mm dia. (3.74 x 3.54" dia.)
Weight:	160g (0.35 lb)

Want to make this sensor wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52.

Part code	Range	Resolution
	NO_2 – Nitrogen Dioxide Sensors	
GS-S-ND10	0 to 10ppm	0.1ppm
	O_2 – Oxygen Sensor	
GS-S-OX25	15 to 25%	0.1%

Data sheet: GS-S-x.pdf

Part code	Range	Resolution
	SO_2 – Sulphur Dioxide Sensor	
GS-S-SD20	0 to 20ppm	0.5ppm

Data sheet: GS-S-x.pdf

Note: These units are not intended for use in life safety applications.

GS-S-CO Carbon Monoxide Sensors

GS-S-CO-LED types

GS-S-CO-W types

GS-S-CO-M types

Sontay's range of CO sensors offers real time detection for Carbon Monoxide measurement.

The GS-S-CO-LED range has 6 LED indicator lights which change colour based upon concentration levels. This allows for easy visual awareness of the CO levels, with either a relay or RS485 interface output.

A user selectable 0-10Vdc, 4-20mA or optional ModBus output is available with the GS-S-CO-W range. Using a robust long life electrochemical Carbon Monoxide sensor, the GS-S-CO-W is ideal for many applications including underground parking, loading bays and warehouses.

The GS-S-CO-M sensor measures CO and temperature with a ModBus output.

FEATURES

- 5 Year sensor lifetime
- Accurate and reliable
- 3-Set LED indication (GS-S-CO-LED)
- User selectable outputs with ModBus option
- Robust housing for industrial applications (GS-S-CO-W)

SPECIFICATION

Outputs:	GS-S-CO-LED	Relay or RS485	
	GS-S-CO-W	4-20mA(3-wire)	
		0-10Vdc (jumper selectable)	
	GS-S-CO-M	ModBus	
Power supply:	GS-S-CO-LED	18 to 38Vac/dc	
	GS-S-CO-M	18 to 38Vac/dc	
	GS-S-CO-W	4-20mA	24Vdc ±10%
		0-10Vdc	24Vac/dc ±10%
Consumption:		2.8W max.	
Measurement range:	GS-S-CO-LED	0 to 500ppm	
	GS-S-CO-M	0 to 500ppm	
	GS-S-CO-W	0 to 100ppm/0 to 1000ppm	
		selectable	
Accuracy:	GS-S-CO-W	<1ppm, @ 20°C (68˚F) ±5°C (±9˚F),	
		15 to 85%RH	
Response time:	GS-S-CO-LED	<5 minutes for 90% step change	
	GS-S-CO-M	<5 minutes for 90% step change	
	GS-S-CO-W	<60 seconds	
ModBus RS485:	19200bps, 15kV antistatic protection		
Ambient range:	GS-S-CO-LED	Temperature	0 to 70°C (32 to 158˚F)
		RH	0 to 95%
			non-condensing
	GS-S-CO-W	Temperature	0 to 50°C (32 to 122˚F)
		RH	0 to 99% non-condensing
	GS-S-CO-M	Temperature	0 - 50°C (32fo22˚F)
		RH	5 to 95% non-condensing
Housing material:		Flame retardant ABS	
Dimensions:	GS-S-CO2-LED	100 x 80 x 28mm (3.94 x 3.15 x 1.10")	
	GS-S-CO-M	100 x 80 x 28mm (3.94 x 3.15 x 1.10")	
	GS-S-CO-W	100 x 80 x 50mm (3.94 x 3.15 x 1.97")	
	Probe	69 x 26mm dia. (2.72 x 1.02" dia.)	
Protection:	GS-S-CO-LED	IP30	
	GS-S-CO-M	IP30	
	GS-S-CO-W	IP30	
Weight:	GS-S-CO-LED	190g (0.42 lb)	
	GS-S-CO-M	190g (0.42 lb)	
	GS-S-CO-W	260g (0.57 lb)	

Want to make this sensor wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52.

Part code	*Description*
GS-S-CO-LED	CO Detector 0-500pmm with LED Indication and Relay Output
GS-S-CO-LED-M	CO Detector 0-500pmm with LED Indication and RS485 Output
GS-S-CO-M	CO & Temperature Sensor, 0-500ppm with ModBus Output

Data sheets: GS-S-CO-LED.pdf · GS-S-CO-M.pdf

Part code	*Description*
GS-S-CO-W-K	CO Sensor, 0-100ppm
GS-S-CO-W-P	CO Sensor, 0-1000ppm
GS-S-CO-W-K-M	CO Sensor, 0-100ppm with ModBus Output
GS-S-CO-W-P-M	CO Sensor, 0-1000ppm "

Data sheet: GS-S-CO-W.pdf

Note: These units are not intended for use in life safety applications.

GS-CO Carbon Monoxide Sensor

Based on the GS-CO2 series platform, the new CO sensor delivers a linear proportional output corresponding to a 0 -160ppm range.

Optional temperature and RH outputs are available, with optional passive outputs for setpoint, override switch and fan speed switch, plus any thermistor in the Sontay range. Note that an LCD display option is not currently available for this sensor.

IMPORTANT!
The sensor is not designed, manufactured or intended for use or re-sale as control or monitoring equipment in environments requiring life safety performance, in which the failure of the sensor could lead directly to death, personal injury, or severe physical or environmental damage.

Sontay and its suppliers specifically disclaim any express or implied warranty of fitness for life safety.

USE THE CODE NOBRAND ON YOUR ORDER IF THE SONTAY LOGO IS NOT REQUIRED

SPECIFICATION

Outputs:	0-10Vdc, 0-5Vdc or 4-20mA (not loop powered)	
Power supply:	24Vac/dc	
Output ranges:	CO	0 – 160ppm
	Temperature	Optional, 0°C – 40°C as standard, others available on request
	RH	Optional, 0 – 100% RH
Optional:	-T	Passive thermistor output
Stability:	CO	<2% of FS over sensor life
	Temperature	±0.1°C
	RH	±1%RH per year
Ambient:	Temperature	0°C to 50°C
	RH	0 to 95% RH, non-condensing
Housing:	Material	ABS (flame retardant)
	Colour	polished white finish
Dimensions:	115 x 85 x 28mm	
Protection:	IP30	
Country of origin:	UK	

Part code	*Description*
GS-CO-622	Duct Mounting CO Sensor
GS-CO-1000	Space Mounting CO Sensor

Data sheets: GS-CO-622.pdf · GS-CO-1000.pdf

RF-IOM WIRELESS SENSOR INPUT

Want to make this sensor wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52.

SD-622 Duct Smoke Detector

The SD-622 provides relay outputs on the detection of smoke or fault conditions. The alarm output relay can be either manual or auto reset depending on application type.

FEATURES

- Manual or auto reset
- Fault relay output
- Self-test feature

RF-IOM WIRELESS SENSOR INPUT

Want to make this sensor wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52.

Part code	*Description*
SD-622	Duct Smoke Detector

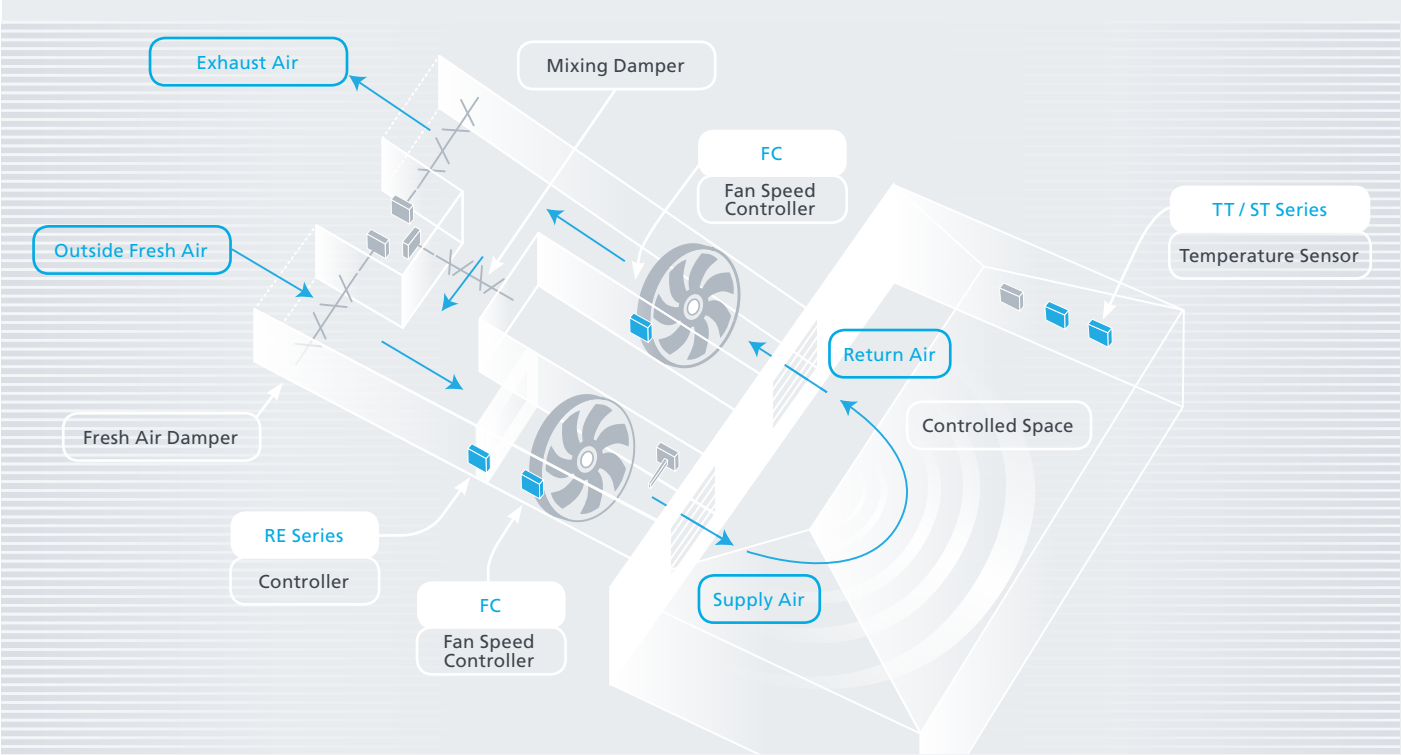
Data sheet: SD-622.pdf

SPECIFICATION

Supply voltage:	24Vac/dc, ±20%	
Power consumption:	50mA max.	
Relay outputs (smoke & fault):	SPST 2A @ 48V	
Minimum duct size:	100 x 320mm (3.94 x 12.60")	
Maximum duct size:	450 x 450mm (17.72 x 17.72")	
LED indication:	On in alarm	
Reset:	Manual or auto reset, selectable	
Housing:	Material	ABS (flame retardant type VO)
	Dimensions	116 x 106 x 52mm (4.57 x 4.17 x 2.05")
Probe:	Material	Plastic
	Dimensions	300 x 20mm (11.81 x 0.79") diameter
Ambient range:	Temperature	10 to 40°C (50 to 104°F)
	Ambient	20 to 80% non-condensing
Protection:	IP65	
Weight:	350g (0.77 lb)	

USE THE CODE NOBRAND ON YOUR ORDER IF THE SONTAY LOGO IS NOT REQUIRED

Controllers



FC Fan Speed Controller Range

For fans and suitable single-phase AC electric motors.

FC Speed Controller

- Close Control at Optimal Speeds
- Accurate Duct Pressure Maintenance
- Manual and Automatic Variants

RE Electric Heater Battery Controllers

Are used to accurately modulate the heating output of single and 3-phase heaters.

RE Single Phase & 3-Phase Controller

- Accurately Modulate the Heating Output
- Automatic Reset & Alarm Function

FC-DIN — Fan Speed Controllers (DIN-rail)

The FC-DIN range of DIN-rail mounting Fan Speed Controllers offer user selectable 0-10Vdc, 4-20mA input control signal compatibility for automatic control, and a optional 3-wire potentiometer input for manual control.

The FC-DIN are available in 1A, 3A and 5A single phase ratings. A fast start function is available, as well as user definable minimum and maximum run speeds.

FEATURES

- User definable maximum and minimum speed
- Fast on normal start up
- User definable fast start time

APPLICATION

Fan or pump speed control, for energy and cost savings.

Want to make this sensor wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52

SPECIFICATION

Supply:	230Vac, –6%, +10%
Frequency:	47 to 64Hz
Inputs:	4-20mA (not loop powered)
	0-10Vdc
	0-10kΩ optional 3-wire potentiometer
Output:	Triac, phase angle
Mounting:	DIN-rail
Ambient Range:	–10 to +50°C (14 to 122°F)
	5 to 95% RH non-condensing
Dimensions:	125 x 75 x 80mm (4.92 x 2.95 x 3.15")
Weight:	350g (0.77 lb)

Part code	*Description*
FC-DIN-1	1A, 230V, 1-phase Manual Controller
FC-DIN-3	3A, 230V, 1-phase Manual Controller
FC-DIN-5	5A, 230V, 1-phase Manual Controller
	Accessory
FC-SP	Manual control adjustment

Data sheet: FC-DIN.pdf

FC-ERV — Fan Speed Controllers

The FC-ERV can control the speed of single-phase, voltage controllable electric motors, with a 0-10Vdc or 4-20mA control signal.

Centrifugal fans, axial fans, propeller fans and centrifugal pumps are prime candidates for electronic speed control.

Want to make this sensor wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52

Part code	*Description*
FC-ERV-1	1A, 230V, 1-phase Controller
FC-ERV-3	3A, 230V, 1-phase Controller
FC-ERV-5	5A, 230V, 1-phase Controller
FC-ERV-10	10A, 230V, 1-phase Controller

Data sheet: FC-ERV.pdf

SPECIFICATION

Nominal supply:	230Vac, 1-phase, 50Hz	
Control type:	Automatic from remote signal	
On/off switch:	Mounted on side	
Remote signal:	Two wire 4-20mA or 0-10Vdc	
Starting speed:	According to signal value	
Minimum speed:	Adjustable via trim pot.	
Current ratings:	FC-ERV-1	0.1 to 1.5A
	FC-ERV-3	0.1 to 3.0A
	FC-ERV-5	0.5 to 5.0A
	FC-ERV-10	0.5 to 10.0A
Fuse:	20mm 'FF' type	
Fuse ratings:	FC-ERV-1	FF 3A
	FC-ERV-3	FF 5A
	FC-ERV-5	FF 10A
	FC-ERV-10	FF 16A
Mounting style:	Wall mount	
Protection:	IP54	
Dimensions including cable gland:	178 x 113 x 92mm (7.01 x 4.45 x 3.62")	
Weight:	810g max. (1.79 lb)	

FC-MTY — Manual Speed Controllers for small motors

Manual control for small, single-phase motors up to 4 amps. Suitable for wall and/or flush mounting.

Part code	Description
FC-MTY-1	1A, 230V, 1-phase Controller
FC-MTY-2	2A, 230V, 1-phase Controller
FC-MTY-4	4A, 230V, 1-phase Controller

Data sheet: FC-MTY.pdf

SPECIFICATION

Nominal supply:	230Vac, 1-phase, 50Hz	
Control type:	Manual via potentiometer	
On/off switch:	Inbuilt with pot.	
Pot. action:	Clockwise = min. to max. speed	
Minimum speed:	Adjustable via trim pot	
Current ratings:	FC-MTY-1	0.1 to 1.0A
	FC-MTY-2	0.2 to 2.0A
	FC-MTY-4	0.4 to 4.0A
Fuse:	20mm 'FF' type	
Fuse ratings:	FC-MTY-1	FF 1.25A
	FC-MTY-2	FF 2.5A
	FC-MTY-4	FF 5A
Mounting style:	Wall and flush mount (FC-MTY-4 wall mount only)	
Protection:	FC-MTY-1	
	FC-MTY-2	IP44
	FC-MTY-4	IP54
Dimensions:	Wall mount	82 x 82 x 65mm (3.23 x 3.23 x 2.56")
	Flush mount	82 x 82 x 56mm (3.23 x 3.23 x 2.20")
Weight:	360g max. (0.79 lb)	

FC-STL — Manual Speed Controllers

This range of manual speed controllers provide single-phase voltage control for AC motors, by varying the supplied voltage through phase-angle control.

Part code	Description
FC-STL-3D	3A, type D, 1-phase Controller
FC-STL-5D	5A, type D, 1-phase Controller
FC-STL-10D	10A, type D, 1-phase Controller

Data sheet: FC-STL.pdf

SPECIFICATION

Nominal supply:	230Vac, 1-phase, 50Hz	
On/off switch:	Separate to potentiometer, mounted on side	
Starting sequence:	Full speed for 6 to 7 secs	
Pot. action:	Clockwise = max. to min. speed	
Minimum speed:	Adjustable via trim pot.	
Current ratings:	FC-STL-3D	0.3 to 3.0A
	FC-STL-5D	0.2 to 5.0A
	FC-STL-10D	0.5 to 10.0A
Fuse:	20mm 'FF' type	
Fuse ratings:	FC-STL-3D	FF 5A
	FC-STL-5D	FF 8A
	FC-STL-10D	FF 16A
Mounting style:	Wall mount	
Protection:	IP54	
Dimensions including cable gland:	FC-STL-3D	160 x 83 x 66mm (6.30 x 3.27 x 2.60")
	FC-STL-5D	160 x 83 x 81mm (6.30 x 3.27 x 3.19")
	FC-STL-10D	178 x 113 x 102mm (7.01 x 4.45 x 4.02")
Weight:	740g max. (1.63 lb)	

RE-PR1 — 1.5, 3 and 6kW, Single-phase Controllers

This range of triac control assemblies provide full seamless control of single phase electric heating loads.

The controllers incorporate a temperature trip, automatic reset, integral semi-conductor fuses and heatsink.

FEATURES

- 0-10Vdc or 0-5Vdc control input
- Over temperature protection with auto reset
- No additional heatsinks required
- No external 24V supply required
- No external RFI filters required

SPECIFICATION

Input signal:	0-5Vdc or 0-10Vdc	
Supply:	230Vac RMS ±10%, 50/60Hz	
Over temp:	Trip-in temp.	@ 90°C (194°F) ±1°C (±1.8°F)
	Trip-out temp.	@ 85°C (185°F) ±1°C (±1.8°F)
Fault condition:	Over temp.	LED flashes in 0.5 sec pulse bursts
	Loss of signal	LED flashes in 1 sec pulse bursts
Ambient temp:	65°C (149°F) – maximum operational	
Dimensions:	RE-PR1-F-1.5	112 x 95 x 75mm (4.41 x 3.74 x 2.95")
	RE-PR1-F-3	112 x 95 x 75mm (4.41 x 3.74 x 2.95")
	RE-PR1-F-6	112 x 95 x 85mm (4.41 x 3.74 x 3.35")
Weights:	RE-PR1-F-1.5 - 280g (0.62 lb), RE-PR1-F-3 - 280g (0.62 lb)	
	RE-PR1-F-6 - 700g (1.54 lb)	

Part code	Description	Current rating
RE-PR1-F-1.5	1.5kW Controller	6.3A
RE-PR1-F-3	3kW Controller	12.5A
RE-PR1-F-6	6kW Controller	25A

Part code	Description
	Accessories
RE-PR1-F15102	1.5kW Replacement fuse
RE-PR1-F15103	3kW Replacement fuse
RE-PR1-F11307	6kW Replacement fuse
RE-PR1-F-6-GD	Replacement 6kW guard

Data sheet: RE-PR1-F.pdf

Want to make these controllers wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52

RE-PR3 — 12 and 18kW, 3-phase Controllers

The RE-PR3-DIN-xx range of thyristor stacks provides full seamless control of 415V supply loads. They incorporate a temperature trip, automatic reset, alarm output, LED indication (output on) and heatsink.

FEATURES

- 0-10Vdc control input
- Over temperature protection with auto reset
- No additional heatsinks required

Part code	*Description*	*Current rating*
RE-PR3-DIN-12	12kW Controller	16.7A per phase
RE-PR3-DIN-18	18kW Controller	25A per phase

Data sheet: RE-PR3-DIN.pdf

SPECIFICATION

Input signal:	0-10Vdc	
External supply:	(control) 24Vac/dc ±10%, 50Hz	
Supply:	(load) 3-Phase, 400Vac RMS ±10%, 50Hz	
Fault condition:	24Vac/dc (as power supply)	
	24V alarm terminal normally present, drops to 0V in the event of over-temp. or loss of external power supply	
LED indication:	T1 & T3 LED pulse when output is 'ON'	
Mounting:	DIN-rail	
Ambient temp:	40°C (104°F) – max. operational	
Dimensions:	RE-PR3-DIN-12	217 x 92 x 85mm (8.54 x 3.62 x 3.35")
	RE-PR3-DIN-18	217 x 92 x 107mm (8.54 x 3.62 x 4.21")
Weights:	RE-PR3-DIN-12	600g (1.32 lb)
	RE-PR3-DIN-18	960g (2.12 lb)

RE-PR3-E — 27, 36, 54, 86 and 105 kW, 3-phase Controllers

These thyristor control assemblies provide full seamless control of 3-phase resistive loads of up to 27, 36, 54, 86 and 105 kW. The controllers incorporate a temperature trip, automatic reset, alarm output, LED indication (output on) and heatsink.

FEATURES

- 0-5Vdc, 0-10Vdc or 4-20mA control input
- Over temperature protection with auto reset
- No additional heatsinks required
- No external 24V supply required

SPECIFICATION

Input signal:		0-5Vdc, 0-10Vdc or 4-20mA	
Supply:		(control) 24Vac/dc ±10% (by dipswitch)	
		(load) 3-Phase, 400Vac RMS ±10%, 50/60Hz	
Over temp:		Trip-in temp. @ 90°C (194°F) ±1°C (±1.8°F)	
		Trip-out temp. @ 85°C (185°F) ±1°C (±1.8°F)	
Fault condition:		Relay rated at 230Vac @ 8A	
Fault status:		Phase loss – LED flashes in 1.5 sec pulse bursts	
		Sensor loss – LED flashes in 0.5 sec pulse bursts	
Ambient temp:		65°C (149°F) - maximum operational	
Mounting:		Panel	
Dimensions:	RE-PR3-E	-27	150 x 240 x 100mm (5.91 x 9.45 x 3.94")
		-36	205 x 155 x 120mm (8.07 x 6.10 x 4.72")
		-54	250 x 155 x 120mm (9.84 x 6.10 x 4.72")
		-86 & 105	340 x 232 x 124mm (13.39 x 9.13 x 4.88")
Weights:	RE-PR3-E	-27	3.0kg (6.61 lb)
		-36	3.6kg (7.94 lb)
		-54	3.6kg (7.94 lb)
		-86 & 105	6.6kg (14.55 lb)

Part code	*Description*	*Current rating*
RE-PR3-E-27	27 kW Controller	38A per phase
RE-PR3-E-36	36 kW Controller	50A per phase
RE-PR3-E-54	54 kW Controller	75A per phase
RE-PR3-E-86	86 kW Controller	120A per phase
RE-PR3-E-105	105 kW Controller	146A per phase

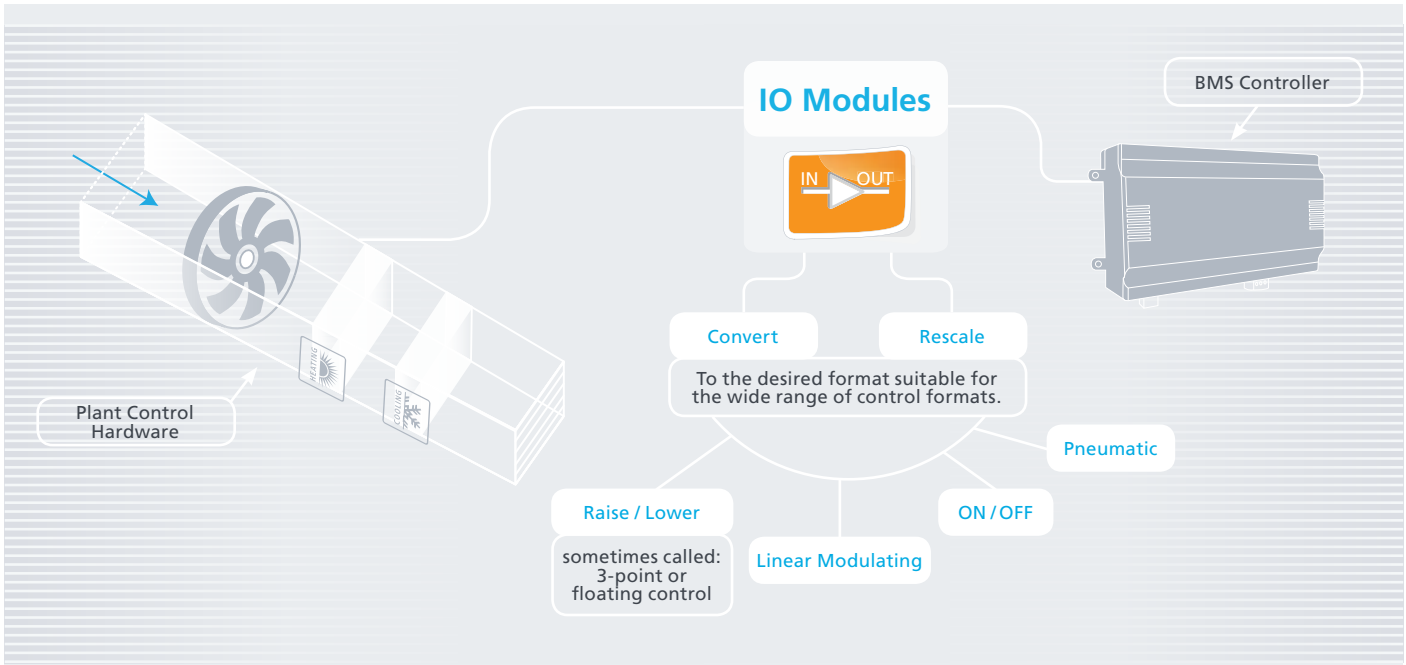
Note: Larger sizes are available on request.

Part code	*Description*
	Accessories
RE-PR3-F11310	27kW Replacement fuse
RE-PR3-F11511	36kW Replacement fuse
RE-PR3-F11513	54kW Replacement fuse
RE-PR3-F11606	86kW Replacement fuse
RE-PR3-F11610	105kW Replacement fuse

Data sheets: RE-PR3-E-27.pdf · RE-PR3-E-36&54.pdf · RE-PR3-E-86&105.pdf

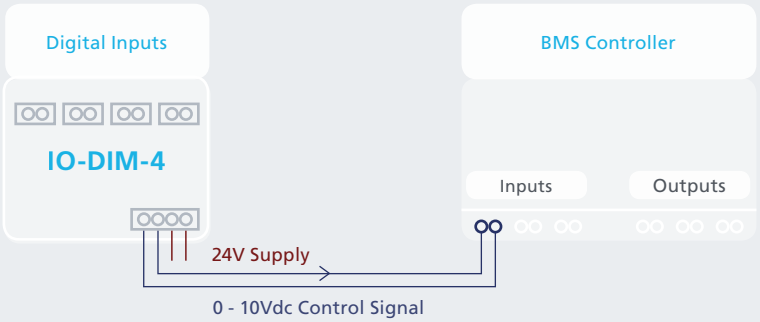
IO Modules

Sontay offer a wide range of input/output modules



IO-DIMs Digital Input Multiplexers

Allow up to 6 digital inputs to be connected to a single analogue input on a BMS controller, effectively expanding the available input count.

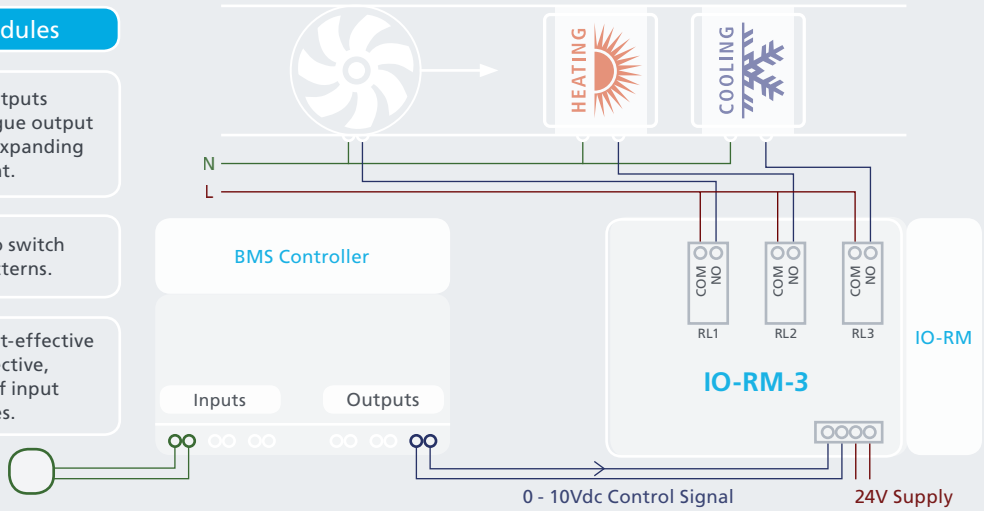


IO-RM Relay Output Modules

Allow up to 8 digital relay outputs to be connected to a single analogue output on a BMS controller, effectively expanding the available output count.

The relays can be configured to switch in commonly used control patterns.

The Sontay IO series are highly cost-effective from a commissioning perspective, with a comprehensive range of input and output compatibilities.



IO-A Signal Conditioning

For signal rescaling, the IO-A-RM can accept either a voltage or current input which can be rescaled to either a voltage or current output. The signal rescaling is achieved by using the trimming potentiometers and jumpers links. The IO-A-RM can also reverse an input signal.

The IO-A-UD accepts a raise/lower relay signal and provides a 0-10Vdc output. Additional features include Hand/Off/Auto jumper for manual override, LED status indication and selectable hysteresis.

FEATURES

- Field selectable ranges
- LED Status
- Voltage to current, current to voltage conversion (IO-A-RM)
- Current or voltage outputs (IO-A-UD)

SPECIFICATION

Input signals:	IO-A-RM	Voltage	0 to 25Vdc max.
		Current	0 to 44mA max.
	IO-A-UD	Relay contact, transistor, triac, 24Vac 50/60Hz	
Input ranges:	IO-A-UD	45, 60 or 240 seconds, selectable	
Output signals:	IO-A-RM	Voltage	0.25 to 20Vdc max.
		Current	1 to 44mA max.
	IO-A-UD	Voltage	0-10Vdc 3.3KΩ min.
		Current	4-20mA 750Ω max.
Power supply:	IO-A-RM	24Vac/dc ±10%, 200mA max.	
	IO-A-UD	21.6 to 28Vdc or 24 to 35Vdc	
Ambient range:	Temperature	–10 to +50°C (14 to 122°F)	
	RH	10 to 95% RH non-condensing	
Dimensions:	IO-A-RM	93 x 60 x 40mm (3.66 x 2.36 x 1.57")	
	IO-A-UD	96 x 58 x 30mm (3.78 x 3.15 x 1.18")	
Weight:		60g (0.13 lb)	

Part code	*Description*
IO-A-RM	Analogue Rescaling Module
IO-A-UD	R/L to Analogue Module

Data sheets: IO-ARM.pdf · IO-AUD.pdf

IO-ABM4 Analogue Override Module

Intended for applications which require independent manual override of analogue output channels from a BMS controller, as a fail-safe in the event of controller failure.

Enables actuators to be manually overridden from the panel where local access is difficult. Also useful for commissioning or temporary control of plant prior to controller installation.

FEATURES

- 4 x 0-10Vdc channels
- Hand/off/auto link selectable
- Manual adjustment of output signal
- 24Vac/dc powered
- Up to four outputs to be controlled from one input
- Direct or buffered output signals

SPECIFICATION

Input signals:	0-10Vdc
Output signals:	0-10Vdc direct or buffered
Max. output current:	20mA per channel in buffered mode
Power supply:	24Vac/dc ±15%
Max. supply current:	AC supply 260mA | DC supply 115mA
Fused output:	24Vac @ 8A
Fuse:	8A max.
Ambient range:	–10 to +50°C (14 to 122°F)
Dimensions:	104 x 106 x 70mm (4.09 x 4.17 x 2.76")
Weight:	110g (0.24 lb)

Part code	*Description*
IO-ABM4	4-channel Module

Data sheet: IO-ABM4.pdf

IO-DIM Digital Input Multiplexers

These modules are intended for use with BMS controllers to expand their input capacity by multiplexing four or six digital signals, or 4 or 6 x 24Vac/dc inputs into a single analogue controller unit. Each combination of input states corresponds to an analogue value from the IO-DIM4 and IO-DIM6 which can be decoded into four or six digital status bits.

FEATURES

- Fault finding LED indication
- Input status indication
- Input status simulation
- Expands controller input capacity
- Self calibrating output

SPECIFICATION

Inputs:	VFC, 24Vac or 24Vdc	
Outputs:	0-10Vdc into 2kΩ impedance	
	4-20mA into 500Ω max.	
Power supply:	24Vac ±15% @ 50Hz or	
	24Vdc +15% – 6%	
Current:	35mA max. voltage output mode	
	55mA max. current output mode	
LED indication:	Supply OK, supply voltage low, supply voltage high, current output (4-20mA output only)	
Ambient range:	Temperature	–10 to +50°C (14 to 122°F)
	RH	0 to 80% non-condensing
Dimensions:	IO-DIM-4	75 x 55 x 42mm (2.95 x 2.17 x 1.65")
	IO-DIM-6	75 x 75 x 42mm (2.95 x 2.95 x 1.65")
Weight:	IO-DIM-4	80g (0.18 lb)
	IO-DIM-6	100g (0.22 lb)

Part code	*Description*	*Volume Price Breaks*
IO-DIM-4	4 x VFC or 24Vac/dc inputs, selectable output	*Unit Prices (10+)*
IO-DIM-6	6 x VFC or 24Vac/dc inputs, selectable output	–

Data sheets: IO-DIM4.pdf · IO-DIM6.pdf

IO-IIM Input Isolation Modules

Intended for use with BMS controllers wherever the output signal requires isolation from the supply ground. The IO-IIM accepts either a current loop or voltage input. The module is powered by 24Vac and the output 0V is floating with respect to the input and supply ground.

FEATURES

- 4-20mA, 0-5Vdc, or 0-10Vdc input
- Full opto-isolation between inputs and output

Part code	*Description*
IO-IIM-I	4-20mA, Input Isolation Module
IO-IIM-V	0-5/0-10Vdc, Input Isolation Module

Data sheet: IO-IIM.pdf

SPECIFICATION

Input signal:	IO-IIM-I	4-20mA
	IO-IIM-V	0-5Vdc, 0-10Vdc
Output signal:	IO-IIM-I	0-10Vdc
	IO-IIM-V	0-5Vdc or 0-10Vdc
Output current:	20mA max.	
Supply:	24Vac +15% –10%	
Typical current:	80mA + load	
Power supply to sensor:	24Vdc ±5%	
Max. sensor current:	100mA	
Ambient range:	–10 to +50°C (14 to 122°F)	
Dimensions:	75 x 102 x 65mm (2.95 x 4.02 x 2.56")	
Weight:	325g (0.72 lb)	

IO-RM1 Single Relay Modules

A range of relays for use with BMS controllers for switching plant and isolation of input signals. They are supplied complete with DIN-rail mounting base and retaining clip.

Part code	*Description*	*Volume Price Breaks*
IO-RM1-12DC	Single Relay, 12Vdc Module	*Unit Price (20-29 & 30+)*
IO-RM1-24DC	Single Relay, 24Vdc Module	*Unit Price (20-29 & 30+)*
IO-RM1-24AC	Single Relay, 24Vac Module	*Unit Price (20-29 & 30+)*
IO-RM1-240AC	Single Relay, 240Vac Module	*Unit Price (20-29 & 30+)*

Data sheet: IO-RM1.pdf

SPECIFICATION

Relay clip:	Auto eject type supplied	
Ambient range:	–10 to +50°C (14 to 122°F)	
Dimensions:	55 x 12 x 50mm (2.17 x 0.47 x 1.97")	
Input signals:	IO-RM1-12DC	10Vdc
	IO-RM1-24AC	24Vac
	IO-RM1-24DC	24Vdc
	IO-RM1-240AC	230Vac
Output contacts:	IO-RM1-12DC	8A resistive
	IO-RM1-24DC	8A resistive
	IO-RM1-24AC	12A resistive
	IO-RM1-240AC	12A resistive
Weight:	60g (0.13 lb)	

IO-RM Relay Modules

This range of relay modules is intended for use with BMS controllers to convert an analogue control output to various switching relay modes. The adjustable relay module provides individually adjustable on and off switching points.

Example applications include the control of raise/lower valves, damper actuators, pump changeover and boiler control. LEDs indicate correct operation and Hand/Off/Auto jumpers ease commissioning.

Low current draw from 0-10Vdc controller output means that the IO-RM range works successfully with most BEMS controllers.

FEATURES

- Fault finding LED indication
- Relay status LED indication
- Link selectable switching modes
- On/Off/Auto links for ease of commissioning

SPECIFICATION

Input signal:	0 to 10Vdc <1mA	
Input impedance:	Approx. 11kΩ	
Output contacts:	8A @ 230Vac (resistive load)	
Power supply:	24Vac/dc ±15% @ 50Hz	
Power consumption:	100mA max.	
Ambient range:	Temperature	0 to 40°C (32 to 104°F)
	RH	0 to 80% RH non-condensing
Dimensions:	IO-RM-2 + RM-A	72 x 49.5 x 55mm (2.83 x 1.95 x 2.17")
	IO-RM-3	72 x 64 x 55mm (2.83 x 2.52 x 2.17")
	IO-RM-4	72 x 82 x 55mm (2.83 x 3.23 x 2.17")
	IO-RM-8	72 x 156 x 55mm (2.83 x 6.14 x 2.17")
Weights:	IO-RM-2	100g (0.22 lb)
	IO-RM-3	140g (0.31 lb)
	IO-RM-4	200g (0.44 lb)
	IO-RM-8	300g (0.66 lb)
	IO-RM-A	82g (0.18 lb)

Part code	*Description*	*Volume Price Breaks*
IO-RM-2	2-stage Relay Module	*Unit Prices (10-19 & 20+)*
IO-RM-3	3-stage Relay Module	*Unit Prices (10+)*
IO-RM-4	4-stage Relay Module	*Unit Prices (5+)*
IO-RM-8	8-stage Relay Module	–
IO-RM-A	Adjustable Switching Point Relay Module	–

Data sheets: IO-RM2.pdf · IO-RM3.pdf · IO-RM4.pdf
IO-RM8.pdf · IO-RMA.pdf

Want to make this sensor wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52.

Energy Saving through Lighting Control

LL Series · Light Level Sensors

Light and Heat Detection

Lux level (light level)

OC Series · PIR & Microwave Sensors

Passive Infra-red (body heat) detection

Switching Light ON only when:

The ambient light is too low — AND — The controlled space is occupied

Can result in significant energy and cost savings.
This cost-effective approach has a good return on investment.

LL-C-M Lighting Controller

A complete lighting controller in a robust ceiling mount housing

with
- Concealed Light Level
- Off Delay Adjustments

LL-E-V Light Level Sensor

Can be used to control exterior lighting, such as car parks — to — Automatically switching lighting ON and OFF at appropriate times

UK Tel. +44 (0) 1732 861200 · Int. Tel. +44 (0) 1732 861225 · UK Fax +44 (0) 1732 861201 · Int. Fax +44 (0) 1732 861226

LL Light Level Sensors

Our range of light level sensors output a linear 0-10Vdc signal representing the lux level at the sensor element. This is typically used in lighting strategies to optimise energy efficiency through dimming and/or disabling of lights as required. The LL-E-V has two selectable ranges of 10-2000 and 10-10,000 where as the others have a fixed range of 10-2000 lux.

FEATURES

- 0-10Vdc output
- 24Vac/dc powered

Part code	*Description*
LL-E-V	External, Light Level Sensor
LL-C-V	Ceiling Mounted Internal, Light Level Sensor
LL-W-V	Wall Mounted Internal, Light Level Sensor

Data sheets: LL-E-V.pdf · LL-C-V.pdf · LL-W-V.pdf

SPECIFICATION

Sensor reference:	Photo-diode	
Accuracy:	±5% across range	
Field of view:	60°	
Output:	0-10Vdc	
Supply:	24Vac/dc	
Ambient range:	Temperature	0 to 50°C (32 to 122˚F)
	RH	0 to 90% RH non-condensing
Housing material:	LL-E-V	Flame retardant ABS, polycarbonate
	Others	Flame retardant ABS, polypropylene
Dimensions:	LL-E-V	116x106x52mm (4.57 x 4.17 x 2.17")
	LL-C-V	76mm (2.99") (dia.) x 95mm (3.74") (H)
	LL-W-V	100 x 43 x 75mm (3.94 x 1.69 x 2.95")
Protection:	LL-E-V	IP65
	Others	IP30
Weight:	160g (0.35 lb) max.	

Want to make this sensor wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52.

LL-C Lighting Controller

The LL-C are designed to give savings over uncontrolled lighting whilst retaining an ease of installation and configuration. A passive infra-red detector monitors occupancy through moving body heat and a photo-sensitive device monitors light level. This will ensure that lighting is only switched on when the area covered is occupied and the light level is too low for normal working conditions.

FEATURES

- Energy saving
- Adjustable light level and off delay time
- Simple to install

Part code	*Description*
LL-C-M	230Vac, flush ceiling mounted light level and occupancy controller

Data sheet: LL-C-M.pdf

SPECIFICATION

Occupancy sensor:	Passive infra-red detector	
Field of view:	360°	
Coverage:	6 metres (19.7ft) max.	
Light range:	10 to 2000 Lux	
Off delay timer:	10 seconds to 30 minutes	
Connections:	Live, neutral & switched live	
Ambient:	Temperature	–10 to +40°C (14 to 104°F)
	RH	0 to 90% RH, non-condensing
Housing material:	Flame retardant ABS, polypropylene	
Dimensions:	76mm (2.99") dia. x 95mm (3.74") height	
Protection:	IP30	
Weight:	150g (0.33 lb)	

Want to make this sensor wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52.

