Air Ambient

ENISCOPE AIR AMBIENT

TRANSFORM AIRCON ENERGY PERFORMANCE WITH AUTOMATED INTELLIGENCE & REMOTE CONTROL

Overview

Eniscope Air Ambient the new generation of HVAC control from Best.Energy. It's a plug-and-play system, designed to seamlessly integrate with any thermistor-input air conditioning unit. It offers the chance to transform energy management in one of the most wasteful areas of any commercial building.

The IoT device delivers on and off switching capability using a set of logic-based controls; a set of rules which, if satisfied, trigger the on / off function. That can be a set of ambient temperature parameters, or a schedule based on operating hours.

This product works hand in hand with the Air Sense multi-functional environmental sensor. No longer do your AirCon units need to take their temperature readings inefficiently from ceiling level, now they can operate on a live feed from occupant level. After all, it's the occupants that matter! Inputs like temperature, humidity, time of day, occupancy and various others can all be used to optimise HVAC perfectly.

The Specifics

Up to 3 HVAC systems can be operated from a single Eniscope Air Ambient. One on-board temperature sensor and inputs for 2 local temperature probes supported when other temperature sources are not available. Powered from 12V to 30V AC/DC input - allowing power to be derived from either the HVAC directly (most support 24VAC output) or low voltage lighting or a PSU - locally sourced or Best. Energy provided.

As with all Eniscope Air products, this device does not require a WiFi connection.

Core Functionality

AirCon Cloud Scheduling

AirCon Temperature Control

AirCon Optimisation
(Occupancy, Humidity etc.)

Key Features

Supply Voltage	12 to 30V AC/DC – 80mA. 1 amp mains converter module 100-277 VAC.		Weight	0.250Kg
Evaporator temperature thermistor types	5K ohm @ 25°C 10K ohm @ 25°C 20K ohm @ 25°C 50K ohm @ 25°C		Safety	EN 60730-1:2016
			LoRa Wireless Bands	Band 1 - 16 Channels, 865MHz – 870MHz Band 2 - 16 Channels, 915MHz – 925MHz
Air Ambient room temperature thermistor types	1 Wire DS18 digital			
On board temperature monitor	PCB mounted			
External Power Supply Fuse	Internal 100mA auto reset type			
Switched Inputs	2 x Volt free, cloud configurable			
Enclosure Type	Polycarbonate			
Enclosure Rating	IP20			
Operating Temperature	-20 - +60°			
Altitude	1000M			
Dimensions	H106, W123, D38mm Height excludes cable glands			

"Eniscope Air Ambient is a truly transformative product for an area of energy wastage that is prevalent in so many businesses we work with – air conditioning. Hugely cost-effective and easy to install – this should be a key part of any multi-site retail energy solution."

Troy Wrigley, CEO @ Best.Energy

DISCOVER THE FULL RANGE

AIR AMBIENT	AIR DIGITAL	AIR CONNECT	AIR SWITCH	AIR SENSE

No WiFi connection Required.
With a dependable LoRa network, this device limits the need for unreliable and costly WiFi networking.

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Air Digital

ENISCOPE AIR DIGITAL

INTRODUCE THE POWER OF IOT SMART BUILDING TECHNOLOGY TO YOUR OPERATION.

Overview

Eniscope Air Digital is a versatile, multi-functional IoT device capable of delivering a raft of smart building functionality to a huge variety of premises. It offers two key benefits via its control technology - energy saving and operational.

On the energy saving side, Air Digital delivers binary control of key assets by controlling the contactors that facilitate power to that asset. Working in line with a schedule set in the Cloud and delivered by the central Eniscope hub, Air Digital switches your devices on and off for optimum efficiency.

On the operational side, Air Digital's switching capabilities extend to alarms and indicators - allowing you to create a set of smart alarms around your building; alerting staff to chiller doors left ajar, low soap levels in car washes, low oil levels in heating systems and so on. The possibilities are endless.

The Specifics

Supporting 3 output relays with 600V isolation, Air Digital can independently control separate devices at 250V 5A for resistive loads. Higher, inductive or multi-phase loads are switched using contactors under the control of the Eniscope Air Digital. Fryers are a huge energy drain in a restaurant. Using Air Digital, we can schedule those fryers on and off in line with the needs of the restaurant - avoiding out of hours consumption and over-provision. The result is big energy savings.

As with all Eniscope Air products, this device does not require a WiFi connection.

Core Functionality

Asset Cloud Scheduling (3-Phase)

Low Fill-Level Detection

Operational Alarms

Water & Gas Meter Consumption Tracking

Key features

Supply Voltage	12 to 30V AC/DC – 1 amp continuous. 300mA mains converter module 100-277 VAC.	Dimensions	H106, W123, D38mm Height excludes cable glands
Fuse Rating	Internal 500mA auto reset type	Weight	0.250Kg
Output Relay Ratings	5 amps Resistive @ 250 VAC 1 amp Inductive @ 250 VAC	Safety	EN 60730-1:2016
Output Terminal Ratings	Output terminal Ratings	LoRa Wireless Bands	Band 1 - 16 Channels, 865MHz – 870MHz Band 2 - 16 Channels, 915MHz – 925MHz
Switch Circuit Current Rating	20 amps Resistive		
External Power Supply	24 VDC, 50mA		
External Power Supply Fuse	Internal 100mA auto reset type		
Digital Inputs x 4	Volt Free or Powered Inputs. Maximum external device supply current 50mA, 24 VDC		
Enclosure Type	Polycarbonate		
Enclosure Rating	IP20		
Operating Temperature	-20 - +60°		
Altitude	1000M		

"The Eniscope Air Digital device is a key component of our smart building solution. Its impact on energy saving is huge, with the ability to schedule and optimise some of the most energy intensive devices on-site. But the IoT control possibilities are truly exciting."

