AKCP

Est. USA 1981

PRODUCT CATALOG

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About AKCP

AKCP established in the USA in 1981, created the market for networked temperature, environmental and power monitoring solutions. Today with over 100 employees and 180,000 installations, AKCP is the world's oldest and largest manufacturer of SNMP enabled networked sensors. We count amongst our customers Fortune 500 companies, banks, goverment agencies and the military

Directory

Our Customers

Our customers are diverse and include fortune 500 companies, government agencies, banks and military. Below are just some of our 180,000 installations worldwide.

Consultancy, Law & Business Services	Government Sector	Education and Research	Aerospace and Defence Industry
ANPI	Austrian Institute of Technology	Austrian Research Centers	BAE Systems
Astron	Chilean Navy	Chapman University, California	Canadian Space Agency
BNN (Baker Newman Noyes LLC)	City of Ahlen, Germany	College of Biblical Studies	CEA Technologies
Booz Allan Hamilton	City of Tulare, CA	Grenoble Universités, France	Concurrent Technologies Corporation
Claria Corporation	Duesseldorf Courts, Germany	MIT Lincoln Laboratory	DeTect
Computer Sciences Corporation	Gemeente Heerlen, Netherlands	Pace University, United States	EADS
Cozen O'Connor	Landkreis Helmstedt	Stanford University	Ensco, Inc.
Dechert LLP	London Fire Brigade	Stanley County Schools	General Dynamics
Deloitte & Touche	Royal Danish Air Force	Stanley County Schools	ITT Corporation
DisclosureNet Inc.	United States Air Force	Syngenta	Lockhead Martin
Haynsworth Sinkler Boyd, P.A.	United States Army	University of Oklahoma	Lufthansa Systems
IPC Systems, Inc.	USDA – Rural Development	University of Tromsø, Norway	Lufthansa Technik
IT Operations & Consulting	US National Park Service	US Naval Post Graduate School	MITRE
Electronic Industry	Natural Resources Canada	University of Lorraine, France	NASA
AV-Professional	Landkreis Helmstedt	The Jackson Laboratory	NMG Aerospace
Bose Corporation	London Fire Brigade	The Juilliard School, US	Northrop Grumman
Cisco Systems	**IT & Telecoms Industry**	The Rockefeller University, US	Raytheon Company
DELL	123.net	The University of Göttingen	Thales Group
EFIRACK, France	AAPT	**Energy Industry**	The Boeing Company
eSilicon Corporation	Adobe Systems	Agder Energi	Safran – Techspace Aero
Hewlett-Packard	Airstar	Anglo Coal, Australia	**Automotive Industry**
IBM	Blackboard	BEWAG	Autoliv
Intel	Bay Area Internet Solutions	British Petroleum (BP p.l.c)	Bleisthal GmbH & Co. KG
MABE, Ecuador	Bell Canada	CCG	Daimler AG
Motorola	CIS Computer & Internet Services	Cegedel S.A.	Faurecia

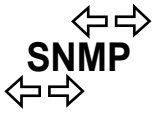
Network Enabled Base Units

All base units are fully SNMP compliant, have an embedded web interface, and are compatible with a wide range of AKCP's intelligent sensors. Used in data centers, remote sites and rugged or harsh environments you can rely on us.

Ethernet

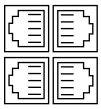
10/100 Ethernet connection is provided on every base unit, making it a network enabled, addressable device. Access sensor data over the base units own embedded web interface.

SNMP



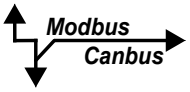
10/100 Ethernet connection is provided on every base unit, making it a network enabled, addressable device. Access sensor data over the base units own embedded web interface.

Sensors



Sensor ports are compatible with a wide range of AKCP's intelligent sensors. Auto sense technology self configures the user itnerface to display the connected sensor parameters and settings.

RS485



sensorProbe+, securityProbe+ and securityProbe base units come equipped with a Modbus RS485 port. Use your AKCP device as a Modbus to SNMP gateway. Base units can function as Modbus Master or Slave, and support Modbus RS485 or Modbus TCP/IP.

Wireless

LoRa™ Wireless technology is deployed on the AKCP L-DCIM and LoRa™sensors to provide long range, low power, wireless sensor communication. AKCP have developed additions to the standard LoRa™ protocols for firmware updates over the air, queing and aknowledgment or sensor data and immediate broadcast on threshold violation.

sensorProbe Series

Simple, Robust and Reliable

The sensorProbe product range is our entry level base unit. With 2, 4 or 8 intelligent sensor ports, and optional 20 or 60 dry contact inputs it can satisfy most basic monitoring requirements. IP enabled, full SNMP V1 compliance, a built in web interface and alerts via E-Mail and SNMP traps.

Standard units are powered by a 5VDC power supply, but optional PoE, and other DC Voltage ranges* can be used to satisfy your requirements.

*Refer to our power supply options in section 3.2

sensorProbe Base Units

	Name	Code	Description
	**sensorProbe2**	**SP2**	2 port sensor monitoring device
	**sensorProbe4**	**SP4**	Simple 4 port sensor monitoring device
	**sensorProbe8**	**SP8**	8 port sensor monitoring device
	**sensorProbe8-X20**	**SP8-X20**	8 port sensor monitoring device with 20x dry contact inputs
	**sensorProbe8-X60**	**SP8-X60**	8 port sensor monitoring device with 60x dry contact inputs

sensorProbe2 (SP2)

2 port sensor monitoring device

Simple, Accurate and Rugged, sensorProbe2 is a low cost SNMP enabled and Web-Based Environmental Monitoring Device. Based on years of Industry experience it's ready to run right out of the box, simply assign the IP address and connect to the embedded web server.

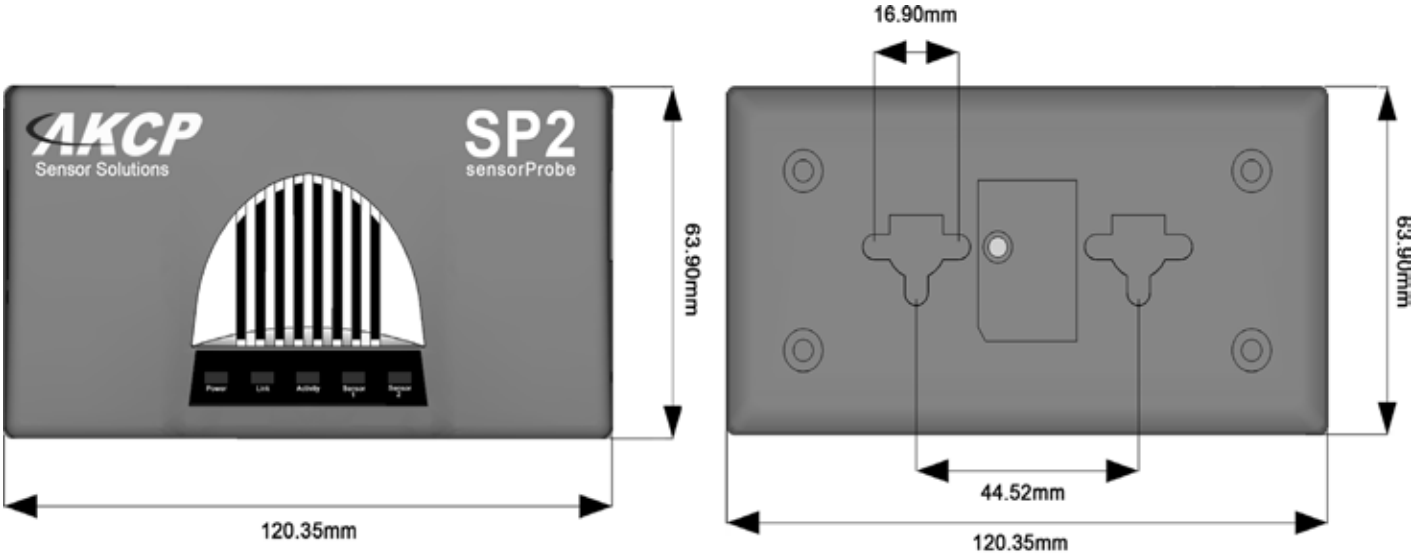
Temperature and Humidity Monitoring

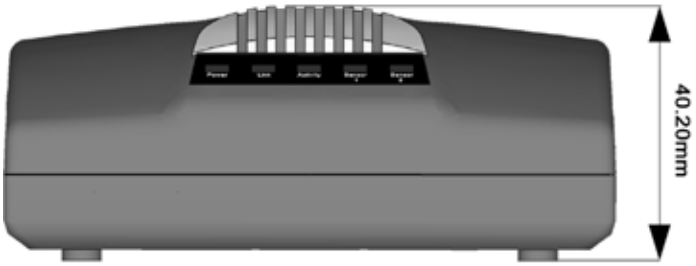
Use one of the SP2's sensor ports to connect our dual temperature and humidity sensor. This gives 2 sensors on a single sensor port, leaving one spare for additional sensors, such as a spot water sensor or airflow.

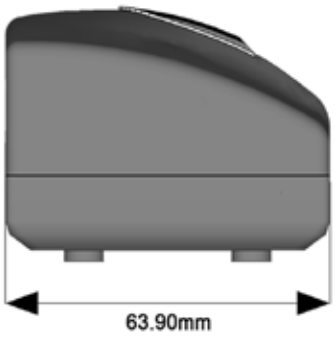
Technical Specifications

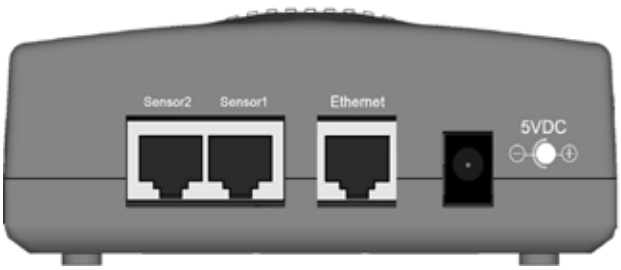
Dimensions	Size 4.5" x 2.5" x 1.25" Weight 0.242 pounds
Network Interface	Standard 100MB Full Duplex Ethernet RJ-45 Port
Mounting	0u rack-mount, or wall hanging
Power Requirements	Voltage 7.5 - 9 V / >= 1.2 Amp
Status Indication	LED indication for Power LED for Network Connectivity LED for sensor online and Threshold status
Outputs	Configurable output signals (0VDC/5VDC) on any of the 2 RJ-45 sensor ports
Power Consumption	Typical 1.125 Watt, 0.15A
Operating Environment	Temp : Min. -35°C - Max.80°C Humidity : Min. 20% - Max. 80% (Non-Condensing)
Components	Manufactured using highly integrated, low power surface mount technology to ensure long term reliability.
Inputs	2 RJ-45 ports for connecting AKCP sensors Up to 10 dry contact inputs
PoE - Power Over Ethernet	SP2 PoE is IEEE 802.3af compliant

SP2 Technical Drawing









sensorProbe4 (SP4)

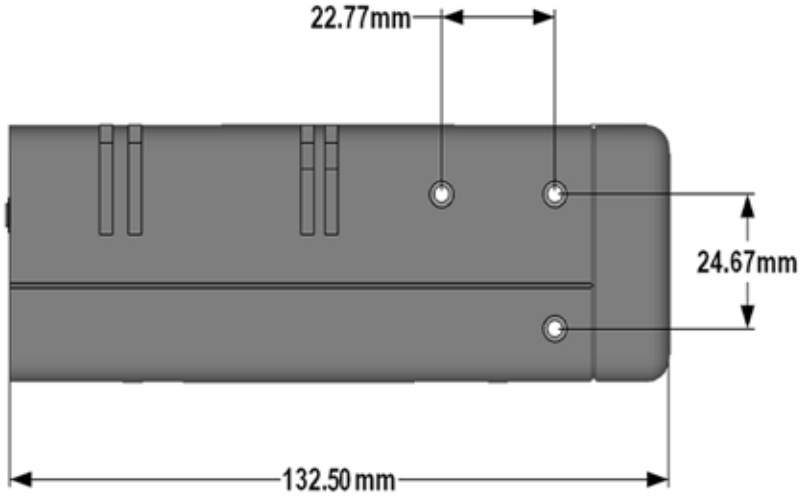
4 Port Sensor Monitoring Device

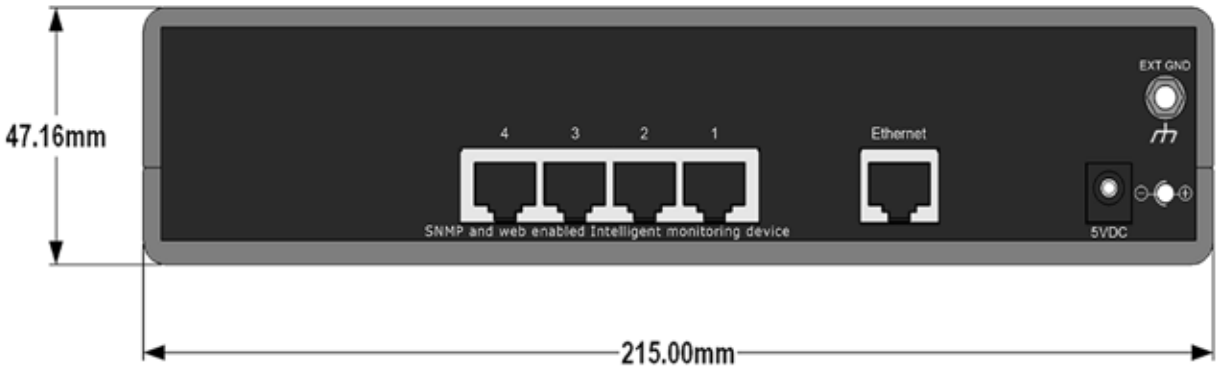
An intelligent monitoring device, the sensorProbe4 has an embedded, web interface, and full Email and SNMP functionality. Ready to run right out of the box. Simply assign the IP address and connect to the embedded web server. Compatible with a wide range of intelligent sensors.

Technical Specifications

Dimension	Size 8.5" x 2.5" x 1.80" 1U Rack Mount Standard Weight 0.242 pounds
Network Interface	Standard 10 Base-T Ethernet RJ-45
Mounting	1U Rack mount bracket included
Power Requirements	Voltage 7.5 ~ 9 v Current>= 1.2 Amp
Status Indication	LED indication for Power LED for Network Connectivity LED for sensor online and Threshold status
Output	Configurable output signals (0VDC/5VDC) on any of the 4 RJ-45 sensor ports
Inputs	4x RJ-45 ports for connecting AKCP sensors
Operating Environment	Temp : Min. -35°C - Max. +55°C Humidity : Min. 20% - Max. 80% (Non-Condensing)
Components	Manufactured using highly integrated, low power surface mount technology to ensure long term reliability.
Power Consumption	Typical 1.12 Watt, 0.13A
PoE - Power Over Ethernet	SP4 PoE is IEEE 802.3af compliant

SP4 Technical Drawing





SP4 with 1U rack mount brackets

sensorProbe8 (SP8)

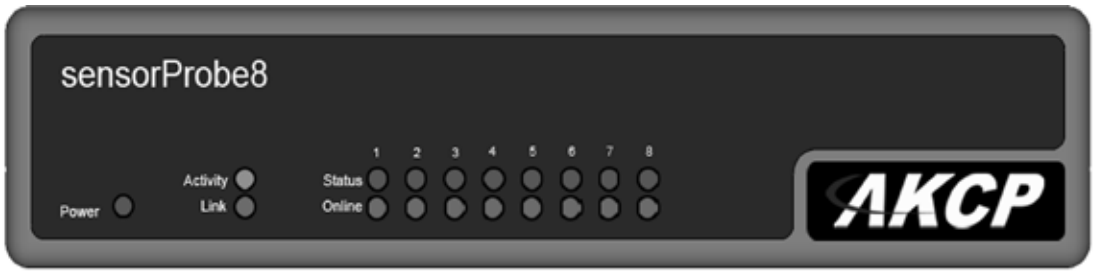
8 Port Sensor Monitoring Device

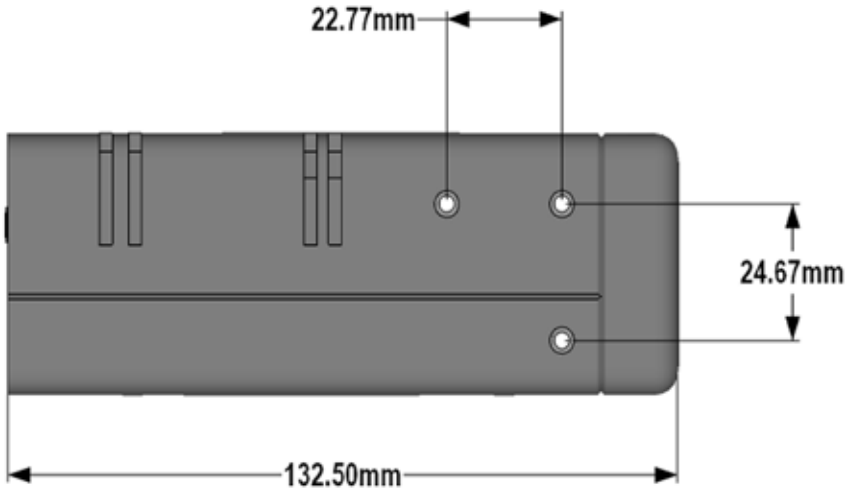
An intelligent monitoring device, the sensorProbe4 has an embedded, web interface, and full Email and SNMP functionality. Ready to run right out of the box. Simply assign the IP address and connect to the embedded web server. Compatible with a wide range of AKCP intelligent sensors.

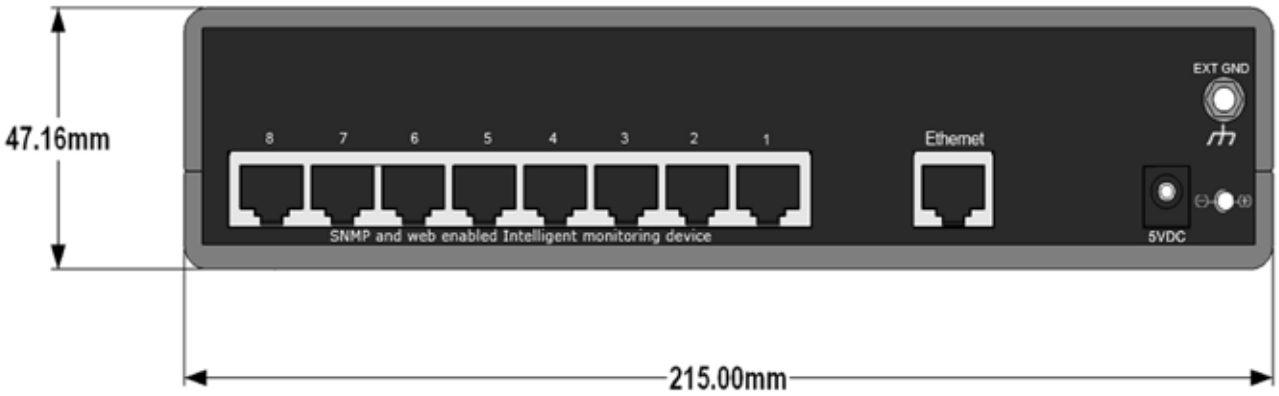
Technical Specifications

Dimension	Size 8.5" x 2.43" x 1.80" 1U Rack Mount Standard Weight 1.72 poundst
Network Interface	Standard 10 Base-T Ethernet RJ-45
Mounting	1U Rack mount bracket included
Power Requirements	Voltage 7.5 ~ 9 v Current>= 1.2 Amp
Status Indication	LED indication for Power LED for Network Connectivity LED for sensor online and Threshold status
Output	Configurable output signals (0VDC/5VDC) on any of the 8 RJ-45 sensor ports
Inputs	8x RJ-45 ports for connecting AKCP sensors
Operating Environment	Temp : Min. -35°C - Max. +55°C Humidity : Min. 20% - Max. 80% (Non-Condensing)
Components	Manufactured using highly integrated, low power surface mount technology to ensure long term reliability.
Power Consumption	Typical 1.12 Watt, 0.15A
PoE - Power Over Ethernet	SP8 PoE is IEEE 802.3af compliant

SP8 Technical Drawing







SP8 with 1U rack mount brackets

sensorProbe8 (SP8-X20)

8 Sensor Ports with 20x Dry Contact Inputs

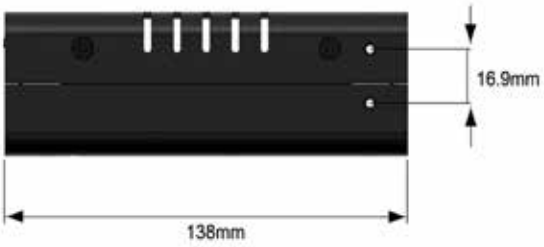
An intelligent monitoring device,the sensorProbe8-X20 has an embedded, web interface, full Email and SNMP functionality. Ready to run right out of the box. Simply assign the IP address and connect to the embedded web server.

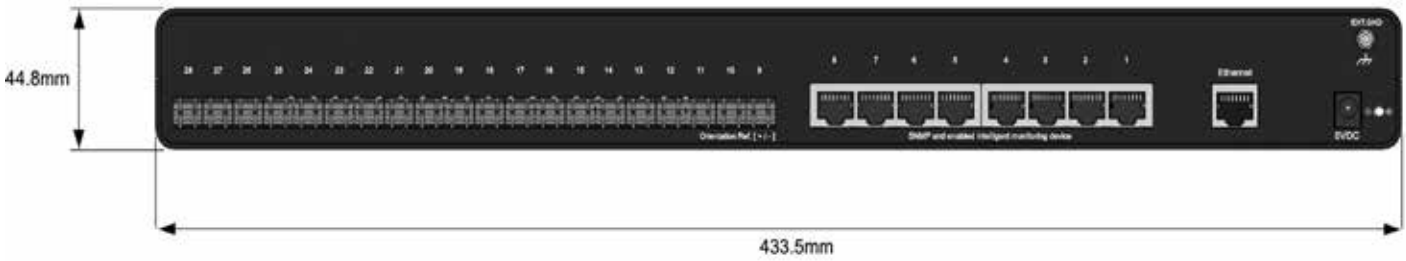
SP8-X20 comes with 20x dry contact digital inputs, these 5V inputs can also be set for opto isolation by a jumper on each input

Technical Specifications

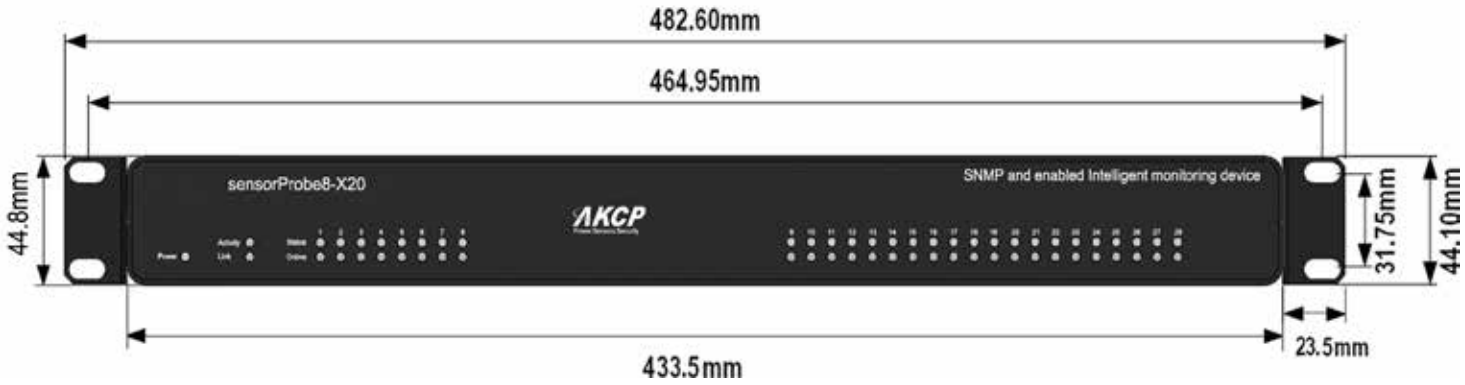
Mounting	1U Rack mount bracket included
Power Requirements	Voltage 7.0 ~ 9 v Current>= 3 Amp
Status Indication	LED indication for Power LED for Network Connectivity LED for sensor online and threshold status
Output	Configurable output signals (0VDC/5VDC) on any of the 8 RJ-45 sensor ports
Inputs	8 RJ-45 ports for connecting AKCP sensors 20, 2 wire dry contacts. Input only up to 5VDC and up to 40VDC in opto isolated mode using internal jumper setting.
Operating Environment	Temp : Min. -35° C - Max. +55° C Humidity : Min. 20% - Max. 80% (Non-Condensing)
Components	Manufactured using highly integrated, low power surface mount technology to ensure long term reliability.
Power Consumption	Typical 1.90 Watt, 0.21A

SP8-X20 Technical Drawing





SP8-X20 with 1U rack mount brackets



sensorProbe8 (SP8-X60)

8 Sensor Ports with 60x Dry Contact Inputs

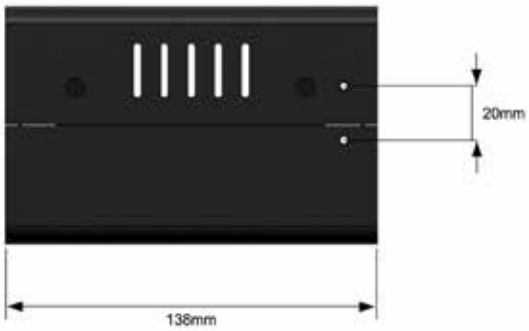
An intelligent monitoring device,the sensorProbe8-X60 has an embedded web interface, full Email and SNMP functionality. Ready to run right out of the box. Simply assign the IP address and connect to the embedded web server.

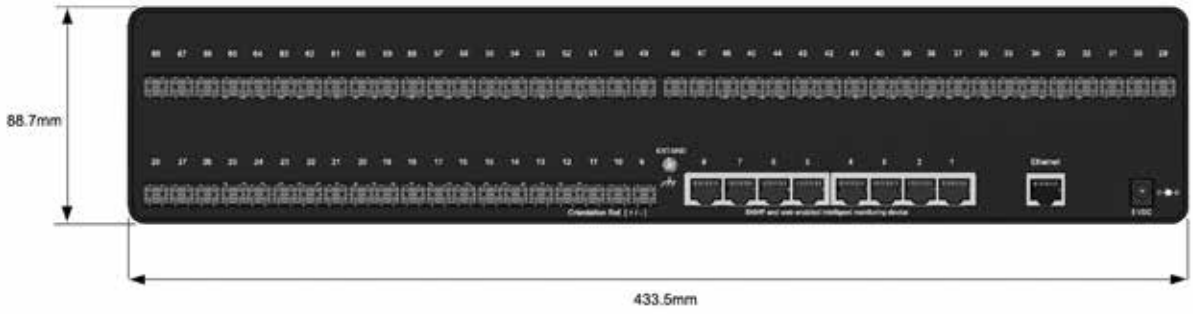
SP8-X60 comes with 60x dry contact digital inputs, these 5V inputs can also be set for opto isolation by a jumper on each input

Technical Specifications

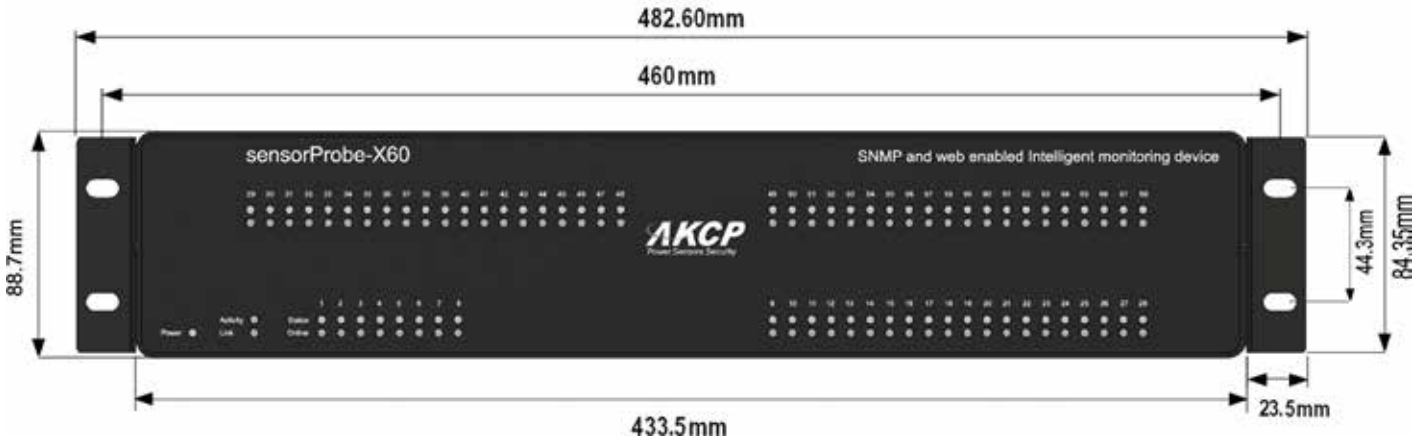
Dimension	Size 18" x 5" x 3.45" 2U Rack Mount Standard Weight 4.4 pounds
Network Interface	Standard 10 Base-T Ethernet RJ-45
Mounting	2U Rack mount bracket included
Power Requirements	Voltage 7.0 ~ 9 v Current>= 3 Amp
Status Indication	LED indication for Power LED for Network Connectivity LED for sensor online and threshold status
Output	Configurable output signals (0VDC/5VDC) on any of the 8 RJ-45 sensor ports
Inputs	8 RJ-45 ports for connecting AKCP sensors Configurable analog inputs on any of the 2 RJ-45 Sensor Ports (0-5VDC) 60, 2 wire dry contacts.
Operating Environment	Temp : Min. -35° C - Max. +55° C Humidity : Min. 20% - Max. 80% (Non-Condensing)
Components	Manufactured using highly integrated, low power surface mount technology to ensure long term reliability.
Power Consumption	Typical 2.90 Watt, 0.32A

SP8-X60 Technical Drawing





SP8-X60 with 2U rack mount brackets



sensorProbe+ Series

Customizable Sensor Monitoring Devices

sensorProbe+ base units come in 1U, 0U and DIN rail mounting options. Choose from our standard configurations, or build your own custom unit selecting only the modules you need.

sensorProbe+ supports Modbus, include virtual sensors and optional internal cellular data modem. Many of the features of the high end securityProbe devices can be found here, making it a very cost effective and versatile monitoring solution.

sensorProbe+

	Name	Code	Description
	sensorProbe+	SP2+	4 port monitoring device, with option to install internal modem, or change a sensor port for RS485 Modbus/Canbus expansion port.
	sensorProbeX+	SPX+	Customizable monitoring device, in 1U, 0U and Din rail mounting options. Choose from a variety modules such as sensors ports, dry contact, digital I/O's and more to build the unit to your exact specifications

sensorProbe+ Accessories

	Name	Code	Description
	Internal 3G Modem for SP+ (US and EU frequencies)	ME MU	Internal modem for cellular data comunication, phone calls and SMS messaging. It is not recommended for retrofitting these modems, it should be ordered pre-installed from the factory.
	Internal 4G Modem for SP+ (US and EU frequencies)	M4E M4U	Internal modem for cellular data comunication, phone calls and SMS messaging. It is not recommended for retrofitting these modems, it should be ordered pre-installed from the factory.

Software Licenses

	Name	Code	Description
	5 Dry Contact	DC5	5 dry contact sensor (per port) for SP2+ only. 1 License equals 1 RJ45 port unlocked
	SNMPv3 license	V3	SNMPv3 license
	Virtual Private Network (VPN)	VP	VPN - Connect to AKCP Pro Server from your base unit through cellular network. When using this feature the maximum number of sensors that can be monitored is reduced to 50.
	Virtual Sensor Pack	VS	Virtual sensor (pack of 5 sensors). Max of 40 virtual sensors. Every SP2+ comes with 5 free, SPX+ comes with 10 free virtual sensors.
	3rd Party PMS & Modbus	PM	3rd Party Modbus / PMS device. Up to 4 devices with 15 sesnors.
	500 Access control user database	UA	500 users for access control (SP+ series has 100 users as standard)

sensorProbe2+ (SP2+)

Cost Effective and Versatile Monitoring

SP2+ comes with 4x intelligent sensor ports that can be used to conect a wide range of AKCP sensors, as well as support for our new range of smart sensors such as thermal maps and LCD displays.

Options include an internal 3G or 4G cellular data modem with optional GPS antenna.

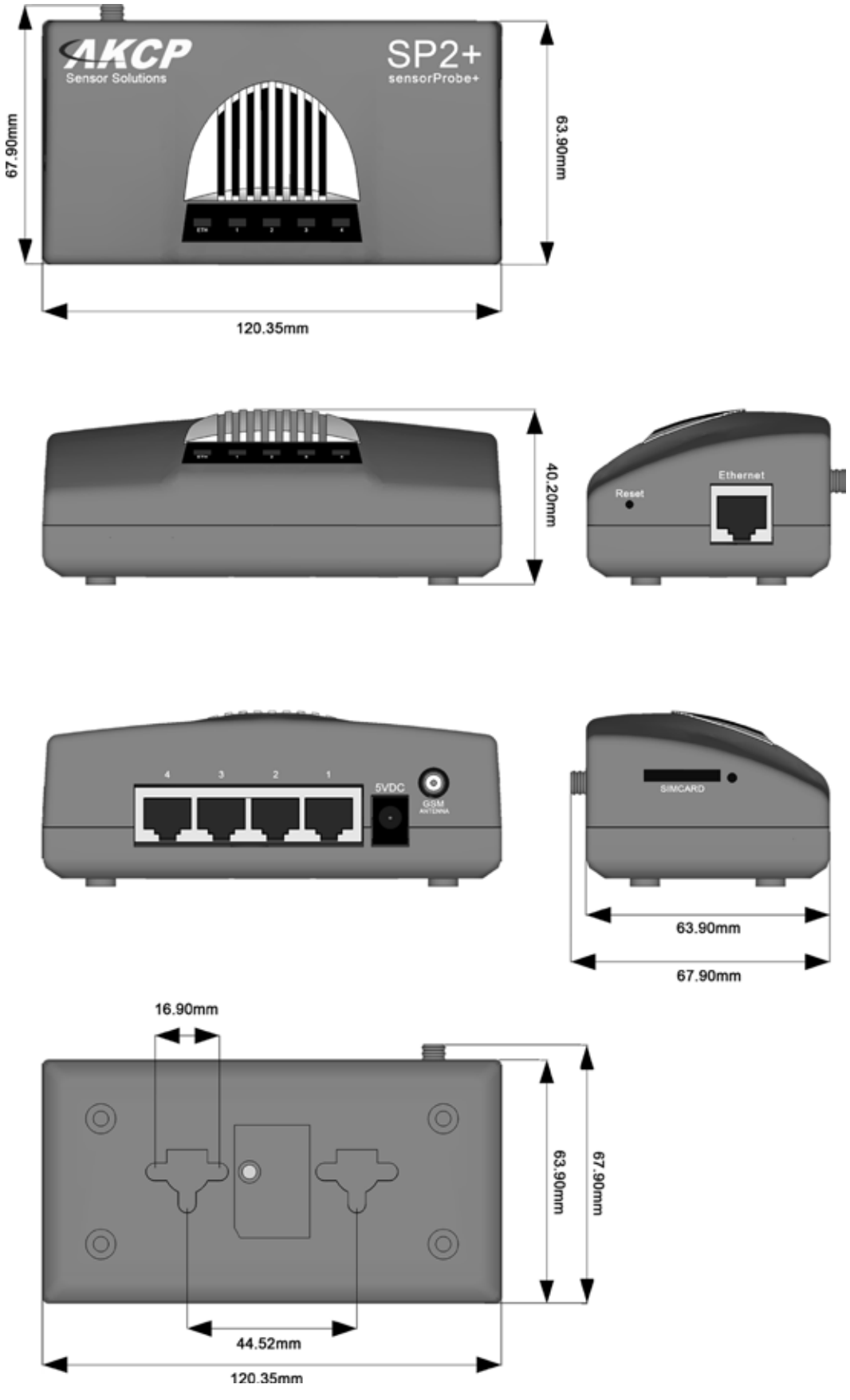
If you have Modbus or Canbus devices that you wish to monitor, such as a generator, or other industrial equipment, the SP2+ can be ordered with an RS485 port option (SP2+E).

Technical Specifications

Dimensions	Size : 4.5" x 2.5" x 1.25"
RJ-45	4 RJ-45 Ports for connecting AKCess Pro Sensors Up to 20 Dry Contact Inputs Optional Rj-45 Expansion Port
Mounting	0u rack-mount, or hanging Compatible with AKCP's DIN Clips
Power Requirements	Voltage: 5VDC 3Amp (including optional modem)
Status Indication	LED indicator for power LED for network connectivity LED for sensor online and threshold status
Components	Manufactured using highly integrated, low power surface mount technology to ensure long term reliability AKCP STM32F4 MCU 8MB to 16MB Flash Memory
Operating Environment	Temperature : Min.-35° C - Max.80° C Humidity : Min. 20% - Max. 80% (Non-Condensing)
MTBF	1,400,000 Hours
Inputs	4x RJ-45 Sensor Ports for connecting AKCess Pro sensors 1x RJ-45 Ethernet 10/100 *1 sensor port can be used as expansion port or Modbus/Canbus RS485 on SP2+E version
Outputs	Configurable output signals (0VDC/5VDC) on any of the 4 RJ-45 sensor ports
Optional Expansion Capabilities :	See above *1 sensor port can be used as expansion port (on SP2+X version)
Maximum Number of Users :	10,000 users. 100 users default

SP2+ Technical Drawing

SP2+ with Internal Modem



sensorProbeX+ (SPX+)

Customizable Modular Design

Select from a standard configuration, or build your own customized monitoring solution. Choose a mounting options to suit your installation, whether it be 1U, 0U rack mounting, or DIN rail. Optional modules and Cellular modem can be selected depending on your requirements.

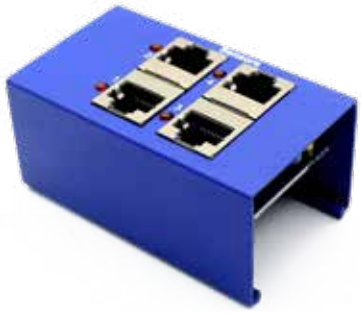
Technical Specifications

Dimension	44 (W) x 46 (H) low profile design
Expansion Port	EXP port for conecting SPX+ EXP Remote Units BEB port for connecting SPX+ BEB Remote Units
Mounting	0U Toolless rack mount, optional wall mount brackets, horizontal 1U mounting or DIN rail brackets.
Power	External 5V 3A Power Adapter Input Voltage and Current ratings : 100V~240V - 0.22A
Status Indication	LED for power, network connection, sensor online and threshold status. Internal Buzzer for audible alerts
Operating Environment	Temperature : Min. -35° C - Max.70° C Humidity : Min 20% - Max. 80% (Non-Condensing)
MTBF	1,400,000 Hours based on field experience with sensorProbe units
Base Unit	4x Sensor Ports for connecting AKCP sensors 1x Expansion Out Port (Optionally used for Modbus) 1x 10/100 Ethernet Port
Max Sensors	Maximum of 150 onlined sensors, including Expansion Units and virtual sensors. Reduced to 50 if VPN is enabled
SPX+ Modules	4x Sensor Ports module 10x or 20x Dry module, available in 3 configurations : - Configurable I/O dry Contact (0VDC/5VDC) - Input only 5V Dry Contact, opto-coupled input - Isolated input Dry Contact, from 5V to 20V voltage input signal - Isolated AC Detection Input 5-30ACV @ 44mA 3G or 4G cellular data modem with extenal antenna. (GSM/CDMA) - Optional GPS 4x 0-5VDC / 4-20mA input for third party sensors 4x Mini relays for driving larger relays 2x 0-5VDC / 4-20mA input for third party sensors with 2x Mini relays Internal mini UPS, 4x AA rechargable batteries

SPX+ - Modules

MCU

The MCU Module is the core of the SPX+. A mandatory module it forms the base configuration of every unit. 4x intelligent sensor ports, Ethernet and a dual purpose Expansion (EXP) port for Modbus RS485 communications, or connection to AKCP Expansion. Basic Expansion Bus (BEB) port connects the SPX+ to SPX+ basic expansion units comprised of additional SPX+ modules.



sensor4

sensor4 modules give additional intelligent sensor ports, allowing you to build your SPX+ to your requirements. Connect a wide range of intelligent sensors and smartRack sensors such as Cabinet Thermal Maps, Programmable LCD Display and RFID Swing Handle Locks.

Dry Contacts

Dry contact modules can be added in x10 and x20 blocks. The dry contacts can be ordered as I/O, isolated input only (internal 5V) and isolated input only (external 5-20V). Dry contacts can be used to monitor a variety of third party devices and alarm panels

AC Voltage Detection

Monitor 10x or 20x AC Voltage inputs, detect if circuits are energized or not. This module does not give a votlage reading, only the presence or absence of AC Voltage. Voltage range is 5-30ACV @ 44mA.

SPX+ - Modules

Cellular Data Modem / GPS

A 3G or 4G Cellular Data Modem module can be added to your SPX+ to give a primary or backup method of communication Send SMS and e-mail alerts directly from the device through the cell network. Ideal for remote site locations and those with unreliable DSL connection. Add optional GPS antenna for realtime tracking of location.

4x Mini Relays

This module includes 4x mini DC relays. Use them to switch on/off low current devices directly, or use them to drive larger relays. Ideal for systems and control, building and industrial automation.

4x Analog to Digital Inputs

This module is ideal for connecting third party analog sensors with a 0-5VDC or 4-20mAmp scale output. Many industrial sensors are available with this scale output, opening up the possibilities of monitoring many different sensors not provided by AKCP.

2x Mini Relays & 2x Analog Inputs

This module is a combination of the above modules, with 2x relays and 2x 0-5VDC or 4-20mA analog sensor inputs.

SPX+ - Modules

Valve Control Module

If you have DC motors or electronically controlled ball valves which require polarity reversal to turn in the opposite direction, this module is applicable. Ideal for water irrigation or industrial applications which require valve and motor controls.

Tank Depth Pressure Sensor Module

Use this module if you are connecting an AKCP Tank Depth Pressure Sensor (TDPS). The sensor is used for monitoring theliquid level in storage tanks, suitable for fuel level monitoring applications for example. The TDPS connects directly to the SPX+ module without the need for the TDPS external conversion box to connect to a sensor port.

Internal Mini UPS

This module is useful in situations where the SPX+ may face power outages. An internal battery backup using 4x AA batteries can power the SPX+ for several hours (depending on sensors connected, alerts generated etc). This is ample time to be able to continue to send alerts, and most importantly notify you of the power situation so the main power can be restored.
Ideally combined with the intenral cellular data modem, SMS alerts can be sent even if the rest of your network is down.

Online Configuration

Customize your SPX+ with our online configuration tool, graphically build up your device with the modules you need and submit for quotation.

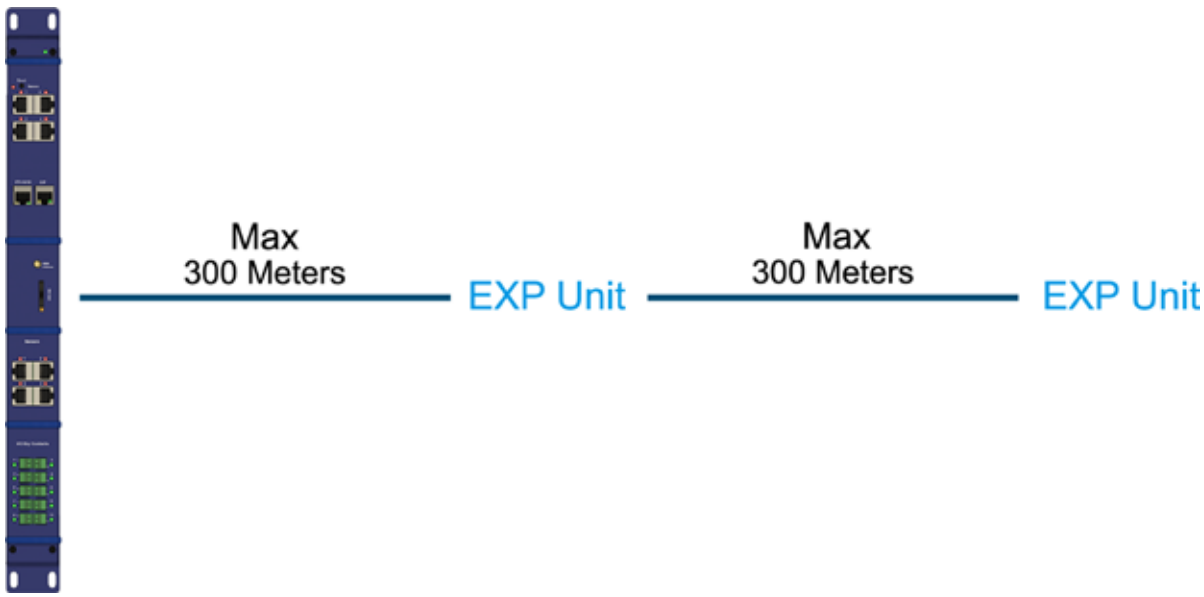
SPX+ - Expansion

Basic Expansion Bus (BEB)

Using an SPX+ Master with BEB, together with SPX+ Basic Expansion Bus devices, you can increase the number of sensor ports, and dry contacts available. Recommended for use over a short distance , within the same cabinet only, it provides a cost effective way to expand your system. The maximum distance from the SPX+ Master to the last unit in the chain is 10 meters.

RS485 Expansion (EXP)

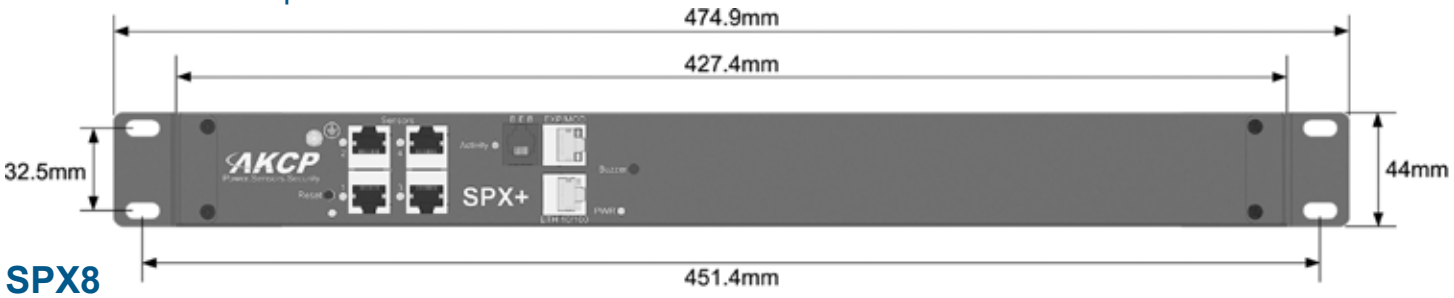
Using an SPX+ Master with EXP, together with EXP units you can add dry contacts and sensor ports to your system, with the ability to place the units up to 300 meters (1,000ft) away from each other. Ideal for covering a large area, and placing dry contacts beside alarm panels with only a single CAT5 cable back to the main SPX+ device. Supported EXP devices are the E-Sensor8 and E-Opto16 Expansion units.



SPX+ Technical Drawing

SPX+ Standard Configurations

SPX4
SPX with 4 sensor ports

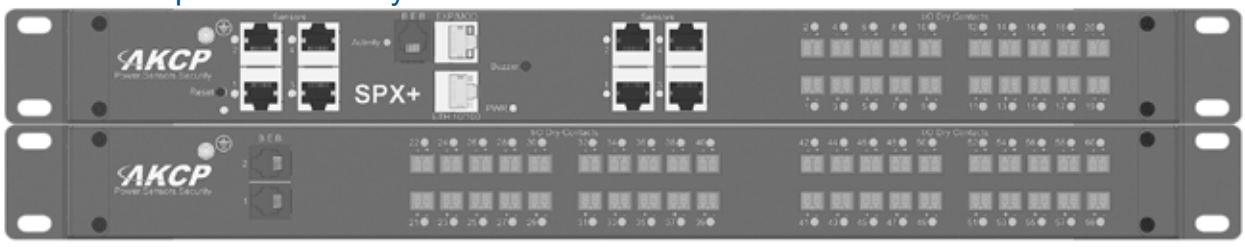


SPX8
SPX with 8 sensor ports

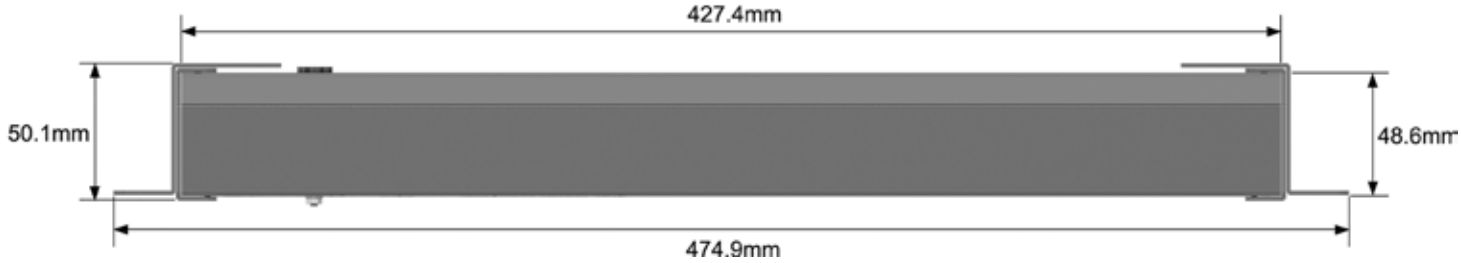
SPX4-X10
SPX with 4 sensor ports and 10 dry contacts

SPX8-X20
SPX with 8 sensor ports and 20 dry contacts

SPX8-X60
SPX with 8 sensor ports and 60 dry contacts



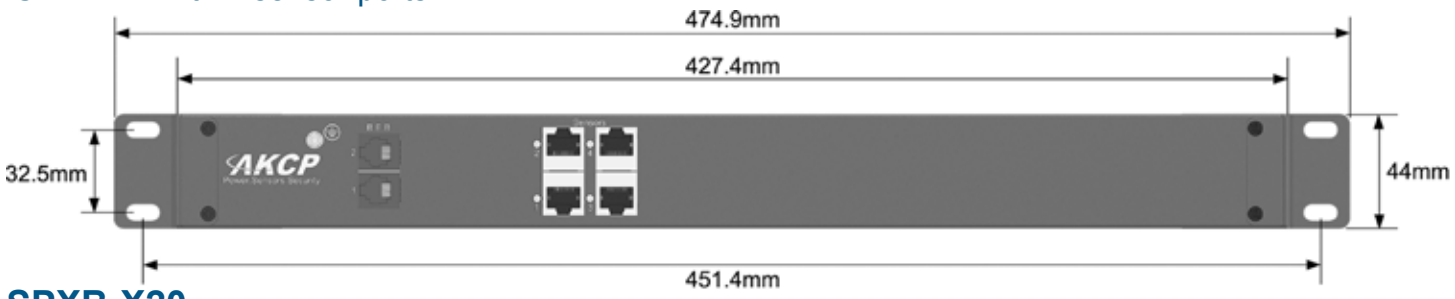
Top View



SPX+ Technical Drawing

Standard BEB Configurations

SPXB4
SPX BEB with 4 sensor ports



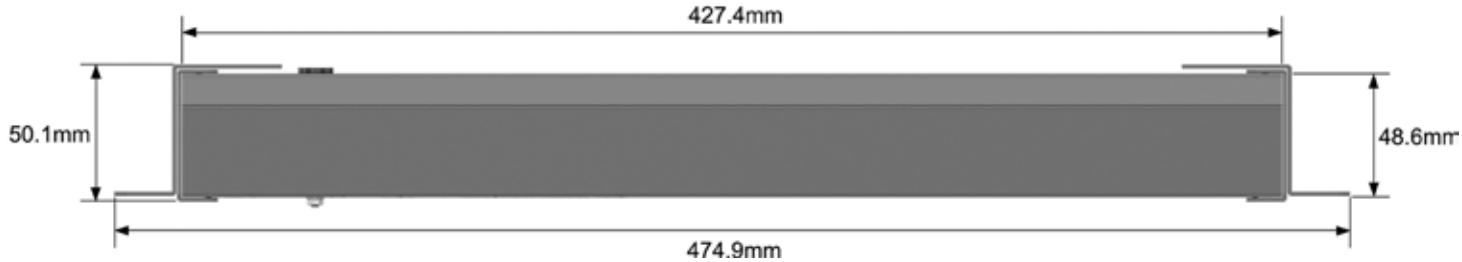
SPXB-X20
SPX BEB with 20 dry contacts

SPXB8-X20
SPX BEB with 8 sensor ports and 20 dry contacts

SPXB16
SPX BEB with 16 sensor ports

SPXB-X40
SPX BEB with 40 dry contacts

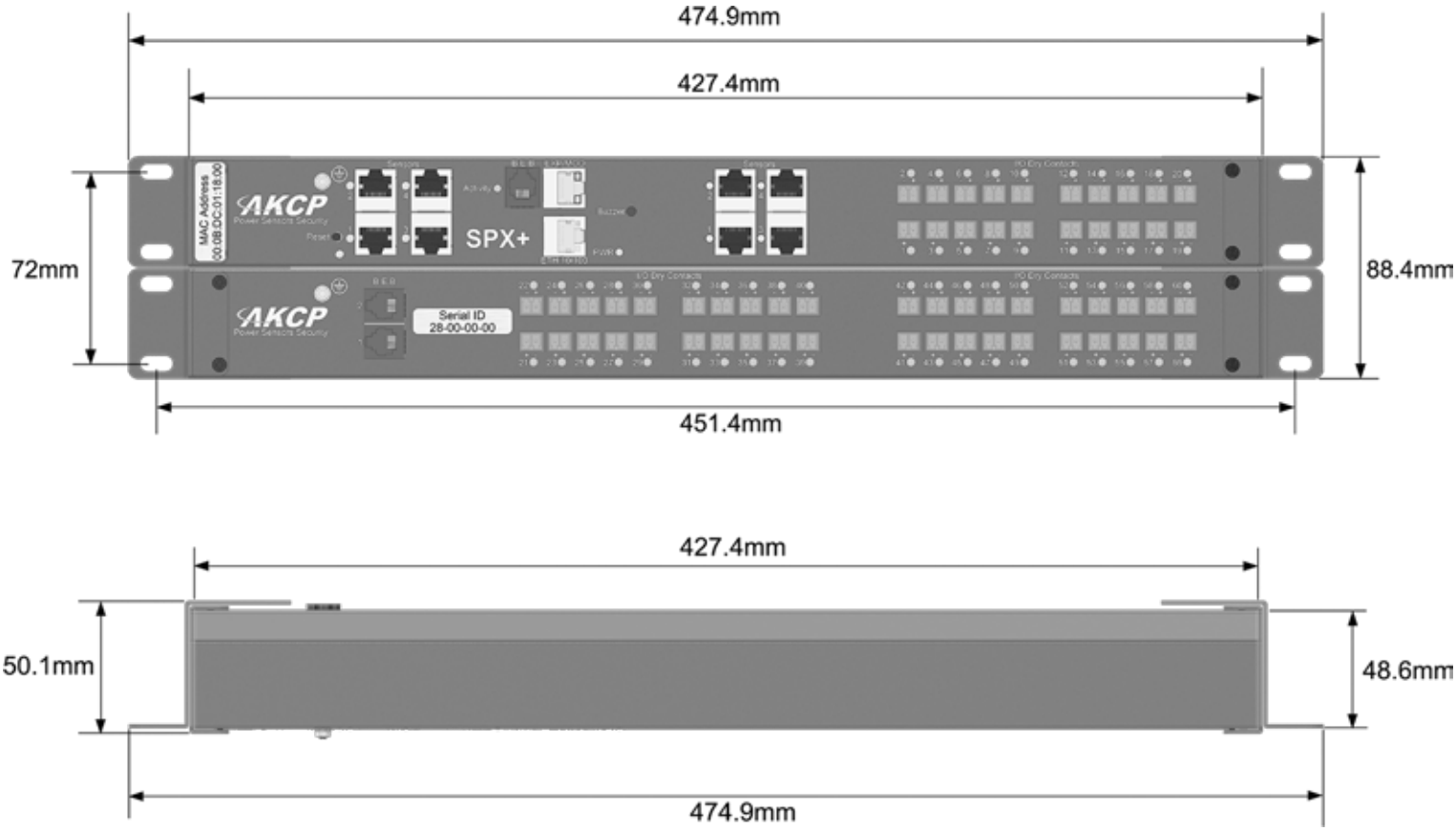
Top View



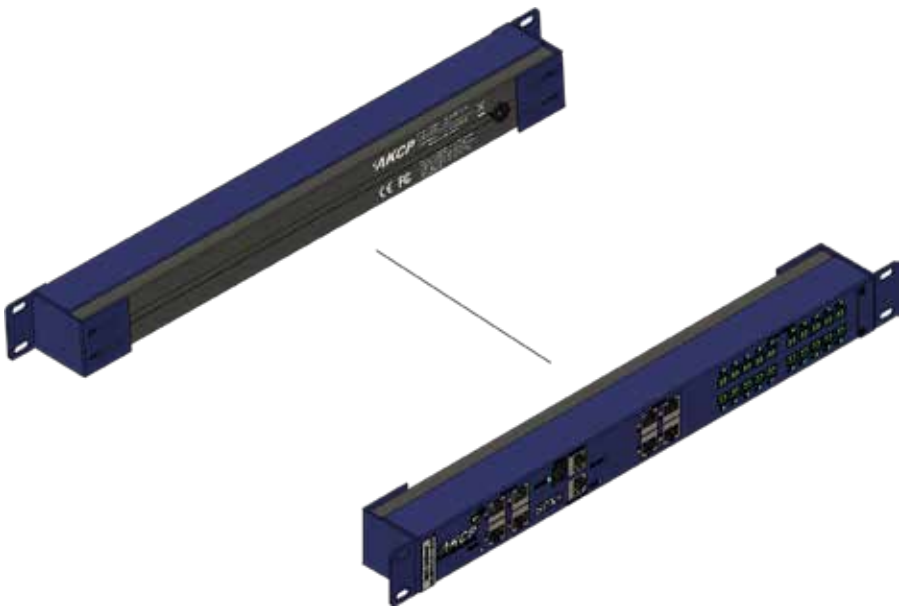
SPX+ Technical Drawing

SPX8-X60

SPX8-X60 is a 2U device, comprised of an SPX+ with BEB unit. This can be mounted in 2 seperate U's, or back to back in the same U as illustrated below.

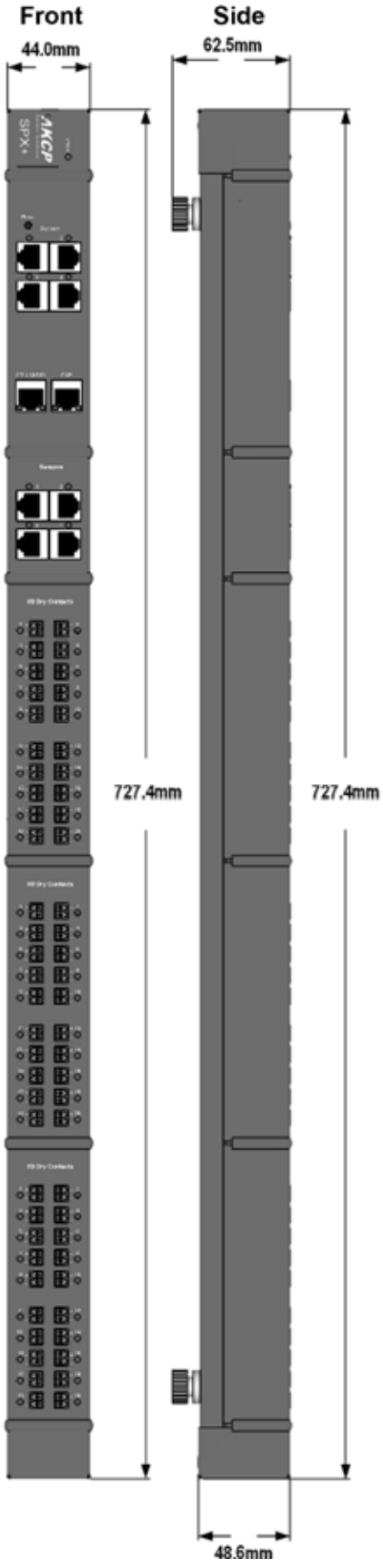


1U mounting of SPX8-X60 at front and rear of cabinet

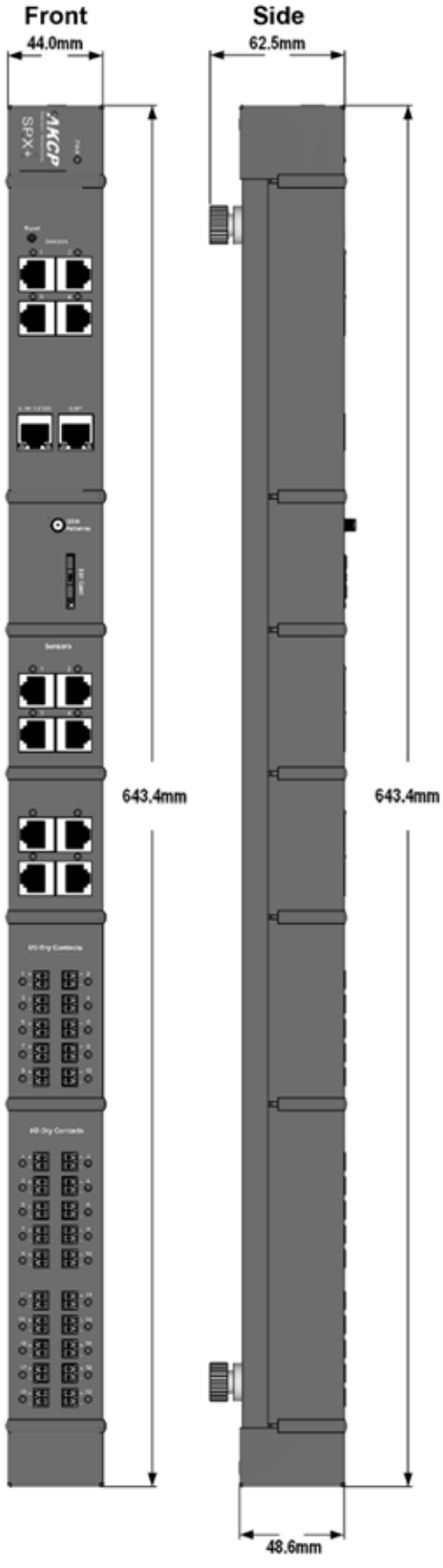


SPX+ Technical Drawing

0U SPX+ with 60x dry contacts
(configured as input only, I/O or opto isolated).

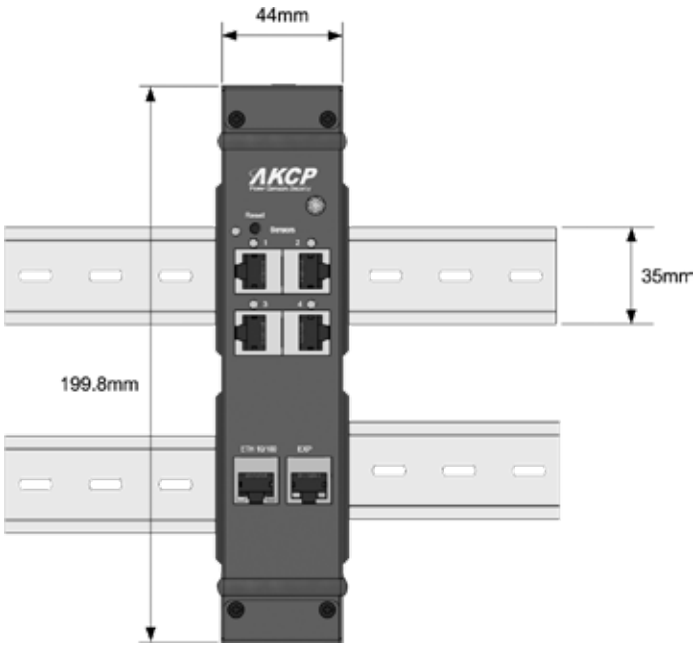


0U SPX+ with 12x sensor ports and 30x dry contacts (configured as input only, I/O or opto isolated).

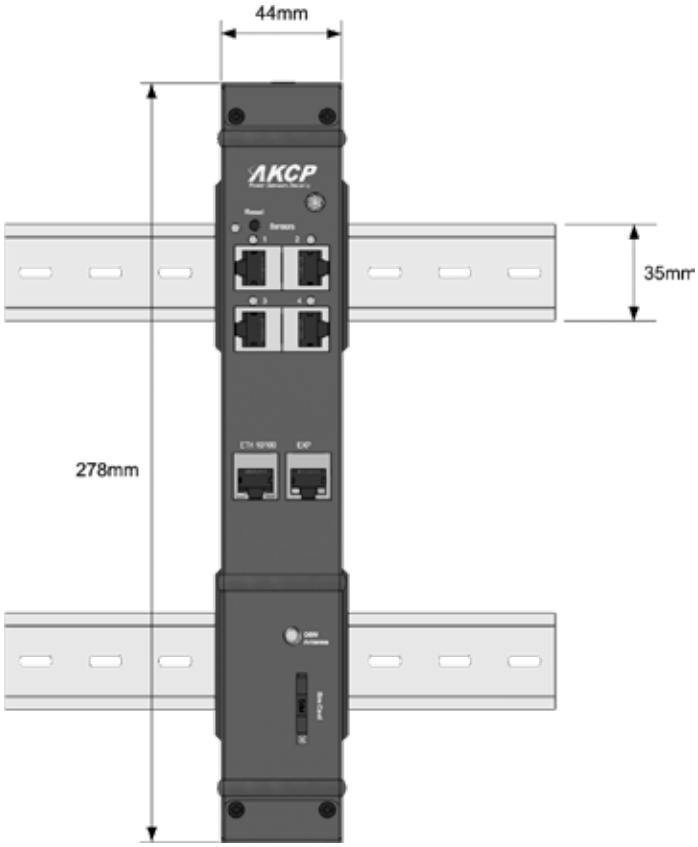


SPX+ Technical Drawing

0U SPX+ with DIN rail mounting



0U SPX+ with internal modem & DIN rail mounting



securityProbe Series

Versatile Monitoring device

securityProbe series is our high end, versatile monitoring platform. Includes 80 virtual sensors such as SNMP get, Ping, SNMP Trap receivers. Run custom Bash scripts to expand further it's capabilities.