OC Occupancy Detectors

Using passive infra-red detection, the OC-x-LV range of occupancy detectors monitors occupation through moving body heat and upon detection the internal SPDT relay activates. **The OC-C-M** is an active motion detector, it emits high-frequency electro-magnetic wave (5.8GHz) and receives their echo. The detector detects the change in echo from even the slightest movement in its detection zone. **The OC-C-LV** is for flush mounting through a false ceiling using the clips provide, the OC-W-LV can be directly fixed to a wall or mounted using the angled bracket supplied and the OC-C-M is for direct ceiling mounting.

FEATURES

- Wall mounting or ceiling versions
- Low voltage loads can be switched directly without the need for interposing relays

Part code	*Description*
OC-C-LV	Ceiling Mounted, PIR Occupancy Detector
OC-W-LV	Wall Mounted, PIR Occupancy Detector
OC-C-M	Ceiling Mounted, Microwave Occupancy Detector

Data sheets: OC-C-LV.pdf · OC-W-LV.pdf · OC-C-M.pdf

SPECIFICATION

Supply:	OC-x-LV	24Vac/dc
	OC-C-M	220-240Vac
Sensor type:	OC-x-LV	Passive infra-red detector
	OC-C-M	Microwave, 5.8GHz CW radar, ISM band
Field of View:	OC-C-LV, OC-C-M 360° | OC-W-LV 90°	
Coverage:	OC-C-LV	6 meters max. (19.7ft)
	OC-W-LV	18 meters (59ft)
	OC-C-M	1-8 meters radius (adjustable) (3.3-26.25ft)
Off delay timer:	OC-C-LV, OC-W-LV	10 seconds to 30 minutes
	OC-C-M	8 seconds to 12 minutes
Switching capacity:	OC-C-LV, OC-W-LV	6(2)A @24V OC-C-M, 1200W 220-240Vac
Ambient range:	Temperature	–10 to 40°C (14 to 104°F)
	RH	0 to 90% RH, non-condensing
Dimensions:	OC-C-LV	76mm (2.99") (dia.) x 95mm (3.74") (H)
	OC-W-LV	100 x 43 x 75mm (3.94 x 1.69 x 2.95")
	OC-C-M	95mm (3.74") x 40mm (1.57") (H)
Protection:	IP30	
Weight:	140g (0.31 lb)	

Want to make this sensor wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52.

Metering & Power Monitoring

How to size your meter...

Sontay offer a wide range of water & heat metering

Upper Limit (m³/h)	90	120	150	250	300	350	650
Permanent (m³/h)	15	25	40	60	100	150	250
Lower Limit (m³/h)	0.35	0.45	0.8	1.5	3	3.5	6.5
Meter Code	**MW-xF-50**	**MW-xF-65**	**MW-xF-80**	**MW-xF-100**	**MW-xF-125**	**MW-F-150**	**MW-F-200**
Upper Limit (m³/h)	60	60	90	180	250	300	500
Permanent (m³/h)	15	25	40	60	100	150	250
Lower Limit (m³/h)	0.6	1	3.2	2	3	8	10
Meter Code	**MW-F-50**	**MW-F-65**	**MW-F-80**	**MW-F-100**	**MW-F-125**	**MW-F-150**	**MW-F-200**
Upper Limit (m³/h)	3	5	7	12	12	20	
Permanent (m³/h)	1.5	2.5	3.5	6	6	10	
Lower Limit (l/h)	30	50	65	90	90	160	
Meter Code	**MW-MJx-20A**	**MW-MJx-20B**	**MW-MJx-25A**	**MW-MJx-25B**	**MW-MJx-32**	**MW-MJx-40**	
Upper Limit (m³/h)	3	5	7	12	20	30	
Permanent (m³/h)	1.5	2.5	3.5	6	10	15	
Lower Limit (l/h)	15	25	35	60	100	450	
Meter Code	**MW-MxS-15**	**MW-xS-20**	**MW-xS-25**	**MW-xS-32**	**MW-xS-40**	**MW-CS-50**	
Qi, Minimum (l/h)	12	30	50				
Qp, Nominal (m³/h)	0.6	1.5	2.5				
Qs, Maximum (l/h)	1.2	3	3.5				
Meter Code	**MW-SJ-15A**	**MW-SJ-15B**	**MW-SJ-20**				

To ensure you get the best performance and accuracy from your meter it is essential that it is sized correctly. To do this you will need to know your permanent, upper limit and lower limit flow rates. Select the closest match from these tables.

In today's energy efficient environment, metering isn't just desirable, in many cases it's a legal requirement. New standards and EU directives are brought into UK law by Sis (Statutory Instruments), so it's vital that metering products and systems are compliant.

Metering in buildings falls into basic categories, such as gas (the Sontay MG series), water (MW series), electricity (PM series) and heat (MW series). All these categories are covered by MID (the Measuring Instruments Directive). Sontay have all the in-house knowledge of the SIs, standards and directives (the legal metrology) applicable to this complex range of products to allow the correct choices to be made when specifying.

SAMPLE OF PRODUCTS

MG-G | MW | MW-C | MW-H | MW-CHM | MW-MD | MW-U | MW-QS

Flow parts for metering

Sontay offer flow parts for two distinct applications

Flow parts for water

denoted in the Sontay catalogue as 'water meters'

Are used specifically for sanitary water only, i.e. water without additives or chemical treatment, and are designed for non-continuous flow, such as domestic cold and hot water supplies.

- The total daily flow should not exceed 3 hours, over a 6 year period
- Volumetric flows higher than this can lead to increased wear in the bearings of the impellor, causing inaccuracies in reading meters
- Water meters have a narrow fluid temperature range, typically between:
  0 to +90°C (32 to 194°F) for hot water meters
  0 to +30°C (32 to 86°F) for cold water meters

Flow parts for heating

denoted in the Sontay catalogue as 'flow sensors'

Can be used with chemically treated water, and are designed for continuous or very high duty cycle flow conditions typically found in hot water heating systems.

- Flow sensors have a wider fluid temperature range than water meters, typically between 0 to +120°C *(32 to 248°F)*

Note: Because of these distinct differences, only flow parts designed specifically for heat metering should be used for heat metering applications. Although water meters can, in theory, be used for heat meter applications, Sontay cannot warranty water meters if used in this manner.

Definitions of the heat meter flow rate

At which the heat meter shall function, without the maximum permissible errors being exceeded:

***Qs** – upper limit*	***Qp** – permanent*	***Qi** – lower limit*
(the highest rate for short periods)	(the highest rate continuously)	(the lowest rate the meter shall function)
The upper limit of the flow-rate, is the highest flow-rate at which the heat meter shall function for short periods (< 1 hour/day; < 200 hour/year), without the maximum permissible errors being exceeded.	The permanent flow-rate, is the highest flow-rate at which the heat meter shall function continuously without the maximum permissible errors being exceeded.	The lower limit of the flow-rate, is the lowest flow-rate above which the heat meter shall function without the maximum permissible errors being exceeded.

UK Tel. +44 (0) 1732 861200 · Int. Tel. +44 (0) 1732 861225 · UK Fax +44 (0) 1732 861201 · Int. Fax +44 (0) 1732 861226

MG-G Gas Meters (with pulsed output)

Our range of diaphragm gas meters use proven, reliable technology to measure the volume of gas used and then send a pulsed signal to a BMS system.

FEATURES

- Diaphragm type
- All meters include pulsed output lead

Part code	*Description*	*Max flow (m^3/h)*
MG-G4	1" Screwed Gas Meter	6
MG-G6	1" Screwed Gas Meter	10
MG-G10	1½" Screwed Gas Meter	16
MG-G16	1½" Screwed Gas Meter	25
MG-G25	2" Screwed Gas Meter	40
MG-G40	100mm (4") Flanged Gas Meter	65
MG-G65	100mm (4") Flanged Gas Meter	100

Data sheet: MG-G.pdf

SPECIFICATION

Max. pressure:	MG-G4 to G10 500mbar (7.3 psi)
	MG-G16 to G65 200mbar (2.9 psi)
Material:	Epoxy coated steel
	Pulsed output specification
Pulse value:	MG-G4 to G10 0.01m³ per pulse
	MG-G16 to G65 0.1m³ per pulse
Max. load current:	100mA
Max. switching voltage:	24Vdc
Max. contact rating:	0.6W
Switch actuating time:	0.3s
Connection type:	4-core flying lead
Lead length:	2m (6.56 ft)
Conformity:	EEC 71/318, UNI-CIG 7987/7988 norms,
	OIML Regulations
Ambient temperature:	0 to 40°C (32 to 104°F)
Weight:	90kg max. (198 lb)

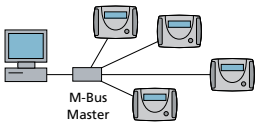
MW-M-BUS M-BUS Network

The MW-MD & MW-U range of heat meter integrators, when ordered with the optional M-Bus output module and an M-Bus master, will allow up to 250 devices to be connected together on a network.

The M-Bus master module receives data from the meters, and using the MW-GMM software it is possible to read the meters and export information as a .CSV file, typically energy usage for billing purposes. M-Bus was developed specifically for meter reading applications.

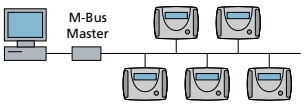
SUPPORTED TOPOLOGIES

Star
Each device is linked to a central master with an individual transmission line. The devices can transmit to the central master either sequentially or simultaneously.



Disadvantage:
- Increased requirement for cabling

Bus *(Sontay recommends BUS topology only)*
The devices are connected together with a common transmission line, with the result that at any given time only one device can transmit data.



Advantages:
- Very cost-effective
- No disruption if one of the devices fails
- Combination of star and bus
- NB – Ring topology is NOT supported.

BENEFITS INCLUDE:

- Only 2-core cable required (multi-strand is preferred)
- Polarity independent connections
- Up to 250 devices per M-Bus segment

M-BUS SEGMENTS TYPICALLY CONSIST OF:

- M-Bus 'slave' devices *(for example, heat meters)*
- An M-Bus 'master'/level convertor
  (A master unit - typically a PC with M-Bus software - polls the slaves for data, the level convertor changes M-Bus data levels to RS-232 for connection to a PC)
- M-Bus repeaters *(if required)*
- Maximum cable length per segment = 1000m
- Maximum number of M-Bus slaves per segment = 250
- M-Bus baud rate = 2400
- Cable resistance <73Ω / km
- Cable capacitance <300pF / 100m

Part code	*Description*
MW-GMM	**M-Bus Communication software**
	Single user PC licence. *Other packages available on request.*
MW-MASTER-32	M-Bus Master, 32 metering points
MW-MASTER-250	M-Bus Master, 250 metering points

Data sheet: MW-M-BUS.pdf

MW — Flow Sensors (continuous flow)

Meters for measuring the volume flow in heating and cooling systems.

The MW range of flow sensors are meters especially designed for the special conditions in heating and cooling circuits.

The pulse transmission takes place via the tried and tested reed-contact and is thus, compatible with the MW-MD.

The special construction and the material design guarantee long-term measuring stability and high reliability. All of the flow sensors are designed for temperatures up to 120°C (248°F) with safety up to 130°C (266°F).

FEATURES

- Reinforced bearings
- High measuring stability
- Wide load range
- Reliable in operation up to 130°C (266°F)

GENERAL SPECIFICATION

Temperature range:	10 to 120°C (50 to 248°F) (safety margin 130°C / 266°F)	
Max. operating pressure:	PN16 (232 psi)	
Measuring accuracy:	Class 3 (MID Annex MI-004)	
Conformity:	MID (Annex B and Annex D)	
Connections:	MW-SJ & MW-MJ types	Screwed
	MW-F types	Flanged
Materials:	Screwed	Brass
	Flanged	Cast iron
Weight:	47kg max. (103 lb)	

SINGLE-JET FLOW SENSORS

MW-SJ flow sensors (DN15 & 20) are very compact devices used for flows of up to Qp 2.5. They can be installed horizontally or vertically.

Part code	*Size*	*Litres /pulse*	*Qi (l/h)*	*Qp (m^3/h)*	*Qs (m^3/h)*
MW-SJ-15A	½"	10	12	0.6	1.2
MW-SJ-15B	½"	10	30	1.5	3
MW-SJ-20	¾"	10	50	2.5	5

Data sheet: MW-SJ.pdf

MULTI-JET FLOW SENSORS

MW-MJ flow sensors (DN20 to 40) have proven themselves for use with heavier flows. They are available for horizontal installation positions.

The MW-MJR (riser pipe) and MW-MJD (down pipe) meters have the advantage for vertical piping. Due to the low bearing load, this results in improvements in the long-term stability of measuring results.

Part code	*Size*	*Litres /pulse*	*Qi (l/h)*	*Qp (m^3/h)*	*Qs (m^3/h)*
	Horizontal Types				
MW-MJ-20A	¾"	10	30	1.5	3
MW-MJ-20B	¾"	10	50	2.5	5
MW-MJ-25A	1"	10	65	3.5	7
MW-MJ-25B	1"	10	90	6	12
MW-MJ-32	1¼"	10	90	6	12
MW-MJ-40	1½"	10	160	10	20
	Vertical Riser Pipe Types				
MW-MJR-20	¾"	10	30	1.5	3
MW-MJR-25A	1"	10	65	3.5	7
MW-MJR-25B	1"	10	90	6	12
MW-MJR-32	1¼"	10	90	6	12
MW-MRJ-40	1½"	10	160	10	30
	Vertical Down Pipe Types				
MW-MJD-20	¾"	10	30	1.5	3
MW-MJD-25A	1"	10	65	3.5	7
MW-MJD-25B	1"	10	90	6	12
MW-MJD-32	1¼"	10	90	6	12
MW-MJD-40	1½"	10	160	10	30

Data sheet: MW-MJx.pdf

FLANGED FLOW SENSORS

MW-F flow sensors (DN50 to 200) can be installed horizontally or vertically. They are characterised by extremely low starting flows with high measuring accuracy and excellent measuring stability – even in the most extreme of situations.

This applies for the upper, as well as the lower measuring ranges.

Part code	*Size*	*Litres /pulse*	*Qi (m^3/h)*	*Qp (m^3/h)*	*Qs (m^3/h)*
MW-F-50	50mm (2")	100	0.6	15	60
MW-F-65	65mm (2½")	100	1	25	60
MW-F-80	80mm (3")	100	3.2	40	90
MW-F-100	100mm (4")	100	2	60	180
MW-F-125	125mm (5")	100	3	100	250
MW-F-150	150mm (6")	1000	8	150	300
MW-F-200	200mm (8")	1000	10	250	500

Data sheet: MW-FS.pdf

MW-C Cold Water Meters (non-continuous flow)

SCREWED COLD WATER METERS

- Inbuilt water strainer
- Complete with couplings
- Epoxy resin coated brass to DIN 50 930 part 6
- Dry dial

Please refer to data sheet or Sontay's website for performance data, dimensions information and pressure drop tables.

SPECIFICATION

Max. fluid temperature:	30°C (86°F) (safety margin 50°C / 122°F)
Max. working pressure:	16 bar (232 psi)
Installation position:	Horizontal, dial upwards
Conformity:	EN 14154
MID:	Annex B, Annex D, Annex I & MI-001

Part code	Size	Litres / pulse	Qi (l/h)	Qp (m^3/h)	Qs (m^3/h)
Cold Water Meters (Screw connections)					
MW-CS-15-A	½"	10	30	1.5	3
MW-CS-20-A	¾"	10	50	2.5	5
MW-CS-25-A	1"	10	70	3.5	7
MW-CS-32-A	1¼"	10	120	6	12
MW-CS-40-A	1½"	10	200	10	20
MW-CS-50-B	2"	100	450	15	30

Data sheet: MW-S.pdf

Want to make this meter wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52

FLANGED COLD WATER METERS

- Cast Iron body

Please refer to data sheet or Sontay's website for performance data, dimensions information and pressure drop tables.

SPECIFICATION

Max. fluid temperature:	30°C (86°F) (safety margin 50°C / 122°F)
Max. working pressure:	16 bar (232 psi)
Flanges:	DIN 2501 PN16
Installation position:	Horizontal / vertical, dial upwards
Conformity:	EN 14154
MID:	Annex B, Annex D, Annex I & MI-001

Part code	Size	Litres / pulse	Qi (m^3/h)	Qp (m^3/h)	Qs (m^3/h)
Cold Water Meters (Flanged connections)					
MW-CF-50-B	50mm (2")	100	0.35	15	90
MW-CF-65-B	65mm (2½")	100	0.45	25	120
MW-CF-80-B	80mm (3")	100	0.8	40	150
MW-CF-80-C	80mm (3")	1000	0.8	40	150
MW-CF-100-B	100mm (4")	100	1.5	60	250
MW-CF-100-C	100mm (4")	1000	1.5	60	250
MW-CF-125-C	125mm (5")	1000	3	100	300
MW-CF-150-C	150mm (6")	1000	3.5	150	350
MW-CF-200-C	200mm (8")	1000	6.5	250	650

Data sheet: MW-F.pdf

MW-H Hot Water Meters (non-continuous flow)

SCREWED HOT WATER METERS

- Inbuilt water strainer
- Complete with couplings
- Epoxy resin coated brass to DIN 50 930 part 6
- Dry dial

Please refer to data sheet or Sontay's website for performance data, dimensions information and pressure drop tables.

SPECIFICATION

Max. fluid temperature:	90°C (194°F) (safety margin 120°C / 248°F)
Max. working pressure:	16 bar (232 psi)
Installation position:	Horizontal, dial upwards
Conformity:	EN 14154
MID:	Annex B, Annex D, Annex I & MI-001

Part code	Size	Litres / pulse	Qi (l/h)	Qp (m^3/h)	Qs (m^3/h)
Hot Water Meters (Screw connections)					
MW-HS-15-A	½"	10	30	1.5	3
MW-HS-20-A	¾"	10	50	2.5	5
MW-HS-25-A	1"	10	70	3.5	7
MW-HS-32-A	1¼"	10	120	6	12
MW-HS-40-A	1½"	10	200	10	20

Data sheet: MW-S.pdf

Want to make this meter wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52

FLANGED HOT WATER METERS

- Cast Iron body

Please refer to data sheet or Sontay's website for performance data, dimensions information and pressure drop tables.

SPECIFICATION

Max. fluid temperature:	90°C (194°F) (safety margin 120°C / 248°F)
Max. working pressure:	16 bar (232 psi)
Flanges:	DIN 2501 PN16
Installation position:	Horizontal / vertical, dial upwards
Conformity:	EN 14154
MID:	Annex B, Annex D, Annex I & MI-001

Part code	Size	Litres / pulse	Qi (m^3/h)	Qp (m^3/h)	Qs (m^3/h)
Hot Water Meters (Flanged connections)					
MW-HF-50-B	50mm (2")	100	0.35	15	90
MW-HF-65-B	65mm (2½")	100	0.45	25	120
MW-HF-80-B	80mm (3")	100	0.8	40	150
MW-HF-80-C	80mm (3")	1000	0.8	40	150
MW-HF-100-B	100mm (4")	100	1.5	60	250
MW-HF-100-C	100mm (4")	1000	1.5	60	250
MW-HF-125-C	125mm (5")	1000	3	100	300
MW-HF-150-C	150mm (6")	1000	3.5	150	350
MW-HF-200-C	200mm (8")	1000	6.5	250	650

Data sheet: MW-F.pdf

MW-CHM Compact Heat Meters

Heat energy is calculated by using a matched pair of high accuracy sensors to measure the difference between the forward and flow temperatures. The amount of water flowing through the circuit is measured by the water meter, and the microprocessor-controlled calculator then calculates the consumed heat energy from the temperature and flow data. The large, easy-to-read display shows the energy used. Additional measurement and instrument data can be easily displayed by scanning the display loops. The integrated non-volatile E^2PROM automatically stores the meter data once a day. It is possible to view the last 18 monthly values from the display.

FEATURES

- Compact design
- Simple operation
- Measures heating or cooling
- Pulsed output or M-Bus options

SPECIFICATION · Water Meter

Temperature range:	10 to 90°C (50 to 194°F)
Nominal pressure:	16 bar (232 psi)
Installation:	Return
Cable length to heat meter:	50cm (19.69”)
Nominal diameter (DN):	15mm or 20mm (½ or ¾”)
Nominal flow (Qp):	15mm (½”) 0.6 or 1.5m³/h
	20mm (¾”) 2.5m³/h
External thread:	15mm (½”) G¾”
	20mm (¾”) G1”

Want to make this sensor wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52

SPECIFICATION · Temperature Sensors

Sensor element:	PT500	
Sensor:	Lead length: 1.5m (4.92 ft) | Diameter: 5mm (0.20”)	
Installation:	Flow	¾” or 1” ball valve with integral pocket

SPECIFICATION · Heat Meter

Temperature range:	1 to 130°C (34 to 266°F)	
Display type:	8 digit LCD	
Energy display:	MWh	
Data storage:	Non-volatile memory, once daily	
Battery life:	>6 years	
Output pulse:	Max. operating voltage	30Vdc, 20mA max
	Pulse width	400-600m/s
Conformity:	MID (Annex B & Annex D)	
Measuring accuracy:	Class 3 (MID Annex MI-004)	
Ambient temperature:	5 to 55°C (41 to 131°F)	
Protection:	IP54	
Weight:	1.02 kg (2.25 lb)	

Part code	*Description*
MW-CHM-1	Meter with 0.6m³/h nominal flow
MW-CHM-2	Meter with 1.5m³/h nominal flow
MW-CHM-3	Meter with 2.5m³/h nominal flow
	Output Options (add type to above code)
-A	Pulsed output
-B	M-Bus output
	Replacement Items
MW-BV-1	¾” ball valve c/w pocket
MW-BV-2	1” ball valve c/w pocket

Data sheet: MW-CHM.pdf

The default location of the flow sensor is in the return. If the meter is to be fitted in the flow please advice at time of order.

MW-MD Heat Meter Integrators

The MW-MD range of heat meter integrators uses the latest innovative technology to calculate heat usage from heating and cooling systems. They are for use with mechanical flow parts. With its dynamic measuring cycle even the smallest energy consumptions are reliably collected. The large multifunction display permanently shows the heat consumption total, and by using the button it is possible to scroll through the display to show all data.

FEATURES

- Simple operation
- Integral wall and DIN-rail mounting bracket
- Pulsed or M-Bus output options
- Measures heating or cooling and heat/cooling

SPECIFICATION

Temp. range:	1 to 150°C (34 to 302°F)
Temp. diff:	3 to 120K
Battery life:	6 years (optional 11 year)
Display:	Multifunction 8-digit + characters LCD
Output pulse:	30Vdc max. @ 20mA
Pulse duration:	400m/s <TP <600m/s
M-Bus Baud rate:	2400
Sensor type:	PT500 Matched pair
Pocket thread:	½” BSP
Conformity:	EN 1434, MID Annex, I M1/E1 & Annex M1-004
Ambient range:	Temperature 5 to 55°C (41 to 131°F)
	RH 95% non-condensing
Dimension:	106 x 54 x 120mm (4.17 x 2.13 x 4.72”) (H x L x W)
Protection:	IP54
Weight:	500g (1.1 lb)

Want to make this sensor wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52

Part code	*Description*
MW-MD	Heat Meter Integrator *(build unit with following options)*
	Output Module (add type to above code)
-P	Pulsed output
-M	M-Bus
	Pockets & PT500 Temp. Sensor (add type to above code)*
-A	45mm (1.77”), pocket sensor pair – 1.5m cable (4.92 ft)
-B	105mm (4.13”), pocket sensor pair – 3m cable (9.84 ft)
-C	105mm (4.13”), pocket sensor pair – 10m cable (32.8 ft)
-D	140mm (5.51”), pocket sensor pair – 3m cable (9.84 ft)
-E	140mm, (5.51”) pocket sensor pair – 10m cable (32.81 ft)
	System Type (add type to above code)
-4	Heating system
-5	Cooling system
-6	Heat/cooling system
	Accessory
MW-BATTERY	Optional 11 year battery (only available when purchasing MW-MD, not available as a separate item)
	Replacement Items
MW-PKT-1	45mm (1.77”) stainless steel pockets (pair)
MW-PKT-2	105mm (4.13”) stainless steel pockets (pair)
MW-PKT-3	140mm (5.51”) stainless steel pockets (pair)

Data sheet: MW-MD.pdf

*__NOTE:__ When selecting the pocket & sensor lengths you should ensure that the sensor/pocket tip must be located in the centre of the pipe diameter.

The default location of the flow sensor is in the return. If the meter is to be fitted in the flow please advice at time of order.

MW-U Ultrasonic Flow Sensors Complete with Calculator

Ultrasonic heat sensors have no moving parts which makes them almost wear free and noiseless. They measure the flow by using the transit time principle, one ultrasonic signal is launched in the flow direction and one against the flow direction. The calculator uses the latest innovative technology to calculate heat usage from heating systems. With its dynamic measuring cycle even the smallest energy consumptions are reliably collected. The large multifunction display permanently shows the heat consumption total; it is possible to scroll through the display to show all data.

FEATURES

- Simple operation
- Long life ultrasonic flow meter
- Flow meter can be mounted in any position
- Integral wall and DIN-rail mounting bracket for calculator
- Pulsed or M-Bus output options

SPECIFICATION

Nominal flow rate:	Qp 0.6 to Qp 60m³/h	
Max. static pressure:	Screwed	16 bar (232 psi)
	Flanged	25 bar (362 psi)
Body materials:	Brass	
Temperature range:	Heating	10 to 130°C (50 to 266°F)
	Cooling	10 to 50°C (50 to 122°F)
Maximum temp:	50°C (122°F) for 2000 h	
Temperature diff:	3 to 120K	
Supply:	3.6V Lithium battery	
Battery life:	6 years (optional 11 year available upon request)	
Display:	Multifunction 8-digit + characters LCD	
Output pulse:	30Vdc max. @ 20mA	
Pulse duration:	400m/s <TP <600m/s	
M-Bus baud rate:	2400	
Sensor type:	PT500 Matched pair	
Sensor lead lengths:	1.5m (4.93 ft) screwed types, 3m (9.84 ft) flanged types	
Sensor pockets:	45mm (1.77") screwed types, 105mm (4.13") flanged types	
Pocket thread:	½" BSP	
Conformity:	MID (Annex B & Annex D)	
Measuring accuracy:	Class 2 (MID Annex MI-004)	
Ambient range:	Temp. 5 to 55°C (41 to 131°F), RH 95% non-condensing	
Protection:	IP54	
Weight:	22.5 kg max. (50 lb max.)	

Part code	*Description*
MW-U	Heat Meter Integrator *(build unit with following options)*
	Output Module (add type to above code)
-P	Pulsed output
-M	M-Bus
	Flow Sensor (add type to above code)
-4	Qp 0.6m3/h, G¾", (R½") screwed
-5	Qp 1.5m3/h, G¾", (R½") screwed
-6	Qp 2.5m3/h, G1", (R¾") screwed
-7	Qp 3.5m3/h, G1¼", (R1") screwed
-9	Qp 10m3/h, G2", (R1½") screwed
-E	Qp 10m3/h, DN40 (1½") flanged
-F	Qp 15m3/h, DN50 (2") flanged
-G	Qp 25m3/h, DN65 (2½") flanged
-H	Qp 40m3/h, DN80 (3") flanged
-J	Qp 60m3/h, DN100 (4") flanged
	System Type (add type to above code)
-4	Heating system
-5	Cooling system
-6	Heat/Cooling system

Data sheet: MW-U.pdf

NOTE: When installing the pockets you should ensure that the sensor/ pocket tip must be located in the centre of the pipe diameter.

The default location of the flow sensor is in the return. If the meter is to be fitted in the flow please advice at time of order.

Want to make this sensor wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52

MW-QS M-Bus QuickServer Gateway

Sontay's MW-QS range are high-performance, fully-configurable, cost-effective building automation gateway's for integrators to easily interface devices between M-Bus to networks such as BACnet MS/TP, BACnet IP, Modbus RTU or LonWorks in commercial buildings, industrial plants and many other applications.

The M-Bus QuickServer Gateway is configurable to act as both a Master and a Slave M-Bus device. As an M-Bus Master the number of devices supported is limited to up to 64 devices as the module provides power to the M-Bus. The M-Bus master interrogates the slave devices as the gateway acts as a Client. It will request information from the slave devices and receive and process only the expected responses.

As an M-Bus Slave the maximum number of devices on the M-Bus is limited to the M-Bus standard of 250.

The gateway will act as an M-Bus Slave and will respond only to requests from the M-Bus master devices.

FEATURES:

- BTL Marked (MW-QS-RS)
- LonMark Certified (MW-QS-LON)
- Multi-configurable capability
- External DIP switches and LED's to aid easy set-up
- DIP switch selectable node ID or baud rate

SPECIFICATION

Power:	9-30Vdc or 12-24Vac 50/60Hz	
M-Bus standards supported:	EN-13757-2 (physical & link layer)	
	EN 13757-3 (application layer)	
Dimensions (WxDxH):	1282 x 739 x 406mm (5.05 x 2.91 x 1.6")	
Ambient Range:	Temperature	-40 to +75°C (-40 to 167°F)
	Humidity	5 to 90% RH non-condensing
Weight:	200g (0.44lb)	

Part code	*Description*
MW-QS-RS	M-Bus to RS-485 Gateway
MW-QS-LON	M-Bus to LonWorks Gateway

Data sheet: MW-QS.pdf

PM-CS Current Switches

Sontay's range of current switches offer adjustable or fixed setpoint's and provides accurate, reliable and maintenance-free operation. Output switching options include 30Vac/dc @ 1A or 240Vac @ 1A, with current ratings of up to 150A. Both versions have a unique self-gripping feature which allows the switch to literally clip on to a cable without the need for a base mounting plate.

APPLICATIONS

- Detection of fan belt breakage
- Detection of motor failure
- Verifying lighting circuits
- Monitoring critical motors (compressors etc.)
- Process equipment status

ADJUSTABLE SETPOINT TYPES

Allow for easy detection of broken drive belts, drive belt slip or pump coupling shear. A typical HVAC motor that loses its load has a reduction of current draw of up to 50%.

Part code	*Description*		*Volume Price Breaks*
	Adjustable Setpoint Types		
PM-CS-A01	0.75 to 150A	30Vac/dc, split core	*Unit Price (5+)*
PM-CS-A02	0.5 to 150A	30Vac/dc, solid core	*Unit Price (5+)*
PM-CS-A03	0.75 to 150A	240Vac, split core	*Unit Price (5+)*
	Fixed Setpoint Types		
PM-CS-F01	0.35 to 150A	30Vac/dc, split core	*Unit Price (5+)*
PM-CS-F02	0.25 to 150A	30Vac/dc, solid core	*Unit Price (5+)*
PM-CS-F03	0.50 to 150A	240Vac, split core	*Unit Price (5+)*

Data sheet: PM-CS.pdf

FEATURES

- Adjustable set-point
- More reliable and cost-effective than differential pressure switches
- 100% solid-state output, no moving parts to fail
- Output status LEDs for fast setup
- Self-powered

FIXED SETPOINT TYPES

Provide a cost-effective solution for monitoring the status of unit vents, exhaust fans, recirculation pumps and other fixed loads where belt loss is not a concern

FEATURES

- More reliable for status than relays across auxiliary contacts
- Ideal for lighting status
- Monitor status of fans, pumps, motors and other electrical loads

SPECIFICATION

Supply:	Self-powered from monitored line	
Insulation class:	600Vac	
Trip setpoint:	PM-CS-A01 - 0.75 to 150A	PM-CS-F01 - 0.35A or less
	PM-CS-A02 - 0.5 to 150A	PM-CS-F02 - 0.25A or less
	PM-CS-A03 - 0.75 to 150A	PM-CS-F03 - 0.5A or less
Sensor power:	Induced from monitored conductor	
Temperature range:	–35 to +60°C (–31 to +140°F)	
Humidity range:	0 to 95%, non-condensing	
Dimensions:	Split core types	65 x 50 x 30mm (2.56 x 1.97 x 1.18"
	hole:	13 x 13mm (0.51 x 0.51"), self-gripping clamp
	Solid core types:	53 x 37 x 24mm (2.09 x 1.46 x 0.94")
	hole:	13mm (0.51") dia
Conformity:	CE marked	
Weight:	100g (0.22lb) max.	

Want to make this switch wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52

PM-CTR Current Transducers

This series of current transducers provide accurate load trending information with a choice of 4-20mA, 0-10Vdc and 0-5Vdc output signals. They provide accurate, reliable and maintenance-free operation.

Solid and split-core versions are available with current ratings up to 100A. current versions are supplied with pre-wired 400mm (15.75") tails and voltage versions have screw terminals.

Both versions have a unique self-gripping feature which allows the switch to literally clip on to a cable without the need for a base mounting plate.

APPLICATIONS

- Load trending
- Motor control

FEATURES

- Power the sensor and receive the signal with only two wires
- Split core versions for fast retrofit installation with no need to remove conductor
- Dip-switch selectable ranges on 0-10Vdc version

SPECIFICATION

Supply:	Current output	Loop powered
	Voltage output	Self powered
Maximum sense voltage:	600Vac	
Accuracy:	Current output	99% FS (25-100% span)
	Voltage output	96.8% FS

Want to make this switch wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52

Temperature range:	–35 to +60°C (–31 to +140°F)	
Humidity range:	0 to 95%, non-condensing	
Dimensions:	Split core types	65 x 50 x 30mm (2.56 x 1.97 x 1.18")
		hole 13 x 13mm (0.51 x 0.51"),
		self-gripping clamp
	Solid core types	53 x 37 x 24mm (20.9 x 1.46 x 0.94")
		hole 13mm (0.51") dia.
Conformity:	CE marked	
Weight:	100g (0.22lb)	

Part code	*Description*	
	4-20mA Output	
PM-CTR-01	0 to 20A, split core	Current Transducer
PM-CTR-02	0 to 50A, split core	"
PM-CTR-03	0 to 100A, split core	"
PM-CTR-04	0 to 20A, solid core	"
PM-CTR-05	0 to 50A, solid core	"
PM-CTR-06	0 to 100A, solid core	"
	0-5Vdc Output	
PM-CTR-07	0 to 10A, solid core,	Current Transducer
PM-CTR-08	0 to 20A, solid core	"
PM-CTR-09	0 to 50A, solid core	"
PM-CTR-10	0 to 100A, solid core	"
	0-10Vdc Output	
PM-CTR-11	20/50/100A, split core	Current Transducer

Data sheet: PM-CTR.pdf

PM-CT Current Transformers

The Sontay range of current transformers are available in moulded, split core and ring types. They all suitable for use with the PM-EM range of kWh meters.

The split core Current transformers are useful for retrofits, upgrades and temporary installations, as they can be fitted without any disruption to the existing installation.

FEATURES

- Ratings from 50 to 800A
- 5A secondary current

SPECIFICATION

Overload:	1.2 x rated current (continuous)	
Frequency:	50/60Hz	
Insulation level:	3kV (50Hz) for 1 minute (not PM-CT-M)	
Connections:	PM-CT-M	Screw terminals
	PM-CT-xSC	1m tails (3.28 ft)
	PM-CT-R	M6 lug terminals
Conformity:	PM-CT-xSC	IEC185, BS7626, BSEB 60044-1
	PM-CT-R	IEC44-1, IEC185, BS7626
Ambient range:	Humidity	up to 95% RH (non-condensing)
	Temperature	–20 to +85°C (PM-CT-M) (–4 to +185°F)
		–30 to +85°C (others) (–22 to +185°F)
Weight:	750g max. (1.65 lb)	

Part code	*Description*
	Moulded Types
PM-CT-M100	100A, 2.5VA Current Transformer
PM-CT-M150	150A, 2.5VA "
PM-CT-M200	200A, 5VA "
PM-CT-M250	250A, 5VA "
PM-CT-M300	300A, 5VA "
PM-CT-M400	400A, 5VA "
PM-CT-M500	500A, 10VA "
PM-CT-M600	600A, 10VA "
PM-CT-M800	800A, 10VA "
	Split Core Types
PM-CT-100SC	100A, 1VA Current Transformer
PM-CT-150SC	150A, 1.5VA "
PM-CT-200SC	200A, 2.5VA "
PM-CT-250SC	250A, 2.5VA Current Transformer
PM-CT-300SC	300A, 2.5VA "
PM-CT-400SC	400A, 5VA "
PM-CT-500SC	500A, 5VA "
PM-CT-600SC	600A, 5VA "
PM-CT-800SC	800A, 5VA "
	Ring Types
PM-CT-R50	50A, 2.5VA Current Transformer
PM-CT-R100	100A, 10VA "
PM-CT-R150	150A, 15VA "
PM-CT-R250	250A, 15VA "
PM-CT-R300	300A, 15VA "
PM-CT-R400	400A, 15VA "
PM-CT-R500	500A, 15VA "
PM-CT-R800	800A, 15VA "

Data sheets: PM-CT-M.pdf · PM-xSC.pdf · PM-CT-R.pdf

PM-EM21 Energy Analyser (DIN-rail or panel mounted)

The PM-EM21 is a compact energy meter that has a removable front LCD display that allows it to be either DIN-rail or panel mounted. The energy meter is designed for active and reactive energy metering. All operations, including programming and viewing up to seven display pages are performed using the two push buttons on the detachable display. It is possible to block the access to programming by means of a trimmer position on the rear of the display. Standard meters are non-MID. For billing use, add annex -B+D option. Extra system information is required please contact Sontay Support.

FEATURES

- Pulsed or ModBus output options
- Self powered
- 5A CT secondary current
- Compact size
- Detachable display
- Multi-use housing for both DIN-rail and panel mounting applications

APPLICATIONS

- 3-Phase, 4-wire balanced & unbalanced load
- 3-Phase, 3-wire balanced & unbalanced load
- 2-Phase, 3-wire
- 1-Phase, 2-wire

CHARACTERISTICS

Measurements:	System	W, var, PF, Hz, Phase-sequence
	Single-phase	VLL, VLN, A, PF, kWh, kvarh

SPECIFICATION

Frequency:	45 to 65Hz	
Display:	2 lines	
Housing:	Nylon PA66, self-extinguishing UL 94 V-0	
Mounting:	DIN-rail or panel	
Output types:	Pulse	Open collector
	ModBus	RS485
RS 485:	Address	Programmable, 1 to 247
	Baud-rate	9600 bit/s
Refresh time:	1/s	
Ambient:	Humidity	0 to 90% (non-condensing)
	Temperature	–25 to +55°C (–13 to +131°F)
Protection:	IP50 (front)	
Dimensions:	72 x 72 x 65mm (2.83 x 2.83 x 2.56")	
Weight:	260g (0.57 lb)	

Part code	*Description*
PM-EM21-P	Energy Analyser – Pulsed Output
PM-EM21-M	Energy Analyser – ModBus Output
	Option (add to part code above)
-B+D	Annex B+D Certification

Data sheet: PM-EM21.pdf

PM-EM24 Energy Analyser (DIN-rail)

The PM-EM24 DIN-rail mounted energy analyser is designed for active and reactive energy metering. When using the optional RS-485 ModBus output it is possible to connect up to three additional pulse inputs from other metering equipment enabling all consumption data to be read from just one meter. PM-EM24 features eight user-selectable applications are available to allow fast setup, with lockable programme selector, and joystick control of up to 31 LCD display pages. Standard meters are non-MID. For billing use, add annex -D option. Extra system information is required please contact Sontay Support.

FEATURES

- Gas and water measurements and multi-tariff management in one unit
- Easy variable scrolling by means of the front joystick
- Pulsed or ModBus output options
- 5A CT secondary current
- Two digital outputs (alarms or/and pulses) or RS485 communication port

APPLICATIONS

- 3-Phase, 3-wire balanced & unbalanced load
- 3-Phase, 4-wire balanced & unbalanced load
- 2-Phase, 3-wire
- 1-Phase, 2-wire

CHARACTERISTICS

Measurements:	System	VLL, VLN, Admd max, var, VA, W, Wdmd, Wdmd max, VAdmd, VAdmd max, PF, Hz
	Single-phase	VLL, VLN, A, W, var, VA, PF, Admd, kWh, kvarh, hour counter

SPECIFICATION

Frequency:	45 to 65Hz	
Display:	3 lines (1 x 8 digit, 2 x 4 digit)	
Housing:	Nylon PA66, self-extinguishing UL 94 V-0	
Mounting:	DIN-rail or panel (optional PM-PMK)	
Output types:	Pulse	Open collector
	ModBus	RS485
	Address	Programmable, 1 to 247
	Baud-rate	Programmable, 4800, 9600 bit/s
Sampling rate:	1600 samples /s @ 50Hz	
	1900 samples /s @ 60Hz	
Display refresh time:	750m/s	
Ambient:	Humidity	0 to 90% (non-condensing)
	Temperature	–25 to +55°C (–13 to +131°F)
Protection:	IP50 (front)	
Dimensions:	90 x 71 x 65mm (3.54 x 2.80 x 2.56")	
Weight:	360g (0.79 lb)	

Part code	*Description*
PM-EM24-P	Energy Analyser – Pulsed Output
PM-EM24-M	Energy Analyser – ModBus Output
	Option (add to part code above)
-D	Annex -D Certification
	Accessory
PM-PMK	Panel door mounting kit

Data sheet: PM-EM24.pdf

PS 24Vdc Output Supplies

Sontay's range of 24Vdc power supplies offer advanced protection, self-diagnostics and self-test facilities, to make installation and commissioning quicker and easier than ever before. 240Vac and 24Vac input versions are available, all featuring over-current and over-voltage protection, LED indication of a wide range of conditions, an optional alarm relay output for loss of input and on-PCB reset button.

The 24Vac input type is available in two versions:

1. PS-24-24DC-1A – the input 0V and the output 0V are NOT common.
2. PS-24-24DC-E – the input 0V and the output 0V are common on the PCB.

This allows the user a choice, depending on what type of field wiring is installed.