Troy Wrigley, CEO @ Best.Energy

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ENISCOPE AIR SENSE

MULTI-FUNCTIONAL, SURFACE-MOUNTED IOT SENSOR.

Overview

Eniscope Air Sense is a versatile sensor, offered as part of our Eniscope Air suite of products.

Battery or mains powered and mounted on a wall or ceiling, the Air Sense product has a raft of sensory features - including occupancy, light levels, temperature, and humidity.

Application

The Air Sense is perfect when used in conjunction with other energy saving technologies - like air conditioning scheduling and control technologies - to help optimise their performance based on real-time data from the implementation area.

But it also stands alone as a real-time environmental sensor with huge value potential - allowing operators to optimise working conditions and air quality for staff, and the comfort of their customers.

The Specifics

The Air Sense product offers autonomous update rates of 1 to 60 minutes depending on the operator's preference, and is powered either by lithium batteries for convenient replacement or straight from the mains. Stylishly designed and easily mounted without the need for an electrician, it can operate effectively in temperatures ranging from -20°C to 60°C.

This device uses RF communication, utilising the Eniscope Air Connect to provide connectivity to the master Eniscope system, without the need for a WiFi connection.

Core Functionality

Temperature Sensing

Humidity Sensing

Occupancy Sensing

Light Sensing

Key Features

Supply Voltage (AD101/1)	100 – 277 VAC -10%/+6% (internally fused) or, 5 to 30V AC/DC - 0.1 amps		Temperature Range	-20°C to +60°C
Fuse Rating (AD101/1)	100 – 277 VAC - 15mm 1 amp, Littlefuse 209 series		Temperature Accuracy	+/- 0.2°C
Power Requirements (AD101/1)	Less than 0.1 amps		Light Levels	16 bit A-D, Range scalable in Analytics platform-
Battery Specifications (AD101/2)	Cell Size R6-AA Lithium-thionyl chloride Li-SCOI2 Voltage 3.6V Recommended battery type SAFT 14500		Powered Analogue Inputs x 4	Settable 0-10V, 0-1V, 4-20mA Maximum external device supply current 5mA, 3.3V
Battery quantity	Maximum of 5 cells		Pulse Input x 1	2 Wire Input Volt Free 1.5mA Pulse Current Input frequency scalable in Analytics
Battery life	2 cells, 5-minute update rate = 10 years 5 cells, 1-minute update rate = 5 years		Enclosure type	Polycarbonate
Relative Humidity	0-100% RH		Enclosure rating	IP20
Relative Humidity Accuracy	+/- 2%		Operating temperature	-20 - +60°
PIR	Maximum mounting height 7 Meters Detection angle 46° Maximum detection range 12 meters Yellow PIR activation LED		Altitude	1000M
			Dimensions	Diameter 115mm, Height 65mm
			Weight	0.240Kg
			Safety	EN 60730-1:2016
			LoRa Wireless Bands	Band 1 - 16 Channels, 865MHz – 870MHz Band 2 - 16 Channels, 915MHz – 925MHz

"The Eniscope Air Sense provides valuable context to energy saving devices. Take air conditioning for example. The temperature data from Air Sense, taken at occupant level – not ceiling level – helps to optimise aircon for the real operating environment."

Troy Wrigley, CEO @ Best.Energy

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AIR AMBIENT   **AIR DIGITAL**   **AIR CONNECT**   **AIR SWITCH**   **AIR SENSE**

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ENISCOPE AIR CONNECT

YOUR PATHWAY TO A TRULY SMART BUILDING.

Overview

Occupying an important position at the very centre of the Eniscope Air suite of products, the Eniscope Air Connect is a radio transceiver that enables all 'Air' devices to communicate with the master Eniscope system.

Eniscope Air Connect introduces the conditions required for a truly IoT connected building to exist. Providing the LoRa network that all Eniscope Air products rely on, this small but powerful device is a true 'facilitator' for effective energy saving projects.

The device is backwards compatible, allowing it to work with almost all incumbent Eniscope devices anywhere in the world and has been engineered with 'high availability' top of mind, ensuring your sites can function seamlessly at all times.

What does 'high availability' mean for you?

Air Connect enables the network that all Air devices work on, monitoring and controlling your key assets to provide both energy saving and smart building improvements. But what happens if there's a network outage?

The schedule and configuration of the system is stored in non-volatile memory on the central Eniscope Hybrid device, connection to the Cloud is only required for updates to these. So once the initial configuration is done, the system can work perfectly without internet access!