Options include internal 3G or 4G cellular data modems, analog or digital USB cameras, and 40-60VDC internal power supplies

securityProbe

	Name	Code	Description
	securityProbe5E	SEC5ESV SEC5ESVA SEC5ES	8 sensor port device with digital video inputs. 8 sensor port device with analog video inputs. 8 sensor port device without camera inputs.
	securityProbe5E X20	SEC5ESV-X20 SEC5ESVA-X20 SEC5ES-X20	8 sensor port device with digital video inputs and 20x dry contact inputs. 8 sensor port device with analog video inputs and 20x dry contact inputs. 8 sensor port device, with 20x dry contact inputs, without camera inputs.
	securityProbe5E X60	SEC5ESV-X60 SEC5ESVA-X60 SEC5ES-X60	8 sensor port device with digital video inputs and 20x dry contact inputs. 8 sensor port device with analog video inputs and 60x dry contact inputs. 8 sensor port device, with 60x dry contact inputs, without camera inputs.

securityProbe Accessories

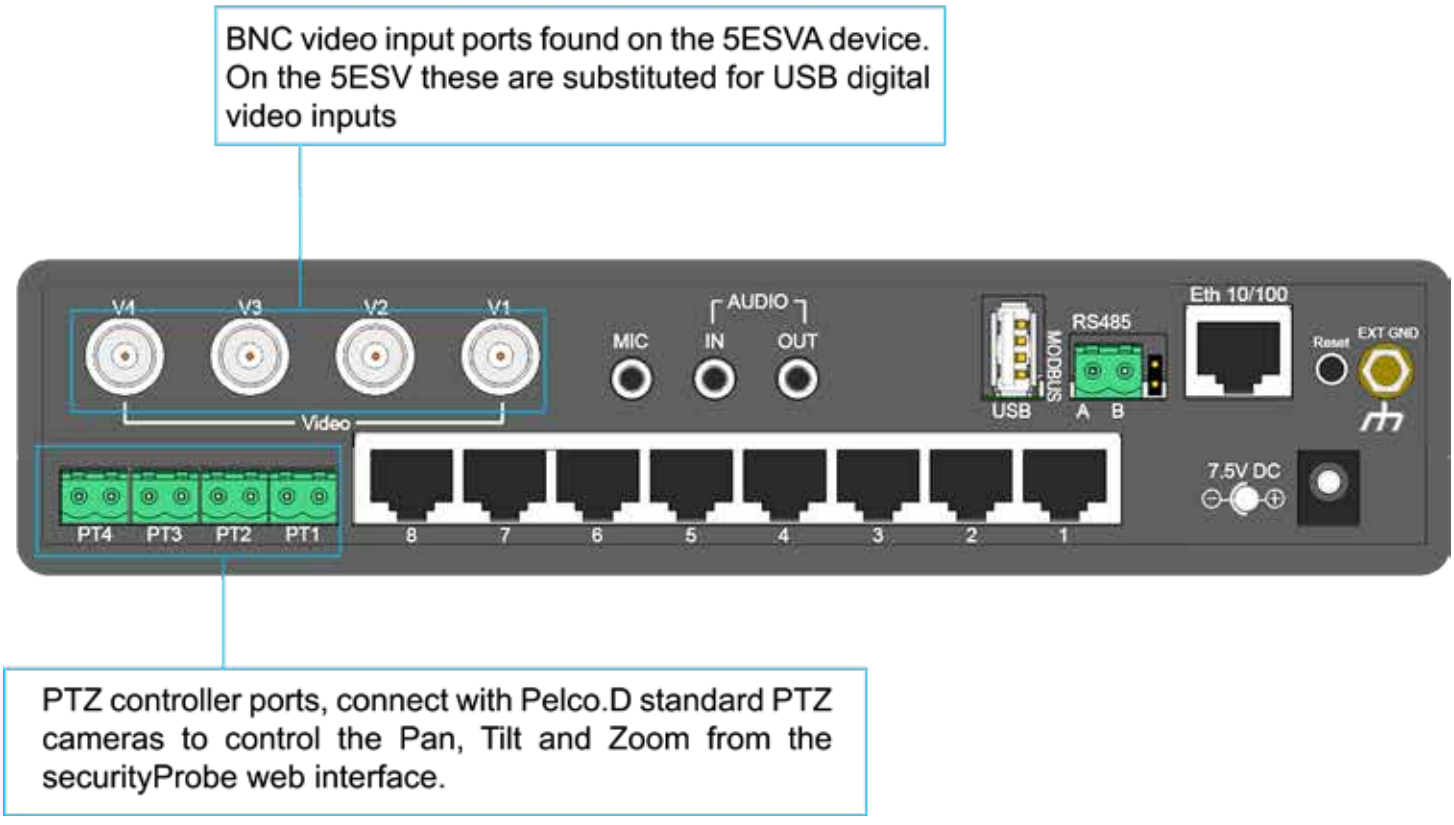
	Name	Code	Description
	Internal 3G Modem (US and EU frequencies)	SEC3GM-US SEC3GM3-EU	Internal modem for cellular data comunication, phone calls and SMS messaging. It is not recommended for retrofitting these modems, it should be ordered pre-installed from the factory.
	Universal Mount Camera (PAL and NTSC)	UMC-PAL UMC-NTSC	Analog camera for use with the BNC connector available on SEC5ESVA models.
	Pan and Tilt Dome Camera (PAL and NTSC)	PTDC-PAL PTDC-NTSC	Analog PTZ camera for use with the BNC connector available on SEC5ESVA models.
	Digital Universal Mount Camera	HD-DC	Digital USB camera for use with the USB connector available on SEC5ESV models.
	Digital Pan and Tilt Dome Camera	HD-PTDC	Digital USB PTZ camera for use with the USB connector available on SEC5ESV models.

securityProbe5E (SEC5ES/V/A)

Advanced monitoring system with video capabilities

securityProbe5E comes in several versions, the 5ES, which has no video function, 5ESV, which has 4x USB digital video inputs, and the 5ESVA which has 4x BNC analog video inputs. Packages are available with cameras included, or connect with existing analog cameras in your facility.

Optional 3G or 4G internal modems can be installed to send SMS alerts directly from the securityProbe device, or for comunicating in sites with no wired network available.

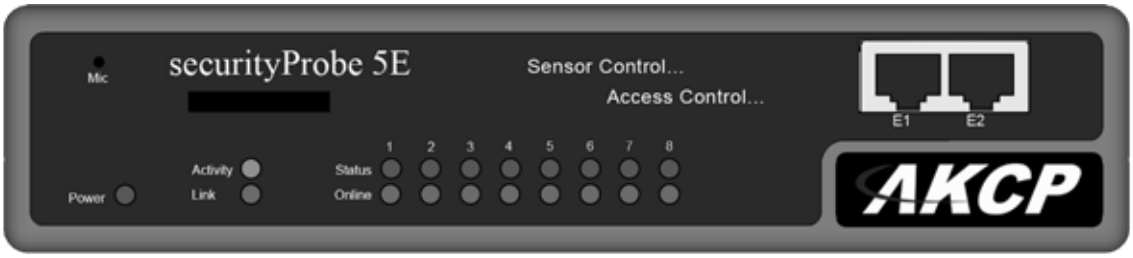


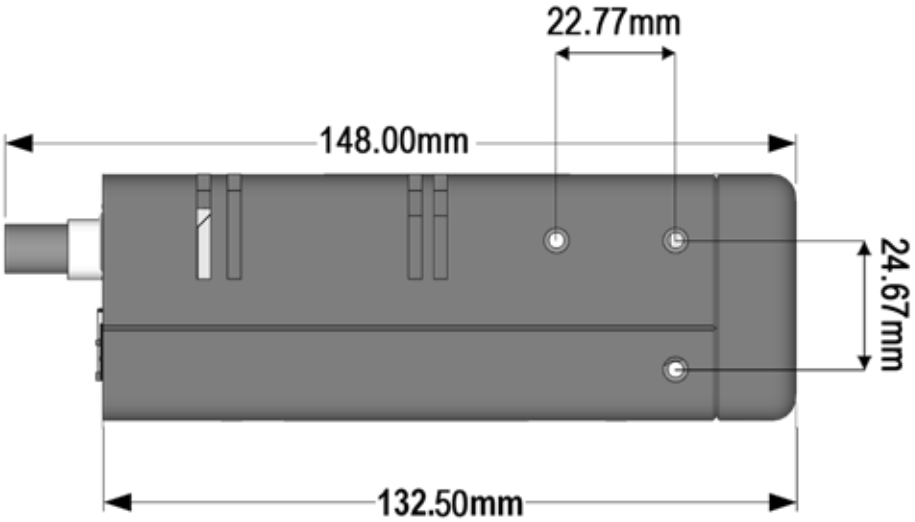
SEC5ES/V/A - Technical Specification

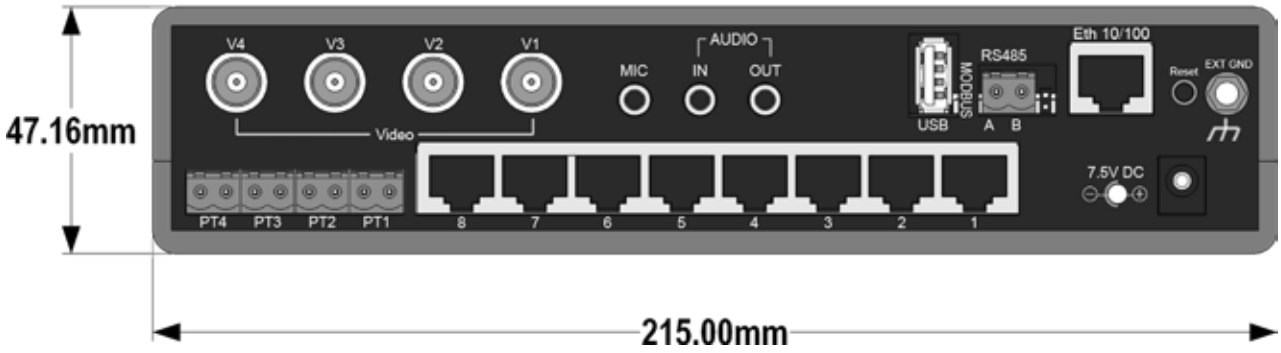
Dimension	Size : 8.5" x 5.43" x 1.80" Weight : 2.4 Pounds
Expansion Ports	2x RJ-45 Expansion Ports 115.2K BPS Data Transfer Rate Simultaneous Functionality between Expansion Ports & RS485 Port Threshold Status
Mounting	Rack Mount Brackets included Compatible with AKCP's DIN and Rack Mount Trays
Power Requirements	Voltage : 7.0 - 9.0 VDC, 3Amp
Status Indication	LED Indication for Power LED for Network Connectivity LED for Sensor Online and Threshold Status
Output	Ext. Speaker Out, 2.5" Jack (Analog) For Modem Aplication
Power Consumption	Typical 3.375 Watt, 0.45A
Operating Environment	Temp : Min -35°C- Max +55°C Humidity : Min 20% - Max 80% (Non-Condensing)
Components	IMX25 Processor 128 MB NAND Flash Internal On-Board SD Memory Slot Drive
Inputs	8x RJ-45 Sensor Ports 2x RJ-45 Expansion Ports 4x BNC Video Ports (5ESVA version only) 4x USB Video Ports (5ESV version only) 1x USB Port (Version 2.0) 4x PTZ Two Pin Controllers Audio In (Analog) 2.5" Jack RS485, 2 Pin Terminal Box (Used for MODBUS)
MTBF	400,000 Hours
Expansion Boards	Intelligent Sensors Module (E-Sensor 8) 16 Port Dry Contacts Module (E-OPTO16) Expansion modules are daisy chainable with maximum of 1,000 feet / 300 meters between each module

SEC5E - Technical Drawing

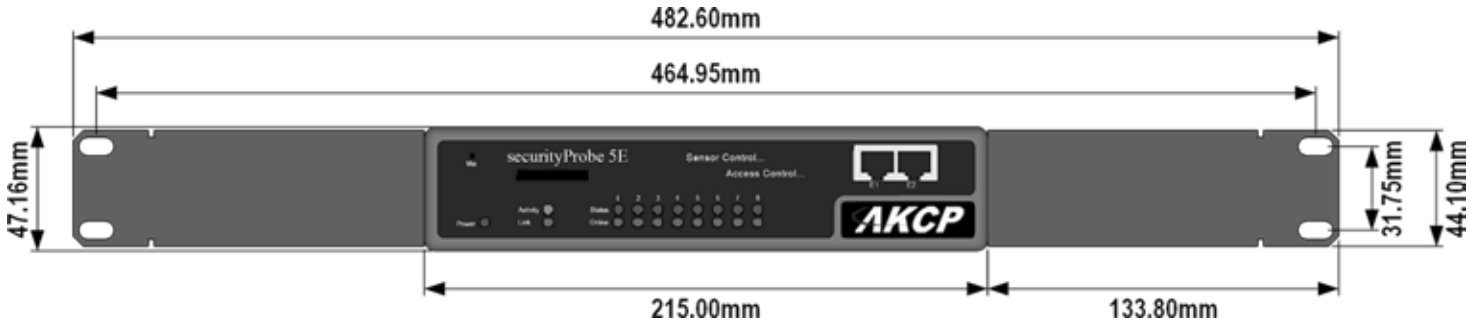
Technical drawing illustrates SEC5ESVA, dimensions of 5ES and 5ESV are the same







securityProbe with 1U rackmount brackets



securityProbe5E-X20 (SEC5ES/V/A-X20)

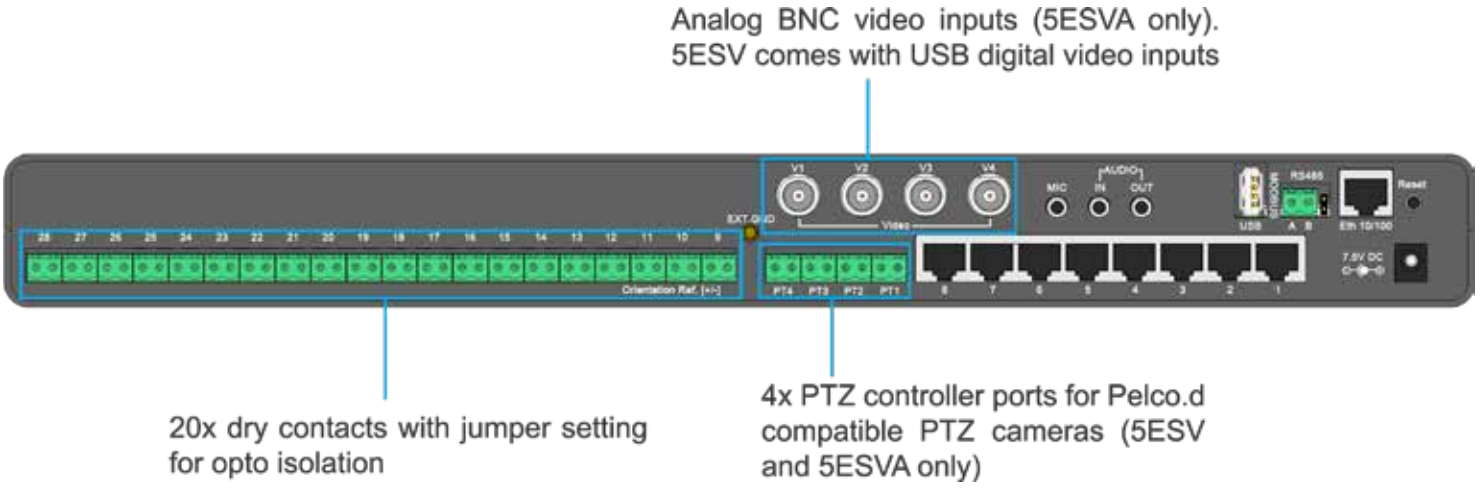
A securityProbe with 20 dry contact inputs.

Based on the basic securityProbe5E the X20 comes with all the same options, no video, with analog video or digital video inputs, plus 20 dry contact digital inputs. These can be set to opto isolated mode with a jumper for instances where there is a chance of over voltage.

Optional 3G and 4F internal modems can be installed to send SMS alerts directly from the securityProbe device, or for communicating in sites with no wired network available.

Based on the basic securityProbe5E the X20 comes with all the same options, no video, with analog video or digital video inputs, plus 20 dry contact digital inputs. These can be set to opto isolated mode with a jumper for instances where there is a chance of over voltage.

Optional 3G and 4G internal modems can be installed to send SMS alerts directly from the securityProbe device, or for communicating in sites with no wired network available.

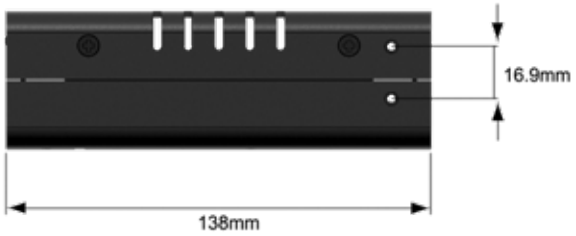


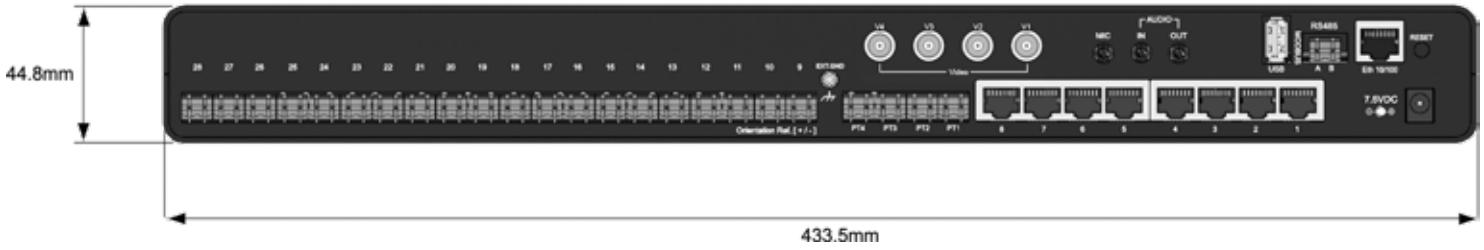
SEC5ES/V/A-X20 - Technical Specification

Dimension	Size : 17.08" x 5.43" x 1.80" Weight : 3.3 Pounds
Expansion Ports	2x RJ-45 Expansion Ports 115.2K BPS Data Transfer Rate Simultaneous Functionality between Expansion Ports & RS485 Port Threshold Status
Mounting	Rack Mount Brackets included Compatible with AKCP's DIN and Rack Mount Trays
Power Requirements	Voltage : 7.0 - 9.0 VDC, 3Amp
Status Indication	LED Indication for Power LED for Network Connectivity LED for Sensor Online and Threshold Status
Output	Ext. Speaker Out, 2.5" Jack (Analog) For Modem Application
Power Consumption	Typical 6.150 Watt, 0.82Amp
Operating Environment	Temp : Min -35oC - Max +55oC Humidity : Min 20% - Max 80% (Non-Condensing)
Components	iMX25 Processor 128 MB NAND Flash Internal On-Board SD Memory Slot Drive
Inputs	8x RJ-45 Sensor Ports 4x RJ-45 Expansion Ports 4x Video Ports V1-4 (BNC on 5ESVA, USB on 5ESV) 1x USB Port (Version 2.0) 4x PTZ Two Pin Controllers (On 5ESV and 5ESVA models only) Audio In (Analog) 2.5" Jack RS485, 2 Pin Terminal Box (Used for MODBUS) 20 Dry Contact Ports
MTBF	400,000 Hours
Expansion Boards	8 Port Intelligent Sensors Module (E-Sensor 8) 16 Port Dry Contacts Module (E-OPTO16) Expansion modules are daisy chainable, with up to 300 Meters, or 1,000ft between each module.

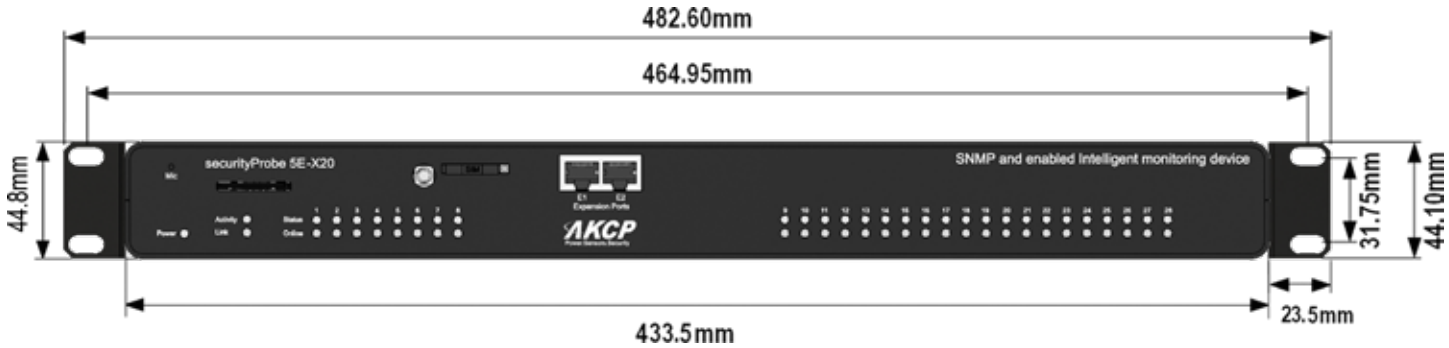
SEC5ES/V/A-X20 - Technical Drawing

Technical drawing illustrates SEC5ESVA-X20, dimensions of 5ES and 5ESV are the same





securityProbe5E-X20 with 1U rackmount brackets



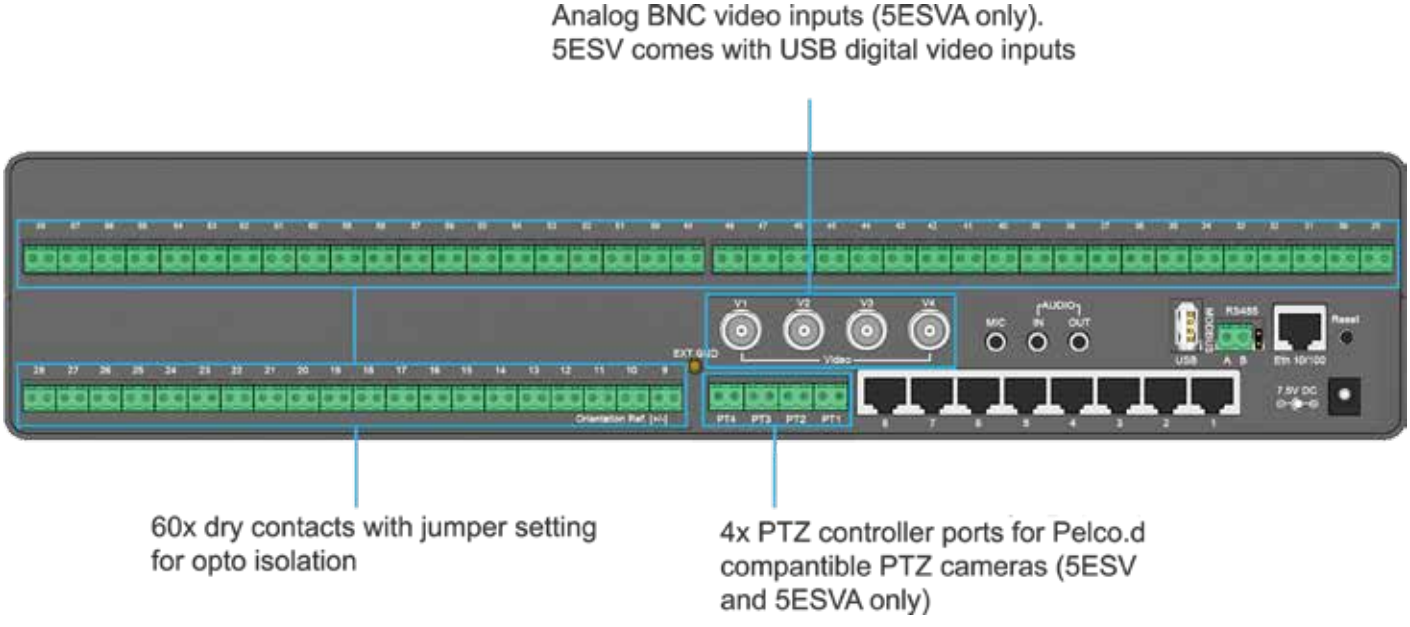
securityProbe5E-X60 (SEC5ES/V/A-X60)

A securityProbe with 60 dry contact inputs.

Based on the basic securityProbe5E the X60 comes with all the same options, no video, with analog video or digital video inputs, plus 60 dry contact digital inputs. These can be set to opto isolated mode with a jumper for instances where there is a chance of over voltage.

Optional 3G and 4G internal modems can be installed to send SMS alerts directly from the securityProbe device, or for communicating in sites with no wired network available.

Based on the basic securityProbe5E the X20 comes with all the same options, no video, with analog video or digital video inputs, plus 20 dry contact digital inputs. These can be set to opto isolated mode with a jumper for instances where there is a chance of over voltage.

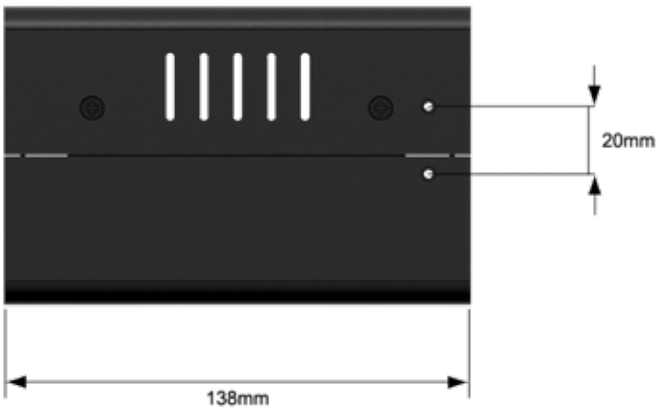


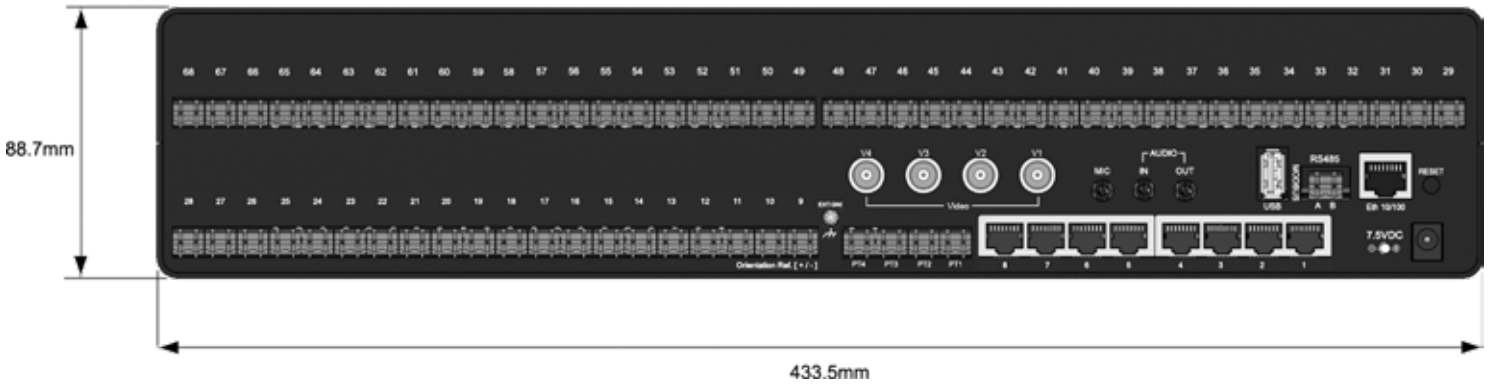
SEC5ES/V/A-X60 - Technical Specification

Dimension	Size : 18.5" x 5" x 3.45" Weight : 4.4 Pounds
Expansion Ports	2x RJ-45 Expansion Ports 115.2K BPS Data Transfer Rate Simultaneous Functionality between Expansion Ports & RS485 Port Threshold Status
Mounting	Rack Mount Brackets included Compatible with AKCP's DIN and Rack Mount Trays
Power Requirements	Voltage : 7.0 - 9.0 VDC, 3Amp
Status Indication	LED Indication for Power LED for Network Connectivity LED for Sensor Online and Threshold Status
Output	Ext. Speaker Out, 2.5" Jack (Analog) For Modem Application
Power Consumption	Typical 6.150 Watt, 0.82Amp
Operating Environment	Temp : Min -35oC - Max +55oC Humidity : Min 20% - Max 80% (Non-Condensing)
Components	iMX25 Processor 128 MB NAND Flash Internal On-Board SD Memory Slot Drive
Inputs	8x RJ-45 Sensor Ports 4x RJ-45 Expansion Ports 4x Video Ports V1-4 (BNC on 5ESVA, USB on 5ESV) 1x USB Port (Version 2.0) 4x PTZ Two Pin Controllers (5ESV and 5ESVA version only) Audio In (Analog) 2.5" Jack RS485, 2 Pin Terminal Box (Used for MODBUS) 60 Dry Contact Ports
MTBF	400,000 Hours
Expansion Boards	8 Port Intelligent Sensors Module (E-Sensor 8) 16 Port Dry Contacts Module (E-OPTO16) Expansion modules are daisy chainable with up to 300 meters, or 1,000 feet between each module

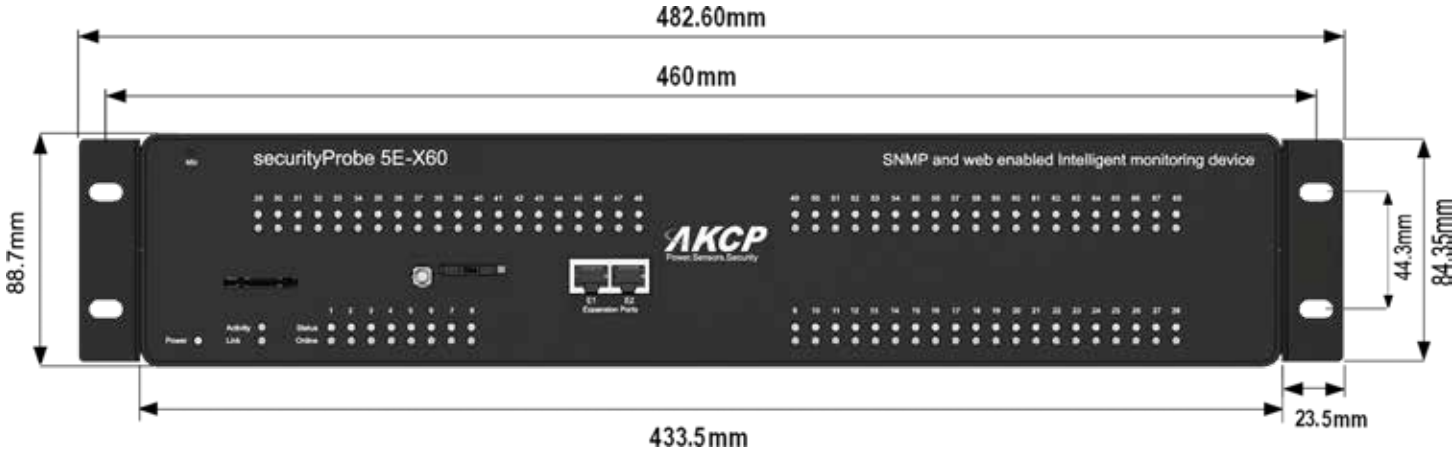
SEC5ES/V/A-X60 - Technical Drawing

Technical drawing illustrates SEC5ESVA-X60, dimensions of 5ES and 5ESV are the same





securityProbe5E-X60 with 1U rackmount brackets



Analog and Digital Cameras

Analog and Digital Cameras for your securityProbe

connect up to 4x analog (5ESVA models) or digital cameras (5ESV). Pan and tilt camera option gives remote control of the camera position and automaticaly point to pre-set positions on sensor events.

Synchronize sensor events with camera footage, taking snapshots or video when an event happens, sending it via E-mail or MMS, giving you a visual reference to the situation at your monitored location.

UMC	Support
	securityProbe 5ESVA securityProbe 5ESVA-X20 securityProbe 5ESVA-X60

PTDC	Support
	securityProbe 5ESVA securityProbe 5ESVA-X20 securityProbe 5ESVA-X60

HD-DC	Support
	securityProbe 5ESV securityProbe 5ESV-X20 securityProbe 5ESV-X60

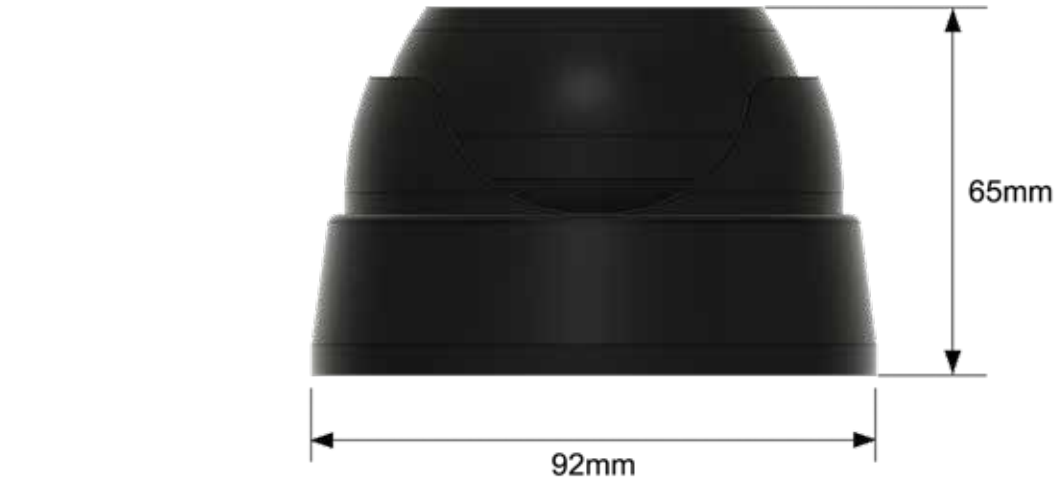
HD-PTDC	Support
	securityProbe 5ESV securityProbe 5ESV-X20 securityProbe 5ESV-X60

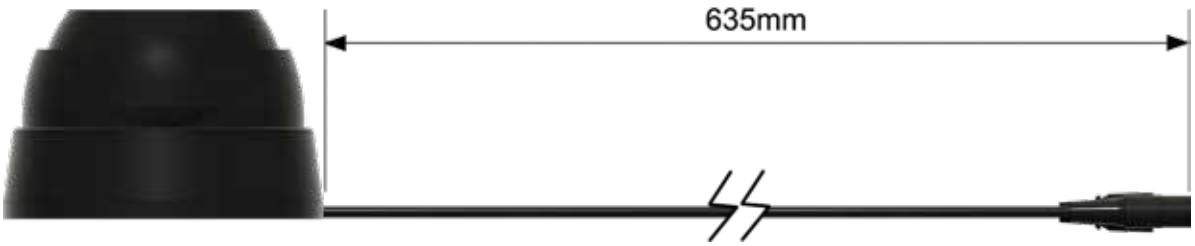
Analog and Digital Cameras

Technical Specification

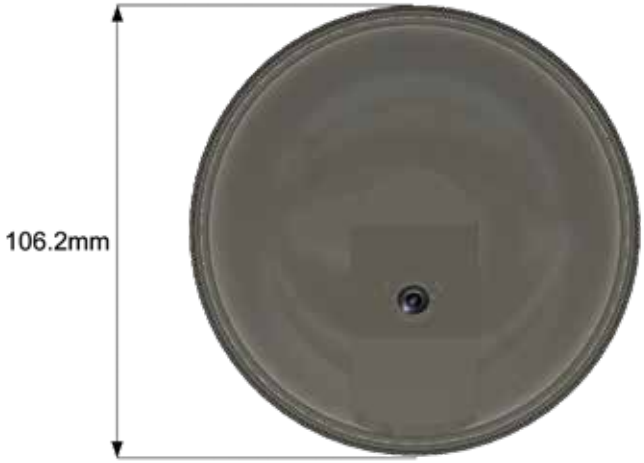
Camera Control. (Pan and Tilt cameras only)	Remote pan and tilt (remote 330deg pan, 80deg tilt)
	Control of camera motor via web-interface (administrator only)
	Camera control port PT1-4, Pelco D RS485, 2 pins Terminal box
	Precision, custom designed stepper motor
Image Sensor	
CCD	High quality Sony CCD Light sensitivity of .5 lux at f1.2 1/3" interline CCD Auto White Balance 640 pixels per line, with 625 per frame (interlaced)
Electronic Iris	1/50 - 1/100,000 (PAL); 1/60 - 1/100,000 (NTSC)
Picture Elements	640 (H) x 480 (V)
S/N ratio	45dB or more (AGC o)
Connections	
Video	BNC (Analog, UMC-PAL/NTSC and PTDC-PAL/NTSC) USB (Digital, HD-DC and HD-PTDC)
Power	2.5mm Male plug
Optics	
Lens type	fixed
Focal length	3.6mm
Viewing angle	92 deg
Physical and Environmental	
Weight	0.8 kg (PTDC) 0.3 kg (HD and UMC)
Power	9VDC, external (PTDC and UMC versions) 5VDC powered by security Probe (HD-DC only)
Power consumption	2.16 W
Operating temp. range	0 - 40 °C
Operating humidity range	10 - 80 % RH, non-condensing

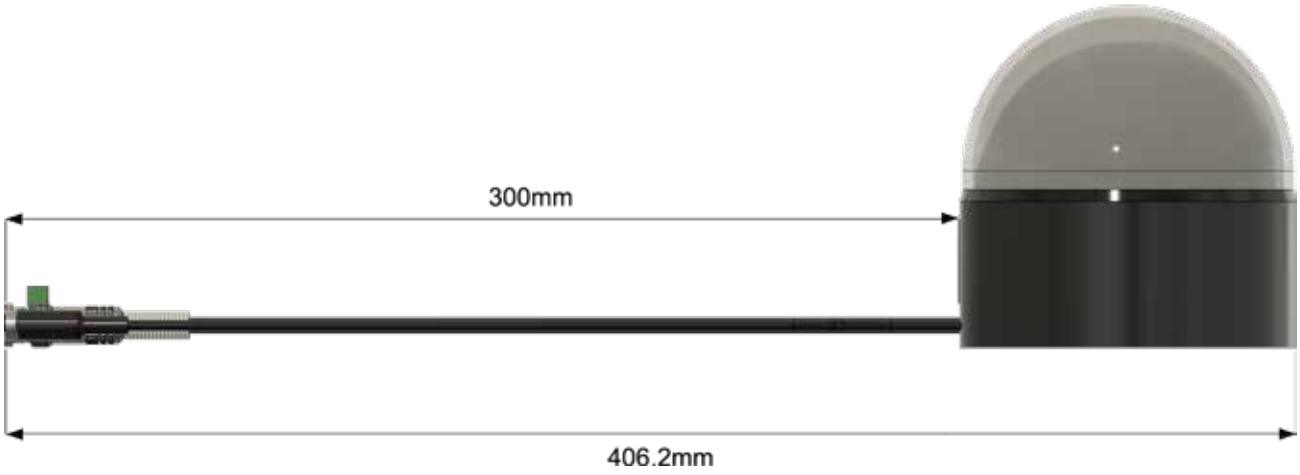
UMC / HD-DC - Technical Drawing





PTDC / Hd-PTDC - Technical Drawing

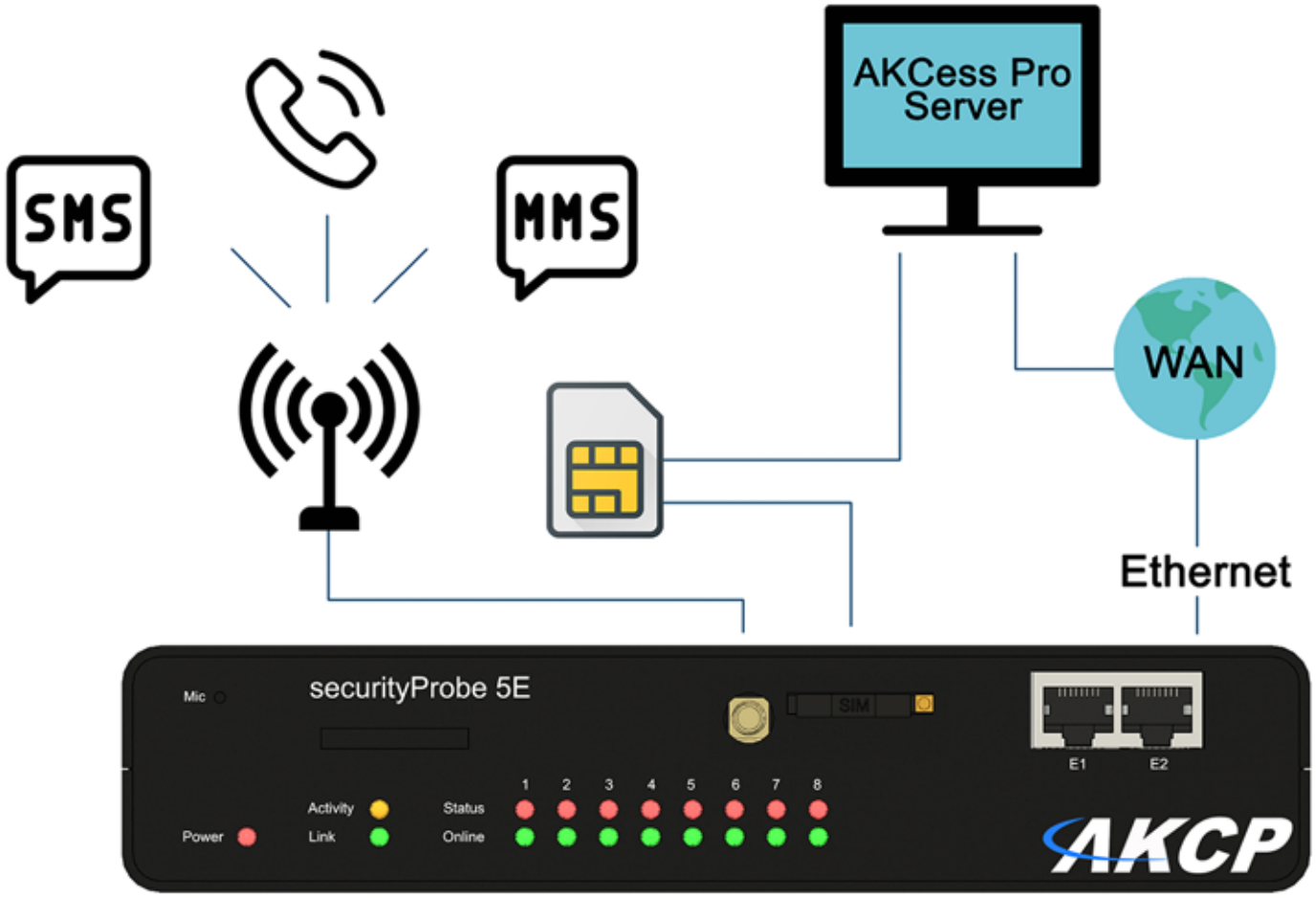




Cellular Data Modem

Internal Modem for securityProbes.

if your securityprobe is installed at a remote site with no wired internet connection available, or you wish to have a backup means of communication should your internet network be unavailable, then choose the option to install a 3G or 4G internal modem. An internal cellular data modem also allows you to send SMS and MMS alerts directly from the securityProbe device itself, notifying you of a sensors critical status.



Cellular Data Modem

Technical Specification

Weight	5.7g
Dimension	30 X 30X 2.9mm
Power Suppy	Power is supplied by the securityProbe base unit.
Operation Temperature	-40ºC to +85ºC
Note : Two versions of the Internal 3G Modem are available in EU and US frequency ranges. It is the responsibility of the customer to check and confirm the frequency required for their region	**European Version**: Dual-Band UMTS/HSPA+ 850/1900MHz Quad-Band GSM/GPRS/EDGE 850/900/1800/1900MHz
	US Version: Dual-Band UMTS/HSPA+ 900/2100MHz Quad-Band GSM/GPRS/EDGE 850/900/1800/1900MHz
	GPRS multi-slot class 12
	EDGE multi-slot class 12
Output Power	**UMTS 850/1900**: 0.25W
	UMTS 900/2100: 0.25W
Specifications for Data transfer	HSPA+ Max. 14.4Mbps(DL), Max.5.76Mbps(UL)
	WCDMA Max.384Kbps(DL), Max.384Kbps(UL)
	EDGE Class Max. 236.8Kbps(DL),Max.118Kbps(UL)
	GPRS Max. 85.6Kbps(DL), Max.42.8Kbps(UL)
Antenna Specifications	
Weight	60g
Dimensions	28mmx85mm
Mounting	Magnetic Mount
Connector Type	SMA Male
Cable	3M
Color	Black
Operation Temperature	-40ºC to +85ºC
General Release Notes	The Internal 3G Modem is compatible with all securityProbe units. However, the Internal 3G Modem cannot be retrofitted to securityProbe units
	The Internal 3G Modem includes external antenna with a 3 meter cable.
	A SIM Card is not provided.
	The Internal 3G Modem is not available on the AKCP Door Control Unit.

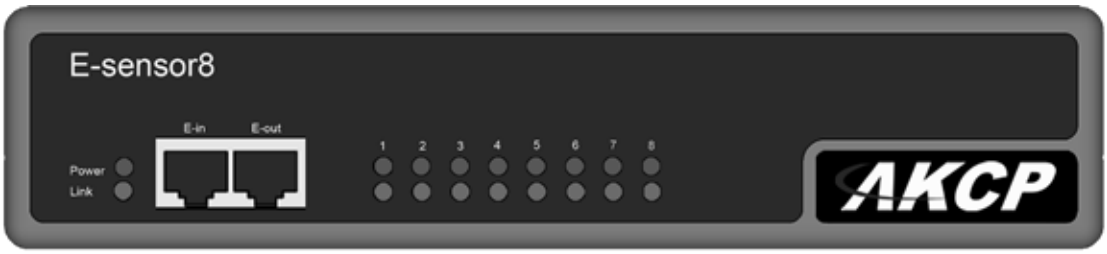
8 Port Sensor Expansion Unit (E-IS8)

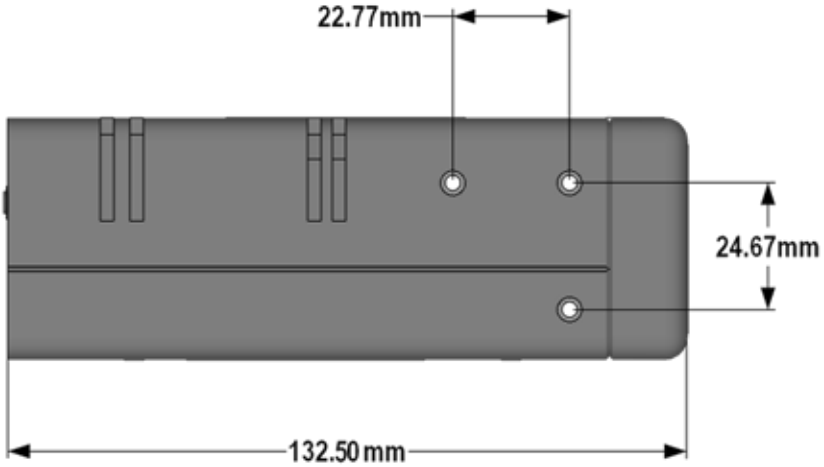
Expand the securityProbe with more sensor ports.

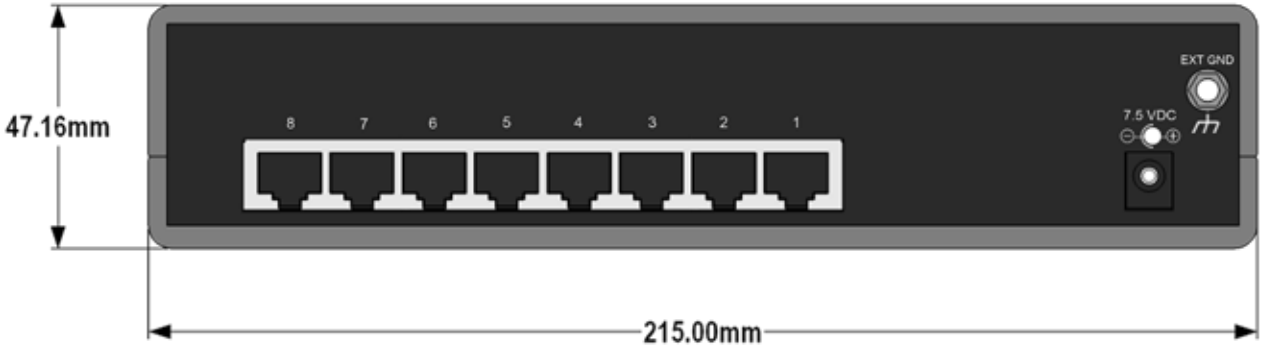
securityProbe devices come with 8 sensor ports as. Should you need more sensor ports, the most cost effective way is to add E-Sensor8 expansion units. Up to 1,000ft (300m) cable length can be used between the securityProbe and the E-Sensor8. Additional expansion units can be daisychained with up to 1,000ft (300m) between each unit. A maximum of 600 total sensor points can be monitord from a single securityProbe. E-Sensor8 EXP unit is also compatible with the sensorProbeX+

Dimension	Size : 8.5" x 5.43" x 1.80" Weight : 2.4 pounds
Expandable Ports	Daisy chain multiple E-modules including E-sensor8 and E-opto16 Uses standard RJ-45 connections and CAT5 LAN cable Data transfer rate: 115.2 KBPS Maximum extension cable run length: 300 meters (1000 feet) 1 RJ-45 expansion module input (E-in) 1 RJ-45 expansion module output (E-out) Compatible with AKCPs complete line of intelligent sensors Connect up to 600 AKCP intelligent sensors to one securityProbe 5E
Mounting	Rack mount brackets included Compatible with AKCP DIN and Tray rack mount kits
Power Requirements	Voltage 7.0 - 9 VDC, 3 Amp
Status Indication	LED indication for Power LED for Network Connectivity LED for sensor online and threshold status Disconnect alert from securityProbe 5E base unit notifications.
Output	Configurable output signals (0VDC/5VDC) on any of the 8 RJ-45 sensor ports 1 RJ-45 expansion module output (Eout)
Inputs	8x RJ-45 ports for connecting AKCP sensors 1x RJ-45 expansion module input (E-in) 1 RJ-45 expansion module input
Operating Environment	Temp : Min. -35°C - Max. +55°C Humidity : Min. 20% - Max. 80% (Non-Condensing)
Components	Manufactured using highly integrated, low power surface mount technology to ensure long term reliability.
Power Consumtion	Typical 6.15 Watt, 0.82Amp

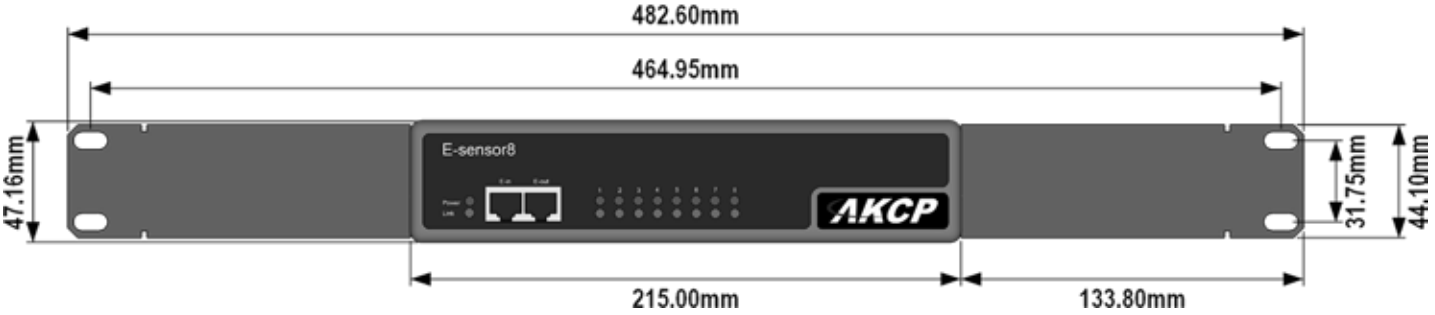
E-IS8 - Technical Drawing







E-IS8 with 1U rackmount brackets



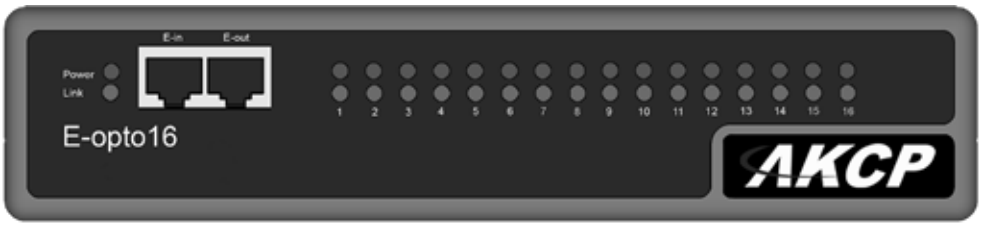
16x Opto-Isolated Dry Contacts (E-OP16)

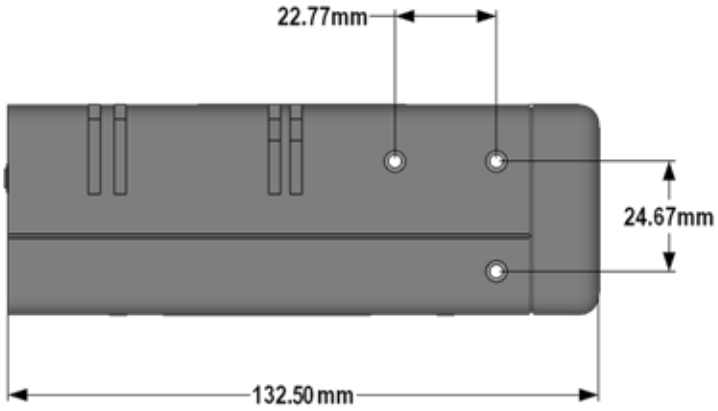
Optically isolated Dry Contact Expansion Unit.

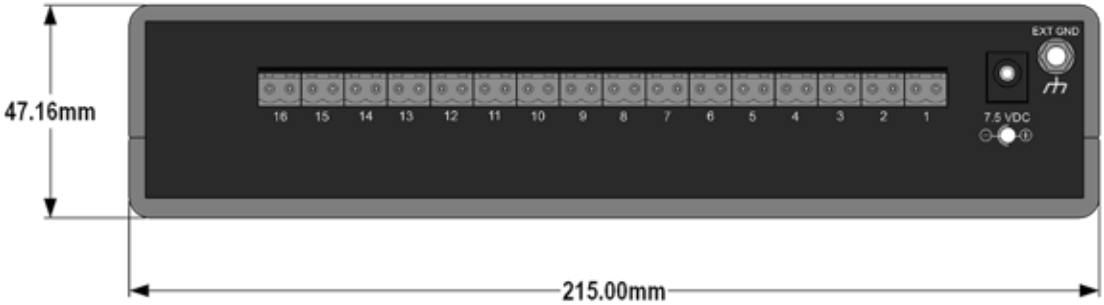
Add isolated dry contacts to your securityProbe or sensorProbeX+. If your main device is some distance from the contacts you wish to monitor, save money and time in cable infrastruture by installing the E-Opto16 clse to the contacts you wish to monitor and run only a single CAT5 cable back to the base unit. E-Opto16 devices can be installed up to 1,000ft or 300m from the base unit and daisychained with a max distance of 1,000ft or 300 meters between each device.

Dimension	Size : 8.5" x 5.43" x 1.80" Weight : 2.4 pounds
Expadble Ports	Daisy chain multiple E-modules including E-sensor8 and E-opto16 combined Uses standard RJ-45 connections and CAT5 LAN cable Data transfer rate: 115.2 KBPS Maximum extension cable run length: 300 meters (1000 feet) 1 RJ-45 expansion module input (E-in) 1 RJ-45 expansion module output (E-out)
Mounting	Rack mount brackets included Compatible with AKCP DIN and Tray rack mount kits
Power Requirements	Voltage 7.0 - 9 VDC, 3 Amp
Status Indication	LED indication for Power LED for E-module connectivity LED for dry contact status LED for Network Connectivity Disconnect alarm notification from securityProbe 5E base unit LED for sensor online
Output	1 RJ-45 expansion module output (E-out)
Inputs	16x 2 wire dry contact inputs configured as opto-isolated 2 wire dry contact inputs support up to 50 Volts DC and 80mA of current 1 RJ-45 expansion module input (E-in)
Operating Environment	Temp : Min. -35°C - Max. +55°C Humidity : Min. 20% - Max. 80% (Non-Condensing)
Components	Manufactured using highly integrated, low power surface mount technology to ensure long term reliability.
Power Consumption	Typical 6.15 Watt, 0.82Amp

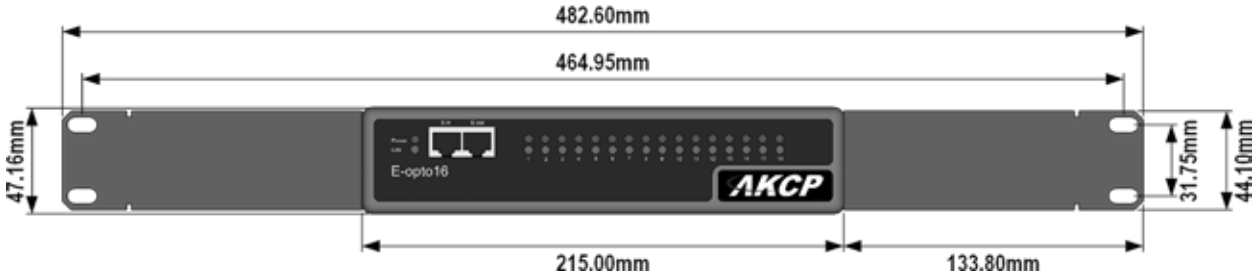
E-OP16 - Technical Drawing

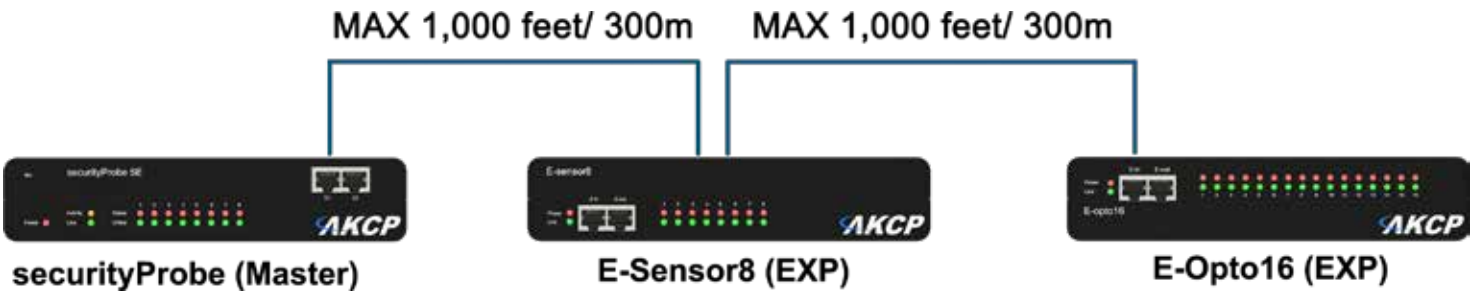






E-OP16 with 1U rackmount brackets





Door Control Unit (DCU)

Control access and synchronize with video

With the DCU and our central management software, AKCP Pro Server, you can administer your security, access priivilidges and schedules for hundreds of doors across different locations. Ideal for centralized management of remote sites, or multiple facilities. With it's tight integration with the AKCP management platform you can monitor all sensors, cameras and access from a single software, with sensor and acces events synchronized with video.

The DCU is based on the securityProbe5E platform, meaning many of the features such as Modbus, custom scripts, virtual sensors, are all avaialble in the DCU as well. 2x intelligent sensor ports are provided, if additional sensor ports are needed then you can connect the EXP units such as the E-Sensor8 and E-Opto16.

EM Card Reader

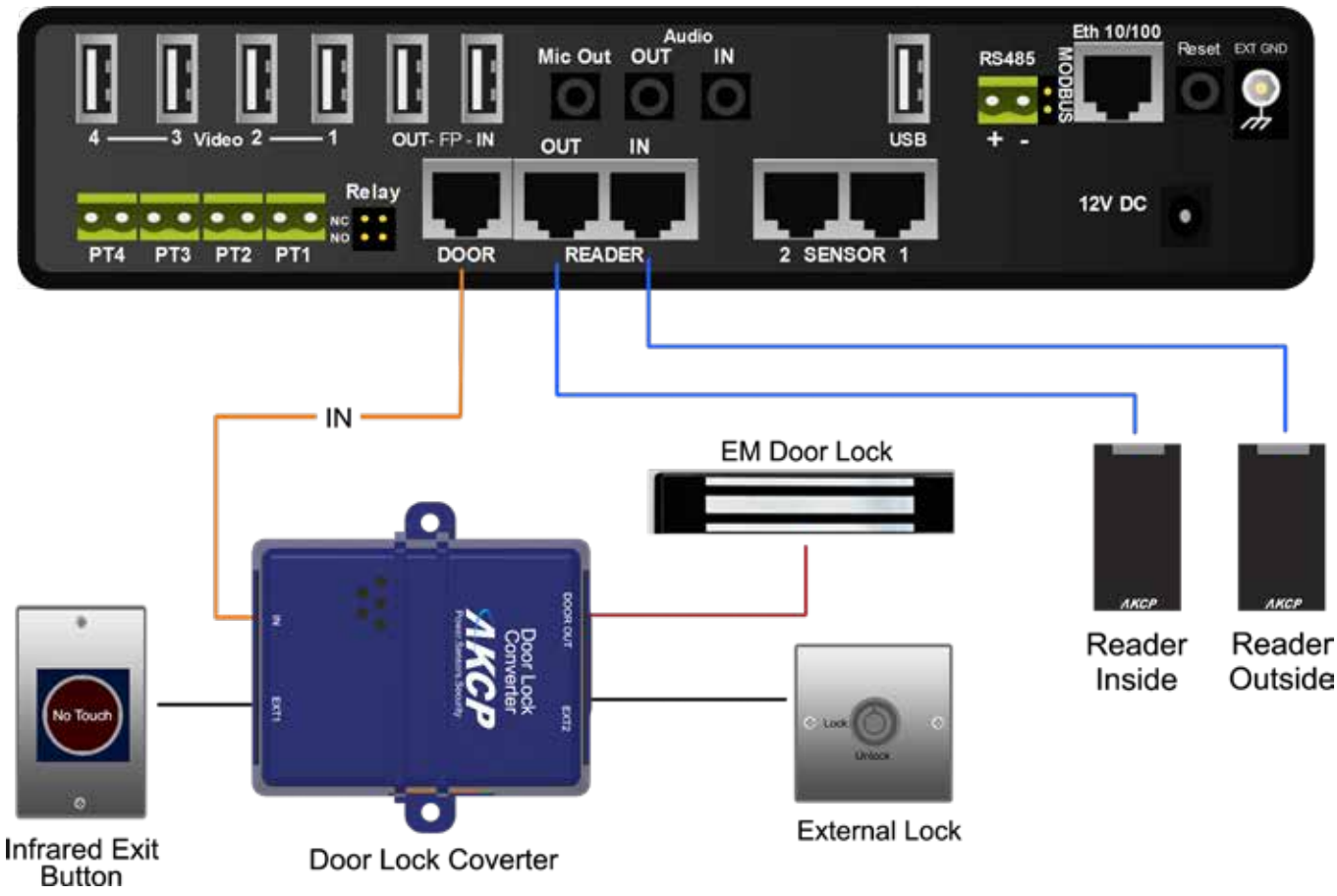
EM Lock

External Lock Override

Infrared Exit Button

PVC Cards

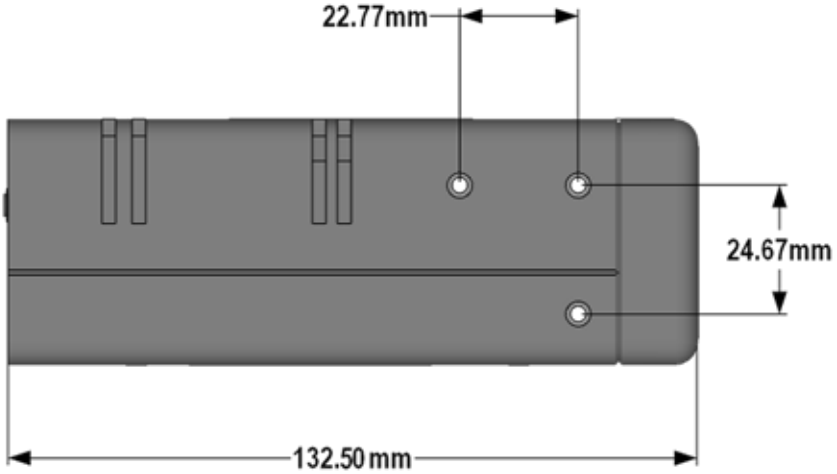
DCU - Wiring Diagram

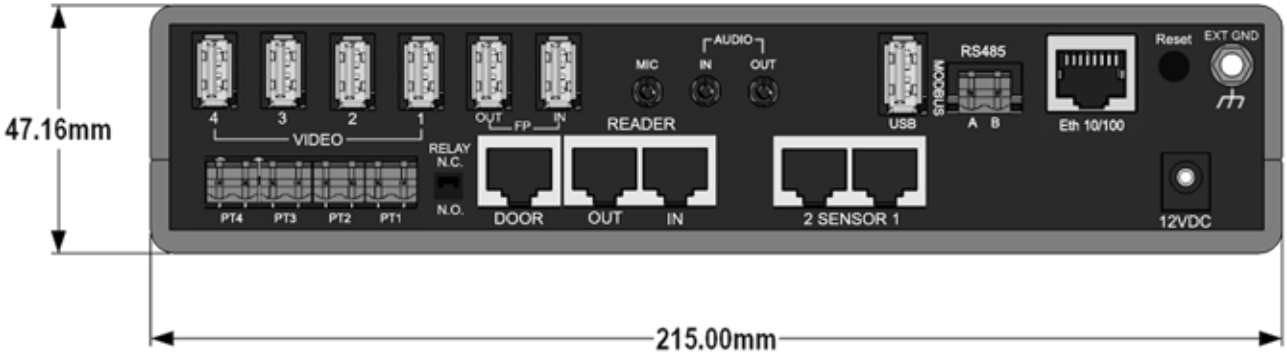


DCU - Technical Specification

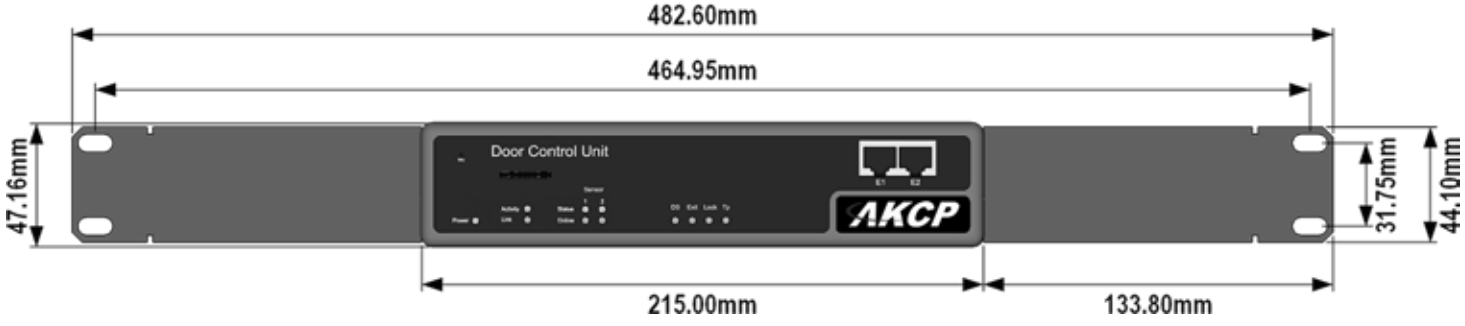
Dimension	Size : 8.5" x 5.43" x 1.80"
	Weight : 1 Kg
Expansion Ports	2x RJ-45 Expansion Ports 115.2K BPS Data Transfer Rate Simultaneous Functionality between Expansion Ports & RS485 Port Threshold Status
Mounting	Rack Mount Brackets included Compatible with AKCP's DIN and Rack Mount Trays
Power Requirements	Voltage : 12 VDC, 3Amp
Status Indication	LED Indication for Power LED for Network Connectivity LED for Sensor Online and Threshold Status LED for Door Status
Output	Ext. Speaker Out, 2.5" Jack (Analog) For Modem Application
Power Consumption	Typical 5.025 Watt, 0.67A
Operating Environment	Temp : Min -35°C - Max +55°C Humidity : Min 20% - Max 80% (Non-Condensing)
Components	Manufactured using highly integrated, low power surface mount technology to ensure long term reliablity.
	CPU : AKCP i.MX25 Processor
	128 MB On-Board NAND Flash Memory Slot Drive
Inputs	2x RJ-45 Sensor Ports 2x RJ-45 Expansion Ports 1x USB 2.0 Modem Port 4x Video Ports 2x Fingerprint Ports (when using Fingerprint Readers it is recommended that only x2 Video Ports are enabled.) 2x Wiegand 26 Ports 4x PTZ Two Pin Controllers Audio In (Analog) 2.5" jack RS485, 2 Pin Terminal box, (used for Modbus)
MTBF	400,000 Hours
Expansion Boards	8 Port Intelligent Sensors Module (E-Sensor 8) 16 Port Dry Contacts Module (E-OPTO16) Extendable up to 1,000 Feet or 300 Meters Expansion modules are daisy chainable. Cabinet Control Unit (25 per chain)

DCU - Technical Drawing





DCU with 1U rackmount brackets



Cabinet Control Unit (CCU)

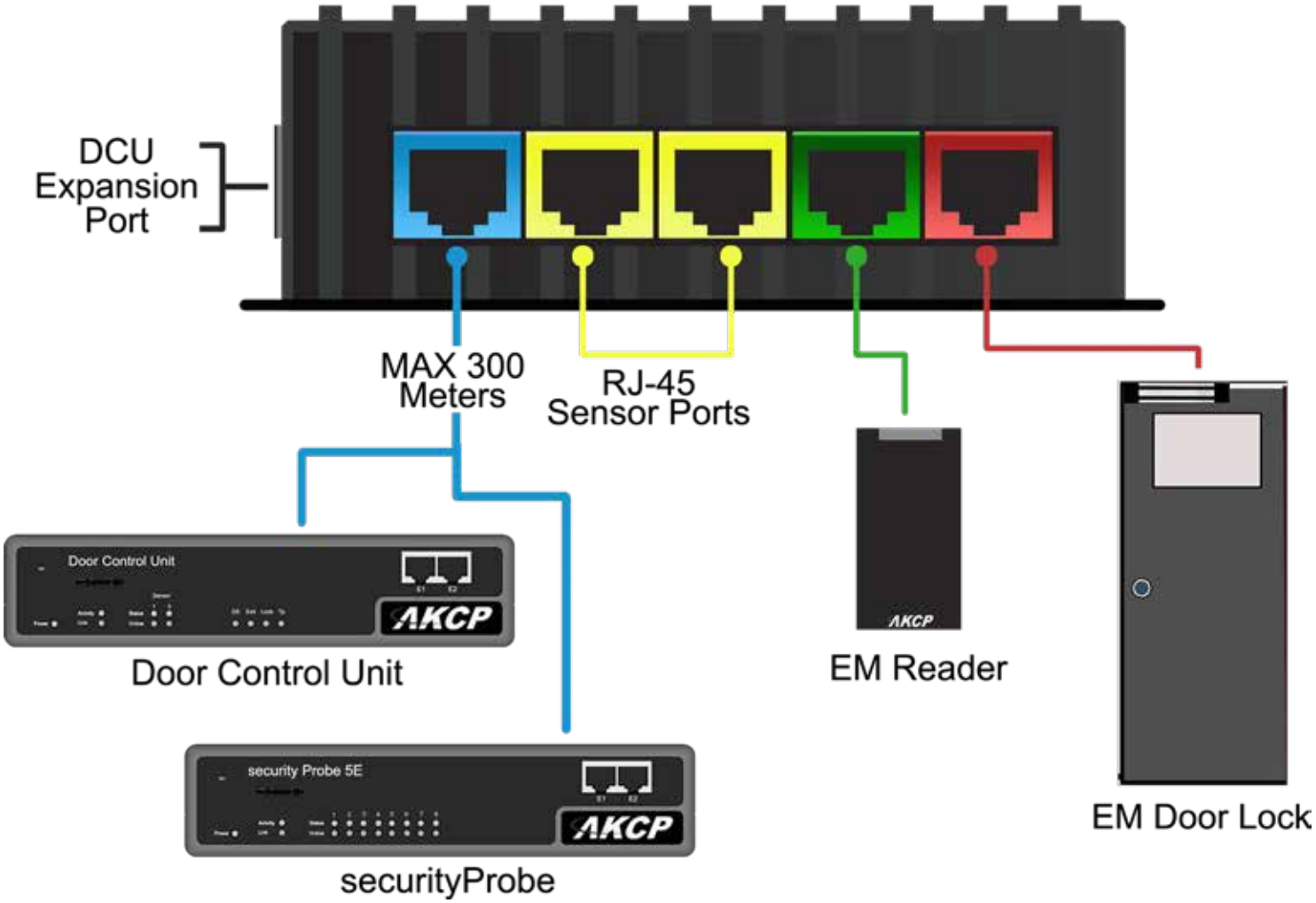
Cabinet Access Controller

The CCU is a compact door access controller. Working on our Expansion Technology, it connects to the Expansion port of any SEC5E, DCU or SPX+, providing a cost effective way to add access control to your facility and monitoring in a single platform together with your environmental sensors. The CCU can be used on any doors, and also computer cabinets, or other types of cabinets where the swing handle lock can not be installed, or an electromagnetic type lock is prefered.