FEATURES

- Advanced LED indication of faults
- ON-PCB self-test function
- Polarity independent output

SPECIFICATION

Supply:	240Vac and 24Vac	
Output:	24Vdc @ 1A	
LED indication:	Power ON, low output voltage, high output voltage, output voltage within limits, reset button pressed, self-test in progress	
Temperature range:	–10 to +50°C (14 to 122°F)	
Humidity range:	0 to 95%, non-condensing	
Dimensions:	PS-240-24DC-1A	104 x 118 x 88mm (4.09 x 4.65 x 3.46")
	PS-24-24DC-1A	104 x 74 x 65mm (4.09 x 2.91 x 2.56")
	PS-24-24DC-E	104 x 74 x 70mm (4.09 x 2.91 x 2.76")
Weights:	PS-240-24DC-1A	620g (1.37 lb)
	PS-24-24DC-1A	120g (0.26 lb)
	PS-24-24DC-E	120g (0.26 lb)

Part code	*Description*
PS-24-24DC-1A	24Vac-24Vdc, 1A floating Supply Module
PS-24-24DC-E	24Vac-24Vdc, grounded Supply Module
PS-230-24DC-1A	240Vac-24Vdc, 1A Supply Module

Data sheet: PS-x.pdf

Pressure

MEASURING

Static Pressure → Control & Efficiency ← Differential Pressure

PA Series · Air and Gas Pressure | **PL Series · Liquid Pressure**

Sensors	AND	Switches
Measure an applied pressure and produce a linear output (0-10Vdc or 4-20mA) which represents a specific pressure range, such as 0 –25 Pa, or 0 –1 bar.		Measure pressure, but switch a contact at a pre-set pressure level within the operating range of the switch.

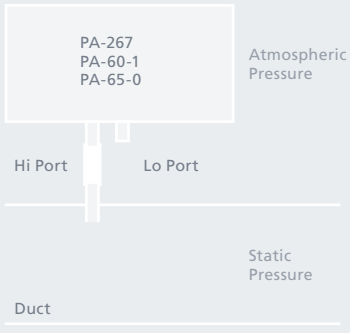
A Range of Accessories is available:

- Duct Fixing Kits
- Pig-Tails (to reduce temperature and shock loading)

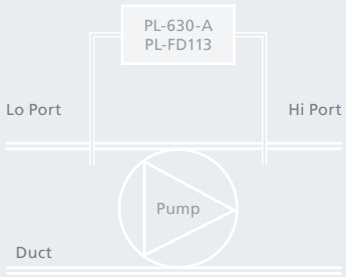
APPLICATIONS

Applications include fan and pump proving, dirty filter indication and fan and pump speed control.

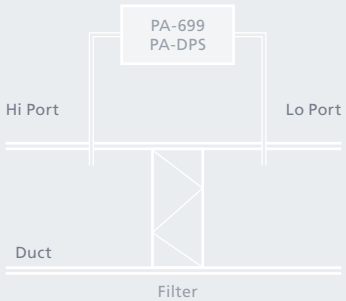
Static Air Pressure Control



Pump Flow Proving



Dirty Filter Indication



PA-DPS Air DP Switches

These are highly sensitive air differential pressure switches, suitable for providing an indication of fan status and 'dirty filter' conditions. The switching setpoint is adjusted by means of a knob mounted under the main cover. Units are supplied complete with a duct fixing kit.

FEATURES

- Duct fixing kit included
- IP54 or IP65 housing option
- One screw needed for housing cover
- Scale in Pascal's

SPECIFICATION

Operating ranges:	*Type:*	*Adjustment range:*
	PA-DPS-88	20 to 300Pa (0.08 to 0.80"w/c)
	PA-DPS-83	50 to 500Pa (0.20 to 2"w/c)
	PA-DPS-85	200 to 1000Pa (0.8 to 4"w/c)
	PA-DPS-90W	20 to 300Pa (0.08 to 1.2"w/c)
	PA-DPS-91W	50 to 500Pa (0.2 to 2"w/c)
	PA-DPS-92W	100 to 1000Pa (0.4 to 4"w/c)
	PA-DPS-94W	500 to 2000Pa (2 to 8"w/c)
Max. operating pressure:	5000Pa (20"w/c)	
Pressure connections:	6mm i/d push-on tubing	
Electrical rating (IP54):	1.5A (0.4)/250Vac AgCdO contacts	
Electrical rating (IP65):	5A (0.8A) 230Vac or 2A@30Vdc	
Connections (IP54):	Spade terminals and screw terminal adaptors for cable up to 1.5mm^2 max.	
Connections (IP65)	Screw terminals	
Housing material:	Plastic moulding	
Dimensions:	IP54	85mm (3.35") dia. x 59mm (2.32")
	IP65	81mm (3.23") dia. x 58mm (2.28")
Protection:	IP54 or IP65	
Ambient range:	Temperature	–20 to +85°C (–4 to +185°F)
	RH	0 to 95% RH, non-condensing
Weight:	250g (0.55 lb)	

Part code	*Description*		*Volume Price Breaks*
	IP54 Switch Housing		
PA-DPS-88	20 to 300Pa (0.08 to 0.80"w/c)	Switch	*Unit Price (10-19 & 20+)*
PA-DPS-83	50 to 500Pa (0.20 to 2"w/c)	Switch	*Unit Price (10-19 & 20+)*
PA-DPS-85	200 to 1000Pa (0.8 to 4"w/c)	Switch	*Unit Price (10-19 & 20+)*
	Accessories		
PA-DPS-B	Right angled moiunt bracket		–
DFK	Duct fixing kit		–
TEE	Tee piece air pressure (pack of 10)		–
PA-TUBE-8MM	PVC tube 8mm o/d x 1.5mm wall, 30m reel		–
	IP65 Switch Housing		
PA-DPS-90W	20 to 300Pa (0.08 to 1.2"w/c)	Switch	–
PA-DPS-91W	50 to 500Pa (0.2 to 2"w/c)	Switch	–
PA-DPS-92W	100 to 1000Pa (0.4 to 4"w/c)	Switch	–
PA-DPS-94W	500 to 2000Pa (2 to 8"w/c)	Switch	–
	Accessories		
DFK	Duct fixing kit		–
TEE	Tee piece air pressure (pack of 10)		–
PA-TUBE-8MM	PVC tube 8mm o/d x 1.5mm wall, 30m reel		–

Data sheets: PA-DPS-8x.pdf, PA-DPS-9x.pdf

Note: A duct fixing kit (DFK) is supplied with the switch, consisting of 2m (6.56 ft) 5mm (0.20") i/d plastic tubing, 2 x pitot tubes and 4 x fixing screws.

Want to make this sensor wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52.

PA-650 Multi-Configurable Air DP Sensor

The PA-65x pressure transducers sense differential or gauge (static) pressure and convert this pressure difference to a proportional electrical output for either field selectable unidirectional or bidirectional pressure ranges. The PA-650 series is offered with field selectable ranges and analog outputs of 0 to 5Vdc, 0 to 10Vdc, or 4 to 20mA. The measurement cell uses an advanced design capacitive element to ensure excellent linearity and stability.

FEATURES

- Field selectable multi-ranges
- Re-zero
- Integral LCD
- Snap-fit cover
- Duct fixing kit included

Part code	*Description*
PA-650	0-50, 0-100, 0-150, 0-200, bi-directional ±50, ±100, ±150, ±200Pa (0-0.2, 0-0.4, 0-0.6 & 0-0.8, bi-directional ±0.2, ±0.4, ±0.6 & ±0.8"w/c)
PA-651	0-250, 0-500, 0-750, 0-1000, bi-directional ±250, ±500, ±750, ±1000Pa (0-1, 0-2, 0-3 & 0-4, bi-directional ±1, ±2, ±3 & ±4"w/c)
PA-652	0-750, 0-1500, 0-2250, 0-3000, bi-directional ±750, ±1500, ±2250,±3000Pa (0-3, 0-6, 0-9 & 0-12, bi-directional ±3, ±6, ±9 & ±12"w/c)
	Suffix (add to above part code)
-S	Static pressure probe
	Accessories
DFK	Duct fixing kit
TEE	Tee piece air pressure (pack of 10)
PA-TUBE-8MM	PVC tube 8mm o/d x 1.5mm wall, 30m reel

SPECIFICATION

Ranges:
PA-650 0-50, 0-100, 0-150, 0-200, bi-directional ±50, ±100, ±150, ±200Pa
(0-0.2, 0-0.4, 0-0.6 & 0-0.8, bi-directional ±0.2, ±0.4, ±0.6 & ±0.8"w/c)
PA-651 0-250, 0-500, 0-750, 0-1000, bi-directional ±250, ±500, ±750, ±1000Pa
(0-1, 0-2, 0-3 & 0-4, bi-directional ±1, ±2, ±3 & ±4"w/c)
PA-652 0-750, 0-1500, 0-2250, 0-3000, bi-directional ±750, ±1500, ±2250,±3000Pa
(0-3, 0-6, 0-9 & 0-12, bi-directional ±3, ±6, ±9 & ±12"w/c)

Output:	Current	4-20mA, load: 100 to 800Ω
	Voltage	0-5Vdc, 0-10Vdc (o/p impedance 300Ω)
Power supply:	Current	24Vdc
	Voltage	18-24Vac or 13-30Vdc
Accuracy:	Overall	±1.00% fs
	Non-linearity	±0.98% fs
	Hysteresis	0.10% fs
	Non-repeatability	0.05% fs
Thermal effect:	Zero /Span Shift	±0.03% fs per °C (0.054°F)
Long term stability:	2.0% fs/yr	
Over pressure:	68kPa (10psi)	
Pressure connections:	Push fit for 6mm (0.24") i/d tube	
Diaphragm:	Stainless steel 304SS	
Housing:	Material	Flame retardant ABS
	Dimensions	116 x 106 x 52mm (4.57 x 4.17 x .05")
Optional static probe:	196 x 6mm dia. (7.72 x 0.25")	
Protection:	IP65	
Ambient range:	Temperature	0 to 50°C (32 to 122°F)
	RH	0 to 85% RH, non-condensing
Weight:	240g (0.53lb)	

Data sheet: PA-65x.pdf

Note: A A duct fixing kit (DFK) is supplied with the sensor, consisting of 2m (6.56 ft) 5mm (0.20") i/d plastic tubing, 2 x pitot tubes and 4 x fixing screws.

PA-267 High Accuracy DP Sensors

These highly accurate sensors are designed for differential pressure measurements of air and other neutral gases. The unit is especially suited for measurement and control in HVAC applications.

FEATURES

- Available in ranges as low as 0-25Pa (0 to 0.10"w/c)
- Integral LCD option
- Duct fixing kit included

Part code	*Description*
PA-267-25-AH	0 to 25Pa (0 to 0.10"w/c), 4-20mA Transmitter
PA-267-50-AH	0 to 50Pa (0 to 0.20"w/c), "
PA-267-100-AH	0 to 100Pa (0 to 0.40"w/c), "
PA-267-300-AH	0 to 300Pa (0 to 1.20"w/c), "
PA-267-500-AH	0 to 500Pa (0 to 2.01"w/c), "
PA-267-1000-AH	0 to 1000Pa (0 to 4.01"w/c), "
PA-267-1600-AH	0 to 1600Pa (0 to 6.42"w/c), "
PA-267-2500-AH	0 to 2500Pa (0 to 10.04"w/c), "
PA-267-3000-AH	0 to 3000Pa (0 to 12.04"w/c), "
	Suffixes (add to above part code)
-V	0-10V voltage output
-B	Bi-directional
-LCD *	Integral LCD display

Want to make this sensor wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52

SPECIFICATION

Overall Accuracy:	±0.40% fsd	
Thermal effect:	±0.06% per °C	
Over pressure:	10 psi (68 kPa)	
Pressure connections:	Push fit for 6mm (0.24") i/d tube	
Output:	Current	4-20mA, load: 100 to 800Ω
	Voltage	0-10Vdc (o/p impedance <100kΩ)
Power supply:	Current Min.	9Vdc + (0.02 x load resistance)
	Max.	30Vdc + (0.004 x load resistance)
	Voltage	9-30Vac or 12-40Vdc
Diaphragm:	Stainless steel 304SS	
Housing:	Glass-filled polycarbonate to UL94V-0	
Protection:	IP65	
Operating temp:	–18 to +65°C (0 to 149°F)	
Dimensions:	158 x 80 x 60mm max. (6.22 x 3.15 x 2.36")	
Weight:	340g (0.75 lb)	

Part code	*Description*
	Accessories
DFK	Duct fixing kit
TEE	Tee piece air pressure (pack of 10)
PA-TUBE-8MM	PVC tube 8mm (0.31") o/d x 1.5mm (0.06") wall, 30m (98.5 ft) reel
PA-267-CAL *	Calibration certificate

Data sheet: PA-267-AH.pdf

Notes: * These options must be specified at time of sensor order. They are built to order and not available ex-stock.

- A duct fixing kit (DFK) is supplied with the sensor, consisting of 2m (6.56 ft) 5mm (0.20") i/d plastic tubing, 2 x pitot tubes and 4 x fixing screws.

PA-60-x Multi-Configurable Air DP Sensor

With new added pressure ranges the PA-60-x series of differential pressure transmitters are ideal for measuring filter conditions, as well as many other applications in ventilation/air conditioning systems in buildings, laboratory's and clean rooms (air and non-corrosive gases). The PA-60-x series have four field-selectable pressure ranges and selectable output signal type, which are easily defined by user selection switches.
Also available are an optional LCD displays and ModBus/ BACnet outputs.

USE THE CODE NOBRAND ON YOUR ORDER IF THE SONTAY LOGO IS NOT REQUIRED

FEATURES

- User selectable measurement range and output type Re-zero
- Duct fixing kit included
- Snap-fit cover

Part code	Description
PA-60-1	0 to 25, 50, 150 & 250Pa Multi Range Selectable (0 to 0.1, 0.2, 0.6 & 1" w/c) 0-10Vdc or 4-20mA Selectable Output
PA-60-2	0 to 50, 100, 300 & 500Pa Multi Range Selectable (0 to 0.2, 0.4, 1.2 & 2" w/c) High Accuracy 0-10Vdc or 4-20mA Selectable Output
PA-60-2-HA	0 to 50, 100, 300 & 500Pa Multi Range Selectable (0 to 0.2, 0.4, 1.2 & 2" w/c) 0-10Vdc or 4-20mA Selectable Output
PA-60-3	0 to 125, 250, 750 & 1250Pa Multi Range Selectable (0 to 0.5, 1, 3 & 5" w/c) 0-10Vdc or 4-20mA Selectable Output
PA-60-4	0 to 250, 500, 1500 & 2500Pa Multi Range Selectable (0 to 1, 2, 6 & 10" w/c) 0-10Vdc or 4-20mA Selectable Output

Part code	Description
	Suffix (add to above part code)
-LCD	Integral LCD Display
-COM	ModBus/BACnet
	Accessories
DFK	Duct fixing kit
TEE	Tee piece air pressure (pack of 10)
PA-TUBE-8MM	PVC tube 8mm o/d x 1.5mm wall, 30m reel

Data sheet: PA-60x.pdf - PA-60x-COM.pdf

SPECIFICATION

Power Supply:		
	Current Output: 24Vdc±10% (3-wire)	
	Voltage Output: 24Vdc / dc ±10% (3-wire)	
Measurement ranges:	Selectable	
Overall accuracy:		
PA-60-1	±3.00% fs	
PA-60-2,-3 &4	±2.00% fs	
PA-60-2-HA	±1.00% fs	
Burst Pressure:	1.5bar (1.5psi)	
Pressure Connections:	Push fit for 6mm (0.24')ID tubing	
Housing:	Material	ABS (Flame retardant VO)
	Dimensions	116 x 106 x 52mm
		(4.57 x 4.17 x 2.05")
Protection:	IP65	
Ambient range:	Temperature	0 to 40°C (32 to 104°F)
	RH	0 to 85% RH, non-condensing
Weight:	240g (0.53lb)	

Note: A A duct fixing kit (DFK) is supplied with the sensor, consisting of 2m (6.56 ft) 5mm (0.20") i/d plastic tubing, 2 x pitot tubes and 4 x fixing screws.

PA-699 Multi-range Air DP Sensors

Sontay's range of field selectable multi-range differential pressure transmitters, incorporate a proven ceramic fulcrum lever technology for pressure measurement.

The PA-699 has three field selectable ranges in one unit, providing versatility for a multitude of applications.

FEATURES

- Adjustable measurement range
- IP65 housing
- Duct fixing kit included
- Compact construction

RF-IOM WIRELESS SENSOR INPUT

Want to make this sensor wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52

SPECIFICATION

Accuracy, total of linearity, hysteresis & repeatability (% fs):	PA-699-01 to 04 ±1.0 max. Others ±0.6		
Thermal effect (typical % fs/°C):		*TC zero point*	*TC sensitivity*
	PA-699-01	±0.02	±0.03
	PA-699-02	±0.02	±0.03
	PA-699-04	±0.01	±0.01
	Others	±0.01	±0.01
Rupture pressure:	2 x overload at ambient temp.		
Power supply:	Current output 8 to 33Vdc Voltage 13.5 to 33Vdc or 24Vac ±15%		
Diaphragm:	Silicone		
Housing:	Polycarbonate PC		
Temperature:	Medium & ambient 0 to 70°C (32 to 158°F)		
Protection:	IP65		
Dimensions:	92 x 75 x 47.9mm (3.62 x 2.95 x 1.89")		
Weight:	92g (0.20 lb)		

Part code	Description
PA-699-01	Bi-directional, 30, 50 & 100Pa, (0.12, 0.20 & 0.40"w/c) 4-20mA Multi Range
PA-699-02	0 to 30, 50 & 100Pa, (0.12, 0.20 & 0.40"w/c) 4-20mA Multi Range
PA-699-04	0 to 100, 300 & 500Pa, (0.40, 1.20 & 2.01"w/c) 4-20mA Multi Range
PA-699-06	0 to 500, 1000 & 1600Pa, (2.01, 4.01 & 6.42"w/c) 4-20mA Multi Range
PA-699-08	0 to 1600, 2500 & 5000Pa, (6.42, 10.04 & 20.07"w/c) 4-20mA Multi Range

Notes: * This option must be specified at time of sensor order.
They are built to order and not available ex-stock.

- **A duct fixing kit (DFK) is supplied with the sensor, consisting of 2m (6.56 ft) 5mm (0.20") i/d plastic tubing, 2 x pitot tubes and 4 x fixing screws.**

Part code	Description
	Suffixes (add to above part code)
-V	0-10V voltage output
-LCD	Integral LCD option
	Accessories
DFK	Duct fixing kit
TEE	Tee piece air pressure (pack of 10)
PA-TUBE-8MM	PVC tube 8mm (0.31") o/d x 1.5mm (0.06")wall, 30m (98.5 ft) reel
PA-BRK	DIN-rail bracket
PA-699-CAL *	Calibration certificate

Data sheet: PA-699.pdf

PL-FD113 Liquid DP Switch

Liquid differential pressure switch suitable for monitoring flow status across pumps, chillers, valves etc. The switch has an adjustable set point from 0.3 bar to 4.5 bar (4.4 to 65.3 psi) with a fixed differential of 0.2 bar (2.9 psi).

FEATURES

- SPDT switch
- Single unit covers a wide pressure range
- Simple to configure

Part code	*Description*	*Volume Price Breaks*
PL-FD113	0.3 to 4.5 bar (4.4 to 65.3 psi) Liquid DP Switch	*Unit Prices (20+)*

Data sheet: PL-FD113.pdf

SPECIFICATION

Range:	0.3 to 4.5 bar (4.4 to 65.3 psi)
Switching differential:	0.2 bar (2.9 psi)
Pipe connections:	¼" BSP female
Ambient temperature:	–10 to +70°C (14 to 158°F)
Liquid temperature:	70°C max. (158°F)
Switch rating:	3A @ 230Vac
Protection:	IP30
Dimensions:	128 x 175 x 48mm (5.04 x 6.89 x 1.89")
Weight:	800g (1.76 lb)

Note: A mounting bracket is supplied with the switch.

Want to make this sensor wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52.

PL-PSA Liquid Pressure Switches

Adjustable pressure switches, suitable for the monitoring of flow failure and proving in pumps, chillers, valves etc. Units have an adjustable setpoint and differential.

FEATURES

- Adjustable pressure range
- Narrow adjustable differential

Part code	*Description*	*Volume Price Breaks*
PL-PSA1	–0.75 to +3 bar (–10.9 to +43.5 psi)	*Unit Price (20+)*
PL-PSA2	–0.8 to +1.5 bar (–11.6 to +21.8 psi)	*Unit Price (20+)*
PL-PSA3	–0.5 to +7 bar (–7.3 to +101.5 psi)	*Unit Price (20+)*
	Accessories	
PL-PIG	2m (6.56 ft) of 6mm (0.24") copper tubing + fitting	–
BRK	Bracket for PL-PSAx	–

Data sheet: PL-PSA.pdf

SPECIFICATION

Range:	PL-PSA1	–0.75 to +3 bar (–10.9 to +43.5 psi)
	PL-PSA2	–0.8 to +1.5 bar (–11.6 to +21.8 psi)
	PL-PSA3	–0.5 to +7 bar (–7.3 to +101.5 psi)
Differential:	PL-PSA1	0.25 to 1.5 bar (3.6 to 21.8 psi)
	PL-PSA2	0.2 to 1 bar (2.9 to 14.5 psi)
	PL-PSA3	0.5 to 5 bar (7.3 to 72.5 psi)
Pressure connections:	¼" BSP male	
Ambient temperature:	–50 to +70°C (–58 to +158°F)	
Liquid temperature:	–50 to +70°C (–58 to +158°F)	
Switch rating:	230Vac @ 24(10)A	
Protection:	IP44	
Dimensions:	42 x 85 x 75mm (1.65 x 3.35 x 2.95")	
Weight:	346g (0.76 lb)	

Want to make this sensor wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52.

PL-630-A Differential Pressure Switches

Ideal for flow monitoring and proving applications in heating, ventilating and air-conditioning systems.

FEATURES

- Over-pressure safety capability to 10 bar (145 psi) / 20 bar (290 psi)
- Mechanically isolated switching chamber for safety and reliability
- Medium temperatures to 80°C (176°F)
- Rugged construction
- Adjustable setting and differential

SPECIFICATION

Max. operating pressure and overload on one side (P1>P2):	With range ≤ 200 mbar (2.9 psi) = 10 bar (145 psi) With range 150 to 5000 mbar (2.2 to 72.5 psi) = 20 bar (290 psi) Lowest turn-on pressure: 15 mbar (0.2 psi)
Pressure connection:	1/8" BSP female
Media:	Water, air and steam (with pigtail siphon)
Electrical rating:	1A(0.5A) @ 250Vac
Contact system:	Changeover contact
Operating range:	–10 to +80°C (14 to 176°F)
Protection:	IP65
Dimensions:	110 x 65mm (4.33 x 2.56")
Weight:	1.08 kg (2.38 lb)

RF-IOM WIRELESS SENSOR INPUT

Want to make this sensor wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52.

Part code	*Description*
PL-630-A-0.02	6 to 20 mbar (0.1 to 0.3 psi) Diff. Pressure Switch
PL-630-A-0.06	15 to 60 mbar (0.2 to 0.9 psi) "
PL-630-A-0.2	40 to 200 mbar (0.6 to 2.9 psi) "
PL-630-A-1	0.15 to 1 bar (2.2 to 14.5 psi) Diff. Pressure Switch
PL-630-A-3	1 to 3 bar (14.5 to 43.5 psi) "
PL-630-A-5.5	2 to 5.5 bar (29 to 79.8 psi) "

Data sheet: PL-630-A.pdf

Note: A mounting bracket is supplied with the switch.

PL-528 Static Pressure Transmitter

The PL-528 range of static pressure transmitters are suitable for use with a large range of liquids and gases compatible with the FPM (Viton) seal. The pressure transmitter is based on proven ceramic technology for exceptional performance speed and reliability.

FEATURES

- Compact rugged construction
- Negligible temperature influence on accuracy
- IP65 protection
- Electrical terminals and gland to DIN EN175 301-803-A
- Supply short circuit & polarity reversal protection

SPECIFICATION

Supply voltage:	PL-528-x	7Vdc to 33Vdc
	PL-528-x-V	12Vdc to 33Vdc or 24Vac ±15%
Output:	PL-528-x	4-20mA
	PL-528-x-V	0-10Vdc
Response time:	<2ms, 1ms typical	
Overload/rupture pressure:	0 to 4 bar (58 psi) 3 x measuring range full scale 6 to 40 bar (87 to 580 psi) 2.5 x measuring range full scale	
Materials:	Pressure connection	S/S 1.4305 / AISI 303
	Sensor	Ceramic Al2O3 (96%)
	Sealing material	FPM (Viton)
Pressure connection:	½" BSP male manometer combi	
Temperature:	Media	–15 to +125°C (5 to 257°F)
	Ambient	–30 to +85°C (–22 to +185°F)
Protection:	IP65	
Dimensions:	105 x 65mm (4.13 x 2.56")	
Weight:	105g (1.5 lb)	

RF-IOM WIRELESS SENSOR INPUT

Want to make this sensor wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52.

Part code	*Description*
	4-20mA Output (2-wire loop powered)
PL-528-1	0 to 1 bar (0 to 14.5 psi) Static Pressure Sensor
PL-528-1.6	0 to 1.6 bar (0 to 23.2 psi) "
PL-528-2.5	0 to 2.5 bar (0 to 36.3 psi) "
PL-528-4	0 to 4 bar (0 to 58 psi) "
PL-528-6	0 to 6 bar (0 to 87 psi) "
PL-528-10	0 to 10 bar (0 to 145 psi) "
PL-528-16	0 to 16 bar (0 to 232 psi) "
PL-528-25	0 to 25 bar (0 to 362.6 psi) "
PL-528-40	0 to 40 bar (0 to 580 psi) "
	0-10Vdc Output
PL-528-1-V	0 to 1 bar (0 to 14.5 psi Static Pressure Sensor
PL-528-1.6-V	0 to 1.6 bar (0 to 23.2 psi) "
PL-528-2.5-V	0 to 2.5 bar (0 to 36.3 psi) "
PL-528-4-V	0 to 4 bar (0 to 58 psi) "

Part code	*Description*
PL-528-6-V	0 to 6 bar (0 to 87 psi) Static Pressure Sensor
PL-528-10-V	0 to 10 bar (0 to 145 psi) "
PL-528-16-V	0 to 16 bar (0 to 232 psi) "
PL-528-25-V	0 to 25 bar (0 to 362.6 psi) "
PL-528-40-V	0 to 40 bar (0 to 580 psi) "
	Accessories
PL-HS	Pressure Transmitter Heat Sink
PL-528-CAL *	Calibration certificate

Data sheets: PL-528.pdf · PL-HS.pdf

Notes:

1. Heat Sink PL-HS can be used where media has a higher temperature than the sensor allows.
2. * This option must be specified at the time of sensor order. It is built to order and not available ex-stock.

PL-625 Static Pressure Switches

Features optimised polymer diaphragm technology to give long term stability and excellent repeatability of switching points and housed within a rugged industrial case.

FEATURES

- Suitable for liquids and gases
- High vibration resilience
- Adjustable switching differential
- Spade connectors and gland supplied

Part code	*Description*
PL-625-2.2	120 to 2200 mbar (0.12 to 2.2 bar / 1.7 to 31.9 psi) Switch
PL-625-6	1000 to 6000 mbar (1 to 6 bar / 14.5 to 87 psi) Switch

Data sheet: PL-625.pdf

SPECIFICATION

Max. test pressure:	10 bar (145 psi)
Max. operating pressure:	1½ x range
Pressure connection:	¼" BSP male
Media:	Water, air and steam (with pigtail siphon)
Electrical rating:	6A(3A) @ 250Vac
Contact system:	Changeover contact
Operating range:	–10 to +80°C (14 to 176°F)
Protection:	IP54
Dimensions:	98 x 65mm (3.86 x 2.56")
Weight:	260g (0.57 lb)

Want to make this sensor wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52.

PL-652 Low Range Differential Pressure Sensors

A sensor for liquids and gases which uses the 'Hall Effect' sensing technology. The high over pressure resilience and rugged mechanical construction make this product suitable for a wide range of HVAC applications.

FEATURES

- Output signal in current or voltage
- High over pressure safety margin
- High linearity, accuracy and repeatability
- Rugged IP65 case construction
- Suitable for mildly aggressive liquids & gases

Part code	*Description*
	4-20mA Output (3-wire)
PL-652-0.05	0 to 50 mbar (0 to 0.7 psi) Diff. Pressure Sensor
	0-10Vdc Output
PL-652-0.05-V	0 to 50 mbar (0 to 0.7 psi) Diff. Pressure Sensor
	Accessory
PL-652-CAL *	Calibration certificate

Data sheet: PL-652.pdf

SPECIFICATION

Supply voltage:	20-30Vdc
Max. operating pressure and overload on one side (P1>P2):	10 bar (145 psi)
Pressure connection:	$^1/_8$ " BSP female
Media:	Water, air and steam (with pigtail siphon)
Operating range:	–10 to +80°C (14 to 176°F)
Protection:	IP65
Dimensions:	110 x 65mm (4.33 x 2.56")
Weight:	940g (2.07 lb)

Notes:
1. A mounting bracket is supplied with the sensor.
2. * This option must be specified at the time of sensor order. It is built to order and not available ex-stock.

Want to make this sensor wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52.

PL-691 Low Range Static Pressure Sensor

The speed and accuracy of the PL-691 range, made possible by the ceramic sensing technology, make them particularly suitable to level sensing and other applications where close control is required.

FEATURES

- Current and voltage output models
- Easy installation and wiring
- Complete with 1.5m (4.92 ft) cable, ready connected
- Solid state sensing technology
- High over-pressure resilience

Part code	*Description*
	4-20mA Output (2-wire loop powered)
PL-691-0.1	0 to 100 mbar (0 to 1.5 psi) Static Pressure Sensor
PL-691-0.2	0 to 200 mbar (0 to 2.9 psi) "
PL-691-0.3	0 to 300 mbar (0 to 4.4 psi) "
PL-691-0.6	0 to 600 mbar (0 to 8.7 psi) "
	0-10Vdc Output
PL-691-0.1-V	0 to 100 mbar (0 to 1.5 psi) Static Pressure Sensor
PL-691-0.2-V	0 to 200 mbar (0 to 2.9 psi) "
PL-691-0.3-V	0 to 300 mbar (0 to 4.4 psi) "
PL-691-0.6-V	0 to 600 mbar (0 to 8.7 psi) "

Data sheets: PL-691.pdf · PL-HS.pdf

SPECIFICATION

Supply voltage:	4-20mA	11 to 33Vdc
	0-10Vdc	18 to 33Vdc or 24Vac ±15%
Response time:	<5ms	
Overload:	2 x measuring range (rupture 3 x)	
Pressure connection:	½" BSP male	
Media:	Water, air and steam (with PL-HS)	
Temperature:	Ambient & media –15 to +80°C (5 to 176°F)	
Protection:	IP65	
Dimensions:	132 x 40mm (5.20 x 1.57")	
Weight:	260g (0.57 lb)	

Want to make this sensor wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52.

Part code	*Description*
	Accessories
PL-HS	Pressure Transmitter Heat Sink
PL-691-CAL *	Calibration certificate

Notes:
1. Heat Sink PL-HS can be used where media has a higher temperature than the sensor allows.
2. * This option must be specified at the time of sensor order. It is built to order and not available ex-stock.

PL-692 Differential Pressure Sensors

For high accuracy and close control applications, the PL-692 features ceramic sensing technology for exceptional accuracy and reliability. The amplified sensing technologies allow high temperature stability and no creepage associated with mechanical systems.

FEATURES

- Current and voltage output models
- Supplied with 6mm o/d fittings
- Easy installation and wiring
- Complete with 1.5m (4.92 ft) cable, ready connected
- High temperature stability

SPECIFICATION

Supply voltage:	4-20mA	11 to 33Vdc
	0-10Vdc	18 to 33Vdc or 24Vac ±15%
Response time:	<5ms	
Pressure connection:	6mm compression	
Media:	Water, air and steam (with pigtail siphon)	
Temperature:	Ambient & media –15 to +80°C (5 to 176°F)	
Protection:	IP65	
Dimensions:	130 x 40mm (5.12 x 1.57")	
Weight:	640g (1.41 lb)	

Want to make this sensor wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52.

Part code	*Description*
	4-20mA Output (2-wire loop powered)
PL-692-0.1	0 to 100 mbar (0 to 1.5 psi) Diff. Pressure Sensor
PL-692-0.2	0 to 200 mbar (0 to 2.9 psi) "
PL-692-0.4	0 to 400 mbar (0 to 5.8 psi) "
PL-692-1	0 to 1 bar (0 to 14.5 psi) "
PL-692-2.5	0 to 2.5 bar (0 to 36.3 psi) "
PL-692-4	0 to 4 bar (0 to 58 psi) "
PL-692-6	0 to 6 bar (0 to 87 psi) "
PL-692-10	0 to 10 bar (0 to 145 psi) "
PL-692-16	0 to 16 bar (0 to 232 psi) "
	0-10Vdc Output
PL-692-0.1-V	0 to 100 mbar (0 to 1.5 psi) Diff. Pressure Sensor
PL-692-0.2-V	0 to 200 mbar (0 to 2.9 psi) "
PL-692-0.4-V	0 to 400 mbar (0 to 5.8 psi) "
PL-692-1-V	0 to 1 bar (0 to 14.5 psi) "
PL-692-2.5-V	0 to 2.5 bar (0 to 36.3 psi) "
PL-692-4-V	0 to 4 bar (0 to 58 psi) "
PL-692-6-V	0 to 6 bar (0 to 87 psi) "
PL-692-10-V	0 to 10 bar (0 to 145 psi) "
PL-692-16-V	0 to 16 bar (0 to 232 psi) "
	Accessory
PL-692-CAL *	Calibration certificate

Data sheet: PL-692.pdf

Notes:
1. A mounting bracket is supplied with the sensor.
2. * This option must be specified at the time of sensor order. It is built to order and not available ex-stock.

UK Tel. +44 (0) 1732 861200 · Int. Tel. +44 (0) 1732 861225 · UK Fax +44 (0) 1732 861201 · Int. Fax +44 (0) 1732 861226

Smart Communication

The future in sensing!

New technologies are revolutionising the way sensing devices are installed and used in HVAC and climate control applications. Simplifying the way devices are installed and offering many sensing options in one housing, these devices enable monitoring for occupancy comfort and ever important energy savings.

Take a look at our range of wireless and smart communication devices.

SonNet...the revolutionary family of wireless sensing devices ideal for retrofit applications.

What is SonNet

SonNet is a reliable alternative to traditional wired sensing devices. Offering robust connectivity and a range of interfaces with many BMS controllers, SonNet is the perfect solution for retrofit and refurbishment projects. Savings can also be made on total installed costs of sensors in new buildings.

Site Survey Kit

The Site Survey Kit enables signal strengths and robustness of a wireless network in a building to be proven before buying and installing the system.

Receivers

RF-RX

Provides analogue outputs which can be incorporated into any controller strategy. It also connects via USB cable to SonNet CMS software on a PC or laptop.

RF-RX-S

Offers direct integration with controllers where a driver has been developed. Ask us for a list of available drivers.

RF-RXS-N

An internally mounted option card that has been developed to be installed in the Tridium JACE or other similar controllers. This allows quick and seamless integration through Niagara Framework

Sensors & Routers

Space

The SonNet space sensor can measure variables such as temperature, RH & CO_2.

Plant

The plant sensor version can be used in immersion, duct and industrial applications to measure temperature, RH & CO_2.

Outside

A version of the sensor is available with protection to measure temperature, RH & CO_2 in outside applications.

Flying Lead/Clamp-On

Use a flying lead or clamp on sensor to measure temperature in ceiling or pipework applications.

Smart Communication

RF-IOM-4A-4U

The RF-IOM is a fully configurable input/output module, and is used in conjunction with the Sontay's range of RF-RR and RF-RS radio devices.

SonNet Powered by SIP

The new Sontay SIP is an interface that allows a SonNet wireless network, using the RF-RXS receiver, to integrate seamlessly into a Trend network.

BCIA Award

SonNet Wireless Technology

Technical Innovation Of the Year

Why SonNet?

SonNet is an ideal solution for retrofit and refurbishment applications. Offering impressive cost savings and minimal downtime for operational buildings on installation. Ideal applications include:

- **Schools**
- **Hospitals**
- **Theatres**
- **Public spaces**
- **Manufacturing facilities**

FEATURES

- Employs 802.15.4 wireless standard, using 2.4GHzISM
- Choice of 16 channels to avoid interference with other wireless networks
- Self-healing tree topology eliminates concerns with reception & reliability
- Up to 5 year sensor battery life
- Simple integration
- Free CMS software for configuration and monitoring
- Site Survey Kit for proving signal strengths
- Assured network security
- Low total installed cost
- Minimal downtime on installation for operational buildings
- Offering energy savings in buildings where it would not have been possible before

GUILDHALL

SonNet SHOWCASED AT THE GUILDHALL ART GALLERY

The Guildhall Art Gallery in London is benefiting from state-of-the-art temperature and humidity monitoring thanks to Sontay's innovative SonNet wireless system.

BACnet/MODbus

For 2015 we are introducing our first smart communication sensor

For 2015 we are introducing our first smart communication sensor. The sensor offers a wide range of sensing variables in one sensor and transmits measurement information through BACnet and Modbus smart protocols.
This offers savings in sensor outlay as only one device is required and connectivity to a range of variables can be made with one connection.
For more information see page 55.

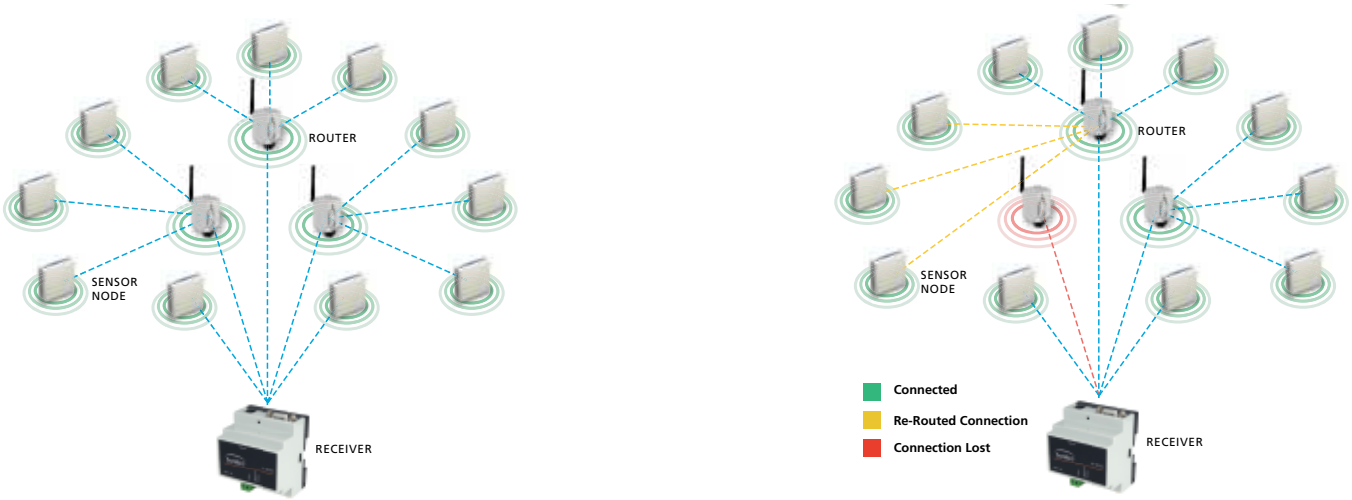
Wireless Technology

SonNet®, the revolutionary family of wireless sensing devices

HOW SONNET WORKS

SonNet employs the 802.15.4 wireless standard, and uses the 2.4GHz ISM band which features a choice of 16 channels and direct sequence spread spectrum techniques to reduce the effects of interference. To ensure a robust network, a self-healing tree topology is used, which eliminates concerns with reception and reliability often associated with existing 'point-to-point' wireless systems. If a sensor detects a problem with the signal, it will automatically re-route to find the strongest available alternative path to the receiver.

SELF-HEALING TREE TOPOLOGY



Note: The receiver and routers can each support a maximum of 16 directly connected 'child' devices. A router can support a maximum of 8 battery powered EDs, plus up to 8 routers. A receiver can have a maximum of 12 directly connected EDs, while a router can have a maximum of 8 directly connected EDs. If no EDs are directly connected a maximum of 16 routers can be directly connected. There can be a maximum depth of 8 'layers' of routers in a network and a maximum of 50 nodes per network with the RF-RX series of receivers, or 150 with the RF-RXS series.

Training videos are availiable on the SonNet range

To access all our training videos visit our website www.sontay.com or use the QR code below:

RF-SSK Site Survey Kit (SSK)

THE SITE SURVEY KIT
It is comprised of a receiver RF-RXSS which is used in conjunction with the Sontay RF-PS-500 site survey routers, RF-HHT hand-held monitor and RF-TS-900 nodes. Routers are used to route signals from battery powered nodes and other routers to the receiver module, where the signal strength of a direct path is not sufficient for reliable communications.

DATA TRANSMISSION
Data is transmitted back to the receiver at configurable time intervals, or on a configurable change in measured value. Each sensor retains these configurations if the battery becomes discharged or requires replacement.

RF-SSK-HIRE
Hire of the RF-SSK SonNet Site Survey Kit for six working days. See page 99 for full hire terms and conditions.

THE SSK RECEIVER
Automatically selects which of the 16 transmission channels available gives the best radio network performance, taking into account both signal strength and interference levels from adjacent channels and equipment (such as Wi-Fi etc.) The SSK hand-held monitor, nodes and routers automatically find the best path back to the receiver, which may be directly to the receiver or via "parent" routers.