And if there is a fault - the system defaults to an 'output on' mode, ensuring your assets aren't made unavailable in the unlikely event of a system fault.

Key Features

Supply Voltage	5V DC Via Eniscope USB
LoRa Wireless Bands	Band 1 - 16 Channels, 865MHz – 870MHz Band 2 - 16 Channels, 915MHz – 925MHz
Wireless Transmission Power	0.049 Watts
Wireless Range	Line of sight 1000M Indoors 100M*
FCC Wireless Approvals	FCC Part 15C FCC Identifier SLW-ERALORA Equipment Class Digital Transmission Systems
CE Wireless Approvals	Radio Equipment Directive 2014/53/EU Product Identification eRA-LORA
Test Standards Radio	EN300 220-1 V2.4.1:2012, EN300 220-2 V2.4.1:2012
Test Standards LVD	EN60950-1:2006+A11:2009+ A1:2010+A12:2011+A2:2013
Test Standards EMC	EN301 489-1 V1.9.2:2011, EN301 489-3 V1.6.1:2013
Test Standards Health	EN62479:2010

Air Connect Approvals Low Voltage Directive	77/23/EEC
EMC Directive	EN60730-1:2016, EN5022: 2010, EN61000-4-2:2009, EN61000-4-3:2006+A2, EN61000-4-4:2012, EN61000-4-5:2014, EN61000-4-6:2014, EN61000-4-11:2004, EN 6100-4-8: 2010, EN6100-3-2: 2019, EN6100-3-3: 2013, EN300 220-2 V3.2.1, 4.3.1, 4.2.2
Enclosure type	Polycarbonate
Enclosure rating	IP20
Operating temperature 1000M	-20 - +60° Altitude
Dimensions (Including Standard Antenna)	H 118, W 100, D 12mm
Weight	0.05Kg
Safety	EN 60730-1:2016

"The Eniscope Air Connect device opens up a world of possibilities for us and is very much the facilitator of our other products in this range. It truly puts the 'Air' in Eniscope Air!"

Troy Wrigley, CEO @ Best.Energy

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ENISCOPE AIR SWITCH

DEVICE LEVEL MONITORING & INTELLIGENT CONTROL

Overview

Eniscope Air Switch is an RF connected and controlled device offered as part of the 'Eniscope Air' suite of wireless energy saving products. It measures the power consumed by an attached device and allows the device to be turned on or off remotely.

This can be housed in various ways depending on its application and includes a soft override switch. This solution has a variety of real-world applications, but has been designed particularly with plug-loads, like food warmers, chip dumps and bottle fridges, in mind.

Unique Features

Unique features include; true power measurement, higher switching capacity than competitive devices, tamper and weather-proof construction and Eniscope Air compatibility for long-range control and scheduling.

Eniscope Air Switch has been built as an extension to the functionality provided on thousands of sites worldwide by Eniscope - the multi-channel, real-time energy monitoring hub. Simply plug an 'Air Connect' into an incumbent Eniscope to enable all the functionality required.

Example Applications

• Control a food warming cabinet to eradicate out-of-hours consumption

• Monitor power consumption of a drinks machine to flag maintenance issues

• Switch an asset on or off, depending on whether a room is occupied, humid, warm or well lit.

And many more!

Core Functionality

Asset-Level Energy Monitoring

Asset Cloud Scheduling (1-Phase)

Asset Performance Improvements
(In conjunction with Air Sense environmental data)

Key Features

Model	AD104/1	Operating temperature	-30 - +40°
Supply voltage	100 – 277 VAC -10%/+6% (internally fused)	Temperature input	1 wire digital DS18 type -10°C to +85°C +/-0.5°C (using best.energy sensor probe) -55°C to +125°C +/-2°C (using Best.Energy sensor probe)
Fuse rating	15mm 1 amp Littlefuse 209 series		
Power requirements	Less than 10 watts	Altitude	1000M – De-rate 1% per additional 100M
Switch circuit current rating	20 amps resistive	Dimensions	H120, W200, D100mm
Switch circuit motor rating (inductive)	2.5kW @ 277VAC, | 2.2kW @ 220VAC, 1.1kW @ 120VAC	Weight	1.3Kg
		Safety	CE to EN 60730-1:2016
Switching Element	Triac	LoRa Wireless Bands	Band 1 - 16 Channels, 865MHz – 870MHz Band 2 - 16 Channels, 915MHz – 925MHz
Inductive rating starts per hour	20 evenly placed starts per hour @ full rating		
Internal switch circuit fuse rating	10x38mm Body – 20A Ferraz A070GRB20T13		
LED indication	Power On, LoRa link		
Local override	Volt free contacts for On & Off		
PIR input	PIR input and DC power supply 5V, 9V, 12V or 24V rated at 1 amp		
Enclosure type	Polycarbonate		
Enclosure rating	IP65		

"Remote, scheduled energy management can be incredibly effective - turning a 'dumb' device like a food warmer into something more responsive to the building's real needs. The Eniscope Air Switch is a hugely cost-effective product for introducing that sort of automated intelligence."

Troy Wrigley, CEO @ Best.Energy

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