Technical Specification

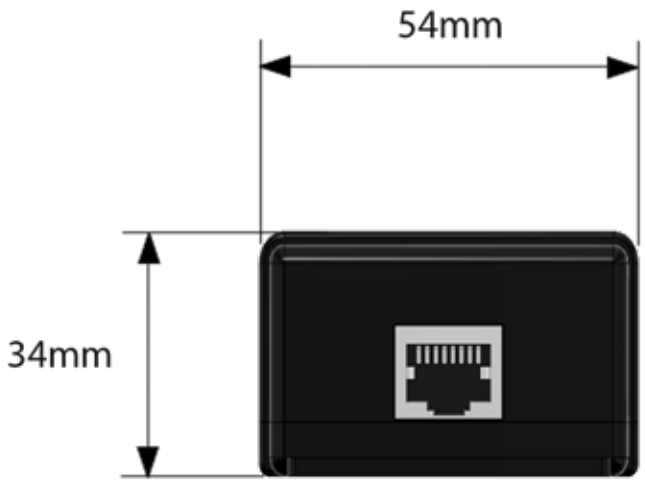
Dimension	Size : 13.20 x 5.38 x 3.40 cm Weight : 0.15 Kg
Expansion Ports	RJ-45 Expansion Ports IN - OUT Connections
Mounting	Rack Mount Brackets included Compatible with AKCP's DIN and Rack Mount Trays
Power Requirements	Voltage : 12 VDC, 1Amp
Status Indication	LED Indication for Power LED for Network Connectivity
Components	Manufactured using highly integrated, low power surface mount technology to ensure long term reliablity.
Power Consumption	Typical 6 Watt
Operating Environment	Temp : Min -35 C° -Max +55°C Humidity : Min 20% - Max 80% (Non-Condensing)
Inputs	2x RJ-45 Sensor Ports 2x RJ-45 Expansion Ports 1x Card Reader Port 1x Cabinet Lock Port
MTBF	400,000 Hours
Supported Lock Rating	The CCU can control a 12V Door Lock with a maximum current draw no greater than 500mA.

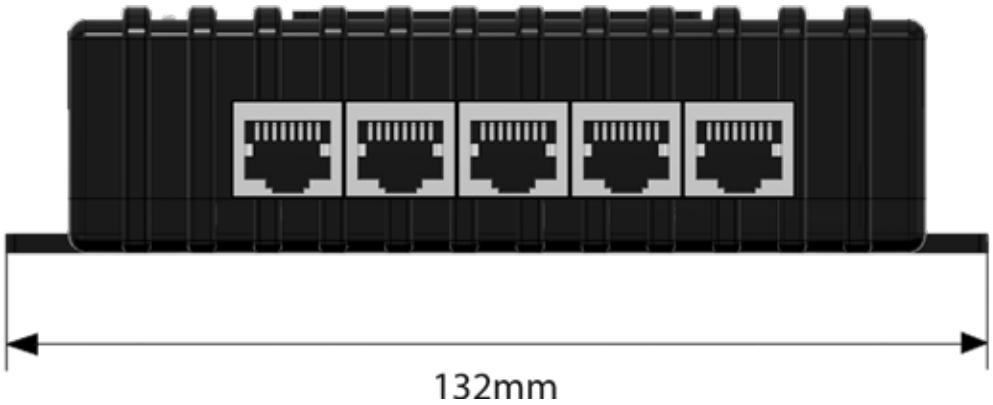
CCU - Wiring Diagram



The CCU can be connected to the Expansion port on either the SEC5E, DCU or SPX+

CCU - Technical Drawing





Environmental Sensors

Use environmental sensors in any place that monitoring of the temperature, humidity, airflow and water is required. Specialist environmental monitoring sensors such as thermocouples can cope with extreme temperatures, and thermal map sensors will monitor and map the air temperature at the top, middle and bottom of your computer cabinets.

Connect the sensor to a compatible AKCP base unit, and you have an SNMP enabled monitoring system with it's own web itnerface or integrate to third party monitoring software. For a tightly integrated solution choose our central management software, AKCPro Server.

		
Thermal Map Sensor and Cabinet Analysis Sensor	**Cabinet Analysis Sensor**	**Temperature Sensor (Water Resistant)**
		
Temperature and Humidity (Water resistant)	**Daisychain Temperature Sensor**	**Spot Water Sensor**
		
Rope Water Sensor	**Airflow Sensor**	**J-K Thermocouple**

Thermal Map Sensor (CTMS / CTHMS)

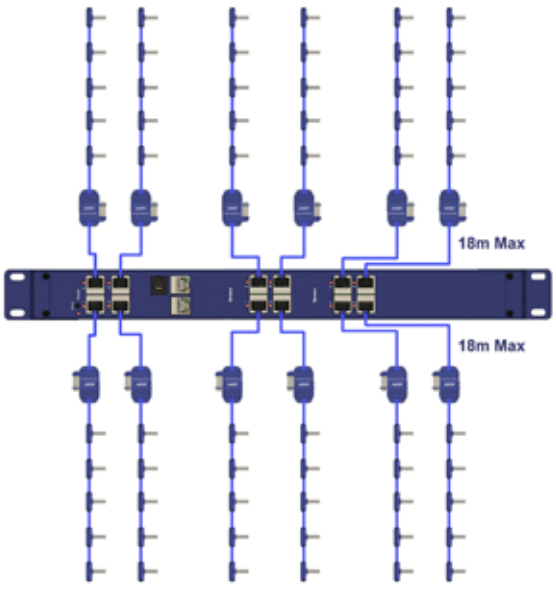
Thermal maps consist of a string of 6x temperature sensors and an optional 2x humidity sensors. Pre-wired to be easily installed in your cabinet, they are placed at the top, middle and bottom - front and rear of the cabinet. This configuration of sensors gives you monitoring of the air intake and exhaust temperatures of your cabinet, and the temperature differential from the front to the rear.

Monitor temperature differentials in your cabinet

Thermal Map sensors are compatible with all sensorProbe+ base units, and are available in temeprature only (6x temp), or dual temperature and humidity (6x temp, 2x hum). Sensors are provided with double sided VHB tape for mounting. Optional magnetic re-positionable mounting kit is available.

Application Diagram

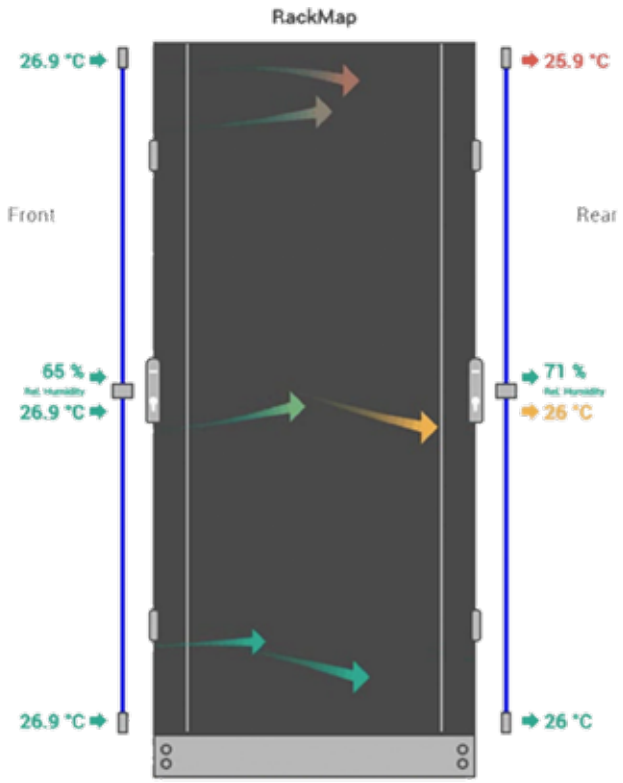
Thermal map sensors connect to any AKCP sensorProbe+ base units. Extendable up to a maximum of 18 meters cable length, you can monitor multiple cabinets from a single IP address. Below example illustrates an SPX+ with 12 sensor ports, this is the maximum number of thermal maps that can be connected to a single SPX+.



Maximum of 12 Thermal Maps connected to an SPX+

Thermal Map installed on cabinet

CTMS / CTHMS - Technical Specifications

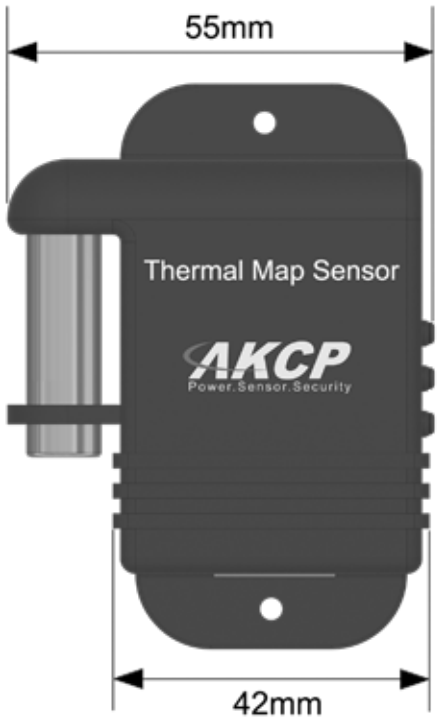


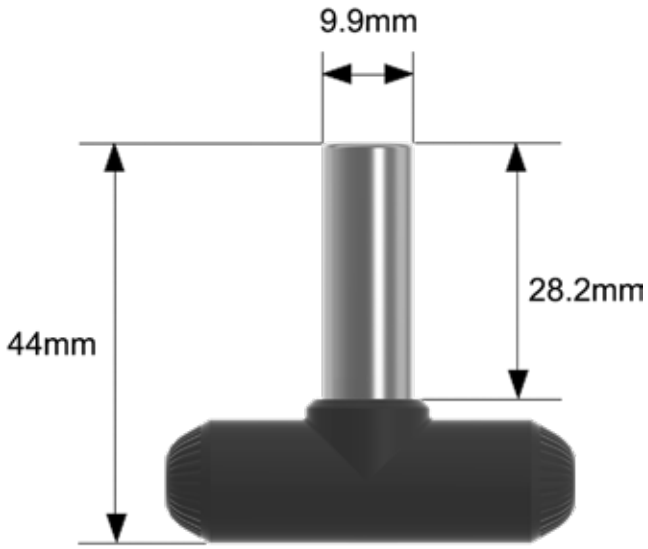
Example of AKCP Pro Server rack map view, with thermal map sensor and front to rear temperature differentials

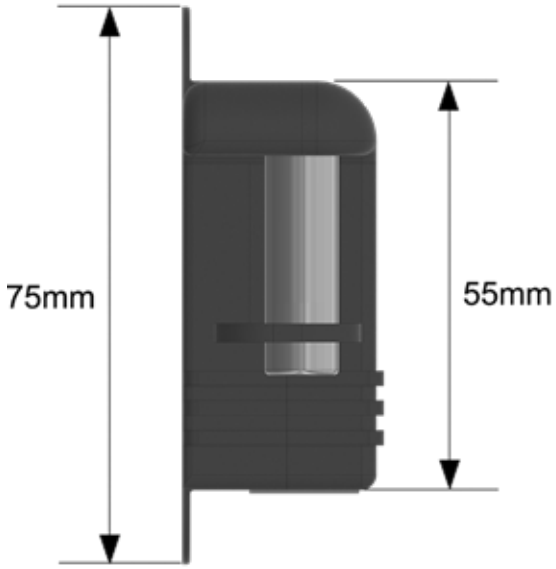
Thermal maps can be added to rack map views in AKCPro Server. Animated arrows show the temperature differential from the front to rear of the cabinet as well as the individual sensor values at the front, rear, top, middle and bottom of the cabinet. Find out more about the great features of this software in the AKCPro Server section of the catalogue.

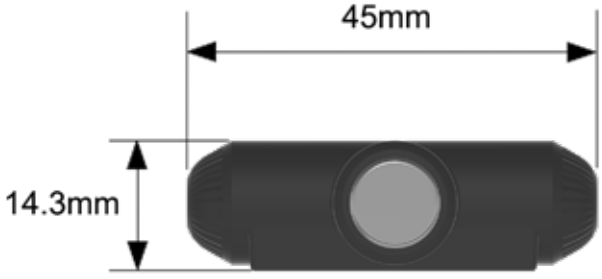
Temperature	
Never needs Calibration	
Measurement range	-40°C to +75°C / -40°F to +167°F
Measurement resolution	0.1°C increments / 0.2°F increments
Measurement accuracy	Maximum ±0.3 at -40°C, minimum ±0.3 at +25°C to +75°C Maximum ±0.6 at -40°F, minimum ±0.6 at +77°F to +167°F
Communications Cable	RJ45 jack to temperature sensor using UTP CAT5/6
Sensor Type	semiconductor microprocessor controlled
Power Source	powered by the sensorProbe+. No additional power needed.
Power Consumption	Typical 75 mWatt, 15 mA
Humidity	
Measurement range	0 to 100% Relative humidity
Resolution	1% for the sensorProbes and 0.1% for the securityProbe units.
Accuracy	25°C ±3%
Power Source	powered by the sensorProbe. No additional power needed.
Power Consumption	Typical 65 mWatt, 13 mA
GENERAL	
Maximum cable length	18 meters / 60 feet with approved low capacitance shielded UTP cable
Auto-sense	sensorProbe+ unit auto detects the presence of the Thermal Map Sensor and configures the unit automaticaly
Important Note	Thermal Map Sensor is only compatible with the sensorProbe+ and securityProbe+ platforms.

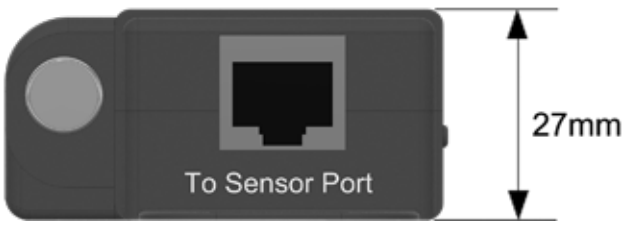
CTMS / CTHMS - Technical Drawing





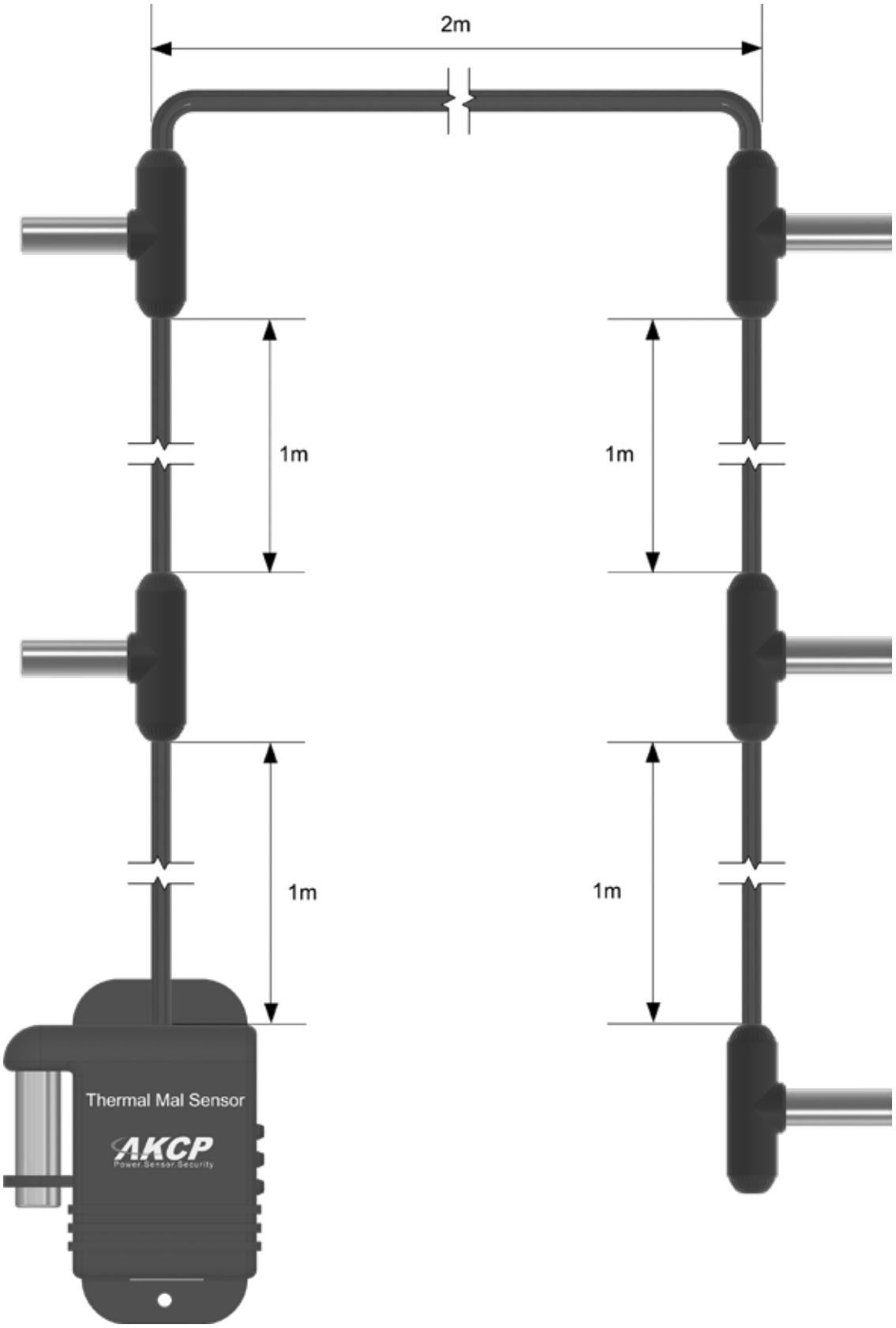






CTMS / CTHMS - Technical Drawing

Cabinet Thermal Map Sensor string



Temperature Sensors (TMP00 / TMP01 / TMPW15)

When you need to know the temperature of a room, enclosure or cabinet this sensor can be used. Housed in a thermally conductive metal tube it is accurate and quick to react to changes in temperature, it is available in two versions.

TMP00

The TMP00 is supplied with a free 5ft cable, it can be extended using standard CAT5 up to 300 meters (1,000ft) from the AKCP base unit. The sensor can be mounted with screws, adhesive or with optional DIN rail clips

TMP01

A short 1ft fixed cable with temperature sensor on the end. Custom lengths can be ordered to suit your needs. Product code for custom lengths is TMPxx where xx is replaced by the cable length in feet.

TMPW15

Waterproof temperature sensor* with extended metal tube. Available in a variey of cable lengths and in either the standard tube or a choice of two additional tube lengths, either 50mm or 100mm. Custom lengths can be ordered with code TMPWxx / TMPWxx-50mm / TMPWxx-100mm where xx is replaced by the cable length in feet.

TMPW15-100mm

TMPW15-50mm

*Water proof up to length of metal tube

Cabinet Analysis Sensor (CAS)

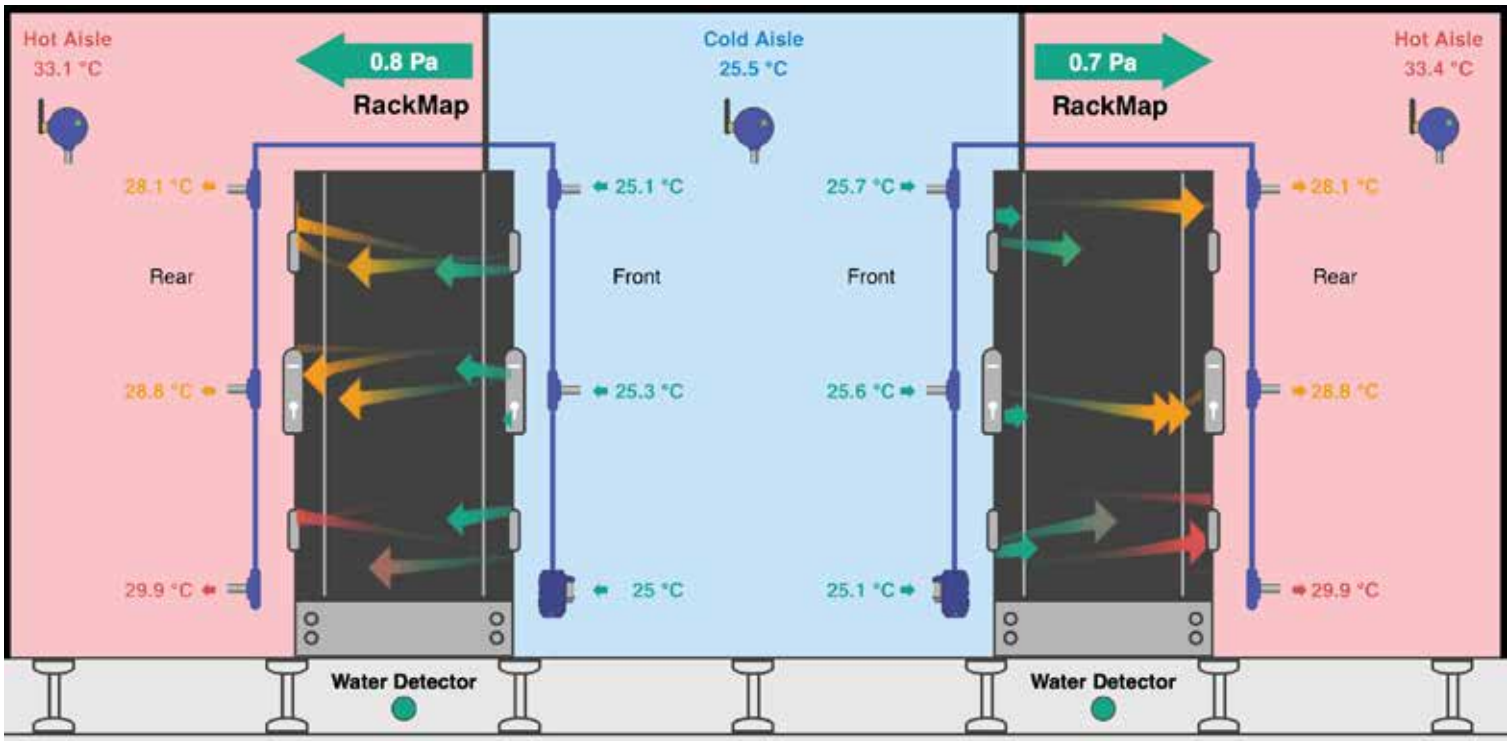
The cabinet analysis sensor combines differential pressure and cabinet thermal maps into one smart sensor. Sensors include :-

String of 6x Temp sensors and 2x Humidity for cabinet front and rear temperatures with ΔT calculation of front and rear temperature differentials.

Differential pressure sensor, check for proper pressure differential between front and rear. Ideal for hot/cold aisle containment to ensure proper airflow.

AKCPro Server Rack Map View
Use the CAS with dedicated rack map views on AKCPro Server. A visual representation of your cabinet, with airflow, front and rear temperatures, temeprature differentials and differential pressure. Add swing handle locks, LCD display and sensor status light for a complete Rack+ solution.

Note: Wireless version (LBCAS) available for use with AKCP Wireless Gateway



Temperature Sensors

Technical Specifications

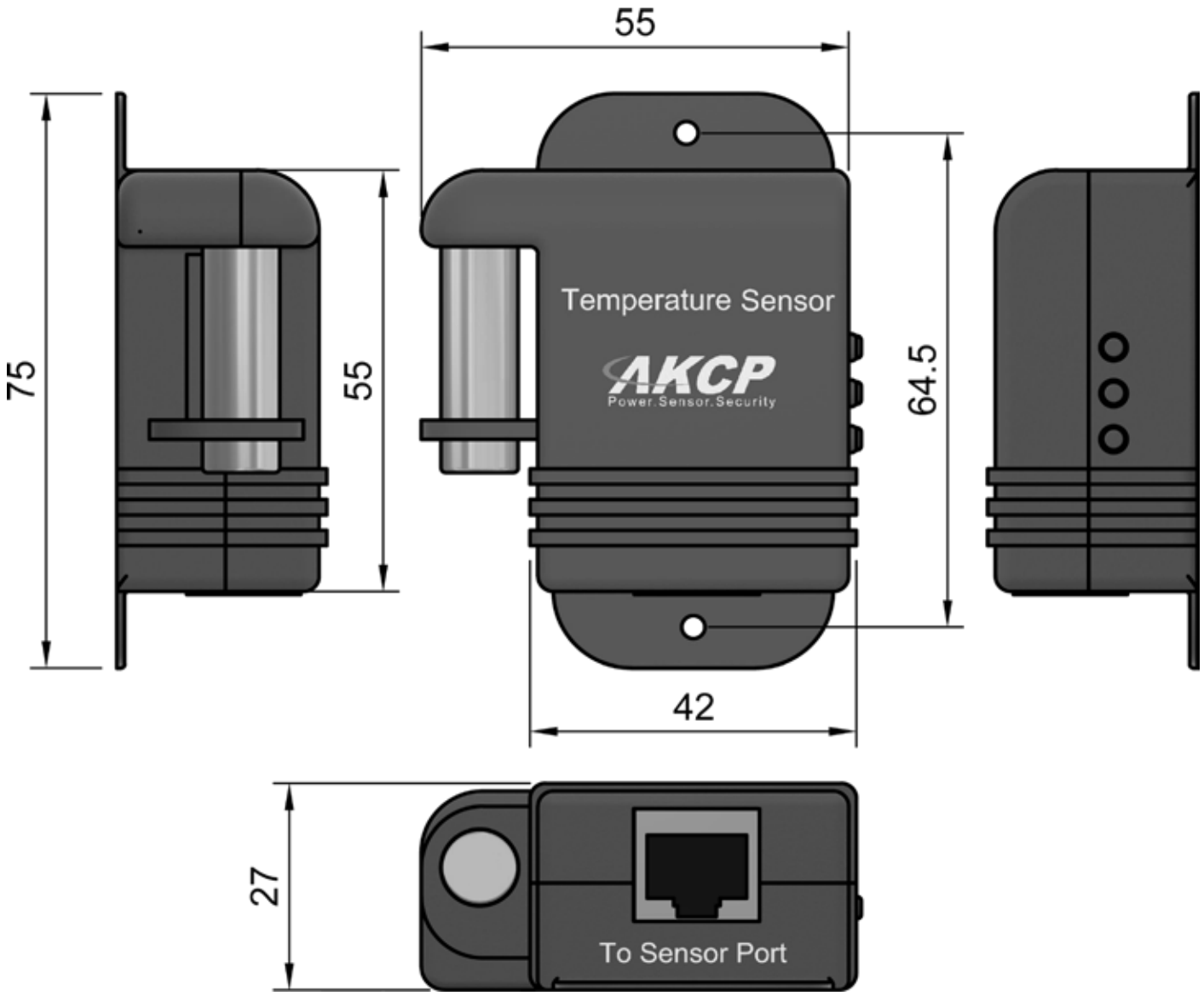
Calibration	Never needs calibration
Measurement range Celsius	-55°C to +75°C
Measurement resolution Celsius	1°C for the sensorProbes and 0.5°C for the securityProbe units.
Measurement accuracy Celsius	±0.5°C accuracy from -10°C to +75°C
Measurement range Fahrenheit	-67°F to +167°F
Measurement resolution Fahrenheit	1°F for the sensorProbes and 0.9°F for the securityProbe units.
Measurement accuracy Fahrenheit	±0.9°F accuracy from +14°F to +167°F
Tube Material	Stainless Steel
Communications Cable	RJ45 jack to temperature sensor using UTP Cat 5 wire
Sensor Type	semiconductor microprocessor controlled
Power Source	powered by the sensorProbe. No additional power needed.
Power Consumption	Typical 10.70 mWatt, 2.14mA sensorProbe autodetects the presence of the temperature sensor
Measurement Rate	one reading every second Up to 2 temperature sensors per sensorProbe2, 8 per sensorProbe8. You can connect up to 8 on the securityProbe main unit and 8 more on each E-sensor8 expansion module.
Temperature Description IOD	.1.3.6.1.4.1.3854.1.2.2.1.16.1.1.<port>
Temperature Status IOD	.1.3.6.1.4.1.3854.1.2.2.1.16.1.4.<port>
Cable Length	TMP00 - Extendable up to 300 meters (1,000ft) with standard CAT5 cable. TMP01 - Fixed 1ft cable length TMPxx - Fixed cable up to 300 meters (1,000ft) TMPWxx - Water resistant withfixed cable up to 300 meters (1,000ft)

CAS - Technical Specifications

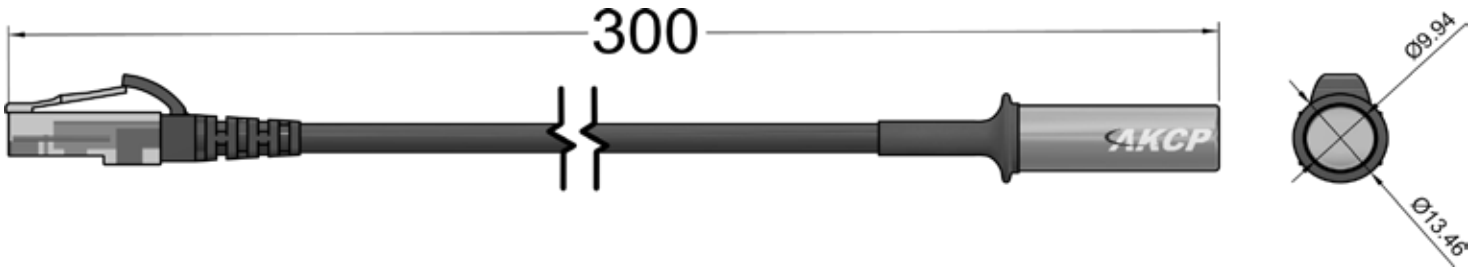
CAS	Cabinet Analysis Sensor (Thermal Map with Pressure Differential)
Dimension	75mm X 55mm X 27mm
Mounting	Wallmount
Power source :	5V from SP+
Components	Manufactured using highly integrated, low power surface mount technology to ensure long term reliability.
Operating Environment	Temperature : Min. -35° C – Max.80° C Humidity: Min. 20% – Max. 80% (Non-Condensing)
Environment monitoring	
Temperature	6x Temperature sensor values 3x Differential Temperature sensor values
Measurement Range :	-40°C to +75°C -40°F to +167°F
Measurement Resolution :	0.1°C increments 0.2°F increments
Measurement Accuracy :	Maximum ±0.3 at -40ºC, minimum ±0.3 at +25ºC and ±0.3 at +75ºC Maximum ±0.6 at -40ºF, minimum ±0.6 at +25ºC and ±0.6 at +167ºF
Humidity	2x Humidity sensor values
Measurement range :	0 to 100% Relative humidity
Resolution :	1%RH increments, 0.01%RH sensor reading
Accuracy at :	25°C ±2%RH
Differential Pressure	1x Differential Pressure value
Measurement range :	± 125 Pa (±0.5 inH2O / ±1.25 mbar)
Resolution :	0.01 Pa increments
Accuracy at :	25°C ±0.5%

TMP00 / TMP01 - Technical Drawing

TMP00 - Extendable Temperature Sensor



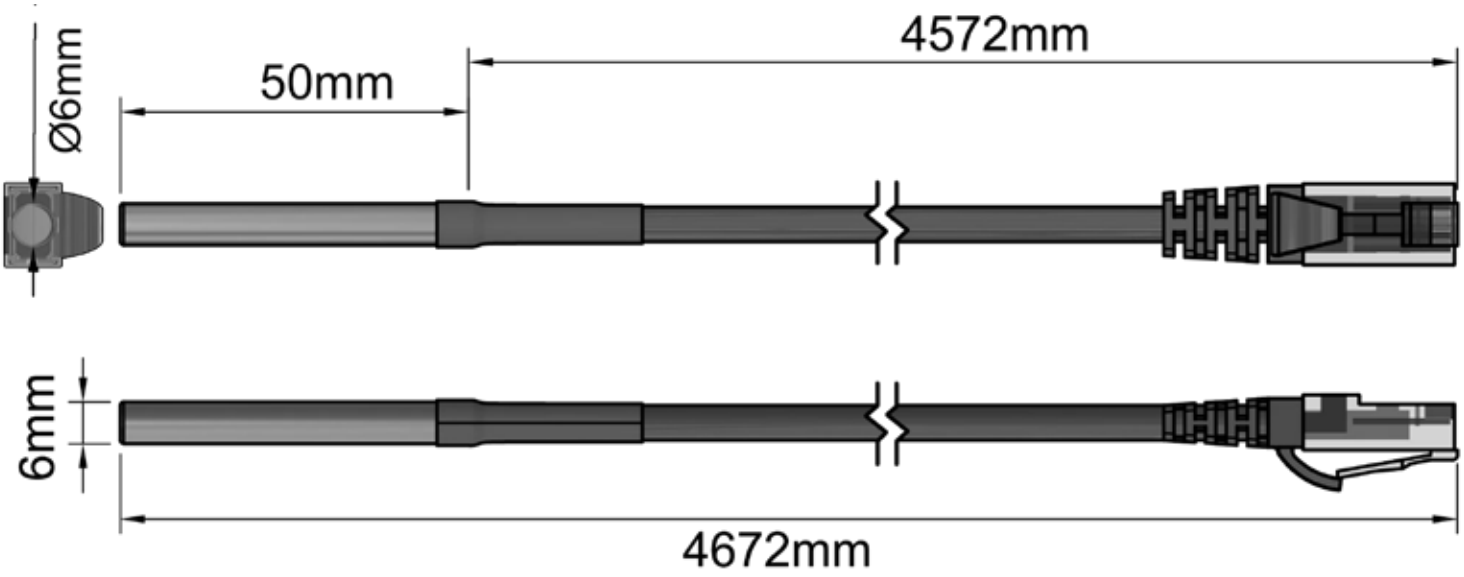
TMP01 - 1ft Temperature Sensor



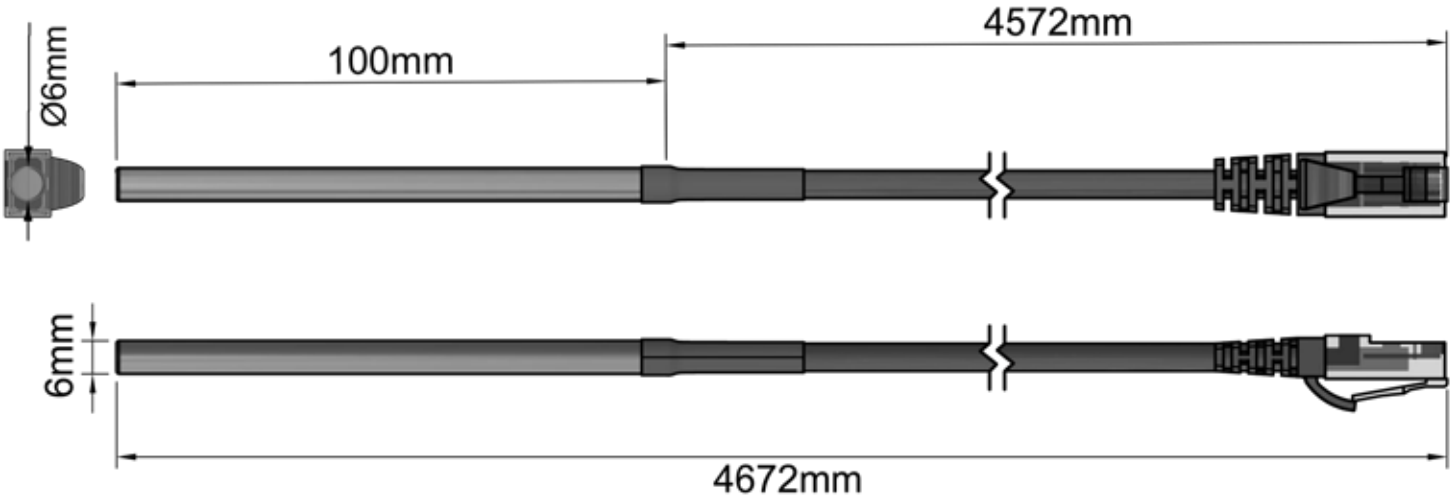
CAS - Technical Drawing

TMPW15 - Technical Drawing

TMPW15-50mm- Waterproof Temperature Sensor with 50mm tube



TMPW15-100mm- Waterproof Temperature Sensor with 100mm tube



Dual Temp and Humidity Sensors (THS00 / THS01)

Accurate and responsive measurement of temperature and humidity. Available in fixed length or extendable version, the sensor is housed in a metal tube that is thermally conductive and perforated to still provide accurate readings.

THS00

The THS00 is supplied with a free 5ft cable, it can be extended using standard CAT5 up to 300 meters (1,000ft) from the AKCP base unit. The sensor can be mounted with screws, adhesive or with optional DIN rail clips

THS01

A short 1ft fixed cable with a dual temperature and humidity sensor on the end. Custom lengths can be ordered to suit your needs. Product code for custom lengths is THSxx where xx is replaced by the cable length in feet.*

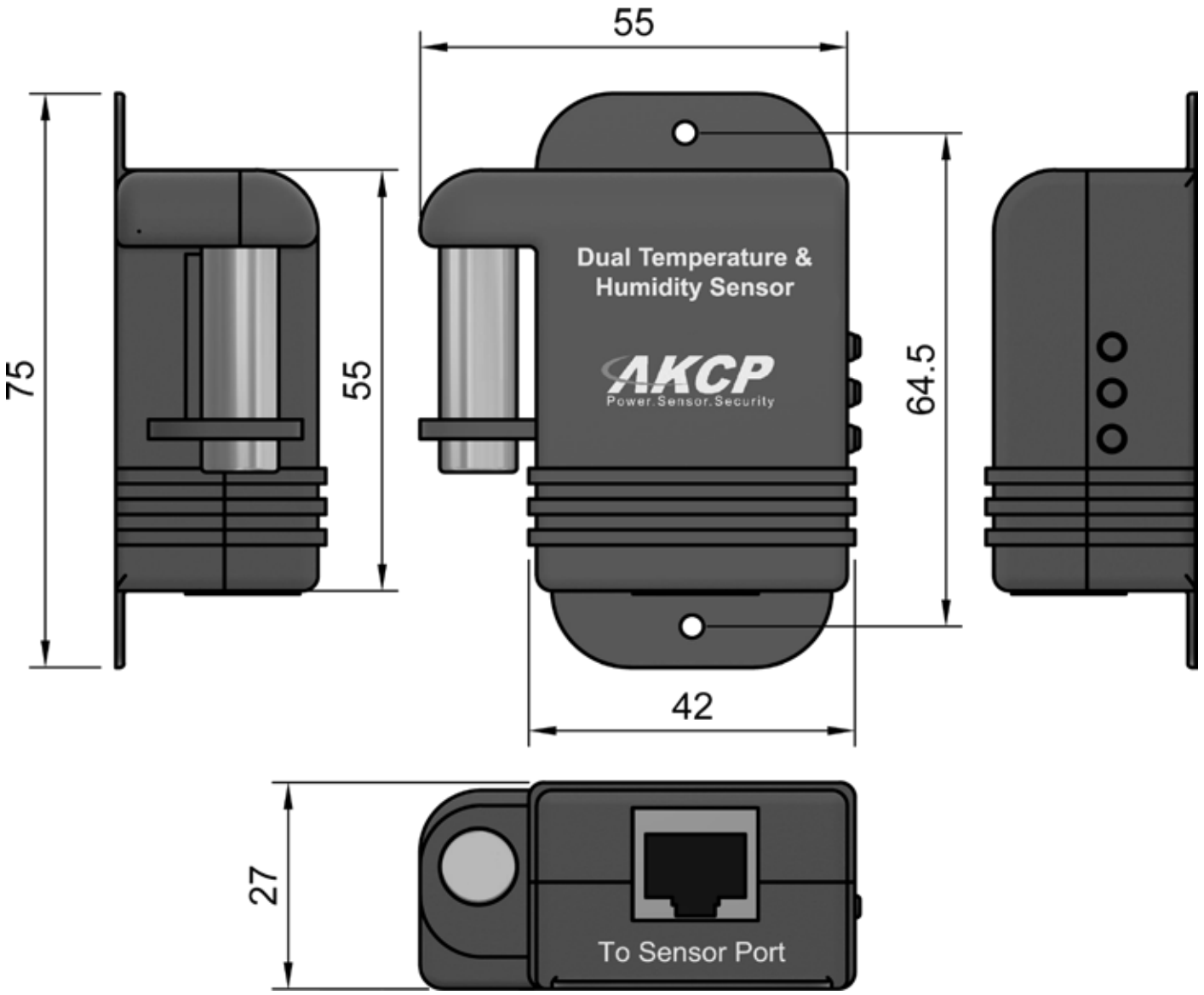
Technical Specifications

Temperature	
Calibration	Never needs calibration
Measurement range Celsius	-40°C to +75°C
Measurement resolution Celsius	1°C for the sensorProbe and 0.1°C for the securityProbe units.
Measurement accuracy Celsius	Maximum ±2.3 at -40oC, minimum ±0.4 at +25oC and ±1.7 at +75oC
Measurement range Fahrenheit	-40°F to +167°F
Measurement resolution Fahrenheit	1°F for the sensorProbe and 0.1°C for the securityProbe units.
Measurement accuracy Fahrenheit	Maximum ±4.1 at -40oF, minimum ±0.9 at +25oC and ±4 at +167oF
Communications Cable	RJ45 jack with UTP Cat 5 wire
Sensor Type	semiconductor microprocessor controlled
Power Source	powered by the sensorProbe. No additional power needed.
Power Consumption	Typical 10.70 mWatt, 2.14mA
Measurement Rate	one reading every second.
OID temperature sensorProbeTempDegree	1.3.6.1.4.1.3854.1.2.2.1.16.1.3.X
OID temperature sensorProbeTempStatus	1.3.6.1.4.1.3854.1.2.2.1.16.1.4.X
OID humidity sensorProbeHumidityPercent	1.3.6.1.4.1.3854.1.2.2.1.17.1.3.X
OID humidity sensorProbeHumidityStatus	1.3.6.1.4.1.3854.1.2.2.1.17.1.4.X
Humidity	
Measurement range	0 to 100% Relative humidity
Resolution	1% for the sensorProbes and 0.1% for the securityProbe units.
Accuracy	25°C ±3%

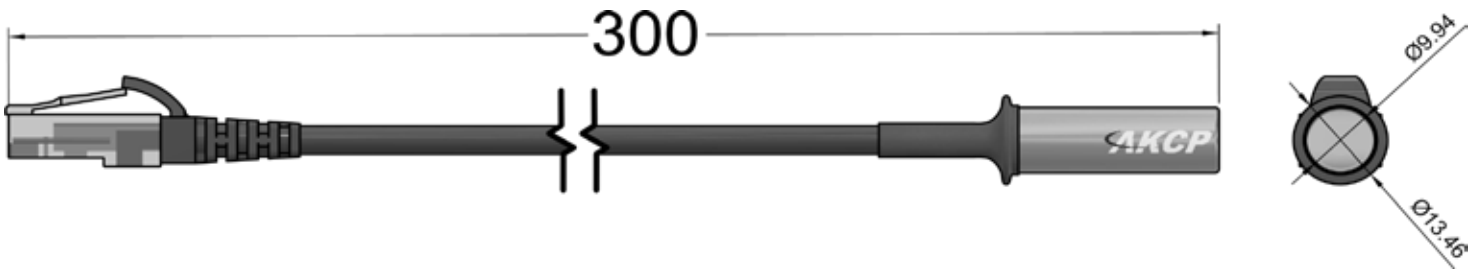
*Water resistant version can be ordered on request, product code is THSWxx, where xx is the length of fixed cable in feet.

THS00 / THS01 - Technical Drawing

TMP00 - Extendable Temperature Sensor



TMP01 - 1ft Temperature Sensor



daisyTemp Sensor (DCT00 / DCT04 / DCT08)

Up to 8 temperature sensors on a single sensor port

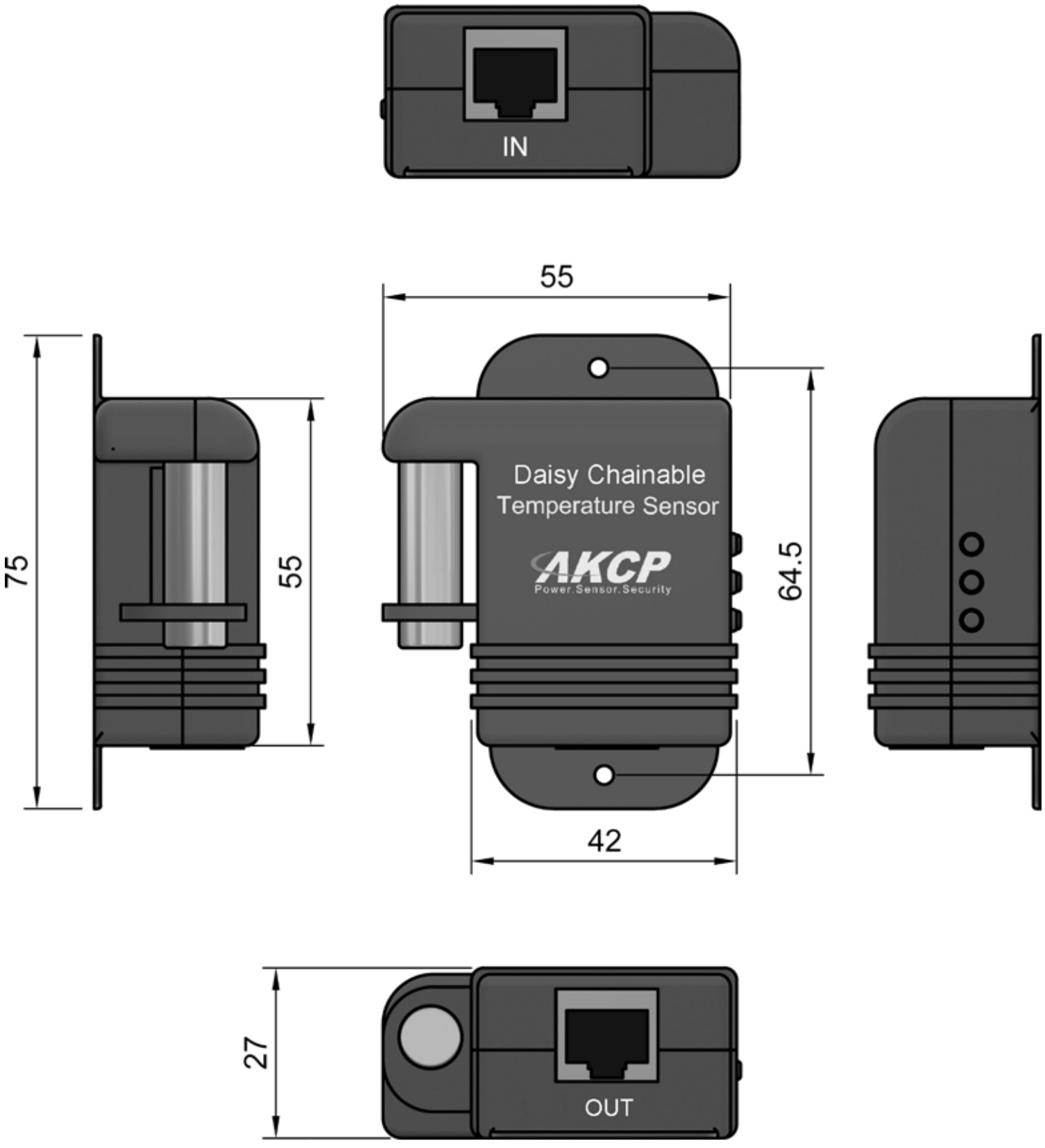
daisyTemp sensors consist of an array of up to 8 temperature sesnors in a single string. Connect to one sensor port, and supported on all AKCP base units, this versatile sensor allows for temperature coverage in larger areas in a cost effective manner, consuming a single sensor port and IP address for a larger number of sensors.

daisyTemps ensors are avaialble in packages of 4 (DCT04) and 8 (DCT08) or individually to add to an existing string (DCT00). THe distance between each sensor can be variable and made using standard CAT5 cable. A total max length of 150m (500ft) for the chain.

Technical Specifications

Temperature	
Never needs Calibration	
Measurement range Celsius	-55°C to +75°C.
Measurement resolution Celsius	0.5 °C increments.
Measurement accuracy Celsius	±0.5°C accuracy from -10°C to +75°C.
Measurement range Fahrenheit	-67°F to +167°F.
Measurement resolution Fahrenheit	0.9 °F increments.
Measurement accuracy Fahrenheit	±0.9°F accuracy from +14°F to +167°F.
Communications Cable	UTP CAT 5 wire.
Sensor Type	semiconductor microprocessor controlled.
Power Source	powered by the securityProbe. No additional power needed.
Power Consumption	Typical 10.70 mWatt , 2.14 mA
Measurement Rate	one reading every second.
OID temperature sensorProbeTempDegree	1.3.6.1.4.1.3854.1.2.2.1.16.1.3.X
OID temperature sensorProbeTempStatus	1.3.6.1.4.1.3854.1.2.2.1.16.1.4.X
OID humidity sensorProbeHumidityPercent	1.3.6.1.4.1.3854.1.2.2.1.17.1.3.X
OID humidity sensorProbeHumidityStatu	1.3.6.1.4.1.3854.1.2.2.1.17.1.4.X

DCT00 / DCT04 / DCT08 - Technical Drawing



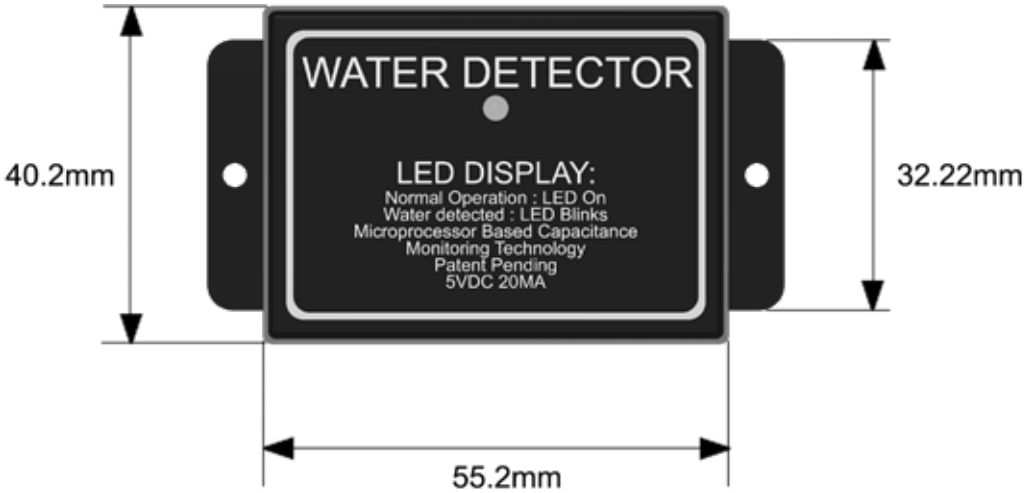
Spot Water Sensor (WSxx)

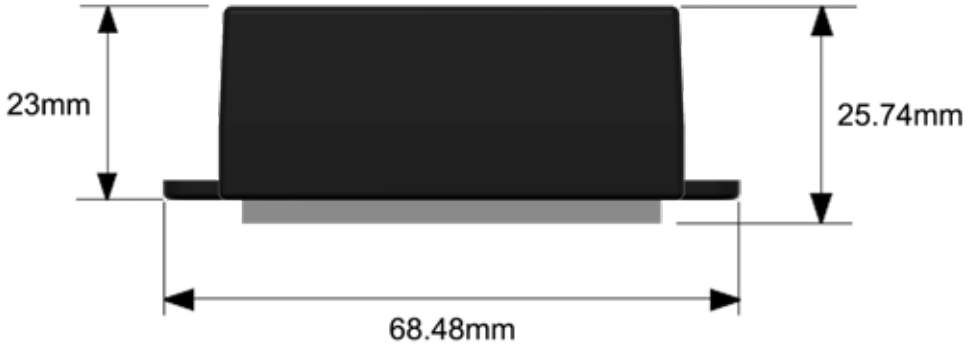
Water leaks can be a disaster, causing damage and potential large monetary losses. Protect your facility and infrastructure using spot water sensors. Placed at strategic positions under raised flooring in a data center, they can be used as an early warning indicator when water may pose a threat. The Spot Water Sensor uses technoogy developed by AKCP to detect the presence of even de-ionised water.

Technical Specifications

Measurement Range	Wet or Dry (-20°C +60°C)
Measurement Accuracy	able to measure distilled water
Sensor Type	patent pending, microprocessor controlled, capacitance measurement technology
Communications Cable	RJ45 jack to sensor using UTP Cat 5 wire, Maximum extension cable length 150m (500 ft.) with approved low capacitance shielded cable or UTP.
Measurement Rate	multiple readings every second

WSxx - Technical Drawing





Rope Water Sensor (RWSCxx / LWSCxx)

The rope water sensor comes in two parts, the orange non-sensing cable, and the yellow sensing cable. IP66 rated waterproof connectors join the two sections of rope together, with an additional connector at the tail end allowing the sensor to be extended with additional lengths as required. Lay these rope water sensors out around the perimeter of your room, or underneath aisles in your data center to give early warning of potential water leaks and avoid costly damage.

Rope water sensors are available in two versions. The standard RWSC type, and a locating type (LWSC). The locate type will identify how far along the length of the cable the leak has been detected.

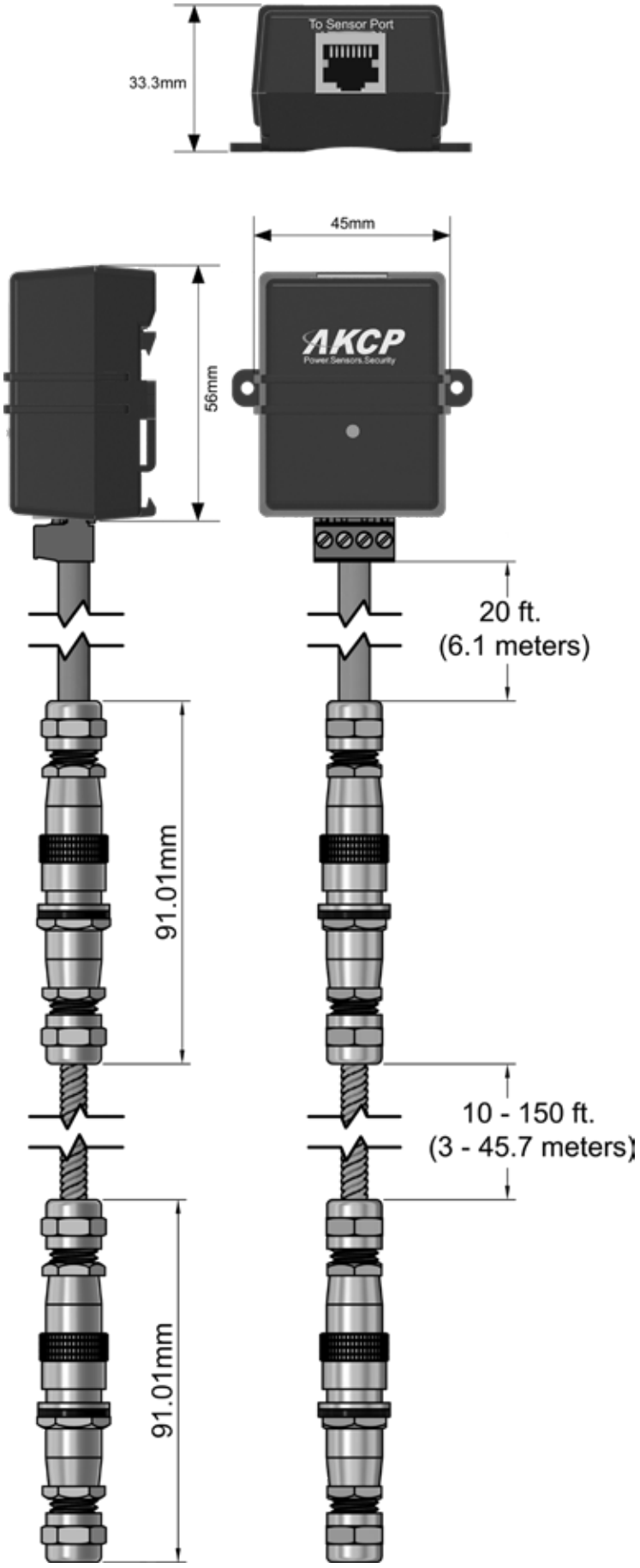
Technical Specifications

Measurement range	Wet or Dry (-20 °C- +60 °C)
Measurement accuracy	Able to detect the presence or non-presence of water.
Sensor type	Patent pending, capacitance measurement technology
Power consumption	Typical 125 mWatt, 25 mA
Communications Cable	RJ-45 jack to main sensor module using UTP CAT5 cable.

- Maximum extension cable run length is 30 meters (100 feet).
- Comes fully assembled including the Water sensing rope, the non-sensing cable that connects the rope to the sensing module and the main sensing module that connects via CAT5 LAN cable to the sensorProbe / securityProbe.
- Sensing rope cable can be pre-ordered from a 10 foot minimum to any custom run length of up to 165 feet or 50 meters.
- Non-sensing cable comes in a standard 20 foot run length.
- Sensor OID is .1.3.6.1.4.1.3854.1.2.2.1.18.1.3.0

Note: AKCP do not recommend the ropeWater Sensor to be placed on a conductive surface.

RWSCxx / LWSCxx - Technical Drawing



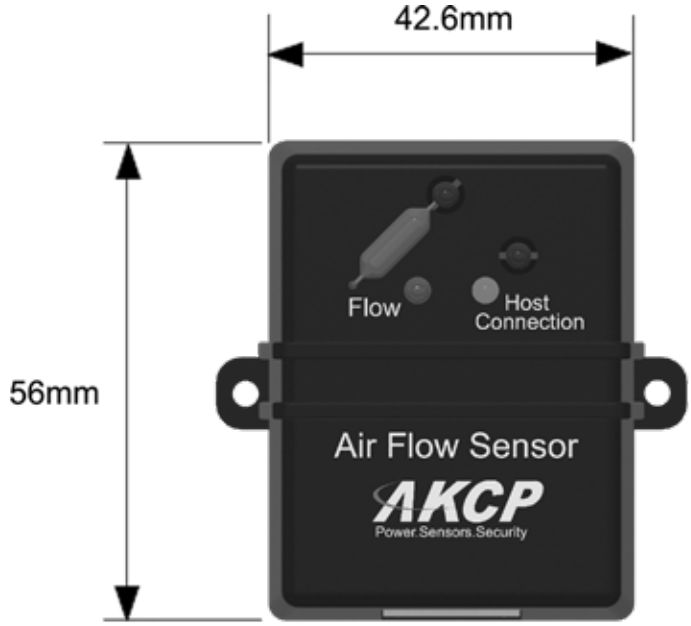
Airflow Sensor (AFS00)

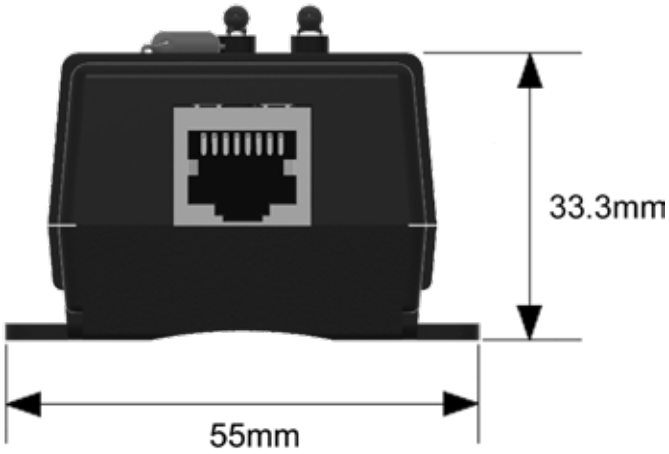
The airflow sensor is a switch type on/off style sensor. It is not a precision airflow measurement sensor, but rather an indicator of whether there is a presence or absence of airflow. A threshold can be set to determine the sensitivity of the sensor. Ideal for placing infront of air intake or exhaust fans to indicate if the airflow is sufficient and as an early warning of failures in the cooling systems or fans.

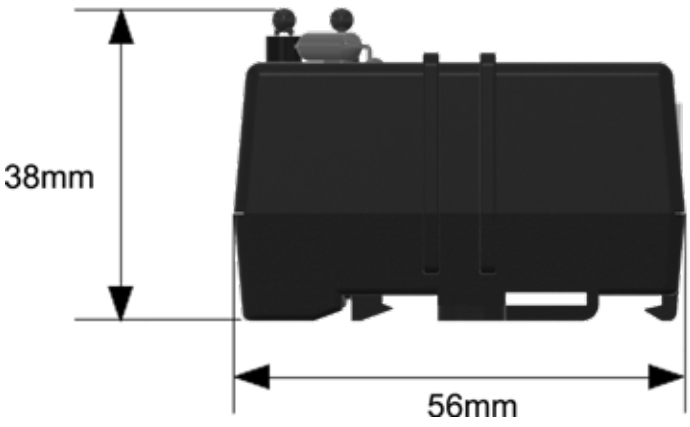
Technical Specifications

Data Collection	via Network Management
Operating Temperature	-20°C to 60° C
Communication Cable	RJ45 Jack
Sensor Type	Thermistor / ON or OFF
Sensor Power	Powered by sensorProbe or securityProbe base unit. No external power required.
Trap Information	Warning sensor number, Sensor description, On or O condition.

AFS00 - Technical Drawing







Thermocouple Sensors and Adapters (TCAK / TCAJ)

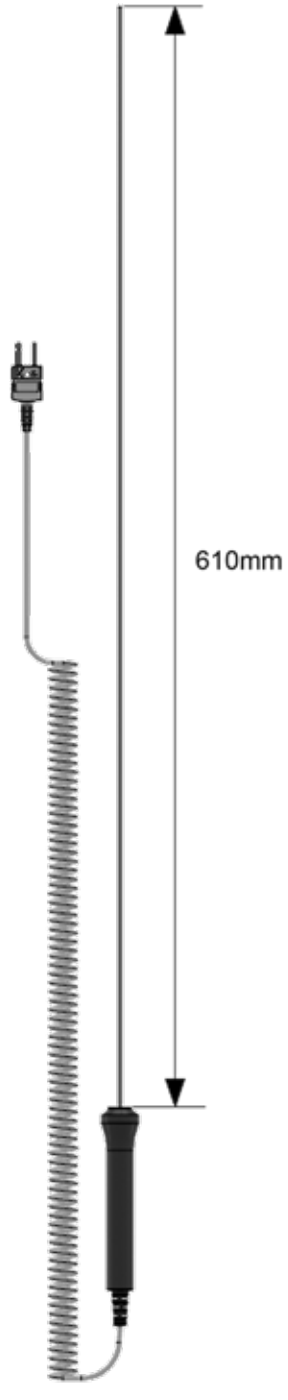
Thermocouples are used where you are exposing the sensor to extremes of temperature. Mostly used for industrial type applications, cryogenics and chemical industry. AKCP provides a complete thermocouple pacakge as well as adapters for type K and J thermocouples if you have existing sensors that you wish to interface with our monitoring platform.

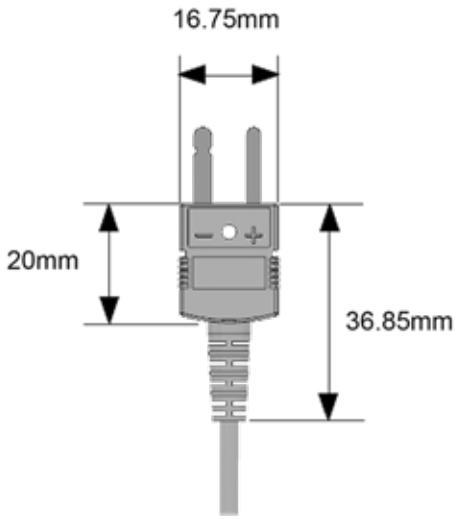
For customers who have an existing thermocouple of either a J or K type, we provide an adapter for interfacing this with our monitoring platform. This turns your thermocouple into a network enabled SNMP compliant thermocouple sensor that can be monitored remotely and send alerts via E-mail, SNMP and SMS when temperatures exceed your pre defined thresholds.