Part code	*Description*
	Site Survey Kit
RF-SSK	Site Survey Kit (SSK) - containing:
	4 sensor nodes, 2 routers, receiver, hand-held monitor and power chargers for the rechargeable batteries
	(Individual units)
RF-TS-900	Sensor End Device (rechargeable)
RF-PS-500	Plant Router (rechargeable)
RF-HHT	Hand-held Tool
RF-RXSS	Site Survey Reciever

Data sheet: RF-SSK-Ind.pdf

RF-RS Battery Powered Sensors (EDs)

SonNet PARTS

Battery Powered Sensors (EDs)

Sensor nodes are used in conjunction with the Sontay RF-RX-20, RF-RX-40 or RF-RXS receiver units, and if required (depending on installation topography), Sontay RF-RR series of routers.

Data is transmitted back to the receiver at configurable time intervals, or on a configurable change in measured value.

Each sensor retains these configurations if the battery becomes discharged or requires replacement.

The sensors automatically find the best path back to the receiver, which may be directly to the receiver or via 'parent' routers.

SPECIFICATION

Radio Output:	Frequency	2.4GHz, 16 channels,
	direct-sequence spread spectrum	
	Compliance	IEEE 802.15.4-2006
Aerial Characteristics:	Space	Gain 1.2dBi, VSWR 1.5:1
	Plant	Gain 2.0dBi, VSWR 2:1
Data Encryption:	AES 128	
Power Output:	0dBm	
Accuracy:	Temperature	±0.3°C
	RH	±3% RH
	CO_2	±75ppm
Battery Type:	Space	3.6V AA 2.4Ah Li-$SOCl_2$, non-rechargeable
	Plant	3.6V 2.1Ah 2/3 A Li-SOC_{l2}, non-rechargeable
Battery Life:	>3 years (depending on configuration)	
Input:	VFC	

Part code	*Description*
	Temperature
RF-RS-T-1000	Space Temperature Sensor *
RF-RS-T-322	Duct Sensor - 150mm probe
RF-RS-T-341	Immersion Sensor - 150mm probe
RF-RS-T-351	Clamp-on Sensor
RF-RS-T-331	Outside Air Sensor
RF-RS-T-332	Outside Air Sensor c/w rad. shield
RF-RS-T-555-2	Flying Lead Sensor - 2m
RF-RS-T-555-5	Flying Lead Sensor - 5m
	Humidity & Temperature
RF-RS-R-1000	Space Humidity & temp. Sensor *
RF-RS-R-622	Duct Humidity & temp. Sensor
RF-RS-R-631	Wall Humidity & temp. Sensor
RF-RS-R-632	Outside Humidity & temp. Sensor
	*** Sensor Options for -1000 only (add to part code)**
-MS	Momentary switch interface
-SP	Set-point adjuster interface
-FS5	5 Speed Fan Switch
	CO_2, Humidity & Temperature
RF-RS-CO2-1000	Space CO_2 Sensor * *
RF-RS-CO2-RH-1000	Space CO_2 RH & temp. Sensor * *
RF-RS-CO2-622	Duct CO_2 Sensor
RF-RS-CO2-RH-622	Duct CO_2 RH & temp. Sensor

* * Options not available

Data sheets: RF-RS-R.pdf · RF-RS-T.pdf · RF-RS.C.pdf

RF-RR Powered Routers

USE THE CODE NOBRAND ON YOUR ORDER IF THE SONTAY LOGO IS NOT REQUIRED

SonNet PARTS

Powered Routers

These routers are used in conjunction with the Sontay RF-RX-20, RF-RX-40 or RF-RXS receiver units, and RF-RS series of battery powered radio sensors, and are used to route signals from battery powered nodes and other routers to the receiver module, where the signal strength of a direct path is not sufficient for reliable communications.

Note: Each router can support a maximum of 16 'children', which can consist of a maximum of 8 battery powered nodes and 8 routers, or up to 16 routers if there are no battery powered nodes. Consideration should be given to network planning for redundancy in case of router failure or damage.

Routers automatically find the best path back to the receiver, which may be directly to the receiver or via other 'parent' routers.

SPECIFICATION

Radio Output:	Frequency	2.4GHz, 16 channels, direct-sequence spread spectrum
	Compliance	IEEE 802.15.4-2006
Aerial Characteristics:	Space	Gain 1.2dBi, VSWR 1.5:1
	Plant	Gain 2.0dBi, VSWR 2:1
Data Encryption:	AES 128	
Power Output:	+10dBm	
Accuracy:	Temperature	±0.3°C (0.54°F)
	RH	±3% RH
	CO_2	±75ppm
Power Supply:	24Vac/dc or 230Vac	
Input:	VFC	

NOW WITH VFC TO INTEGRATE WIRED DEVICES

Part code	*Description*
	Routers
RF-RR-1000	Router (space housing)
RF-RR-MPR	Router 230Vac
RF-RR-600	Router (plant housing)
	Router Sensors
RF-RR-T-1000	Space Temp. Sensor/Router *
RF-RR-T-622	Duct Sensor/Router - 150mm probe
RF-RR-T-641	Router Immersion Sensor - 150mm probe
RF-RR-T-651	Router Clamp-on Sensor
RF-RR-T-631	Router Outside Air Sensor
RF-RR-T-632	Router Outside Air Sensor c/w Rad Shield
RF-RR-T-555-2	Router Flying Lead Sensor - 2m
RF-RR-T-555-5	Router Flying Lead Sensor - 5m
RF-RR-R-1000	Router Space Humidity & Temp. Sensor *
RF-RR-R-622	Router Duct Humidity & Temp. Sensor
RF-RR-R-631	Router Wall Humidity & Temp. Sensor
RF-RR-R-632	Router Outside Humidity & Temp. Sensor
	*** Sensor/Router Options for -1000 only (add to part code)**
-MS	Momentary switch interface
-SP	Set-point adjuster interface
-FS5	5 Speed Fan Switch
	CO_2, Humidity & Temperature
RF-RR-CO2-1000	Space CO_2 Sensor / Router **
RF-RR-CO2-RH-1000	Space CO_2 , RH&T Sensor / Router **
RF-RR-CO2-622	Duct CO_2 Sensor / Router
RF-RR-CO2-RH-622	Duct CO_2 , RH&T Sensor / Router

** Options not available

Data sheets: RF-RR.pdf · RF-RR-R.pdf · RF-RR-T.pdf · RF-RR-C.pdf

RF-RX System Receiver

SonNet PARTS

System Receiver

The Sontay RF-RX-20 or RF-RX-40 receiver collects data from all other devices on the radio network, including measurements from sensors, link quality for all links formed in the network, battery levels for all battery powered devices, hours run for all devices and the current status of all devices.

Note: Each receiver can support a maximum of 16 'children', which can consist of a maximum of 12 battery powered nodes and 4 routers, or up to 16 routers if there are no battery powered nodes.

A USB socket is provided for connection to a PC or laptop running the Sontay SonNet CMS software.

Receivers are available in two formats:

- RF-RX-20 - 20 x 0-10Vdc analogue outputs
- RF-RX-40 - 40 x 0-10Vdc analogue outputs

For a live demonstration of the SonNet Wireless Monitoring System please contact the Sontay Sales Team at sonnet@sontay.com.

Part code	*Description*
	Receiver Modules
RF-RX-20	Receiver with 20 x 0-10Vdc outputs
RF-RX-40	Receiver with 40 x 0-10Vdc outputs

SPECIFICATION

Radio Output:	Frequency	2.4GHz.16 channels, direct-sequence spread spectrum
	Compliance	IEEE 802.15.4-2006
Aerial Characteristics:	Gain:	2.0dBi
	VSWR:	2:1
Data Encryption:	AES 128	
Power Output:	+10dBm	
Analogue Outputs:	RF-RX-20	20 x 0-10Vdc analogue outputs @10mA max. each
	RF-RX-40	40 x 0-10Vdc analogue outputs @10mA max. each
Output ranges:	Temp.	–10 to +70°C (14 to 158°F)
	RH	0 to 100%
	Setpoint	0 to 100%
	Switch	0Vdc = OFF, 10Vdc = ON
Power Supply:	24Vac/dc	
Housing:	DIN-rail, 203 x 104 x 38mm (W,H,D)	
	(7.99 x 4.09 x 1.5") – excluding aerial	

Part code	*Description*
	RF-Accessories
RF-RS	Battery for space sensors
RF-RP	Battery for plant sensors
RF-AERIAL-PM2	Aerial extension c/w bulk head fitting - 2m (6.56 ft)
RF-AERIAL-PM5	Aerial extension c/w bulk head fitting - 5m (16.40 ft)

Data sheets: RF-RX.pdf

RF-RXS — SIP Interface

The new Sontay SIP is an interface that allows a SonNet wireless network, using the RF-RXS receiver, to integrate seamlessly into a Trend network. The product package includes everything required to install and commission the SIP, including;

- **SIP**
- **SIP Power supply**
- **Ethernet cable**
- **Serial cable (for connection between the SIP and the RF-RXS)**
- **Quick start guide**
- **DIN rail clip**

The SIP uses vIQs (virtual IQs), if required and 2 variants are available 25 or 50 vIQs). Wireless data points can be mapped to nodes in existing Trend IQs, or to internal vIQs, which can then be interrogated for values using IC Comms modules in existing Trend IQs.

Configured SIPs can be backed up, and a comprehensive user guide is embedded in the SIP, available via a web browser. Each SIP has a VCNC included, which is configurable if required and configurable UDP groups allow duplicate Trend LAN numbers (for example, on different sites).

A vIQ calculator is included in the SIP, which allows the user to influence an output value to a specified module type by performing a sequence of up to 5 operations at specified intervals. Each operation is constructed using a combination of values sourced from a defined module number at a specified OS or a user defined fixed value.

SPECIFICATION

vIQs	25 or 50	
Power supply	24Vdc ±15Vdc regulated	
Output ranges:		
Current	300mA @ 12Vdc, 150mA @ 24Vdc (NB only a DC supply may be used)	
Ports:	1 x RJ45 serial, 1 x 10/100Mb Ethernet, 2 x USB	
System reset button:		
	LEDs for;	
		Power
		Ready
		LAN traffic
Ambient:		
	Storage	-20°C to 80°C, 0 to 90% RH
	Operating	0°C to 70°C, 0 to 90%
Protection:	IP30	
Dimensions	108 x 102 x 32mm	
Weight:	330g	

Part code	*Description*
RF-RXS-SIP-B-25	SIP Interface (BACnet) 25 V/Qs
RF-RXS-SIP-B-50	SIP Interface (BACnet) 50 V/Qs
RF-RXS-SIP-T-25	SIP Interface (Trend) 25 V/Qs
RF-RXS-SIP-T-50	SIP Interface (Trend) 50 V/Qs

Data sheets: RF-RXS-SIP-B_Full.pdf - RF-RXS-SIP-T_Full.pdf

SB/SM — Smart Communication Sensor

This is a new concept for total environmental sensing in a single space or plant housing. Each sensor can be individually tailored to specific requirements, with a wide range of options. All option outputs are available via BACnet MS/TP or ModBus RT. The databus type is user-selectable.

The options include:

Outputs;
- Temperature
- RH
- CO_2
- CO
- IAQ
- Setpoint
- Override switch
- Fan speed switch (3, 4 or 5 position)
- Light level
- PIR occupancy detector

Inputs;
- 1 x 0-10Vdc analogue
- 1 x VFC digital binary
- LCD display, with user configurable temperature units (°C or °F)
- CO_2 "traffic light" LED

Part code	*Description*
	BACnet
SB-1001	Smart Sensor c/w Temp and RH
SB-1002	Smart Sensor c/w Temp and RH, CO_2 & 3 colour LED
SB-1003	Smart Sensor c/w Temp, CO_2 and 3 colour LED
SB-1004	Smart Sensor c/w Temp, LCD, Fan Speed and Setpoint
SB-1005	Smart Sensor c/w Temp and RH , CO_2, LL, OC, SP and 3 colour LED
SB-1006	Smart Sensor c/w Temp, CO_2, LL, OC, SP and 3 Colour LED
SB-1007	Smart Sensor c/w Temp,CO_2,RH,AQ,CO,LCD,SP,FS,MS
	ModBus
SM-1001	Smart Sensor c/w Temp and RH
SM-1002	Smart Sensor c/w Temp and RH, CO_2 & 3 colour LED
SM-1003	Smart Sensor c/w Temp, CO_2 and 3 colour LED
SM-1004	Smart Sensor c/w Temp, LCD, Fan Speed and Setpoint
SM-1005	Smart Sensor c/w Temp and RH , CO_2, LL, OC, SP and 3 colour LED
SM-1006	Smart Sensor c/w Temp, CO_2, LL, OC, SP and 3 Colour LED
SM-1007	Smart Sensor c/w Temp,CO_2,RH,AQ,CO,LCD,SP,FS,MS

Output:	BACnet MS/TP or ModBus RTU	
Baud rate:	9k6 to 76k8 (BACnet) or 57k6 (ModBus) or auto baud rate	
BACnet/ModBus address	DIP switch setting	
Supply voltage	24Vac/dc ±10%	
Supply current	Dependent on the sensor elements fitted.	
Measurement ranges:		
	Temperature	-10°C to +110°C, units user configurable (°C or °F)
	RH: 0% to 100% RH	
	CO_2: 0 to 2000ppm, or 0 to 5000ppm	
User configurable		
	IAQ:	Simple 0 to 10 indices value
	CO:	Simple 0 to 10 indices value
	Light level	0 to 10000 lux
	Setpoint:	0 to 100%
	Fan speed	Off, Low, Med, High, Auto
Measurement Accuracies:		
	Temperature	±0.4°C
	RH	±2% RH
	CO_2	±70ppm, or as dictated by the selected CO_2 element
Auxiliary inputs;		
	1 x 0-10Vdc linear	
	1 x VFC digital	
Display	Optional LCD, to show all fitted measured values	
CO_2 LED	Optional "Traffic light" LED for CO_2 levels	
	Green	400ppm to 1000ppm
	Amber	1000ppm to 1400ppm
	Red	>1400ppm
PIR Occupancy	Off delay 10 – 900 seconds, user configurable	
Ambient:	Temperature	0 to 40°C
	RH	0 to 95% RH Non-Condensing
Housing:	115 x 85 x 28mm	
Material:	ABS (Flame Retardent)	
Protection:	IP30	
Weight:	200g	

RF-RXS | Network Radio Receiver, Niagara Ax™ Option Card

The RF-RXS receivers allow quick and seamless integration with Tridium's range of JACE controllers, with all supported BMS protocols, such as BACnet, LonTalk and ModBus.

The integral web interface allows an engineer to not only gather measurement data from SonNet wireless devices but perform radio network management services such as auto-commissioning of SonNet wireless devices and setting device configuration parameters.

A serial cable is supplied for connecting the RF-RXS to the BMS controller.

Powered by niagara AX FRAMEWORK®

2 VERSIONS OF THE RECEIVER ARE AVAILABLE

- **RF-RXS DIN rail mounted housing** with serial connection to COM1 or COM2 of a JACE
- **RF-RXS-N internally** mounting JACE option card

SPECIFICATION:

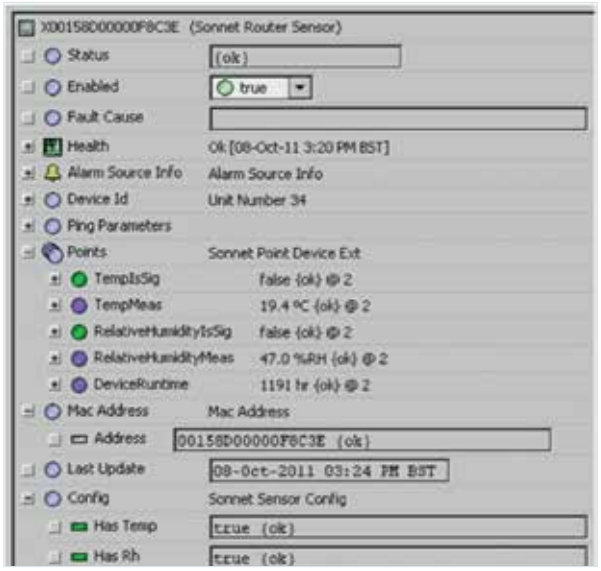
Radio Output:	Frequency	2.4GHz 16 channels, automatically selected	
		Direct-sequence spread spectrum	
		Compliance IEEE 802.15.4-2006	
Aerial Characteristics:	Gain 3.0dBi		
	VSWR <2:1		
Data Encryption:	AES 128		
Power Output:	+10dBm		
Power Supply:	24Vdc ±15%		
	24Vac ±15%, 50/60 Hz		
Serial communications: (RF-RXS only)	USB 2.0		
	Serial 9-pin RS-232		
Environmental:	Operating	Temp.	–10 to +50°C (14 to 122°F)
		RH	0 to 90%, non-condensing
	Storage	Temp.	–10 to +80°C (14 to 176°F)
		RH	0 to 90%, non-condensing
Dimensions:	100mm x 70mm x 58mm (3.94 x 2.76 x 2.28")		

Part code	*Description*
RF-RXS	DIN-rail Mounted Network Radio Receiver
RF-RXS-N	Internally Mounted Network Radio Receiver
RF-AERIAL-PM2	Aerial extension c/w bulk head fitting - 2m (6.56 ft)
RF-AERIAL-PM5	Aerial extension c/w bulk head fitting - 5m (16.40 ft)
	Accessory
RF-SERIAL	Serial cable 1.8m (6 ft)

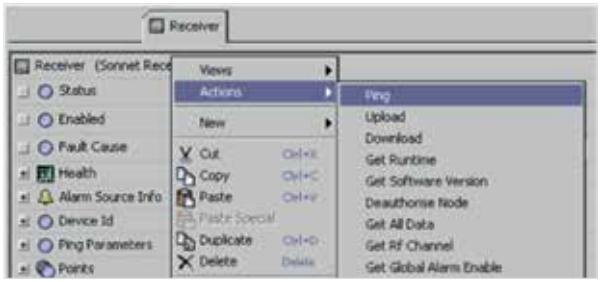
Data sheets: RF-RXS.pdf · RF-RXS-N.pdf

SOFTWARE SCREENSHOTS

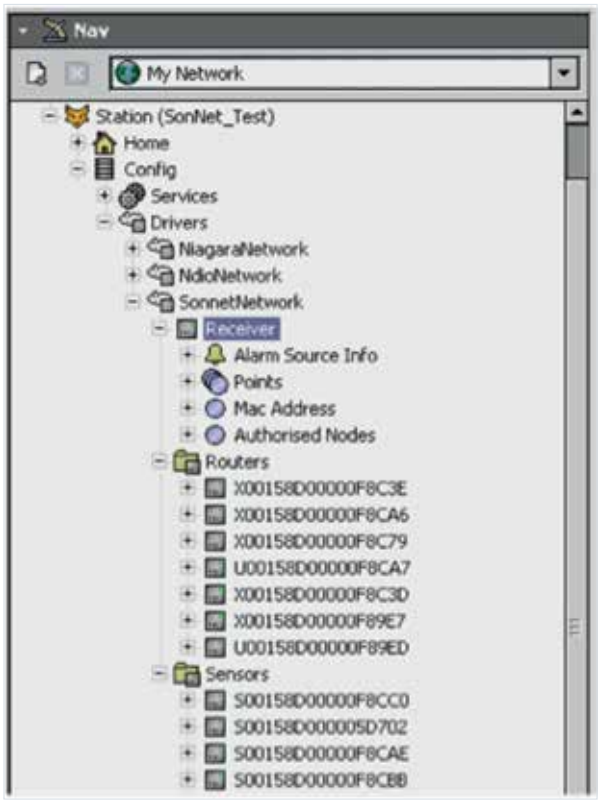
SonNet Router Properties View



SonNet Receiver Actions Menu



SonNet Navigation Tree



RF-IOM-4A-4U Radio Input/Output Module

How it works

The RF-IOM is a fully configurable input/output module, and is used in conjunction with the Sontay's range of RF-RR and RF-RS radio devices. It acts as a local I/O with connectivity to typical HVAC equipment such as fan coil units (FCU) and variable air volume (VAV) boxes. The RF-IOM reads its configurable analogue or digital inputs and transmits the values wirelessly to a BMS controller via either a SonNet RF-RXS serial receiver or SonNet RF-RXS-N option card receiver.
Any 0-10Vdc, 4-20mA, resistive or VFC signals from any device can be transmitted from the RF-IOM to the V2 receiver. Then using the SonNet data points valves can then be read in the JACE controller.

The RF-IOM also acts as a router, and has the same functionality and power output that a standard router does, as well as the IO functionality.

The RF-IOM outputs need to be defined as points such that their value or status can be set by the control strategy via the receiver.
Data from the V2 receiver is made available to the controller via a serial link. The SonNet data points are then used by the controller as part of a control strategy, which will typically calculate heating and cooling demands, damper positions etc. These calculated control values will then be passed back to the receiver via the serial link and passed from the receiver over the wireless network to the RF-IOM.

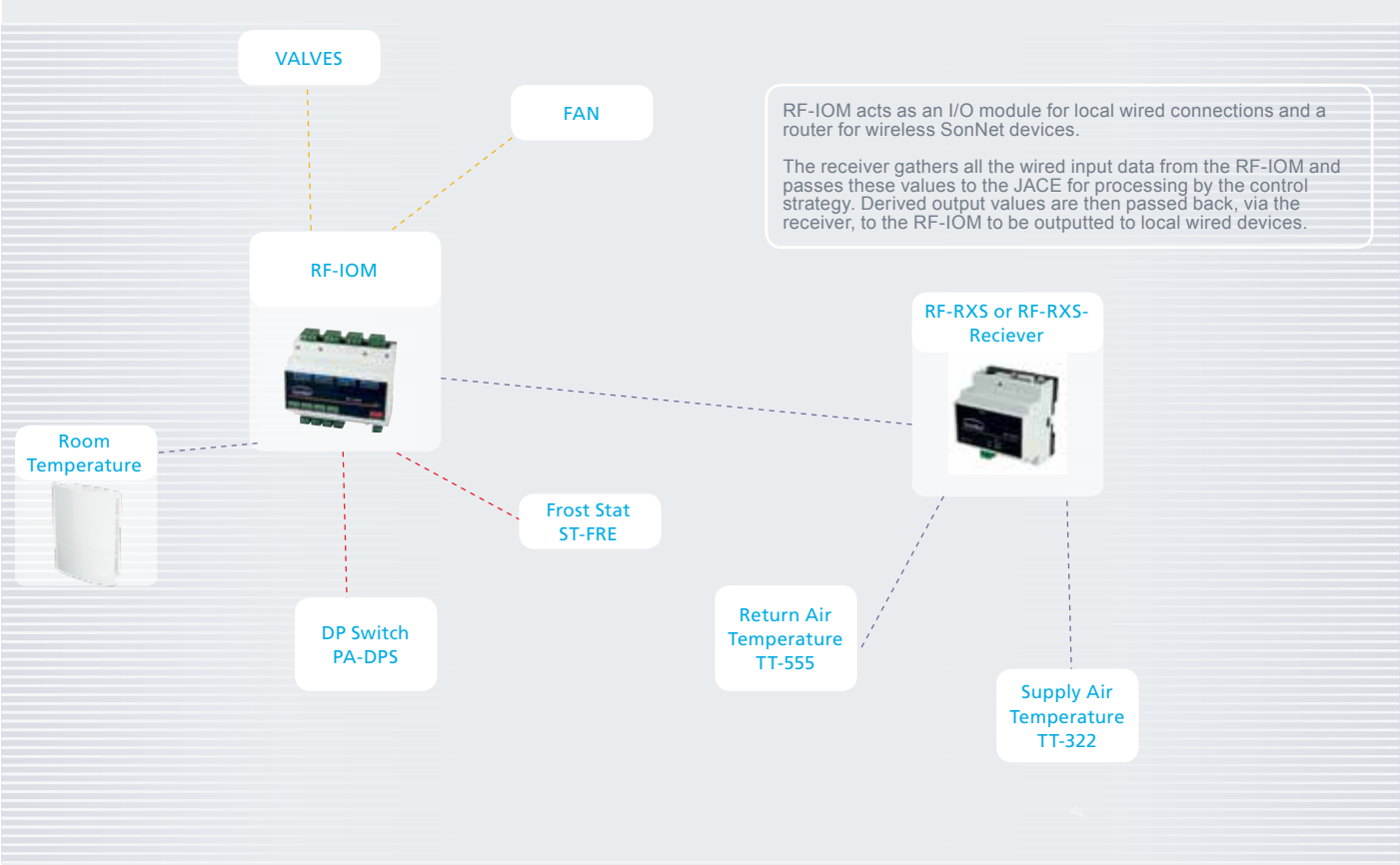
Want to make this sensor wireless – check out our RF-IOM wireless IO module in the SonNet section on page 52.

SPECIFICATION:

Radio Output:	Frequency	2.4GHz 16 channels,
		automatically selected
		Direct-sequence spread spectrum
		Compliance IEEE 802.15.4-2006
Aerial Characteristics:	Gain 3.0dBi	
	VSWR <2:1	
Data Encryption:	AES 128	
Power Output:	+10dBm (10mW@50Ω)	
Power Supply:	24Vac/dc ±15%	
Fuse:	20mm 250V 500mA Anti-surge	
Inputs (4 x universal):	4-20mA	loop or ext. powered 750Ω max.
	0-10Vdc	4k7Ω min. impedance
	Resistive	1.5kΩ min. to 60kΩ max.
	Digital	VFC
Outputs:	4 x 0-10Vdc @ 20mA each	
LED indication:	Network	
	Data	
	Digital input	
Ambient:	Temperature	10 to +50°C (14 to 122°F)
	RH	0 to 90%, non-condensing
Dimensions (H x W x D)	86 x 58 x 104mm (3.39 x 2.28 x 4.09")	

Part code	*Description*	
RF-IOM-4A-4U	Radio Input/Output Module	
	Accessory	
RF-AERIAL-PM2	Coaxial extension cable for externally mounted aerial - 2m length	
RF-AERIAL-PM5	Coaxial extension cable for externally mounted aerial - 5m length	

Data sheet: RF-IOM.pdf



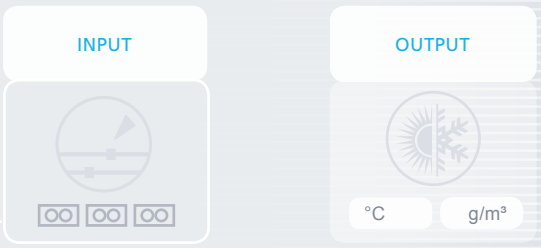
UK Tel. +44 (0) 1732 861200 · Int. Tel. +44 (0) 1732 861225 · UK Fax +44 (0) 1732 861201 · Int. Fax +44 (0) 1732 861226

Relative Humidity & Temperature Sensors

Of all the sensors available on the market, probably the most diverse are those for temperature. Relative Humidity is also a key control parameter in buildings, for comfort, fabric protection and energy efficiency.

RH&T Measurements

From RH&T measurements, basic psychrometry allows other key control values to be calculated, such as enthalpy in kg/kJ (an increasingly popular method of energy efficient close control), dewpoint in °C and absolute humidity in g/m³. Sontay's RH&T sensors offer options to calculate and output these optional values.



Four Types Available

Four basic types are available; space mount, duct mount, wall mount and outside air. An LCD display is available with temperature and dew point shown in either °C or °F, and a range of passive options include setpoint, override switch and fan speed switch, with a third active output for either indoor air quality or CO2 (0-2000ppm or 0-5000ppm). Custom temperature output ranges can be specified at the time of order, and there is an additional option for a direct, passive thermistor output too.

Many variations of sensors are available to suit applications such as space, outside air, duct & immersion.

RH & T Sensors

Each sensor can be user-configured for 4-20mA output (2-wire loop-powered or 3-wire externally powered), 0-5Vdc or 0-10Vdc. An advanced ASIC design gives excellent accuracy, essential for good control and reliable data recording.

Sensors can be printed with customer logo.

Passive options such as setpoint, override switch, fan speed switch are available.

RH-xx-UN — Space, Duct, Wall & Outside RH Transmitter, Single Analogue Universal Sensor

A totally new sensor to the Sontay range the-RH-xx-UN has a single output which automatically determines whether to run in current or voltage output mode by detecting the controller input configuration. No more jumpers or switches to worry about.

All the normal passive options are available on space versions, such as fan speed switch, set point adjustment and override switch. A single 0-10Vdc input can be used to signal 'Override' on the optional LCD display.

FEATURES

- Self-detecting output
- Direct thermistor temperature options available
- Fully configurable LCD display option

Interface restrictions (Space types only)

- SP only
- MS only
- SP-MS only
- SP-FS only

Part code	*Description*
	Wall Mounting Sensors
RH-1000-UN	Space RH Transmitter Single Analogue Output
	Suffixes (add to part code)
-T	Direct resistive temperature output*
-SP	Set point
-MS	Momentary switch
-FS3	3-speed fan switch (1, 2, 3)
-FS4	4-speed fan switch (off, 1, 2, 3)
-FS5	5-speed fan switch (off, 1, 2, 3)
-LCD	Integral LCD display
	Accessories
DECOR	Decorators trim plate
GASKET	Insulating gasket (pack of 10)

Part code	*Description*
	Duct Mounting Sensors
RH-622-UN	Duct RH Transmitter Single Analogue Output
	Wall Mounting Sensors
RH-631-UN	Wall RH Transmitter Single Analogue Output
	Outside Mounting Sensors
RH-632-UN	Outside RH Transmitter Single Analogue Output
	Suffix (add to part code)
-T	Direct resistive temperature output*

Data sheets UN-1000-.pdf, UN-600.pdf.

SPECIFICATION

Outputs:	0-10Vdc or 4-20mA (not loop powered), self-detecting	
Power supply:	24Vac/dc	
Measurement range:	0 to 100% RH	
Measurement accuracy:	±2% RH	
Stability:	±1% per year	
Optional passive outputs (space types only):		
	Set point	1kΩ to 11kΩ linear
	Override	24Vac/dc @ 500mA max
	Fan speed;	
	Auto	Open circuit
	3	22.7KΩ
	2	26KΩ
	1	29.3KΩ
	Off	32.6KΩ
Other Options:		
	-T	Passive thermistor output
	-LCD	Customizable LCD display
Ambient:		
	Temperature	
	Space types	0°C to 50°C (32 to 122°F)
	Plant types	-30°C to +70°C (-22 to 158°F)
	RH	0 to 95% RH, non-condensing
Housing:		
	Space types	115 x 85 x 28mm (4.57 x 3.35 x 1.1")
	Plant types	116 x 106 x 52mm (4.57 x 4.17 x 2.05")
	Probe	
	Duct	215 x 19mm dia. (8.46 x 0.75")
	Wall	90 x 19mm dia (3.54 x 0.75")
	Outside	200 x 118mm dia (7.87 x 4.65")
Material:	ABS (flame retardant)	
Protection:		
	Space types	IP30
	Plant types	IP65
Weight:		
	Space	180g (0.40 lb)
	Duct	240g (0.53 lb)
	Wall	220g (0.49 lb)
	Outside	1.16kg (2.56 lb)

* Notes:

1. -T version uses a thermistor element for direct measurement of temperature. Please specify thermistor type when ordering.
2. Please see page 90 for Thermistor Types and Compatibility Chart.
3. When using the -T option, they are not compensated for internal heating (space types only).

SonNet® WIRELESS TECHNOLOGY

Did you know we also sell wireless RH sensors in our SonNet range? Go to page 52 for more details.

RH-1000 Space RH & T Sensor

Using the latest high accuracy RH & T element, the RH-1000 has options such as setpoint adjustment, momentary switch and fan speed selection, together with a multi-line backlit LCD display. A 0-10Vdc override status input option is also available, allowing occupancy indication on the display.

0-10Vdc, 0-5Vdc or 4-20mA (loop or externally powered) outputs for all measured values are available as standard. A custom output range for temperature can be requested, between –20 and +50°C (–4 to +122°F). A directly connected passive thermistor temperature output is also available, as an alternative to the standard active temperature output.

FEATURES

- High stability and reliability
- Designed to be aesthetically pleasing
- Blends into the fabric of any building
- Developed using customer feedback and involvement
- Fully configurable LCD display option.
  Please contact the Sales Support Team for more information.

INTERFACE OPTIONS

SP
Set temperature to desired point
Setpoint

FS 3/4/5
Fan Speed Switch
Select fan speed

MS
Momentary Switch
Override the programme for a period of time

INTERFACE RESTRICTIONS

- SP only
- MS only
- SP-MS only
- SP-FS only

SonNet® WIRELESS TECHNOLOGY

Did you know we also sell wireless RH sensors in our SonNet range? Go to page 52 for more details.

SPECIFICATION

Active Outputs:	Voltage	0-10Vdc @ 4k7Ω min, 0-5Vdc @ 4k7Ω min
	Current	4-20mA @ 250Ω min
Optional Passive	PTC/NTC Element	Any Sontay resistive type*
Outputs:	Setpoint	2-wire 11-1kΩ/0-10kΩ, linear
	Override	VFC
	Fan Speed	Resistive
Output Ranges:	RH	0-100%
	Temperature	0 to 40°C (32 to 104°F) as standard (others available on request: Range of –20 to +50°C / –4 to 122°F)
	Enthalpy	–20 to +250 kJ/kg (–8.59 to +107.48 Btu/lb)
	Dewpoint	–50 to +50°C (–58 to +122°F)
Power Supply:	0-10Vdc	12 - 26Vac or 16 - 26Vdc @ 60mA max
	4-20mA	20 - 26Vdc only @ 70mA max
Temp. Accuracies:	±0.3°C (0.54°F) (20 to 40°C / 68 to 104°F)	
Ambient:	Temperature	0 to 50°C (32 to 122°F)
	RH	0 to 95% RH, non-condensing
Housing material:	ABS (flame retardant)	
Dimensions:	115 x 85 x 28mm (4.53 x 3.35 x 1.10")	
Weight:	180g (0.40 lb)	

***Notes:**

1. **-T** version uses a thermistor element for direct measurement of temperature. Please specify thermistor type when ordering.
2. When using the **-T** option, they are not compensated for internal heating.
3. Please see page 90 for Thermistor Types and Compatibility Chart.
4. RH-1000-EN outputs only enthalpy and dewpoint values.

Part code	*Description*	*Volume Price Breaks*
RH-1000-AH	RH & T High Accuracy Transmitter (±2%)	*Unit Price (5+)*
RH-1000	RH & T Transmitter (±3%)	*Unit Price (5+)*
RH-1000-EN	Enthalpy & Dewpoint Transmitter*	–
	Suffixes (add to part code)	
-T	Direct resistive temperature output	–
-SP	2-wire, 11-1kΩ/0-10kΩ setpoint	–
-MS	Momentary switch	–
-FS3	3-speed fan switch (1, 2, 3)	–
-FS4	4-speed fan switch (off, 1, 2, 3)	–
-FS5	5-speed fan switch (off, 1, 2, 3, auto)	–
	Suffixes (add to part code)	
-LCD	Integral LCD display for RH and temp.	–
-TR	Custom temperature output range	–
	Accessories	
DECOR	Decorators trim plate	–
GASKET	Insulating gasket (pack of 10)	–

Data sheet: RH-1000.pdf

RH-600 Duct, Wall & Outside Mount RH & T Sensors

The RH-600 range of humidity and temperature sensors offer the latest technology high precision and accuracy RH & T element, and installed in our new revised robust 600 series housing. The housing has an added benefit of being easy to install with the new hinged lid, which can also be screwed closed to make the unit tamperproof.

An optional multi-line backlit LCD display is available, along with a direct PTC/NTC sensing element (when this option is required, the type of element must be specified at the time of ordering).

Output signals of 0-10Vdc, 0-5Vdc or 4-20mA (loop or externally powered) for all measured values and RH are available as standard. A custom output range for temperature can be requested, between –20 and +50°C (-4 to 122°F).

USE THE CODE NOBRAND ON YOUR ORDER IF THE SONTAY LOGO IS NOT REQUIRED

Part code	Description
	Duct
RH-622-AH	RH & T Transmitter (±2%)
RH-622	RH & T Transmitter (±3%)
RH-622-EN	Enthalpy & Dewpoint Transmitter*
	Wall
RH-631-AH	RH & T Transmitter (±2%)
RH-631	RH & T Transmitter (±3%)
RH-631-EN	Enthalpy & Dewpoint Transmitter*
	Outside
RH-632-AH	RH & T Transmitter (±2%)
RH-632	RH & T Transmitter (±3%)
RH-632-EN	Enthalpy & Dewpoint Transmitter*
	Suffixes (add to part code)
-T	Direct resistive temperature output
-TR	Custom temperature output range
-LCD	Integral LCD display

Notes:

1. **-T** version uses a thermistor element for direct measurement of temperature. Please specify thermistor type when ordering.
2. Please see page 90 for Thermistor Types and Compatibility Chart.
3. RH-6xx-EN versions only output enthalpy and dewpoint values.

SonNet® WIRELESS TECHNOLOGY

Did you know we also sell wireless RH sensors in our SonNet range? Go to page 52 for more details.

FEATURES

- High stability and reliability
- Snap-fit cover
- Fully configurable LCD display option. Please contact the Sales Support Team for more information

SPECIFICATION

Active Outputs:	Voltage	0-10Vdc @ 4k7Ω min, 0-5Vdc @ 4k7Ω min
	Current	4-20mA @ 250Ω min
Optional Passive Output:	PTC/NTC	Element any Sontay resistive type*
Output Ranges:	RH	0-100%
	Temperature	–20 to +50°C (–4 to +122°F) as standard others available on request in the range of –20 +50°C (–4 to +122°F)
	Enthalpy	–20 to +250 kJ/kg (–8.59 to +107.48 Btu/lb)
	Dewpoint	–50 to +50°C (–58 to +122°F)
RH Accuracy:	RH-6xx-AH	±2% (20 to 80%RH)
	RH-6xx	±3% (20 to 80%RH)
Long term stability:	<0.5% RH p.a.	
Temp. Accuracies:	±0.3°C (0.54°F) (20 to 40°C / 68 to 104°F)	
Power Supply:	0-10Vdc	12 - 26Vac or 16 - 26Vdc @ 60mA max
	4-20mA	20 - 26Vdc only @ 70mA max
Ambient:	Temperature	–30 to 70°C (22 to 158°F)
	RH	0 to 95% RH, non-condensing
Housing material:	ABS (flame retardant)	
Protection:	RH-622, RH-632 IP65 | RH-631 IP54	
Housing dimensions:	116 x 106 x 52mm (4.57 x 4.17 x 2.05")	
Probe dimensions:	Duct	210 (8.27") x 19mm (0.75") dia.
	Wall	90 (3.54") x 19mm (0.75") dia.
Shield dimensions (RH-632):	200 x 118mm dia.	
Weights:	Duct 240g (0.53lb) | Wall 220g (0.49lb)	
	Outside 1.16kg (2.56lb)	

Part code	Description
	Accessory
DPA	Duct probe adjustment flange (for RH-622 only)

Data sheet: RH-600.pdf

Volume Price Breaks are applicable	
Unit Price (5+)	
RH-622-AH	Please see price list
RH-622	

ST General Purpose Thermostats

Sontay's range of thermostats are well suited for a number of applications of temperature control or safety cut-out in pipe work systems, calorifiers, duct work systems, green houses and many other installations. They all have the set-point adjustment under the cover to prevent unauthorised tampering.

They are available in two types;

Control thermostats (auto reset) - with an adjustable set point, adjustable differential and auto rest, which provides a switched output to a heater or controller.

Safety thermostats (manual reset) - with an adjustable set-point, fixed differential and manual reset, which provides high limit cut-out on boilers etc.

FEATURES

- Robust housing
- Immersion sensors supplied with pocket
- Ideal for many applications
- Volt free contacts
- Concealed adjustment

SPECIFICATION

Switch rating:	24 to 250Vac @ 16(4)A	
Sensing element:	Liquid filled copper element	
Housing:	Material	ABS UL94 V0 (flame retardant)
	Dimensions:	
	ST-S-01A	86.5 x 38 x 53 (3.41 x 1.50 x 2.09")
	Others	108 x 70 x 72mm (4.25 x 2.76 x 2.83")
Ambient:	Temperature	–35 to 65°C (–31 to 149°F)
	RH	0 to 95% RH, non-condensing
Capillary length (ST-C):	1.5m (4.92ft)	
Duct probe (ST-D):	280mm (11.02") x 16mm (0.63") dia.	
Immersion pocket (ST-I):	Dimensions	130mm (5.12"), thread ½" BSPT
	Material	Stainless Steel
Conformity:	CE marked	
Protection:	ST-D-01A	IP54
	ST-S-01A	IP30
	Others	IP65 (auto reset types)
		IP43 (manual reset types)
Weights:	Capillary	340g (0.75lb)
	Duct	700g (1.54lb)
	Immersion	580g (1.28lb)
	Wall	480g (1.06lb)
	Strap-on	250g (0.55lb)

Part code	*Description*	
	Capillary	
ST-C-01M	50 to 140°C (122 to 284°F)	Manual Reset
	Duct	
ST-D-01A	–35 to +35°C (–31 to 95°F)	Auto Reset
ST-D-02A	0 to 90°C (32 to 194°F)	Auto Reset
ST-D-03A	–30 to +30°C (–22 to 86°F)	Auto Reset
ST-D-04M	0 to +90°C (–32 to 194°F)	Manual Reset
	Immersion	
ST-I-01A	0 to 120°C (32 to 248°F)	Auto Reset
ST-I-02M	0 to 110°C (32 to 230°F)	Manual Reset
ST-I-03M	20 to 90°C (68 to 194°F)	Manual Reset
	Wall	
ST-W-01A	–30 to +30°C (–22 to 86°F)	Auto Reset
	Strap-on	
ST-S-01A	0 to 90°C (32 to 194°F)	Auto Reset
	Accessory	
ST-IMM-PKT	Replacement stainless steel pocket (ST-I range only)	

Data sheet: ST-x.pdf

SonNet® WIRELESS TECHNOLOGY

Did you know we also sell wireless RH sensors in our SonNet range? Go to page 52 for more details.

RH-SH Humidistats

RH-SH humidistats are designed for the on/off control of humidification and dehumidification equipment, or the initiation of alarms or override controls.
High quality sensing elements ensure accurate measurement and switching differential.