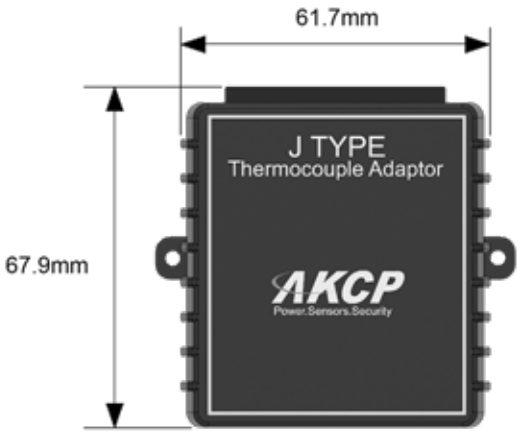
Technical Specifications

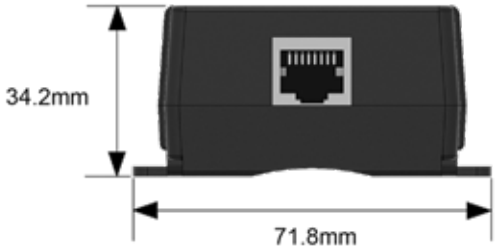
Retractable cable with superior memory
Subminiature Connector for Use with handheld Thermometers
Subminiature Connector for Use with Handheld Thermometers
300, 450 and 600 mm (12', 18 and 24') Lengths
Companion RTD Probe, Type PR-16 304, 310, 316, 321 SS, Inconel N and Super XL Sheaths

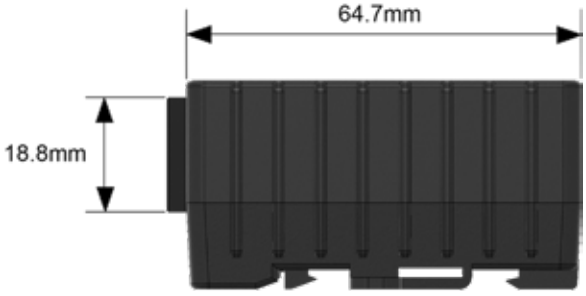
TCAK / TCAJ - Technical Drawing











Security Sensors

AKCP provides a variety of sensors that can be used for security applications. Protect your facilities and assets from theft or fire damage, crontol access to cabinets and detect the status of doors and windows.


RFID Swing Handle Lock


Security Sensor

Vibration Sensor

Motion Detection

Siren and Strobe


Smoke Detector

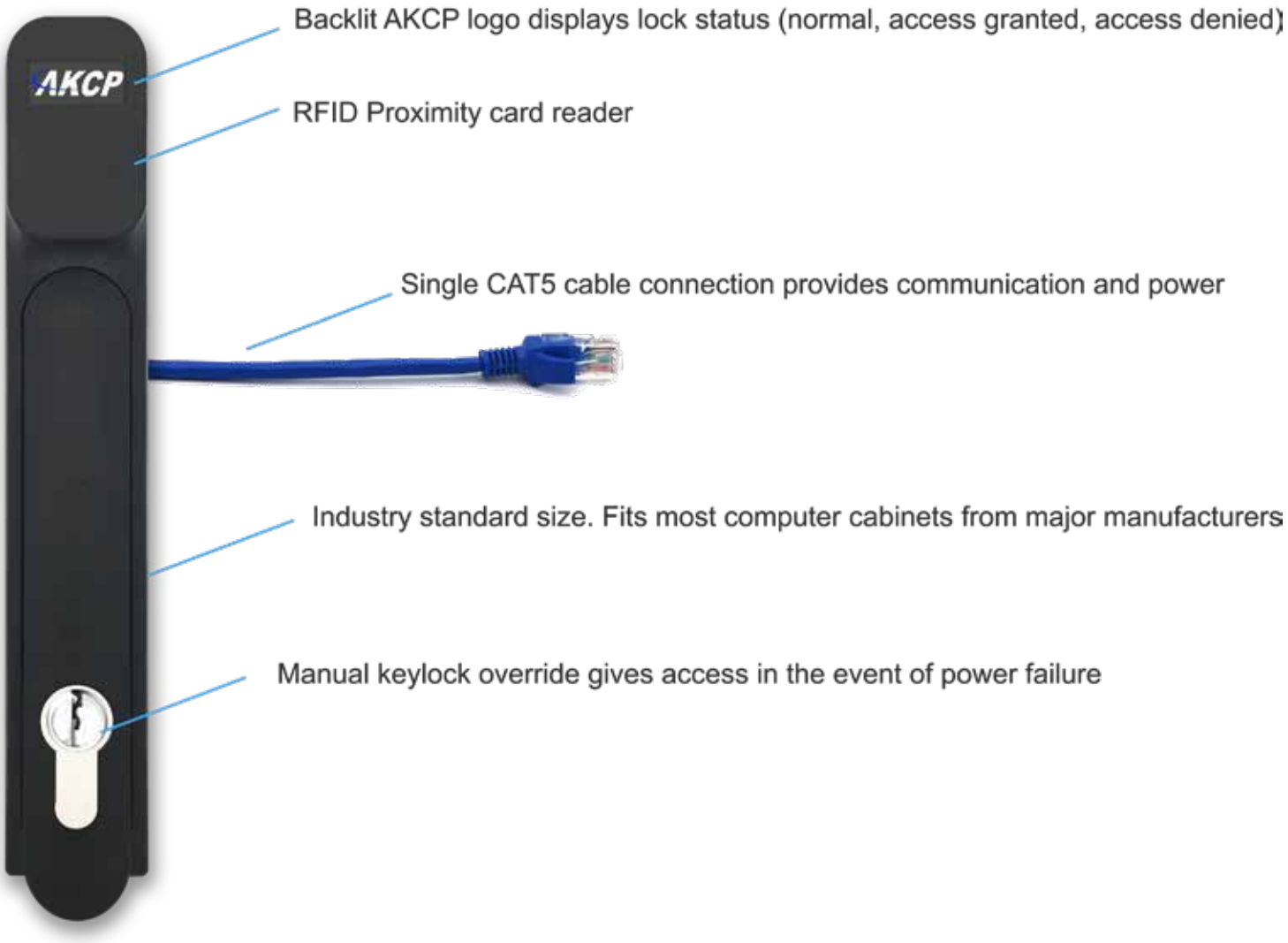

Sensor Status Light

Swing Handle Lock (SHL / SHL01)

The Swing Handle Lock is compatible with a wide range of industry stnadard computer cabinets, making it a simple to install upgrade for your data center. Equipped with an RFID reader, you can control and monitor access to your computer cabinets from a centralized software platform (AKCPro Server).

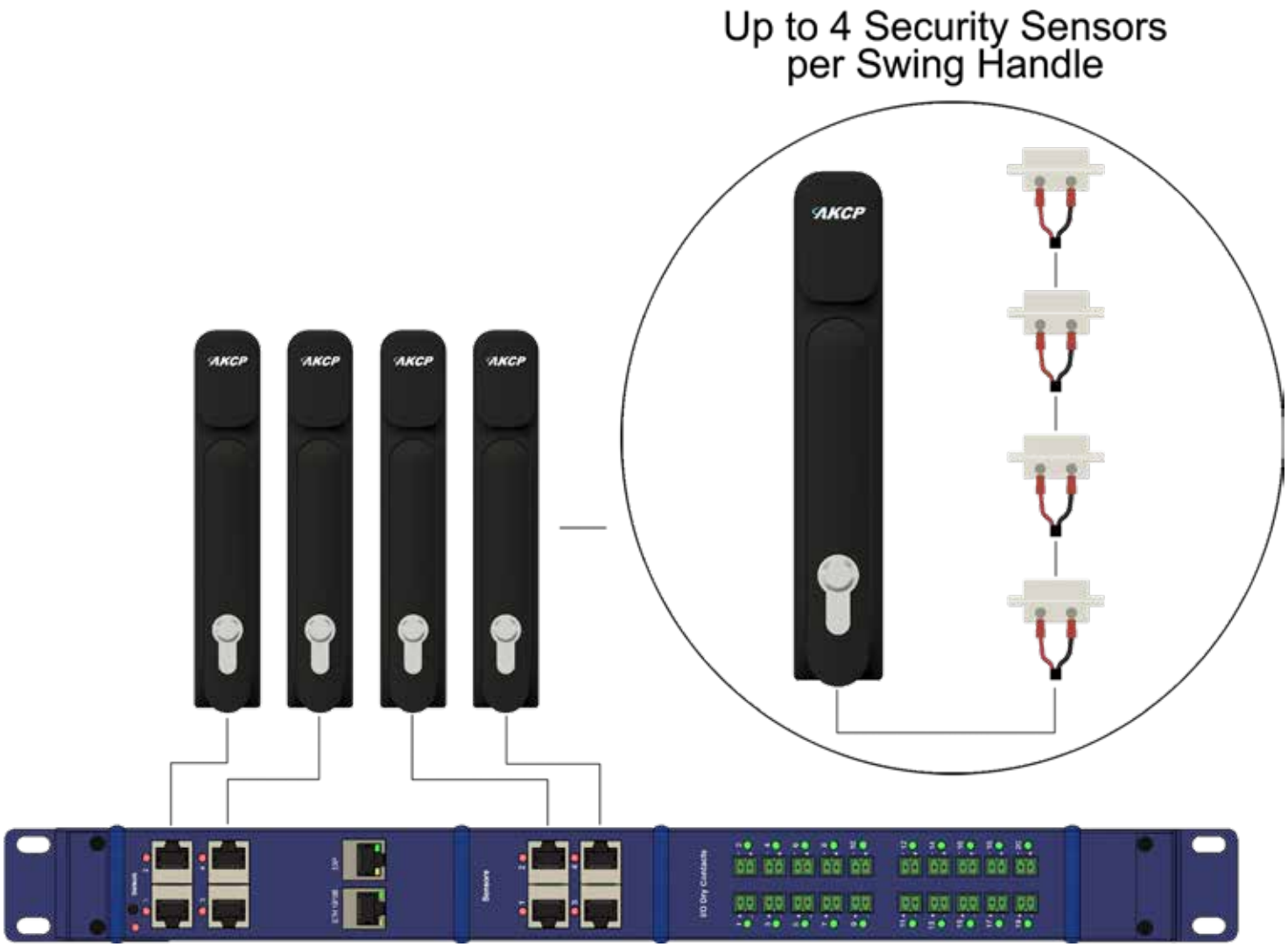
Keep an audited trail of who entered what cabinet and when, how long they were there and be alerted if cabinets are left unlocked. Additional security sensors can monitor side panels. A manual keylock override is provided, and also monitored for use.

Swing Handle Lock is compatible with all sensorProbe+ base units, with a maximum of 16 handles per device. Packages of two handles (SHL01) can be ordered for controlling access to both front and rear of the cabinet.



Swing Handle Lock (SHL / SHL01)

A maximum of 16 swing handle locks can be conencted to a single SPX+. Each swing handle lock comes with one security sensor for sensing the cabinet door position. Additional security sensors can be added to monitor side panels and rear cabinet doors also.



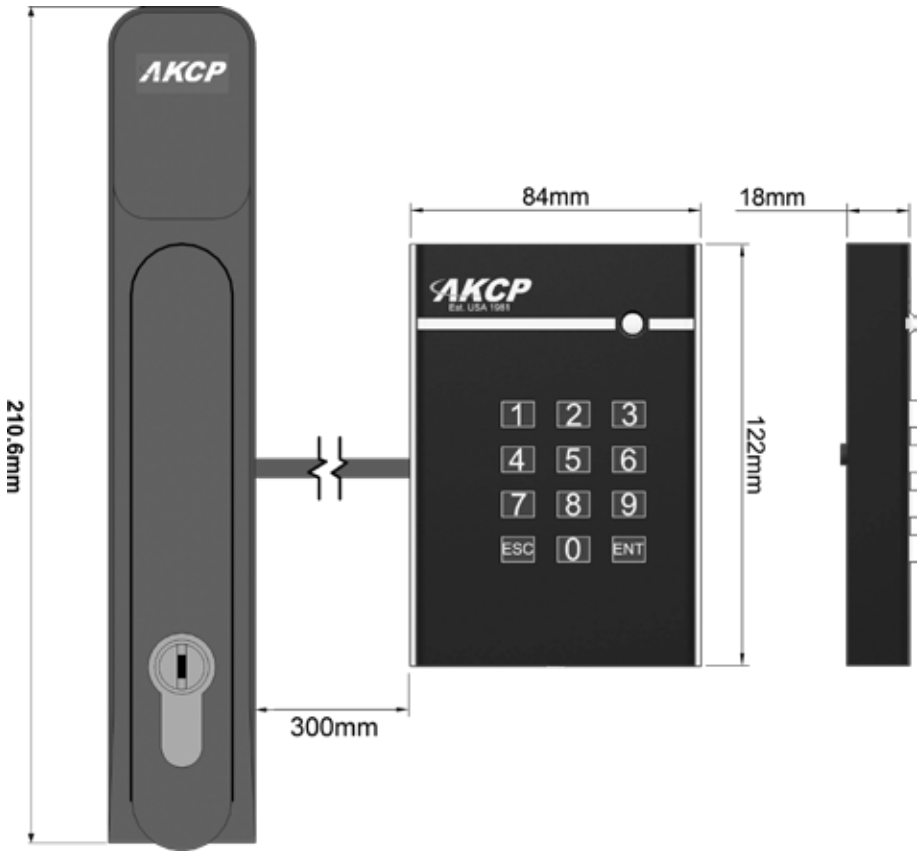
Dual Authentication Swing Handle Lock (SHL-DA)

The Swing Handle Lock with Dual Authentication, allows you to require both a PIN number and an RFID card, or only the PIN number, in order to access the lock. Useful for remote cabinets, no need to distribute RFID cards, a one time access PIN can be assigned.

The SHL-DA can also have third aprty MiFare and HID card readers plugged in for customers who are using these type of encrypted RFID cards.

A maximum of 4 SHL-DA can be connected to a single SPX+ or SP2+.

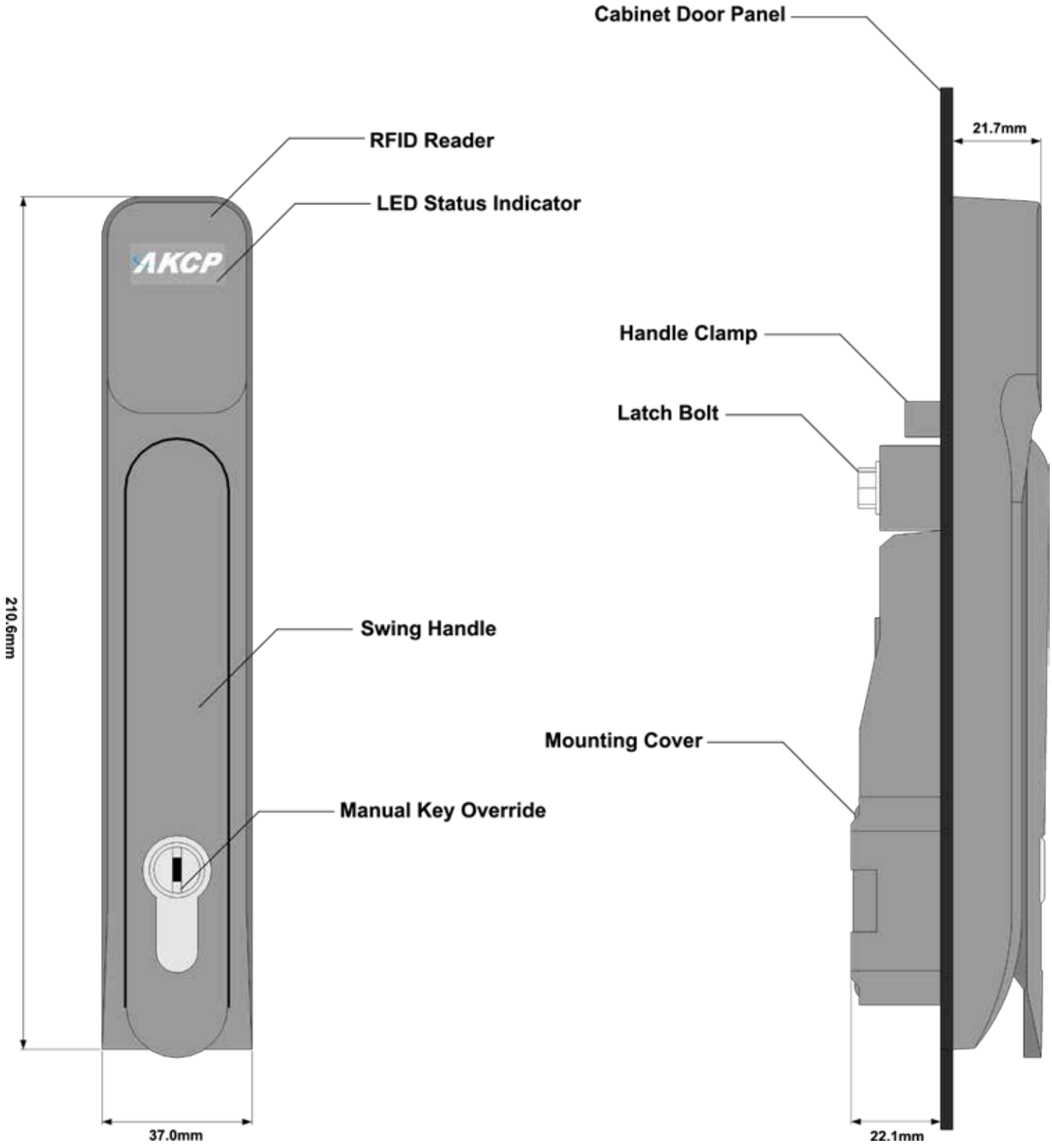
SHL-DA Technical Drawing



SHL / SHL01 - Technical Specification

Card Reader	
Supported Cards	EM-Card, 125Khz Proximity cards, 26bits K4100/EM4100/EM4200/T5577
Proximity Reading Range	0-3cm
Handle Lock	
Access Control	Up to 500 users
Ambient Temperature	-25°C to 75°C
Ambient Humidity	10%-90%
Built-in	RFID Antenna, Motor
Fail-Secure	Integrated key lock for manual override
Fail-Secure	Integrated key lock for manual override
LED Indicator	RGB Color LED : Lock status and Access Control status
Locking Control	Remote lock and unlock from the sensorProbe+ unit via Web Interface, SNMP or AKCess Pro Server Calendar enabled locking and unlocking control Notification locking and unlocking control
Interface	
Communications cable	RJ-45 jack to sensor using UTP CAT5e/6 cable
Power source	Powered by the sensorProbe+ familiy units. No additional power needed
Working Voltage	DC 5V
Power Consumption	Typical 0.35 mWatt, 70 mA
	Peak 1.75 mWatt, 350 mA
Communication Distance	Run length is 16 feet (5 meters) with approved low capacitance shielded cable or UTP
Dimensions	37.0mm x 210.6mm x 43.8mm
Connectivity	
	sensorProbe+ units auto detects the presence of the RFID Swing Handle Lock sensor
	Up to 2 RFID Swing Handle Lock sensors per sensorProbe+ unit
	– The RFID Swing Handle Lock sensor is only compatible with the sensorProbe+ platform units. – When plugging the first time or after upgrading a sensorProbe+ unit, the sensor's firmware might be upgraded by the unit and not be available right away.

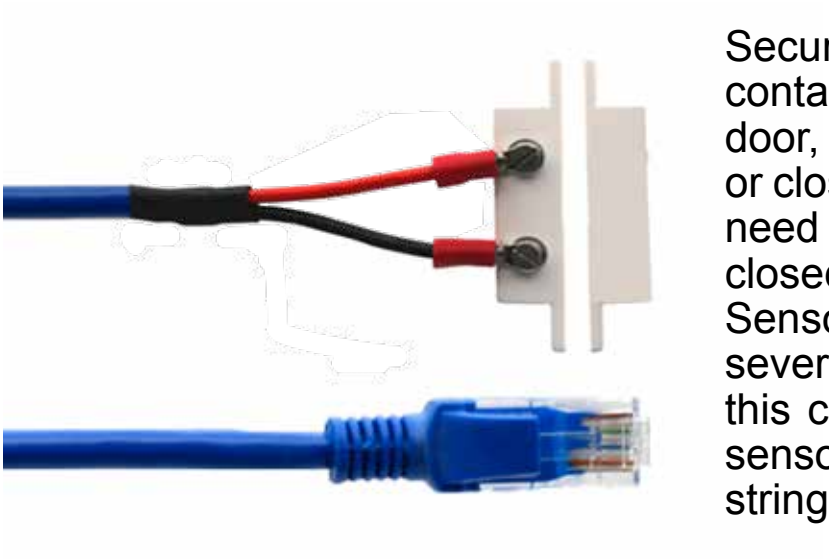
SHL / SHL01 - Technical Drawing



SHL-DA Technical Specification

Card Reader	
Supported Card Reader	AKCP Keypad and RFID Reader 3rd Party Readers : miFare, HID, RFID proximity with cardID Weigand output on 26bits, 30bits and 32bits
Supported Cards	AKCP RFID Reader: 125Khz Proximity cards, 26bits K4100/EM4100/EM4200/T5577
Proximity Reading Range	0-5cm
Interface	
Working Voltage	DC 5V
Power Consumption	Typical 0.8 mWatt, 160 mA
	Peak 1.75 mWatt, 350 mA
Communication Distance	Run length is 16 feet (5 meters) with approved low capacitance shielded cable or UTP
Connectivity	
	sensorProbe+ units auto detects the presence of the DA Swing Handle Lock sensor
	Up to 4 DA Swing Handle Lock sensors per sensorProbe+ unit
	– The RFID Swing Handle Lock sensor is only compatible with the sensorProbe+ platform units. – When plugging the first time or after upgrading a sensorProbe+ unit, the sensor's firmware might be upgraded by the unit and not be available right away.

Security Sensor (SSxx)



Security Sensors are simple magnetic contact swithes that can be placed on any door, cabinet or window to sense the open or closed position. Ideal for using when you need to simply know if a door is open or closed without controlling access. Security Sensors can be daisychained together with several on a single sensor port, although in this configuration you will not know which sensor is critical just that one sensor in the string is in critical state.

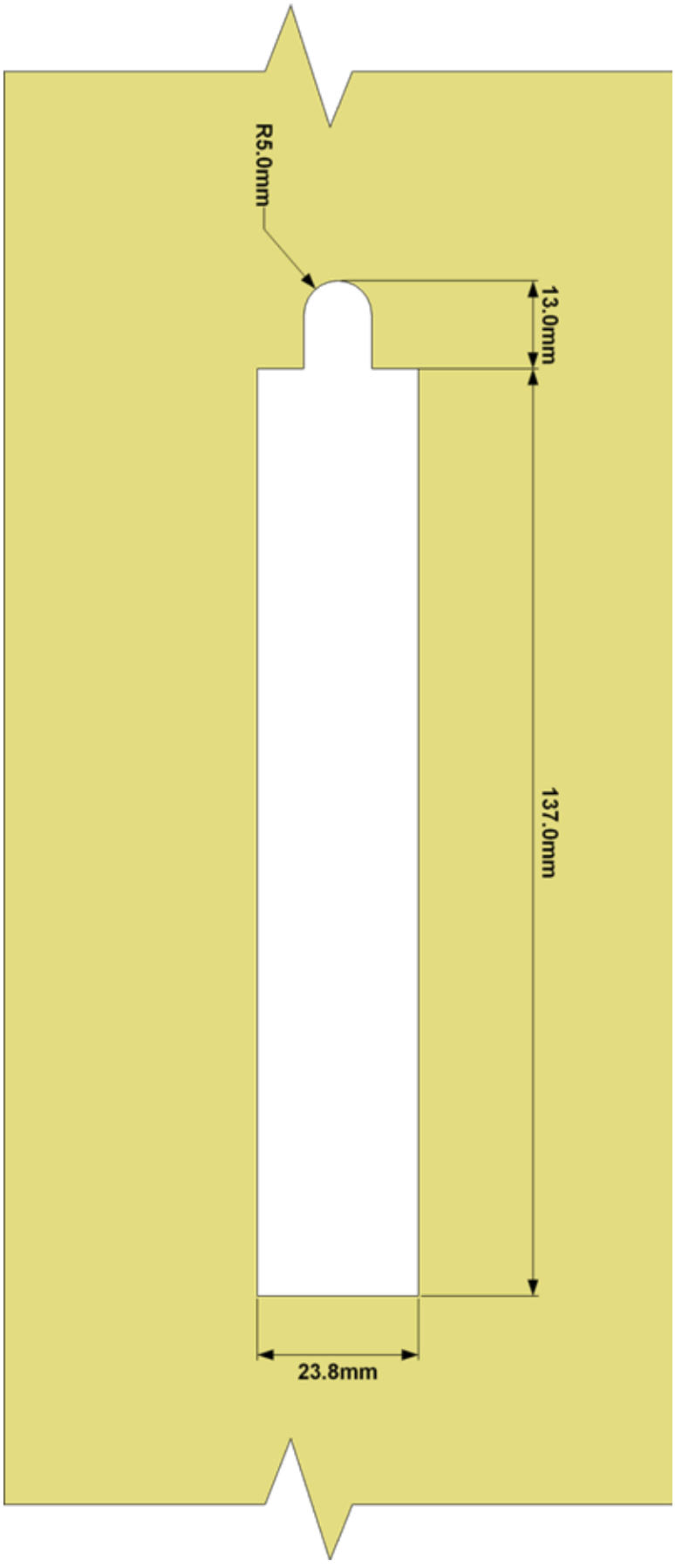
Security Sensors are avaialble in custom lengths, or choose from our standard lengths (SS15 comes with 15ft cable for example).

Technical Specifications

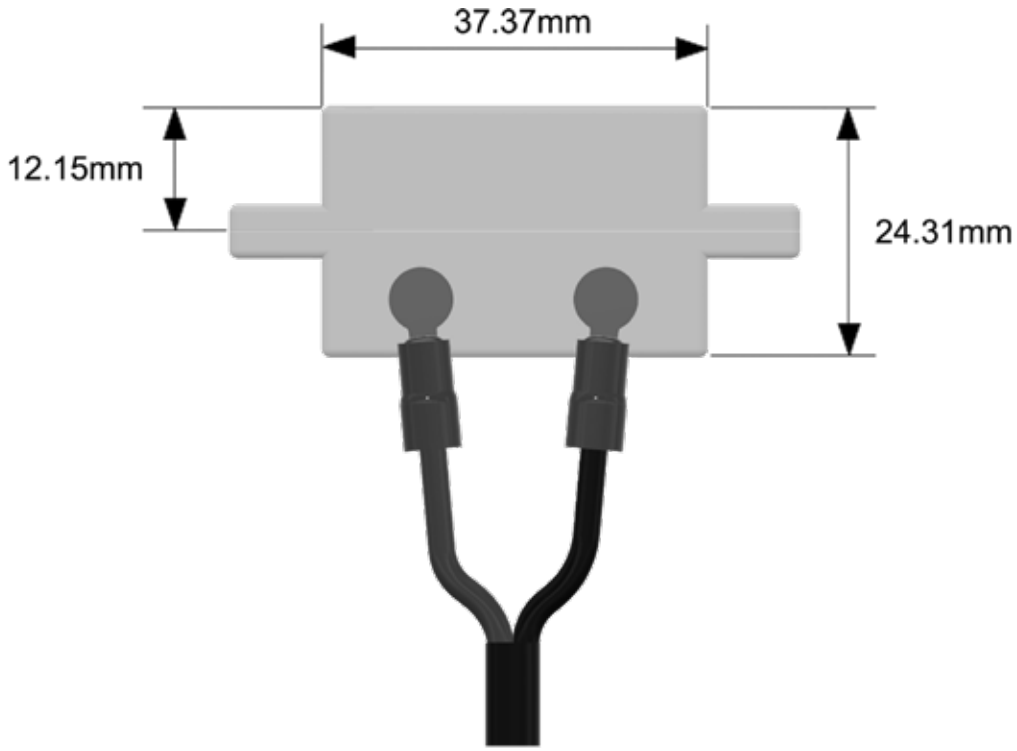
Measurement Range	Alarm or Normal
Communications Cable	RJ45 jack to sensor using UTP Cat 5 wire Maximum extension cable lengt 305m (1000 ft.) with approved low
Sensor Type	Open/closed contact switch
Measurement Rate	Multiple reading every second

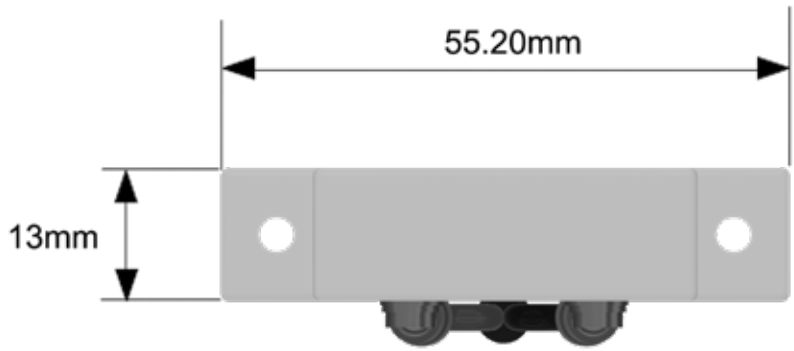
SHL / SHL01 - Cutout Pattern

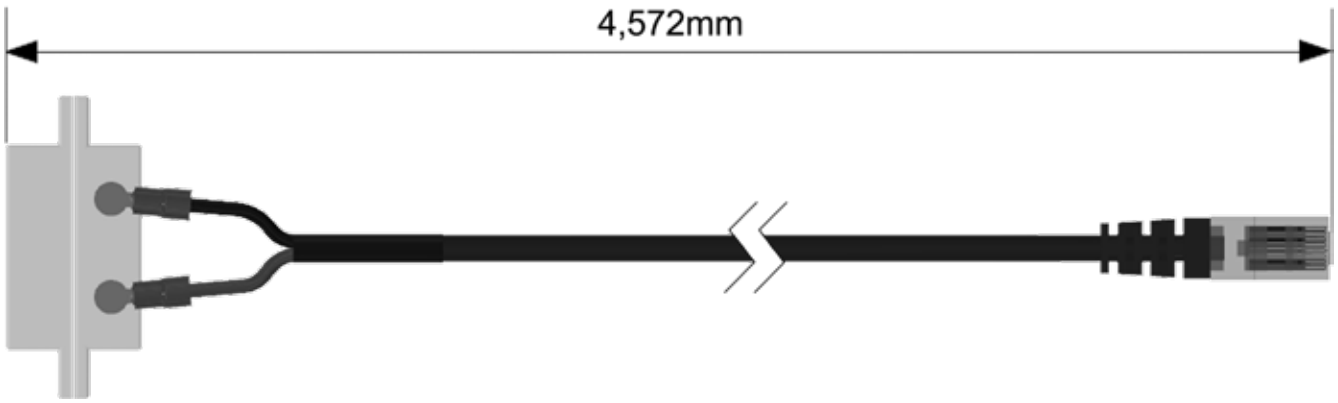
The below template outlines the size of the hole required in your cabinet to fix the Swing Handle Lock.



SSxx - Technical Drawing







Vibration Sensor (VDS)

Install Vibration sensors on cabinets, safes, floors or walls and detect when vibration occurs. Use for being alerted if an object is moved, or if a cabinet is being forcibaly opened.

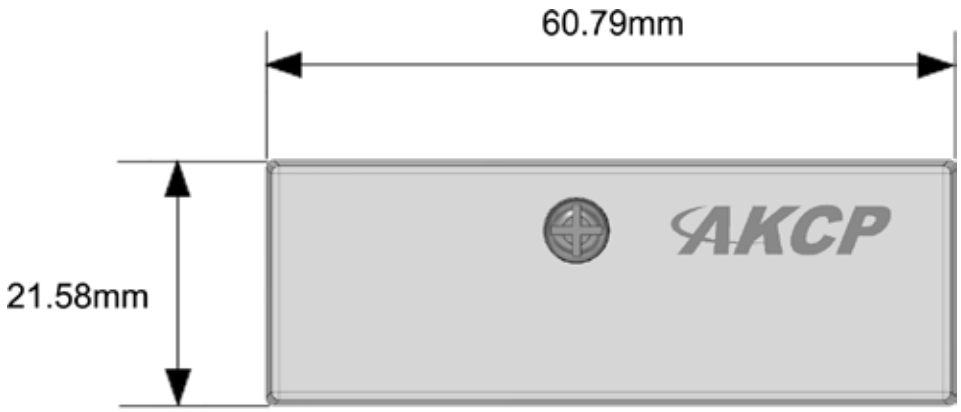
Detect if walls are being broken with jackhammer, or forced entry with crowbar or saw. Alerts will be sent when an undesireable force is applied to the surface you are protecting.

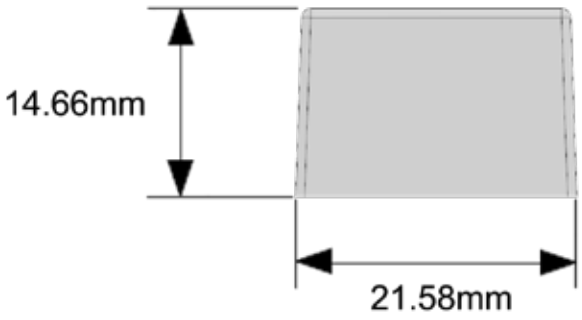
The vibration sensor has a built in tamper switch which is independent of the main vibration sensor circuit to alert should the sensor be tampered with or disconnected.

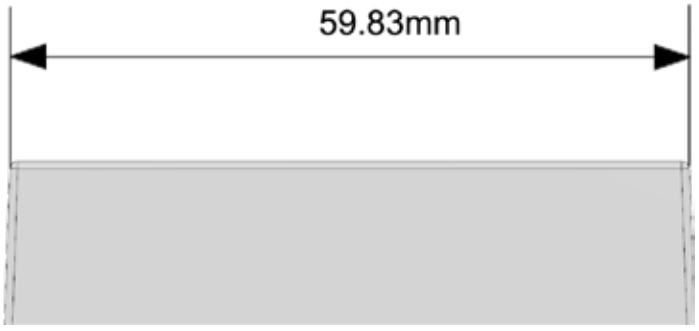
Technical Specifications

Circuit	Normally-closed contact, momentary open when activated.
Contact Pressure	Adjustable from 1 to 50 grams but recommended setting between 5 and 25 grams only. Supplied with pressure of approximately 6 grams.
Rated	1A at 50VDC
Contact Break Time	Approximately 45ms maximum (at 6-grams of pressure)
Life	Over 100,000 contacts
Case	ABS resin.
Size	15mm(H) x 21mm(W) x 60mm(L)
Weight	20 grams.

VDS - Technical drawing







Motion Detector (MD00)

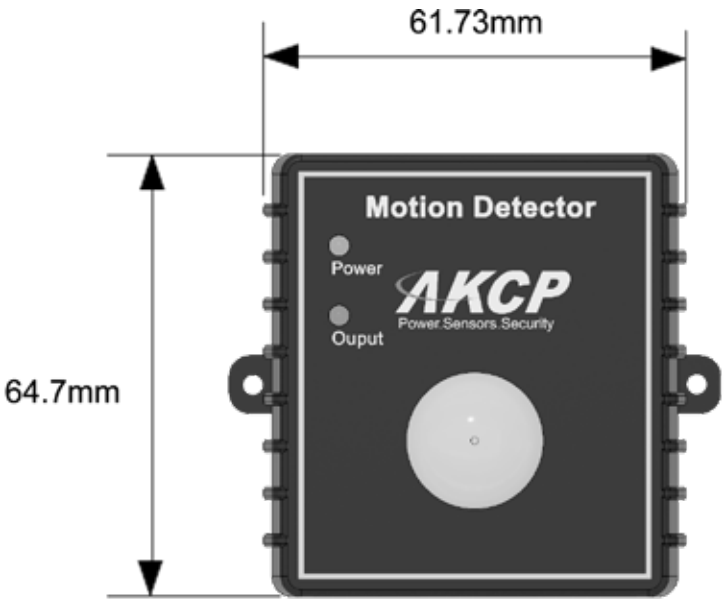
Infrared motion detection, is a hardware based motion detection technology that will detect movement up to 3 meters away. MD00 can be daisychained together with a maximum of 10 in a single string, meaning a single sensor port can support 10 motion sensors. When one motion sensor in the string is in critical state the whole string will show as critical.

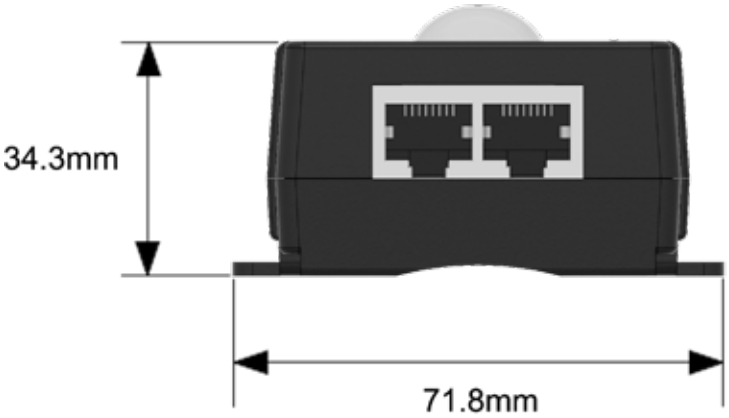
Motion detectors can be used as a trigger of alarms and actions through the AKCP Base Unit. A siren and strobe light connected to the sensorProbe for example can be triggered based on the motion detectors status. Sensor controlled relays can be turned on, meaning that the motion detector can also be used to trigger any DC or AC powered device, whether it be an alarm or light.

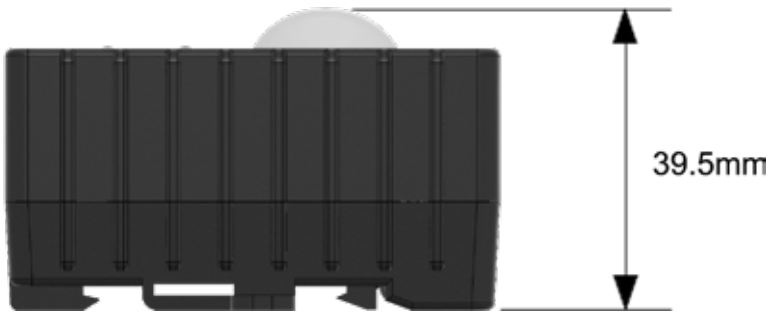
Technical Specifications

Powered by sensorProbe/securityProbe	
Power Consumption	Typical 51.40 mWatt, 10.28mA
	Infrared sensor dual element
	High sensitivity
Temperature	-20 °C~50 °C (4 °F~122 °F)
Dimensions	65×60x35 mm
	Detection angle 60°
	Maximum working distance is 3 m (9 feet)
	Maximum cable length of single motion detector sensor is 300 m (1K feet)
	Maximum total cable length of a string of 10 motion sensors is 46 m (150 feet)
	Maximum length of cable between each motion sensor should less than 6 m (20 feet)

MD00 - Technical Drawing







Siren and Strobe (STR00)

The Siren and Strobe light provides an audible and visual alarm when a sensor is in a critical state. Mount on the wall of a control room or security office and activate when a security breach occurs, for example.

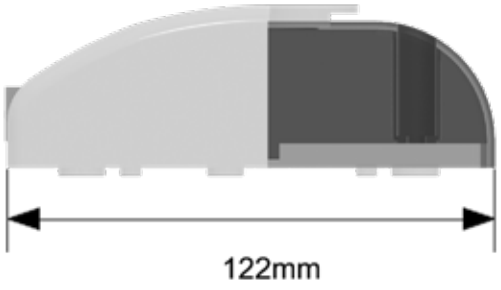
Siren and Strobes can also be used as part of a systems and control system, to alarm when a machine is turning on or off, giving warning of danger to employees, as well as for security purposes.

In the data center, mount a Siren and Strobe ontop of each cabinet, and alarm when a cabinet is in a critical state, alerting nearby technicians, and allowing them to easily locate the problematic cabinet by the flashing strobe

Technical Specifications

Measurement Range	Alarm or Normal
Communications Cable	RJ45 jack to sensor using UTP Cat 5 wire
Maximum Extension Cable	Length 30m (100 ft.) with approved low capacitance shielded cable or UTP
Sensor Type	open/closed contact switch
	Powered by the sensorProbe. No additional power needed
	sensorProbe and securityProbe auto detects the presence of the sire and strobe
Measurement Rate	multiple readings every second
	Up to 2 sensors per sensorProbe2, and 8 per sensorProbe8 and securityProbe
	Full autosense including disconnect alarm
Alarm Sound	100±3db@100cm
Strobe Flash Frequency	≈400 Times/Minute
Light Source	Super bright LEDs x8
Dimension	72×123×45 mm

STR00 - Technical Drawing



Smoke Detector (SK00)

Protect your facilities and infrastructure from fire with the AKCP Smoke Detector. Connect the sensor to any AKCP base unit, either to an intelligent sensor port, or dry contact connection, and it forms a network based smoke detection and warning system. Monitor all your smoke detectors from a single user interface, with mapping features of AKCess Pro Server, you can see which alarm is critical at a glance.

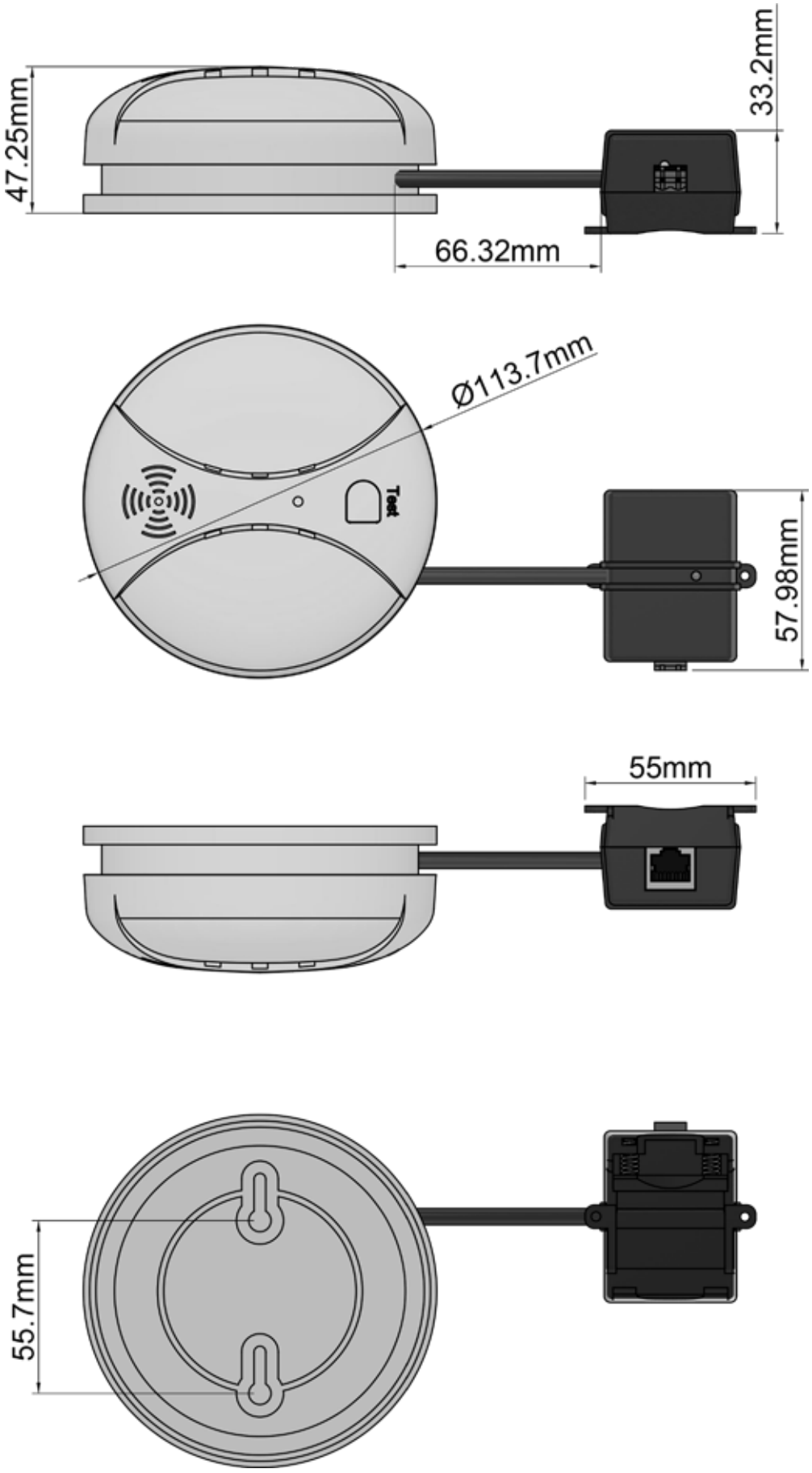
Connect the sensor to both your fire alarm panel, and the AKCP base unit by using the dry contact connection for your alarm panel and the intelligent sensor port connetion simulatneously.

Technical Specifications

Power supply	DC 9V battery
Standby current	<12μA
Alarm curent	<10mA
Alarm sound	>85dB (3m)
Sensor type	Photoelectric
Battery life after low battery warning	>30 days
Temperature range	0°C - 49°C (32°F - 120°F)
Humidity	10% - 90 % RH (No icing or condensation)
Executive criteria	EN14604:2005; GB4715-2005; UI217
Detecting area	80m at 6-12m installation height; 60m at installation height <6m.

- Low battery warning: smoke alarm will chirp once every 40s to remind user of replacing a new battery.
- Auto reset.
- Sound and flash alarm; alarm sound louder than 85 decibel with red LED flashing.
- Test button; tests unit's electronic circuity, buzzer and battery function.
- SMT manufacture technology; high stability.
- Dustproof, mothproof technology and anti-white light interference design.
- Anti-RFI (20V/m-1GHz).

SK00 - Technical Drawing

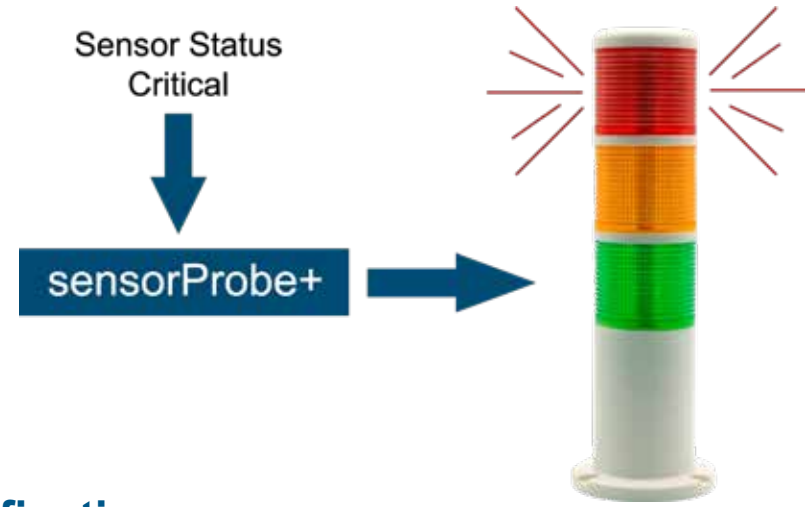


Sensor Status Light (SSL)

Conect the Sensor Status Light to any SPX+ or SP2+ sensor port. The light will change color based on a sensor status. Ideal for systems and control, factory automation and data center applications. Use as part of the Rack+ system to easily identify which abinets in your data center are in a warning or critical state.

Every SSL comes with a buzzer for audible alarms. The buzzer can be turned on or off depending on your requirements.

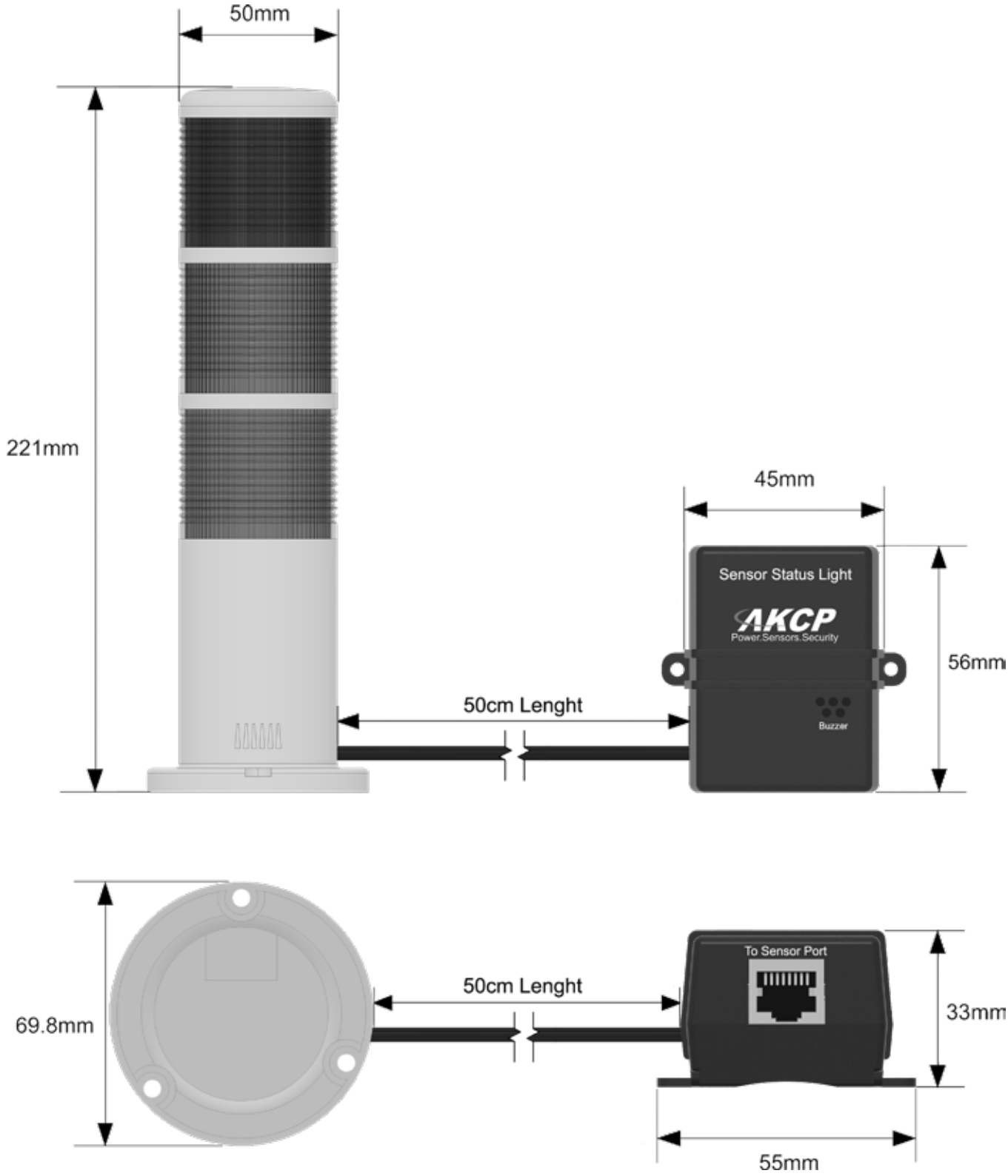
Three lights, Red, Amber and Green are programmed to illuminate or flash based on a sensor status input. Internal buzzer



Technical Specifications

Power supply	Powered by the base unit, no additional power required
Light Status	Green - Solid on, Very slow blink & Off Orange - Solid on, Slow blink & Off Red : Solid on, Fast blink & Off
Control	Notification control, Notification wizard connects light color to sensor input.
Alarm sound	Internal Buzzer for optional audible alert
Connection	Standard CAT5 cable to sensorProbe+ base unit

SSL - Technical Drawing



Power Sensors

Power sensors cover a variety of applications, no matter your power monitoring requirements AKCP has the right sensor for you.

4-20mAmp Sensor

5 Dry Contact Inputs (SP2 and SP2+ only)

8 Port Sensor Controlled Relay

AC Sensor Controlled Relay

AC Voltage Sensor

8 x Digital I/O

DC Sensor Controlled Relay

Mini Sensor Controlled Relay

Dry Contact Cable

Isolated DC Voltage Meter

In-Line Power Meter

Power Monitoring Sensor

Power Sensors

Current Transformers

4-20mAmp Sensor (VC00)

Integrate Third Party Sensors

4-20mA sensor can be used to interface third party sensors with your AKCP base unit. There are many industrial and scientific sensors that output a 4-20mAmp signal. Programming of the sensor scale is done through the base units user interface. This makes it very easy to interface specialized sensors wiith AKCP devices, allowing you to take advantage of the alerts and monitoring they provide.

Typical third party sensors with 4-20mAmp output are :-

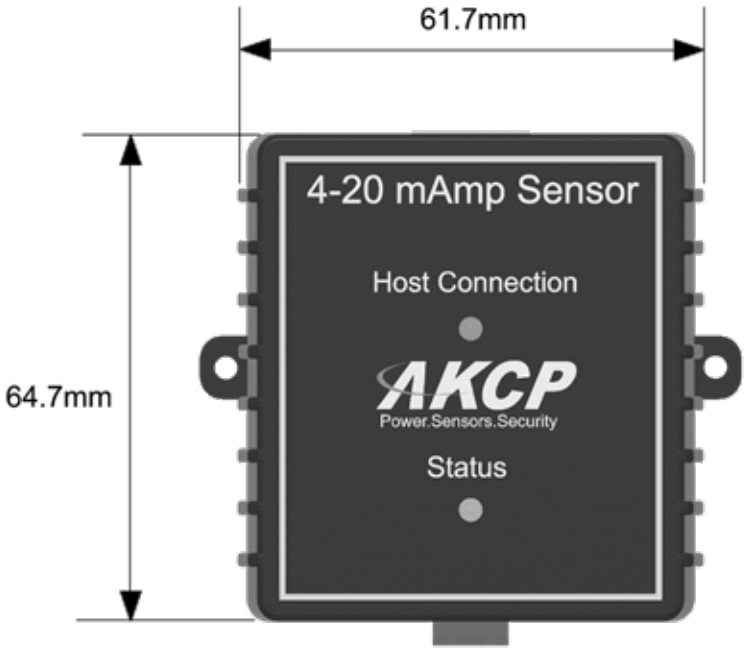
- CO2 sensors
- PH meters
- Air Particle Sensors
- Precision Airflow Sensors

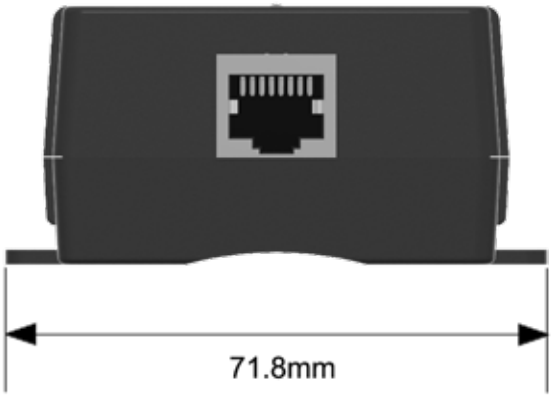
The sensor comes in an innovative box with a variety of mounting options built in such as DIN rail mounting, keyhole, screw, pipe clamp and cable ties.

Technical Specifications

Input Current Range	+4mAmp to +20mAmp
Output Voltage Range	+0.8V to +4.0V
Linearity	± 0.09 % Full Scale, Maximum
Accuracy	± 0.15 % Full Scale (± 0.3%Full Scale, Maximum)
Power Supply	+5 VDC
Power Consumption	25 mW
Operating Temperature	-40° C to 85° C
Input Connector	Two Terminals, Iin(+) and Iin(-), for Current Loop
Output Connector	RJ45 Jack to Converter using UTP Cat 5 wire
Mechanical Dimensions	65(W) x 62(H) x 150(D) mm
Weight	80 grams

VC00 - Technical Drawing





5 Dry Contact Inputs (5DCSxxx)

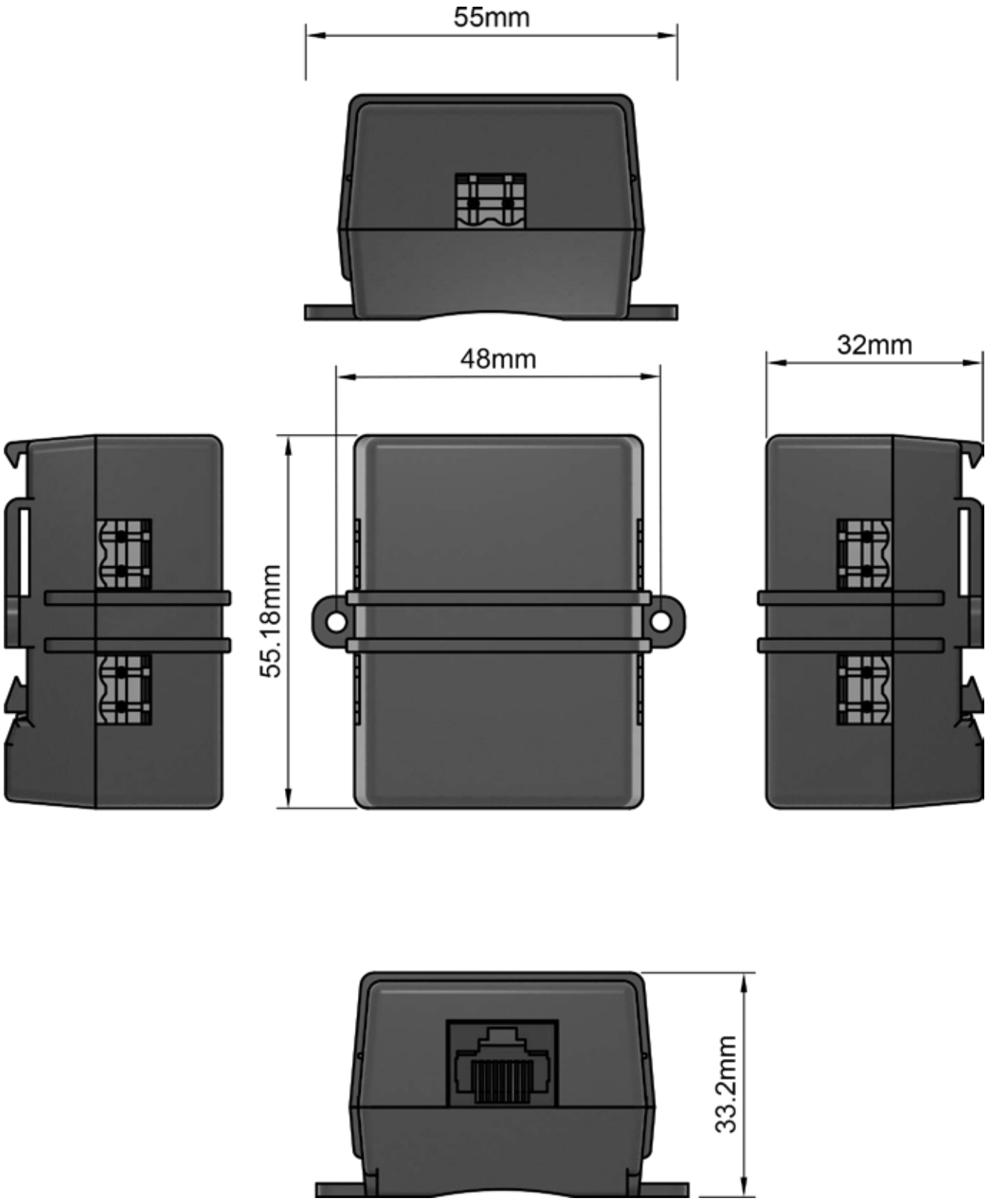
The single port RJ-45 Dry Contact Sensor with an ALARM/NORMAL indication in the software. Can have up two on a SP2, four on an SP2+ eight on a SP8 and 600 Dry Contact Sensors on a securityProbe unit. Dry contact sensors are user definable and can be used to detect many different inputs such as UPS status, security systems, air conditioning status.

SNMP interface for alarm/normal status.
SNMP traps can be sent when the sensor is in a critical state.
SNMP polling is possible via SNMPget.
Web browser interface is available.
When an alarm condition is activated the description and location of the fault can be sent via an email or SNMP trap.

Technical Specifications

Measurement range	Alarm or Normal
Communications cable	RJ45 jack to sensor using UTP Cat 5 wire
Maximum extension cable length 305m (1000 ft.) with approved low capacitance shielded cable or UTP.	
Input voltage range	0 to 5 volts
Normal input voltage is settable under software	
Sensor type	Open / Closed contact switch
Current Range	Can sink up to 20 mAmps
Measurement rate	Multiple readings every second

5DCSxx - Technical Drawing



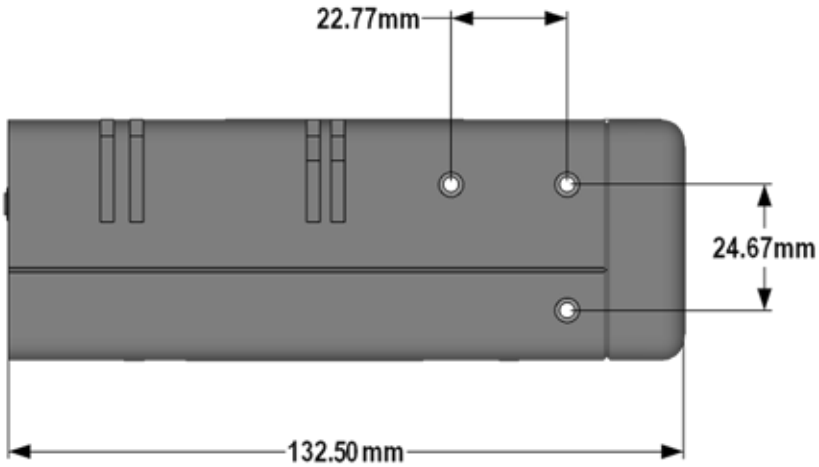
8 Port Sensor Controlled Relay (8PRB)

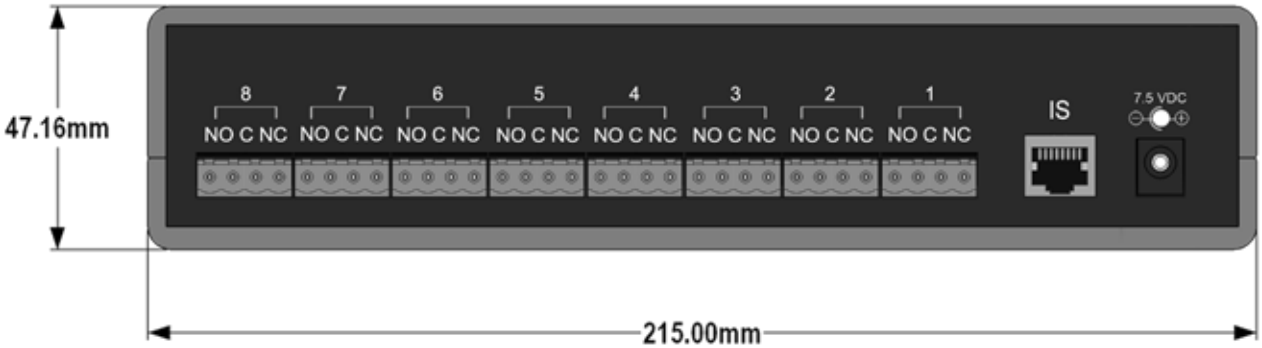
The 8 Port Sensor Relay is specially designed multiport relay for advanced process control. The 8 Port Sensor Relay is easily controlled by any of AKCP's extensive selection of sensors. The relay can provide automatic responses to sensor status changes. Setting up the sensor controlled relay is easy with its built in autosense feature and user friendly web interface.

Technical Specifications

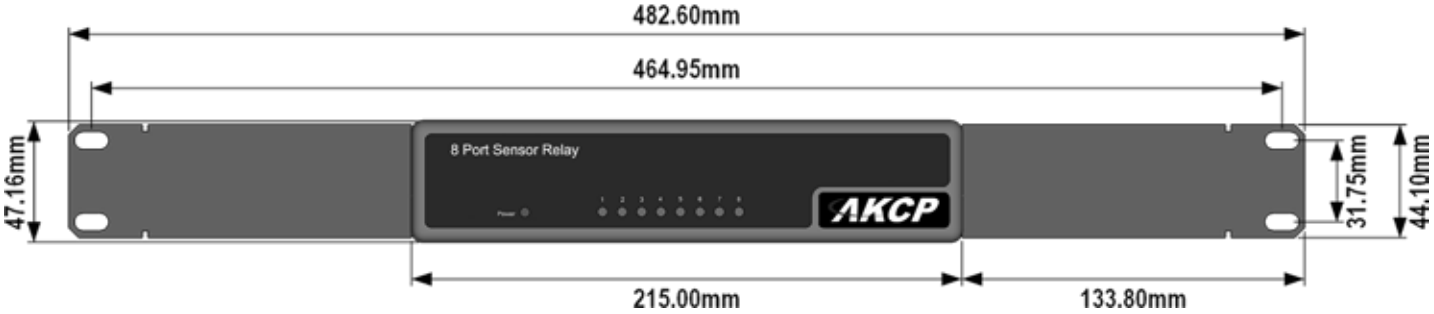
Power Supply	7.5VDC 1.2 Amp (Optional, needed if there are more than 8 relays are connected)
Dimensions	10.83" x 5.43" x 1.80"
Operating Temperature	-40°C to 85°C
Storage Temperature	40°C to 85°C
Relay Specifications	
Contact Material	AgCdO
Carry Current	15.5 Amps
Max. Operating Voltage	380 VAC, 125 VDC
Max. Operating Current	15.5 Amps
Max. Switching Capacity	4,000 VA
480W with Resistive Load 2,000 VA, 240W with Inductive Load	
Power Consumption	Typical 2475.00 mWatt, 495.00mA

8PRB - Technical Drawing





8PRB with 1Urackmount bracket



AC Sensor Controlled Relay (PRB00-ACO)

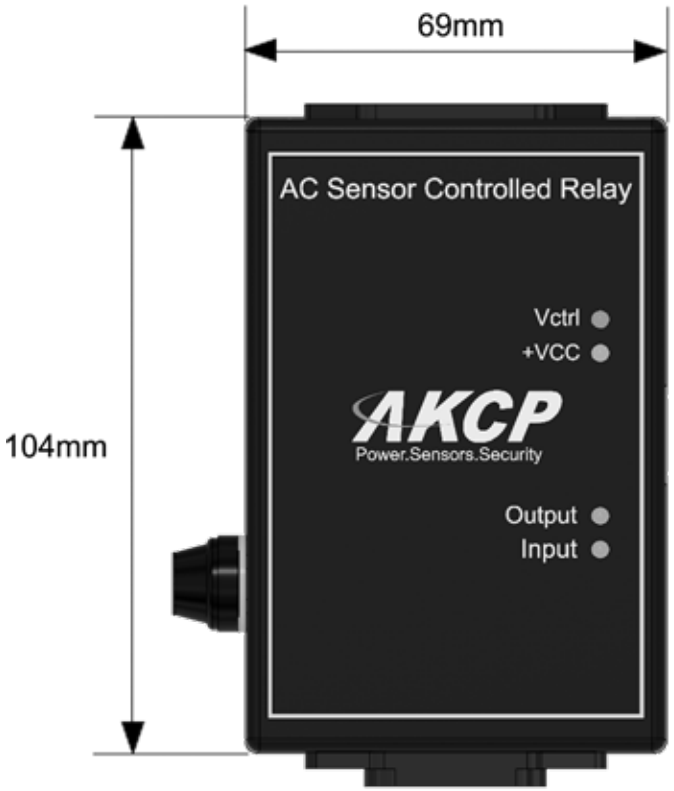
The AC-Sensor Controlled Relay controls the electrical power to devices over the Internet. Easy configuration & integration with sensorProbe product series, It defines a new era in energy management.

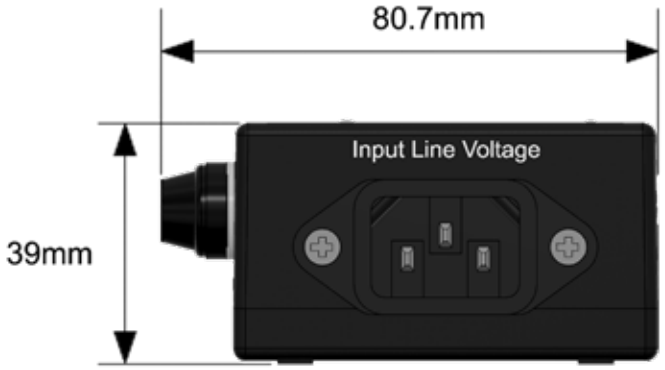
The AC-Sensor Controlled Relay provides 1 high power SPST 5V relay. It includes Metal Oxide Varistors (MOVs) and Snubber circuits to protect the open contact of the relays from the high voltage spikes or noise transients.

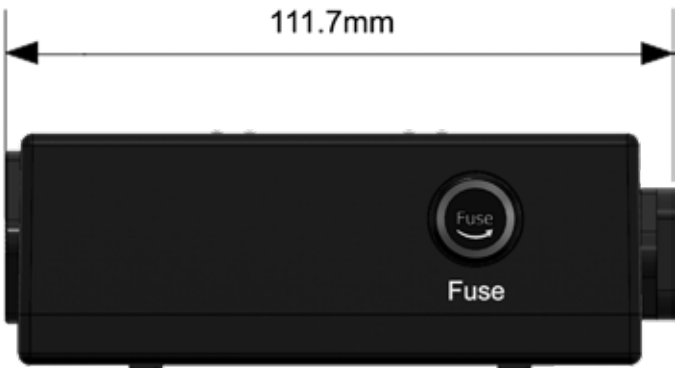
Technical Specifications

Maximum Input Voltage	110 - 220 VAC
Maximum Output Voltage	110 - 220 VAC
Contact Rating	10 Amps for 220VAC and 10 Amps for 110VAC
Carry Current	10 Amps
Max Operating Voltage	380 VAC, 125 VDC
Max Operating Current	10 Amps
Max Switching Capacity	4000 VA, 480W with Resistive Load 2000 VA, 240W with Inductive Load (P.F=0.4)
Min Permissible Load	100mA 5 VDC
Power Consumption	Typical 471.00 mWatt, 94.20mA
PCB Copper Track Rating	10 Amps
10 Amps Fuse	380 VAC
Dimensions	115(w) x 80(H) x 40(D) mm
Operating Temperature	-40 C to 85 C
Weight	250 gms

PRB00-ACO - Technical Drawing







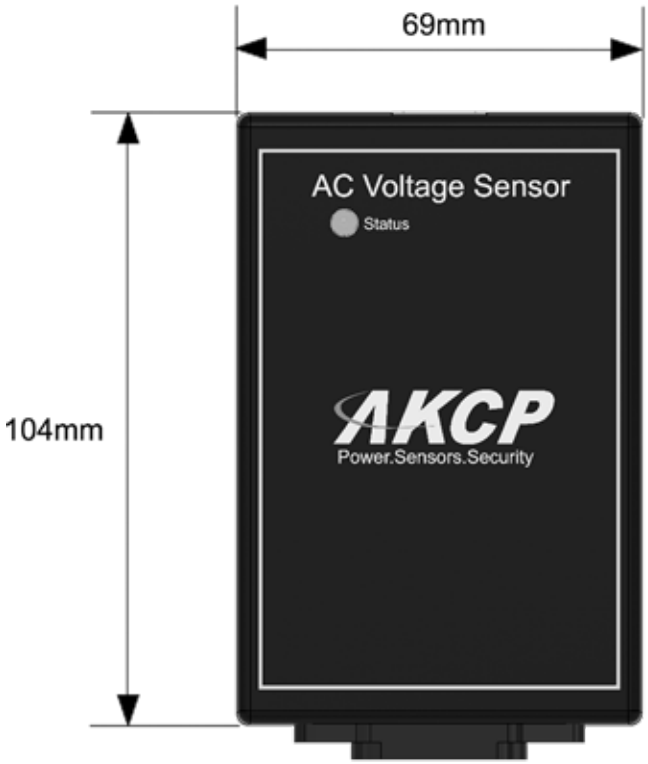
AC Voltage Sensor (ACV00)

AKCP Voltage sensor is specially designed for monitoring AC voltage presence or absence of line voltage up to 250V. It comes with an ALARM / NORMAL indication in the device firmware. Easy installation with no eectrician required, it ismply plugs into any AC power source and will monitor if AC Voltage is present.

Technical Specifications

Measurement Range	Detects voltage at 50V AC to 250V AC
Measurement Indication	Alarm or Normal
Communications Cable	RJ45 jack to sensor using UTP Cat 5 wire
Max. Cable Length	305m (1000 ft.) with approved low capacitance shielded cable or UTP
Sensor Type	Open / Closed contact switch
Measurement Rate	Multiple readings every second

ACV00 - Technical Drawing



IO-Digital8 Sensor (IODC8)

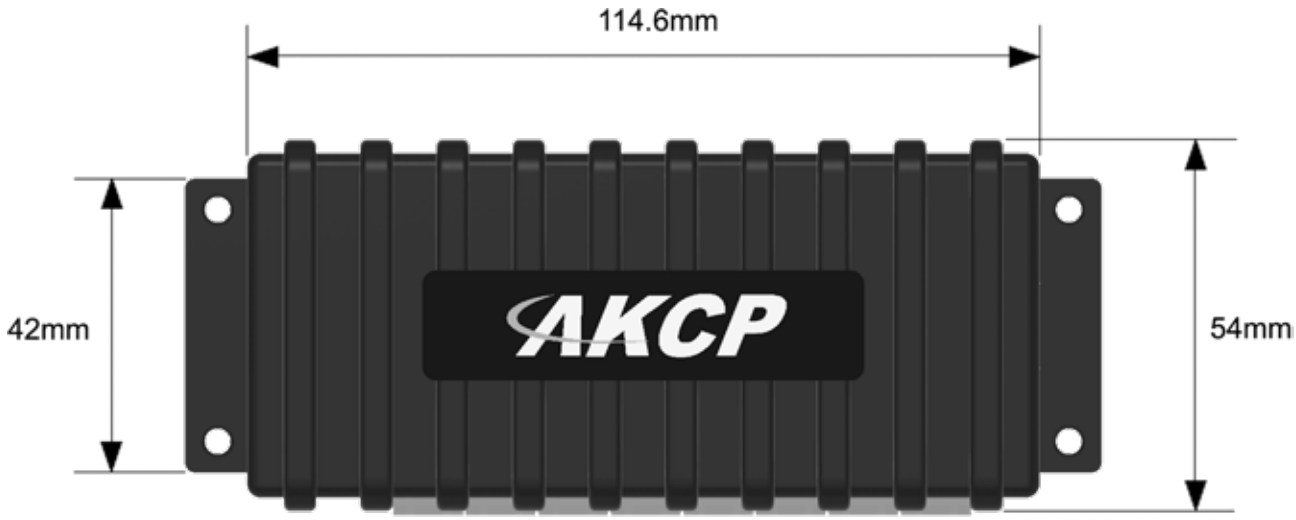
The IO-digital8 sensor adds 8 dry contacts to the securityProbe or expansion module base unit. With 8 ALARM/NORMAL indication in the securityProbe 5E web interface it provides instant notification for changes of status.

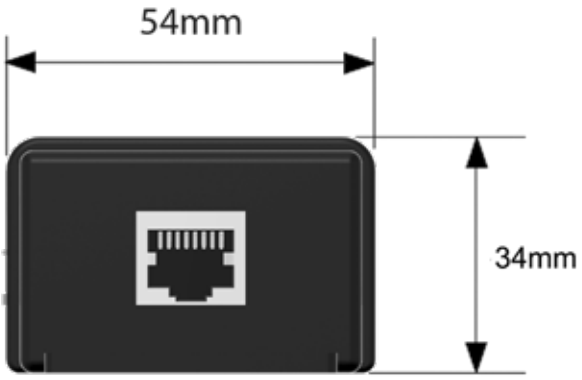
The sensor can be mounted on a wall by your alarm panel, or using our DIN rail clips can be DIN rail mounted. A standard CAT5 cable connects the IO-digital8 sensor to the intelligent sensor port.

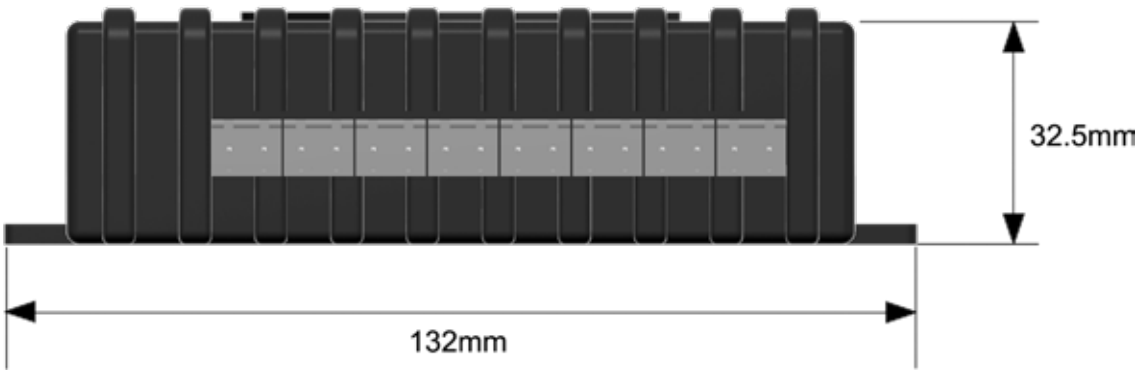
Technical Specifications

Measurement Range	Alarm or Normal
Communications Cable	RJ45 jack to sensor using UTP Cat 5 wire, Maximum extension cable length 305m (1000 ft.) with approved low capacitance shielded cable or UTP.
Sensor Type	Open / Closed or cycles contact switches
Input Voltage Range	0 to 5 volts on each of the 8 dry contacts
Normal State Input Voltage	(0-5 Volts) is settable under software on each of the 8 dry contacts Normally open, normally closed is settable under software on each of the 8 dry contacts
Current Range	Can sink up to 20 mAmps on each of the 8 dry contacts
Measurement Rate	multiple readings every second
Dimensions	Length 13.20 cm x Width 5.38 cm x Height: 3.40 cm
Weight (Approx)	120 grams without cable

IODC8 - Technical Drawing







DC Sensor Controlled Relay (PRB00-DCO)

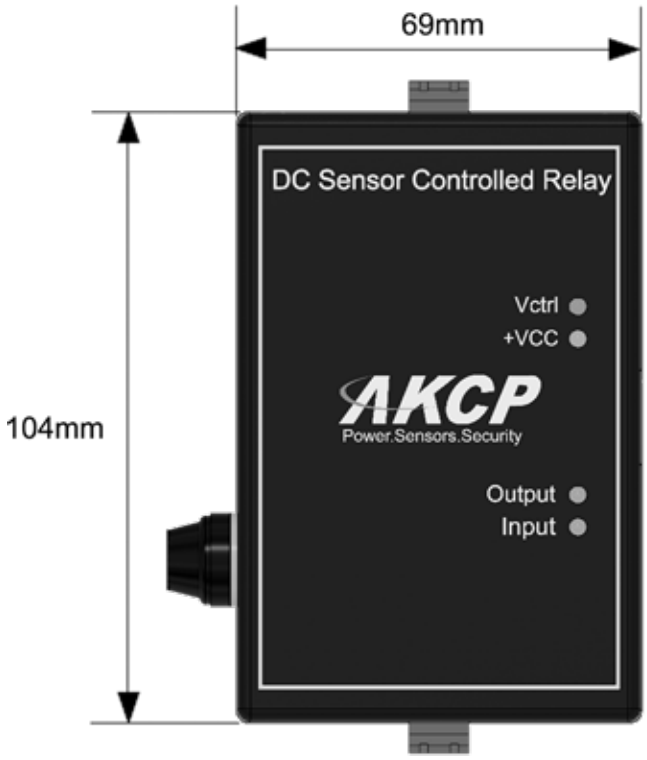
The Sensor Controlled Relay can control the electrical power to devices managed over the Internet. With easy configuration and integration with the sensorProbe product series. The Sensor Controlled Relay defines a new era in energy management.

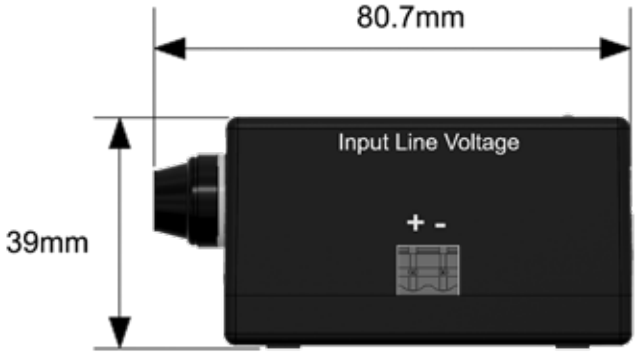
The Sensor Controlled Relay is easily controlled by any of AKCess Pro's extensive selection of sensors. The relay can provide automatic responses to sensor alerts. This is useful, for example, to switch on the fan when the room temperature rises beyond the threshold level or to turn on a light when the motion detector is triggered. Setting up the Sensor Controlled Relay is easy with its built in autosense feature and user friendly web interface.

Technical Specifications

Maximum Input Voltage	48 VDC
Maximum Output Voltage	48 VDC
Contact Rating	Contact Rated Load = 10Amps at 48 VDC
Carry Current	10 Amps
Max Operating Voltage	48 VDC
Max Operating Current	10 Amps
Max Switching Capacity	4000 VA, 480W with Resistive Load 2000 VA, 240W with Inductive Load(P.F=0.4)
Min Permissible Load	100mA 5 VDC
Power Consumption	Typical 471.00 mWatt, 94.20mA
PCB Copper Track Rating	10 Amps
10 Amps Fuse	250 VDC
Dimensions	115(w) x 80(H) x 40(D) mm
Operating Temperature	-40 C to 85 C
Weight	250 gms

PRB00-DCO - Technical Drawing





Mini Sensor Controlled Relay - MSCR

Mini Relay Controlled by Sensor Status

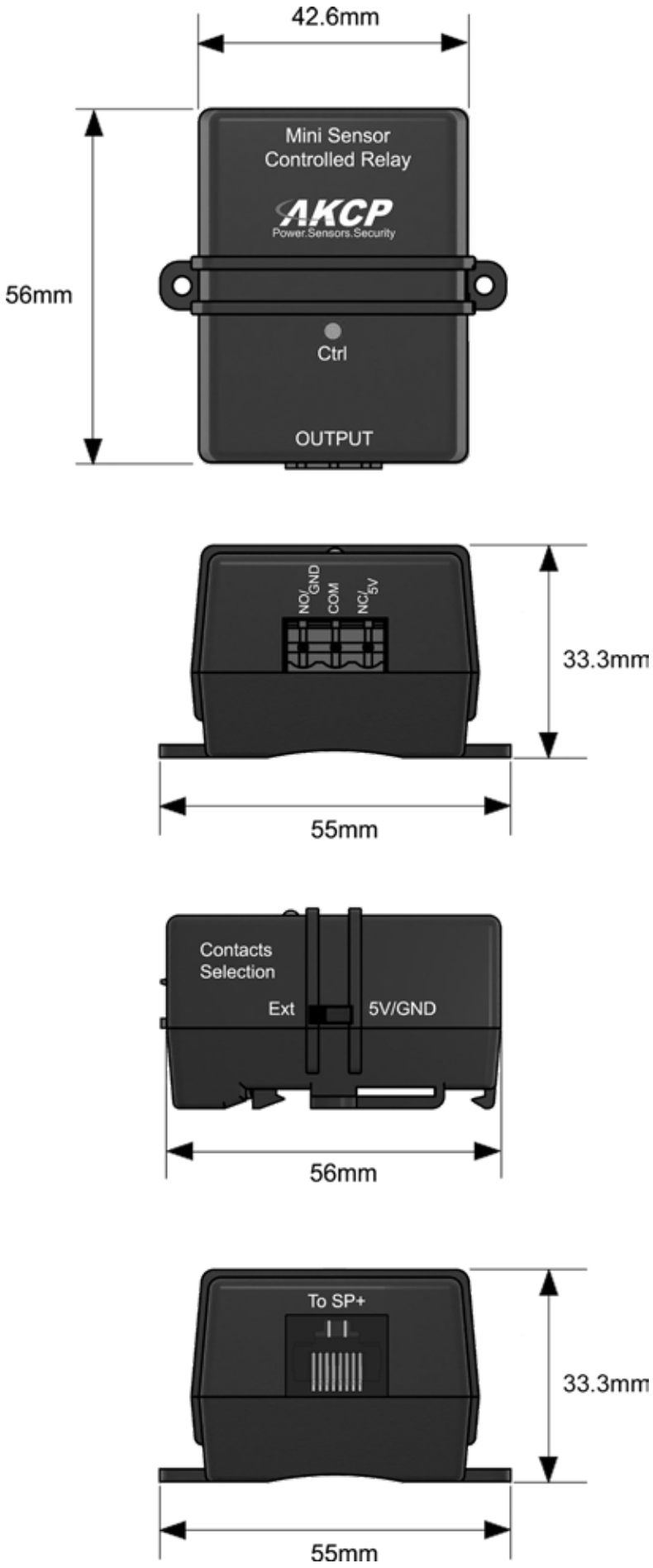
Drive larger relays with a low current output from the sensorProbeX+

If you have an equipment with a relay that you would like to switch based on a sensor input, this adapter will output 200mA - 5V DC based on a sensors status. Use this smaller relay as to drive the larger relay on your appliance.

Technical Specifications

Coil Consumption	150mW
Switching Power	120VA, 24W
Contact Material	AgNi Alloy
Min. Contact Load	1mA @ 1VDC
Initial Contact Resistance	50mΩ at 100mA, 6VDC
Contact Ratings	1A, 120 VAC / 24 VDC
Mechanical Endurance	10x10e6 operations
Electrical Endurance	1A, 120 VAC, resistive, 100x10e3 ops.
Electrical Endurance	1A, 24 VDC, resistive, 100x10e3 ops.

MSCR - Technical Drawing



Dry Contact Sensor (DCSxxx)

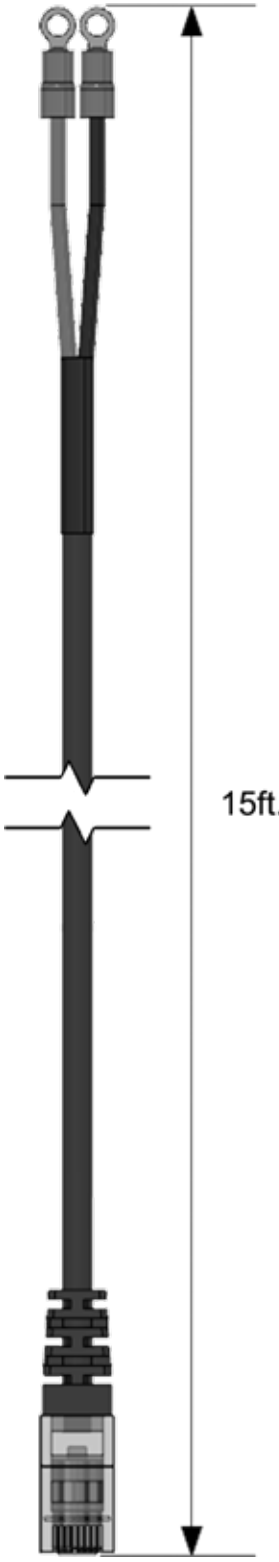
The Dry Contact sensor is a simple connection to burglar alarms, fire alarms or any application that requires monitoring by the sensorProbe. Dry contact sensors are user definable and can be used to detect many different inputs such as UPS status, security systems, air conditioning status.

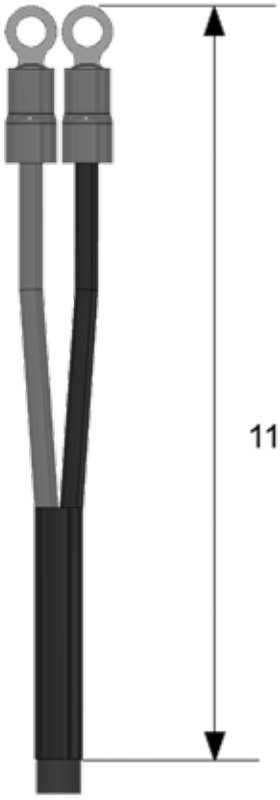
These general purpose switches can be either input or output. When used as an output it can source up to 20 mAmps. You can select the output voltage by setting the Output Level to a Low or a High. When set to Low the pin will output 0 volts. When set as a High the pin will output 5 volts.

Technical Specifications

Measurement range	Alarm or Normal
Communications cable	RJ45 jack to sensor using UTP Cat 5 wire
Maximum extension cable length 305m (1000 ft.) with approved low capacitance shielded cable or UTP.	
Input voltage range	0 to 5 volts
Normal input voltage is settable under software	
Sensor type	Open / Closed contact switch
Current Range	Can sink up to 20 mAmps
Measurement rate	Multiple readings every second

DCSxxx - Technical Drawing





Isolated DC Voltage Sensor (IDCV00)

The Isolated Digital Voltmeter allows the user to integrate a custom sensor to the sensorProbe or securityProbe while still retaining all of the features of the statndard sensors. The Digital Voltmeter has the full range of functionality including SNMP integration, email and trap generation upon settable limits and thresholds.

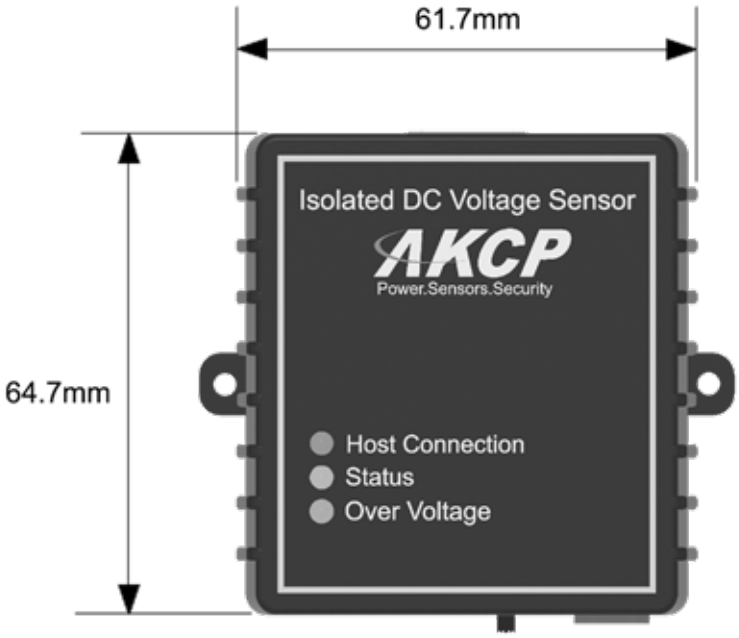
The Isolated DC Voltage Sensor can be used by OEMs and engineers to create their own custom data collection systems. The user can input a DC voltage range from -60 to 0 volts or 0 to 60 volts. The Isolated DC Voltage Sensor can provide real time data from the world around them.

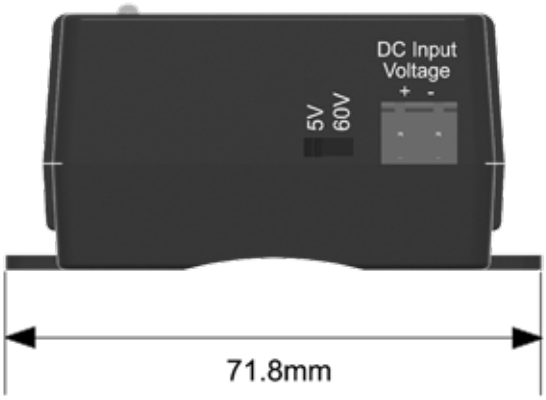
Technical Specifications

Isolation Voltage	1600 VDC.
2 Hardware setting modes	**Wide Range Mode** is -60 to +60 VDC with 0.01 V resolution and 1% accuracy. **High Resolution Mode** is -5 to +5 VDC with 0.001 V resolution and 1% accuracy
Communications Cable	RJ-45 jack to sensor using UTP CAT5/6 cable.
Input Impedance	1.6 MOhm when set at the high scale (60 Volt maximum) and 1.1 MOhm when set at the low scale (5 volt maximum).
Maximum Extension Cable	run length is 60 feet with approved low capacitance shielded cable or UTP.
Measurement Rate	Multiple readings every second.
Power Source	Powered by the sensorProbe or securityProbe. No additional power is needed. Up to 2 iDCV sensors per sensorProbe2, up to 8 per sensorProbe8 and up to 8 per securityProbe and up to 600 per securityProbe 5E (8 per E-sensor8 expansion board).

Note: The iDCV is only compatible with the securityProbe, securityProbe 5E, securityProbe 5ES, newer sensorProbe2 shipped after October 2009, sensorProbe4, and sensorProbe8, sensorProbe8-X20/X60 units shipped after July 1st 2011.

IDCV00 - Technical Drawing





In-Line Power Meter (ILPM)

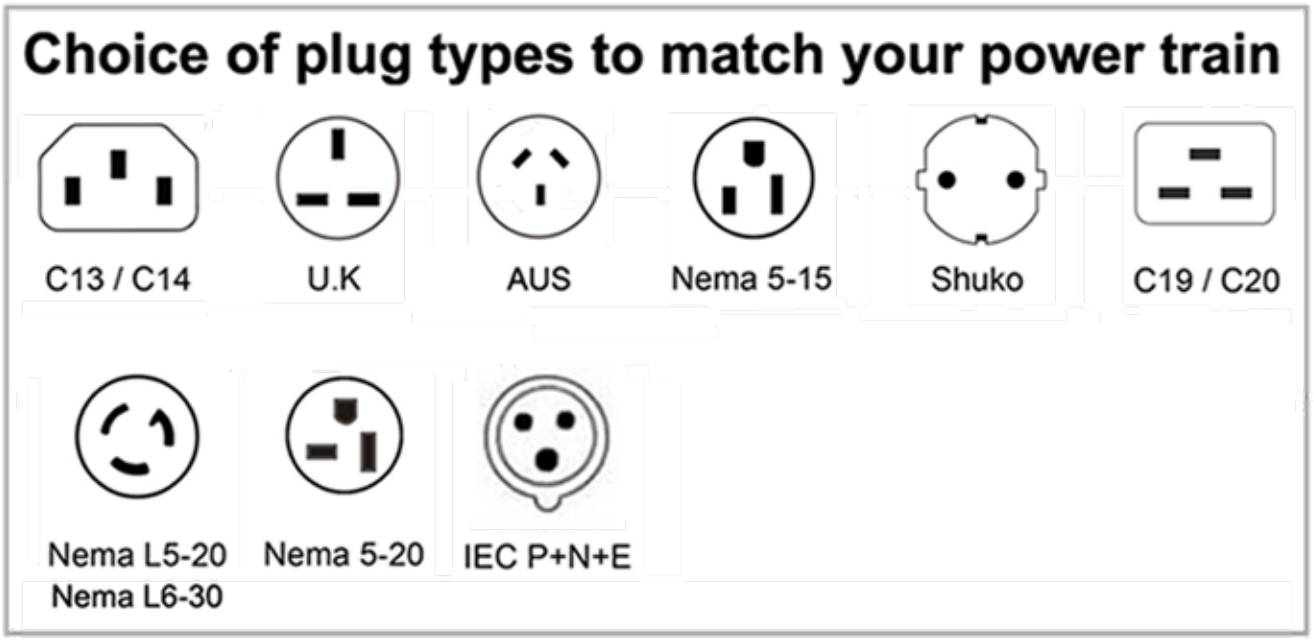
Power Monitoring and Switching

16A and 32A in-line power meters with optional Relay.

The power meter goes between the electrical source and the PDU or individual appliance, monitoring the voltage (V), current (A) and Kilowat Hours (kWh) being consumed. Identify power hungry equipment with billable grade accuracy and remotely switch devices on and off. Relays are either Normally Closed, Normally Open or Bi-Stable Latched relay, which retains it's state regardless of whether it is receiving power or not.

In-Line Power Meter is essential for :-

- **Checking how close you are to tripping your circuit breaker**
- **Ensure sufficient power overhead WHEN adding equipment to a circuit**
- **Billing individual clients in co-located services**
- **Monitoring up to 16 appliances from a single IP address**



ILPM - Technical Specification

Dimension	To be defined
Mounting	To be defined
Power	Input Voltage and Current ratings : 1 phase, 100V~250V 16A/32A
Power Metering	- Voltage (V) - Current (A) - Active Power (kW) - Total Active Energy (kWh) - Leakage current (A) - Power Factor
Environment monitoring	- Temperature sensor with 1 meter cable *range -40°C to +75°C or - Dual Temperature/Humidity sensor with 1 meter cable * range -40°C to +75°C * 0 to 100% Relative humidity
Status Indication	LED indication for power LED Relay status (with optional relay)
Components	Manufactured using highly integrated, low power surface mount technology to ensure long term reliability.
Operating Environment	Temperature : Min. -35° C – Max.80° C Humidity: Min. 20% – Max. 80% (Non-Condensing)
MTBF	1,400,000 Hours based on field experience with sensorProbe units.
Inputs	1x sensor RJ45 Port Hardwired with following plugs : - IEC 60320 C20 - IEC 60320 C14 - Nema 5-15P - Nema 5-20P - Nema 5-30P - Nema L5-15P - Nema L5-20P - Nema L5-30P - UK BS - Shuko CEE 7/7 plug - IEC60309 2P+E blue
Outputs	Outlet types : - IEC 60320 C13 - IEC 60320 C19 - Nema 5-15R - Nema 5-20R - Nema 5-30R - Nema L5-15R - Nema L5-20R - Nema L5-30R - UK BS1363 - Shuko CEE 7/3 Socket - IEC 60309 2P+E Blue
Relay	Latched Relay Contacts rating : 40 Amp Mechanical Life : 1×10^7 times Electrical Life : 3×10^4 times Class B

ILPM - Technical Specification

Options and Product Codes

Inline Power Meters come with a variety of options, relays, thermal maps, connection types. Refer to the table below for the availabl options.

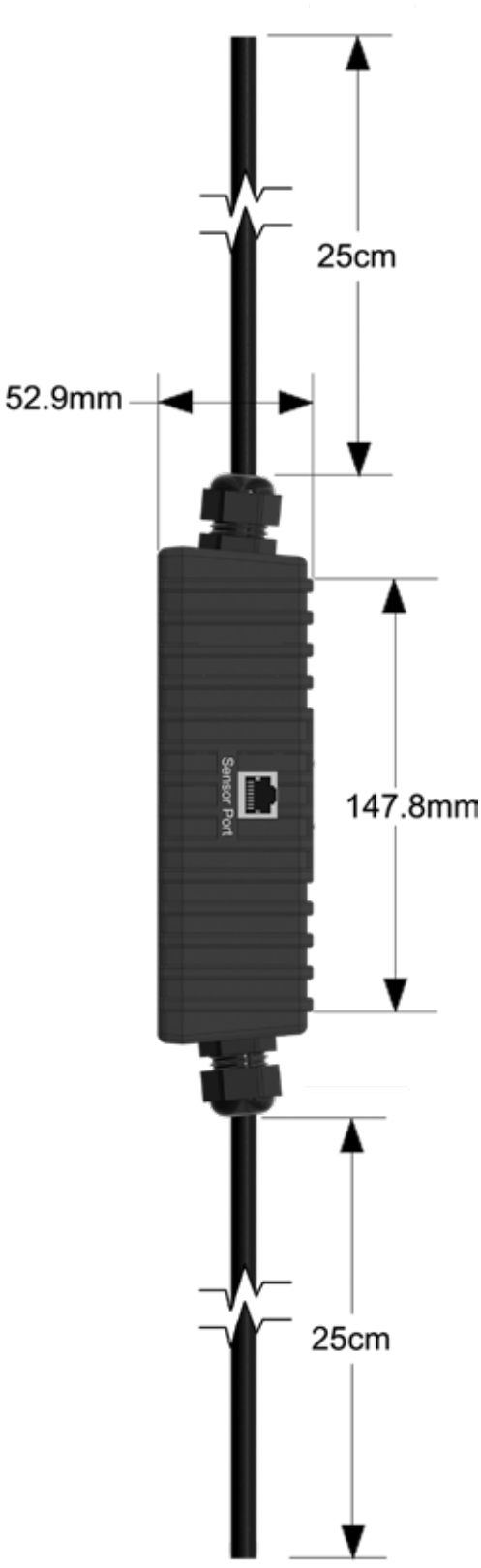
Order individual code options, or combine into a single part number :-

16A In-line Power Meter with Latched Relay
ILPM-16A-LR
or
ILPM-16A
LR

Product Name	Product Code
Inline Power Meter 32A (25cm power in / out cable bare ends)	ILPM-32A
Inline Power Meter 16A (25cm power in / out cable bare ends)	ILPM-16A
OPTIONS	
Relays	
Normally Closed Relay	NCR
Normally Open Relay	NOR
Latched Relay	LR
Cabinet Thermal Maps	
Cabinet Thermal Map Temperature Only	ILPM-CTM
Cabinet Thermal Map Temperature & Humidity	ILPM -CTHM
10A Connections	
IEC C13 (Power Out)	C13
IEC C13 Locking (Power Out)	C13L
IEC C14 (Power In)	C14
13A Connections	
UK Plug (Power In)	UKP
15A Connections	
AUS (Power In)	AUS
Nema 5-15R (Power Out)	5-15R
Nema 5-15P (Power In)	5-15P

Product Name	Product Code
16A Connections	
EUR Plug (Power in)	EURP
C19 (Power Out)	C19
C19 Locking (Power Out)	C19L
C20 (Power In)	C20
IEC 2P+E (Power In)	2PEP
IEC 2P+E (Power Out)	2PEO
20A Connections	
Nema 5-20R (Power In)	5-20R
Nema L6-20P (Power Out)	L6-20P
Nema 5-20P (Power Out)	5-20P
30A Connections	
Nema 5-30P (Power Out)	5-30P
Nema L6-30P (Power Out)	L6-30P
32A Connection	
IEC 2P+E (220V Power In)	2PEP-32
IEC 2P+E (220V Power Out)	2PEO-32

ILPM - Technical Drawing



Power Monitoring Sensor (PMS)

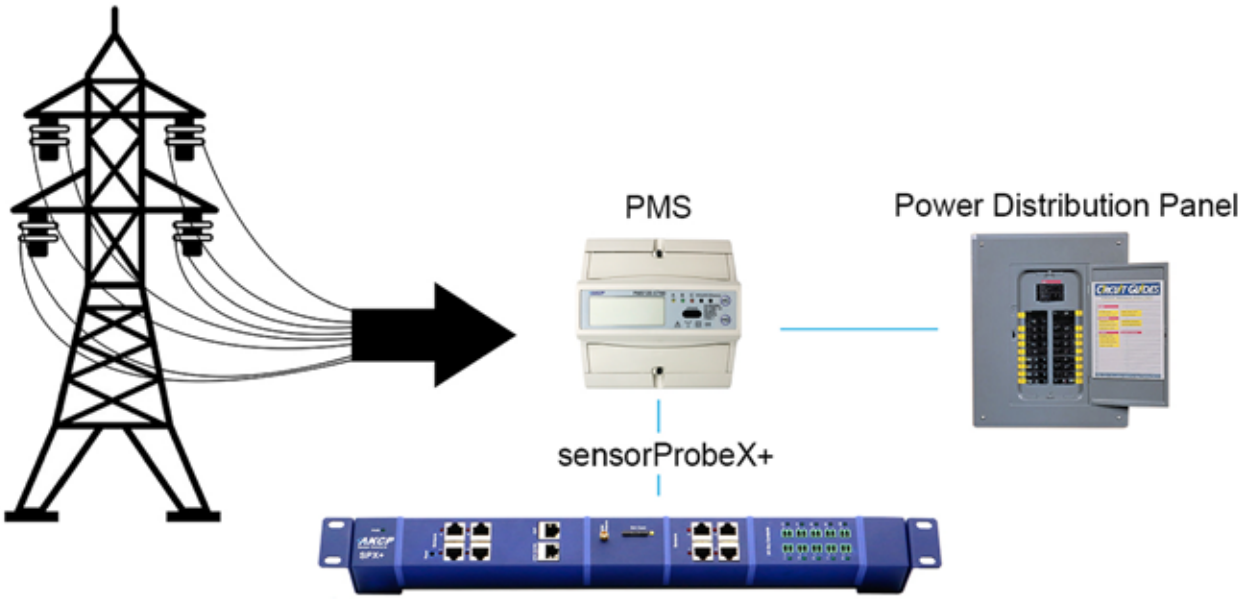
The AKCP Power Monitor Sensor gives vital information and allows you to remotely monitor power eliminating the need for manual power audits as well as providing immediate alerts to potential problems.

It has been integrated into the base unit web interface with its own “Power Management” menu, allowing up to six three phase and fourteen single phase Power Monitor Sensors to be set up on a single securitoryProbe or SPX+. More PMS can be connected to a single base unit depending on what readings are required.

Data collected voer time using the Power Monitor sensor can also be viewed using the built in graphing tool. Combining this durable Power Monitor Sensor with the SPX+ or securityProbe base unit creates an IP-enabled power monitoring capable of monitoring:

- Phase Line Voltages
- Current
- Power Factor
- Active Energy
- Active Power

Technical Diagram

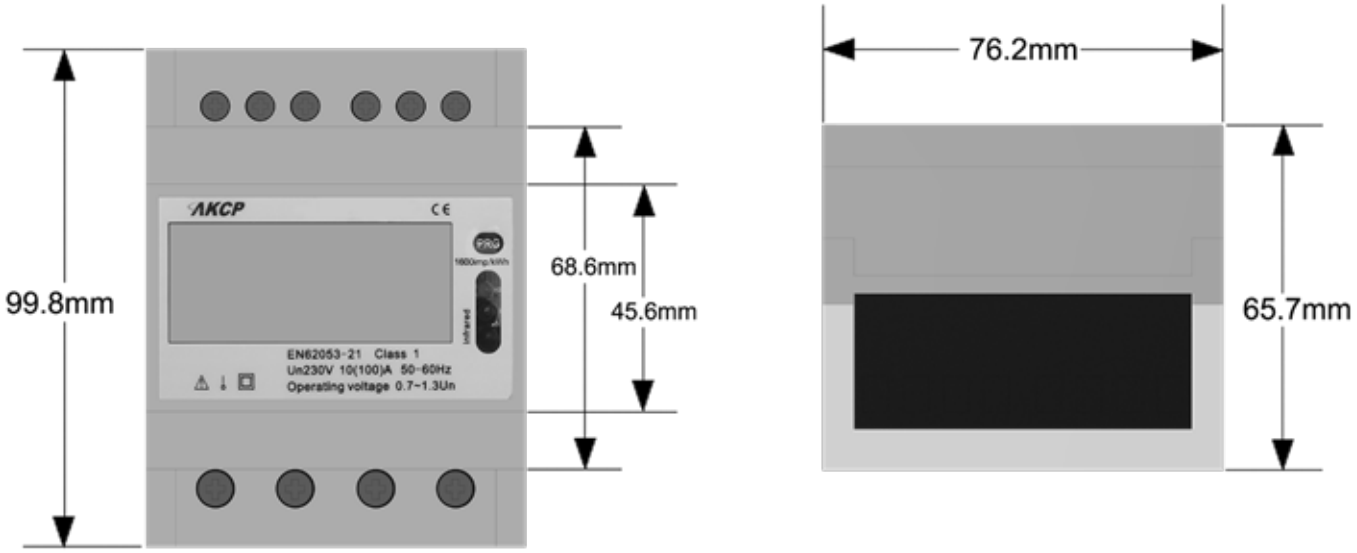


PMS - Technical Specification

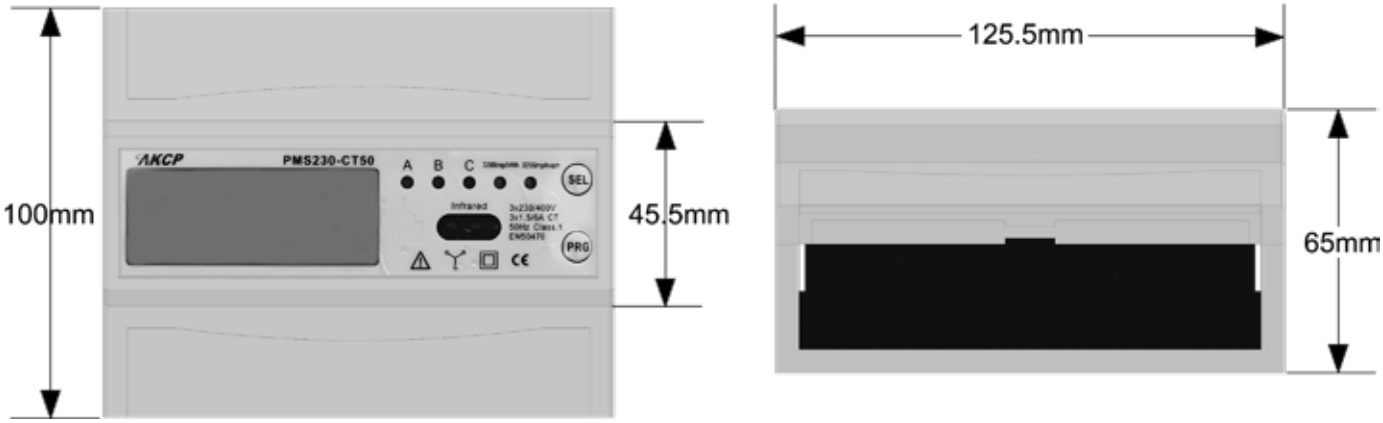
	Single Phase Meter	Three Phase Meter	Three Phase Meter - CT Type
Voltage (V)			
Rated Voltage (Un)	230V AC	230/400V AC (3˜)	230/400V AC (3˜)
Operational Voltage Range	0.7~1.3Un	161/279-300/520V AC (3˜)	161/279-300/520V AC (3˜)
Current (A)			
Basic Current (Ib)	10A	10A	1.5A
Maximum Current	100A	100A	6A
Operational Current Range	0.4% ib-Imax	0.4% Ib- Imax	0.4% Ib- Imax
Over Current Withstand	30Imax for 0.01s	30Imax for 0.01s	30Imax for 0.01s
Internal Power Consumption	≤2W / 10VA	≤2W / 10VA per phase	≤2W / 10VA per phase
Frequency (Hz)			
Operational Frequency Range	5~60Hz ±10%	50Hz ±10%	50Hz ±10%
Operating Environment			
Operating humidity	< 75%	< 75%	< 75%
Operating temperature	-10°C - +50°C	-10°C - +50°C	-10°C - +50°C
International standard	IEC 62053-21	IEC 62053-21	IEC 62053-21
Accuracy Class			
Voltage	±0.5%	±0.5%	±0.5%
Amps	±0.5%	±0.5%	±0.5%
Frequency (Hz)	±0.2%	±0.2%	±0.2%
Dimensions			
Height	100 mm	130 mm	130 mm
Width	76 mm	126 mm	126 mm
Depth	65.5 mm	65 mm	65 mm
Max Diameter Cable	11.5 mm		
Weight	0.35 Kg	0.7 Kg (net)	0.7 Kg (net)

PMS - Technical Drawing

Single Phase



Three Phase



Current Transformers (CTXXXX/5A)

AKCess Pro Current Transformers are designed for easy installation with a simple, fast, safe and easy way to connect a monitoring system to your power supply.

- Sensing Overload Currents
- Ground fault detection
- Metering
- Analog to Digital circuits
- Facilities and building management

AKCess Pro provide split core current transformers that can be installed without opening any cable or bus bar circuit. The connection of conventional Current Transformers (CTs) usually requires the interruption of the primary side circuit to pass cables or bus bars through the transformer core or to connect such cables to the primary terminals.

The AKCess Pro transformers core can be easily opened and installed then connected without any supply interruption. AKCess Pro Current Transformers save you time and installation costs and are safer to work with :

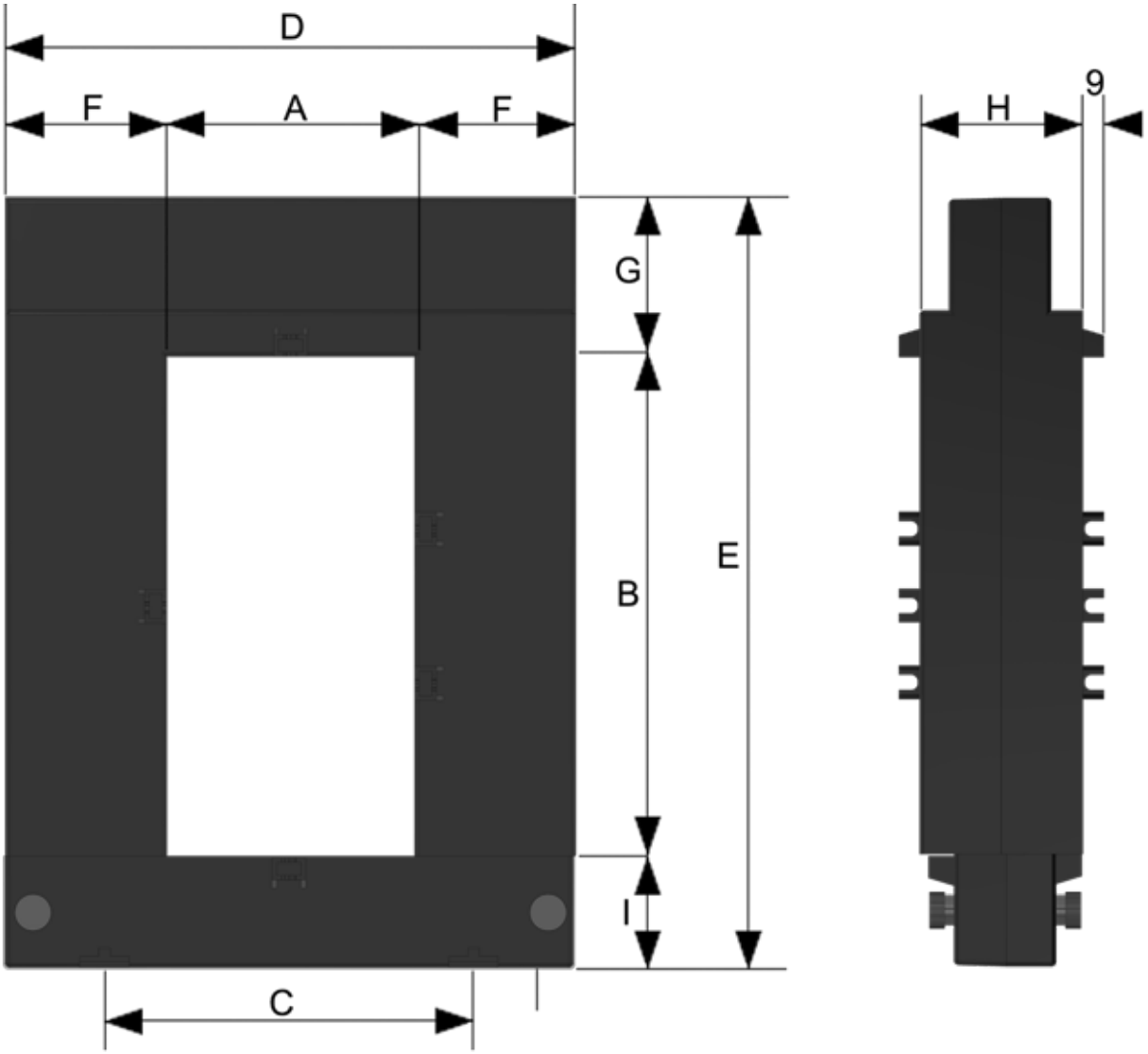
- Compact size for easy mounting
- Wide inner window, allowing clamping of big cables or bus bars
- Wide range of sizes to accommodate all existing installations
- High accuracy and reliability

The AKCess Pro CTs connect to the securityProbe and has its own interface so you can set parameters for monitoring and alerting on a variety of measurement factors.

CTXXXX/5A - Technical Specifications

Model	Nominal current ratio	Burden VA	
		Class: 0,5	Class: 1
		VA	VA
DP-23	100/5	-	-
	150/5	-	-
	200/5	-	1.5
	250/5	-	2
	300/5	1.5	3.75
	400/5	2.5	6
DP-58	250/5	1.5	2
	300/5	1.5	3
	400/5	1.5	3
	500/5	2.5	5
	600/5	2.5	6
	750/5	2.5	7.5
	800/5	2.5	7.5
	1000/5	5	10
DP-88	250/5	1.5	3.75
	300/5	1.5	6
	400/5	1.5	10
	500/5	2.5	15
	600/5	2.5	17.5
	750/5	2.5	18
	800/5	2.5	18
	1000/5	5	20
DP-812	500/5	2.5	12
	600/5	2.5	15
	750/5	2.5	17.5
	800/5	2.5	18
	1000/5	5	20
	1200/5	6	25
	1250/5	7.5	25
	1500/5	7.5	30
DP-816	1000/5	10	20
	1500/5	15	25
	2000/5	15	25
	2500/5	15	25
	3000/5	20	30
	4000/5	20	30
	5000/5	20	30

CTXXX/5A - Technical Drawing



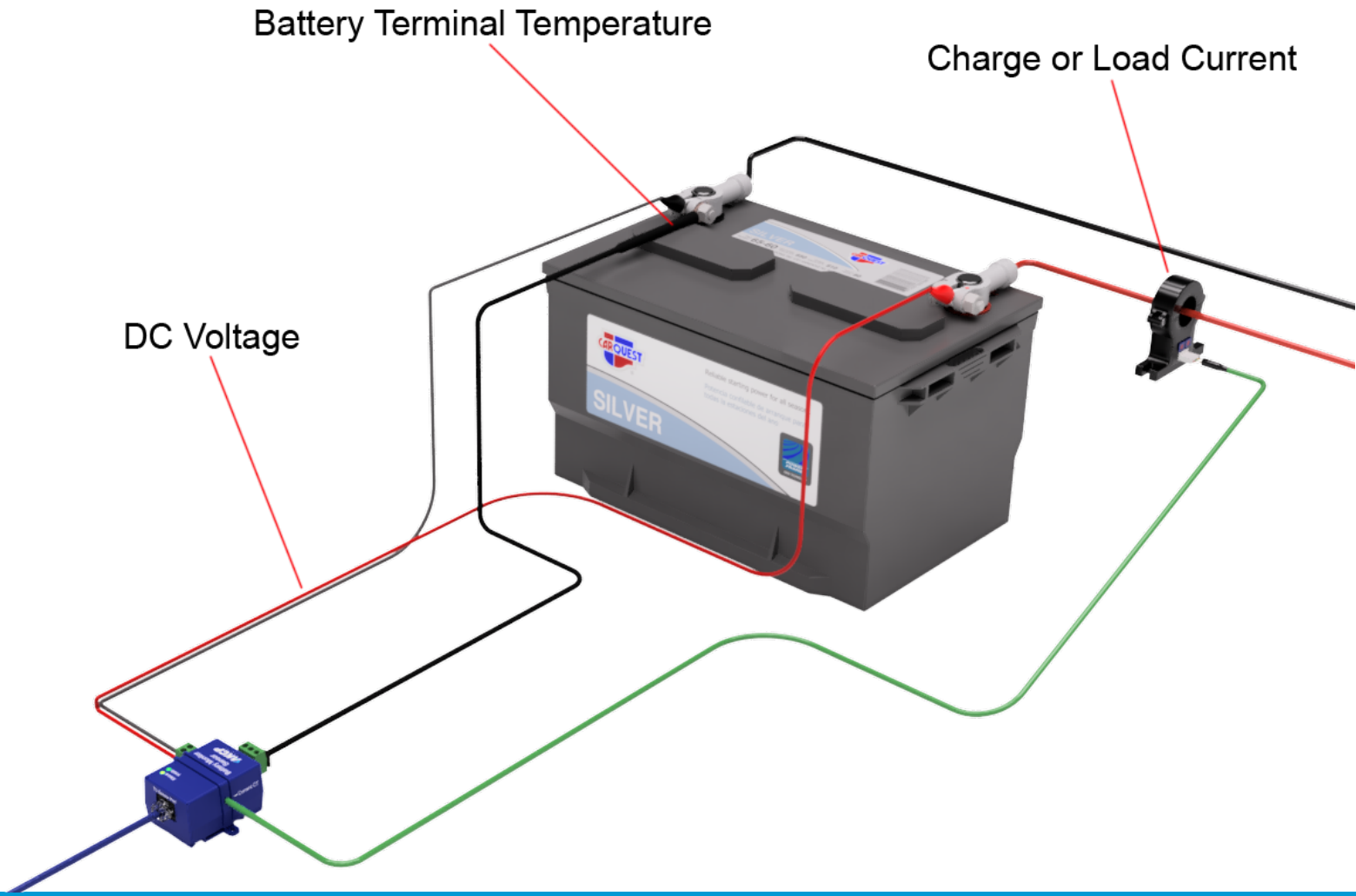
Model	A	B	C	D	E	F	G	H	I	Weight (kg)
DP-23	20	30	51	89	111	34	47	40	32	0.75
DP-58	50	80	78	114	145	32	32	32	33	0.90
DP-88	80	80	108	144	145	32	32	32	33	1.05
DP-812	80	120	108	144	185	32	32	32	33	1.25
DP-816	80	160	120	184	245	52	52	52	38	4.3

Battery Monitoring Sensor (BATTMON)

Monitoring of Voltage, Amps and Temperature

The Battery Monitoring Sensor is a simple, yet effective way to monitor a variety of battery types. Lead Acid, LiPoly, individual cells or banks of batteries. The sensor consists of a battery terminal temperature sensor, battery DC Voltage meter and a current transformer.

Check the battery system performance, such as charge/discharge status. This sensor aids in maintaining and monitoring battery health for generators and engines, backup UPS power and solar systems.



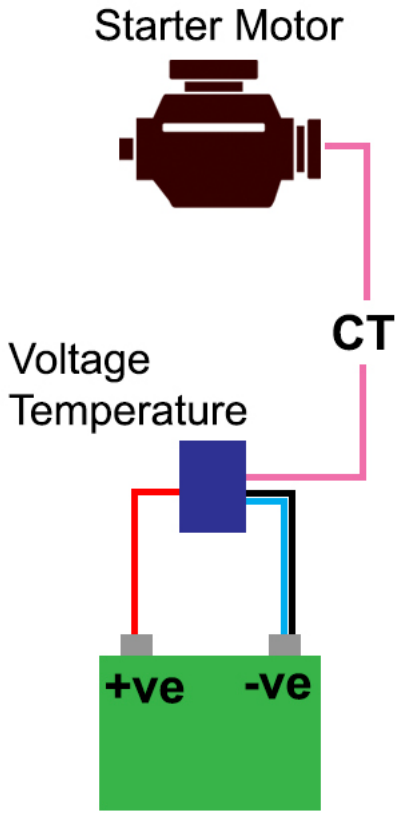
BATTMON - Engines and Generators

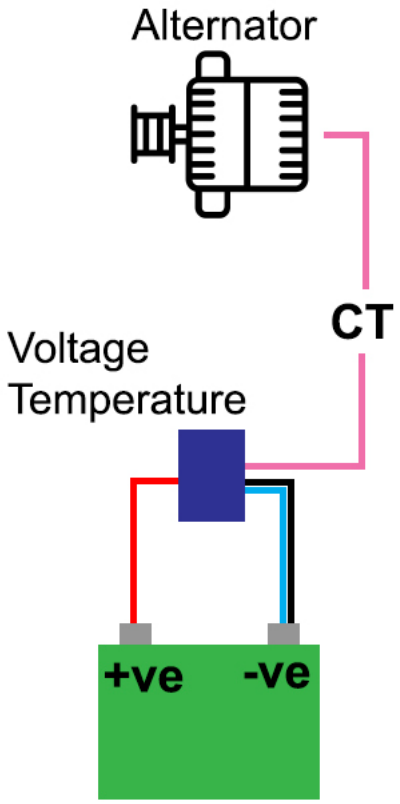
Monitor Starter Motors and Alternators

Connect the BATTMON sensor to your generator/engine battery to monitor the voltage, terminal temeprature and either the crank current from the starter motor or the charge current from alternator.

Crank Current
By monitoring the crank current you can identify decrease in battery performance. Decreasing current during crank can be a sign of bad battery health, or problems in the starter motor. This can lead to a failure to start situation.

Charge Current
Place the CT on the Alternator to monitor charge performance and identify early signs of altenrator or electrical system problems.



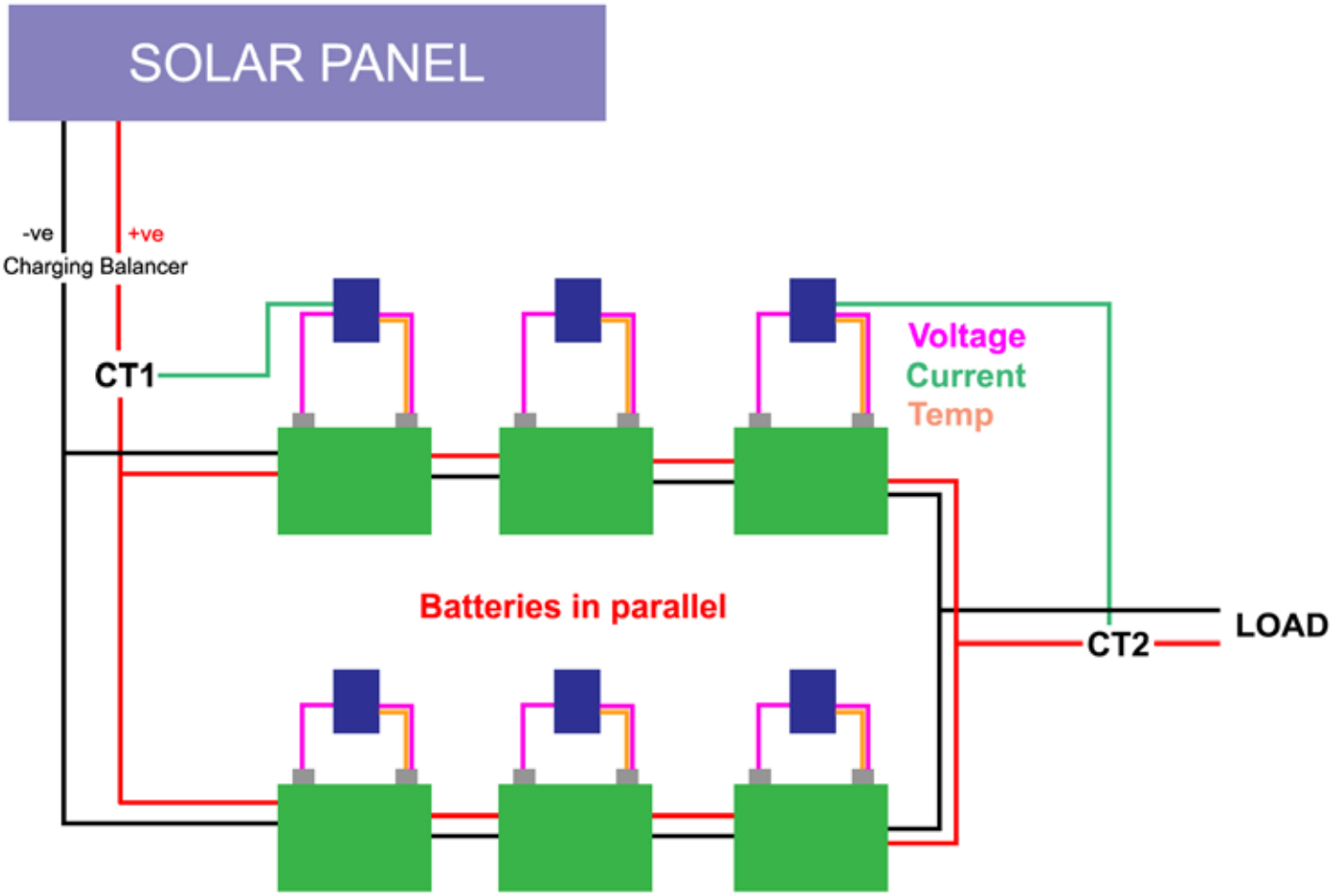


BATTMON - Solar Panels and Battery Stacks

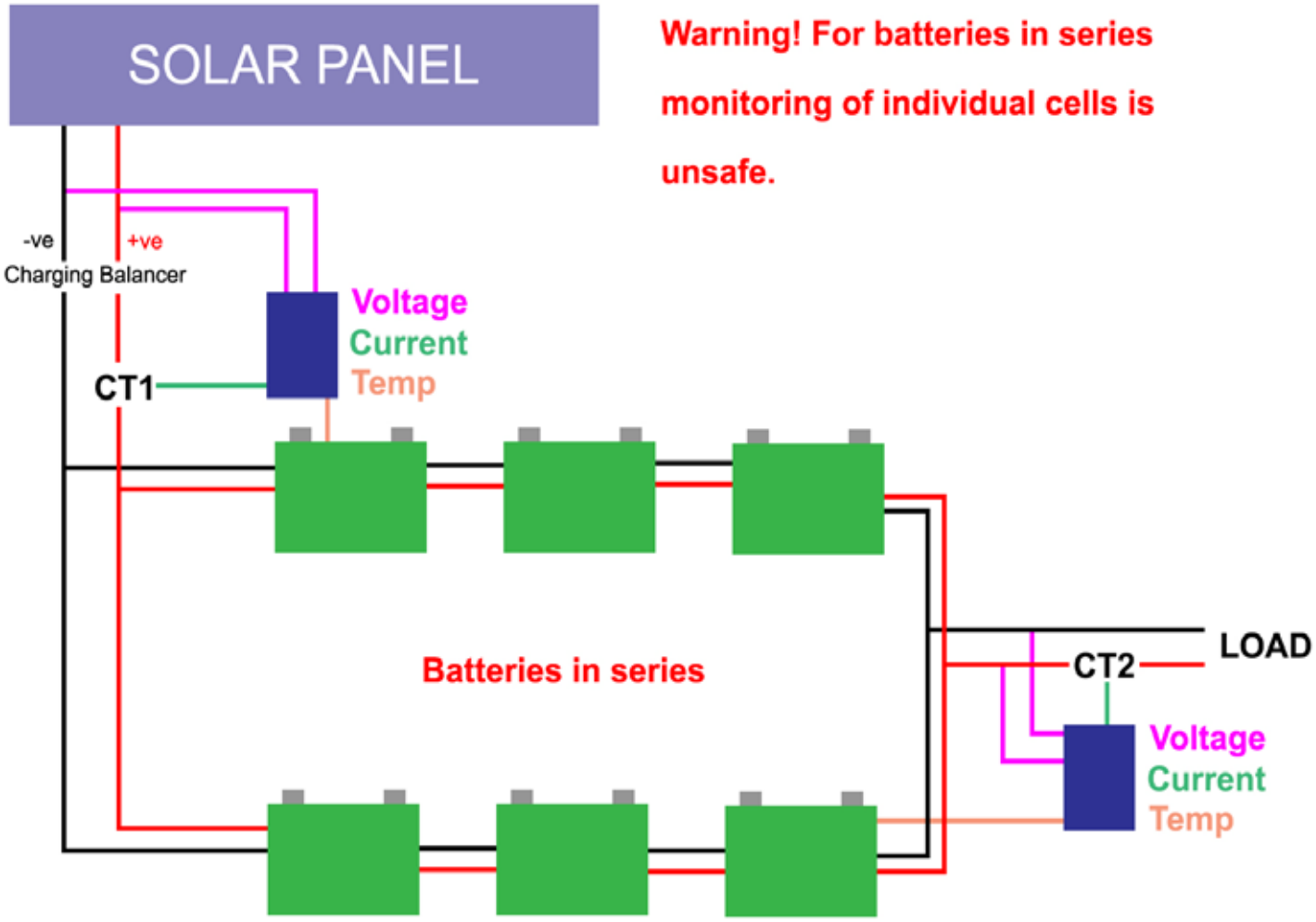
Solar System Monitoring

BATTMON can be installed on a solar panel battery system. Monitor individual cell voltages, temperature and current, or voltage and temperature only. Place a single CT on the battery stack to monitor the load. An additional CT placed on the solar panel output gives a complete end to end monitoring of your charging current, battery load, cell voltages and temperatures.

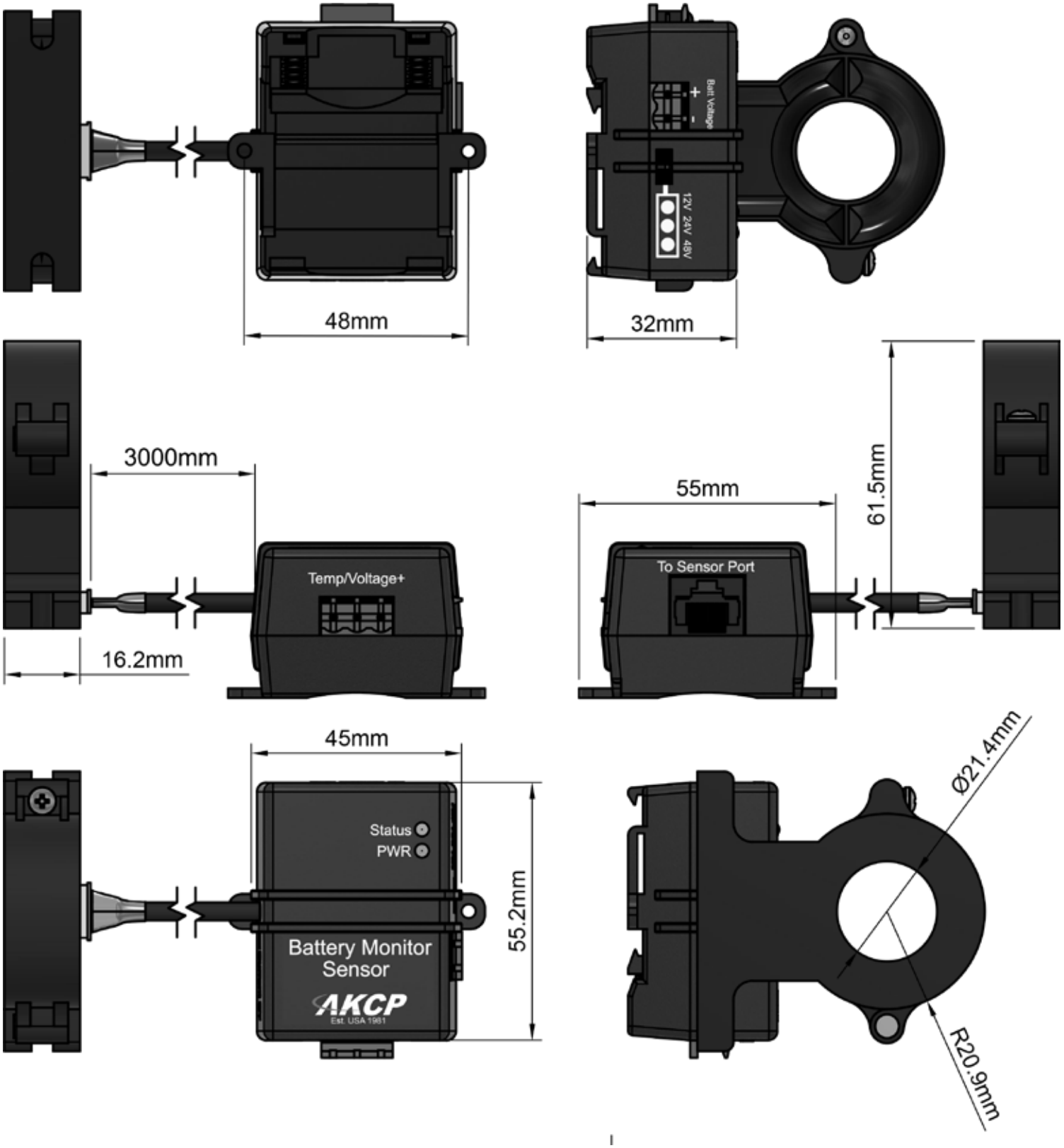
- Check your solar panel efficiency, voltage and current outputs.
- Monitoring individual cells and complete battery stacks
- Monitoring charge current vs discharge current



BATTMON - Technical Specification



BATTMON - Technical Drawing



Specialized Sensors

LCD Display

Tank Depth Pressure Sensor

ropeFuel Sensor

Battery Terminal Temp Sensor

probeSwitch

Modbus Adapter

Sensor Adapter

LCD Display

Programmable display of sensor values

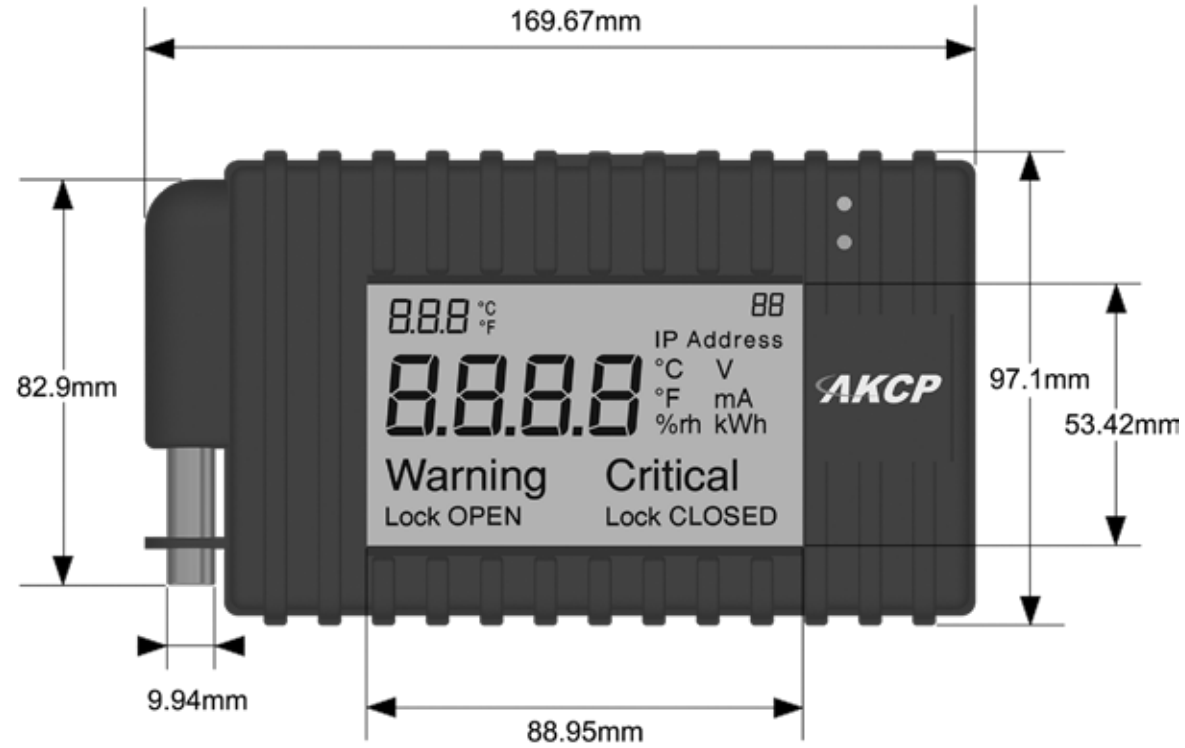
The AKCP LCD Sensor Display plugs into any sensorProbe+ (SP2+, SPX+) base unit and can be programmed to display the data from any AKCP Intelligent or virtual sensor. Mount a single display on the end of an aisle, on the door of every cabinet, or the wall of the room. LED indicators will alert if a sensor is in critical condition, as well as the on screen display of the critical or warning status.