FEATURES

- Single and 2-stage units available (space types only)
- Duct or space mounted units

SPECIFICATION

Case construction:	ABS	
Operating range:	30-100% RH	
Differential (per stage):	4% RH	
Stage differential:	2 to 15% RH	
Switch rating:	Duct	15(8)A @ 240Vac
	Room	5(0.2)A @ 250Vac
Cable entry:	20mm gland PG11 thread (not supplied)	
Protection:	RH-SH-xR	IP20
	RH-SH-xD	IP65
	RH-SH-1DE	IP20
Dimensions:	RH-SH-xR	Housing 115 x 35 x 70mm
		(4.53 x 1.38 x 2.76")
	RH-SH-xD	Housing 108 x 72 x 72mm
		(4.25 x 2.83 x 2.83")
	Probe	19mm (0.75") dia. x 225mm (8.86") long
Weight:	300g (0.66 lb)	

Part code	*Description*
	Room Humidistats
RH-SH-1R	Single-stage, concealed setpoint adjust.
RH-SH-1RE	Single-stage,exposed setpoint adjust.

Part code	*Description*
	Duct Humidistats
RH-SH-1D	Single-stage, concealed setpoint adjust.
RH-SH-1DE	Single-stage, exposed setpoint adjust.

Data sheet: RH-SH.pdf

ST-FRE Capillary Frost Thermostats

The ST-FRE range of frost thermostats provide a switch output based on the average temperature detected along a two (6.56 ft) or six metre (19.69 ft) capillary sensor.

A common application is for frost protection on fresh air intakes or airconditioning systems, to prevent the icing up of filters, fans and coils. The capillary is fixed in a matrix across the duct, in a position downstream of the pre-heater or frost coil.

FEATURES

- Easy adjustment of setpoint
- Setting indicator
- IP65 option

SPECIFICATION

Control range:	–30 to +10°C (–22 to +50°F)	
Differential:	ST-FRE-1 & 3	2 to 16°C (3.6 to 28.8°F)
	ST-FRE-2 & 4	2.5°C (4.5°F) – fixed
Switch rating:	230Vac @ 24(10)A	
	24Vdc @ 3A	
Manual reset:	On low temperature (ST-FRE2 & ST-FRE4)	
Housing material:	ABS	
Housing dimensions:	86 x 75 x 44mm (3.39 x 2.95 x 1.73”)	
Capillary:	Material	Copper
	Charge	Vapour
	Max. temp.	150°C (302°F)
Dimensions:	2m (6.56 ft) or 6m (19.69 ft) x 1.8mm (0.07”) dia.	
Protection:	IP44 or IP65	
Weight:	476g (1.05 lb)	

Part code	*Description*
ST-FRE-1	Auto reset, 6m (19.69 ft) capillary, Frost Thermostat
ST-FRE-2	Manual reset, 6m (19.69 ft) capillary, Frost Thermostat
ST-FRE-3	Auto reset, 2m (6.56 ft) capillary, Frost Thermostat
ST-FRE-4	Manual reset, 2m (6.56 ft) capillary, Frost Thermostat

Volume Price Breaks are applicable	
Unit Price (10+)	
ST-FRE-1	Please see price list
ST-FRE-2	

Part code	*Description*
	IP65 Housing and Thermostat
ST-FRE-1-IP65	Auto reset, 6m (19.69 ft) capillary, Frost Thermostat
ST-FRE-2-IP65	Manual reset, 6m (19.69 ft) capillary, Frost Thermostat
ST-FRE-3-IP65	Auto reset, 2m (6.56 ft) capillary, Frost Thermostat
ST-FRE-4-IP65	Manual reset, 2m (6.56 ft) capillary, Frost Thermostat
	Accessories
ST-DFK	Pack of six additional capillary fixing clips
BRK	Mounting bracket for ST-FREx

Data sheet: ST-FRE.pdf

Note: All these thermostats include six capillary fixing clips as standard.

ST-SMT131 Smart Touch Screen Room Temperature Controller

The ST-SMT131 offers a big bright display that provides feedback of the air conditioning status and allows for easy adjustment of air conditioning on/off and adjustment of temperature/fan control.

It also provides a total solution for air conditioning control and by adding optional logic modules, extending its capabilities further including advanced energy conservation features such as set point limit control, un-occupied heating and cooling settings as well as Modbus RTU communications.

FEATURES

- Easy adjustment of setpoint
- Bright Backlit touch screen
- Easy operation
- Modbus RTU communication as standard
- Extensive Installer options menu:
- Temperature control limits
- Auto off timer
- Dead band adjustment
- Fan purge period
- Backlight level etc...

SPECIFICATION

Supply:	24V ±20%, 50/60Hz	
Control range:	5 to 30°C (41 to 86°F)	
Outputs:	Relay:	5x 24Vac @ 1A max. (Low/Med/Hi/ Heat/ Cool)
	Analogue:	2 x 0-10Vdc @ 5mA max. (Heat/Cool)
	Modbus:	Bauld rate 4.8, 9.6, 19.2 or 34.4K 1 stop bit, 8 data bits, 1 start bit. No parity
Display:	Backlight	LED
	Type	STN Touch panel
	Dimensions	69.5 x 46.3mm (2.74 x 1.82”)
Housing:	Material:	ABS/Poly blend, flame retardant & UV stabilised
	Dimensions:	103 x 113 x 26mm (4.06 x 4.45 x 1.02”)
Ambient:	Temperature	0 to 50°C (32 to 122°F)
	RH	0 to 95% non-condensing
Protection:	IP30	
Weight:	260g (0.57 lb)	

Part code	*Description*
ST-SMT131	Smart Touch Screen Room Temperature Controller

Data sheet: ST-SMT131.pdf

ST-TY Space Thermostats

The ST-TY series of wall mounting space thermostats are suitable for heating and/or cooling and frost protection applications.

FEATURES

- Tamperproof option
- Bi-metallic switch mechanism for reliability

COMMON SPECIFICATION

Operating voltage:	220/240Vac @ 50/60Hz	
Switching differential:	<1°K	
Switching current:	250Vac 10(2)A SPDT; 3(1)A SPST	
Sensor system:	Bi-metal	
Housing material:	ABS V0	
Ambient range:	50°C (122°F) max.	
Protection:	IP20	
Dimensions:	ST-TY92-C3T	78 x 78 x 36mm (3.07 x 3.07 x 1.42”) max.
	Others	82 x 82 x 32mm (3.23 x 3.23 x 1.26”) max.
Weights:	ST-TY92-C3T	120g (0.26 lb)
	Others	220g (0.49 lb)

HEATING STAT SPECIFICATION – ST-TY92-C1

Contact configuration:	SPST open-on-rise
Temperature range:	5 to 35°C (41 to 95°F)

FROST STAT SPECIFICATION – ST-TY92-C1F

Contact configuration:	SPST open-on-rise
Temperature range:	–5 to +15°C (23 to 95°F)
Switching current:	250Vac @ 10(2)A

HEATING OR COOLING STAT SPECIFICATION – ST-TY92-C3T & ST-TY92-C3

Contact configuration:	SPDT
Temperature range:	5 to 35°C (41 to 95°F)
Switching current:	250Vac @ 3(1)A

Part code	*Description*	*Range*
ST-TY92-C1	Heating Thermostat	5 to 35°C (41 to 95°F)
ST-TY92-C1F	Frost Thermostat	–5 to +15°C (23 to 59°F)
ST-TY92-C3	Heating or Cooling Thermostat	5 to 35°C (41 to 95°F)
ST-TY92-C3T	Heating or Cooling Tamperproof	5 to 35°C (41 to 95°F)

Data sheet: ST-TY.pdf

TT-512 Low Profile Temperature Sensors

The TT-512 range of low profile button temperature sensors are used for measuring air temperature in indoor space where style or a robust solution is required. Their discreet appearance offers reliable temperature monitoring without being obtrusive.

These sensors are particularly effective in applications where anti-ligature sensors are required for the safety of the building occupants. Due to the robust design and materials, the sensors are also tamperproof.

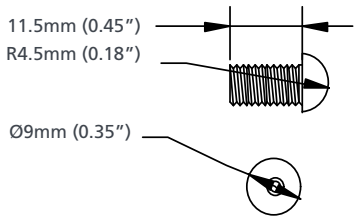
They are available in either white plastic or stainless steel finishes and contain either a high quality Thermistor, Platinum or Nickel sensing element. Sensor types compatible with most controls manufacturers' equipment are available.

SPECIFICATION

Output types:	Resistive
Material:	White plastic or stainless steel
Cable length:	2m (6.56ft) or 5m (16.4ft)
Mounting:	M6, Nut supplied
Ambient range:	-10 to +60°C (14 to 140°F)
Protection:	IP65
Weight:	8g (0.18lb)

Part code		*Description*
Stainless Steel	**White Plastic**	
TT-512-SS-A	**TT-512-WP-A**	10K3A1, Trend, Cylon, Distech
TT-512-SS-B	**TT-512-WP-B**	10K4A1, Andover
TT-512-SS-C	**TT-512-WP-C**	20K6A1, Honeywell
TT-512-SS-D	**TT-512-WP-D**	PT100A, Serck
TT-512-SS-E	**TT-512-WP-E**	PT1000A, Cylon
TT-512-SS-F	**TT-512-WP-F**	Ni1000A, Sauter
TT-512-SS-G	**TT-512-WP-G**	Ni1000A/TCR (LAN1), Siemens
TT-512-SS-L	**TT-512-WP-L**	TAC1, TAC
TT-512-SS-M	**TT-512-WP-M**	2.2K3A1, Johnson Controls
TT-512-SS-N	**TT-512-WP-N**	3K3A1, Alerton
TT-512-SS-P	**TT-512-WP-P**	30K6A1, Drayton
TT-512-SS-Q	**TT-512-WP-Q**	50K6A1, Ambiflex
TT-512-SS-Z	**TT-512-WP-Z**	10K NTC, Carel
TT-512-SS-DC	**TT-512-WP-DC**	Delta Controls
Suffix (add to part code)		
-5M		5m (16.40 ft) probe length

Data sheet: TT-512.pdf



TT-515 Low Profile Plate Sensors

The TT-515 range of low profile button temperature sensors are for direct mounting onto a standard UK back box and used for measuring air temperature in indoor spaces.

These sensors are particularly effective in applications where anti-ligature sensors are required for the safety of the building occupants. Due to the robust design and materials, the sensors are also tamperproof.

They are available in either white plastic or stainless steel finishes and contain either a high quality Thermistor, Platinum or Nickel sensing element. Sensor types compatible with most controls manufacturers' equipment are available.

SPECIFICATION

Output types:	Resistive
Housing:	Material White plastic or stainless steel
	Dimensions 85 x 85 (3.35 x 3.35")
Mounting:	Flush, to standard UK wall box
Ambient range:	-10 to +60°C (14 to 140°F)
Protection:	IP65
Weight:	220g (0.49 lb)

Part code		*Description*
Stainless Steel	**White Plastic**	
TT-515-SS-A	**TT-515-WP-A**	10K3A1, Trend, Cylon, Distech
TT-515-SS-B	**TT-515-WP-B**	10K4A1, Andover
TT-515-SS-C	**TT-515-WP-C**	20K6A1, Honeywell
TT-515-SS-D	**TT-515-WP-D**	PT100A, Serck
TT-515-SS-E	**TT-515-WP-E**	PT1000A, Cylon
TT-515-SS-F	**TT-515-WP-F**	Ni1000A, Sauter
TT-515-SS-G	**TT-515-WP-G**	Ni1000A/TCR (LAN1), Siemens
TT-515-SS-H	**TT-325-WP-H**	SAT1, Satchwell
TT-515-SS-K	**TT-325-WP-K**	STA1, Landis & Staefa
TT-515-SS-L	**TT-325-WP-L**	TAC1, TAC
TT-515-SS-M	**TT-325-WP-M**	2.2K3A1, Johnson Controls
TT-515-SS-N	**TT-325-WP-N**	3K3A1, Alerton
TT-515-SS-P	**TT-325-WP-P**	30K6A1, Drayton
TT-515-SS-Q	**TT-325-WP-Q**	50K6A1, Ambiflex
TT-515-SS-R	**TT-325-WP-R**	100K6A1, York >40°C
TT-515-SS-S	**TT-325-WP-S**	SAT2, Satchwell
TT-515-SS-T	**TT-325-WP-T**	SAT3, Satchwell
TT-515-SS-W	**TT-325-WP-W**	SIE1, Siebe
TT-515-SS-Y	**TT-325-WP-Y**	STA2, Landis & Staefa
TT-515-SS-Z	**TT-325-WP-Z**	10K NTC, Carel
TT-515-SS-DC	**TT-325-WP-DC**	Delta Controls

Data sheet: TT-515.pdf

TT-518 Thimble Sensors

Thimble temperature sensors are used for measuring air temperature in indoor spaces. Units contain either a high quality thermistor, Nickel or Platinum sensing element. The sensing element is mounted in an attractive 'thimble' enclosure for surface mounting, typically on a backplate or a ceiling tile.

FEATURE

- Plastic, brass, stainless steel or aluminium thimble options

SPECIFICATION

Output types:	Thermistor Resistive	
	Current	4 to 20mA
	Voltage	0 to 10Vdc
Thread:	Plastic	M16 x 1.5 x 25mm
	All others	M16 x 1.5 x 12mm
Connections:	2m (6.56 ft) flying lead, screened	
Ambient range:	–10 to +60°C (14 to 140°F)	
Protection:	IP30	
Dimensions:	Plastic	45mm overall x 22mm dia. (1.77 x 0.87")
	Metal	30mm overall x 19mm dia. (1.18 x 0.75")
Weight:	80g (0.18 lb)	

Part code	*Description*
	Suffixes (add to part code)
-AL	Aluminium thimble
-SS	Stainless steel thimble
-BR	Brass thimble
-BW	Brilliant white thimble
-5M	5m (16.40 ft) cable length

Note: If no colour is specified, standard off-white thimble will be supplied.
* These units are supplied with the transmitter in the plant housing.

Part code	*Description*
	Passive Output
TT-518-A	10K3A1, Trend, Cylon, Distech
TT-518-B	10K4A1, Andover
TT-518-C	20K6A1, Honeywell
TT-518-D	PT100A, Serck
TT-518-E	PT1000A, Cylon
TT-518-F	Ni1000A, Sauter
TT-518-G	Ni1000A/TCR (LAN1), Siemens
TT-518-H	SAT1, Satchwell
TT-518-K	STA1, Landis & Staefa
TT-518-L	TAC1, TAC
TT-518-M	2.2K3A1, Johnson Controls
TT-518-N	3K3A1, Alerton
TT-518-P	30K6A1, Drayton
TT-518-Q	50K6A1, Ambiflex
TT-518-S	SAT2, Satchwell
TT-518-T	SAT3, Satchwell
TT-518-W	SIE1, Siebe
TT-518-Y	STA2, Landis & Staefa
TT-518-Z	10K NTC, Carel
TT-518-DC	Delta Controls
	Active Output
TT-518-CVO	4-20mA/0-10Vdc selectable output * ***Output ranges:*** –10 to +40°C (14 to 104°F) or –10 to +110°C (14 to 230°F) (selectable)
TT-518-CVO-C	4-20mA/0-10Vdc selectable output (custom temp. scaling) *, Calibration to customer specification in the range of –10 to +60°C (14 to 140°F)

Data sheets: TT-518.pdf · TT-CVO.pdf

SonNet® WIRELESS TECHNOLOGY

Did you know we also sell wireless Temperature sensors in our SonNet range? Go to page 52 for more details.

TT-322 Duct Sensors

The TT-322 direct output, temperature sensor used to measure air temperature in ducts. Units contain either a high quality thermistor, nickel or platinum sensing element. The sensing element is fitted into a stainless steel probe. A flange plate is available for adjustment of penetration depth (order as TT-DFP).

SPECIFICATION

Output types:	Thermistor	Resistive
	Current	4 to 20mA
	Voltage	0 to 10Vdc
Probe:	Material	Stainless steel 304
	Dimensions	65mm (2.56"), 150mm (5.91") or 250mm (9.84") x 6mm dia. (0.24")
Housing:	Material	ABS (flame retardant)
	Dimensions	74 x 70 x 50mm (2.91 x 2.76 x 1.97")
Ambient range:	–30 to +70°C (-22 to 158°F)	
Protection:	IP65	
Weight:	160g (0.35 lb)	

Part code	*Description*
	Active Output
TT-322-CVO	4-20mA/0-10Vdc selectable output, ***Output ranges:*** –10 to +40°C (14 to 104°F) or –10 to +110°C (14 to 230°F) (selectable)
TT-322-CVO-C	4-20mA/0-10Vdc selectable output (custom temp. scaling), Calibration to customer specification in the range of –30 to +70°C (-22 to 158°F)
	Suffixes (add to part code)
-250	250mm probe length
-65	65mm probe lenght
	Accessory
TT-DFP	Duct flange plate

Data sheets: TT-322.pdf · TT-CVO.pdf

Part code	*Description*
	Passive Output
TT-322-A	10K3A1, Trend, Cylon, Distech
TT-322-B	10K4A1, Andover,
TT-322-C	20K6A1, Honeywell
TT-322-D	PT100A, Serck
TT-322-E	PT1000A, Cylon
TT-322-F	Ni1000A, Sauter
TT-322-G	Ni1000A/TCR (LAN1), Siemens
TT-322-H	SAT1, Satchwell
TT-322-K	STA1, Landis & Staefa
TT-322-L	TAC1, TAC
TT-322-M	2.2K3A1, Johnson Controls
TT-322-N	3K3A1, Alerton
TT-322-P	30K6A1, Drayton
TT-322-Q	50K6A1, Ambiflex
TT-322-R	100K6A1, York >40°C
TT-322-S	SAT2, Satchwell
TT-322-T	SAT3, Satchwell
TT-322-W	SIE1, Siebe
TT-322-Y	STA2, Landis & Staefa
TT-322-Z	10K NTC, Carel
TT-322-DC	Delta Controls

Volume Price Breaks are applicable		
Unit Price (10-19 and 20+)		
TT-322-A	10K3A1	Please see price list
TT-322-B	10K4A1	
TT-322-C	20K6A1	
TT-322-E	PT1000A	
TT-322-G	Ni1000A/TCR	
TT-322-H	SAT1	
TT-322-K	STA1	
TT-322-L	TAC1	

TT-325 Duct Averaging Sensors

The TT-325 temperature sensors are used for measuring temperature in ducts where an average reading across the air flow is required. Units contain either high quality thermistor, nickel or platinum sensing elements which are housed in a 'Nylon 12' tube, spaced at 0.5m (1.64 ft) intervals along the standard 2.2m (7.22 ft) length.

SPECIFICATION

Output types:	Thermistor	Resistive
	Current	4 to 20mA
	Voltage	0 to 10Vdc
Probe:	Material	Nylon 12
	Dimensions	2.2m x 8mm dia. (7.22 ft x 0.31")
Housing:	Material	ABS (flame retardant)
	Dimensions	74 x 70 x 50mm (2.91 x 2.76 x 1.97")
Ambient range:	–30 to +70°C (-22 to 158°F)	
Protection:	IP65	
Weight:	220g (0.49 lb)	

Part code	*Description*
	Active Output
TT-325-CVO	4-20mA/0-10Vdc selectable output, ***Output ranges:*** –10 to +40°C (14 to 104°F) or –10 to +110°C (14 to 230°F) – selectable
TT-325-CVO-C	4-20mA/0-10Vdc selectable output (custom temp. scaling), Calibration to customer specification in the range of –30 to +70°C (-22 to 158°F)
	Suffix (add to part code)
-5M	5m (16.40 ft) probe length

Part code	*Description*
	Passive Output
TT-325-A	10K3A1, Trend, Cylon, Distech
TT-325-B	10K4A1, Andover
TT-325-C	20K6A1, Honeywell
TT-325-D	PT100A, Serck
TT-325-E	PT1000A, Cylon
TT-325-F	Ni1000A, Sauter
TT-325-G	Ni1000A/TCR (LAN1), Siemens
TT-325-H	SAT1, Satchwell
TT-325-K	STA1, Landis & Staefa
TT-325-L	TAC1, TAC
TT-325-M	2.2K3A1, Johnson Controls
TT-325-N	3K3A1, Alerton
TT-325-P	30K6A1, Drayton
TT-325-Q	50K6A1, Ambiflex
TT-325-R	100K6A1, York >40°C
TT-325-S	SAT2, Satchwell
TT-325-T	SAT3, Satchwell
TT-325-W	SIE1, Siebe
TT-325-Y	STA2, Landis & Staefa
TT-325-Z	10K NTC, Carel
TT-325-DC	Delta Controls

Data sheets: TT-325.pdf · TT-CVO.pdf

TT-626 True Duct Averaging Sensors

Sontay's true duct averaging sensor contains a PT100B element, which measures at point along the full length of the copper tube.

USE THE CODE NOBRAND ON YOUR ORDER IF THE SONTAY LOGO IS NOT REQUIRED

SPECIFICATION

Output types:	PT100B	Resistive
	Current	4 to 20mA
	Voltage	0 to 10Vdc
Probe:	Material	Copper
	Dimensions	2050mm (6.73 ft)
		(includes 50mm (1.97") collar) x ¼" dia.
Housing:	Material	ABS (flame retardant)
	Dimensions	116 x 106 x 52mm (4.57 x 4.17 x 2.05")
Ambient range:	–30 to +70°C (-22 to 158°F)	
Protection:	IP65	
Weight:	420g (0.93 lb)	

Part code	*Description*
	Passive Output
TT-626-PT100B	PT100B Thermistor Output
	Active Output
TT-626-CVO	4-20mA/0-10Vdc selectable output ***Output ranges:*** –10 to +40°C (14 to 104°F) or –10 to +110°C (14 to 230°F) (selectable)
TT-626-CVO-C	4-20mA/0-10Vdc selectable output (custom temp. scaling), Calibration to customer specification in the range of –30 to +70°C (-22 to 158°F)

Data sheets: TT-626.pdf · TT-CVO.pdf

SonNet® WIRELESS TECHNOLOGY

Did you know we also sell wireless Temperature sensors in our SonNet range? Go to page 52 for more details.

TT-331 Outside Air Sensors

The TT-331 range are direct output, temperature sensors for measuring outside air temperature. Units contain either a high quality thermistor, Nickel or Platinum sensing element. The sensors are housed in IP65 rated enclosures. The TT-331 has a cap containing the sensing element located externally in the shadow of the lid to curb the effects of solar gain, but should always be situated in a sheltered position on a north facing wall.

USE THE CODE NOBRAND ON YOUR ORDER IF THE SONTAY LOGO IS NOT REQUIRED

SPECIFICATION

Output types:	Thermistor	Resistive
	Current	4 to 20mA
	Voltage	0 to 10Vdc
Housing material:	ABS (flame retardant)	
Dimensions:	74 x 70 x 50mm (2.91 x 2.76 x 1.97")	
Ambient range:	–30 to +70°C (-22 to 158°F)	
Protection:	IP65	
Weight:	160g (0.35 lb)	

Volume Price Breaks are applicable		
Unit Price (5-9 and 10+)		
TT-331-A	10K3A1	Please see price list
TT-331-B	10K4A1	
TT-331-C	20K6A1	
TT-331-D	PT100A	
TT-331-E	PT1000A	
TT-331-G	Ni1000A/TCR	
TT-331-H	SAT1	
TT-331-K	STA1	
TT-331-L	TAC1	

SonNet® WIRELESS TECHNOLOGY

Did you know we also sell wireless Temperature sensors in our SonNet range? Go to page 52 for more details.

Part code	*Description*
	Passive Output
TT-331-A	10K3A1, Trend, Cylon, Distech
TT-331-B	10K4A1, Andover
TT-331-C	20K6A1, Honeywell
TT-331-D	PT100A, Serck
TT-331-E	PT1000A, Cylon
TT-331-F	Ni1000A, Sauter
TT-331-G	Ni1000A/TCR (LAN1), Siemens
TT-331-H	SAT1, Satchwell
TT-331-K	STA1, Landis & Staefa
TT-331-L	TAC1, TAC
TT-331-M	2.2K3A1, Johnson Controls
TT-331-N	3K3A1, Alerton
TT-331-P	30K6A1, Drayton
TT-331-Q	50K6A1, Ambiflex
TT-331-R	100K6A1, York >40°C
TT-331-S	SAT2, Satchwell
TT-331-T	SAT3, Satchwell
TT-331-V	SAT4, Satchwell
TT-331-W	SIE1, Siebe
TT-331-Y	STA2, Landis & Staefa
TT-331-Z	10K NTC, Carel
TT-331-DC	Delta Controls
	Active Output
TT-331-CVO	4-20mA/0-10Vdc selectable output ***Output ranges:*** –10 to +40°C (14 to 104°F) or –10 to +110°C (14 to 230°F) – selectable
TT-331-CVO-C	4-20mA/0-10Vdc selectable output (custom temp. scaling), Calibration to customer specification in the range of –30 to +70°C (-22 to 158°F)

TT-332 Outside Air Sensors with Radiation Shield

For measuring outside air temperature the TT-332 contains either a high quality thermistor, nickel or platinum sensing element. The sensors are housed in IP65 rated enclosures. The TT-332 has the element fitted into a PTFE radiation shield, designed to provide fast response times to changes in outside air temperature and to protect the element from the effects of direct sunlight.

SPECIFICATION

Output types:	Thermistor	Resistive
	Current	4 to 20mA
	Voltage	0 to 10Vdc
Housing material:	ABS (flame retardant)	
Dimensions:	74 x 70 x 50mm (2.91 x 2.76 x 1.97")	
Ambient range:	–30 to +70°C (-22 to 158°F)	
Protection:	IP65	
Weight:	160g (0.35 lb)	

Part code	*Description*
	Active Output
TT-332-CVO	4-20mA/0-10Vdc selectable output
	Output ranges: –10 to +40°C (14 to 104°F) or –10 to +110°C (14 to 230°F) – selectable
TT-332-CVO-C	4-20mA/0-10Vdc selectable output (custom temp. scaling), Calibration to customer specification in the range of –30 to +70°C (-22 to 158°F)

Part code	*Description*
	Passive Output
TT-332-A	10K3A1, Trend, Cylon, Distech
TT-332-B	10K4A1, Andover
TT-332-C	20K6A1, Honeywell
TT-332-D	PT100A, Serck
TT-332-E	PT1000A, Cylon
TT-332-F	Ni1000A, Sauter
TT-332-G	Ni1000A/TCR (LAN1), Siemens
TT-332-H	SAT1, Satchwell
TT-332-K	STA1, Landis & Staefa
TT-332-L	TAC1, TAC
TT-332-M	2.2K3A1, Johnson Controls
TT-332-N	3K3A1, Alerton
TT-332-P	30K6A1, Drayton
TT-332-Q	50K6A1, Ambiflex
TT-332-R	100K6A1, York >40°C
TT-332-S	SAT2, Satchwell
TT-332-T	SAT3, Satchwell
TT-332-V	SAT4, Satchwell
TT-332-W	SIE1, Siebe
TT-332-Y	STA2, Landis & Staefa
TT-332-Z	10K NTC, Carel
TT-332-DC	Delta Controls

Data sheets – TT-332.pdf, TT-CVO.pdf

SonNet® WIRELESS TECHNOLOGY

Did you know we also sell wireless Temperature sensors in our SonNet range? Go to page 52 for more details.

TT-341 Immersion Sensors

These immersion sensors are used for measuring the temperature of liquids in pipework. Units contain either a high quality thermistor, nickel or platinum element. The TT-341 sensing element is housed in a stainless steel probe fitted to an IP65 rated enclosure, for direct mounting into TT-PO521 or TT-PO-HP range of stainless steel pockets (page 74).

SPECIFICATION

Output types:	Thermistor	Resistive
	Current	4 to 20mA
	Voltage	0 to 10Vdc
Housing material:	ABS (flame retardant)	
Dimensions:	74 x 70 x 50mm (2.91 x 2.76 x 1.97")	
Probe:	Material	Stainless steel 304
	Dimensions	65mm (2.56"), 150mm (5.91") or 250mm (9.84") x 6mm dia. (0.24")
Ambient range:	–30 to +70°C (-22 to 158°F)	
Protection:	IP65	
Weight:	160g (0.35 lb)	

Volume Price Breaks are applicable		
Unit Price (10-19 and 20+)		
TT-341-A	10K3A1	Please see price list
TT-341-B	10K4A1	
TT-341-C	20K6A1	
TT-341-D	PT100A	
TT-341-E	PT1000A	
TT-341-G	Ni1000A/TCR	
TT-341-H	SAT1	
TT-341-L	TAC1	

Part code	*Description*
	Passive Output
TT-341-A	10K3A1, Trend, Cylon, Distech
TT-341-B	10K4A1, Andover
TT-341-C	20K6A1, Honeywell
TT-341-D	PT100A, Serck
TT-341-E	PT1000A, Cylon
TT-341-F	Ni1000A, Sauter
TT-341-G	Ni1000A/TCR (LAN1), Siemens
TT-341-H	SAT1, Satchwell
TT-341-L	TAC1, TAC
TT-341-M	2.2K3A1, Johnson Controls
TT-341-N	3K3A1, Alerton
TT-341-P	30K6A1, Drayton
TT-341-Q	50K6A1, Ambiflex
TT-341-R	100K6A1, York >40°C
TT-341-S	SAT2, Satchwell
TT-341-T	SAT3, Satchwell
TT-341-W	SIE1, Siebe
TT-341-Y	STA2, Landis & Staefa
TT-341-Z	10K NTC, Carel
TT-341-DC	Delta Controls
	Active Output
TT-341-CVO	4-20mA/0-10Vdc selectable output ***Output ranges:*** –10 to +40°C (14 to 104°F) or –10 to +110°C (14 to 230°F) – selectable
TT-341-CVO-C	4-20mA/0-10Vdc selectable output (custom temp. scaling), Calibration to customer specification in the range of –30 to +70°C (-22 to 158°F)
	Suffixes (add to part code)
-65	65mm (2.56") probe length
-250	250mm (9.84") "

Data sheets: TT-341.pdf · TT-CVO.pdf

SonNet® WIRELESS TECHNOLOGY

Did you know we also sell wireless Temperature sensors in our SonNet range? Go to page 52 for more details.

TT-342 High Temperature Immersion Sensors

The TT-342 is for use in high temperature applications up to 400°C (752°F). The sensor consists of a stainless steel probe fitted to an aluminium head, and connected by a 1m (3.28 ft) cable to a plant housing where terminations and transmitters are located. The TT-342 is available in two standard probe lengths of 150mm (5.91") or 250mm (9.84"), for direct mounting into the TT-PO521 or TT-PO-HP range of stainless steel pockets (page 74).

USE THE CODE NOBRAND ON YOUR ORDER IF THE SONTAY LOGO IS NOT REQUIRED

SPECIFICATION

Output types:	RTD	Resistive
	Current	4 to 20mA
	Voltage	0 to 10Vdc
Housing material:	ABS (flame retardant)	
Dimensions:	74 x 70 x 50mm (2.91 x 2.76 x 1.97")	
Probe:	Material	Stainless steel
	Dimensions	150mm (5.91") or 250mm (9.84") x 6mm dia. (0.24")
Ambient range:	Housing	–30 to +70°C (-22 to 158°F)
	Probe	–10 to +400°C (14 to 752°F)
Protection:	IP65	
Weight:	340g (0.75 lb)	

Part code	*Description*
	Passive Output (150mm (5.91") Probe)
TT-342-D	PT100A Sensor
TT-342-E	PT1000A Sensor
	Active Output (150mm (5.91") Probe)
TT-342-CVO	4-20mA/0-10Vdc selectable output ***Output ranges:*** –10 to +40°C (14 to 104°F), –10 to +110°C (14 to 230°F), –10 to +160°C (14 to 320°F) or 0 to 400°C (32 to 752°F) – selectable
TT-342-CVO-C	4-20mA/0-10Vdc selectable output (custom temp. scaling), Calibration to customer specification in the range of –10 to +400°C (14 to 752°F)
	Suffix (add to part code)
-250	250mm (9.84") probe length
	Accessory
TT-DFP	Duct flange plate

Data sheets: TT-342.pdf · TT-CVO.pdf

TT-351 Clamp-on Sensors

The TT-351 is used to measure pipe temperature, and contain either a high quality thermistor, nickel or platinum element, which is housed in a 50mm (1.97") long probe with two metres (6.56 ft) of PTFE 2-core cable as standard connecting the probe to an IP65 housing for termination.

USE THE CODE NOBRAND ON YOUR ORDER IF THE SONTAY LOGO IS NOT REQUIRED

SPECIFICATION

Output types:	Thermistor	Resistive
	Current	4 to 20mA
	Voltage	0 to 10Vdc
Housing material:	ABS (flame retardant)	
Dimensions:	74 x 70 x 50mm (2.91 x 2.76 x 1.97")	
Cable length:	2 metre (6.56 ft) – standard	
Ambient range:	–30 to +70°C (-22 to 158°F)	
Protection:	IP65	
Weight:	200g (0.44 lb)	

Part code	*Description*
	Suffix (add to part code)
-5M	5m (16.40 ft) cable length

Data sheets: TT-351.pdf · TT-CVO.pdf

Volume Price Breaks are applicable		
Unit Price (10-19 and 20+)		
TT-351-A	10K3A1	Please see price list
TT-351-B	10K4A1	
TT-351-C	20K6A1	
TT-351-D	PT100A	
TT-351-E	PT1000A	
TT-351-G	Ni1000A/TCR	
TT-351-H	SAT1	
TT-351-L	TAC1	

Part code	*Description*
	Passive Output
TT-351-A	10K3A1, Trend, Cylon, Distech
TT-351-B	10K4A1, Andover
TT-351-C	20K6A1, Honeywell
TT-351-D	PT100A, Serck
TT-351-E	PT1000A, Cylon
TT-351-F	Ni1000A, Sauter
TT-351-G	Ni1000A/TCR (LAN1), Siemens
TT-351-H	SAT1, Satchwell
TT-351-L	TAC1, TAC
TT-351-M	2.2K3A1, Johnson Controls
TT-351-N	3K3A1, Alerton
TT-351-P	30K6A1, Drayton
TT-351-Q	50K6A1, Ambiflex
TT-351-R	100K6A1, York >40°C
TT-351-S	SAT2, Satchwell
TT-351-T	SAT3, Satchwell
TT-351-W	SIE1, Siebe
TT-351-Y	STA2, Landis & Staefa, Distech
TT-351-Z	10K NTC, Carel
TT-351-DC	Delta Controls
	Active Output
TT-351-CVO	4-20mA/0-10Vdc selectable output ***Output ranges:*** –10 to +40°C (14 to 104°F) or –10 to +110°C (14 to 230°F) (selectable)
TT-351-CVO-C	4-20mA/0-10Vdc selectable output (custom temp. scaling), Calibration to customer specification in the range of –30 to +70°C (-22 to 158°F)

SonNet® WIRELESS TECHNOLOGY

Did you know we also sell wireless Temperature sensors in our SonNet range? Go to page 52 for more details.

TT-554 Remote Probe Sensors

This range of remote probe sensor is perfect for tight locations, hard to access areas or for applications where the usual duct (TT-322) or immersion (TT-341) sensor do not fit. 150mm probe is used with either the TT-PO range of immersion sensor pockets or the TT-DFP duct flange plate.

SPECIFICATION

Output types:	Thermistor	Resistive
	Current	4-20mA
	Voltage	0 to 10Vdc
Probe:	Material	Stainless steel
	Dimensions	150 x 6mm (5.91 x 0.24")
Lead length:	2 meters (6.56ft)	
Protection:	IP65	
Weight:	125g (0.53 lb)	

Part code	*Description*
	Passive Output
TT-554-A	10K3A1, Trend, Cylon, Distech
TT-554-B	10K4A1, Andover
TT-554-C	20K6A1, Honeywell
TT-554-D	PT100A, Serck
TT-554-E	PT1000A, Cylon
TT-554-F	Ni1000A, Sauter
TT-554-G	Ni1000A/TCR (LAN1), Siemens
TT-554-L	TAC1, TAC
TT-554-M	2.2K3A1, Johnson Controls
TT-554-P	30K6A1, Drayton
TT-554-Z	10K NTC, Carel
TT-554-DC	Delta Controls
TT-554-CVO-C	4-20mA/0-10Vdc selectable output (custom temp. scaling) *, Calibration to customer specification in the range of –10 to +60°C (14 to 140°F)
	Suffix (add to part code)
-5M	5 meter (16.4ft) cable length
	Accessories
TT-DFP	Duct flange plate
TT-PO521	Stainless steel immersion pocket

Data sheets: TT-554.pdf · TT-CVO.pdf

Note: Custom lengths available.
* These units are supplied with the transmitter in the plant housing.

TT-555 Flying Lead Sensors

The TT-555 is a direct output temperature Sensor used to measure air temperature, especially in fan-coil units etc, and contain either a high quality thermistor, nickel or platinum sensing element. The standard cable length is two metres (6.56 ft) of 2-core screened cable. Longer lengths can be made to order.

SPECIFICATION

Output types:	Thermistor	Resistive
	Current	4 to 20mA
	Voltage	0 to 10Vdc
Probe material:	Stainless steel 304	
Probe dimensions:	25 x 6mm (0.98 x 0.24") dia.	
Ambient range:	–10 to +60°C (14 to 140°F)	
Protection:	IP40 (with -R option IP67)	
Weight:	80g (0.18 lb)	

Part code	*Description*
	Suffixes (add to part code)
-5M **	5m (16.40 ft) cable length
-R	Cap potted (waterproof)

Note: Custom lengths available.
* These units are supplied with the transmitter in the plant housing.
** Volume price breaks available on application.

Volume Price Breaks are applicable		
Unit Price (10-19 and 20+)		
TT-555-A	10K3A1	Please see price list
TT-555-B	10K4A1	
TT-555-C	20K6A1	
TT-555-E	PT1000A	
TT-555-G	Ni1000A/TCR	
TT-555-H	SAT1	
TT-555-L	TAC1	

Part code	*Description*
	Passive Output
TT-555-A	10K3A1, Trend, Cylon, Distech
TT-555-B	10K4A1, Andover
TT-555-C	20K6A1, Honeywell
TT-555-D	PT100A, Serck
TT-555-E	PT1000A, Cylon
TT-555-F	Ni1000A, Sauter
TT-555-G	Ni1000A/TCR (LAN1), Siemens
TT-555-H	SAT1, Satchwell
TT-555-K	STA1, Landis & Staefa
TT-555-L	TAC1, TAC
TT-555-M	2.2K3A1, Johnson Controls
TT-555-N	3K3A1, Alerton
TT-555-P	30K6A1, Drayton
TT-555-Q	50K6A1, Ambiflex
TT-555-R	100K6A1, York >40°C
TT-555-S	SAT2, Satchwell
TT-555-T	SAT3, Satchwell
TT-555-W	SIE1, Siebe
TT-555-Y	STA2, Landis & Staefa
TT-555-Z	10K NTC, Carel
TT-555-DC	Delta Controls
	Active Output
TT-555-CVO	4-20mA/0-10Vdc selectable output * ***Output ranges:*** –10 to +40°C (14 to 104°F) or –10 to +110°C (14 to 230°F) (selectable)
TT-555-CVO-C	4-20mA/0-10Vdc selectable output (custom temp. scaling) *, Calibration to customer specification in the range of –10 to +60°C (14 to 140°F)

Data sheets: TT-555.pdf · TT-CVO.pdf

SonNet® WIRELESS TECHNOLOGY

Did you know we also sell wireless Temperature sensors in our SonNet range? Go to page 52 for more details.

TT-359 Direct Clamp-on Sensors

The TT-359 clamp-on sensor is used for direct connection to measure pipe temperature. The sensing element is enclosed in a moulded nickel contact bar on the underside of the main housing. Units are available with a large range of sensing elements, using high quality thermistor, nickel or platinum elements.

SPECIFICATION

Output types:	Thermistor	Resistive
	Current	4 to 20mA
	Voltage	0 to 10Vdc
Housing material:	ABS Flame retardant	
Housing dimensions:	74 x 70 x 30mm (2.91 x 2.76 x 1.97") dia.	
Ambient range:	–30 to +70°C (-22 to 158°F)	
Protection:	IP65	
Weight:	180g (0.40 lb)	

Volume Price Breaks are applicable		
Unit Price (10-19 and 20+)		
TT-359-A	10K3A1	Please see price list
TT-359-B	10K4A1	
TT-359-C	20K6A1	
TT-359-D	PT100A	
TT-359-E	PT1000A	
TT-359-G	Ni1000A/TCR	
TT-359-H	SAT1	
TT-359-L	TAC1	

Data sheets: TT-359.pdf · TT-CVO.pdf

Part code	*Description*
	Passive Output
TT-359-A	10K3A1, Trend, Cylon, Distech
TT-359-B	10K4A1, Andover
TT-359-C	20K6A1, Honeywell
TT-359-D	PT100A, Serck
TT-359-E	PT1000A, Cylon
TT-359-F	Ni1000A, Sauter
TT-359-G	Ni1000A/TCR (LAN1), Siemens
TT-359-H	SAT1, Satchwell
TT-359-L	TAC1, TAC
TT-359-M	2.2K3A1, Johnson Controls
TT-359-N	3K3A1, Alerton
TT-359-P	30K6A1, Drayton
TT-359-Q	50K6A1, Ambiflex
TT-359-R	100K6A1, York >40°C
TT-359-S	SAT2, Satchwell
TT-359-T	SAT3, Satchwell
TT-359-W	SIE1, Siebe
TT-359-Y	STA2, Landis & Staefa
TT-359-Z	10K NTC, Carel
TT-359-DC	Delta Controls
	Active Output
TT-359-CVO	4-20mA/0-10Vdc selectable output ***Output ranges:*** –10 to +40°C (14 to 104°F) or –10 to +110°C (14 to 230°F) (selectable)
TT-359-CVO-C	4-20mA/0-10Vdc selectable output (custom temp. scaling), Calibration to customer specification in the range of –30 to +70°C (-22 to 158°F)

SonNet® WIRELESS TECHNOLOGY

Did you know we also sell wireless Temperature sensors in our SonNet range? Go to page 52 for more details.