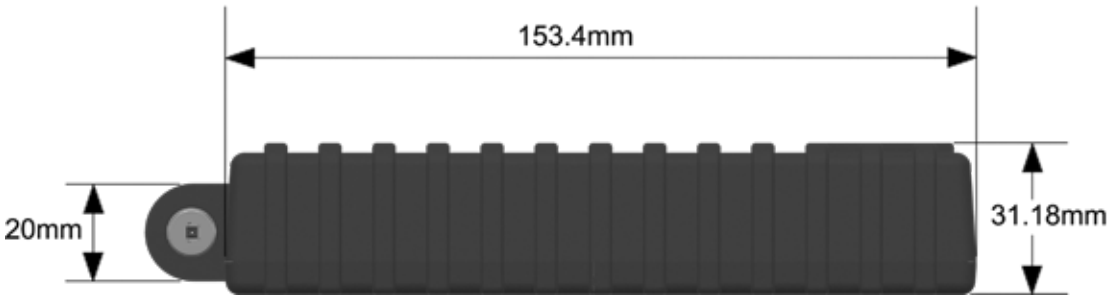
Features
- Easy to read, high quality backlit LCD display
- Connects to available sensor port on sensorProbe+
- Program to display specific sensors
- Keyhole mounting
- LED Status indicator

Technical Specifications

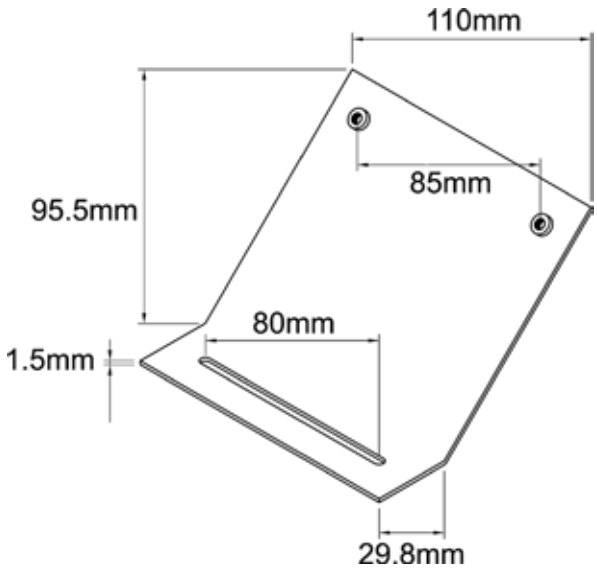
Power input	5V via sensor port.
Current	Typically 45mA, 0.2WW
Display	Continuous embedded temperature display Display Up to 8 sensor in standard rotation list, configured via SP+ web Interface with preview. Display up to 8 sensors in critical rotation list, configured via SP+ web Interface with preview 2 global status LEDs Display sensor status Warning or Critical Display sensor units : °C, °F, %rh, % V, (m)A, (k)W, (k)Wh Display unit's IP address when pluggin in Display SHL lock status : Open, Closed

LCD Display - Technical Drawing

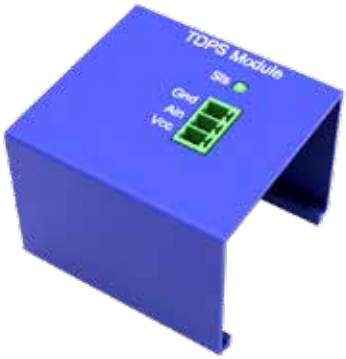




LCD 45° Mounting Bracket



Tank Depth Pressure Sensor (TDPS-5/10/15/20)



SPX+ TDPS Module

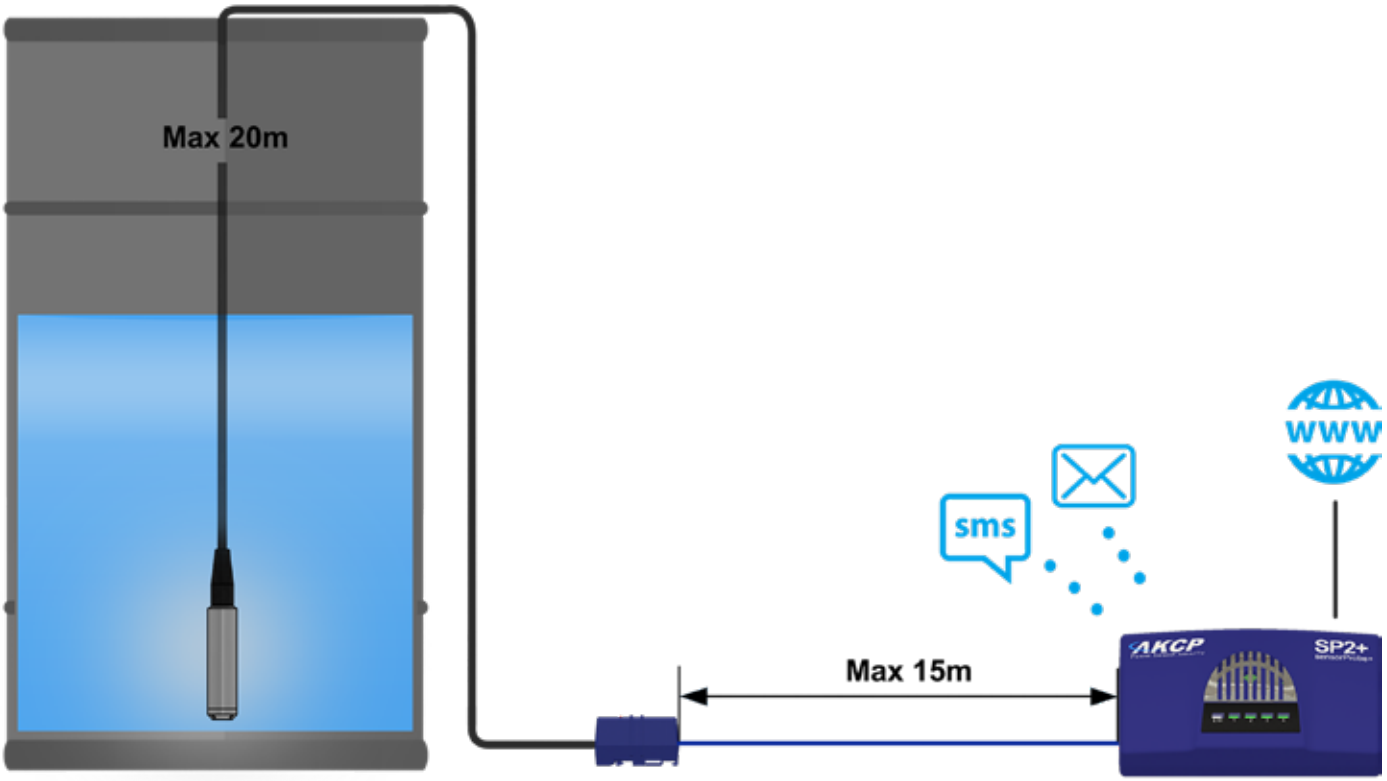
The tank depth pressure sensor can monitor all types of fuel and other liquid storage tanks. Comes complete with all mounting hardware required.

Lower the sensor into the tank until it reaches the bottom, and connect it with the sensorProbe+ device. The sensor will detect the pressure of the liquid column above it and calculate the depth of the liquid based on this.

TDPS are available calibrated for different tank depths from 5 to 20 meters.

TDPS-5 (For 5 meter tank)
TDPS-10 (For 10 meter tank)
TDPS-15 (For 15 meter tank)
TDPS-20 (For 20 meter tank)

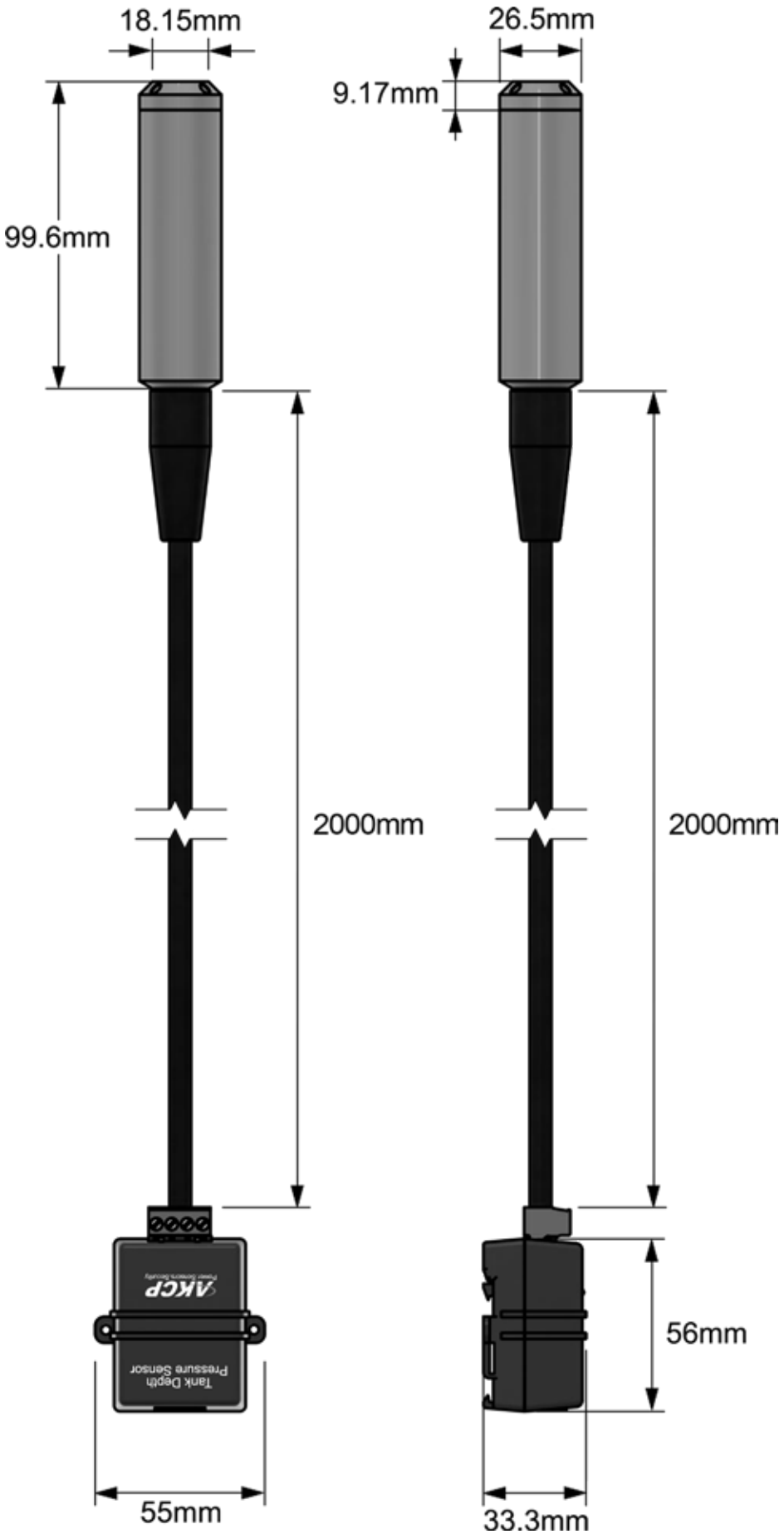
The TDPS can be ordered with external convertor box that connects to a sensor port on the SPX+ or SP2+, or with a dedicated TDPS module on the SPX+



TDPS - Technical Specification

Tank sizes up to 20 meters	Sensor is calibrated for specific tank size, please select for either max 5, 10,15 or 20 meter tank when ordering.
Accurate measurement for non-linear size tank for static liquid level, via linearization	
Measurements	
Measurement Method	Hydrolic Pressure (Fluid column pressure)
Tank Depth	0–20 m (65 ft) for Water, 0-15 m for Petrol, 0-16,6 m for Diesel.
Accuracy Distance	0–2000 cm (65 ft) with 0.2% accuracy for water
Full Scale Accuracy	±0.5%FS (Max)
Mounting	Suspended inside the tank by leader cable
Cables	
Communications Cable	RJ45 jack to UFLS converter box using UTP Cat 5 wire
Communications Cable Max. length:	30 meters (100 ft)
	Ships with a 15 foot CAT6 LAN extension cable
	CAT6 LAN extension cable can be extended up to 30 meters (100 ft)
Sensor Part Cable	Leader cable from the sensor part to the converter box is 5/10/15/20 meters respectively based on depth type ordered.
	Comes fully assembled, only needs calibration and installation
Environmental	
Chemical Resistance	Petrol, Diesel, Water
Operating Temperature Range	-20°C to 80°C
Protection Grade	IP68 (pressure sensor part)
Electrical	The module operates at 5V from securityProbe5, E-Sensor8 or sensorProbe+
	The sensor part operates at 12V from an external power supply (provided)
Notes	Works with certain types of fuel, fresh water
	Requires securityProbe 5E, E-Sensor8 expansion module or sensorProbe+

TDPS - Technical Drawing



ropeFuel Sensor (FLKS)

The AKCP ropeFuel sensor is a rope-type leak detector that connects to any AKCP sensorProbe or securityProbe RJ-45 Intelligent Sensor Ports and facilitates the detection of fuel and other liquids.

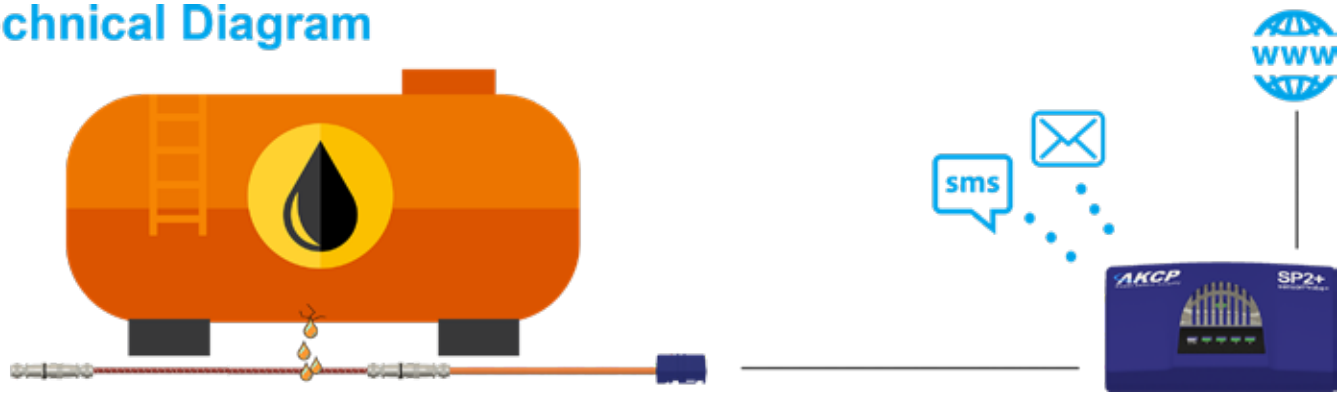
The AKPP rope Fuel sensor provides distributed leak detection for a wide range of applications such as monitoring for fuel leaks beneath or around backup
generator fuel tanks, fuel storage areas, or fuel transfer stations.

Fuel and Oil Leak Detection

The ropeFuel sensor detects the presence of liquid hydrocarbon fuels at any point along its length. Installed with the AKCPro sensor module, the sensor detects the liquid, triggers an alarm, and pinpoints the location of a leak within a meter, or a foot. Typically this sensor can detect:

- Gasoline
- Diesel #1
- Jet A\B\5\8
- JP-4\5\7
- Kerosene

Technical Diagram



ropeFuel Sensor connected to SP2+ monitoring device. The SP2+ communicates via the internet. Login to the SP2+ embedded web interface to view sensor data, or send to AKCess Pro Server central monitoring platform.

FLKS - Technical Specification

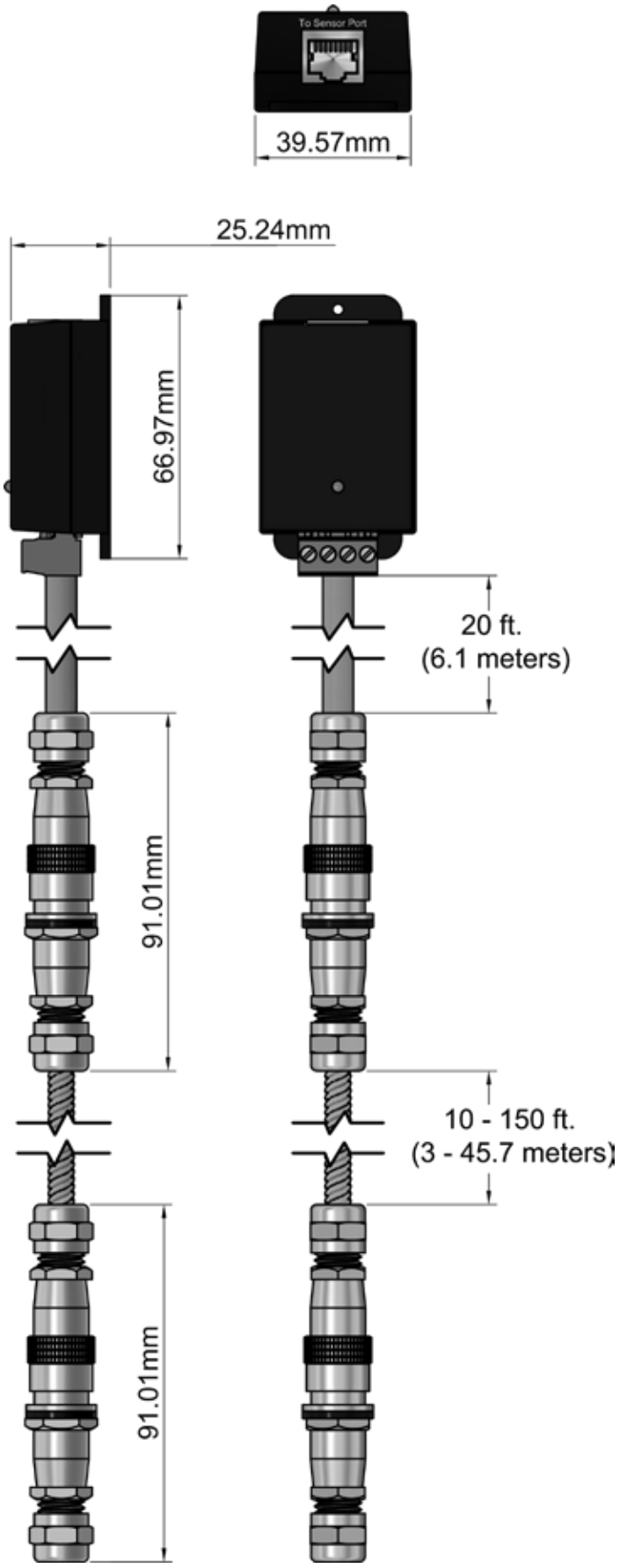
Cable Diameter	0.28 in. (7 mm) nominal.
Operating Temperature Range	-20°C to 60°C (-4° F to 140° F)
Pull Force Limit	Not to exceed 50 lb.
Bend Radius	2 in. (50 mm) minimum.
Pressure	Loads greater than 20 lb (9 kg) per linear inch at 20°C (68°F) may immediately trigger an alarm.
Measurement Accuracy	Capable of detecting the presence of fuel and oil at a speci c location within 1 meter, or 1 foot along the length of the sensing rope.
Nonresettable	Must be replaced after exposure to hydrocarbon liquids
Sensor Type	Patent pending, microprocessor controlled capacitance measurement technology
Power Consumption	Typical 125 mWatt, 25 mA.
	Comes fully assembled and includes the rope portion that is the liquid sensing cable, the non-sensing leader cable (from the rope to the sensing module) and the main sensing module. Also includes a 5 foot CAT5 extension cable.
Communications Cable	RJ-45 jack to main sensor module using standard UTP CAT5 cable. Maximum extension cable length is 30 meters or 100 feet.
	Sensing Rope Cable can be pre-ordered from a 1 meter minimum to any custom run length of up to 5 meters.
	Non-sensing Cable comes in a standard 20 foot run length and can be extended up to 165 feet (50 meters). Sensor OID is .1.3.6.1.4.1.3854.1.2.2.1.18.1.3.0

Note: The ropeFuel sensor is only compatible with the securityProbe, securityProbe 5E and newer sensorProbe2 shipped after October 2009. If you have an older sensorProbe2 or sensorProbe8 base unit, please contact us for upgrade details.

The AKCP ropeFuel sensor in most cases is for single usage only and must be replaced after exposure to hydrocarbon liquids

Note: AKCP do not recommend the Sensor to be placed on a conductive surface.

FLKS - Technical Drawing



Battery Terminal Temp Sensor (BTTS)

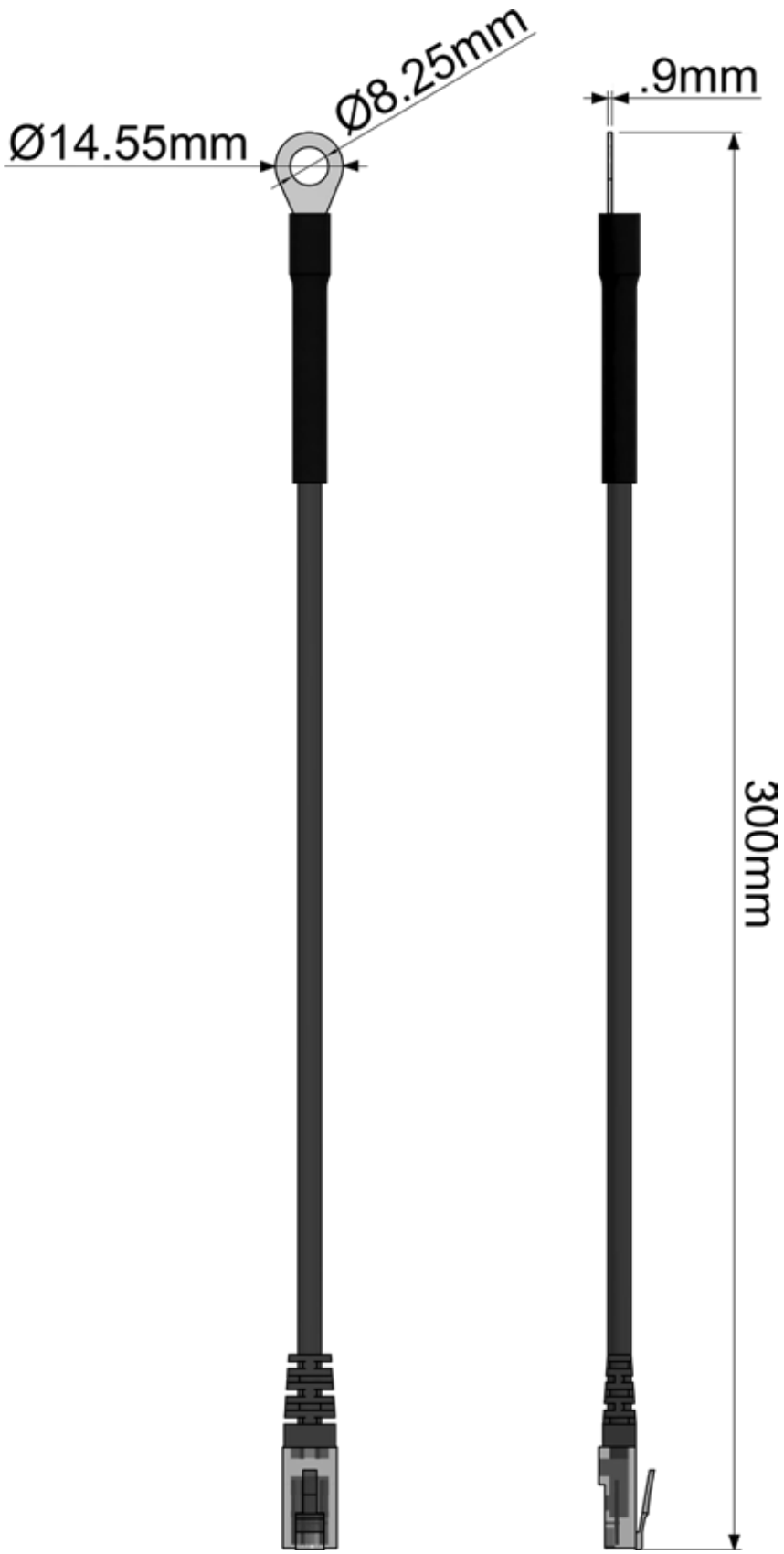
Designed to easily connect to battery terminals, the BTTS connects directly to the Negative Battery Terminal and provide readings to aid in monitoring the battery health, and internal temperature. As the battery terminal provides the closest thermal connection to the batteries internal plates it will give you the closest accuracy to the actual battery temperature. The sensor chip is insulated to help protect it from interference from ambient temperature fluctuations.

Typical Installation on Lead Acid Battery

Technical Specifications

Never needs Calibration	
Measurement range Celsius	-55°C to +75°C
Measurement resolution Celsius	1°C for the sensorProbes and 0.5°C for the securityProbe units.
Measurement accuracy Celsius	±0.5°C accuracy from -10°C to +75°C
Measurement range Fahrenheit	-67°F to +167°F
Measurement resolution Fahrenheit	1°F for the sensorProbes and 0.9°F for the securityProbe units.
Measurement accuracy Fahrenheit	±0.9°F accuracy from +14°F to +167°F
Tube Material	Stainless Steel
Communications Cable	RJ45 jack to temperature sensor using UTP Cat 5 wire
Sensor Type	semiconductor microprocessor controlled
Power Source	powered by the sensorProbe. No additional power needed.
Power Consumption	Typical 10.70 mWatt, 2.14mA sensorProbe autodetects the presence of the temperature sensor
Measurement Rate	one reading every second Up to 2 temperature sensors per sensorProbe2, 8 per sensorProbe8. You can connect up to 8 on the securityProbe main unit and 8 more on each E-sensor8 expansion module.
Temperature Description IOD	.1.3.6.1.4.1.3854.1.2.2.1.16.1.1.<port>
Temperature Status IOD	.1.3.6.1.4.1.3854.1.2.2.1.16.1.4.<port>

BTTS - Technical Drawing



probeSwitch (PS00)

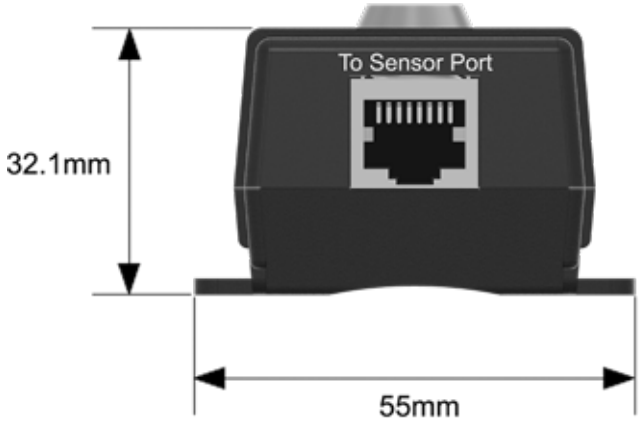
Carry out maintenance on areas that would normally trigger unnecessary multiple notifications. With this new product it is now possible to turn off all notifications with a simple turn of a key switch.

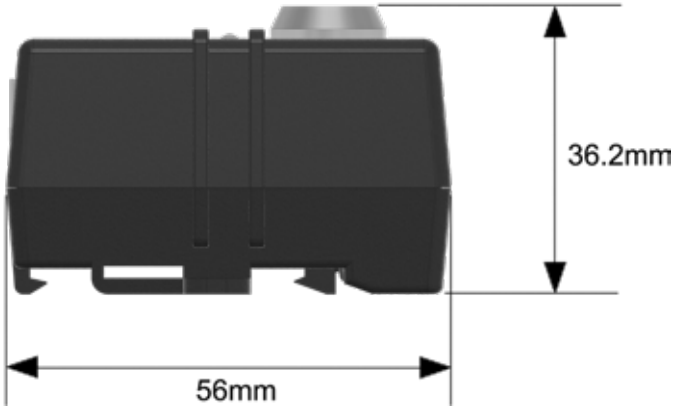
This product can be connected to the securityProbe Series as a dry contact and once set up is ready to work. Once connected there is no need to disable the notifications using the web interface, your maintenance engineer simply turns the switch connected to the unit, to turn off the notifications and when they have completed their work just switch the notifications back on.

Technical Specifications

	Set to Enabled or Disabled
Communications cable	RJ45 jack to sensor using UTP Cat-5 wire
Maximum extension Cable Length	305m (1000 ft.) with approved low capacitance shielded cable or UTP
Sensor type	Key Lock Switch

PS00 - Technical Drawing



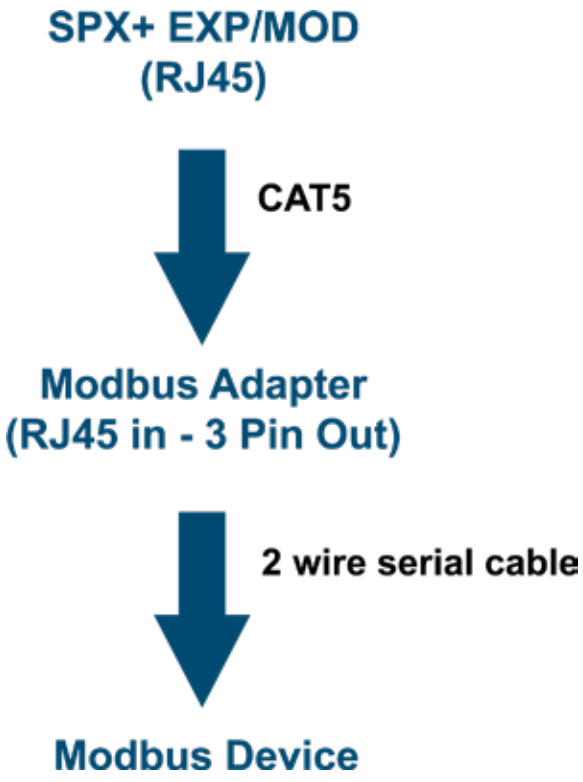


Modbus Adapter (MOD-A)

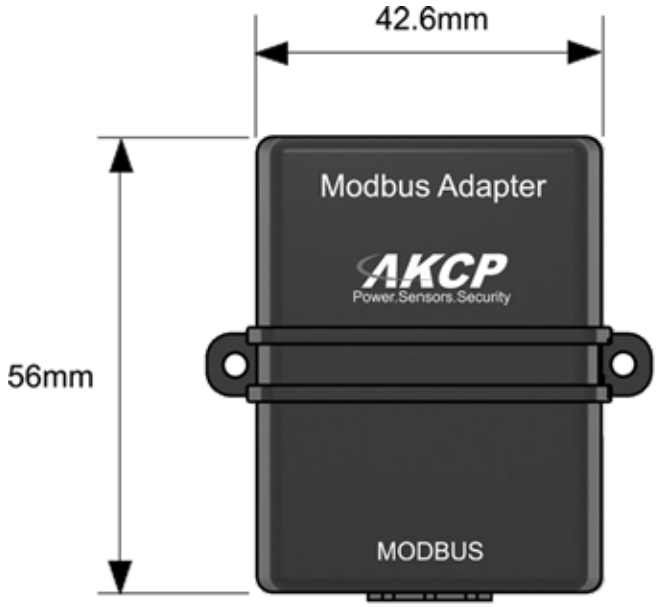
Convert RJ45 to 3-Pin Connection

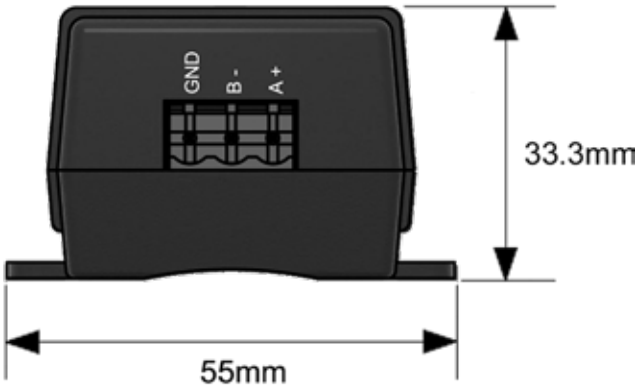
Easily convert the MOD/EXP port on sensorProbeX+ from CAT5 to 2 wire serial cable.

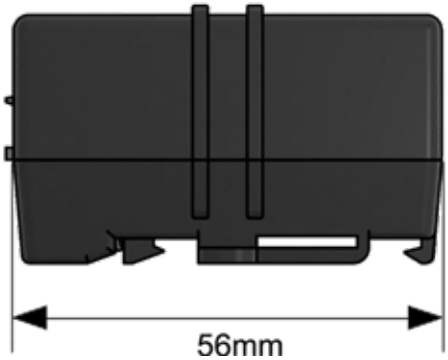
sensorProbeX+ comes equipped with an RS485 Modbus and Expansion port. When using this RJ45 port to connect Modbus appliances, the Modbsu Adapter makes it easier to connect a 2 wire serial bus cable to the RJ45 port, converting the RJ45 connector into a 3 pin terminal block connection.



MOD-A - Technical Drawing







Sensor Adapter (SEN-A)

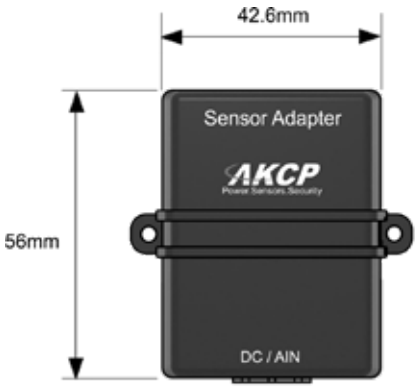
Third Party Sensor Adapter

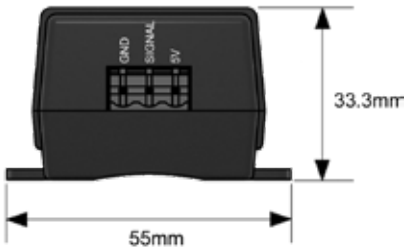
Connect sensors with 0-5 VDC output.
Connect Dry Contacts requiring 5VDC power

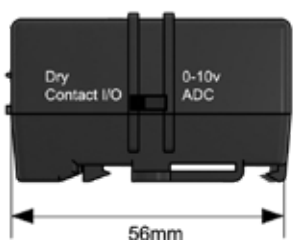
The Sensor Adapter makes it easy to connect third party sensors that output a 0-10 DC Voltage scale.

A switch on the side of the sensor adapter allows you to switch to a dry contact I/O instead, which is capable of maintaining a 5VDC output to power the sensor at all times, while still monitoring the dry contact input.

Technical Drawing







Racks & DIN Accessories

Rack Mount Kit

Rack Containment

LCD Mounting Bracket

Rack Mount Kits

AKCP Rack Mount kits are available in different configurations to help meet your requirements. There are three different configurations to ensure that all your permutations are covered. Whatever your cabinet space requirements are, AKCP has the appropriate answer. Get your server cabinets organized and utilize the space to maximize efficiency

Single 1U Din Rail Rack mount kit

DN1U
- Ideal for mounting your sensors and sensorProbe2
- No more wasted space
- Compatible with all AKCP DIN rail mounted sensor boxes
- Includes 2x DIN rail clips

Split 1U Din Rail Rack mount kit

DN1USP
- Ideal for fitting a sensorProbe plus sensors
- Ideal for fitting securityProbe with sensors
- 8.5” of space available for sensors
- Compatible with all AKCP DIN rail mounted sensor boxes

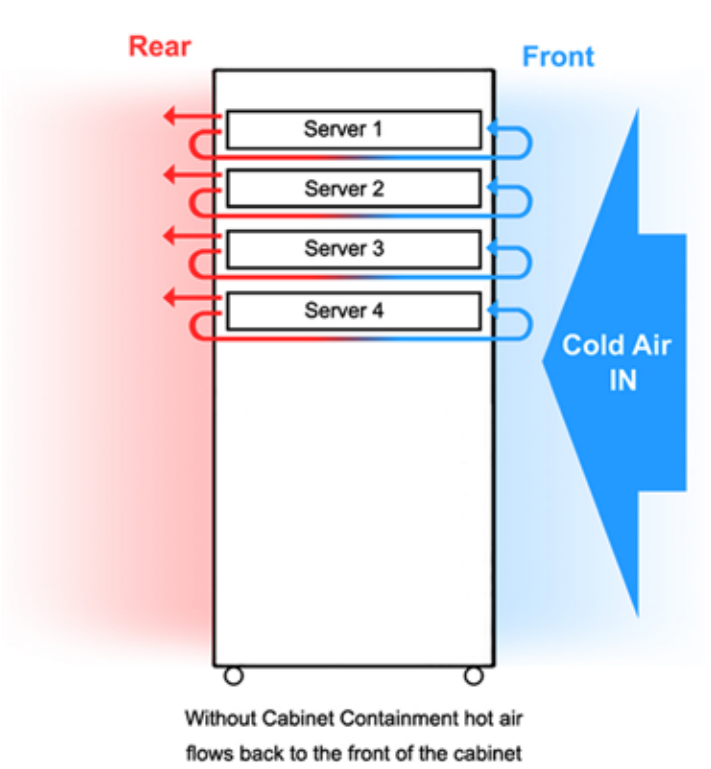
Double Rack mount kit

DR1U
- Only takes up 1U
- Ideal for mounting the securityProbe plus an expansion unit
- Option to add the1U Din Rail Rack above for sensors

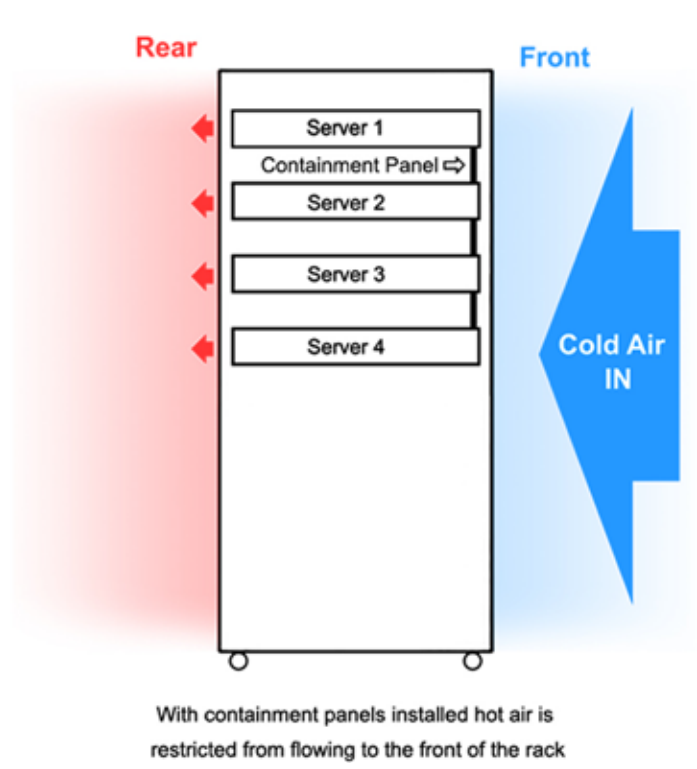
Rack Containment (1UBP, 1UBPB, 2UBP, 2UBPB)

Efficient Cooling Through Containment

Servers, and other rack mounted equipment are typically designed to draw cool air in through the front panel vents and exhaust the warm air through the rear. Having any gaps between equipment or “empty U’s” can actually hurt your cooling efficiency by allowing cold air to pass through to the rear of the cabinet. If you have hot/cold aisle containment in your data center then this is definitely something you want to avoid! Conversely you don’t want any hot air to pass to the front of the cabinet and be drawn back into your IT equipment.



Without Cabinet Containment hot air flows back to the front of the cabinet

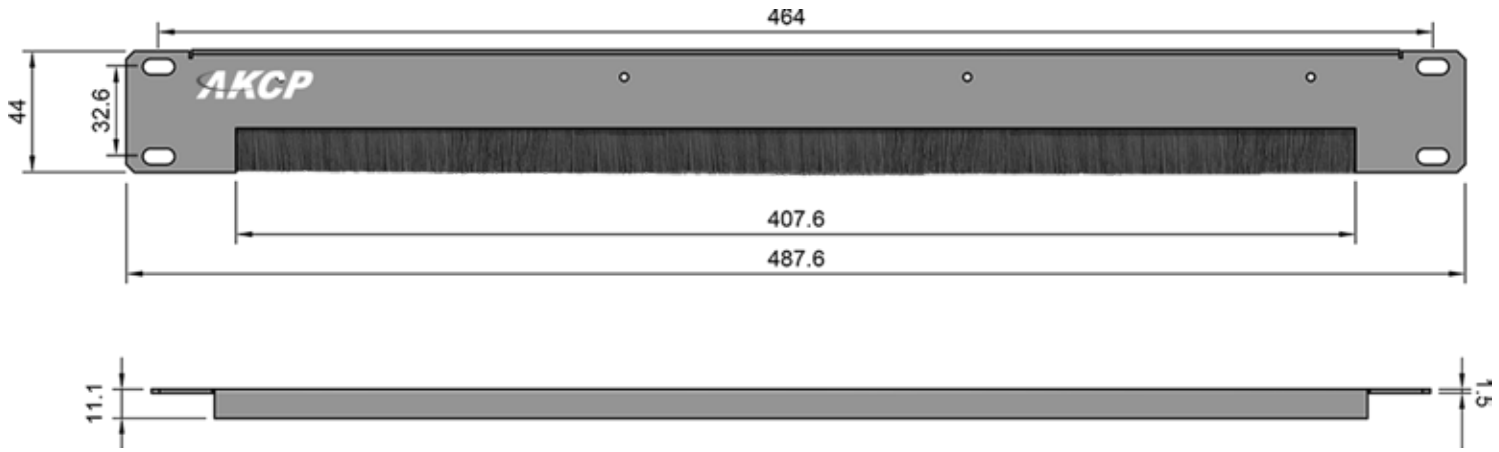


With containment panels installed hot air is restricted from flowing to the front of the rack

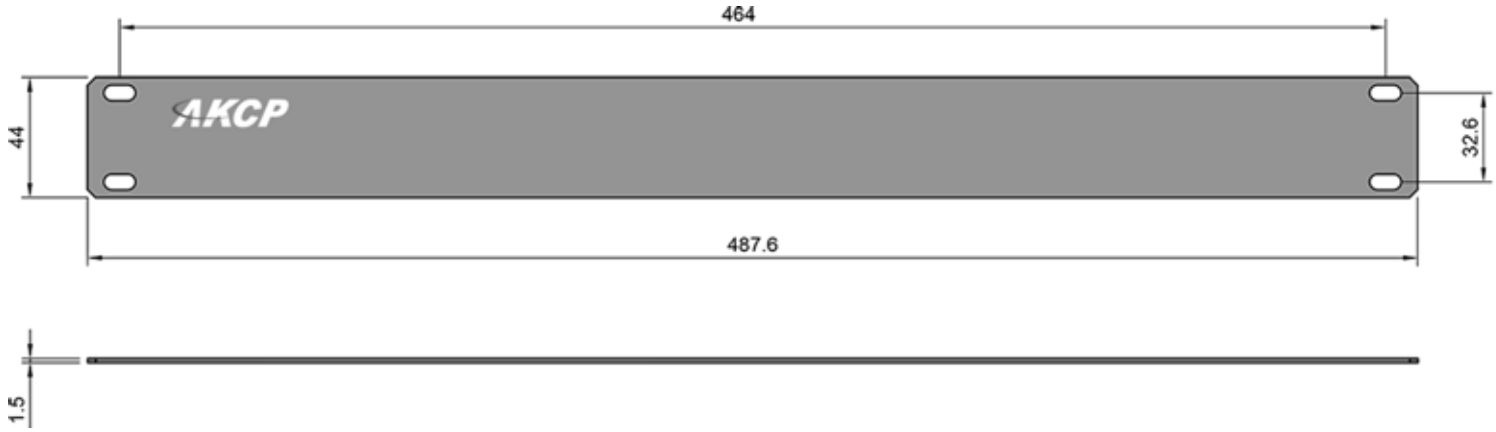
AKCP provide blanking panels that can be used to fill these 1U or 2U gaps you may have in your cabinet. They aid in sealing and containing the rack, preventing the hot/cold air mix that can so severely harm your PUE numbers.

Rack Containment - Technical Drawing

1U Blanking Panel With Cable Brushes
1UBPB

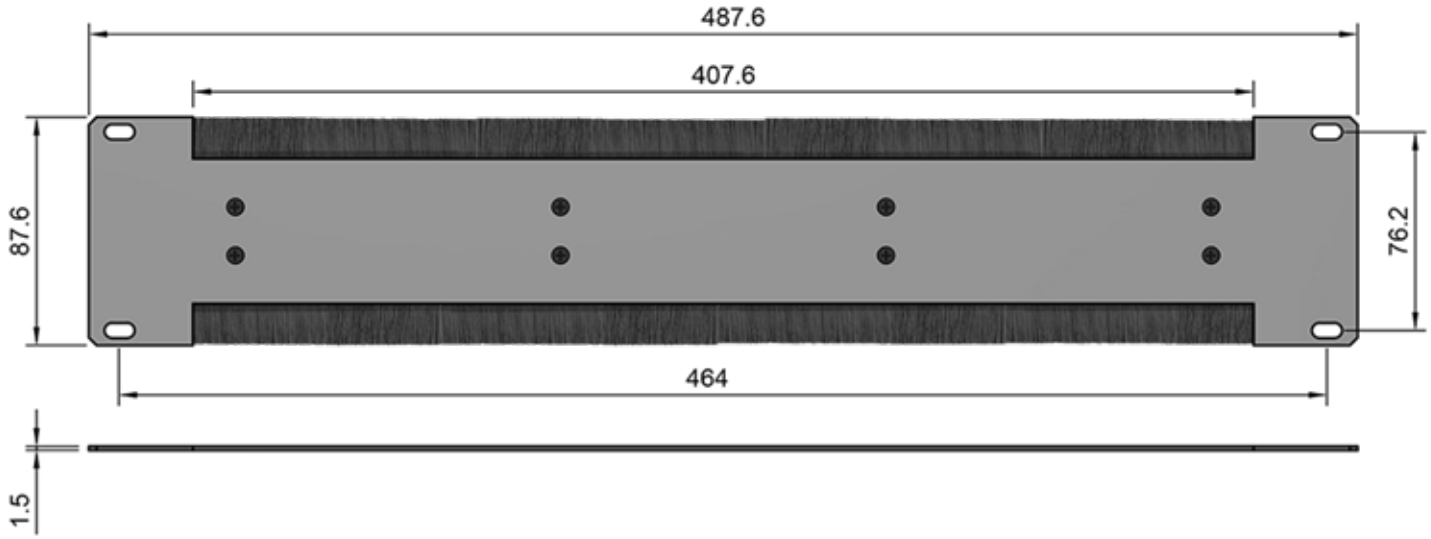


1U Blanking Panel
1UBP

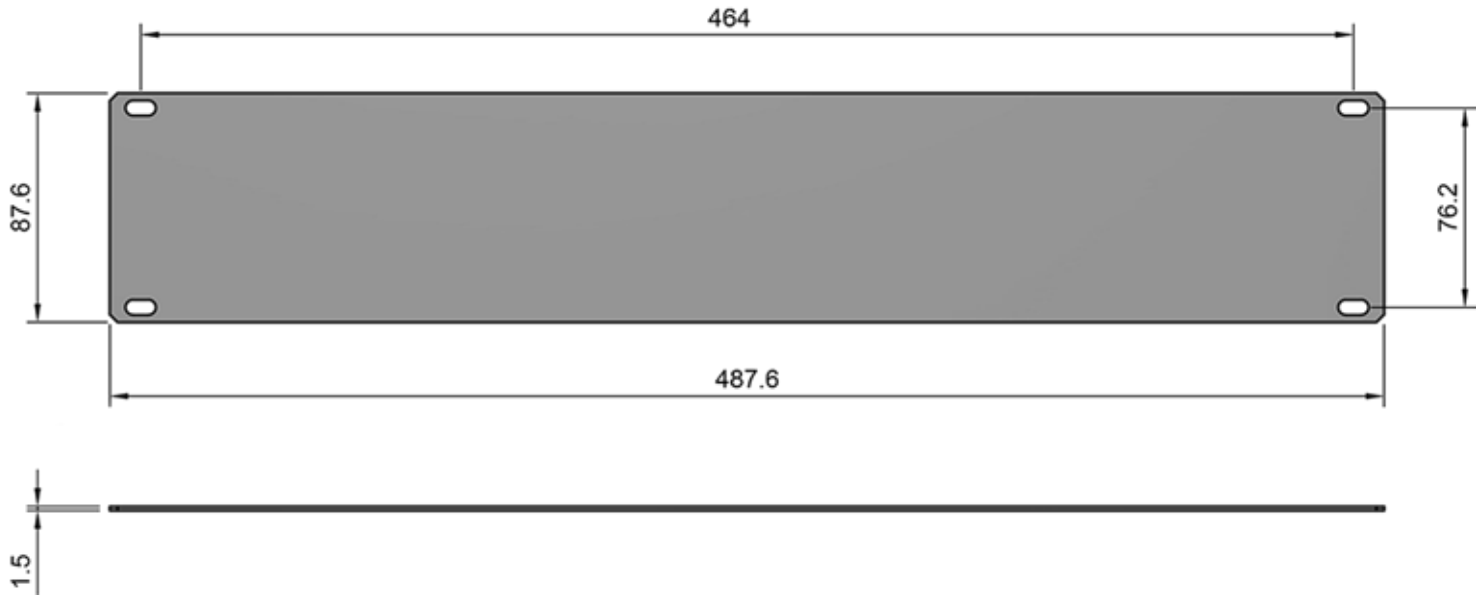


Rack Containment - Technical Drawing

2U Blanking Panel With Cable Brushes
2UBPB



2U Blanking Panel
2UBP



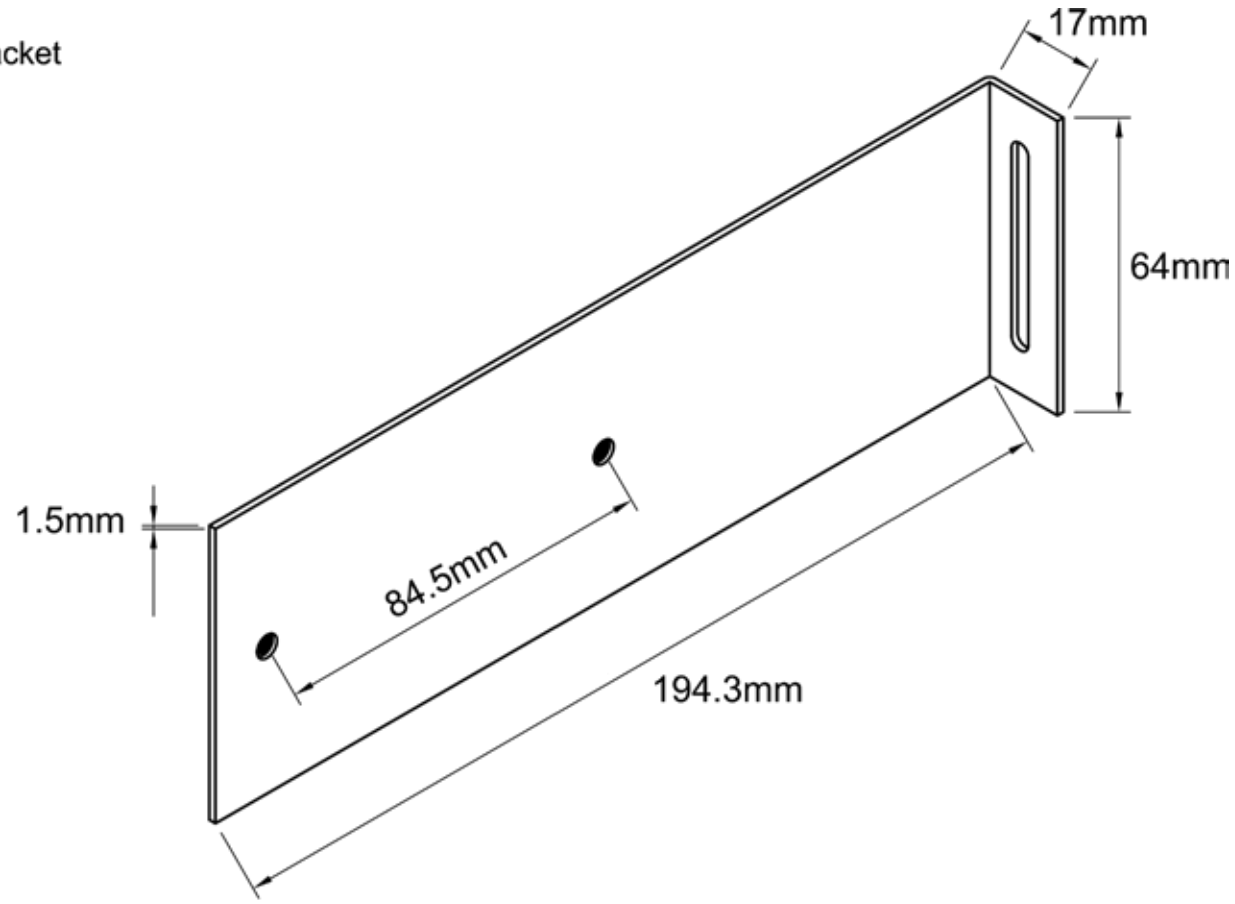
LCD Mounting Bracket

LCD 0U Bracket

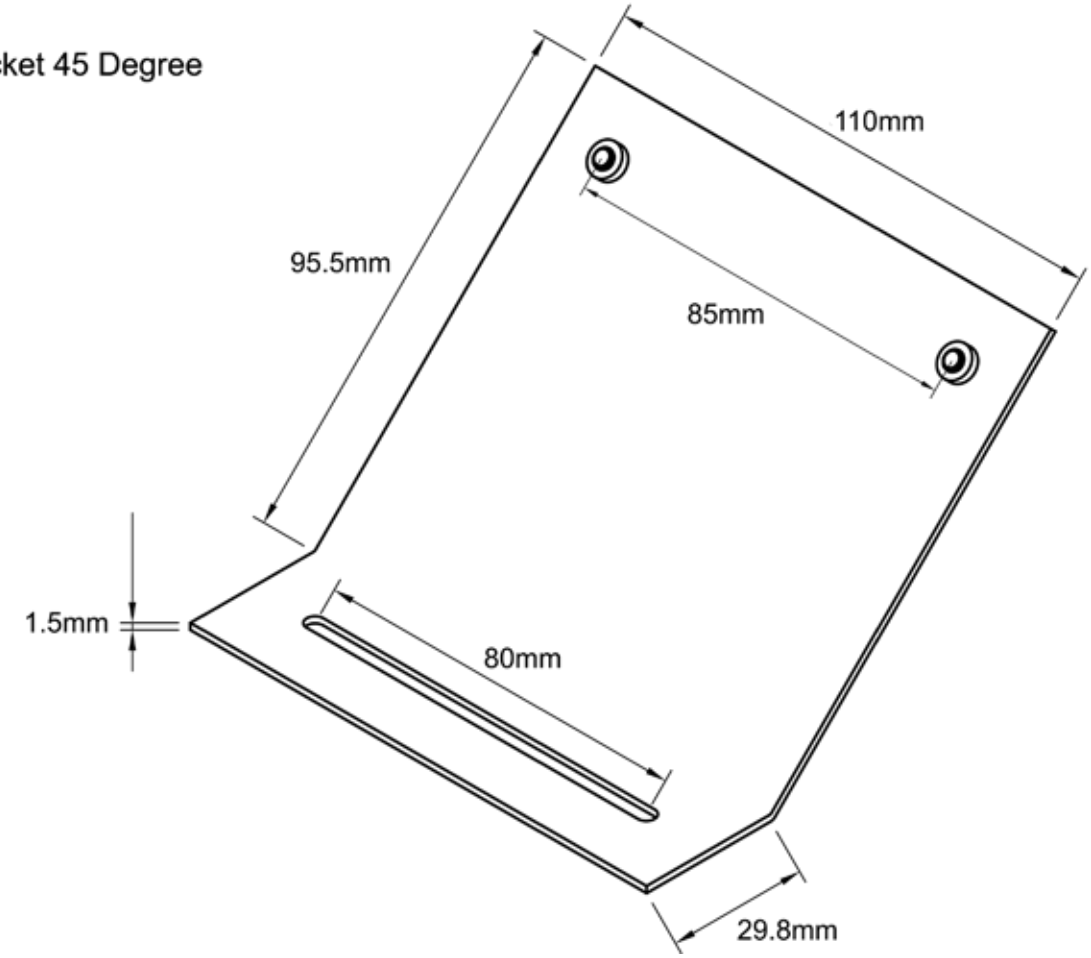
LCD Bracket 45 Degree

LCD Mounting Bracket - Technical Drawing

LCD Bracket



LCD Bracket 45 Degree



Power Supplies

DC-DC Converter - DCW024-5

DC-DC Converter - DCW048-5

DC-DC Converter - DCW075

POE Splitter

DC-DC Power Converters

12-24 to 5VDC Converter (DCW024-5)

This DC to DC power converter can take in a range of votlage from 12-24 VDC. It is suitable for powering the SP2+, SPX+, SP2, SP4 and SP8 with it's 5VDC 3Amp output.

48 to 5VDC Converter (DCW048-5)

Isolated 48 VDC power input, which converts to a 1.9Amp 5VDC output. Suitable for use with all 5VDC powered base units, such as the SP2, SP2+, SPX+, SP4, SP8.

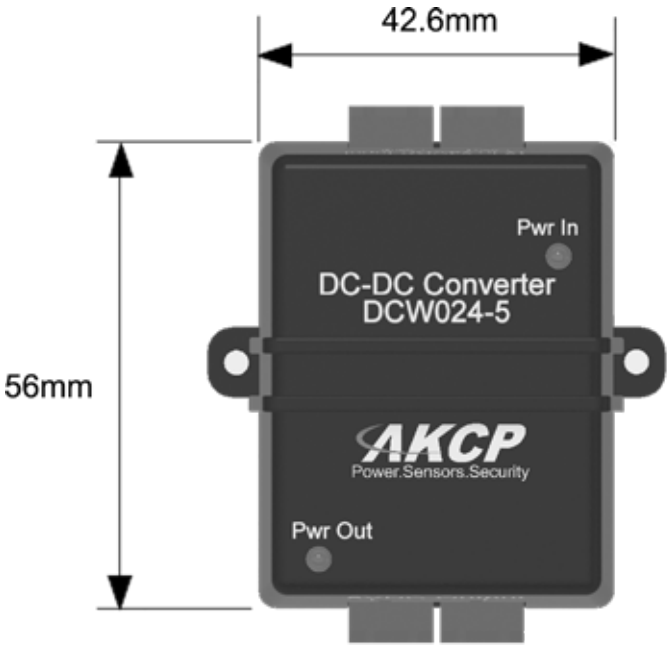
40-60 to 7.5VDC Converter (DCW075)

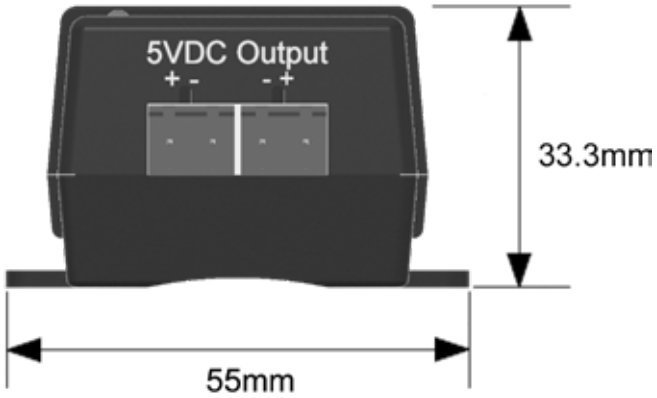
40-60 VDC power input, which converts to a 7.5VDC output. Suitable for use with all 7.5VDC base units such as the SP8-X20, SP8-X60

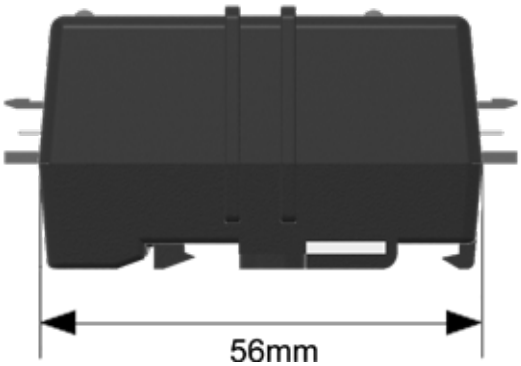
POE Splitter (POE-EXT)

The POE Splitter is an external POE power supply for all 5VDC base units such as SP2+, SPX+, SP2, SP4 and SP8.