TT-635 External Black Bulb Sensors

The TT-635 sensor is used for radiant heat in outdoor spaces. Black bulb temperature sensors are used to calculate comfort temperature which is specified as the average of the conductive temperature and the radiant temperature. Units contain either a high quality thermistor, platinum or nickel sensing element.

$$\text{T comfort} = \frac{\text{(T radiant + T conductive)}}{2}$$

SPECIFICATION

Output type:	Thermistor	Resistive
Ambient range:	–30 to +70°C (-22 to 158°F)	
Material:	Housing	ABS (flame retardant)
	Black bulb	Anodised aluminium
Dimensions:	Housing	116 x 106 x 52mm (4.57 x 4.17 x 2.05")
	Black bulb	17.5 x 37mm (0.69 x 1.46") dia.
Protection:	IP65	
Weight:	160g (0.35 lb)	

SonNet® WIRELESS TECHNOLOGY

Did you know we also sell wireless Temperature sensors in our SonNet range? Go to page 52 for more details.

Part code	*Description*
	Passive Output
TT-635-A	10K3A1, Trend, Cylon, Distech
TT-635-B	10K4A1, Andover
TT-635-C	20K6A1, Honeywell
TT-635-D	PT100A, Serck
TT-635-E	PT1000A, Cylon
TT-635-F	Ni1000A, Sauter
TT-635-G	Ni1000A/TCR (LAN1), Siemens
TT-635-H	SAT1, Satchwell
TT-635-K	STA1, Landis & Staefa
TT-635-L	TAC1, TAC
TT-635-M	2.2K3A1, Johnson Controls
TT-635-N	3K3A1, Alerton
TT-635-P	30K6A1, Drayton
TT-635-Q	50K6A1, Ambiflex
TT-635-S	SAT2, Satchwell
TT-635-T	SAT3, Satchwell
TT-635-W	SIE1, Siebe
TT-635-Y	STA2, Landis & Staefa
TT-635-Z	10K NTC, Carel
TT-635-DC	Delta Controls

Data sheets: TT-635.pdf · TT-CVO.pdf

TT-1000 Space Sensors

A NEW ERA IN SPACE TEMPERATURE SENSOR DESIGN
This range of innovative space sensors is designed to meet the exacting standards of today's architects, specifiers and building owners. Its unique low profile, curved style allows it to blend seamlessly in to the architecture of modern and older buildings alike.

As with its predecessor the TT-1000 range can be supplied with a wide range of user interface options such as set-point adjustment, fan speed and momentary switches etc. to give the customer additional functionality. Sontay also offers a complete range of customised user interfaces for every requirement.

See page 75 for details on Sontay's UI-500 series or call our Sales Support Team for more information.

INTERFACE OPTIONS

SP
Set temperature to desired point
Setpoint

FS 3/4/5
Fan Speed Switch
Select fan speed

MS
Momentary Switch
Override the programme for a period of time

INTERFACE RESTRICTIONS

- SP only
- MS only
- SP-MS only
- SP-FSx only

SPECIFICATION

Output types:	Thermistor	Resistive
	Current	4 to 20mA
	Voltage	0 to 10Vdc or 0 to 5Vdc
Set-point:	2-wire 11-1kΩ/0-10Ω linear	
Fan speed:	Resistive	
Momentary switch:	N/O push button	
Housing:	Material	ABS (flame retardant)
	Colour	Polished white finish
Ambient range:	–10 to +60°C (14 to 140°F)	
Protection:	IP30	
Dimensions:	115 x 85 x 28mm (4.53 x 3.35 x 1.10")	
Weight:	120g (0.26 lb)	

SonNet® WIRELESS TECHNOLOGY

Did you know we also sell wireless Temperature sensors in our SonNet range? Go to page 52 for more details.

FEATURES

- Designed to be aesthetically pleasing
- Blends into the fabric of any building
- Meets exacting standards of today's specifiers
- LCD display options on -ACT models

Part code	*Description*
	Passive Output
TT-1000-A	10K3A1, Trend, Cylon, Distech
TT-1000-B	10K4A1, Andover
TT-1000-C	20K6A1, Honeywell
TT-1000-D	PT100A, Serck
TT-1000-E	PT1000A, Cylon
TT-1000-F	Ni1000A, Sauter
TT-1000-G	Ni1000A/TCR (LAN1), Siemens
TT-1000-H	SAT1, Satchwell
TT-1000-K	STA1, Landis & Staefa
TT-1000-L	TAC1, TAC
TT-1000-M	2.2K3A1, Johnson Controls
TT-1000-N	3K3A1, Alerton
TT-1000-P	30K6A1, Drayton
TT-1000-Q	50K6A1, Ambiflex
TT-1000-S	SAT2, Satchwell
TT-1000-T	SAT3, Satchwell
TT-1000-W	SIE1, Siebe
TT-1000-Y	STA2, Landis & Staefa
TT-1000-Z	10K NTC, Carel
TT-1000-DC	Delta Controls
	Active Output
TT-1000-ACT	4-20mA/0-10Vdc/0-5Vdc selectable output, output range –0 to +40°C (32 to 104°F)
TT-1000-ACT-TR	4-20mA/0-10Vdc/0-5Vdc selectable output, custom temp. scaling between –20 to +50°C (14 to 122°F)

Volume Price Breaks are applicable		
Unit Price (10-19 and 20+)		
TT-1000-A	10K3A1	Please see price list
TT-1000-B	10K4A1	
TT-1000-C	20K6A1	
TT-1000-E	PT1000A	
TT-1000-G	Ni1000A/TCR	
TT-1000-H	SAT1	
TT-1000-K	STA1	
TT-1000-L	TAC1	

Part code	*Description*
	Interface Options *
-SP	2-wire, 11-1kΩ/0-10Ω setpoint
-FS3	3-speed fan switch (1, 2, 3)
-FS4	4-speed fan switch (off, 1, 2, 3)
-FS5	5-speed fan switch (off, 1, 2, 3, auto)
-MS	Momentary switch
-LCD**	Integral display
-LEDG	24V Green LED
	Accessories
DECOR	Decorators trim plate
GASKET	Insulating gasket (pack of 10)

Data sheets: TT-1000.pdf · TT-1000-ACT.pdf

* Interface options are not applicable to 'Volume Price Breaks'.
** Only available on **-ACT** types

TT-1015 Black Bulb Sensors

USE THE CODE NOBRAND ON YOUR ORDER IF THE SONTAY LOGO IS NOT REQUIRED

Comfort temperature measurement can be best achieved by taking into account the radiant effect of surfaces within the controlled space. The comfort temperature is specified as the average of the conductive temperature and the radiant temperature.

$$\text{T comfort} = \frac{\text{T radiant} + \text{T conductive}}{2}$$

The TT-1015 is a low cost Black Bulb Temperature Sensor used to measure radiant heat in indoor spaces. Units contain either a high quality thermistor or Platinum element.

SPECIFICATION

Output type:	Thermistor Resistive	
Ambient range:	–10 to +60°C (14 to 140°F)	
Protection:	IP30	
Housing:	Material	ABS (flame retardant)
	Colour	Polished white finish
Black bulb:	Anodised aluminium	
Dimensions:	Housing	115 x 85 x 28mm (4.53 x 3.35 x 1.10”)
	Bulb	17.5 x 37mm (0.69 x 1.46”) dia.
Weight:	120g (0.26 lb)	

Volume Price Breaks are applicable		
Unit Price (5-9 and 10+)		
TT-1015-A	10K3A1	Please see price list
TT-1015-B	10K4A1	
TT-1015-C	20K6A1	
TT-1015-E	PT1000A	
TT-1015-G	Ni1000A/TCR	
TT-1015-H	SAT1	
TT-1015-L	TAC1	

SonNet® WIRELESS TECHNOLOGY

Did you know we also sell wireless Temperature sensors in our SonNet range? Go to page 52 for more details.

Part code	*Description*
	Passive Output
TT-1015-A	10K3A1, Trend, Cylon, Distech
TT-1015-B	10K4A1, Andover
TT-1015-C	20K6A1, Honeywell
TT-1015-D	PT100A, Serck
TT-1015-E	PT1000A, Cylon
TT-1015-F	Ni1000A, Sauter
TT-1015-G	Ni1000A/TCR (LAN1), Siemens
TT-1015-H	SAT1, Satchwell
TT-1015-K	STA1, Landis & Staefa
TT-1015-L	TAC1, TAC
TT-1015-M	2.2K3A1, Johnson Controls
TT-1015-N	3K3A1, Alerton
TT-1015-P	30K6A1, Drayton
TT-1015-Q	50K6A1, Ambiflex
TT-1015-S	SAT2, Satchwell
TT-1015-T	SAT3, Satchwell
TT-1015-W	SIE1, Siebe
TT-1015-Y	STA2, Landis & Staefa
TT-1015-Z	10K NTC, Carel
TT-1015-DC	Delta Controls

Part code	*Description*
	Interface Options
-SP	2-wire, 11-1kΩ/0-10Ω setpoint
-FS3	3-speed fan switch (1, 2, 3)
-FS4	4-speed fan switch (off, 1, 2, 3)
-FS5	5-speed fan switch (off, 1, 2, 3, auto)
-MS	Momentary switch
-LEDG	24V Green LED
	Accessory
DECOR	Decorators trim plate
GASKET	Insulating gasket (pack of 10)

Data sheet: TT-1015.pdf

Note:
A Sensor Guard (TT-GD) is available – see below.

TT-GD Space Sensor Guard

The TT-GD is designed to protect TT-1000 and TT-1015 temperature sensors from accidental damage.

FEATURES

- Robust construction
- Easy fixing

SPECIFICATION

Material:	Powder coated mild steel
Dimensions:	122 x 130 x 55mm (4.80 x 5.51 x 2.17”)
Weight:	180g (0.40 lb)

Part code	*Description*
TT-GD	Space Sensor Guard

Data sheet: TT-GD.pdf

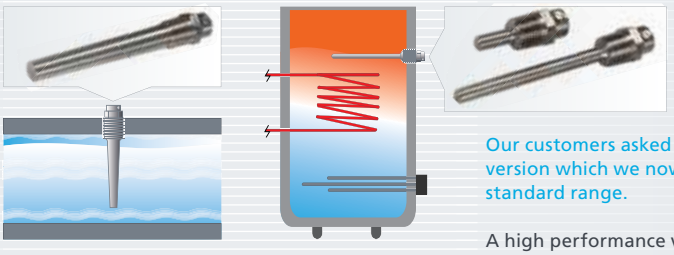
Immersion Sensor Pockets

Industry requirements, recently introduced, are for pockets that can withstand higher pressures and flow rates.

To ensure these standards are met we have worked hard to supply a robust stainless steel pocket at a similar price to the brass version.

Our new range of stainless steel pockets offer the robustness and reliability you would expect, with an exceptionally competitive price.

High performance Pocket



Fast Flowing Water Pipes | High Pressure Tanks

Our customers asked us for a 65mm version which we now supply in our standard range.

A high performance version is available for those projects that require that extra strength, such as for fast flowing water.

TT-PO Immersion Sensor Pockets

TT-PO - 250mm Pockets

TT-PO - 150mm Pockets

TT-PO - 65mm Pockets

TT-PO521 and TT-PO-HP range of stainless steel pockets are for use with immersion sensors TT-341 and TT-342. The two part welded TT-PO521 pockets are intended for low flow applications.

They may be used in applications such as sumps or storage tanks or low flowing water in pipes. For applications requiring installation in high flowing water, the TT-PO-HP should be used.

Pockets are designed to accept either a 65mm (2.56”), 150mm (5.91”) or 250mm (9.84”) x 6mm (0.24”) dia. probes, which are locked in position by a grub screw.

These pockets can be installed in any system that is constructed from compatible materials whose operating pressures and flow rates are within the specified ranges.

SPECIFICATION

Material:	S/S 316	
Temperature ranges:	–20 to +400°C (–4 to +752°F)	
Maximum pressure (out to in):	16 bar (232 psi)	
Water velocity max. (0 to100°C):	TT-PO521	3.7 m/s (728 ft/min)
	TT-PO521-65	18 m/s (3543 ft/min)
	TT-PO521-250	1.7 m/s (335 ft/min)
	TT-PO-HP	17.0 m/s (3340 ft/min)
	TT-521-HP-250	6.5 m/s (1280 ft/min)
Weights:	TT-PO521	140g (0.31 lb)
	TT-PO-HP	220g (0.49 lb)

Part code	*Description*
	65mm (2.56”) Pockets
TT-PO521-65	Stainless Steel Immersion Pocket
	150mm (5.91”) Pockets
TT-PO521	Stainless Steel Immersion Pocket
TT-PO-HP	High Performance Stainless Steel Immersion Pocket
	250mm (9.84”) Pockets
TT-PO521-250	Stainless Steel Immersion Pocket
TT-PO-HP-250	High Performance Stainless Steel Immersion Pocket

Volume Price Breaks are applicable	
Unit Price (10-19 and 20+)	
TT-PO521	Please see price list
TT-PO-HP	

Data sheet: TT-PO.pdf

UI-500 Interface Options

INDIVIDUAL SOLUTIONS

In addition to our standard range of sensors we are able to manufacture user interface equipment to your specifications. Typically this would be a single or twin gang plate styled to match other equipment on a project. We can fit a large range of devices to UI-500 products including sensors, setpoint adjustments and LCDs.

The examples on this page are just a few of the types, designs and options we can supply. Please contact the Sales Support Team for more information or to discuss your requirements.

CUSTOMISED INTERFACE SOLUTIONS

All of our user interface products are designed and built to your exact requirements.

From custom engraving to LCD displays, switches and setpoints, we can supply a solution that fits your needs.

If you have a requirement, please call our technical support on 01732 861218 or email support@sontay.com.

UI-AA Alarm Annunciators

The UI-AA series are used in conjunction with one or two analogue or VFC signals to provide low cost local audible and visual alarm facilities. The units can accept voltage, current and VFC switched inputs.

Adjustment of alarm threshold and the time delay before an alarm is standard on all models.

A mute button silences the audible alarm, whilst the visual alarm will not reset until the monitored parameter returns to within its desired range.

FEATURES

- 1 or 2-channels
- LEDs for OK/alarm indication
- Audible alarm mute button
- Alarm output relay

SPECIFICATION

Input signals:	UI-AA1-F	0-10Vdc, 4-20mA, relay or 24Vac
	UI-AA2-F	0-10Vdc, 4-20mA or relay
Alarm delay time (sec):	5 to 45 secs	
Relay output:	SPCO, 6A @ 240Vac	
Buzzer output:	85dB @ 1 metre	
LED indication:	Green = OK, flashing red = alarm	
Power supply:	24Vac/dc ±15%	
Housing:	UI-AA1-F	Panel mounting or UK standard single gang box
	UI-AA2-F	For panel mounting only or deep UK standard double gang box
Ambient range:	–10 to +40°C (14 to 104°F)	
Protection:	IP32	
Dimensions:	UI-AA1-F	85 x 85 x 37mm (3.35 x 3.35 x 1.46”)
	UI-AA2-F	145 x 85 x 35mm (5.71 x 3.35 x 1.38”)
Weight:	UI-AA1-F	140g (0.31 lb)
	UI-AA2-F	200g (0.44 lb)

Part code	*Description*
UI-AA1-F	1-channel Interface Panel
UI-AA2-F	2-channel

Data sheet: UI-AAx-F.pdf

Valves & Actuators

Valves and Actuators are "first fix" devices, and it is vital to select the correct types and sizes. Sizing should not be based on physical pipe size, flow co-efficient data must be used to select the correct valve.

ROTARY SHOE
VR-RANGE

ZONE
VZ-RANGE

PLANT/PLUG & SEAT
VE-RANGE

TERMINAL
VT RANGE

INDEPENDENT
BALANCING &
CONTROL VC RANGE

Suitable actuators are available in various power (24V and 230V supply) and control (modulating, ON/OFF and Raise/lower) types.

VA RANGE

Damper actuators – VA range are also available, with auxiliary end switches and fail-safe types, in torque ratings from 5Nm to 30Nm.

A comprehensive valve sizing service is available, based on design flow rates and control circuit pressure drops, to make the selection process quick and easy. Contact support@sontay.com or use our valve sizing tool at www.sontay.com/support to ensure you are selecting the correct valve for your application.

VS RANGE

GL RANGE

Gas safety valves – VS range (show picture) are important plant items, and can be combined with the GL range of gas leak detection systems for complete gas safety protection.

VA Damper Actuators

5Nm Types

Sontay's range of damper actuators are suitable for many applications including motorised control of dampers in ventilation systems.

They are available with either on/off, floating (raise/lower) or modulating control signal input and various torque ratings. A failsafe damper actuator is also available in a 20Nm (177 in/lb) torque rating.

All units can have optional auxiliary switch(es) fitted and the direction of rotation can be reversed and the angle of mechanical travel can be limited.

8Nm & 15Nm Types

FEATURES

- Position indication
- Maintenance-free
- Mechanical set rotation limits
- Reversible rotation

20Nm & 30Nm Types

SPECIFICATION

Power supply:	24Vac @ 50/60Hz or 24Vdc ±20%	
	80 to 265Vac @ 50/60Hz	
Drive times	5 & 8Nm - 60 to 120 (44 - 70 in/lb)	
(seconds):	15Nm (132 in/lb) - <150 (spring-return <20)	
	20Nm (177 in/lb) - 150	
	30Nm (265 in/lb) - 150	
Control signals:	On/off, raise/lower and modulating	
Aux. switch rating:	250V @ 5(2.5)A	
Angle of rotation:	Max. 59° (mechanically limitable)	
Ambient:	Temperature	–20 to +50°C (–4 to +122°F)
	Humidity	5 to 95% RH
Protection:	5Nm (44 in/lb)	IP42
	Others	IP54 (cable downwards)
Dimensions	VA-05	145 x 65 x 61mm (5.71 x 2.56 x 2.40")
(L x W x H):	VA-08 & 15	115 x 65 x 61mm (4.53 x 2.56 x 2.40")
	VA-20 & 30	193 x 96 x 60 (7.60 x 3.78 x 2.36")
	VA-F	250 x 96 x 60 (9.84 x 3.78 x 2.36")
Weights:	VA-05	0.5kg (1.10 lb)
	VA-08 & 15	0.53kg (1.17 lb)
	VA-20 & 30	1.7kg (3.75 lb)
	VA-F	2.5kg (5.51 lb)

General Note for Torque Requirement

For air dampers the following rule of thumb can be used in the absence of damper manufacturers' guidelines.

Torque	*Duct area*
5Nm (44 in/lb)	Up to 1m² (3.28 ft²)
8Nm (70 in/lb)	Up to 1.6m² (5.25 ft²)
15Nm (132 in/lb)	Up to 3m² (9.84 ft²)
20Nm (177 in/lb)	Up to 4m² (13.12 ft²)
30Nm (265 in/lb)	Up to 6m² (19.69 ft²)

Part code	*Description*
	5Nm (44 in/lb) Actuators
VA-05A-24	24V On/off, raise/lower
VA-05A-24S	24V On/off, raise/lower with auxiliary switches
VA-05A-230	230V On/off, raise/lower
VA-05A-230S	230V On/off, raise/lower with auxiliary switches
VA-05M-24	24V Modulating
	8Nm (70 in/lb) Actuators
VA-08A-24	24V On/off, raise/lower
VA-08A-24S	24V On/off, raise/lower with auxiliary switch
VA-08A-230	230V On/off, raise/lower
VA-08A-230S	230V On/off, raise/lower with auxiliary switch
VA-08M-24	24V Modulating
VA-08M-24S	24V Modulating with auxiliary switch
	15Nm (132 in/lb) Actuators
VA-15A-24	24V On/off, raise/lower
VA-15A-24S	24V On/off, raise/lower with auxiliary switch
VA-15A-230	230V On/off, raise/lower
VA-15A-230S	230V On/off, raise/lower with auxiliary switch
VA-15M-24	24V Modulating
VA-15M-24S	24V Modulating with auxiliary switch

Part code	*Description*
	20Nm (177 in/lb) Actuators
VA-20A-24S	24V On/off, raise/lower with auxiliary switches
VA-20A-230S	230V On/off, raise/lower with auxiliary switches
VA-20M-24S	24V Modulating with auxiliary switches
	30Nm (265 in/lb) Actuators
VA-30A-24	24V On/off, raise/lower
VA-30A-24S	24V On/off, raise/lower with auxiliary switches
VA-30A-230S	230V On/off, raise/lower with auxiliary switches
VA-30M-24S	24V Modulating with auxiliary switches
	Failsafe Actuators (20Nm / 177 in/lb)
VA-FA-24	24V On/off
VA-FA-24S	24V On/off with auxiliary switches
VA-FA-230	230V On/off
VA-FA-230S	230V On/off with auxiliary switches
VA-FM-24	24V Modulating
VA-FM-24S	24V Modulating with auxiliary switches

Data sheets: VA-05.pdf · VA-08.pdf · VA-15.pdf · VA-20.pdf VA-30.pdf · VA-FA.pdf

VC-x | Pressure Independent Balancing & Control Valves

Sontay's range of screwed and flanged pressure independent balancing & control valves are used in heating and cooling systems in applications with Fan Coil Units, Chilled Beams or other terminal unit applications, Air Handling Units, Heat Exhangers or Mixing Circuits.

They provide modulating control with full authority regardless of any fluctuations in the differential pressure of the system. The dual function valve combines an externally adjustable automatic balancing valve, a differential pressure control valve and a full authority modulating control valve. Using these valves it is simple to achieve 100% control of the water flow in the building, while creating high comfort and energy savings at the same time. An additional benefit is that no balancing is required if further stages are added to the system, or if the dimensioned capacity is changed.

Energy saving due to optimal control, lower flow and pump pressure. Maximized ΔT due to faster response and increased system stability.

FEATURES

- The presetting function has no impact on the stroke; Full stroke modulation at all times, regardless the preset flow.
- The constant differential pressure across the modulating control component guarantees 100% authority.
- Automatic balancing eliminates overflows, regardless of fluctuating pressure conditions in the system.
- Thermal actuator On/Off or 0-10V, normally closed.
- Electro mechanical actuator 0-10V, (Linear or Logarithmic) or 3 point control, normally closed.
- Differential pressure operating range up to 400kPa (screwed) or 600kPa (flanged)
- High flows with minimal required differential pressure due to advanced design of the valve
- Higher pre-setting precision due to stepless analogue scale

BENEFITS

Design

- Less time to define the necessary equipment for a hydraulic balanced system (only flow data are required)
- No need to calculate valve authority.
- Flexibility if the system is modified after the initial installation

Installation

- No further regulating valves required in the distribution pipework
- Total number of valves minimized due to the 3-in-1 design
- Minimized commissioning time due to automatic balancing of the system
- No minimum straight pipe lengths required before or after the valve

Operation

- High comfort for the end-users due to high precision temperature control
- Longer life due to less movements of the actuator

SPECIFICATION

Valves

Materials:	(Screwed)	Body	Brass
		Diaphragm	HNBR
		O-rings	EPDM
	(Flanged)	Body	GJL-250 (PN16) or GJL-400 (PN25)
		Diaphragm	Reinforced EPDM
		O-rings	EPDM
Media:		Water and water mixture up to 50% glycol	
Connections:		Screwed	BSP
		Flanged	ISO 7005-2 / EN 1092-2
Differential pressure:		Screwed	400kPa
		Flanged	600kPa
Media temperature:		0 to 120°C (32 to 248°F)	
Weight:		26.8kg (59.08lb) max.	

Actuators *(dependent on version ordered)*

Power supply:		24V or 230V	
Control signal:		On/off, 3-point or modulating	
Ambient:	(Screwed)	Thermic	0 to 60°C (32 to 140°F)
		On/off, modulating	1 to 50°C (34 to 122°F)
	(Flanged)	On/off modulating	-5 to +55°C (23 to 131°F)
Protection:	(Screwed)	Thermic	IP54
		On/off, modulating	IP40
	(Flanged)	On/off modulating	IP54
Weight:		1.75kg (3.86lb) max.	

Part code	*Connection*
	Screwed Valves MxM Thread
VC-S-15-L	15mm (½") Low Flow
VC-S-15-H	15mm (½") High Flow
VC-S-20-L	20mm (¾") Low Flow
VC-S-20-H	20mm (¾") High Flow
VC-S-25	25mm (1")
VC-S-32	32mm (1 ¼")
	Actuators (for above valves only)
VC-TA1	24V Thermic On/Off Actuator
VC-TA2	230V Thermic, on/off Actuator
VC-TA3	24V Thermic, modulating Actuator
VC-DA1	24V On/off, 3-point Actuator
VC-DA2	230V On/off, 3-point Actuator
VC-DM-1	24V Modulating Actuator

Part code	*Connection*
	Screwed Valves FxF Thread
VC-S-40	40mm (1 ½")
VC-S-50	50mm (2")
	Actuators (for above valves only)
VC-DA3	24V On Off, 3-Point Actuator
VC-DA4	230V On/Off, 3-Point Actuator
VC-DM-2	24V Modulating Actuator

Part code	*Connection*
	Flanged Valves
VC-F-50-L-16	50mm (2") Low Flow, PN16
VC-F-50-H-16	50mm (2") High Flow, PN16
VC-F-65-L-16	65mm (2 ½") Low Flow, PN16
VC-F-65-H-16	65mm (2 ½") High Flow, PN16
VC-F-80-L-16	80mm (3") Low Flow, PN16
VC-F-80-H-16	80mm (3") High Flow, PN16
VC-F-50-L-25	50mm (2") Low Flow, PN25
VC-F-50-H-25	50mm (2") High Flow, PN25
VC-F-65-L-25	65mm (2 ½") Low Flow, PN25
VC-F-65-H-25	65mm (2 ½") High Flow, PN25
VC-F-80-L-25	80mm (3") Low Flow, PN25
VC-F-80-H-25	80mm (3") High Flow, PN25
	Actuators (for above valves only)
VC-DA5	24V On/Off, 3-Point Actuator
VC-DA6	230V On/Off, 3-Point Actuator
VC-DM-3	24v Modulating Actuator

Data sheet: VC-x.pdf

Note:
1. Unions (pipe connectors) are not supplied.

VE-F Large Flanged Control Valves (ANSI Flange)

This range of large globe control valve assemblies are suitable for use in heating, chilled and steam applications. Standard flanges are 125# ANSI (American National Standards Institute) 250# ANSI flanges are available upon request.

Actuators available are raise/lower (3-point) and 0-10Vdc modulating control. They also fitted with manual override and position indicators.

FEATURES

- Suitable for water, glycol mix or steam
- Better than 50:1 turndown ratio
- Maintenance free
- 24Vac actuators for low power consumption

SPECIFICATION

Valves		
Class:	125# (PN10)	
Connections:	ANSI flange	
Medium temperature:	–5 to +175°C (25 to 350°F)	
Materials:	Body	Cast iron
	Packing	Low friction TFE V ring or EPDM lip packing
	Stem	Stainless steel 316
	Seat & Plug	Bronze
Seat close-off (see part codes):	Class II	0.5% of max. flow *
	Class III	0.1% of max. flow **
Actuators		
Power supply:	24Vac @ 50/60Hz	
Power consumption:	6VA	
Pre-cabled connection:	18 AWG, 0.9m (2.95 ft) long	
Ambient range:	Temperature	5 to 55°C (41 to 131°F)
	Humidity	0 to 95% non-condensing
Protection:	IP40 (optional weatherproof cover)	
Weight:	148kg (326 lb) max.	

Part code	*Description*	
	2-Port Flanged Valves / Raise / Lower	
VE-F2-170-RL	100mm (4”), 170 Cv **	Valve
VE-F2-200-RL	100mm (4”), 200 Cv *	”
VE-F2-280-RL	125mm (5”), 280 Cv **	”
VE-F2-360-RL	150mm (6”), 360 Cv **	”
VE-F2-680-RL	200mm (8”), 680 Cv *	”
VE-F2-960-RL	250mm (10”), 960 Cv *	”
	2-Port Flanged Valve Modulating	
VE-F2-170-M	100mm (4”), 170 Cv *	Valve
VE-F2-200-M	100mm (4”), 200 Cv **	”
VE-F2-280-M	125mm (5”), 280 Cv **	”
VE-F2-360-M	150mm (6”), 360 Cv **	”
VE-F2-680-M	200mm (8”), 680 Cv *	”
VE-F2-960-M	250mm (10”), 960 Cv *	”
	3-Port Flanged Valves Raise / Lower (MIXING)	
VE-F3-270-RL	125mm (5”), 270 Cv **	Valve
VE-F3-347-RL	150mm (6”), 347 Cv *	”
VE-F3-590-RL	200mm (8”), 590 Cv *	”
	3-Port Flanged Valves Modulating (MIXING)	
VE-F3-270-M	125mm (5”), 270 Cv **	Valve
VE-F3-347-M	150mm (6”), 347 Cv *	”
VE-F3-590-M	200mm (8”), 590 Cv *	”
	3-Port Flanged Valves Raise/Lower (DIVERTING)	
VE-F3D-195-RL	125mm (5”), 195Cv **	Valve
VE-F3D-300-RL	150mm (6”), 300 Cv *	”
VE-F3D-510-RL	200mm (8”), 510 Cv *	”
	3-Port Flanged Valves Modulating (DIVERTING)	
VE-F3D-195-M	125mm (5”), 195Cv **	Valve
VE-F3D-300-M	150mm (6”), 300 Cv *	”
VE-F3D-510-M	200mm (8”), 510 Cv *	”
	Accessory	
VE-PC-2	Weatherproof cover	

Data sheet: VE-F-ANSI.pdf

Note: Spring return actuators are available

VE-x Plug & Seat Valve Assemblies

Sontay's range of plug & seat valve assemblies are complete with actuators, linkage assembly and valve body. They are suitable for use in heating and chilled applications and with a static pressure rating suitable up to PN25 (screwed) and PN16 (flanged). An optional blanking plug is available to convert the universal 3-way valve body into a 2-way valve. Actuators are available for raise/lower (3-point) and 0-10Vdc modulating control. They also fitted with manual override and position indicators.

FEATURES

- Suitable for water or glycol mix
- Better than 50:1 turndown ratio
- Life time Warranty on valve castings
- 5 year Warranty on cartridges
- Maintenance free
- High and low Kvs of each size
- All metal movement, no plastic

SPECIFICATION

Valves

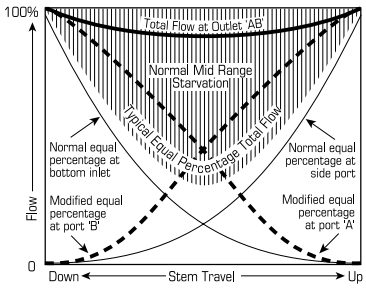
Nominal pressure:	Screwed	PN25
	Flanged	PN16
Characteristics:	eq% ends – linear centre	
Connections:	Screwed	BSPT
	Flanged	DIN 100mm (3")
Medium temperature:	0 to 130°C (32 to 266°F)	
Materials:	Screwed bodies	Bronze
	Flanged bodies	Cast iron
	Packing	Multiple U-cup EPDM rings
	Scrubbing rings	Viton
	Stem	Mirror finish 303 Stainless steel
	Disk	Bronze
Leakage:	Class III 0.1% seat leakage	

Actuators

Power supply:	24Vac @ 50/60Hz	
Power consumption:	Raise/lower	2.3VA
	Modulating	3.3VA
Ambient:	Temperature	5 to 55°C (41 to 131°F)
	Humidity	0 to 95% non-condensing
Protection:	IP54 (optional weatherproof cover)	
Weight:	49kg (108 lb) max. (valve, linkage & actuator)	

BENEFITS OF THE VE-X UNIVERSAL 2-WAY AND 3-WAY VALVE DESIGN.

Modified equal % linear flow characteristics allows for precise control in 2-way valves and no mid-range starvation in 3-way valves. These specially designed plug shapes incorporate the best features of equal percentage and linear characterisation to provide a valve excellent for modulating well at low flow, while adapting to provide linear characterization in the later stages of valve opening. This feature, along with the variable ratio linkage kit, provides better mixing yet no mid-range starvation, (common with most 3-way equal percentage valves). This allows for improved throttling action in 2-way duty.



Data sheet: VE-x.pdf

Note: Spring return actuators are available on request

Part code	*Description*	*Close-off Bar/PSI*	*Fitting*
	3-Port, Plug & Seat Valve Assemblies		
VE-25-5-I	25mm, 5 Kvs (6 Cv) Valve	6.8 / 100	Screwed
VE-25-9-I	25mm, 9.2 Kvs (11 Cv) "	6.8 / 100	"
VE-40-13-I	40mm, 13.3 Kvs (16 Cv) "	4.6 / 66	"
VE-40-20-I	40mm, 20 Kvs (24 Cv) "	4.6 / 66	"
VE-50-29-I	50mm, 29.2 Kvs (35 Cv) "	2.6 / 37	"
VE-50-37-H	50mm, 37.5 Kvs (45 Cv) "	1.7 / 25	"
	Actuators to suit above valves (only)		
VE-5120	24V Raise/Lower, 5Nm (44 in/lb) Actuator		
VE-5320	24V Modulating, 5Nm (44 in/lb) "		
VE-40-13-I	40mm, 13.3 Kvs (16 Cv) Valve	6.8 / 100	Screwed
VE-40-20-I	40mm, 20 Kvs (24 Cv) "	6.8 / 100	"
VE-50-29-I	50mm, 29.2 Kvs (35 Cv) "	4.7 / 70	"
VE-50-37-H	50mm, 37.5 Kvs (45 Cv) "	3 / 45	"
VE-80-54-I	80mm, 54.2 Kvs (65 Cv) "	2.04 / 30	Flanged
VE-80-62-H	80mm, 62.4 Kvs (75 Cv) "	1.02 / 15	"
	Actuators to suit above valves (only)		
VE-5130	24V Raise/Lower, 10Nm (88 in/lb) Actuator		
VE-5330	24V Modulating, 10Nm (88 in/lb) "		
VE-50-29-I	50mm, 29.2 Kvs (35 Cv) Valve	6.8 / 100	Screwed
VE-50-37-H	50mm, 37.5 Kvs (45 Cv) "	4.76 / 70	"
VE-80-54-I	80mm, 54.2 Kvs (65 Cv) "	3.74 / 55	Flanged
VE-80-62-H	80mm, 62.4 Kvs (75 Cv) "	2.04 / 30	"
VE-80-95-K	80mm, 95 Kvs (110 Cv) "	1.7 / 25	"
	Actuators to suit above valves (only)		
VE-5140	24V Raise/Lower, 15Nm (132 in/lb) Actuator		
VE-5340	24V Modulating, 15Nm (132 in/lb) "		
VE-80-54-I	80mm, 54.2 Kvs (65 Cv) Valve	6.12 / 90	Flanged
VE-80-62-H	80mm, 62.4 Kvs (75 Cv) "	3.74 / 55	"
VE-80-95-K	80mm, 95 Kvs (110 Cv) "	2.72 / 40	"
	Actuators to suit above valves (only)		
VE-5140L	24V Raise/Lower, 20Nm (221 in/lb) Actuator		
VE-5340L	24V Modulating, 20Nm (221 in/lb) "		
VE-80-62-Q	80mm, 62.4 Kvs (75 Cv) Valve	5.78 / 85	Flanged
VE-80-95-Q	80mm, 95 Kvs (110 Cv) "	4.42 / 65	"
VE-100-163-T	100mm, 163Kvs (190Cv) "	2.72 / 40	"
	Actuators to suit above valves (only)		
VE-5150	24V Raise/Lower, 35Nm (310 in/lb) Actuator		
VE-5350	24V Modulating, 35Nm (310 in/lb) "		
VE-100-163-T	100mm, 163Kvs (190Cv)	3.4 / 50	Flanged
	Actuator to suit above valves (only)		
VE-5350-ON	24V Raise/Lower & Modulating, 40Nm (360in/lb)		
	Accessories		
VE-P1	25mm (1") plug to convert to 2-way valve		
VE-P2	40mm (1½") plug " "		
VE-P3	50mm (2") plug " "		
VE-P4	80mm (3") plug " "		
VE-PC-1	Weatherproof cover		
VE-PC-2	Weatherproof cover for 80mm, 95 Kvs valves only		

VR-F 3-port Flanged Iron Rotary Shoe Valves

These cast iron rotary shoe valves are used in heating systems for mixing or diverting applications. Valves sizes from 50 to 150mm (2" to 6") and PN6.

Note: These are not tight shut-off valves.

SPECIFICATION

Flow type:	Mixing or diverting	
Fluid temperature:	–10 to +110°C (14 to 230°F)	
Rangeability:	100:1	
Max. pressure drop:	DN50 (2")	50kPa (7.3 psi)
	DN65 to DN150 (2½ to 6")	30kPa (4.4 psi)
Materials:	Body & cover	Cast iron
	Spindle, slipper	Brass
	O-rings	EPDM
Pressure class:	PN6	
Required motor torque:	50mm (2")	5Nm (44 in/lb)
	65 to 100mm (2½ to 4")	10Nm (88 in/lb)
	125 to 150mm (5 to 6")	15Nm (132 in/lb)
Weight:	37kg max. (81.57 lb)	

Actuator Selection				
Non-Failsafe Actuators				
Valve Body	*24V R/L On/Off*	*230V R/L On/Off*	*24V Mod.*	*Linkage*
VR-F-P3-F50	VA-05A-24x	VA-05A-230x	VA-05M-24	VR-LKN-2
Others	VA-15A-24x	VA-15A-230x	VA-15M-24x	VR-LKN-2

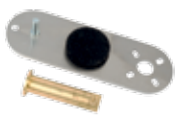
Failsafe Actuators				
Valve Body	*24V* On/Off	*230V* On/Off	*24V Mod.*	*Linkage*
All VR-F	VA-FA-24x	VA-FA-230x	VA-FM-24x	VR-LKN-FS

Part code	*Description*	
	3-port, Flanged Valves	
VR-F-P3-F50-K60	50mm (2"), 60 Kvs (70 Cv)	Valve
VR-F-P3-F65-K90	65mm (2½"), 90 Kvs (105 Cv)	"
VR-F-P3-F80-K150	80mm (3"), 150 Kvs (174 Cv)	"
VR-F-P3-F100-K225	100mm (4"), 225 Kvs (262 Cv)	"
VR-F-P3-F125-K280	125mm (5"), 280 Kvs (326 Cv)	"
VR-F-P3-F150-K400	150mm (6"), 400 Kvs (465 Cv)	"
	Linkage Kits	
VR-LKN-2	For VA Actuators from 5 to 15Nm (44 to 132 in/lb)	
VR-LKN-FS	For VA Failsafe Actuators	

Data sheet: VR-F.pdf

Note: Please refer to page 77 for VA actuators

VR-G 3-port Screwed Brass Rotary Shoe Valves



VR-G-LKN-1

These brass rotary shoe valves are made of a special brass alloy (DZR) allowing use in heating and cooling systems, for both mixing and diverting applications.

Valves are available from ½" to 2" sizes with internal threads.

Note: These are not tight shut-off valves.

FEATURES

- PN10
- DN15 to 50
- Internal threaded connections
- Compact size

SPECIFICATION

Valves only		
Flow type:	Mixing or diverting	
Fluid temperature:	–10 to +110°C (14 to 230°F)	
Rangeability:	100:1	
Leak rate:	Mixing	<0.05% of flow
	Diverting	<0.02% of flow
Nominal pressure:	PN10	
Max. diff. pressure:	100kPa (14.5 psi)	
Materials:	Body	Brass DZR, CW 602N
	Shaft & bushing	PPS
	O-rings	EPDM
Weight:	2.05kg (4.52 lb) max. (valve only)	

Actuator Selection				
Valve Body	*24V R/L On/Off*	*230V R/L On/Off*	*24V Mod.*	*Linkage*
All VR-G	VA-05A-24	VA-05A-230x	VA-05M-24	VR-G-LKN-1

Part code	*Description*	
	3-port, Screwed Valves	
VR-G-01	½" BSP, 0.4 Kvs (0.47 Cv)	Valve
VR-G-02	½" BSP, 0.63 Kvs (0.73 Cv)	"
VR-G-03	½" BSP, 1.00 Kvs (1.16 Cv)	"
VR-G-04	½" BSP, 1.63 Kvs (1.90 Cv)	"
VR-G-05	½" BSP, 2.5 Kvs (2.90 Cv)	"
VR-G-06	½" BSP, 4.0 Kvs (4.65 Cv)	"
VR-G-07	¾" BSP, 2.5 Kvs (2.90 Cv)	"
VR-G-08	¾" BSP, 4.0 Kvs (4.65 Cv)	"
VR-G-09	¾" BSP, 6.3 Kvs (7.32 Cv)	"
VR-G-10	1" BSP, 6.3 Kvs (7.32 Cv)	Valve
VR-G-11	1" BSP, 10 Kvs (11.63 Cv)	"
VR-G-12	1¼" BSP, 16 Kvs (18.60 Cv)	"
VR-G-13	1½" BSP, 25 Kvs (29 Cv)	"
VR-G-14	2" BSP, 40 Kvs (46.5 Cv)	"
	Linkage Kit	
VR-G-LKN-1	For VA 5Nm actuators	

Data sheets: VR-G.pdf · VR-G-LKN-1.pdf

Note: Please refer to page 77 for VA actuators

VS-VMR Automatic Reset Gas Valves

This range of normally closed gas solenoid valves when powered on, the gas valve will open without manual intervention. On power loss the valve will automatically close. The valve can be fitted with an optional closed position indicator switch.

FEATURES

- Spring shut-off action
- Automatic reset upon restart
- Flow rate adjustment

SPECIFICATION

Connections:		
	Screwed	F/F ISO 7-1
	Flanged	PN16 – ISO 7005
Power supply:	230Vac & 24Vac options	
Closing & Opening time:	<1 Second	
Approval:	Class A EN161 Group 2	
Protection:	IP54	
Ambient temperature:	-15 to +60°C (5 to 140°F)	
Weight:	60kg (132 lb) max.	