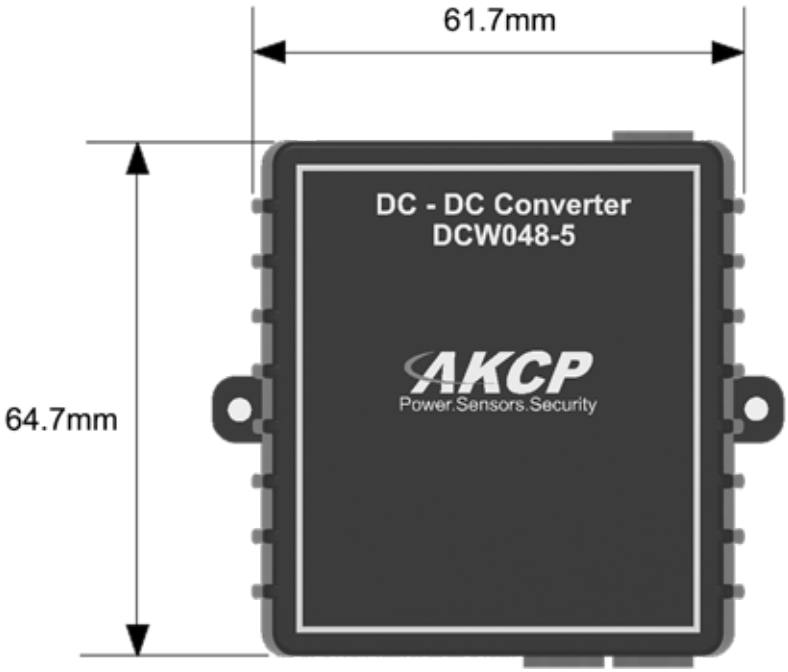
DCW024-5 - Technical Drawing

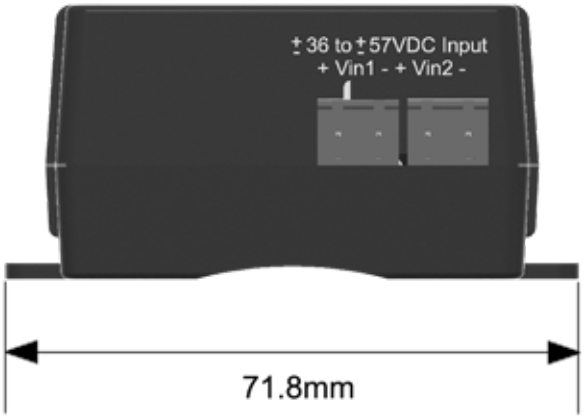




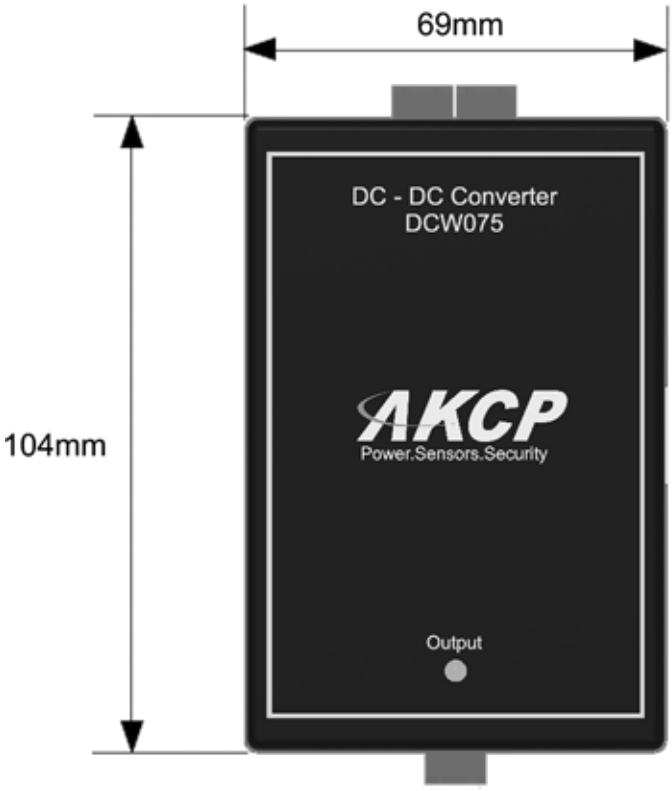


DCW048-5 - Technical Drawing

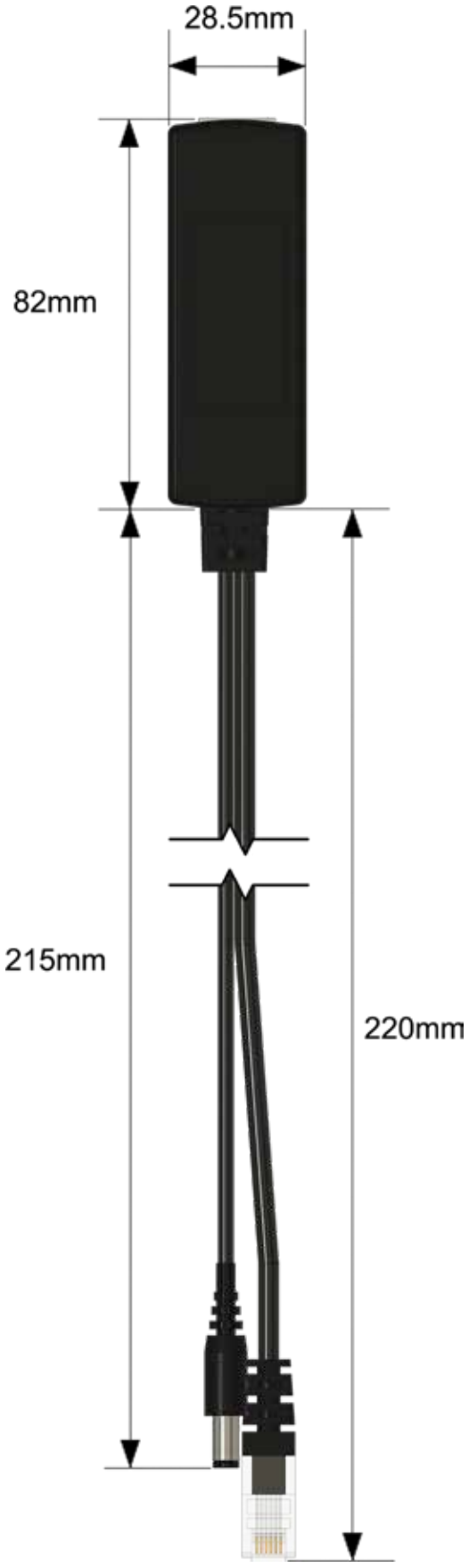




DCW075 - Technical Drawing



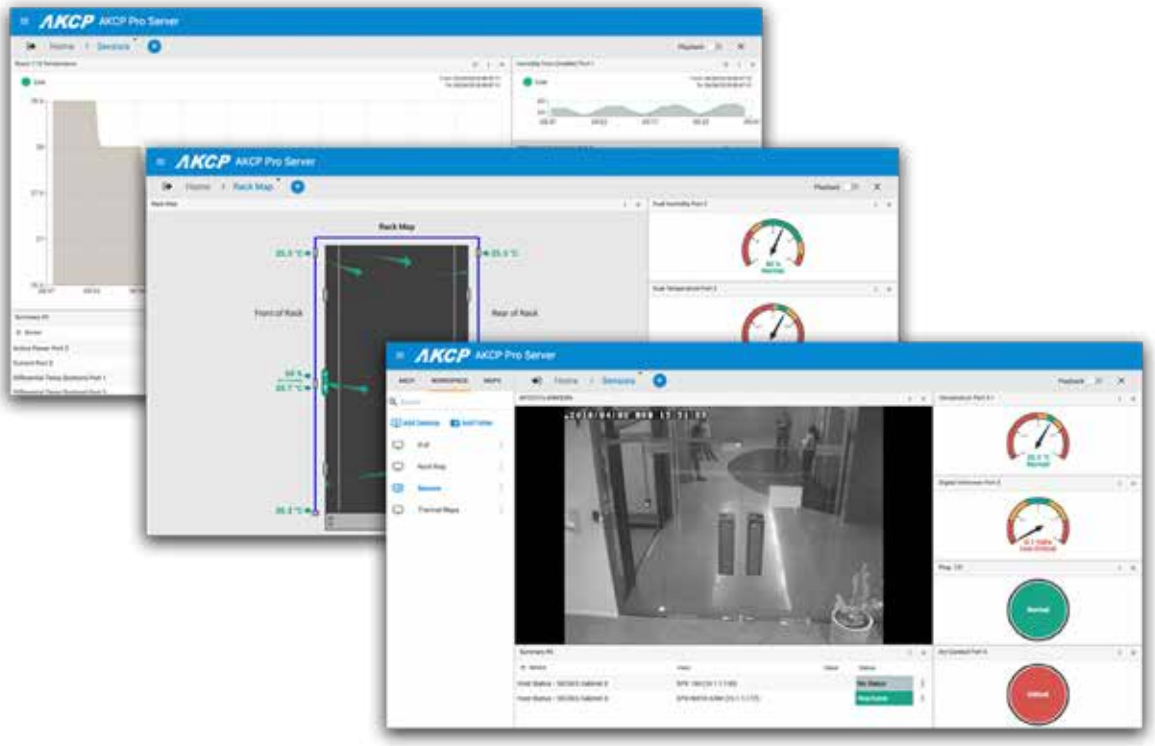
POE-EXT - Technical Drawing



AKCPro Server - Central Monitoring

World Class Infrastructure Management Software

AKCPro Server is our central monitoring and mangement software. Suitable for a wide range of monitoring applications. Free for all AKCP devices. Monitor your infrastructure, whether it be a single building, or remote sites over a wide geographic area. Integrate third party devices with, Modbus and SNMP. Suppot for ONVIF compatible IP cameras.



AKCP base units and sensors can be configured and monitored from AKCPro Server. Base units communicate with through your wired local network (LAN) or wide area network (WAN). Remote sites with no wired network send data to the server through the cellular data network* via a VPN connection. Wireless LoRa sensors are monitored in AKCPro Server embedded on the L-DCIM Gateway.

** Requires base unit with cellular data 3G/4G modem*

AKCP Pro Sever - Management

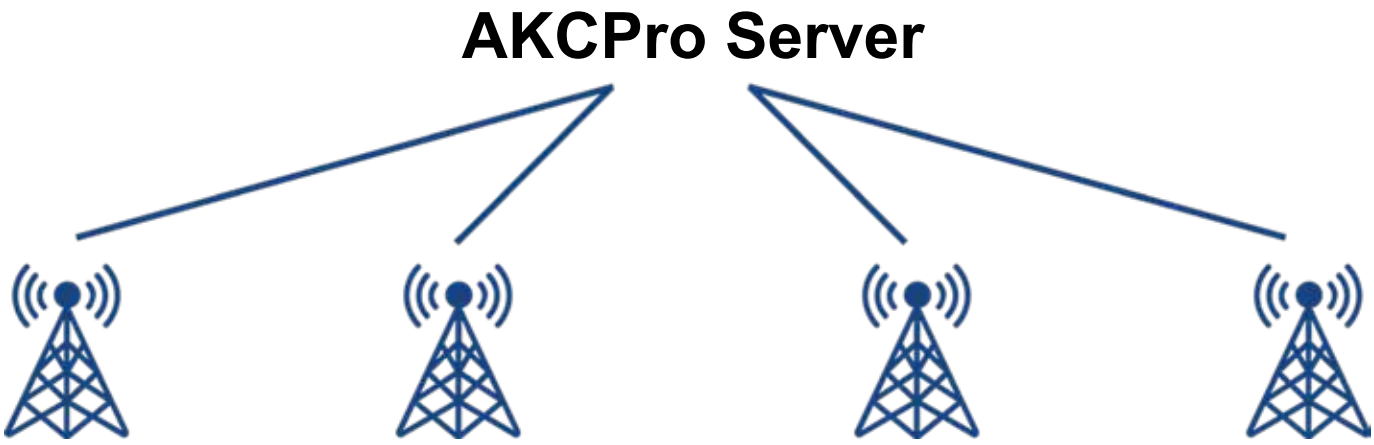
Cross platform, access from your PC, Tablet or Smart Phone

AKCPro Server can be accessed on your smartphone, tablet or PC. Access is operating system independent through the HTML5 user interface on your web browser*.

There are no clients or special apps to install, making it easy to view your data on the go.

Remote Site Management

When sites are spread over a wide geographic area and monitoring from a single central office, AKCPro Server is the ideal choice. AKCP base units at remote sites can communicate over a wired or cellular data connection, sending data on connected sensors back to the main server. Remote monitoring of Modbus devices, generators and any SNMP compliant devices can be done through virtual sensors on APS.



*Chrome and Firefox recommended

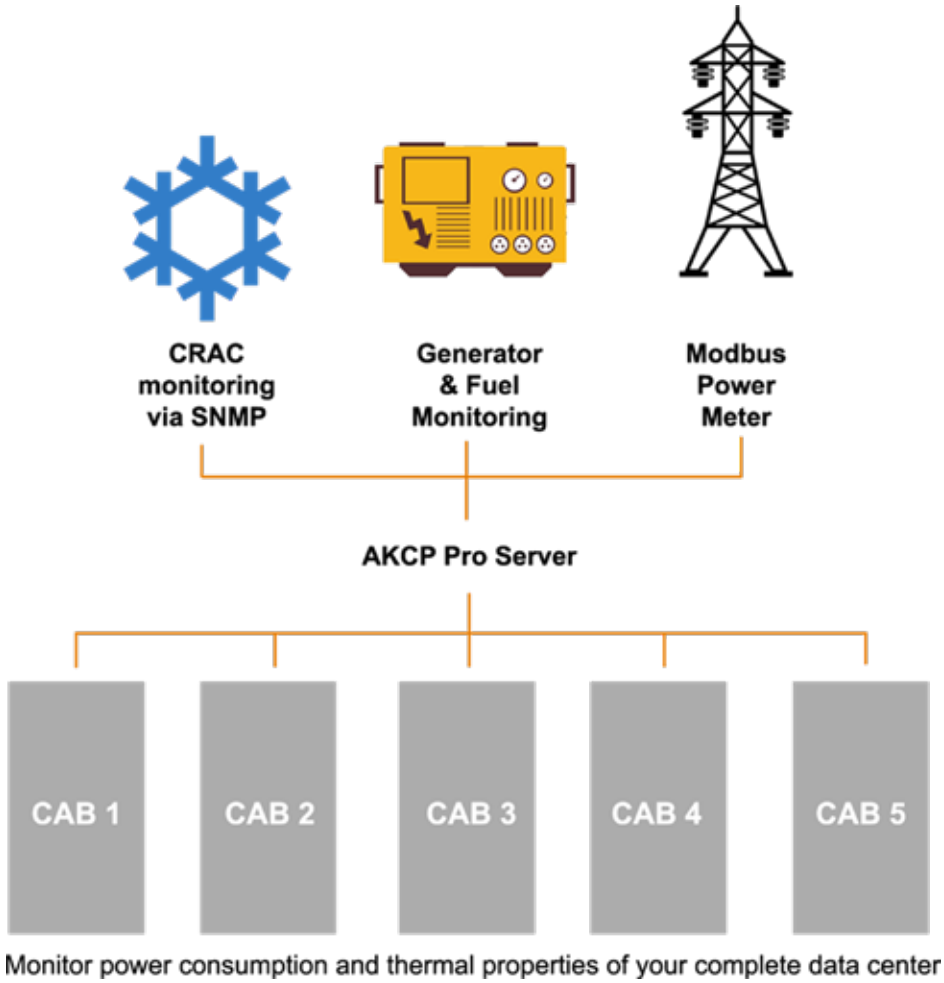
Data Center Infrastructure Management (DCIM)

AKCPro Server is a world class software for Data Center Infrastrcture Management (DCIM). Avoid the complexity and cost of many popular DCIM software. AKCPro Server distills the essence of what DCIM should be to a simple, easy to use application.

Configure dashboards to display the data you need, with drill down mapping taking you from a data center wide to cabinet level view. A dedicated rack map shows smartRack sensors such as thermal maps and RFID Swing Handle lock information in a graphical display.

Features

- Monitor your power train and calculate live PUE numbers
- Check power overhead when installing new devices
- Data center infrastructure monitoring and planning
- Building and rack level access control and management
- Integration to video security systems
- Thermal mapping of cabinets

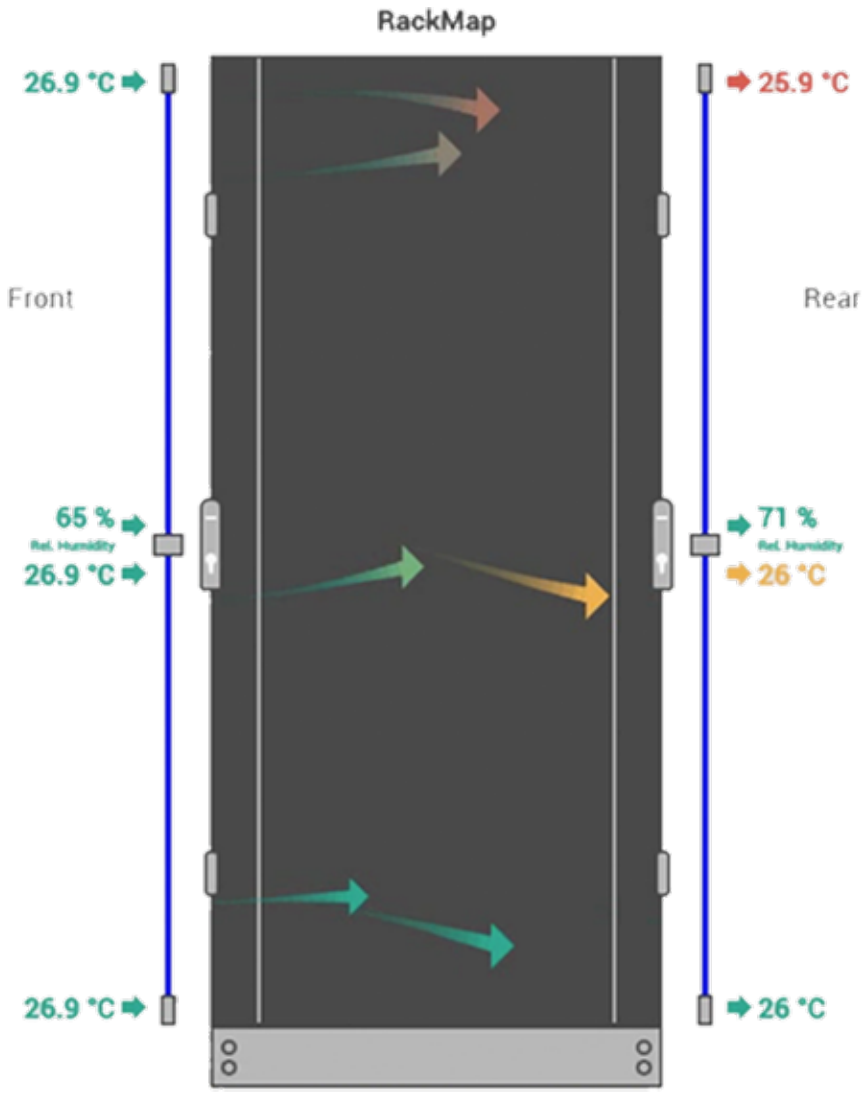


Monitor power consumption and thermal properties of your complete data center

Rack Mapping

Rack mapping is a graphical display in AKCPro Server that gives an accurate picture of your rack condition. With rack maps you can:
- View thermal map sensors front, rear and temperature differentials
- Track assets in your cabinets
- View the status of rack equipment
- View security status with RFID Swing Handle Cabinet Locks

Thermal maps sensors consist of 9 measurement points, top middle and bottom, plus the temperature differential between front and rear. Optional humidity front and rear is available. The sensors together with our graphical display of the data will aid greatly in identifying cabinet hot spots.



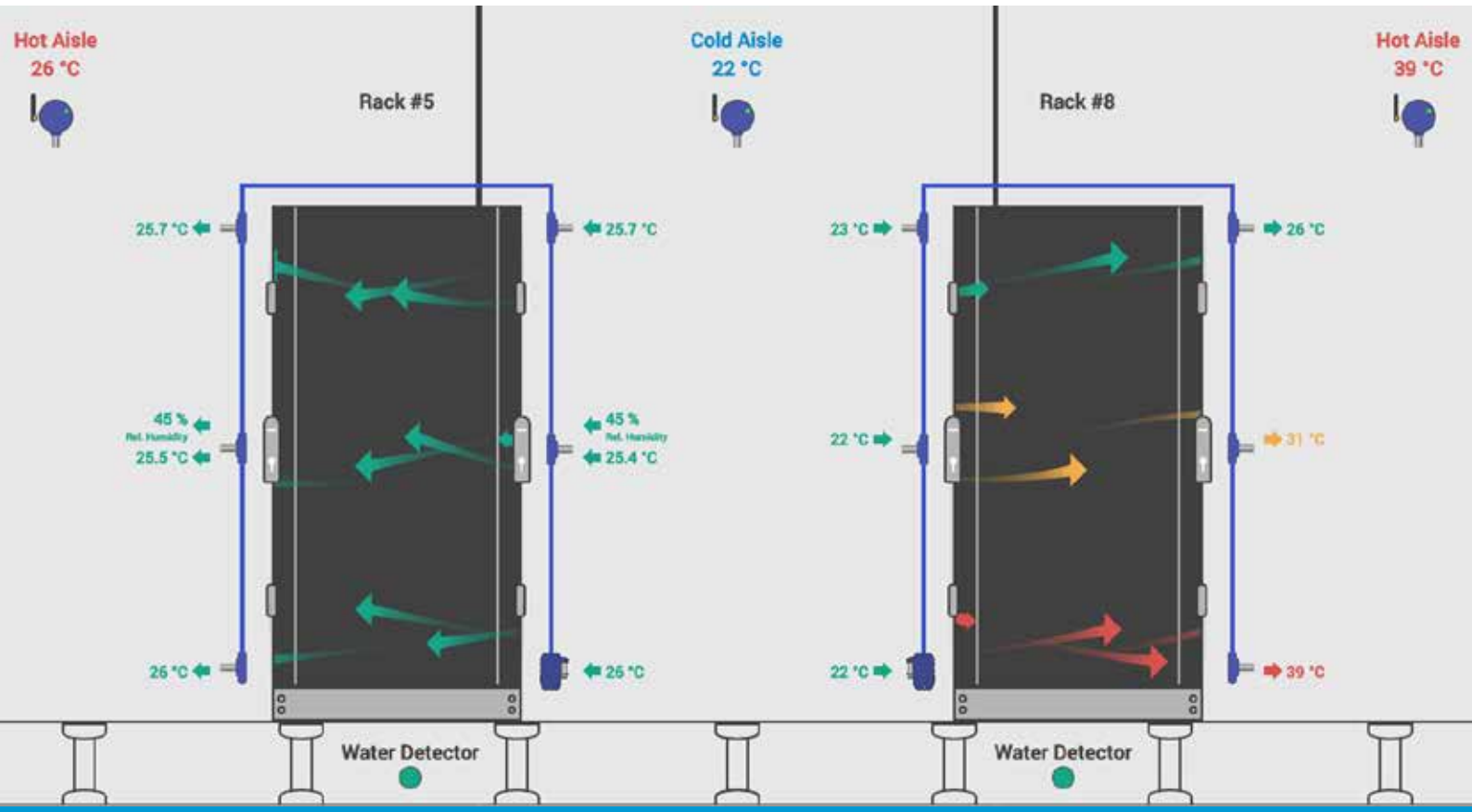
Example of AKCP Pro Server rack map view, with thermal map sensor and front to rear temperature differentials

Containment Mapping

As an extension to the rack mapping desktops, complete hot/cold aisle containment maps can be generatred automatically from a data center floorplan. Create the floorplan by entering the number of cabinets and rows, and then assign the sensors to each rack. When drilling down the containment view will show a section through the aisle with rack maps, and the hot/cold aisle containment temperatures. Rack Map arrows indicate dicretion of airflow based on differential pressure readings, front to rear temperature differential status and airflow speed.

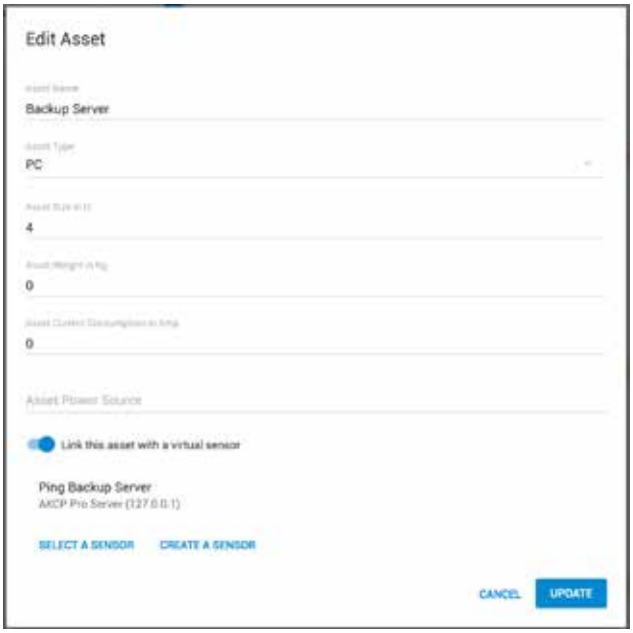
With Containment Mapping you can :-
- View thermal map sensors front, rear and temperature differentials
- Track assets in your cabinets
- View the status of rack equipment
- View security status with RFID Swing Handle Cabinet Locks
- View hot and cold aisle temperatures
- View differential pressures

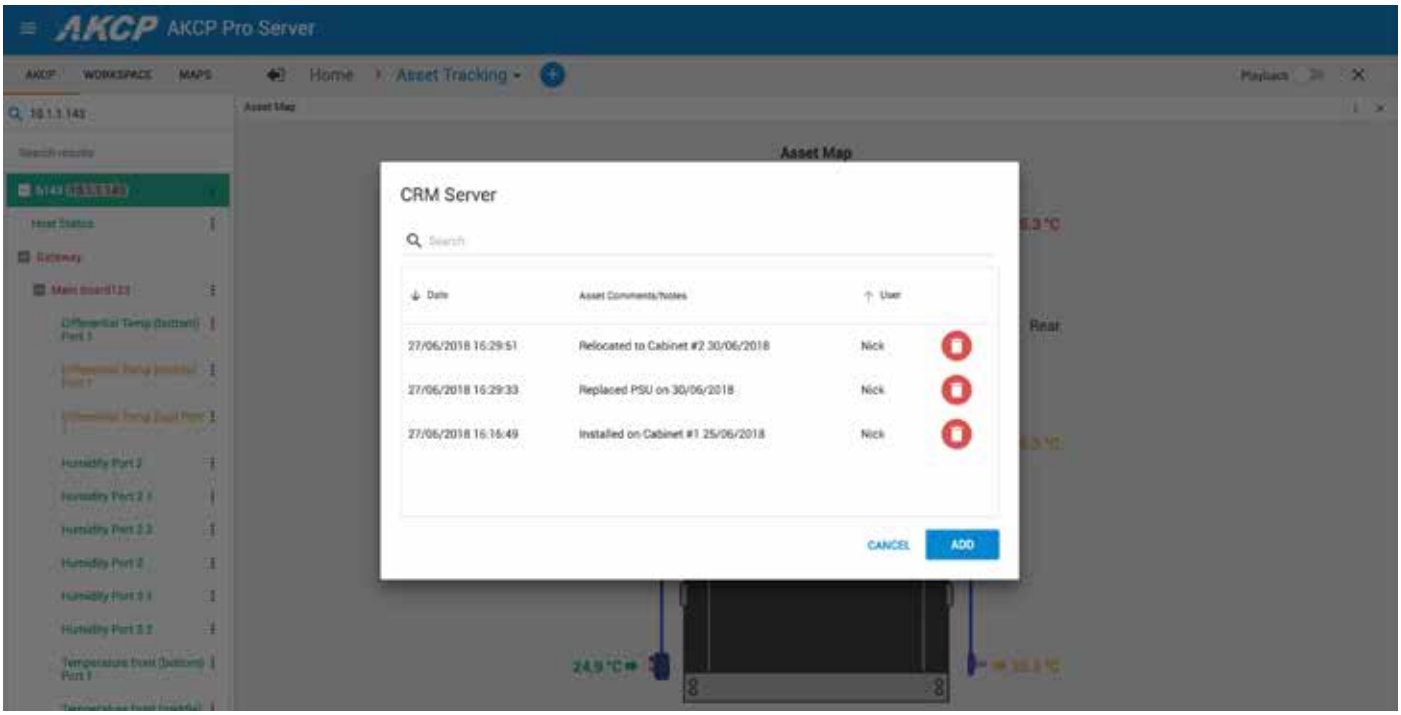
Containment views are best used together with Wired or Wireless Cabinet Analysis Sensor which includes thermal mapping and differential pressure in one sensor.



Asset Tracking

With asset tracking in AKCPro Server you can assign IT equipment to your rack maps, such as UPS, Network switches and servers. These assets editable parameters for their weight and typical power consumption. A maximum weight and power load is defined for each rack so you can plan data center expansion, if there is sufficient weight or power overhead to add new equipment to a rack. Assets also have an attached history so you can track installation date, and record any maintenance history for a particular device. Virtual sensors, such as a ping sensor can attached to an asset to check it's network status.





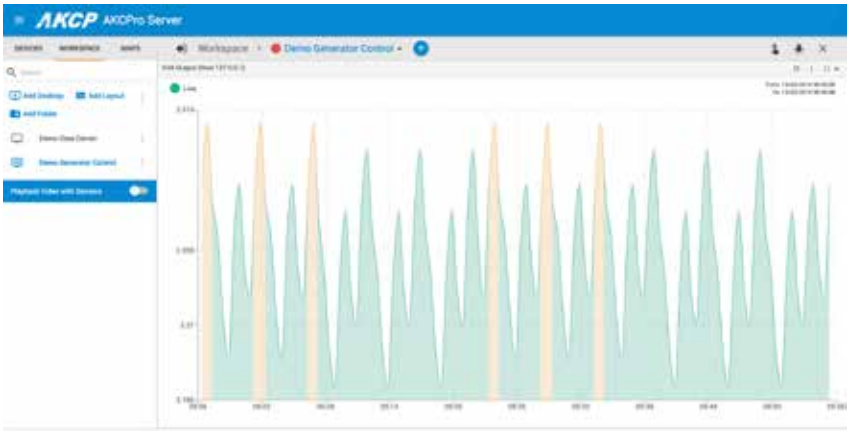
Customized Desktops

AKCPro Server desktops are customized for each user to show the information relevant to them. Desktops display sensor data, gauges, drill down maps, cabinet rack maps, graphs and video feeds. Arrange the windows yourself, or choose from pre-determined layouts for easy setup.

Desktops show a live view, or can be switched to playback for review of historical data, with sensor events synchronized with video on the playback timeline.

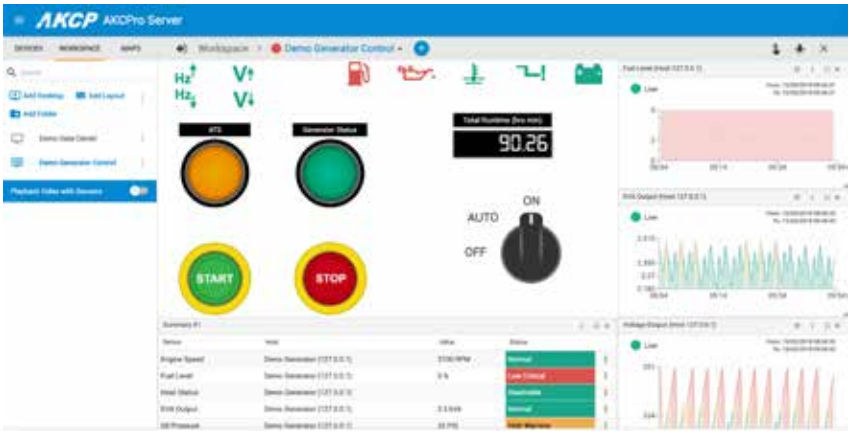
Graphing Desktops

Desktops can be arranged with graphs to show historical sensor data. Desktops can be customized to combine graphs with other sensor data and status indicators and/or gauges.



Sensor Gauges

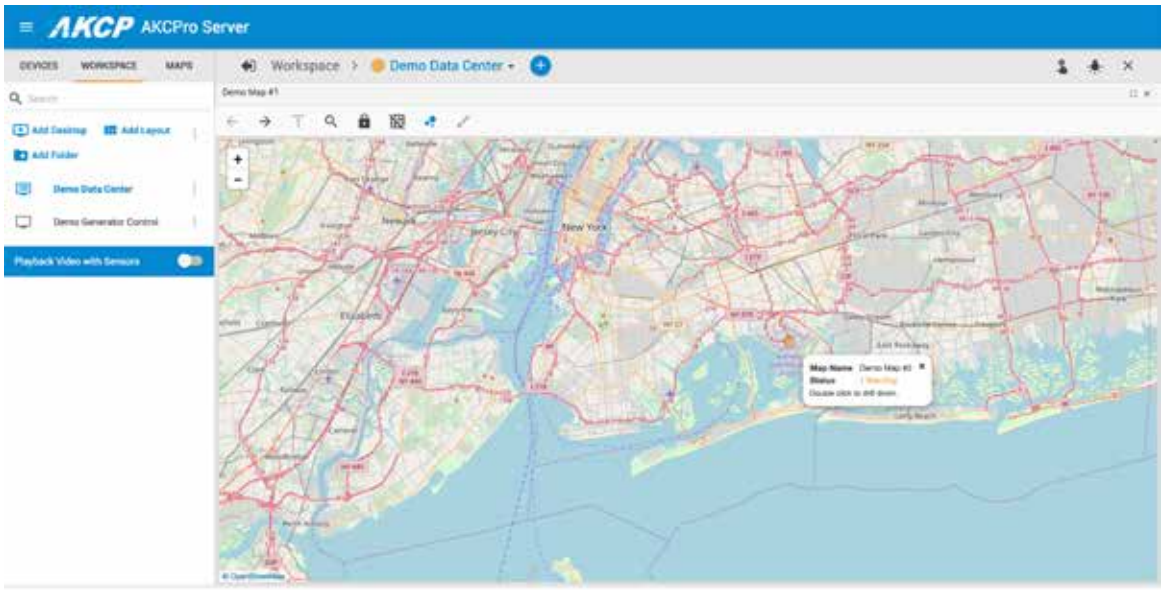
A selection of gauges can be used to display sensor data, specially designed with battery and engine monitoring in mind, they simulate the real world engine gauges.



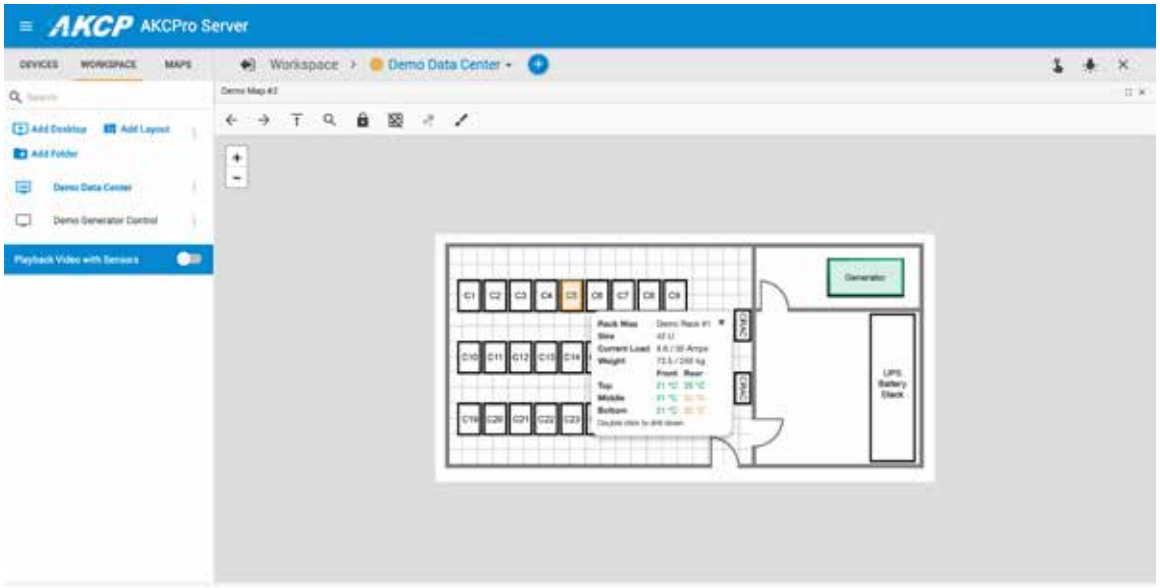
Drilldown Mapping Desktops

Drill-down mapping allows you to go from a worldview to localized with a zoomable map. Further levels of drilldown can be added with uploaded floorplans of your sites, or create simple floorplans with our built in drawing tools.

Ideal for monitoring multiple sites over a wide geographic area, or giving a sensor overview of your data center or building floorplan.

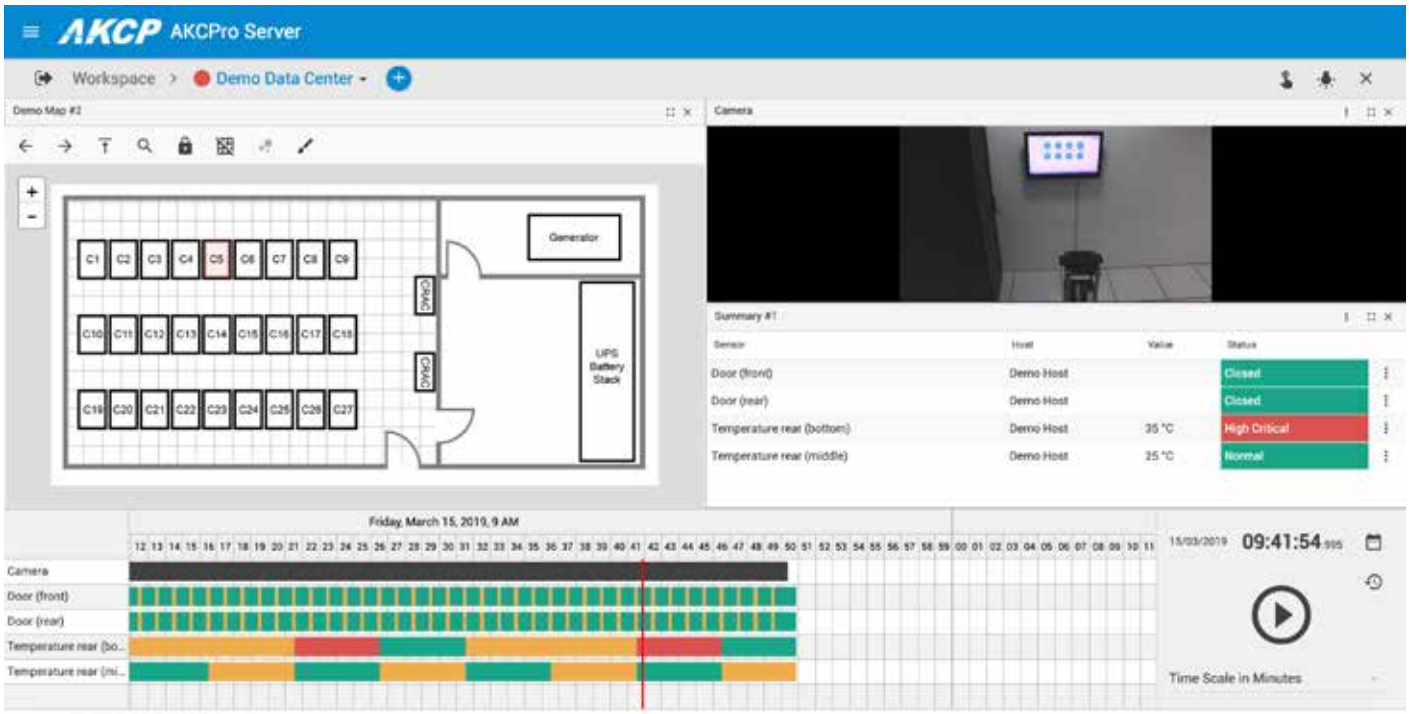


Drill down from worldmap to floorplans

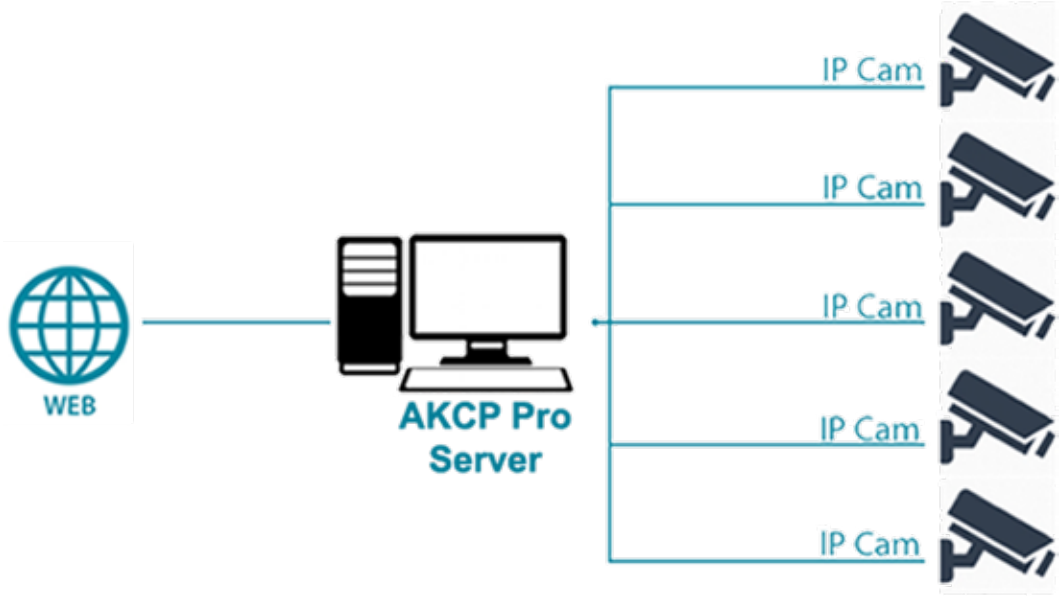


Video Integration

AKCPro Server integrates with IP based ONVIF compatible video cameras. Sensor events from AKCP and virtual sensors are synchronized in the playback window. This allows for easy visual reference of critical events or security breaches.



Desktops show live video, together with sensor status, and can be switched to playback, giving you an easy way to go back to specific sensor events and automatically recall and playback video from that time. Great for integration with access control systems, to have a visual reference for every access event.

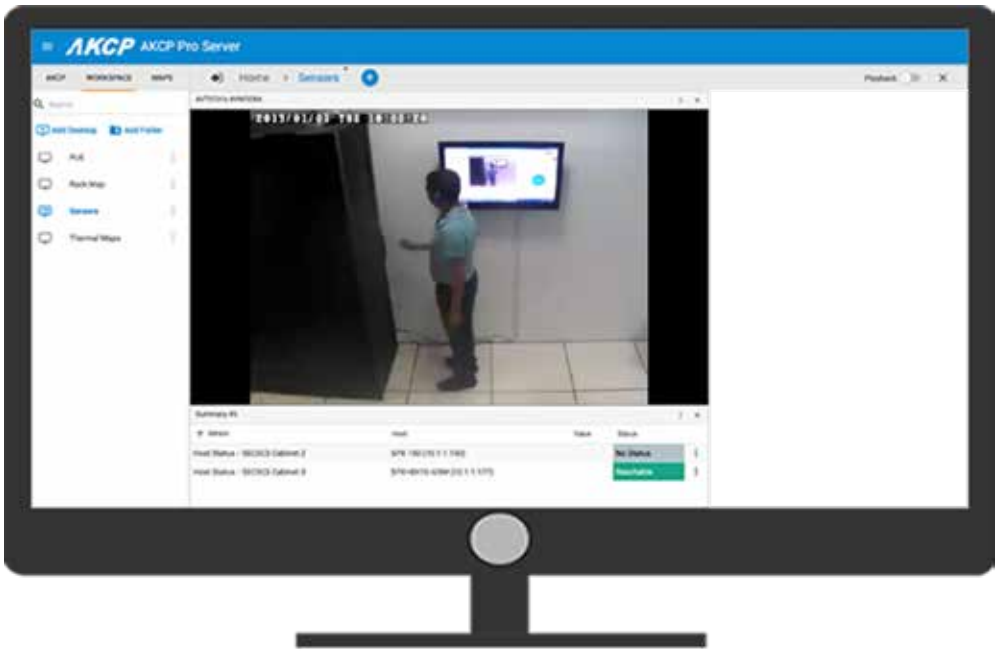


Access Control

From AKCPro Server you can administer access control schedules and privileges, view access logs and reports on a per door, or per user basis. Know who accessed, what time and synchronize with video systems in the playback window to review actual video footage of the events.

Recieve alerts if doors are left open, if unauthorized access attempts are made, setup anti passback feautres such as card expiration dates.

For the data center install AKCP RFID Swing Handle Cabinet Locks to protect your rack assets, and view the security status of the cabinets from the rack map desktops.



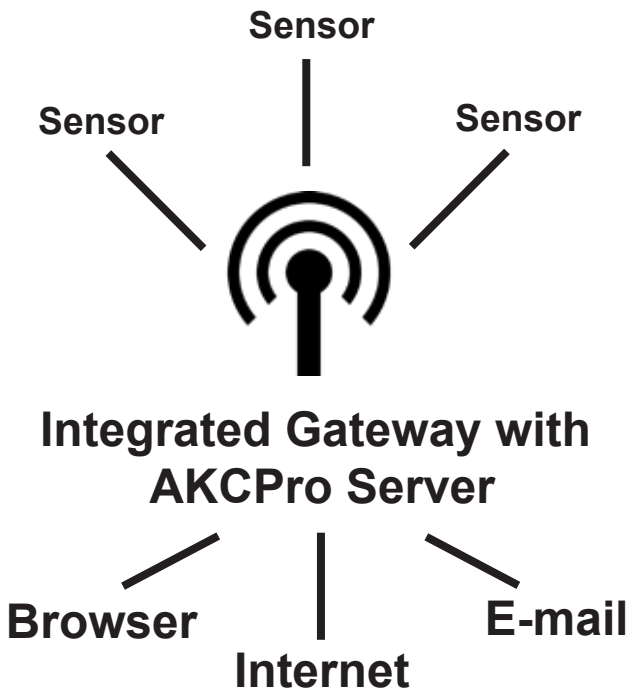
LoRa™ Wireless Solutions

The world's most advanced LoRa™ solution

The AKCP Wireless solution uses LoRa™ technology which provides superior penetration through buildings. A wide range of AKCP's intelligent sensors are avaialble with a LoRa™ wireless module that transmits sensor data to the nearest AKCP LoRa™ gateway.

LoRa™ Advantages

- Long battery life of sensors
- Rapid deployment
- Save on cabling and installation costs
- Fewer base units and IP addresses
- Easy to expand with future requirements
- Advanced High Penetration Wireless System (HPWS™) from AKCP

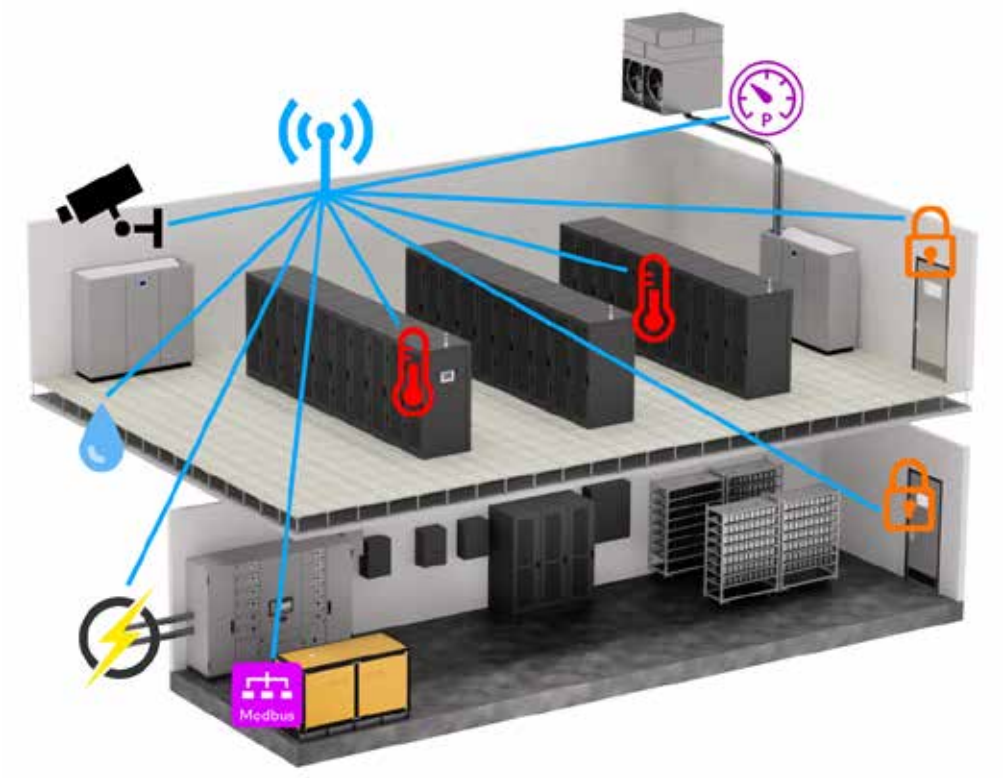


LoRa™ Technology

AKCP Application of LoRa™ Technology

LoRa™ radio is an energy efficient, long range and low cost bi-directional communications technology. LoRa™ radio modulation provides deep indoor penetration through walls, elevator shafts and basements. AKCP have introduced proprietary algorithms that further imrpove stnadard LoRaWAN™ protocol, increasing efficiency and reliability of the wireless sensor solution, applicable for cirtical infrastructure monitoring.

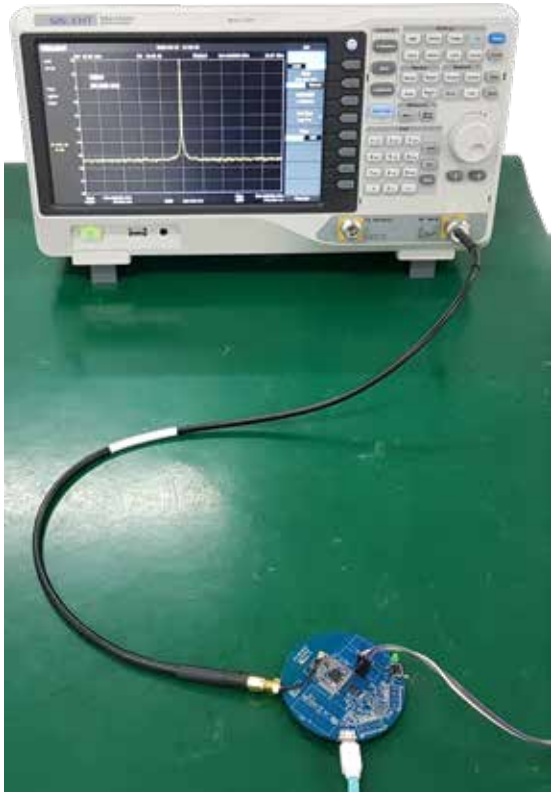
- Immediate broadcast upon sensor status change
- “Listen before talk” to minimize packet collisions
- Queuing and Re-Broadcast of undelivered messages
- Increased battery life by using less airtime with shortest spread factor
- Shorter airtime means more frequent broadcasts are possible
- Individually tuned antennas, maximum range with shortest spreading factor



AKCP and LoRa™

AKCP Tests and Tunes every LoRa™ Radio

AKCP uses professional spectrum analyzers to hand tune every antenna to ensure proper broadcast strength and frequency. We only use high quality external Di-Pole antennas for maximum signal strength. Our thorough testing procedures enabled us to identify counterfeit components in our supply chain which allowed us to pro-actively remove them from production and change suppliers



Testing broadcast frequency and strength of AKCP LoRa™ sensor device

Testing of Di-Pole antenna frequency

DCIM in a box with LoRa™ radio (L-DCIM / 1U-L-DCIM)

The L-DCIM is a “DCIM in a box” solution for data center infrastructure monitoring and management. Many DCIM solutions require annual license fees and are complex to use, as well as needing a dedicated PC. With L-DCIM it’s easy to implement a complete DCIM monitoring solution.

AKCPro Server is embedded on every L-DCIM allowing you to monitor all your data center infrastructure, manage access control, sync video with sensor events track assets, graph sensors and generate alerts.

Equipped with a LoRa™ radio and high quality Di-Pole antenna, monitoring of AKCP wireless sensors means you can rapidly deploy your environmental monitoring system without needing to run cables, tap power, use network ports and IP addresses.

DIN rail / Desktop L-DCIM

The L-DCIM comes in a compact DIN rail, desktop or wall mounted unit. 1U version for standard rack mounting is also available.

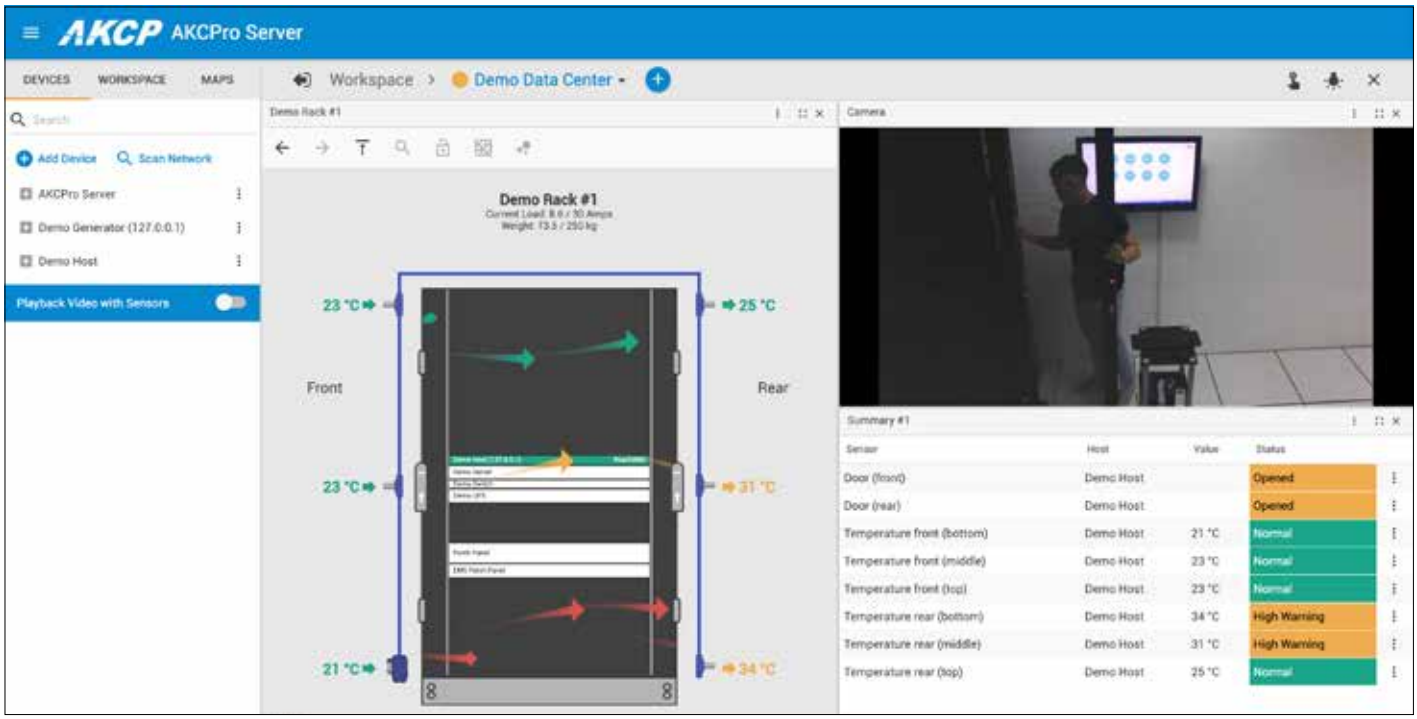
The LoRa radio comes in different frequency bands suitable for your specific country regulations

1U rack mounted L-DCIM

DCIM in a box with LoRa™ radio

L-DCIM is a mini computer running a full version of AKPro Server. Up to 100 wireless LoRa™ sensors, or a total of 1,000 data points can be monitored. Add your existing sensorProbe devices, and use virtual sensors to monitor third party equipment. 25 virtual sensors are included, with additional available with a licensed unlock code.

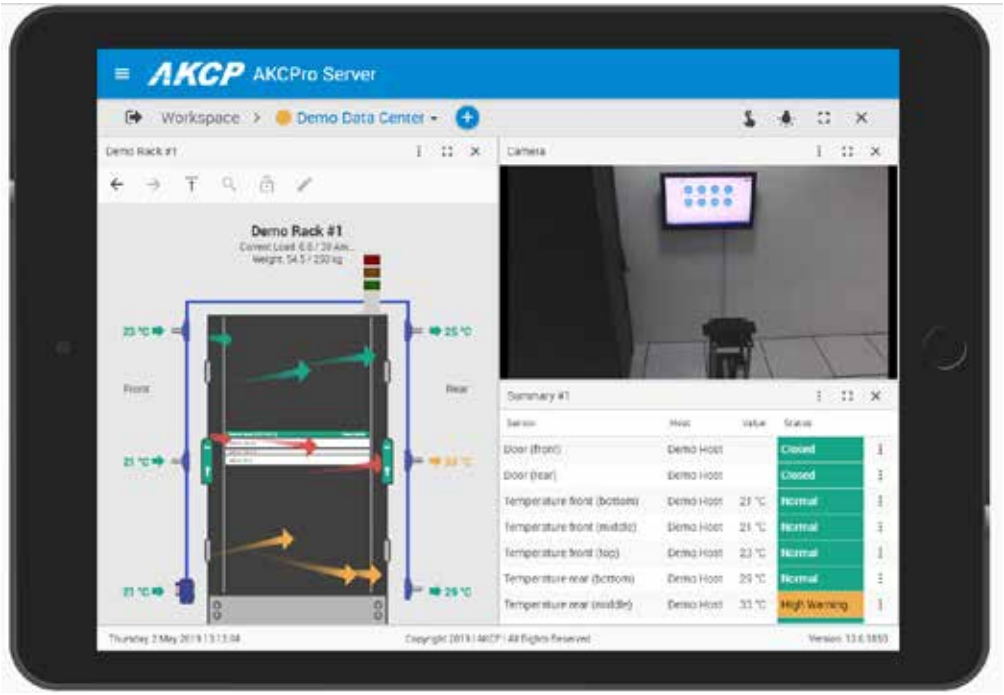
Drill down mapping, cabinet rack maps, asset tracking, graphing, reports, data replay synched with video data. All of the usual AKCPro Server functions are included.

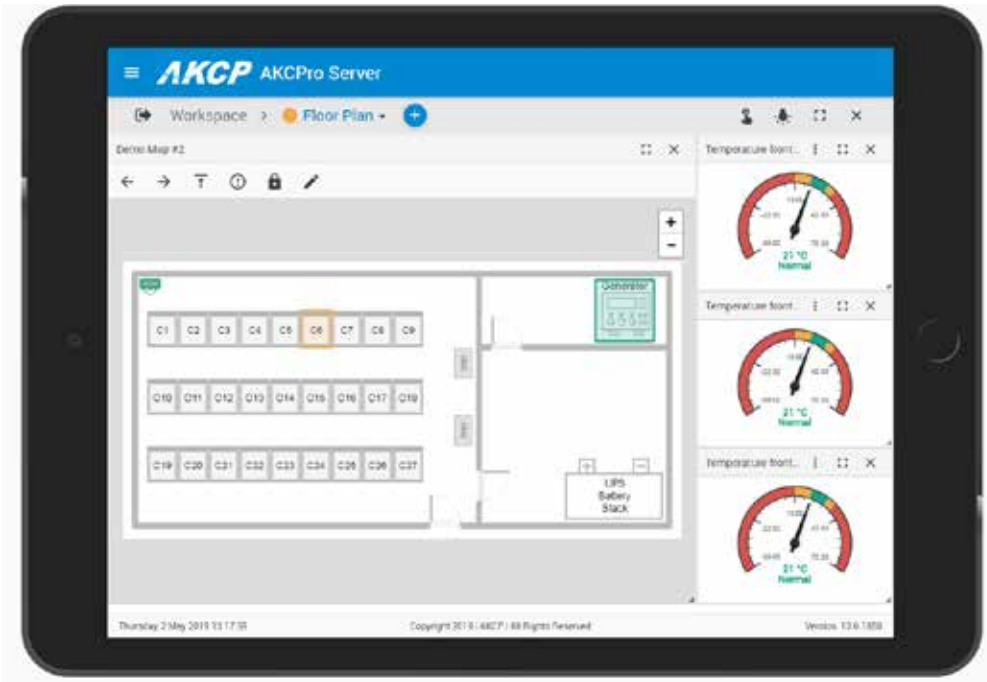


Screenshot of AKCPro Server central monitoring software embedded in every L-DCIM

L-DCIM - Tablet View

Use any Android or IOS tablet or cellphone to monitor your data center at ground level. The L-DCIM acts as a WiFi hotspot for mobile devices to connect directly with and display sensor data in a dedicated tablet user interface. No apps to install, just access using your google Chrome web browser. Now your technicians on the data center floor can be kept up to date and be alerted instantly to critical situations as they arise.

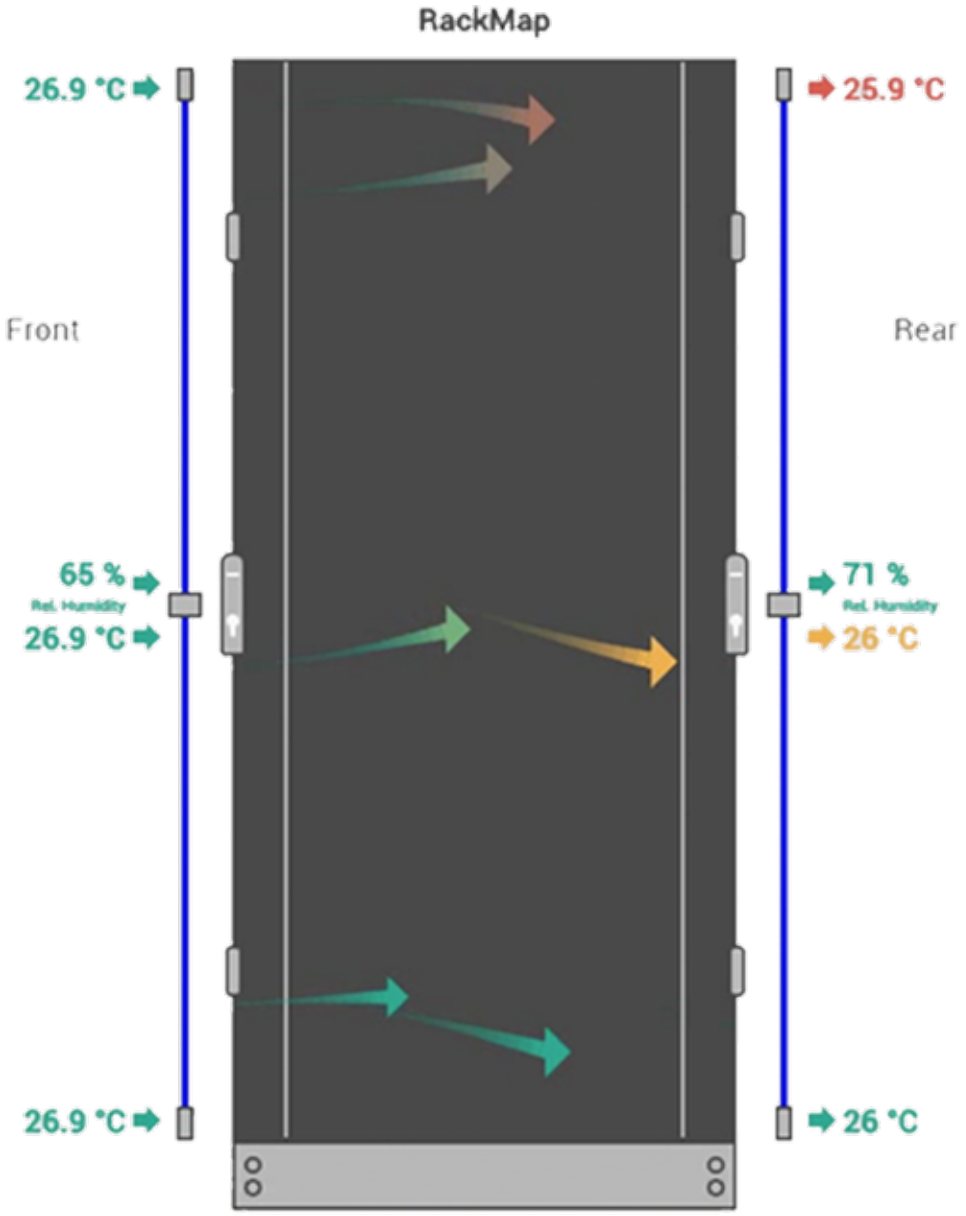




L-DCIM - Data Center Design and Analysis Tool

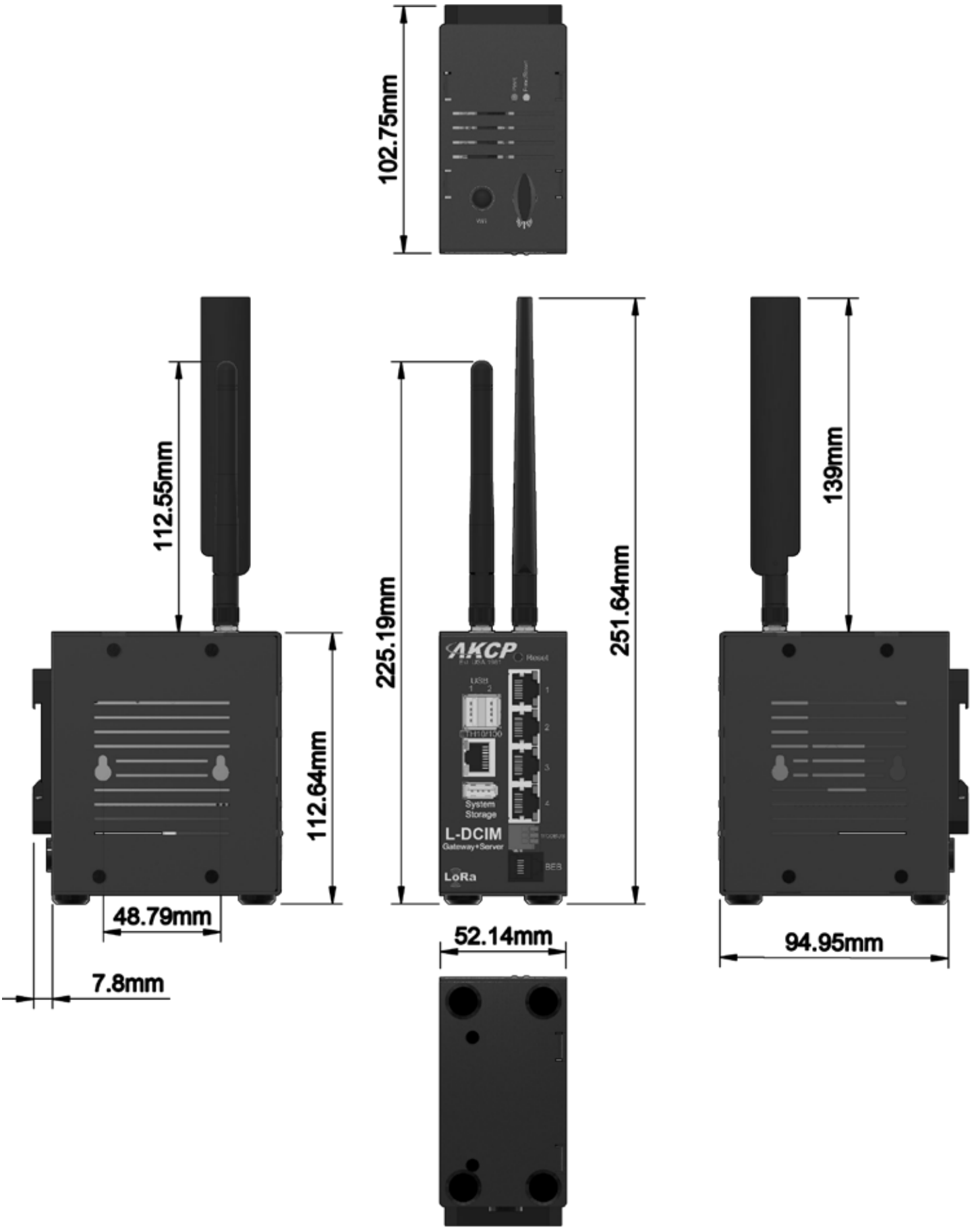
Every L-DCIM comes with a free wireless dual temperature and humidity sensor. You can upgrade to a wireless cabinet thermal map sensor that is battery powered and can be easily moved from rack to rack. This is an ideal engineering design tool that can be left on a rack for several days to profile the thermal properties, detect cabinet hotspots and see the effect of changes that are made. Due to it being a self contained wireless unit moving it from rack to rack is easy.

Find out more details on this solution in the data center design and analysis toolkit section of this catalog.

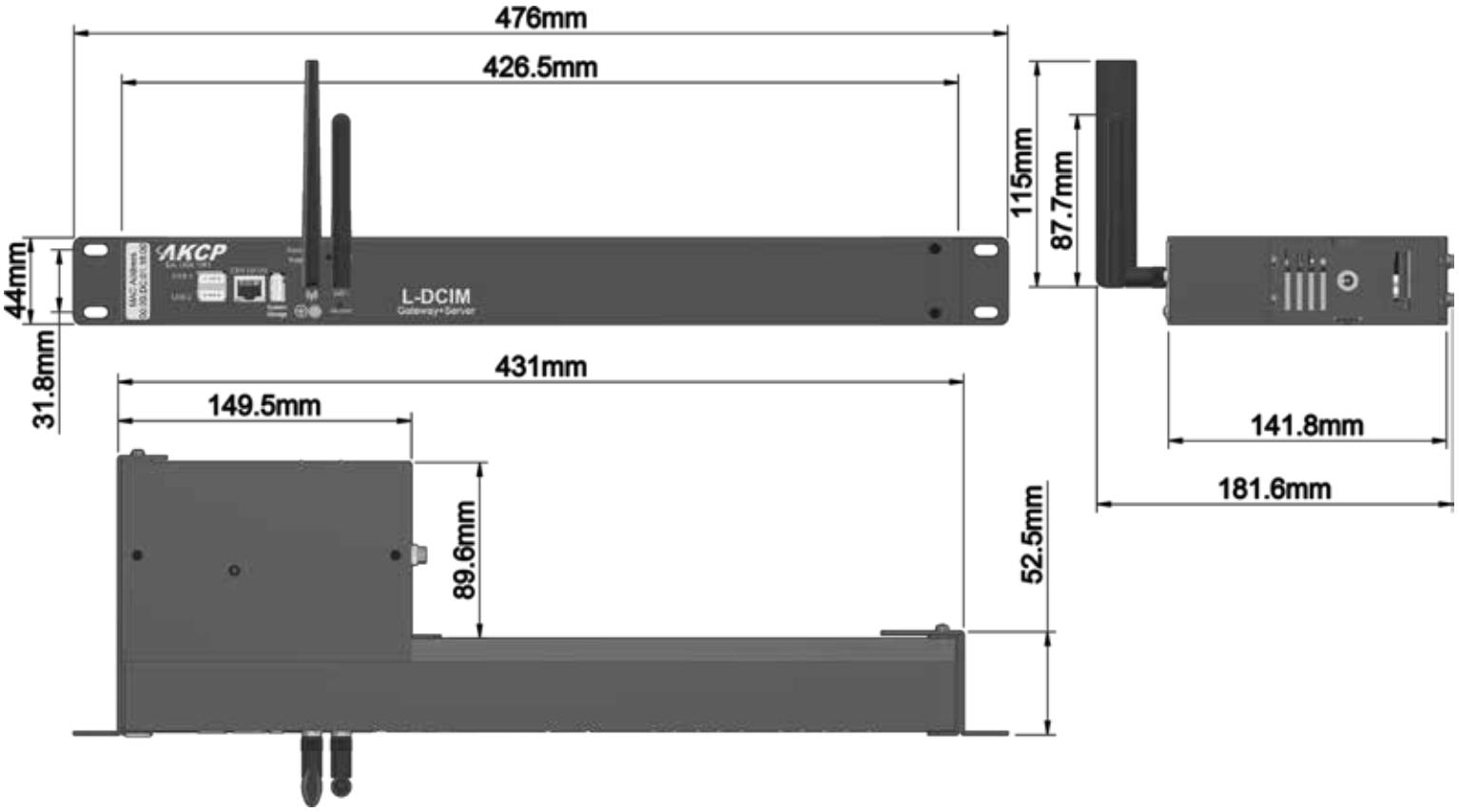


Example of AKCP Pro Server rack map view, with thermal map sensor and front to rear temperature differentials

L-DCIM - Technical Drawing



1U-L-DCIM - Technical Drawing



L-DCIM / 1U-L-DCIM - Technical Specification

Dimension (mm)	52 (W) x 112 (H) x 94 (D) L-DCIM 476 (W) x 44 (H) x 182 (D) 1U-L-DCIM
Mounting	Desktop, wall mount, DIN rail 1U (1U-L-DCIM only)
Power	External 5V 3A Power Adapter Input Voltage and Current ratings : 100V~240V - 0.22A
Status Indication	LED indication for power LED for network connectivity
Components	Manufactured using highly integrated, low power surface mount technology to ensure long term reliability. ARM Coretex-A7 Quad Core 1GHz CPU, 1GB DDR3 8GB Embedded memory
Operating Environment	Temperature : Min. -15° C – Max.50° C Humidity: Min. 20% – Max. 80% (Non-Condensing)
MTBF	1,400,000 Hours
Conectivity	Etherent 10/100 2.4GHz IEEE 802.11 b/g/n/ac wireless LAN Optional Integrated cellular modem with external antenna
Video	Supports 2x AKCP HD-DC Cameras via USB input Supports ONVIF IP Cameras (h.264, MJPEG)
Inputs	1x 10/100 Ethernet Port 2x USB 2.0 Ports 1x USB Sytem Storage
LoRa ® Radio	863-870 MHz (EU) Max TX Power +14dBm Duty cycle 1% 902-915 MHz (US) Max TX Power +20dBm 920~925Mhz (AS) Max TX Power +14dBm Duty Cycle 1% - KR920 (Korea) : 922~923Mhz Max TX Power +14dBm Duty Cycle 1% - IL917 (Israel) : 915~917Mhz Max TX Power +14dBm Duty Cycle 1%
Certification	FCC Part 15C, CE EN300220-2

LSGW - Technical Specification

Dimension (mm)	111 (W) x 62 (H) x 87 (D)
Expansion Port (Optional)	Basic Expansion Bus (BEB) for connecting expansion modules
Mounting	Desktop, wall mount, DIN rail, Magnetic
Power	External 5V 3A Power Adapter Input Voltage and Current ratings : 100V~240V - 0.22A Optional internal UPS with 4x AA Batteries (non-rechargeable)
Status Indication	LED indication for power LED for network connectivity LED for Status
Components	Manufactured using highly integrated, low power surface mount technology to ensure long term reliability.
Operating Environment	Temperature : Min. -15° C – Max.50° C Humidity: Min. 20% – Max. 80% (Non-Condensing)
MTBF	1,400,000 Hours
Conectivity	Etherent 10/100 Optional 4GHz IEEE 802.11 b/g/n wireless LAN Optional Integrated cellular modem with external antenna Optional GPS with external antenna (requires cellualr modem)
Inputs	USB for software upgrade Optional Basic Expansion Bus (BEB) Port Optional Modus RS485
LoRa ® Radio	863-870 MHz (EU) Max TX Power +14dBm Duty cycle 1% 902-915 MHz (US) Max TX Power +20dBm 920~925Mhz (AS) Max TX Power +14dBm Duty Cycle 1% - KR920 (Korea) : 922~923Mhz Max TX Power +14dBm Duty Cycle 1% - IL917 (Israel) : 915~917Mhz Max TX Power +14dBm Duty Cycle 1%
Certification	FCC Part 15C, CE EN300220-2

LoRa™ Battery Temperature / Humidity (LBTH / LBTHxx)

Weatherproof dual temperature and humidity sensor with LoRa™ radio. Battery powered or USB powered, either run 100% battery, or from USB with battery backup. 10 year battery life guarantee.