Part code	*Connection*
	Screwed Valves (24Vac)
VS-VMR-01-LV	½" BSP Auto Reset Gas Valve
VS-VMR-02-LV	¾" BSP "
VS-VMR-03-LV	1" BSP "
VS-VMR-04-LV	1¼" BSP "
VS-VMR-05-LV	1½" BSP "
VS-VMR-06-LV	2" BSP "
	Screwed Valves (230Vac)
VS-VMR-01	½" BSP Auto Reset Gas Valve
VS-VMR-02	¾" BSP "
VS-VMR-03	1" BSP "
VS-VMR-04	1¼" BSP "
VS-VMR-05	1½" BSP "
VS-VMR-06	2" BSP "

Part code	*Connection*
	Flanged Valves (230Vac)
VS-VMR-07	65mm (2½") Auto Reset Gas Valve
VS-VMR-08	80mm (3") "
VS-VMR-09	100mm (4") "
VS-VMR-10	125mm (5") "
VS-VMR-12	150mm (6") "
	Accessories (Closed Position Indicator Switch) *
VS-PCS	To suit 65 to 150mm (2 ½ to 6") valves

Data sheet: VS-VMR.pdf

* This option cannot be retro-fitted, it must be ordered at the same time as the VS-VMR gas valve.

VS-EVMR Manual Reset Gas Valves

Our new range of manual reset gas safety valves, are suitable for locking the gas line when connected to gas leakage detectors, safety thermostats or any other type of alarm signal. . On power loss the valve will automatically close, and will not open until the manual reset facility has been activated. An incorporated find mesh filter is fitted protect the valve as well as downstream components. Flanged vales are fitted as standard with a G1/8" connection for the optional closed position indicator, screwed valves are available with this option upon request.

FEATURES

- Spring shut off action
- Manual reset upon restart

SPECIFICATION

Connections:		
	Screwed	F/F ISO 7-1
	Flanged	PN16 – ISO 7005
Power supply:	230Vac & 24Vac options	
Closing time:	<1 Second	
Approval:	EN161 Group 2	
Protection:		
	DN15 to 80	IP65
	DN100 to DN300	IP54
Ambient temperature:	-15 to +60°C (5 to 140°F)	
Weight:	99kg (218 lb) max.	

Part code	*Connection*
	Screwed Valves (24Vac)
VS-EVMR-01-LV	½" BSP Manual Reset Gas Valve
VS-EVMR-02-LV	¾" BSP "
VS-EVMR-03-LV	1" BSP "
VS-EVMR-04-LV	1¼" BSP "
VS-EVMR-05-LV	1½" BSP "
VS-EVMR-06-LV	2" BSP "
	Screwed Valves (230Vac)
VS-EVMR-01	½" BSP Manual Reset Gas Valve
VS-EVMR-02	¾" BSP "
VS-EVMR-03	1" BSP "
VS-EVMR-04	1¼" BSP "
VS-EVMR-05	1½" BSP "
VS-EVMR-06	2" BSP "

Part code	*Connection*
	Flanged Valves (230Vac)
VS-EVMR-07	65mm (2½") Manual Reset Gas Valve
VS-EVMR-08	80mm (3") "
VS-EVMR-09	100mm (4") "
VS-EVMR-10	125mm (5") "
VS-EVMR-11	150mm (6") "
VS-EVMR-12	200mm (8") "
VS-EVMR-13	250mm (10") "
VS-EVMR-14	300mm (12") "
	Accessories (Flanged Vales only) Closed Position Indicator Switch *
VS-PCS	To suit 65 to 200mm (2 ½ to 8") valves

Data sheet: VS-EVMR.pdf

* This option cannot be retro-fitted, it must be ordered at the same time as the VS-EVMR gas valve.

VS-VMH Electro-hydraulic Gas Valves

Sontay's series of gas safety shut off valves with hydraulic actuators are suitable for air or gas blocking applications including, gas power burners, gas boilers, kilns and may other gas consuming appliances. On power loss the valve will automatically close, and will not open until power is restored.

An incorporated find mesh filter is fitted protect the valve as well as downstream components. Vales are fitted as standard with a connection for the optional closed position indicator

SPECIFICATION

Connections:	Flanged PN16 – ISO 7005
Power supply:	230Vac 50/60Hz
Closing & Opening time:	<1 Second
Approval:	Class A EN161 Group 2
Protection:	IP65
Ambient temperature:	-15 to +60°C (5 to 140°F)
Weight:	52kg (114 lb) max.

Part code	*Description*
VS-VMH-01	**65mm (2 ½") Hydraulic Gas Valve**
VS-VMH-02	**80mm (3")** "
VS-VMH-03	**100mm (4")** "
VS-VMH-04	**125mm (5")** "
VS-VMH-05	**150mm (6")** "
VS-VMH-06	**200mm (8")** "
	Accessory (Closed Position Indicator Switch)
VS-PCS-HP	Closed Position Indicator Switch

Part code	*Description*

Data sheet: VS-VMH.pdf

VT-24 Terminal Unit Valve Actuators

The VT-24 range of actuators are for use with the VT-xP terminal unit valves. They have end of travel automatic shut-off for long life expectancy. On start-up the modulating version has an automatic calibration sequence during which the two ends of travel are programmed.
The reversible, brushless, synchronous, electric motor maintains accurate positioning and provides creep-free control with extreme accuracy.

FEATURES

- Raise/lower (3-point) or modulating control types
- No tools required for mounting
- Hand override
- Life expectancy in excess of ½ million cycles
- Quiet operation

SPECIFICATION

Power supply:	24Vac +10% –5%	
Power consumption:	45mA, 1VA	
Control type:	VT-24-RL	Raise/lower (3-point)
	VT-24-M	0-10Vdc Modulating
Frequency:	50/60Hz	
Stroke:	4.5mm (0.18")	
Speed:	VT-24-RL	90 seconds @ 60Hz
	VT-24-RL	108 seconds @ 50Hz
	VT-24-M	120 seconds
Feedback:	1-5Vdc (VT-24-M only)	
Ambient:	Temperature	5 to 50°C (41 to 122°F)
	Humidity	0 to 95% non-condensing
Protection:	IP51	
Weight:	240g (0.53 lb)	

Part code	*Description*
VT-24-RL	24V Raise/Lower Actuator
VT-24-M	24V Modulating

Data sheet: VT-24.pdf

SonNet® WIRELESS TECHNOLOGY

RF-IOM WIRELESS SENSOR INPUT

Use our RF-IOM output to control the valve actuators wirelessley!

VT-xP Terminal Unit Valves

Sontay's range of terminal unit valves, are designed and provide a high quality long lasting solution for control of hot or chilled water applications with up to a 50% glycol mix. They are suitable for fan coil units, small re-heaters and re-coolers in temperature control systems. They have replaceable interchangeable cartridges that can be changed without removing the valve from the line. 2 & 3-Port valves are available with female or males threaded ports. They are used in combination with the VT-24, VT-SR (2, 3-port valves only) and VT-TA range of actuators.

FEATURES

- Suitable for water or glycolic water
- Better than 50:1 turndown ratio
- Soft sealing on plug gives complete shut-off
- Life time Warranty on valve castings
- 5 year Warranty on cartridges

SPECIFICATION

Nominal pressure:	PN25	
Connections:	2, 3-port VT-xPE	½" BSP or ¾" BSP female thread on all ports
	VT-2PI	½" BSP or ¾" BSP male thread on all ports
	VT-3PI	½" BSP male thread on all ports
	VT-4P	15mm Conex® or similar compression fitting kit (not supplied)
Stroke length:	2-port valves	4mm (0.16")
	3-port valves	2.8mm (0.11")
	4-port valves up to 2.60 Kvs	2.8mm (0.11")
	4-port valve 3.00 Kvs	4mm (0.16")
Medium temp:	0 to 120°C (32 to 248°F)	
Glycol:	50% max.	
Materials:	Body	Low zinc bronze, alloy C84400
	Stem	Stainless steel
	Packing	Double EPDM
	Disc / plunger EPDM / brass	
Leakage:	100% tight shut-off	
Turndown ratio:	50:1	
Max. pressure:	3.5 (50.8 psi) bar	
Weight:	650g (9.4 lb) max.	

Part code	Description		Characteristics
	2-Port, External Threaded c/w Unions		
VT-2PE-15-01	15mm (½"), 0.43 Kvs (0.5 Cv),	Value	Equal percentage
VT-2PE-15-02	15mm (½"), 0.86 Kvs (1.0 Cv),	"	"
VT-2PE-15-03	15mm (½"), 1.30 Kvs (1.5 Cv),	"	"
VT-2PE-15-04	15mm (½"), 1.72 Kvs (2.0 Cv),	"	"
VT-2PE-15-05	15mm (½"), 2.15 Kvs (2.5 Cv),	"	"
VT-2PE-15-06	15mm (½"), 2.58 Kvs (3.0 Cv),	"	"
VT-2PE-20-07	20mm (¾"), 2.58 Kvs (3.0 Cv),	"	"
VT-2PE-20-08	20mm (¾"), 3.87 Kvs (4.5 Cv),	"	Linear
	3-Port, External Threaded c/w Unions		
VT-3PE-15-02	15mm (½"), 0.86 Kvs (0.5 Cv),	Value	Equal percentage
VT-3PE-15-03	15mm (½"), 1.72 Kvs (2.0 Cv),	"	"
VT-3PE-15-04	15mm (½"), 2.58 Kvs (3.0 Cv),	"	"
VT-3PE-20-05	20mm (¾"), 3.10 Kvs (3.5 Cv),	"	"
	2-Port, Internal Threaded		
VT-2PI-15-01	15mm (½"), 0.43 Kvs (0.5 Cv),	Value	Equal percentage
VT-2PI-15-02	15mm (½"), 0.86 Kvs (1.0 Cv),	"	"
VT-2PI-15-03	15mm (½"), 1.30 Kvs (1.5 Cv),	"	"

Part code	Description		Characteristics
	2-Port, Internal Threaded		
VT-2PI-15-04	15mm (½"), 1.72 Kvs (2.0 Cv),	Value	Equal percentage
VT-2PI-15-05	15mm (½"), 2.15 Kvs (2.5 Cv),	"	"
VT-2PI-15-06	15mm (½"), 2.58 Kvs (3.0 Cv),	"	"
VT-2PI-20-07	20mm (¾"), 2.58 Kvs (3.0 Cv),	"	"
VT-2PI-20-08	20mm (¾"), 3.87 Kvs (4.5 Cv),	"	Linear
	3-Port, Internal Threaded		
VT-3PI-15-01	15mm (½"), 0.86 Kvs (1.0 Cv),	Value	Linear
VT-3PI-15-02	15mm (½"), 1.72 Kvs (2.0 Cv),	"	"
VT-3PI-15-03	15mm (½"), 2.58 Kvs (3.0 Cv),	"	"
	4-Port, Compression Terminal Valves (diverting only)		
VT-4P-15-01	15mm, 0.86 Kvs (1.0 Cv),	Value	Linear
VT-4P-15-02	15mm, 1.70 Kvs (2.0 Cv),	"	"
VT-4P-15-03	15mm, 2.60 Kvs (3.0 Cv),	"	"
VT-4P-15-04	15mm, 3.00 Kvs (3.5 Cv),	"	"

Data sheet: VT-xP.pdf

Note: 6.8 bar (98.6 psi), high close-off 2-port valves are available on request. Please contact the Sales Support Team for more information.

VT-SR Spring Return Terminal Unit Valve

These spring return actuators are designed for on/off control and are used with the 2 or 3-port VT-xP terminal unit valves. The VT-SR-xx-1 normally open series and the VT-SR-xx-2 normally closed series are 2-position, 2-wire fail safe on power disruption actuators.

FEATURES

- 24Vac and 230Vac supply options
- Normally closed and normally open versions
- Position indicator
- Maintenance free

SPECIFICATION

Power supply:	VT-ST-24-x - 24Vac ±10% | VT-ST-230-x - 230Vac ±10%	
Power consumption:	8VA, 0.3A @ 24Vac	
Control type:	On/off	
Stroke:	4.5mm (0.18")	
Speed:	VT-SR-xx-1	20 sec. closing, 10 sec. opening
	VT-SR-xx-2	20 sec. opening.10 sec. closing
Ambient:	Temperature	5 to 50°C (41 to 122°F)
	Humidity	0 to 95% non-condensing
Protection:	IP20	
Weight:	360g (0.79 lb)	

Part code	Description
VT-SR-24-1	24V On/Off Spring Return N/O Actuator
VT-SR-24-2	24V On/Off Spring Return N/C Actuator

Part code	Description
VT-SR-230-1	230V On/Off Spring Return N/O Actuator
VT-SR-230-2	230V On/Off Spring Return N/C Actuator

Data sheet: VT-SR.pdf

VT-TA — Thermic Terminal Unit Valve Actuators

Used with the VT-xP range of valves, they are tried and tested totally silent wax expansion principle actuators. The valve opens in direct proportion to the amount of wax melted, driving the stem through its travel to close (or open) the valve. They provide a very cost effective solution for valve control.

FEATURES

- 24Vac and 230Vac supply options
- No tools required for mounting
- Position indicator

SPECIFICATION

Power supply:	VT-TA-24	24Vac ±10%
	VT-TA-230	230Vac ±10%
Control type:	VT-TA-xx-1 & 2	On/off
	VT-TA-24-M	0-10Vdc Modulating
Stroke:	4mm (0.16")	
Speed:	VT-TA-xx-1 / 2	180 seconds approx.
Ambient:	Temperature	5 to 40°C (41 to 104°F)
	Humidity	0 to 95% non-condensing
Protection:	IP54	
Weight:	140g (0.31 lb)	

Part code	*Description*
VT-TA-24-1	24V On/Off Thermic N/O Actuator
VT-TA-24-2	24V On/Off Thermic N/C Actuator
VT-TA-230-1	230V On/Off Thermic N/O Actuator

Part code	*Description*
VT-TA-230-2	230V On/Off Thermic N/C Actuator
VT-TA-24-M	24V Modulating Thermic N/C Actuator

Data sheet: VT-TA.pdf

SonNet® WIRELESS TECHNOLOGY — RF-IOM WIRELESS SENSOR INPUT

Use our RF-IOM output to control the valve actuators wirelessley!

VZ — Zone Valves and Actuators

This series of zone valves are designed for on/off control of fluid flow in a variety of heating and cooling applications, including AHUs and FCUs.

They feature a reliable synchronous motor and a spring return mechanism to provide power failsafe position and fitted with an auxiliary switch as standard.

SPECIFICATION

Operation:	2-port	Normally closed, spring return			
	3-port	Mixing, spring return			
Supply:	230Vac and 24Vac options				
Voltage tolerance:	±10%				
Max. electrical load:	Aux. switch 3A, 125 to 250Vac				
Power consumption:	6W				
Running time:	Open	10 seconds	Close	5 seconds	
Working temp:	0 to 60°C (32 to 140°F)				
Working humidity:	Non-condensing				
Housing:	Plate	Casting aluminium alloy			
	Cover	Flame retardant ABS			
Valve type:	2 or 3-port				
Fluid temp:	0 to 94°C (32 to 201°F)				
Body rating:	2.5 MPa (362 psi)				
Material:	Valve body	Forged brass			
	Valve rod	Stainless steel A151302			
	Seal	NBR			
Protection:	IP20				
Weight:	960g (2.12 lb) max.				

Part code	*Description*
	2-port Valves
VZ-2-15	½" BSP Zone Valve
VZ-2-20	¾" BSP Zone Valve
VZ-2-25	1" BSP Zone Valve
	3-port Valves
VZ-3-15	½" BSP Zone Valve
VZ-3-20	¾" BSP Zone Valve
VZ-3-25	1" BSP Zone Valve

Part code	*Description*
	Actuators
VZ-SM24	24Vac Actuator with auxiliary switch
VZ-SM230	230Vac Actuator with auxiliary switch

Data sheet: VZ.pdf

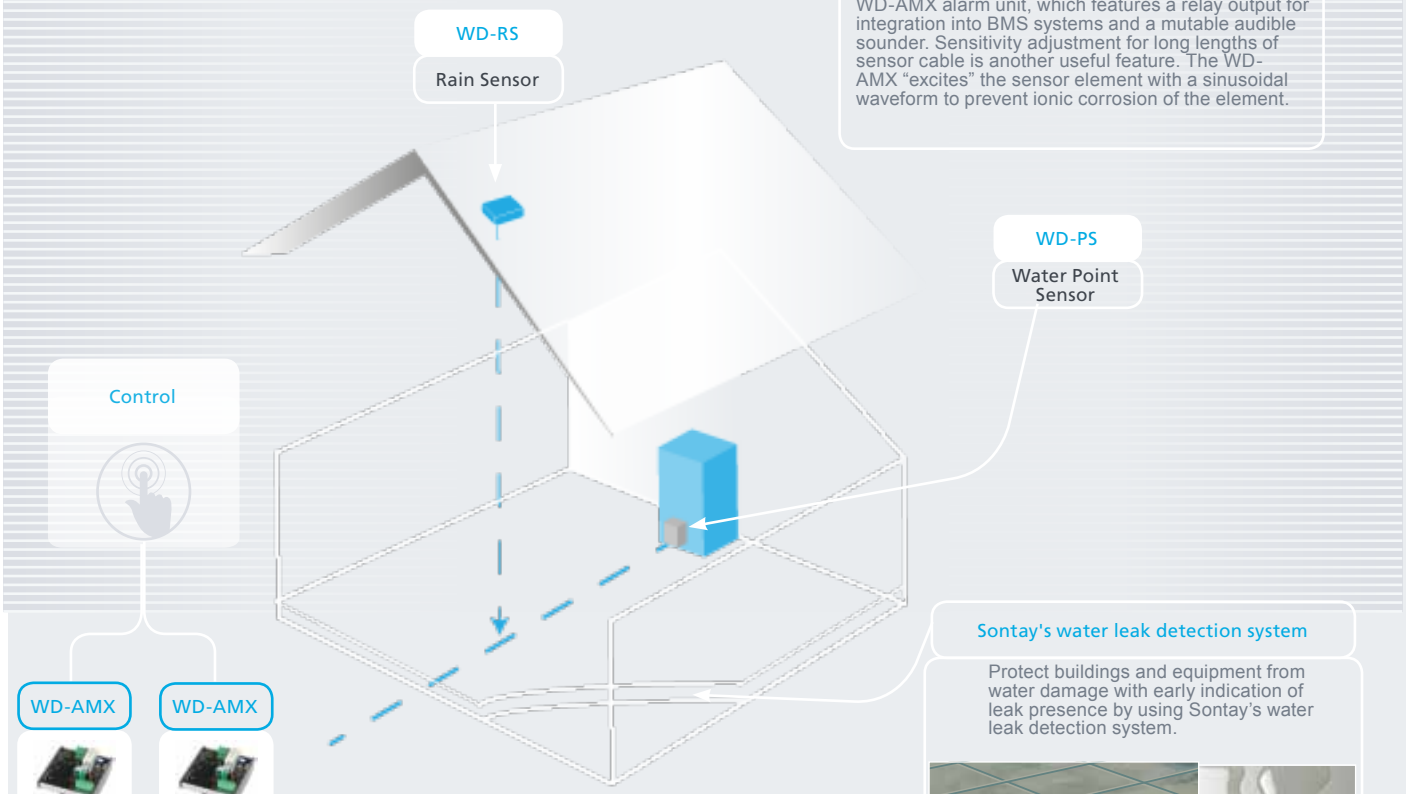
SonNet® WIRELESS TECHNOLOGY — RF-IOM WIRELESS SENSOR INPUT

Use our RF-IOM output to control the valve actuators wirelessley!

Water Detection & Emergency Products

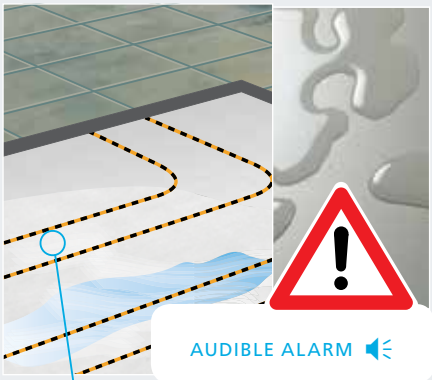
Water leak detection products can be used in a variety of applications, such as leaks from pipes, rain detection, AHU tray leaks, underfloor heating leaks and core coolant leaks in data centres.

A number of sensor elements types are available for these applications, and are all compatible with the WD-AMX alarm unit, which features a relay output for integration into BMS systems and a mutable audible sounder. Sensitivity adjustment for long lengths of sensor cable is another useful feature. The WD-AMX "excites" the sensor element with a sinusoidal waveform to prevent ionic corrosion of the element.

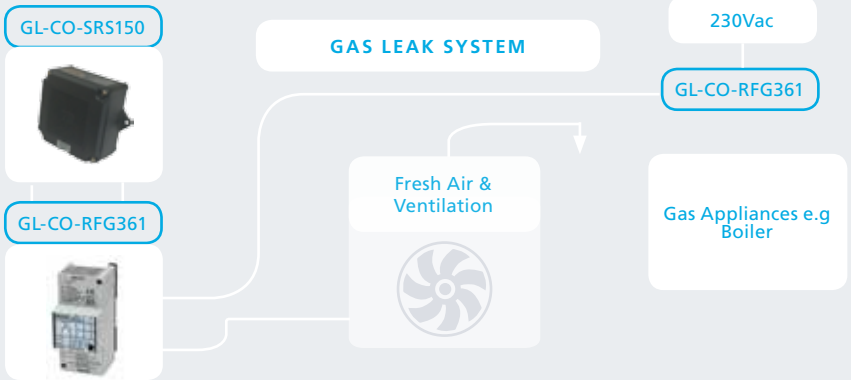


Sontay's water leak detection system

Protect buildings and equipment from water damage with early indication of leak presence by using Sontay's water leak detection system.



The EP series of emergency switches provide local override for instant power off to machinery or alarm activation for fire. The EP-SW72 is a fusible link for power supply switch-off to gas safety valves (see the VS range on page 82 to page 86) or to the GL series of gas leak alarms. It is designed to be placed above a gas appliance, and the conducting element will melt at 72°C (for example, in the event of fire).



EP-SW Emergency Stop


EP-KL


EP-SW10


EP-SW11

A range of emergency stop buttons for manual shutdown of systems in the event of fire or other emergency.

TYPES

EP-KL
Emergency Stop Button with key lock re-set. Set of 2 keys provided.

EP-SW-10
Emergency Stop Button with recessed re-set button.

EP-SW-11
Emergency Stop Button with twist knob re-set.

SPECIFICATION

Switch rating:	EP-KL	15 to 415Vac, 4A
		13 to 110Vdc, 0.5A
	Others	6A @ 240Vac
Reset type:	EP-KL	Key
	EP-SW-10	Push (recessed)
	EP-SW-11	Twist
Dimensions:	EP-KL	65 x 65 x 90mm (2.56 x 2.56 x 3.54”)
	EP-SW-10	73 x 80 x 50mm (2.87 x 3.15 x 1.97”)
	EP-SW-11	65 x 65 x 90mm (2.56 x 2.56 x 3.54”)
Weight:	220g (0.49 lb)	

Part code	*Description*
EP-KL	Stop Button – Key lock
EP-SW-10	Stop Button – Push button (recessed)
EP-SW-11	Stop Button – Twist knob

Data sheet: EP-ES.pdf

EP-SW-72 Fusible Thermal Link

The EP-SW-72 is for use in gas safety circuits. Units consist of a ventilated high temperature glass filled resin case, with electrical connection terminals and a thermal fuse. When located above boilers, the fuse activates on detection of over-temperature to close down the gas system. Replacement fuses are available.

SPECIFICATION

Housing:	High temperature flame retardent glass filled resin
Entry:	M20 thread for standard conduit
Melting point:	72°C (162°F)
Rating:	250Vac @ 5A
Protection:	IP20
Dimensions:	85 x 28 x 65mm (3.35 x 1.10 x 2.56”)
Weight:	60g

Part code	*Description*
EP-SW-72	Electro-thermal Link
EP-SW-72-F	Electro-thermal Link – spare fuse

Volume Price Breaks are applicable	
Unit Price (10-19 and 20+)	
EP-SW-72	Please see price list

Data sheet: EP-SW72.pdf

EP-FS Fireman’s Switches

This range of Safety switches are for use in the event of fire or other emergency. Usually located at exits to gas plant rooms, units are key operated with a 2 or 3-position latching switch.

The EP-KG is a wall or panel-mounted Keyguard. The window is a non-hazardous clear plastic with side tabs designed to break in order to gain access to the key.

It is ideal for use in situations where a glass window would pose a hazard, i.e. food preparation areas, schools etc.

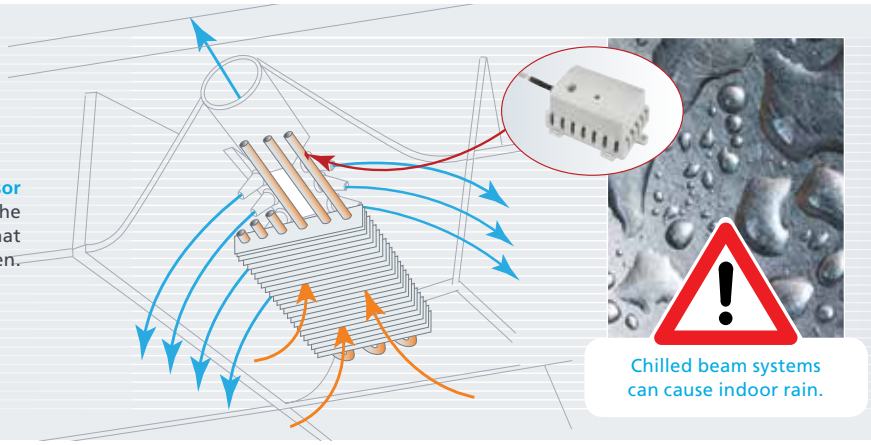
Switch rating:	EP-FS	6A @ 240Vac
Keys:	EP-FS	2 supplied (removable in all positions)
Connections:	EP-FS	4 x 100mm (3.94”) flying leads
Dimensions:	EP-FS	86 x 86 x 50mm (3.39 x 3.39 x 1.97”)
	EP-KG	142 x 125 x 45mm (5.59 x 4.92 x 1.77”)
Weight:	EP-FS	200g (0.44 lb)
	EP-KG	220g (0.49 lb)
Housing:	ABS plastic	

Part code	*Description*
EP-FS-1	Fireman’s Switch – Red 2-position
EP-FS-2	Fireman’s Switch – Red 3-position
EP-FS-C	Fireman’s Switch – Hinged cover
EP-KG-1	Keyguard – Red
EP-KG-W	Keyguard – Spare window

Data sheets: EP-FS.pdf · EP-KG.pdf

Condensation Sensing

A condensation prevention sensor can give early indication of the onset of condensation so that preventative action can be taken.



Chilled beam systems can cause indoor rain.

WD-CPS — Condensation Prevention Sensor

Sontay's condensation prevention sensor has been designed to provide a switched output signal to prevent the onset of condensation on chilled surfaces such as chilled beams.

The detector measures the temperature compensated RH and surface temperature of the chilled surface and calculates the dew point temperature. This is compared to an adjustable setpoint to provide either a current output or VFC switched output.

FEATURES
- Reliable and accurate switching
- VFC or current output
- Quick and simple to install

SPECIFICATION

Output:	Current mode	(dry <3mA, wet >12 mA)
	VFC mode	SPDT contact, 240Vac @ 1A resistive
Supply voltage:	24Vdc ±5% or 24Vac ±10%	
Cable:	Low smoke and fume	
Dimensions:	70 x 48 x 30mm (2.76 x 1.89 x 1.18")	
Weight:	80g (0.18 lb)	

Part code	*Description*
WD-CPS	Condensation Detector - 2m (6.56 ft) lead
WD-CPS-5M	Condensation Detector - 5m (16.4 ft) lead

Data sheet: WD-CPS.pdf

SonNet® WIRELESS TECHNOLOGY — RF-IOM WIRELESS SENSOR INPUT

Use our RF-IOM output to control the valve actuators wirelessley!

WD-x Water Leak Detection

The WD-x range is designed to detect water leaks either at localised points using the WD-PS point sensor or larger areas with the WD-CS cable sensor, a rain sensor is also available.

All these sensors are used with the WD-AMX range of modules that are suitable for DIN-rail mounting inside AHUs, power distribution units or general areas where leak detection is required.

They are fitted as standard with LED indication of the water leak status, and sounder that can be disabled by simply removing a jumper. The WD-AMX relay output can either configured to be manual or auto reset.

A relay output provides an alarm signal that can be used for connection to a BMS controller or remote alarm annunciation panel such as the UI-AA1-F (see page 75).

FEATURES

Modules

- AC detector excitation for reliability
- 24Vac/dc or 230Vac versions
- Audible alarm

Sensors

- WD-CS is easy to lay and detects along its entire length
- More than one WD-PS can be connected to a WD-AMX
- Self-contained heater to avoid nuisance alarms on WD-RS

SonNet® WIRELESS TECHNOLOGY

Did you know we also sell wireless CO2 sensors in our SonNet range? Go to page 52 for more details.

SPECIFICATION

Power Supply:	WD-AMX-1	24Vac/dc ±10%
	WD-AMX-2	230Vac @ 50Hz
	WD-RS heater	24Vac/dc
Supply Current (WD-AMX):	50mA max.	
Output:	SPDT relay 12A @ 230Vac	
Audible alarm:	85dB @ 2.3kHz at 10cm	
Maximum cable run:	200m (656ft) – including detection cable	
Ambient range:	Temperature	0 to 40°C (32 to 104°F)
	RH	0 to 80% RH, non-condensing
Dimensions:	WD-AMX	72 x 64 x 55mm (2.83 x 2.52 x 2.17")
	WD-PS	58 x 58 x 31mm (2.28 x 2.28 x 1.22")
	WD-RS	70 x 30 x 45mm (2.76 x 1.18 x 1.77")
Protection:	WD-AMX	IP30
	WD-RS	IP65
Weights:	WD-AMX-1	100g (0.22lb)
	WD-AMX-2	240g (0.53lb)
	WD-CS	520g (1.15lb) max.
	WD-PS	100g (0.22lb)
	WD-RS	125g (0.28lb)

Part code	*Description*
	Modules
WD-AMX-1	24Vac/dc Controller with buzzer
WD-AMX-2	230Vac Controller with buzzer
	Sensors
WD-CS-2M	Water Cable Sensor, 2m (6.56ft) cable, 3m (9.84ft) leader
WD-CS-5M	" 5m (16.4ft) cable, 3m (9.84ft) leader
WD-CS-10M	" 10m (32.81ft) cable, 3m (9.84ft) leader
WD-CS-15M	" 15m (49.21ft) cable, 3m (9.84ft) leader
WD-CS-20M	" 20m (65.62ft) cable, 3m (9.84ft) leader
WD-CS-25M	" 25m (82.02ft) cable, 3m (9.84ft) leader
WD-PS	Water Point Sensor, 2m (6.56ft)
WD-RS	Rain Sensor with internal heater, 2m (6.56ft) leader
WD-RS-5M	Rain Sensor with internal heater, 5m (16.4ft) leader
	Accessory
WD-FC	Pack of 20 fixing clips for WD-CS

Data sheets: WD-AMX.pdf, WD-xS.pdf

Note: Custom WD-CS lengths available.

Thermistor Types and Compatibility Chart

Element Code	Element Type	Manufacturer	Room	Outside	Duct	Immersion	Clamp-on	Bullet
A	10K3A1	Aquatrol	✓	✓	✓	✓	✓	✓
		Honeywell	T8120B	T7416A, T7043E	✓	T7106A, T7043F	T7044C	T7076D
		Johnson	✓	✓	TE-6361V TE-636GV-1	✓	✓	✓
		Satchwell	✓	DOT10K2 DOS10K2	DDT10K1	DWT10K1 DST10K1	✓	✓
		Seachange	SEN/PTR/ROM	SEN/PR/OAT	SEN/PR/DCT	SEN/PR/IMM	SEN/PR/CLP	SEN/FL
		Trend	TE-TS	TE-TO	TE-TD	TE-TI	TE-TC	✓
		Cylon	✓	✓	✓	✓	✓	✓
		Distech	✓	✓	✓	✓	✓	✓
		Heatmiser	✓	✓	✓	✓	✓	✓
B	10K4A1	Andover	TTS-S Series	✓	TT-O Series	TT-I Series	TT-ST	✓
		Siebe	✓	✓	✓	✓	✓	✓
		York <40°C	✓	✓	✓	✓	✓	✓
C	20K6A1	Honeywell	T7460H, T7470A AF20, DRF20-S, RF20	AF20 DAF20 T7416A1022	LF20	VF20T, VF20NT VF20L, VF20LN WPF20 T7425A	VF20A WPF20A	KFT20, KFT20B DKF20
D	PT100A	Sauter	EGT430/F011	✓	EGT466/F011 EGT447/F011	✓	✓	EGT456/F011
		Serck	✓	✓	✓	✓	✓	✓
		Siemens/Landis & Staefa	QAA100 QAA2010	QAC2010	FK-TP/200 QAM2110	QAE2110		QAP2010
E	PT1000A	Honeywell	T7412	T7416A1014	T7411	T7413	T7414	
		Sauter	EGT430/F101	EGT401/F101	EGT446/F101 EGT446/F101		EGT411/F101	EGT456/F101
		Serck	✓	✓	✓	✓	✓	✓
		Siebe	TS-5811	✓	✓	✓	✓	✓
		Cylon	✓	✓	✓	✓	✓	✓
F	Ni1000A	Sauter	EGT330/F101	EGT301/F101	EGT346/F101 EGT347/F101 EGT348/F101	EGT346/F101 EGT347/F101 EGT348/F101	EGT311/F101	EGT354/F101 EGT356/F101
G	Ni1000A/TCR (LAN1)	Siemens	QAA24/25/26/27 QAA64	QAC22	QAM2120	QAE2120	QAD22 QAD26	QAP21, QAP22 QAZ21
H	SAT1	Satchwell	DRT, DU, DUS DUSF	DOT0002 DOS0002	DDT0001	DWT0001 DST0001	✓	DDU
K	STA1	Landis & Staefa	QAA2040 FR-T1	FW-T1	QAM2140 FK-T1	QAE2140	FA-T1 QAP2040	✓
L	TAC1	TAC	✓	✓	✓	✓	✓	✓
M	2.2K3A1	Ambiflex	RTN3060	ETN3060	DTN3060	ITN3060	CTN3060	✓
		Johnson	TE-6344P	TE-6343P	TE-6341P TE-6341V TE-634GV-1	TE-6342P	✓	✓
N	3K3A1	Alerton	MS-1000 Series TS-1050	✓	✓	✓	✓	✓
P	30K6A1	Drayton	A701	A702	✓	A703	A704	✓
Q	50K6A1	Ambiflex						
R	100K6A1	York >40°C	✓	✓	✓	✓	✓	✓
S	SAT2	Satchwell	DR	✓	DD	DW1202 DWS1301	✓	✓
T	SAT3	Satchwell	✓	✓	✓	DW1204 DWS1202	✓	✓
V	SAT4	Satchwell	✓	DO2202	✓	✓	✓	✓
W	SIE1	Barber Colman	✓	✓	✓	✓	✓	✓
		Siebe	✓	✓	✓	✓	✓	✓
Y	STA2	Landis & Staefa	FR-T30	FO-T30	FK-T30	FT-T305	✓	✓
Z	10K	Carel	✓	✓	✓	✓	✓	✓
DC	10K4A1	Delta Controls	✓	✓	✓	✓	✓	✓

Thermistor Types and Compatibility Chart

A - 10K3A1

Sensor type:
Thermistor, temp coef. negative

°C	Ω
–50	667828
–40	335671
–30	176683
–20	96974
–15	72895
–10	55298
–5	42314
0	32650
1	31030
2	29500
3	28054
4	26688
5	25396
6	24173
7	23016
8	21921
9	20885
10	19904
11	18974
12	18092
13	17257
14	16465
15	15714
16	15001
17	14325
18	13623
19	13053
20	12494
21	11943
22	11420
23	10923
24	10450
25	10000
26	9572
27	9165
28	8777
29	8408
30	8056
35	6530
40	5325
45	4367
50	3601
55	2985
60	2487
65	2082
70	1751
75	1480
80	1256
85	1070
90	916.1
95	787.0
100	678.6
105	587.3
110	510.1
115	444.5
120	388.6
125	340.8
130	300.0
140	234.1
150	184.8
160	–
170	–
180	–
190	–
200	–

B - 10K4A1

Sensor type:
Thermistor, temp coef. negative

°C	Ω
–50	441667
–40	239831
–30	135233
–20	78930
–15	61030
–10	47549
–5	37316
0	29490
1	28157
2	26891
3	25689
4	24547
5	23462
6	22430
7	21450
8	20517
9	19631
10	18787
11	17983
12	17219
13	16490
14	15797
15	15136
16	14507
17	13906
18	13334
19	12788
20	12268
21	11771
22	11297
23	10845
24	10413
25	10000
26	9606
27	9229
28	8869
29	8525
30	8197
35	6754
40	5594
45	4656
50	3893
55	3271
60	2760
65	2339
70	1990
75	1700
80	1458
85	1255
90	1084
95	939.6
100	817.2
105	713.0
110	624.1
115	547.9
120	482.5
125	426.0
130	377.2
140	298.1
150	238.0
160	–
170	–
180	–
190	–
200	–

C - 20K6A1

Sensor type:
Thermistor, temp coef. negative

°C	Ω
0	71120
1	67324
2	63749
3	60385
4	57218
5	54397
6	51429
7	48032
8	46258
9	43938
10	41719
11	39640
12	37676
13	36020
14	34067
15	32409
16	30841
17	29388
18	27954
19	26625
20	25387
21	24178
22	23047
23	21977
24	20962
25	20000
26	19085
27	18225
28	17404
29	16824
30	16384
31	16189
32	14491
33	13847
34	13235
35	12654
36	12010
37	11578
38	11076
39	10600
40	10148
41	9721.1
42	9314.5
43	8826.8
44	8557.5
45	8205.3
46	7899.3
47	7548.9
48	7243.1
49	6951.2
50	6672.6
51	6404.0
52	6148.9
53	5904.6
54	5671.4
55	5448.6
56	5235.7
57	5092.3
58	4837.8
59	4651.6
60	4473.9
61	–
62	–
63	–
64	–

D - PT100A

Sensor type:
Platinum, temp coef. positive

°C	Ω
–50	80.3
–40	84.3
–30	88.2
–20	92.2
–15	
–10	96.1
–5	
0	100.0
5	
10	103.9
15	
20	107.8
25	109.8
30	111.7
35	
40	115.5
45	
50	119.4
55	
60	123.2
65	
70	127.1
75	
80	130.9
85	
90	134.7
95	
100	138.5
105	
110	142.3
115	
120	146.1
125	
130	149.8
140	153.6
150	157.3
160	161.0
170	164.8
180	168.5
190	172.2
200	175.8
210	179.5
220	183.2
230	186.8
240	190.5
250	194.1
260	197.7
270	201.3
280	204.9
290	208.5
300	212.0
310	215.6
320	219.1
330	222.7
340	226.2
350	229.7
360	233.2
370	236.7
380	240.1
390	243.6
400	247.0
401	–
402	–
403	–

E - PT1000A

Sensor type:
Platinum, temp coef. positive

°C	Ω
–50	803
–40	843
–30	882
–20	921
–15	
–10	961
–5	
0	1000
5	
10	1039
15	
20	1078
25	
30	1117
35	
40	1155
45	
50	1194
55	
60	1232
65	
70	1271
75	
80	1309
85	
90	1347
95	
100	1385
105	
110	1423
115	
120	1461
125	
130	1498
140	1536
150	1573
160	1611
170	1648
180	1685
190	1722
200	1758
210	1795
220	1832
230	1868
240	1905
250	1941
260	1977
270	2013
280	2049
290	2085
300	2121
310	2156
320	2191
330	2227
340	2262
350	2297
360	2332
370	2367
380	2401
390	2436
400	2470
401	–
402	–
403	–

F - NI1000

Sensor type:
Platinum, temp coef. positive

°C	Ω
–50	743
–40	791
–30	842
–20	893
–15	
–10	946
–5	
0	1000
5	
10	1056
15	
20	1112
25	
30	1171
35	
40	1230
45	
50	1291
55	
60	1353
65	
70	1417
75	
80	1483
85	
90	1549
95	
100	1618
105	
110	1688
115	
120	1760
125	
130	1833
140	1909
150	1987
160	2066
170	2148
180	2232
190	–
200	–
201	–
202	–
203	–
204	–
205	–

Thermistor Temperature Range

G - LAN 1
(Ni1000A/TCR)
Sensor type:
Nickel, temp coef. positive

°C	Ω
–50	790.8
–40	826.8
–30	871.7
–20	913.4
–15	934.7
–10	956.2
–5	978.0
0	1000.0
1	1004.4
2	1008.9
3	1013.3
4	1017.8
5	1022.3
6	1026.7
7	1031.2
8	1035.8
9	1040.3
10	1044.8
11	1049.3
12	1053.9
13	1058.4
14	1063.0
15	1067.6
16	1072.2
17	1076.8
18	1081.4
19	1086.0
20	1090.7
21	1095.3
22	1100.0
23	1104.6
24	1109.3
25	1114.0
26	1120.0
27	1123.4
28	1128.1
29	1132.9
30	1137.6
35	1161.5
40	1185.7
45	1210.2
50	1235.0
55	1260.1
60	1285.4
65	1311.1
70	1337.1
75	1363.5
80	1390.1
85	1417.1
90	1444.4
95	1472.0
100	1500.0
105	1528.3
110	1557.0
115	1586.0
120	1625.4
125	–
130	–
135	–
140	–
150	–
170	–
180	–
190	–
200	–

H - SAT1
Sensor type:
Thermistor, temp coef. negative

°C	Ω
–50	9719
–40	9584
–30	9349
–20	8968
–15	8708
–10	8396
–5	8031
0	7614
1	7525
2	7434
3	7341
4	7246
5	7150
6	7053
7	6954
8	6853
9	6752
10	6649
11	6545
12	6440
13	6334
14	6228
15	6121
16	6013
17	5905
18	5786
19	5684
20	5580
21	5471
22	5362
23	5254
24	5147
25	5039
26	4933
27	4827
28	4721
29	4617
30	4513
35	4012
40	3545
45	3117
50	2730
55	2386
60	2082
65	1816
70	1585
75	1385
80	1213
85	1064
90	937
95	828
100	734
105	654
110	585
115	525
120	474
125	429
130	391
140	329
150	281
160	–
170	–
180	–
190	–
200	–

K - STA1
Sensor type:
Thermistor, temp coef. positive

°C	Ω
0	2226
1	2236
2	2246
3	2256
4	2266
5	2276
6	2286
7	2298
8	2306
9	2316
10	2326
11	2337
12	2347
13	2357
14	2367
15	2377
16	2388
17	2398
18	2408
19	2418
20	2429
21	2439
22	2449
23	2460
24	2470
25	2480
26	2491
27	2501
28	2512
29	2522
30	2532
31	2543
32	2553
33	2564
34	2574
35	2585
36	2596
37	2606
38	2617
39	2627
40	2638
41	–

L - TAC1
Sensor type:
Thermistor, temp coef. negative

°C	Ω
0	5085
5	4078
10	3294
15	2676
20	2188
25	1800
30	1488
35	1237
40	1034
50	740
60	540
70	400
80	300
90	230
100	180
110	–

M - 2.2K3A1
Sensor type:
Thermistor, temp coef. negative

°C	Ω
–50	150395
–40	75593
–30	39789
–20	21839
–15	16416
–10	12453
–5	9529
0	7353
1	6988
2	6643
3	6318
4	6010
5	5719
6	5444
7	5183
8	4937
9	4703
10	4482
11	4273
12	4075
13	3886
14	3708
15	3539
16	3378
17	3226
18	3081
19	2940
20	2814
21	2690
22	2572
23	2460
24	2353
25	2252
26	2156
27	2064
28	1977
29	1893
30	1814
35	1471
40	1199
45	983.4
50	810.9
55	672.2
60	560.1
65	468.9
70	394.5
75	333.3
80	282.9
85	241.1
90	206.3
95	177.2
100	152.8
105	132.3
110	114.9
115	100.1
120	87.51
125	76.75
130	67.52
140	52.72
150	41.61
160	–
170	–
180	–
190	–
200	–

N - 3K3A1
Sensor type:
Thermistor, temp coef. negative

°C	Ω
–50	200348
–40	100701
–30	53005
–20	29092
–15	21868
–10	16589
–5	12694
0	9795
1	9309
2	8850
3	8416
4	8006
5	7619
6	7252
7	6905
8	6577
9	6266
10	5971
11	5692
12	5428
13	5177
14	4940
15	4714
16	4500
17	4297
18	4105
19	3916
20	3748
21	3583
22	3426
23	3277
24	3135
25	3000
26	2871
27	2749
28	2633
29	2522
30	2417
35	1959
40	1598
45	1310
50	1080
55	895.5
60	746.2
65	624.7
70	525.5
75	444.0
80	376.9
85	321.2
90	274.8
95	236.1
100	203.6
105	176.2
110	153.0
115	133.3
120	116.6
125	102.2
130	89.95
140	70.23
150	55.44
160	–
170	–
180	–
190	–
200	–

P - 30K6A1
Sensor type:
Thermistor, temp coef. negative

°C	Ω
–50	2497K
–40	1219K
–30	622911
–20	331876
–15	245785
–10	183697
–5	138502
0	105305
1	99787
2	94588
3	89689
4	85069
5	60713
6	76604
7	72726
8	69064
9	65608
10	62347
11	59257
12	56346
13	53585
14	50978
15	48511
16	46178
17	43969
18	41877
19	39895
20	38019
21	36240
22	34554
23	32955
24	31438
25	30000
26	28635
27	27339
28	26108
29	24939
30	23828
35	19046
40	15317
45	12390
50	10079
55	8243
60	6777
65	5600
70	4650
75	3879
80	3251
85	2737
90	2313
95	1963
100	1672
105	1430
110	1228
115	1058
120	914.6
125	793.2
130	690.2
140	527.4
150	407.7
160	-
170	-
180	-
190	-
200	-

Thermistor Temperature Range

Q - 50K6A1

Sensor type:
Thermistor, temp coef. negative

°C	Ω
–50	4168K
–40	2033K
–30	1038K
–20	553243
–15	409689
–10	306183
–5	230842
0	175508
1	166310
2	157644
3	149480
4	141779
5	134521
6	127669
7	121207
8	115105
9	109344
10	103903
11	98761
12	93901
13	89307
14	84962
15	80851
16	76961
17	73280
18	69794
19	66492
20	63364
21	60400
22	57589
23	54925
24	52398
25	50000
26	47724
27	45564
28	43513
29	41565
30	39714
35	31744
40	25529
45	20650
50	16799
55	13740
60	11297
65	9334
70	7751
75	6466
80	5419
85	4560
90	3855
95	3271
100	2787
105	2384
110	2046
115	1762
120	1523
125	1321
130	1149
140	878.2
150	678.8
160	–
170	–
180	–
190	–
200	–

R - 100K6A1

Sensor type:
Thermistor, temp coef. negative

°C	Ω
–50	8337K
–40	4067K
–30	2077K
–20	1106K
–15	819378
–10	612366
–5	461683
0	351017
1	332619
2	315288
3	298959
4	283558
5	269041
6	255337
7	242414
8	230210
9	218688
10	207807
11	197521
12	187803
13	178613
14	169924
15	161702
16	153923
17	146560
18	139588
19	132984
20	126729
21	120799
22	115179
23	109850
24	104796
25	100000
26	95449
27	91128
28	87026
29	83129
30	79428
35	63489
40	51058
45	41301
50	33598
55	27479
60	22593
65	18669
70	15502
75	12932
80	10837
85	9121
90	7710
95	6543
100	5574
105	4767
110	4092
115	3525
120	3047
125	2642
130	2299
140	1756
150	1357
160	–
170	–
180	–
190	–
200	–

S - SAT2

Sensor type:
Thermistor, temp coef. negative

°C	Ω
–50	–
–40	–
–30	–
–20	–
–15	–
–10	–
–5	–
0	2094
1	2079
2	2061
3	2046
4	2027
5	2010
6	1992
7	1973
8	1951
9	1934
10	1911
11	1897
12	1872
13	1851
14	1810
15	1809
16	1787
17	1764
18	1740
19	1716
20	1690
21	1667
22	1644
23	1621
24	1598
25	1574
26	1549
27	1524
28	1500
29	1476
30	1452
35	1336
40	1219
45	1113
50	1011
55	–
60	–
65	–
70	–
75	–
80	–
85	–
90	–
95	–
100	–
105	–
110	–
115	–
120	–
125	–
130	–
140	–
150	–
160	–
170	–
180	–
190	–
200	–

T - SAT3

Sensor type:
Thermistor, temp coef. negative

°C	Ω
20	2708
21	2681
22	2659
23	2618
24	2616
25	2592
26	2567
27	2544
28	2520
29	2496
30	2474
31	2447
32	2423
33	2398
34	2372
35	2346
36	2322
37	2296
38	2269
39	2243
40	2216
45	2086
50	1950
55	1818
60	1694
65	1758
70	1461
75	1353
80	1258
85	1171
90	1089
95	1020
100	950

V - SAT4

Sensor type:
Thermistor, temp coef. negative

°C	Ω
–10	1733
–5	1617
0	1504
5	1397
10	1298
15	1208
20	1128

W - SEI1

Sensor type:
Thermistor, temp coef. negative

°C	Ω
–50	10732
–40	10517
–30	10172
–20	9654
–15	9320
–10	8933
–5	8496
0	8044
1	7910
2	7807
3	7702
4	7596
5	7489
6	7381
7	7271
8	7161
9	7050
10	6938
11	6825
12	6712
13	6598
14	6485
15	6370
16	6256
17	6141
18	6028
19	5913
20	5798
21	5686
22	5573
23	5461
24	5349
25	5238
26	5128
27	5019
28	4910
29	4803
30	4696
35	4185
40	3707
45	3271
50	2875
55	2521
60	2206
65	1929
70	1685
75	1472
80	1287
85	1127
90	986
95	866
100	760
105	670
110	590
115	522
120	462
125	410
130	365
140	290
150	233
160	–
170	–
180	–
190	–
200	–

Y - STA2

Sensor type:
Thermistor, temp coef. positive

°C	Ω
0	7490
5	6340
10	5360
15	4540
20	3840
25	3250
30	2750
35	2320

Z - 10K NTC

Sensor type:
Thermistor, temp coef. negative

°C	Ω
–10	42218
–5	33784
0	27197
5	22023
10	17933
15	14684
20	12087
25	10000
30	8315
35	6947
40	5831
45	4916
50	4163
55	3540
60	3023
65	2591
70	2230
75	1926
80	1669
85	1451
90	1266
95	1109
100	973

General Information

Your Sontay Account

Setting up an account:

- Complete and return an account application form to apply for credit facilities
- Pay for your order up front by bank transfer or credit-debit card on a proforma account

Placing orders:

Phone	**+44 1732 861200**
Fax	**+44 1732 861201**
Email	**sales@sontay.com**
Website	**www.sontay.com**

Mail
Sontay Ltd.
Four Elms Road · Edenbridge
TN8 6AB · UK

Setting up an account:

Companies wishing to purchase on credit account should complete and return the 'Application for credit account' form included in this catalogue or on our website at www.sontay.com. Please note that references will not be accepted from companies that are immediate competitors of Sontay.

Companies and individuals placing orders without an account will be invoiced on a proforma basis. Goods will not be despatched until the payment has cleared into our bank account, or for a faster response we are able to accept payment by Mastercard, Visa, and most types of debit/purchase cards.

Credit and payment terms:

All accounts will be subject to a trading credit limit. Accounts trading beyond these terms will be notified and asked to correct their account.
Our standard credit terms are nett monthly account unless agreed otherwise in writing.

Accounts not settled within their terms will be notified and placed on stop. Accounts trading beyond agreed credit terms may invalidate their product warranty. (See warranty section).

Sontay reserve the right to charge interest on overdue balances.
Sontay reserve the right to withdraw credit facilities should payment performance be outside of agreed terms.

Please note that we are no longer able to accept payment by cheque.
Non proforma credit and debit card payments will be subject to a 5% handling fee to cover bank charges.

Minimum order values:

In order that we may maintain our competitive pricing it is necessary for us to insist on minimum order values per shipment
as follows:

UK and Republic of Ireland:	£30
International:	£50

Orders supported by a bank Letter of Credit will only be accepted if over £5,000 in value. In each case, an administration charge of 5% minimum will be applied to cover set-up of payment arrangements and any bank charges will be recovered at cost.

Discount structure:

Customers may be allocated sales discounts, any discount given will be determined and reviewed on the basis of actual turnover. Standard discounts only apply to the specific products in this catalogue, special products and custom variants are excluded and are net priced. Your company discount entitlement can be confirmed at any time by calling Sales Support.

Custom products:

Sontay is always willing to discuss OEM manufacturing and special build contracts. Please contact Sales Support or your account manager for more information.

Placing orders:

Orders can be placed by phone, fax, mail, e-mail or by our website.

The following information is required:

- Order number
- Invoice address
- Delivery address
- Delivery date required
- Part shipment acceptance (Y/N)
- Customer contact
- Items detailed with Sontay part numbers

Delivery periods:

Many items are available for immediate delivery. In all cases where delivery is critical consult the Sales Support who will try to fulfil your needs.

Warranty:

All products purchased after the 1st January 2012 and paid for in full compliance with Sontay's Terms and Conditions of Sale are covered by a 3 year warranty from the date the goods were despatched. The product warranty is void if the bar code label attached to the product has been removed or tampered with in anyway. VT and VE valve castings now have lifetime warranty.

CE marking:

Compliance to the essential requirements of relevant EC Directives and British Standards is detailed on the datasheet for each product, and products are CE marked where appropriate. All data sheets are provided on our website and copies of which can be obtained from the Sales Support Team.

WEEE and RoHS Directive Compliance:

Waste Electrical and Electronic Equipment (WEEE) Directive The WEEE Directive requires producers to pay for electronic and electrical equipment recycling and it covers a broad range of electronic and electrical products. The WEEE Directive aims to divert waste electronics from going into landfills and to encourage eco-design, reuse and recycling through producer responsibility. The WEEE Directive applies to standalone products. These are products that can function entirely on their own and are not part of another system or piece of equipment. Sontay do not supply any products that fit into this category.

General Information

Terms and Conditions of Sale

RESTRICTION OF HAZARDOUS SUBSTANCES (ROHS) DIRECTIVE

A sister directive to WEEE, the RoHS Directive bans the presence of specified hazardous substances in certain electronic and electrical equipment placed on the EU market after 1st July 2006. The RoHS Directive ensures that any such new electronic and electrical equipment does not contain Lead, Mercury, Cadmium, Hexavalent Chromium, Polybrominated Biphenyls (PBB) and Polybrominated Diphenyl Ethers (PBDE) that are often used as flame retardants in some plastics, unless derogation is provided for via an exemption. It should be noted that not all products that Sontay supply are subject to the RoHS Directive. For those that are subject to the Directive we are fully compliant.

PROGRESSING AN ORDER

To progress an order, please call our Sales Support Team and provide the following information:

- Your company name
- Your purchase order number
- The Sontay sales order number as stated on the order confirmation, if at all possible.

If the order has been dispatched but not received, then a 'Proof of Delivery' can be requested. It usually takes between 15 minutes and two hours to provide verbal delivery status or delivery time, location and signature, as applicable. A hard copy can be requested from the couriers, but can take some days to produce.

DELIVERY AND PACKAGING CHARGES

The following prices are for shipping and packing of parcels up to 30Kg within the UK. Heavier parcels are priced individually on request.

Service (UK mainland only)	*Price*
Next Day (up to 30Kg) before 12.00am*	£ 9.00
Before 9.00am (up to 20Kg)	£25.00

** Please note – before 12.00am delivery is not available in all areas.*

For prices on international and heavier items please contact the Sales Support Team. Should you choose to nominate you own freight forwarder a £25 handling charge will be applied to your account to cover our handling and admin.

CANCELLATION OF AN ORDER

Sontay employ the latest lean manufacturing techniques and often manufacture and source products to suit customer's instructions. In the event of a cancelled order, the customer will be liable for any costs incurred by Sontay during the fulfilment of your order up to the point of cancellation. Please note we will only accept written cancellation of an order. You will receive a confirmation of cancellation from us advising that we have been able to cancel your order. We regret that we cannot accept cancellation of confirmed orders for any special products and custom variants.

CUSTOMER COLLECTION

The office is open for collections from 09.00 and 17.00 hours.
Please call Sales Support to arrange a suitable collection time.

DELIVERY TERMS

DAP (Edenbridge): The buyer pays all transportation costs and also bears the risks for bringing the goods to their final destination. This term requires that the buyer is responsible for all duties and taxes applicable when goods are shipped internationally.

Loss, shortfall or damage (UK only): Dispatches will only be delivered if the destination address is attended and the receiver will sign for receipt of the goods.

Our carrier will make all reasonable attempt to deliver the package, it is the customer's responsibility to have a representative available to receive the package. Please allow a 30 minute leeway on delivery times.

If there is nobody available to receive the goods, the carrier will leave a calling card and return the delivery to their local depot. Simply call the number on the card to rearrange the delivery. Neither Sontay nor the carrier will advise further of any failure to deliver. Any loss, shortfall or damage discovered by the receiver/ customer must be reported to Sontay within 7 days of despatch. Sontay will not accept any liability for claims made after this period and the customer will be liable to pay for the whole delivery.

LOSS, SHORTFALL OR DAMAGE (EXPORT) All export orders are accepted terms, ex-works. Sontay accept no responsibility for either lost or damaged goods, we strongly advise customers to ensure that you have insurance in place to cover any such losses.

PRODUCT RETURNS

Please refer to the relevant information below for our procedures and guidelines on our product returns process.
All goods that are to be returned to us must have a RMA number and documentation stating the reason for return, please contact the Sales Support Team to obtain your RMA number should you need to return goods.
Any goods received without a valid RMA number or documented reason for return will not be processed and will be returned to the originator at their cost.

WARRANTY FAILURES

All goods received and accepted with the correct documentation will undergo inspection to determine their condition, goods that are determined to have failed within the defined warranty period will be credited or replaced as requested. Goods that are deemed by inspection and test to have been damaged by the user will be referred back to the customer for a decision on either return or disposal, after notification we will automatically return the goods to the originator after a period of 30 days without reply.
Should you require advance replacements to items being returned we will require you to place a new purchase order, then after inspection should any credit be due it will be placed against the original order.

PRODUCT EXCHANGE

We offer to exchange products that have been ordered in error providing they are standard catalogue items, and have been returned within 60 days of purchase. These products will be inspected on return and if found to be in good condition for resale will be restocked for a 25% charge.
Should you require exchange of items in advance we will require you to place a new purchase order, then after inspection should any credit be due it will be placed against the original order less the 25% restock charge.
Please note that all customised "special products" and non-catalogue items are excluded from the product exchange programme.

SONTAY, EASIER TO DO BUSINESS

Sontay provide a range of services for customers to enable greater and easier access to key information and personnel.

CUSTOMER SERVICES

UK:	Tel: 01732 861200	Fax: 01732 861201
International:	Tel: +44 1732 861225	Fax: +44 1732 861226
Email:	sales@sontay.com	

General Information

Terms and Conditions of Sale

TECHNICAL SUPPORT

UK:	Tel: 01732 861218	Fax: 01732 861219
International:	Tel: +44 1732 861218	Fax: +44 1732 861219
Email:	support@sontay.com	

ACCOUNTS

UK:	Tel: 01732 861202	Fax: 01732 861203
International:	Tel: +44 1732 861202	Fax: +44 1732 861203
Email:	accounts@sontay.com	
Website:	www.sontay.com	

You will find the latest news, information on any product updates as well access to all technical datasheets for our range of catalogue products. Visit often as we are constantly evolving the site!

ISO9001:

Sontay Limited is committed to supplying products that meet or exceed our customers initial and continuing expectations of quality and service, and to this end we have a Quality Management System that complies with the requirements of BS-EN ISO9001, the scope of which covers:

'The design, manufacture, distribution, technical and after-sales support of electro and electro-mechanical temperature and relative humidity sensors and their associated peripheral equipment for building management, measurement and control applications. The provision of training services related to the products provided and their relative applications.' A copy of the certificate of registration is available.

FM 53732
BS-EN ISO9001

DEFINITIONS:

(a) "Goods" means the Goods or services which the Company is to supply in accordance with these terms.
(b) "Company" means Sontay Ltd.
(c) "Terms and Conditions" means the terms and conditions of sale set out below and the Company's "Your Sontay Account" document and any specific terms and/or conditions agreed in writing between the Customer and the Company. In the event of conflict, the terms in this document shall take precedence.
(d) "Contract" means the Contract for the purchase and sale of Goods.
(e) "Writing" includes communication by post, facsimile, e-mail and by personal delivery of documents.
(f) "Acceptance" means confirmation in writing by the Company upon receipt of the Customer's order.
(g) "Customer" means the person, firm or company described overleaf and who purchases the Goods or Service from the Company.

1. APPLICATION

(a) Unless otherwise specifically agreed in writing these Conditions shall be incorporated in every offer quotation acceptance and contract for the sale or supply of goods or services by the Company and together with the order to which they relate constitute the entire contract between the Company and the Customer. Any conditions proposed by the Customer which are inconsistent with these terms are hereby excluded (including any terms or conditions which the Customer purports to apply under purchase order, confirmation of order, specification or other document).
(b) These conditions apply to all the Company's sales and any variation to these conditions and any representation about the Goods or services shall have no effect unless expressly agreed in writing by a director of the Company. The Customer acknowledges that it has not relied on any statement, promise or representation made or given by or on behalf of the Company which is not set out in the Contract. Nothing in this condition shall exclude or limit the Company's liability for fraudulent misrepresentation.
(c) The Customer shall ensure that the terms of its order and any applicable specification are complete and accurate.

2. ACCEPTANCE

(a) All quotations are given subject to confirmation in writing by the Company upon receipt of the Customer's order and no contract shall be concluded until such confirmation is given or the Customer's order is otherwise accepted. Unless otherwise stated in writing by the Company each order when accepted constitutes a separate contract.
(b) The quality and description of the Goods shall be as set out in the Company's quotation or acknowledgement of order.
(c) All samples, drawings, descriptive matter, specifications and advertising issued by the Company and any descriptions or illustrations contained in the Company's catalogues or brochures are issued or published for the sole purpose of giving an approximate idea of the Goods described in them. They shall not form part of the Contract and this is not a sale by sample.

3. PRICES

(a) Prices quoted are exclusive of VAT (unless otherwise stated) and are those in force at the date of quotation. Unless otherwise stated in the quotation (if any) given by the Company they may be varied at any time before delivery of the Goods or before performance of the Services provided the prices may be varied after a contract has become binding only by reason of an increase in the cost of the Company of raw materials or labour or by reason of a fluctuation in exchange rates.
(b) If prices are varied after a contract has become binding the Company shall give the Customer written notice of such variation and on receipt of such notice the Customer may cancel his order. In a case where goods are to be delivered or services are to be supplied in instalments the Customer may cancel payments only for the undelivered goods or the unperformed part of the Services. If the order is not cancelled the Customer shall be bound to pay the increased or varied price in respect of the goods delivered or Services performed after such notice is received. To be effective cancellations must be in writing and must be received by the Company either within fourteen days of the date in which such notice was sent or at least twenty-eight days before delivery or performance is due, whichever is the sooner.
(c) Unless otherwise expressly agreed prices quoted are ex works and exclude all cost of packaging and delivery from the Company's premises but these may be charged as extras.
(d) Any variation or amendment requested by the Customer will only be valid and binding on the Company when subject to a change order relating to the order duly placed upon and accepted by the Company in writing and signed by a duly authorised representative, and subject to appropriate adjustment in price, delivery dates and other matters.
(e) Unless otherwise expressly agreed in the case of export sales, prices quoted also exclude all overseas taxes and tariffs and all costs of delivery which will be the responsibility of the Customer.

4. DELIVERY

(a) Delivery or periods are only best estimates and the Company is not liable for the consequences of any delay. Accordingly, time shall not be of the essence in making deliveries.
(b) Unless otherwise agreed in writing by the Company, delivery of the Goods shall take place at the Company's place of business.
(c) Any delivery or performance period begins on the date of the Company acceptance of the Customer's order or (if later) when the Company receives from the Customer any further information which it may require to proceed with the contract. The Customer agrees to supply such information promptly

General Information

Terms and Conditions of Sale

and to accept the Goods within the delivery or performance schedule or timetable specified in the contract and to give any necessary instructions for delivery or performance accordingly.

(d) Where the Company has agreed to deliver the Goods, the Customer shall in all cases other than export sales provide the labour necessary to the Company to unload and stack free of charge to the Company and shall ensure that the delivery vehicle is unloaded within a reasonable time and shall indemnify the Company against any loss or damage arising during unloading.

(e) If for any reason the Customer fails to accept delivery of any of the Goods when they are ready for delivery, or the Company is unable to deliver the Goods on time because the Customer has not provided appropriate instructions, documents, licences or authorisations:
(i) risk in the Goods shall pass to the Customer (including for loss or damage caused by the Company's negligence);
(ii) the Goods shall be deemed to have been delivered; and the Company may store the Goods until delivery, whereupon the Customer shall be liable for all related costs and expenses (including, without limitation, storage and insurance).

(f) If the Company delivers to the Customer a quantity of Goods of up to 5% more or less than the quantity accepted by the Company, the Customer shall not be entitled to object to or reject the Goods or any of them by reason of the surplus or shortfall and shall pay for such goods at the pro rata Contract rate.

(g) Any typographical, clerical error or other omission in documents issued by the Company shall be subject to correction by the Company without liability on the part of the Company.

(h) The Customer must examine the Goods immediately upon delivery and within 7 days thereafter notify the Company in writing of any defects, and return any allegedly defective part or parts of the Goods to the Company or as the Company shall direct at the Customer's expense within 18 days of delivery and pay to the Company the costs of any tests carried out to such part or parts (such cost to be certified by the Company) together with the costs of return thereof to the Company in the event that no liability attaches to the Company in respect of defects. Where damage occurs, not apparent on reasonable inspection, the Customer must notify the Company within 7 days within the discovery of any such damage. In default the Customer will be deemed to have examined and accepted the Goods.

(i) The Company shall not be liable for any loss or damage caused by or resulting from any variation (for whatever reason) in the specifications or technical data of any outside manufacturer or for any loss or damage arising out of curtailment or cessation of supply following such variation.

(j) The Company will repair or at its option replace free of charge any part of the Goods lost or damaged in transit provided that (if the Company appoints the carrier) the Company and the carrier are given written notice of such loss or damage within the time required by the carrier's Conditions of Carriage. Alternatively where delivery is made by the Company's own transport the Company should be given written notice within three days of the arrival of the Goods or in the case of non-delivery within fourteen days of despatch. This clause shall not apply to export sales.

(k) The quantity of any consignment of Goods as recorded by the Company on despatch from the Company's place of business shall be conclusive evidence of the quantity received by the Customer on delivery unless the Customer can provide conclusive evidence proving the contrary.

5. RISK / TITLE

(a) The Goods are at the risk of the Customer from the time of delivery.

(b) Ownership of the Goods shall not pass to the Customer until the Company has received in full (in cash or cleared funds) all sums due to it in respect of:
(i) the Goods; and
(ii) all other sums which are or which become due to the Company from the Customer on any account.

(c) Until ownership of the Goods has passed to the Customer, the Customer shall:
(i) hold the Goods on a fiduciary basis as the Company's bailee;
(ii) store the Goods (at no cost to the Company) separately from all other goods of the Customer or any third party in such a way that they remain readily identifiable as the Company's property;
(iii) not destroy, deface or obscure any identifying mark or packaging on or relating to the Goods; and
(iv) maintain the Goods in satisfactory condition and keep them insured on the Company's behalf for their full price against all risks to the reasonable satisfaction of the Company. On request the Customer shall produce the policy of insurance to the Company.

(d) The Customer may resell the Goods before ownership has passed to it solely on the following conditions:
(i) any sale shall be effected in the ordinary course of the customer's business at full market value; and
(ii) any such sale shall be a sale of the Company's property on the Customer's own behalf and the Customer shall deal as principal when making such a sale.

(e) The Customer's right to possession of the Goods shall terminate immediately if:
(i) the Customer has a bankruptcy order made against him or makes an arrangement or composition with his creditors, or otherwise takes the benefit of any statutory provision for the time being in force for the relief of insolvent debtors, or (being a body corporate) convenes a meeting of creditors (whether formal or informal), or enters into liquidation (whether voluntary or compulsory) except a solvent voluntary liquidation for the purpose only of reconstruction or amalgamation, or has a receiver and/or manager, administrator or administrative receiver appointed of its undertaking or any part thereof, or documents are filed with the court for the appointment of an administrator of the Customer or notice of intention to appoint an administrator is given by the Customer or its directors or by a qualifying floating charge holder (as defined in paragraph 14 of Schedule B1 to the Insolvency Act 1986), or a resolution is passed or a petition presented to any court for the winding-up of the Customer or for the granting of an administration order in respect of the Customer, or any proceedings are commenced relating to the insolvency or possible insolvency of the Customer; or
(ii) the Customer suffers or allows any execution, whether legal or equitable, to be levied on his/its property or obtained against him/it, or fails to observe or perform any of his/its obligations under the Contract or any other contract between the Company and the Customer, or is unable to pay its debts within the meaning of section 123 of the Insolvency Act 1986 or the Customer ceases to trade; or
(iii) the Customer encumbers or in any way charges any of the Goods.

(f) The Company shall be entitled to recover payment for the Goods not withstanding that ownership of any of the Goods has not passed from the Company.

(g) The Customer grants the Company, its agents and employees an irrevocable licence at any time to enter any premises where the Goods are or may be stored in order to inspect them, or, where the Customer's right to possession has terminated, to recover them.

(h) Where the Company is unable to determine whether any Goods are the goods in respect of which the Customer's right to possession has terminated, the Customer shall be deemed to have sold all goods of the kind sold by the Company to the Customer in the order in which they were invoiced to the Customer.

(i) On termination of the Contract, howsoever caused, the Company's (but not the Customer's) rights contained in this condition 5 shall remain in effect.

6. LAW

The validity construction and performance of any contract to which these conditions apply shall be governed by the law of England and any disputes shall be submitted to the English Courts.

General Information

Terms and Conditions of Sale

7. PAYMENT

(a) Subject to the establishment of an approved credit account, payment by the Customer is due within 30 (thirty) days of the date of the invoice.
(b) If the Customer fails to pay the Company by the due date the Company may either suspend all further deliveries or performance of Services until payment is made in full or cancel the order and subsequent ordered insofar as goods remain to be delivered or Services remain to be performed thereunder.
(c) The Company reserves the right to charge interest when payment has not been made on the due date at the rate (both before and after judgement) or two per cent above Bank Of Scotland base rate for the time being calculated on the outstanding balance from the due date for payment down to receipt by the Company of payment.
(d) Any sums paid by deposit, retainer or prepayment are not refundable in the event of a Customer cancelling an order. The Company reserves the right at any time and it's discretion to demand security for payment before continuing with or delivering any order.
(e) Payment of the price for the Goods is due in pounds sterling.
(f) No payment shall be deemed to have been received until the Company has received cleared funds.
(g) All payments payable to the Company under the Contract shall become due immediately on its termination despite any other provision.
(h) The Customer shall make all payments due under the Contract in full without any deduction whether by way of set-off, counterclaim, discount, abatement or otherwise unless the Customer has a valid court order requiring an amount equal to such deduction to be paid by the Company to the Customer.

8. GUARANTEE OF QUALITY

(a) The Company shall have the right, whether before or after the date of the order, to alter the specification of the Goods or any part thereof provided that such alterations shall not adversely affect the performance of the Goods.
(b) Where the Company is not the manufacturer of the Goods, the Company shall endeavour to transfer to the Customer the benefit of any warranty or guarantee given to the Company.
(c) The Company warrants that (subject to the other provisions of these conditions) on delivery, and for a period of 36 months from the date of delivery, the Goods shall be of satisfactory quality within the meaning of the Sale of Goods Act 1979.
(d) The Company shall not be liable for a breach of the warranty in condition 8 (c) unless the Company is given a reasonable opportunity after receiving the notice of examining such Goods and the Customer (if asked to do so by the Company) returns such Goods to the Company's place of business at the customers cost for the examination to take place there.
(e) The Company shall not be liable for a breach of the warranty in condition 8 (c) if:
  (i) the Customer makes any further use of such Goods after giving such notice; or
  (ii) the defect arises because the Customer failed to follow the Company's oral or written instructions as to the storage, installation, commissioning, use or maintenance of the Goods or (if there are none) good trade practice; or
  (iii) the Customer alters or repairs such Goods without the written consent of the Company.
(f) Subject to condition 8 (d) and condition 8 (e), if any of the Goods do not conform with the warranty in condition 8 (c) the Company shall at its option repair or replace such Goods (or the defective part) or refund the price of such Goods at the pro rata Contract rate provided that, if the Company so requests, the Customer shall, at the Company's expense, return the Goods or the part of such Goods which is defective to the Company.
(g) If the Company complies with condition 8 (f) it shall have no further liability for a breach of the warranty in condition 8(c) in respect of such Goods.

9. USE OF THE GOODS

Where the Goods are plant for use or operation at work (or are components for such plant) it is the Customer's responsibility to ensure that proper standards of safety are maintained in using the Goods and (without limitations) to pass on all instructions regarding such use to personnel and to arrange for their training in such use where appropriate. This obligation shall extend to taking all reasonable steps to ensure compliance with the Health and Safety at Work etc. Act 1974 in the event of sale on or other supply by the Customer.

10. INTELLECTUAL PROPERTY

(a) The Company will indemnify the Customer against any claim for infringement of Letters Patent Registered Design Trade Mark or Copyright ("Intellectual Property Rights") by the use or sale of any of the Goods against all costs and damages which the Customer may incur in any action for such infringement or for which the Customer may become liable in any such action. Provided always that this indemnity shall not apply to any infringement which is due to the Company having followed any instructions furnished or given by the Customer or to the use of such Goods in a manner or for a purpose or in a foreign country not specified by or disclosed to the Company or to any infringement which is due to the use of the Goods in association or combination with any other goods not supplied by the Company. And provided also that this indemnity is conditional upon the Customer giving to the Company notice within 7 days in writing of any claim being made or action threatened or brought against the Customer and on the Customer permitting the Company at the Company's own expense to conduct any litigation that may ensue and all negotiations of the claim. The Customer warrants that any instruction furnished or given by it shall not be such as will cause the Company to infringe any intellectual Property Rights.
(b) The Customer shall indemnify the Company for any loss damage expense or liability in any suit or proceeding based upon any claim for the infringement of Intellectual Property Rights brought against the Company resulting from the Company's compliance with the Customer's designs or specifications and for any such infringement involving any marking or branding applied by the Company at the request of the Customer.

11. LIABILITY

(a) Subject to conditions, the following provisions set out the entire financial liability of the Company (including any liability for the acts or omissions of its employees, agents and sub-contractors) to the Customer in respect of:
  (i) any breach of these conditions;
  (ii) any use made or resale by the Customer of any of the Goods, or of any product incorporating any of the Goods; and
  (iii) any representation, statement or tortious act or omission including negligence arising under or in connection with the Contract.
(b) All warranties, conditions and other terms implied by statute or common law (save for the conditions implied by section 12 of the Sale of Goods Act 1979) are, to the fullest extent permitted by law, excluded from the Contract.
(c) Nothing in these conditions excludes or limits the liability of the Company:
  (i) for death or personal injury caused by the Company's negligence; or
  (ii) for any matter which it would be illegal for the Company to exclude or attempt to exclude its liability; or
  (iii) for fraud or fraudulent misrepresentation.
(d) Subject to conditions 9(b) and 9(c)
  (i) the Company's total liability in contract, tort (including negligence or breach of statutory duty), misrepresentation, restitution or otherwise, arising in connection with the performance or contemplated performance of the Contract shall be limited to the Contract price; and
  (ii) the Company shall not be liable to the Customer for loss of profit, loss of business, or depletion of goodwill in each case whether direct, indirect or consequential, or any claims for consequential compensation whatsoever (howsoever caused) which arise out of or in connection with the Contract.

General Information

Terms and Conditions of Sale

12. FORCE MAJEURE

(a) The Company shall not be liable to the Customer to the extend that fulfilment of its obligations to the Customer has been prevented hindered or delayed by force majeure as herein defined.
(b) For the purpose of this Condition force majeure shall mean any circumstance beyond the control of the Company and shall include (without limitation):
(i) Riot civil commotions war rebellion national or international emergency strikes lockouts or other labour disputes.
(ii) Destruction or damage due to natural cause floods fires explosions or breakdown of machinery.
(iii) Any order of a local national or international authority.
(iv) Shortage of labour equipment materials or supplies.
(v) Transportation embargoes of failure or delays in transport.

13. REGULATIONS

The Customer warrants that it has complied with every applicable lawful requirement or instruction and (without Limitation) that it has obtained every necessary licence permit or authority that may be required in connection with the supply of Goods and Services to be carried out hereunder.

14. DEFAULT INSOLVENCY

If the Customer shall commit a breach of any of its obligations to the Company under this or any other contract or if any distress or execution shall be levied upon the Customer's property or assets or if the Customer shall make or offer any arrangement or composition with creditors or commit any act of bankruptcy or if any petition or receiving order in bankruptcy shall be presented or made against him or (being a limited company) any resolution or petition for winding up shall be passed or presented (other than for the purpose of amalgamation or reconstruction) or if a receiver or administrator of its undertaking property or assets or any part thereof shall be appointed then the Company may without notice:
(a) suspend or determine the contract or any unfulfilled part thereof: and
(b) stop any goods in transit; and
(c) recover any Goods from the Customer's premises for which payment has not been made in full without prejudice to any other right or remedy which the Company may lawfully enforce or exercise. Any cost incurred by the Company during the process of recovering Goods from the Customer's premises for which payment has not been made in full, would be regarded as the debt of the Customer to the Company.

15. GENERAL

(a) The Customer shall not assign its interest in the Agreement without the written consent of the Company.
(b) Each right or remedy of the Company under the Contract is without prejudice to any other right or remedy of the Company whether under the Contract or not.
(c) If any provision of the Contract is found by any court, tribunal or administrative body of competent jurisdiction to be wholly or partly illegal, invalid, void, voidable, unenforceable or unreasonable it shall to the extent of such illegality, invalidity, voidness, voidability, unenforceability or unreasonableness be deemed severable and the remaining provisions of the Contract and the remainder of such provision shall continue in full force and effect.
(d) Failure or delay by the Company in enforcing or partially enforcing any provision of the Contract shall not be construed as a waiver of any of its rights under the Contract.
(e) Any waiver by the Company of any breach of, or any default under, any provision of the Contract by the Customer shall not be deemed a waiver of any subsequent breach or default and shall in no way affect the other terms of the Contract.
(f) The parties to the Contract do not intend that any term of the Contract shall be enforceable by virtue of the Contracts (Rights of Third Parties) Act 1999 by any person that is not a party to it.

16. SONNET RF-SKK HIRE AGREEMENT

How to Order

To be able to hire the kit, an order will be needed to be placed to cover the full value. An invoice will be issued for the full amount , and credit will be raised when the kit is returned minus the hire charge and any applicable cost. Hire of the kit is per 6 working days.

Shipping

The hire period is calculated from the day after despatch from Sontay. This should be when the hirer receives the kit. The kit will be shipped out using our courier service to the hirers office address. We cannot ship to third party site addresses.

The kit should be returned to our Head Office address in Edenbridge and must arrive the day after the 6th hire day to count as one hire period. If the kit is received after this day another hire charge will be applied. The kit remains responsibility of the hirers until it is received back by Sontay. Any damages occurring in the return shipment will be charged to the hirer.

Condition of Return

We expect the kit to be returned in the same condition as it was hired. Loss or damage to the equipment will be identified when tested upon its return and any remedial work is chargeable to the hirers account. Acceptance of any such repairs are a condition of the equipment hire.

Charges for remedial work are:
RF-SSK loss or non-return – £1415.94
SSK case – major damage making the case ineffective – £85
RF-RXSS Receiver replacement – £465
RF-HHT Hand Held Tool replacement – £505
RF-PS-500 Router replacement – £97
RF-TS-900 End Device replacement – £88.87
Charger replacement – £100
USB Lead replacement – £5

Progressive Purchase

Each hire occasion per account contributes to outright ownership of a RF-SSK Site Survey Kit. For each hire occurrence a credit will be added up to the 6th hire period. On the 6th hire period we will despatch a new RF-SSK which will not need to be returned and will become the property of the account. The warranty period for the kit will begin form the date that the new kit is despatched

PRINTED IN ENGLAND

HEAD OFFICE

Sontay Limited · Four Elms Road · Edenbridge · Kent · TN8 6AB · England

UK Telephone	International Telephone	Email
01732 861200	+44 (0)1732 861225	sales@sontay.com
Fax 01732 861201	Fax +44 (0)1732 861226	Website www.sontay.com

Sontay Account Application Form

Please complete this form, scan and email to Sontay or photocopy and fax.

Email: sales@sontay.com · Fax: UK +44 (0)1732 861201 · International: +44 1732 861226

What type of business are you? *(Please tick the box which best describes your company)*			
☐ Distributor	☐ Original Equipment Manufacturer	☐ Panel Manufacturer	☐ End user
☐ Controls Manufacturer	☐ Contractor	☐ Systems Integrator	Other:
How did you find out about us? *(Please select the company type which applies to you)*			
☐ Website	☐ Internet Search	☐ Advertisements	☐ Word of Mouth
☐ Sales Visit	☐ Telesales	☐ Referal	Other:
Please select the company type which applies to you.			
☐ Limited Company	☐ Sole Trader	☐ Partnership	☐ Public Limited Company
Non Limited Companies: If you have been at your current address for less than three years please provide previous.			
Partnership's: Must provide trading names, all partners full names, addresses, date of birth and signatures. *(Please provide this information on a separate sheet)*			

Full Company Name			
Company Registration No.		**VAT No.** *(if applicable)*	
Registered Office Address			
Post Code		**Country**	
Telephone No.		**Fax No.**	
Main Contact Name *(Mr / Mrs / Miss / Other)*			
Position		**Email**	
Telephone No.		**Fax No.**	
Invoice Address *(if different from above)*			
Post Code		**Country**	
Telephone No.		**Fax No.**	
Preferred Invoice Currency	☐ GBP ☐ Euro ☐ US Dollar		
Bank Name			
Sort Code		**Account No.**	
Account Name			
Swift Code		**IBAN Code**	

Sontay Limited will make a search with a credit reference agency, who will keep a record of that search and may share that information with other business. Sontay Limited may also make enquiries about the principle directors with a credit reference agency. Sontay Limited reserve the right to change payment profile as it sees fit without explanation. Sontay Limited may also use your details to let you know about other products and services that they think would be of interest to you. By signing this agreement I/we agree with Sontay's Terms & Conditions of Sale (please refer to pages 80-85)

Acceptance Signature	Print Name
Date	Authorised Signatory Position in Company

Sontay Return Procedure

Please follow the following guidelines to return products.

1. All items returned to us must have a valid returns form with a returns number, for example RMA xxx. The returns form and number are available at www.sontay.com/returns or.
2. If you believe your product to be faulty, please order parts for replacement on a separate order whilst the original parts are being returned and investigated. If the goods are found to be faulty, a credit will be raised to cover the cost of the original goods and carriage.
3. Goods ordered in error can be returned within 60 days of purchase for re-stocking in a re-saleable condition. There will be a 25% restocking charge deducted for the credit issued. Special order products or products labelled with customer logos cannot be returned for re-stocking.

Returns Form

Returns No. *(must be added)*	
Company Name	
Account No.	
Contact Name	
Contact Number	

Reason for Return:	
	☐ Warranty ☐ Restocking
Product Part Code	
Description of Fault:	

Have replaced goods been ordered?	☐ Yes ☐ No

Product Name Listing

Product Name Listing

Notes