AKCP hand tunes every antenna and tests for maximum broadcast strength before shipping. This ensures excellent penetration of wireless radio signal through buildings.

Applications:

- Data center monitoring
- Warehouse environment
- Cold storage and trasnport
- Pharmaceutical and hospitals

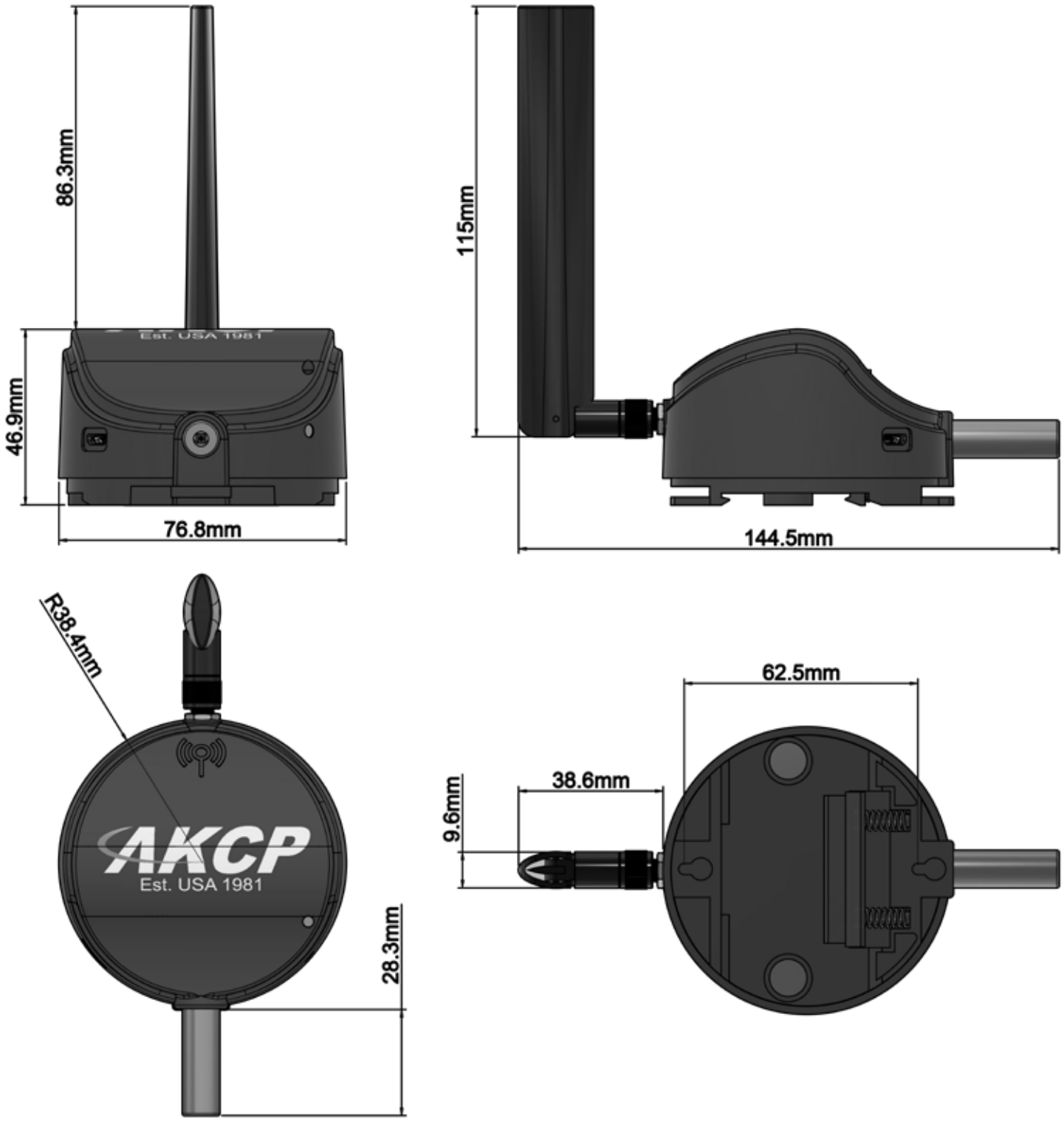
LBTH, sensor tube fixed on box

The LBTH can be ordered with the sensor on a 5ft cable (custom lengths available). This allows you to place the LoRa battery module in a convenient location with the sensor placed in a precise location. This setup is ideal for IT cabinets, where the sensor can be located inside the rack with the battery module on the top of the cabinet.

LBTH-05, sensor tube on 5ft cable

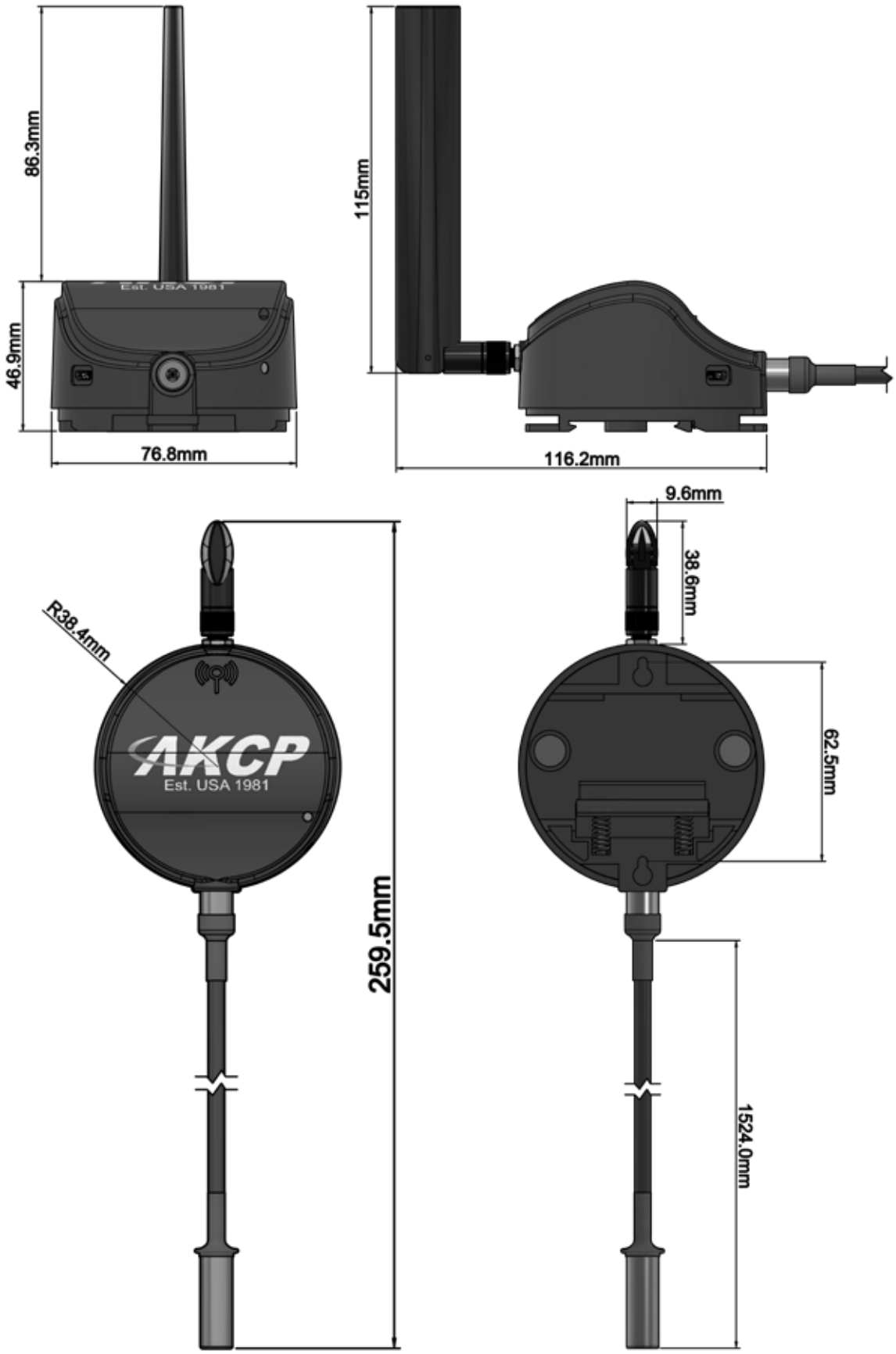
LBTH - Technical Drawing

LoRa™ Battery Temperature and humidity



LBTH05 - Technical Drawing

LoRa™ Battery Temperature and humidity sensor with 5ft cable



LoRa™ Temp & Hum + Door Contact (LBTHD / LBTHD-05)

Wireless sensor with dual temperature and humidity sensor together with door contact sensor. A fixed dual temp/hum sensor with security sensor, or both sensors on a wire are available. Comes as standard with 5ft cable, with custom lengths can be ordered. Ideal for monitoring IT cabinets, refrigerators and secure storage. Monitor environmental conditions and and detect when cabinets or doors are opened. Log all this data in AKCPro Server embedded on the LoRa Gateway (L-DCIM). Recieve alerts when parameters are outside of specified ranges or access is made. With the integration of ONVIF IP cameras video feeds are synchronized with these sensor events.

LBTHD-05 with dual temp/hum sensor on 5ft cable

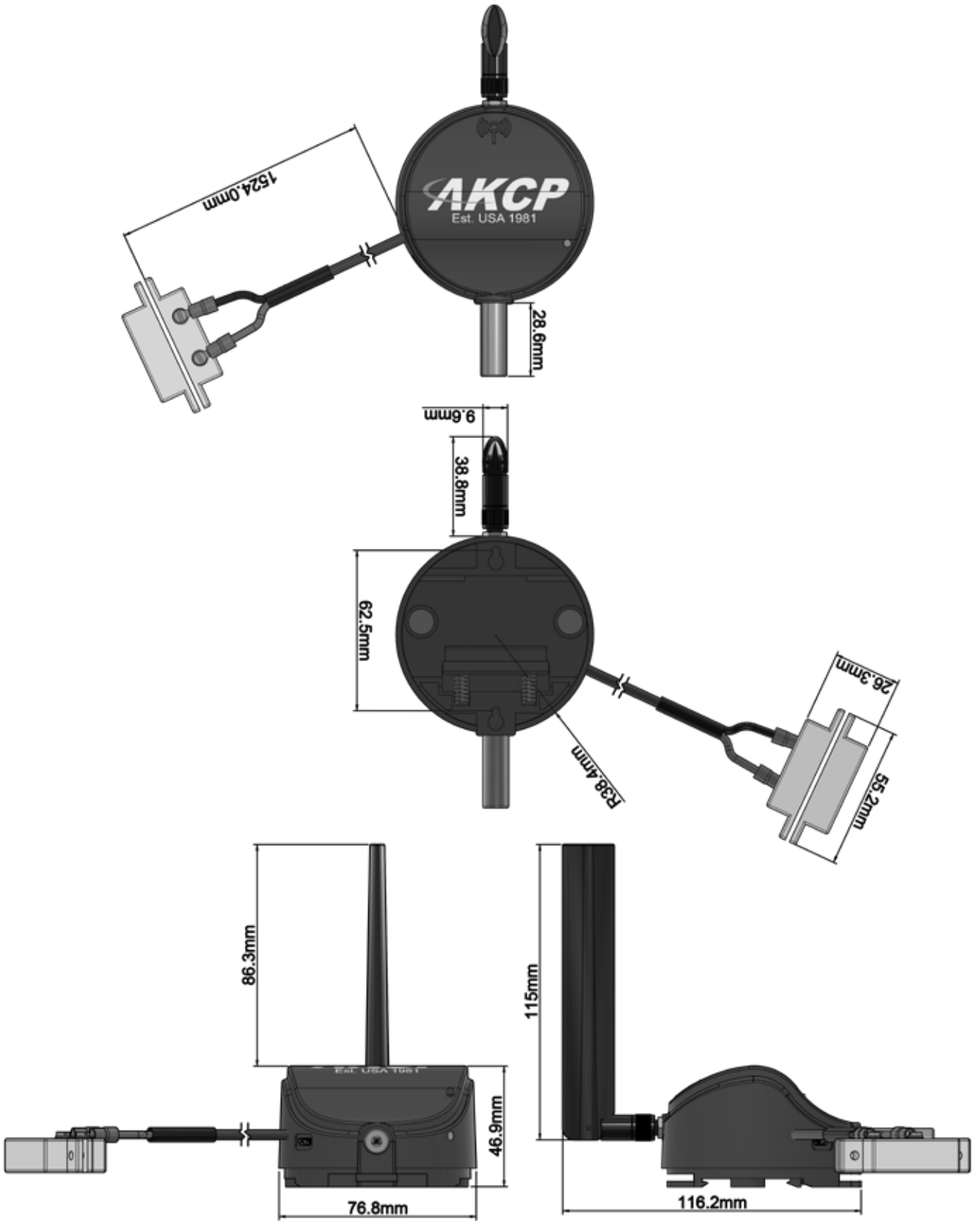
LBTHD with dual temp/hum sensor fixed on the box

LBTH / LBTHD Technical Specification

Dimension	Ø77 X 47mm
Mounting	DIN Rail, Magnetic, Wall Hanging
Power source :	Internal non-removable batteries or via micro-USB port
Power Consumption :	Average 12 mWatt Up to 10 years of battery life
Status Indication	LED indication for Mode
Components	Manufactured using highly integrated, low power surface mount
	technology to ensure long term reliability.
Operating Environment	Temperature : Min. -35° C – Max.80° C Humidity: Min. 20% – Max. 80% (Non-Condensing)
LoRa (R) Radio	- EU : 863~870Mhz Max TX Power +14dBm Duty Cycle 1% - US : 902~915Mhz Max TX Power +20dBm - AS: 920~925Mhz Max TX Power +14dBm Duty Cycle 1%
Certification	FCC Part15C, CE EN300220-2
Environment monitoring	
Temperature	
Measurement Range :	-40°C to +75°C -40°F to +167°F
Measurement Resolution :	0.1°C increments 0.2°F increments
Measurement Accuracy :	Maximum ±0.3 at -40ºC, minimum ±0.3 at +25ºC and ±0.3 at +75ºC Maximum ±0.6 at -40ºF, minimum ±0.6 at +25ºC and ±0.6 at +167ºF
Humidity	
Measurement range :	0 to 100% Relative humidity
Resolution :	1%RH increments, 0.01%RH sensor reading
Accuracy at :	25°C ±2%RH
Dry Contact (LBTD)	1x Discrete Dry Contact inputs
Input	Switch type dry contact: open or close Edge counter

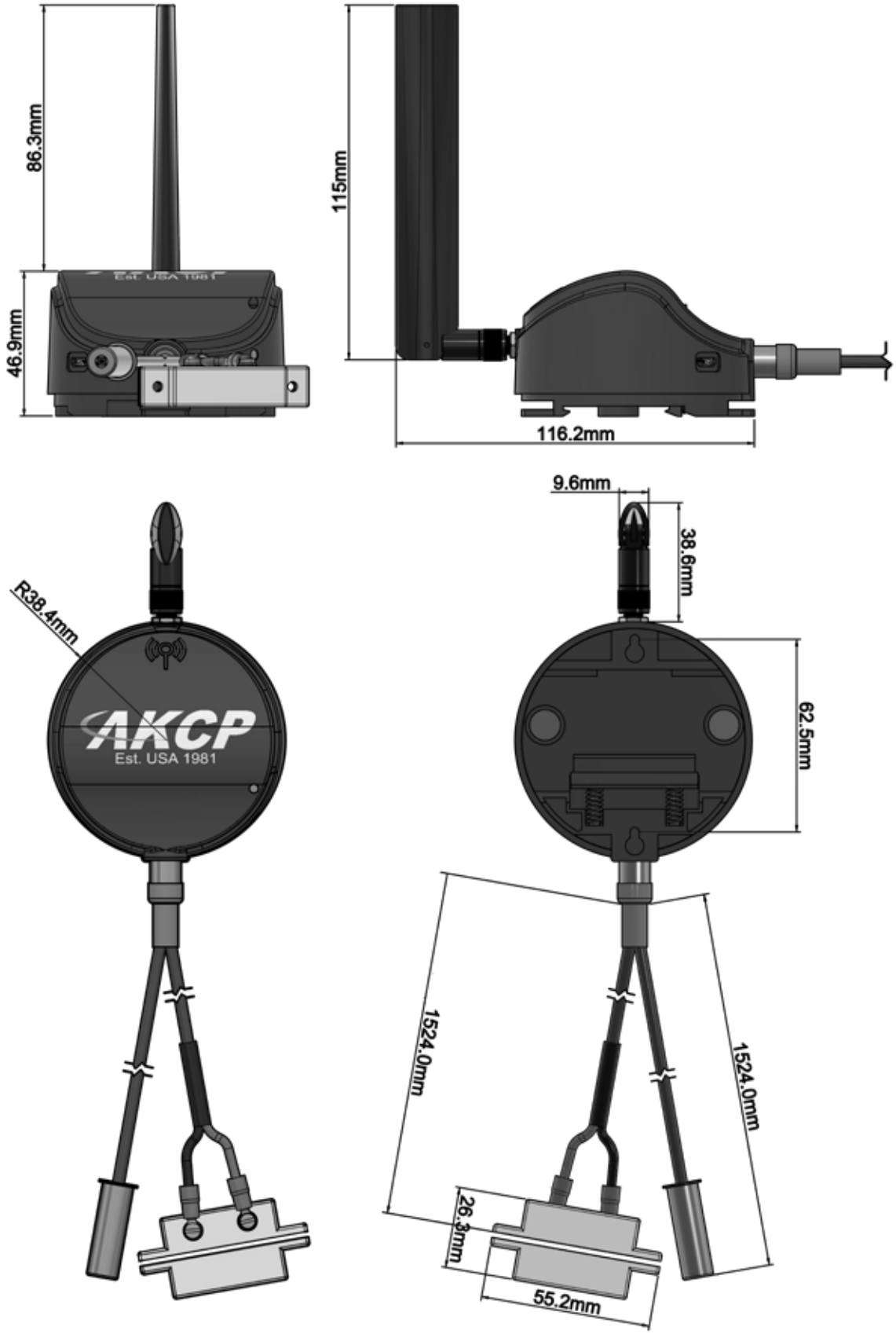
LBTHD - Technical Drawing

LoRa™ Battery Fixed Temperature and Humidity Sensor and security Sensor on 5ft cable



LBTHD-05 - Technical Drawing

LoRa™ Battery Temperature and Humidity Sensor and security Sensor on 5ft cable



LoRa™ Battery 5 Dry Contact Sensor (LBDC5)

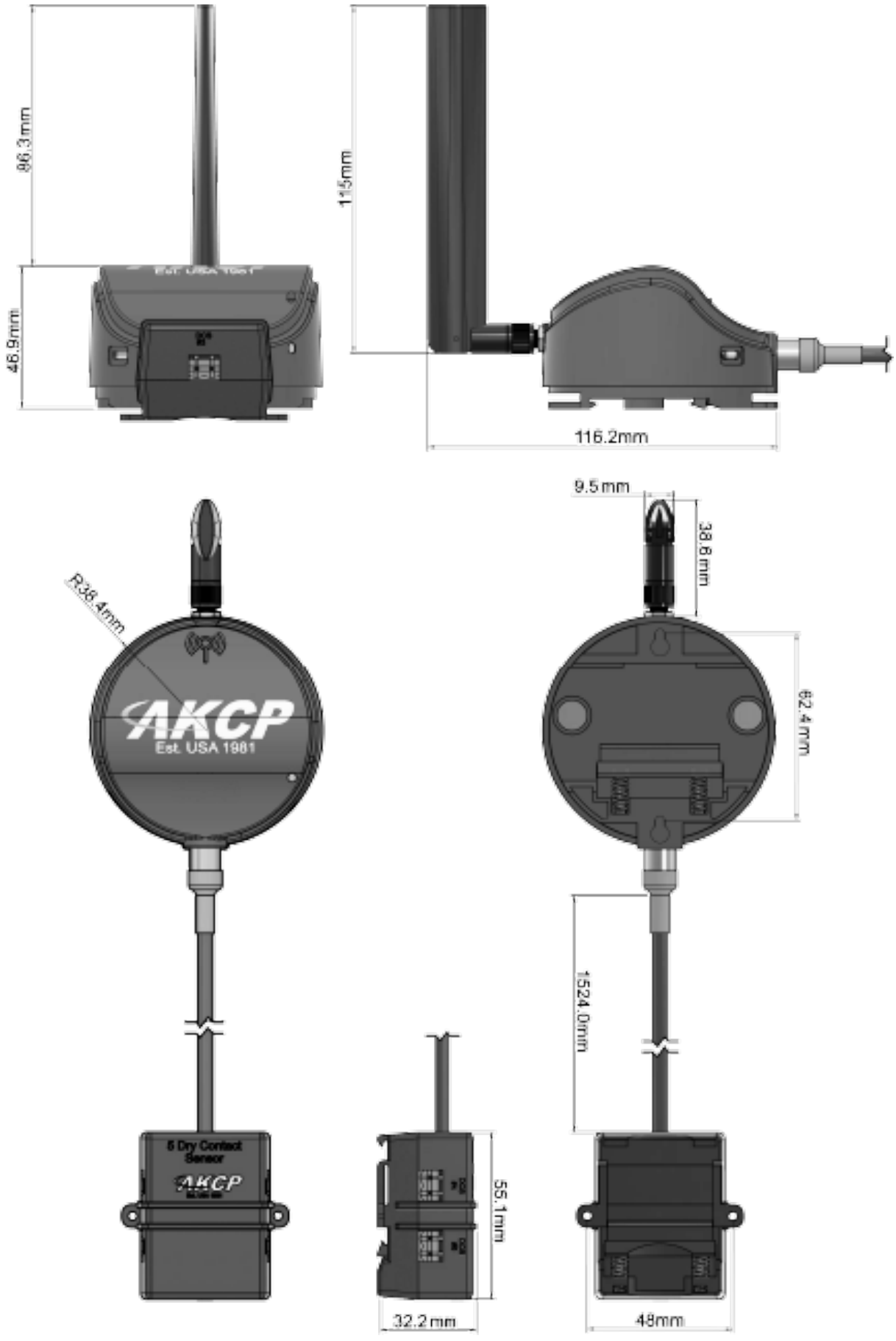
Wireless Extension of Dry Contacts

The wireless 5 dry contact sensor gives multiple inputs to monitor third party devices. Useful for wireless monitoring of alarm panels, UPS, or any device with a dry contact output. Communicate dry contact status over the LoRa™ network to the gateway.

Extend dry contacts across a network wirelessly to actuate relays. When a dry contact status changes it's status is instantly broadcast to the LoRa™ gateway, which can signal a relay to actuate, alarm to sound, or change the state of a digital I/O controller.

Dimension	Ø77 X 47mm
Mounting	DIN Rail, Magnetic, Wall Hanging
Power source :	Internal non-removable batteries or via micro-USB port
Power Consumption :	Average 12 mWatt Up to 10 years of battery life
Status Indication	LED indication for Mode
Components	Manufactured using highly integrated, low power surface mount technology to ensure long term reliability.
Operating Environment	Temperature : Min. -35° C – Max.80° C Humidity: Min. 20% – Max. 80% (Non-Condensing)
LoRa (R) Radio	- EU : 863~870Mhz Max TX Power +14dBm Duty Cycle 1% - US : 902~915Mhz Max TX Power +20dBm - AS: 920~925Mhz Max TX Power +14dBm Duty Cycle 1%
Certification	FCC Part15C, CE EN300220-2
Dry Contact	5x Discrete Dry Contact inputs
Input	Switch type dry contact input: open or close Edge counters
Important Note:	Note 1: All inputs are not isolated, they all share the same ground. Care should be taken on grounding when connecting the LBDC inputs to contacts Note 2: don't apply any voltage to the dry contact inputs

LBDC5 - Technical Drawing



LoRa™ Battery Tank Depth Pressure Sensor (LBTDPS-xx)

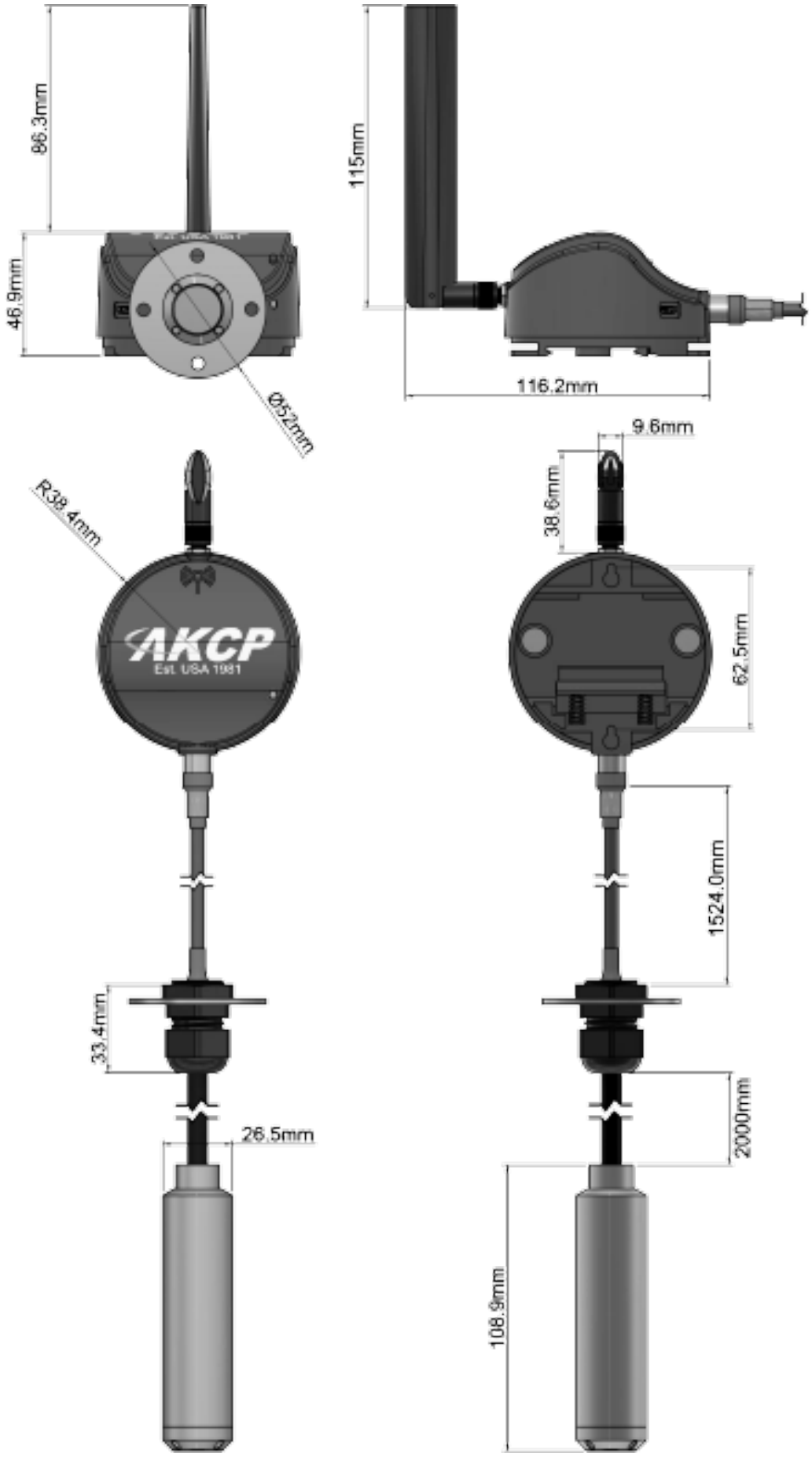
Monitor fuel level and liquid storage tanks

Just like our wired TDPS, the sensor can monitor tanks of varying depths up to 20 meters. Often tanks are located in outdoor or difficult to cable areas. The LB-TDPS is a battery powered self contained wireless tank sensor. Track fuel usage, graph the tank level, recieve alerts when tank levels are critical. No more constraints on maximum cable lengths from the base unit.

LBTDPS-xx Technical Specification

Dimension	Ø77 X 47mm
Mounting	DIN Rail, Magnetic, Wall Hanging
Power source :	Internal non-removable batteries or via micro-USB port
Power Consumption :	Average 0.1 Watt Up to 10 years of battery life
Status Indication	LED indication for Mode
Components	Manufactured using highly integrated, low power surface mount technology to ensure long term reliability.
Operating Environment	Temperature : Min. -35° C – Max.80° C Humidity: Min. 20% – Max. 80% (Non-Condensing)
LoRa (R) Radio	- EU : 863~870Mhz Max TX Power +14dBm Duty Cycle 1% - US : 902~915Mhz Max TX Power +20dBm - AS: 920~925Mhz Max TX Power +14dBm Duty Cycle 1%
Certification	FCC Part15C, CE EN300220-2
Tank Depth Pressure Sensor	
Measurements :	
Measurement Method	Hydrolic Pressure (Fluid column pressure)
Tank Depth	0–20 m (65 ft) for Water, 0-15 m for Petrol, 0-16,6 m for Diesel.
Accuracy Distance	0–2000 cm (65 ft) with 0.2% accuracy for water
Full Scale Accuracy	±0.5%FS (Max)
Mounting	Suspended inside the tank by leader cable
Measurement Values	Liquid's height Liquid's Volume
Probe Specifications :	
Measurement type	0-20mA current
Resolution	0.1mA increment
Accuracy at	Maximum ±0.1mA
Available probe ranges	2m, 5m, 10m, 15m and 20m
Sensor Part Cable	Leader cable from the sensor part to the converter box is 20 meters (65 ft) Comes fully assembled, only needs calibration and installation The probe part operates at 12V provided by the sensor
Chemical Resistance	Petrol, Diesel, Water, Waste Water
Operating Temperature Range	-20°C to 80°C
Protection Grade	IP68 (pressure sensor part)
Notes	Works with certain types of fuel, fresh water

LBTDPS-xx - Technical Drawing



LoRa™ Battery Cabinet Thermal Maps

Thermal Maps for finding hotspots

The wireless cabinet thermal maps come in a string of 3x dual temperature and humidity sensors, or 6x dual temperature and humidity sensors. Used for monitoring the temperature and humidity values at the top, middle and bottom, front and rear of the cabinet. The 6 string can give you the inlet and exhaust air temperatures as well as front to rear temperature differentials.

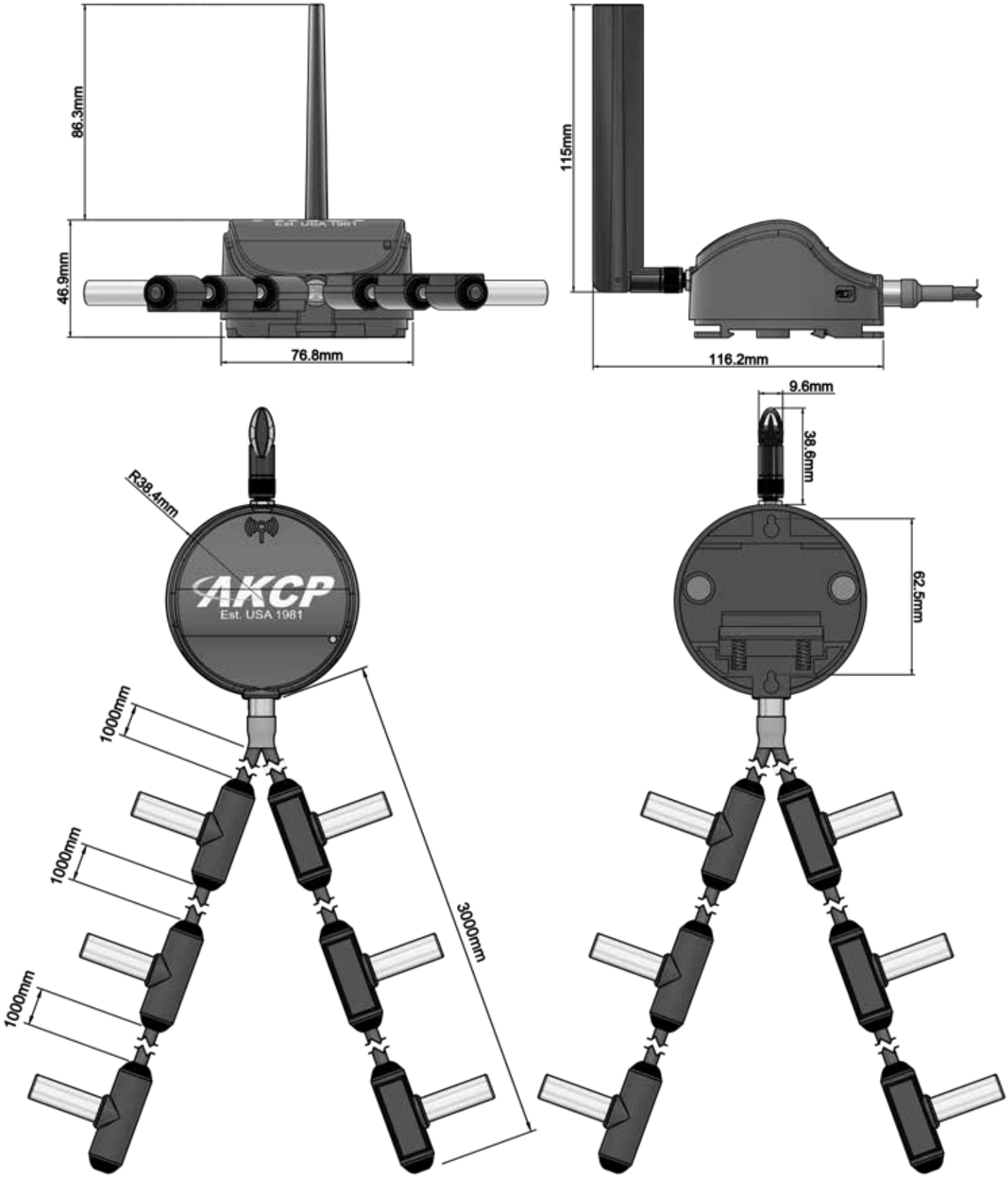
Useful Data Center Analysis Tool

Due to it being wireless and battery powered the sensor can easily be moved around from cabinet to cabinet. This allows you to profile each cabinets thermal properties and identify hotspots, before moving the sensor onto another cabinet.

LBCTH / LBCTHM- Technical Specification

Dimension	Ø77 X 47mm
Mounting	DIN Rail, Magnetic, Wall Hanging
Power source :	Internal non-removable batteries or via micro-USB port
Power Consumption :	Average 12 mWatt, without sensor connected
Status Indication	LED indication for Mode
Components	Manufactured using highly integrated, low power surface mount technology to ensure long term reliability.
Operating Environment	Temperature : Min. -35° C – Max.80° C Humidity: Min. 20% – Max. 80% (Non-Condensing)
LoRa (R) Radio	- EU : 863~870Mhz Max TX Power +14dBm Duty Cycle 1% - US : 902~915Mhz Max TX Power +20dBm - AS: 920~925Mhz Max TX Power +14dBm Duty Cycle 1%
Certification	FCC Part15C, CE EN300220-2
Temperature	
Never needs Calibration	
Measurement range	-40ºC to +75ºC / -40ºF to +167ºF
Measurement resolution	0.1 ºC increments / 0.2ºF increments
Measurement accuracy	Maximum ±0.3 at -40ºC, minimum ±0.3 at +25ºC to +75ºC Maximum ±0.6 at -40ºF, minimum ±0.6 at +77ºF to +167ºF
Sensor Type	semiconductor microprocessor controlled
Humidity	
Measurement range	0 to 100% Relative humidity
Resolution	1%
Accuracy	25ºC ±3%

LBCTH / LBCTHM- Technical Drawing

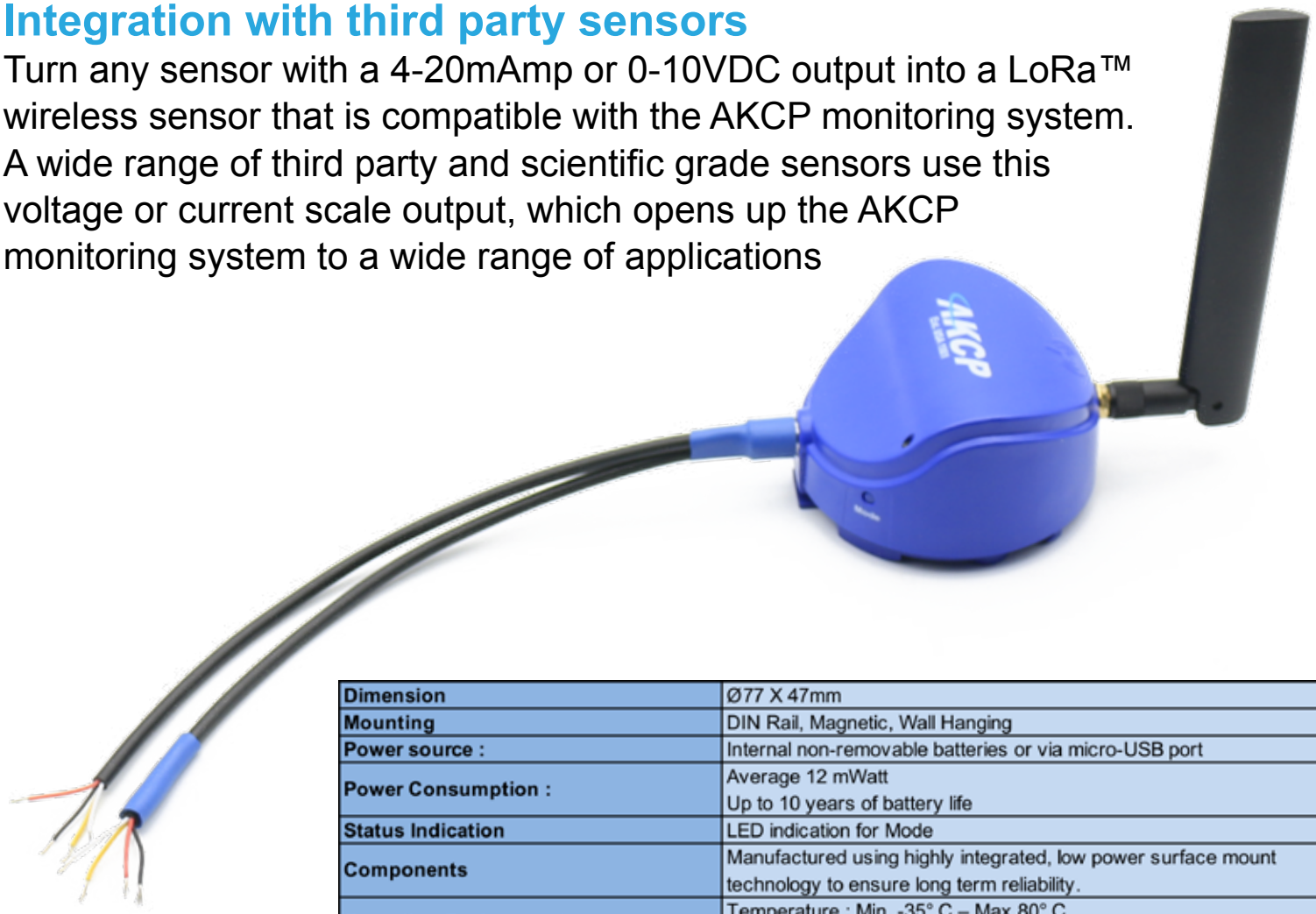


LBCTH consists of one string only, LBCTHM has 2 strings of sensors.

LoRa™ Battery Analog to Digital Converter

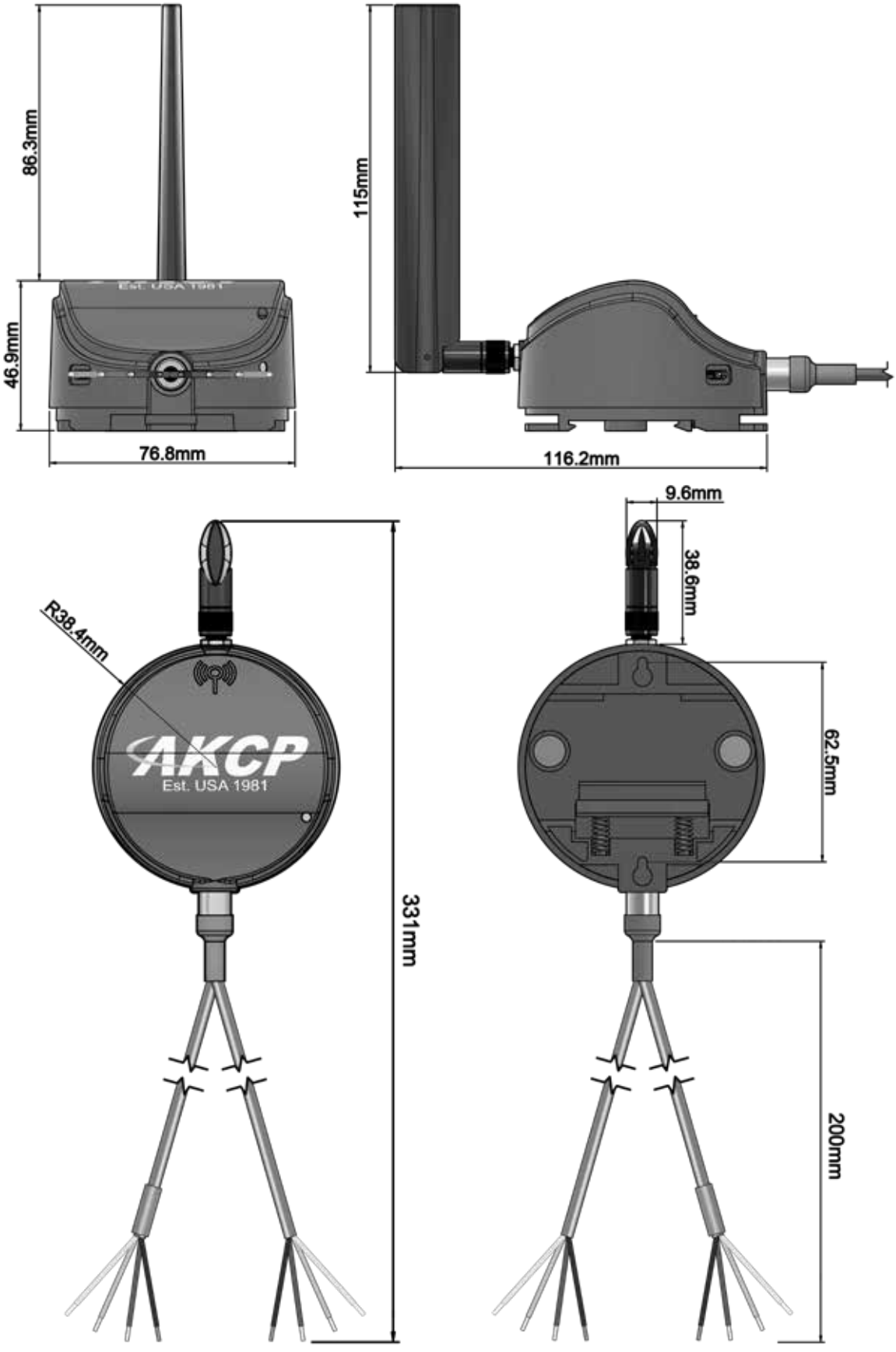
Integration with third party sensors

Turn any sensor with a 4-20mAmp or 0-10VDC output into a LoRa™ wireless sensor that is compatible with the AKCP monitoring system. A wide range of third party and scientific grade sensors use this voltage or current scale output, which opens up the AKCP monitoring system to a wide range of applications



Dimension	Ø77 X 47mm
Mounting	DIN Rail, Magnetic, Wall Hanging
Power source :	Internal non-removable batteries or via micro-USB port
Power Consumption :	Average 12 mWatt Up to 10 years of battery life
Status Indication	LED indication for Mode
Components	Manufactured using highly integrated, low power surface mount technology to ensure long term reliability.
Operating Environment	Temperature : Min. -35° C – Max.80° C Humidity: Min. 20% – Max. 80% (Non-Condensing)
LoRa (R) Radio	- EU : 863~870Mhz Max TX Power +14dBm Duty Cycle 1% - US : 902~915Mhz Max TX Power +20dBm - AS: 920~925Mhz Max TX Power +14dBm Duty Cycle 1%
Certification	FCC Part15C, CE EN300220-2
Input Voltage	2x Analog input voltage
Measurement Range :	0-10V
Measurement Resolution :	0.1V increment
Measurement Accuracy :	Maximum ±0.1V
Input Current	2x Analog input 4-20mA current
Measurement range :	0-20mA current
Resolution :	0.1mA increment
Accuracy at :	Maximum ±0.1mA
Important Note:	All analog inputs are not isolated, they all share the same ground. Care should be taken on voltage potentials when connecting the LBAD inputs to sources.
Input	Switch type dry contact: open or close Edge counter

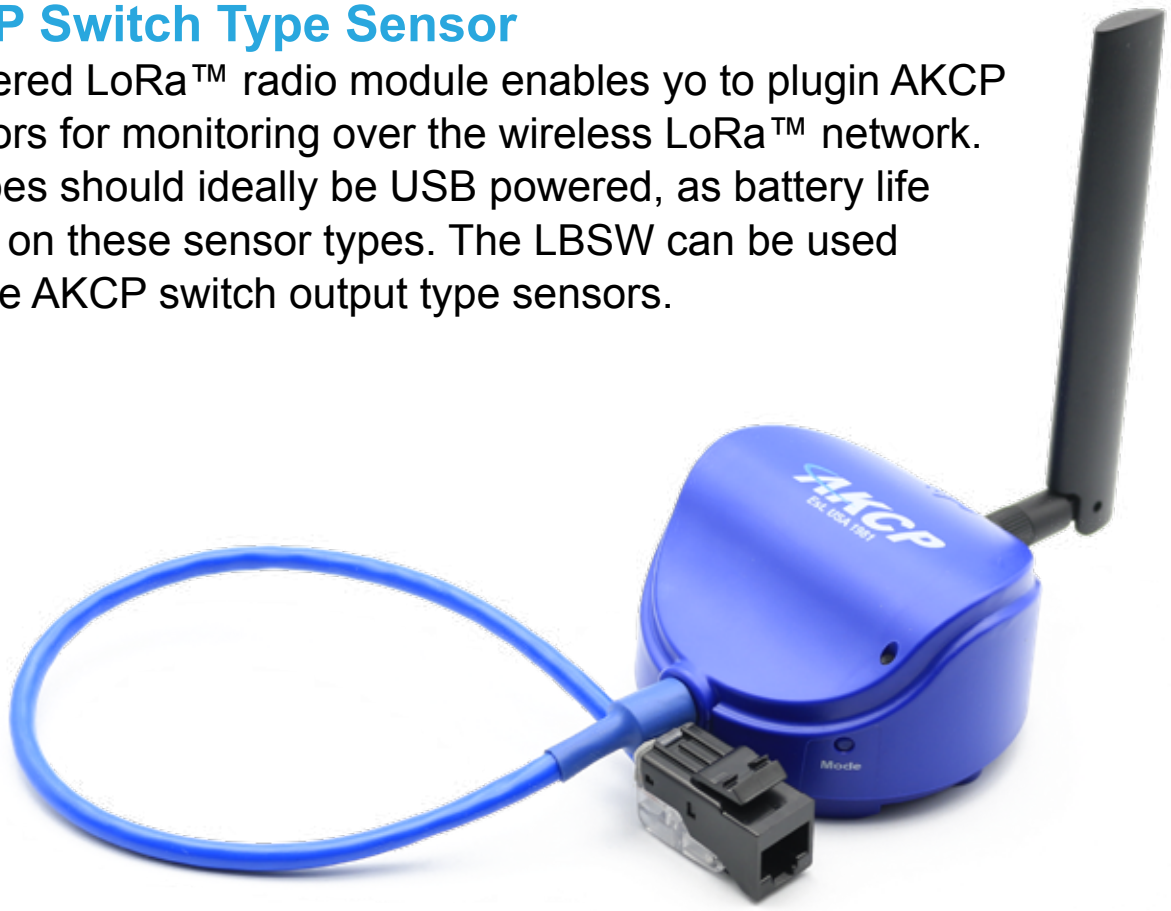
LBAD - Technical Drawing



LoRa™ Battery Switch Type Sensor Adapter

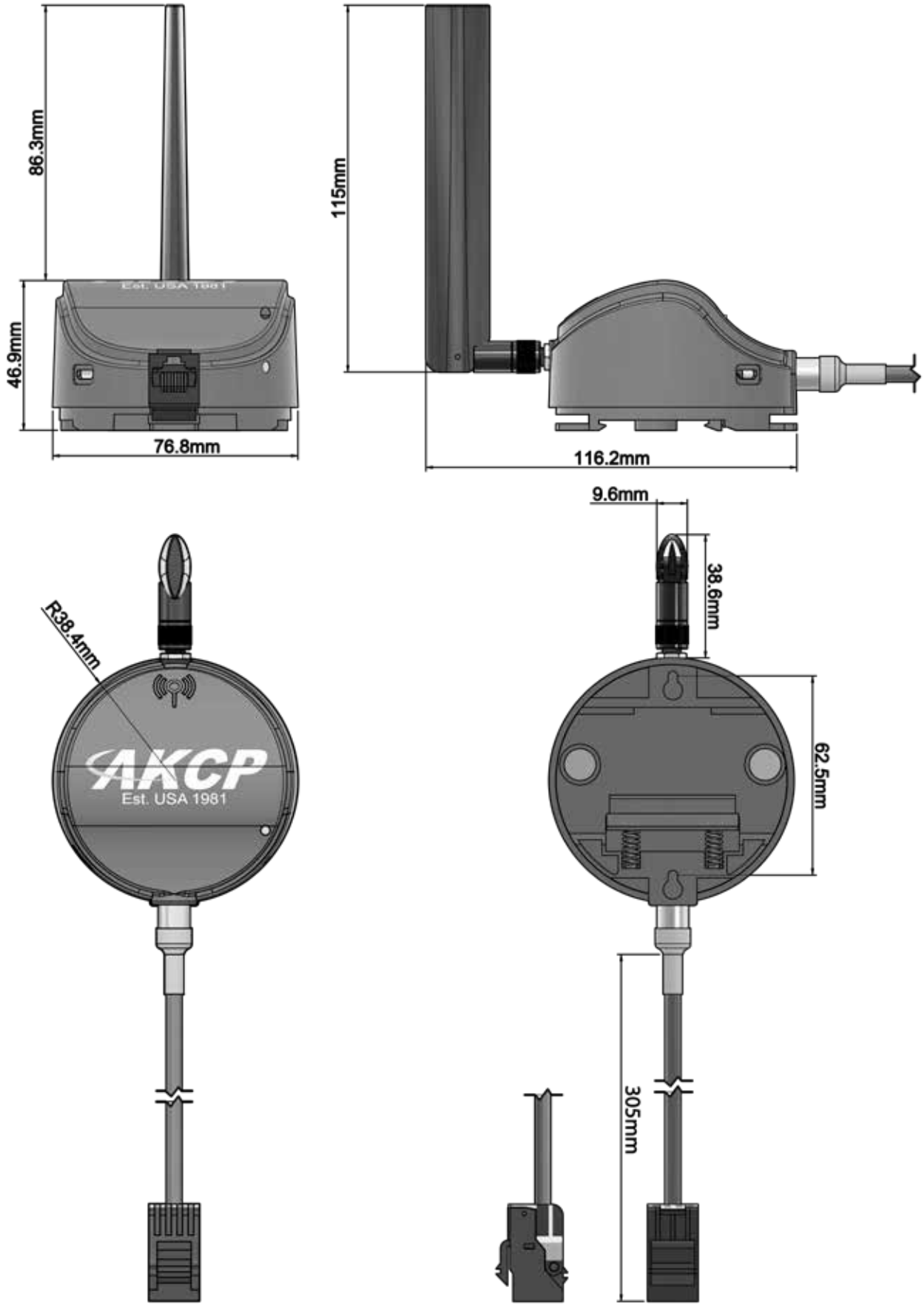
Use any AKCP Switch Type Sensor

This battery powered LoRa™ radio module enables yo to plugin AKCP switch type sensors for monitoring over the wireless LoRa™ network. These sensor types should ideally be USB powered, as battery life will be shortened on these sensor types. The LBSW can be used with the any of the AKCP switch output type sensors.



Dimension	Ø77 X 47mm
Mounting	DIN Rail, Magnetic, Wall Hanging
Power source :	Via micro-USB port (Internal non-removable batteries for backup)
Power Consumption :	Average 12 mWatt, without sensor connected
Status Indication	LED indication for Mode
Components	Manufactured using highly integrated, low power surface mount technology to ensure long term reliability.
Operating Environment	Temperature : Min. -35° C – Max.80° C Humidity: Min. 20% – Max. 80% (Non-Condensing)
LoRa (R) Radio	- EU : 863~870Mhz Max TX Power +14dBm Duty Cycle 1% - US : 902~915Mhz Max TX Power +20dBm - AS: 920~925Mhz Max TX Power +14dBm Duty Cycle 1%
Certification	FCC Part15C, CE EN300220-2
Interface	Cat5 cable with female RJ45 connector, default 1ft long
Sensor supported	Smoke Detector Security Sensor Vibration Detection Sensor Water Detector or Rope Water Detector Motion Detector AC voltage Detector
Important Note:	We do not recommand to use Smoke Detector, Water Detector/Rope Detector or Motion Detector without USB power in order to keep battery life

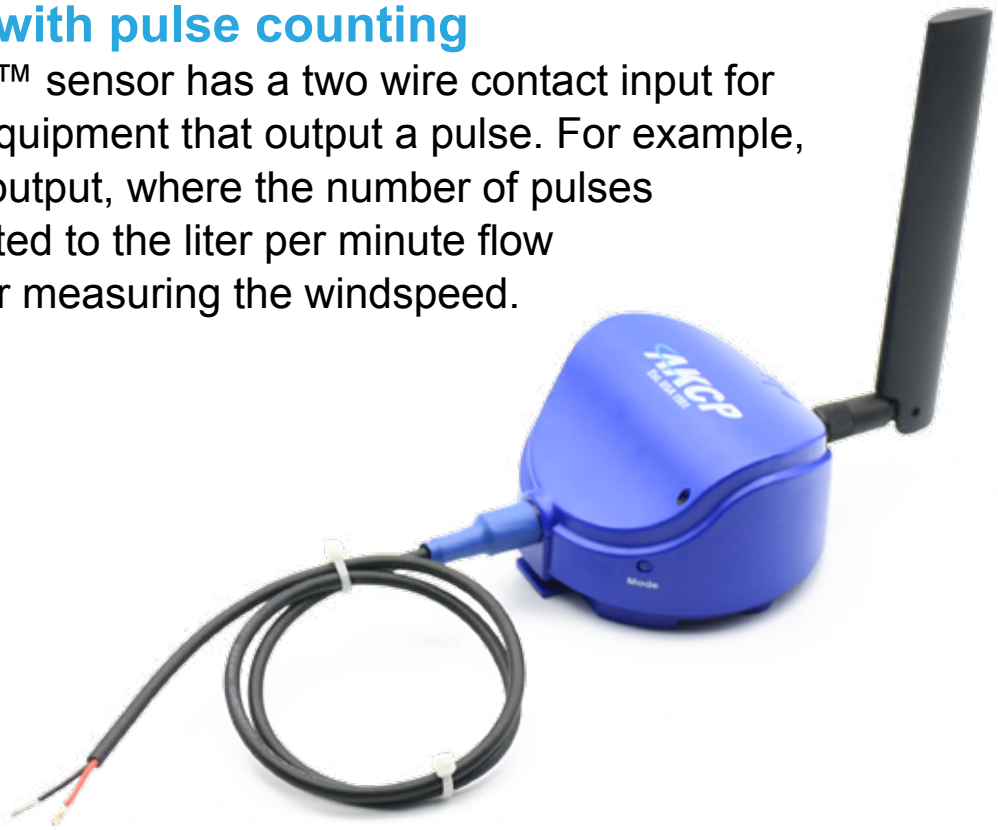
LBSW - Technical Drawing



LoRa™ Battery Pulse Counter

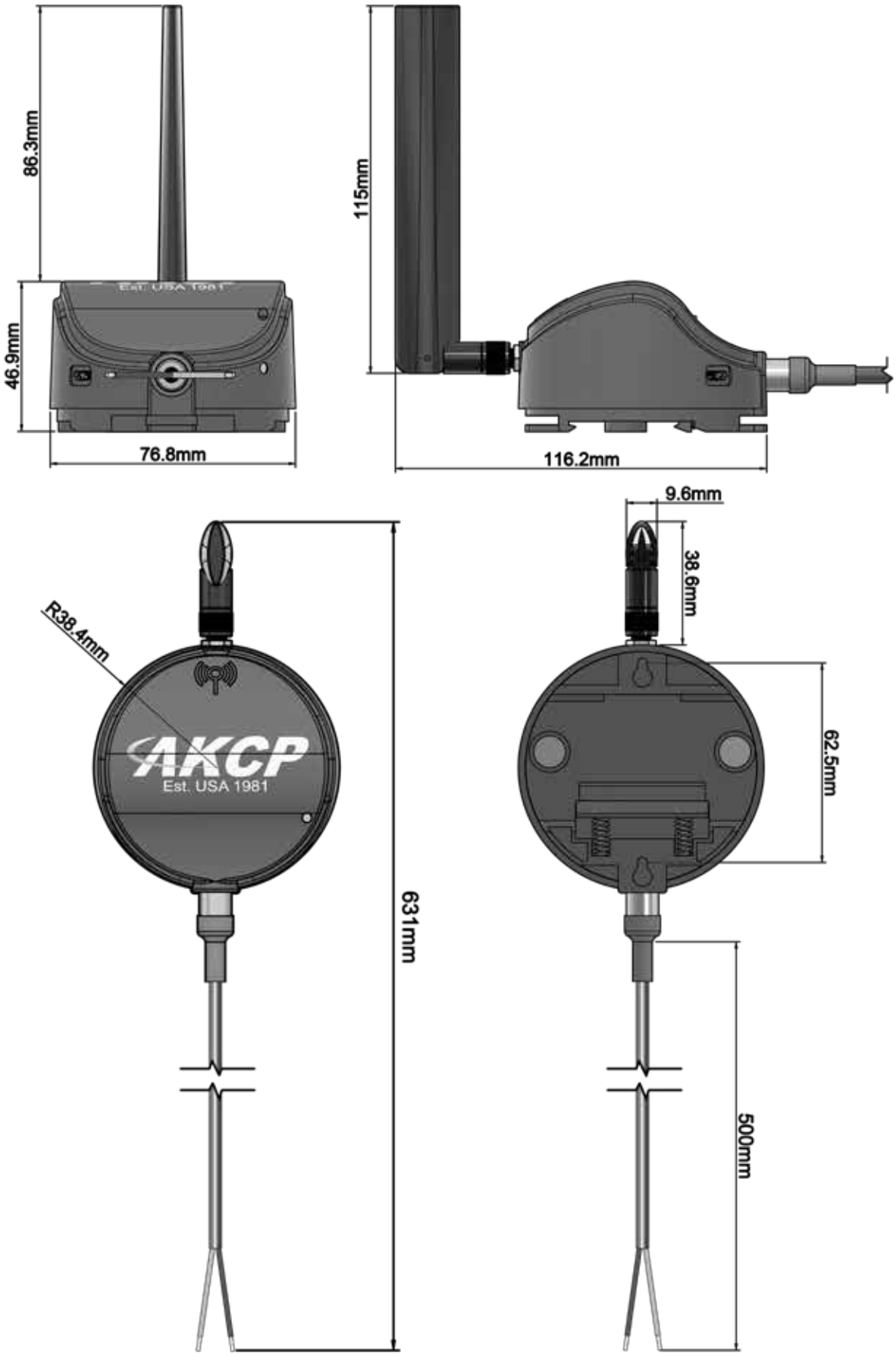
Calculate flow rates with pulse counting

This battery pwoerd LoRa™ sensor has a two wire contact input for connecting to third aprty equipment that output a pulse. For example, a flow meter with a pulse output, where the number of pulses counted per minute is related to the liter per minute flow rate, or an anemometer for measuring the windspeed.



Dimension	Ø77 X 47mm
Mounting	DIN Rail, Magnetic, Wall Hanging
Power source :	Internal non-removable batteries or via micro-USB port
Power Consumption :	Average 12 mWatt Up to 10 years of battery life
Status Indication	LED indication for Mode
Components	Manufactured using highly integrated, low power surface mount technology to ensure long term reliability.
Operating Environment	Temperature : Min. -35° C – Max.80° C Humidity: Min. 20% – Max. 80% (Non-Condensing)
LoRa (R) Radio	- EU : 863~870Mhz Max TX Power +14dBm Duty Cycle 1% - US : 902~915Mhz Max TX Power +20dBm - AS: 920~925Mhz Max TX Power +14dBm Duty Cycle 1%
Certification	FCC Part15C, CE EN300220-2
Dry Contact for pulse counting	1x Discrete Dry Contact inputs
Input	Pulse counting : up to 1kHz pulse signal Flow metering
Important Note:	Don't apply any voltage to the dry contact inputs

LBPC - Technical Drawing



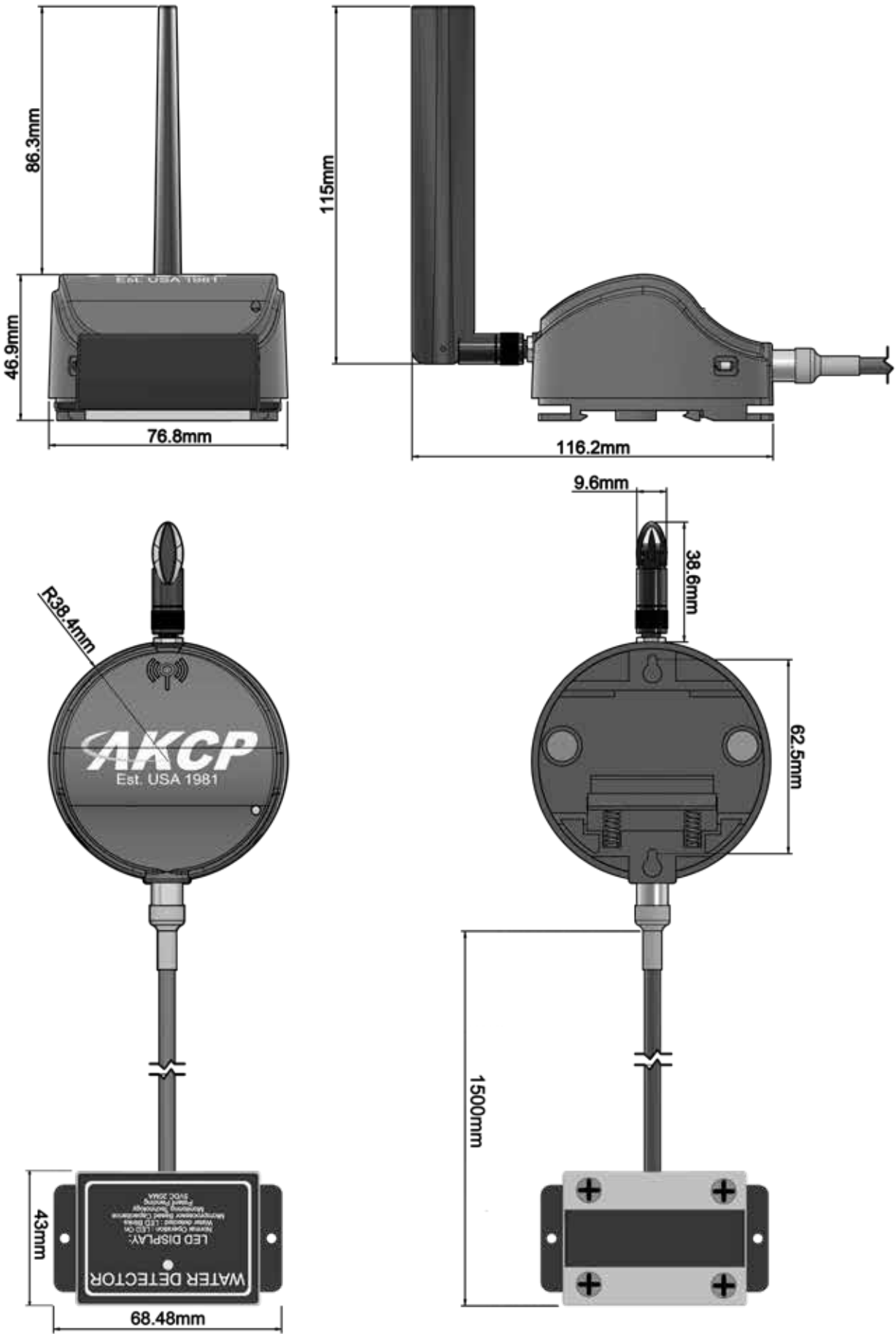
LoRa™ Battery Water Sensor

Wireless Spot Water Sensor

This LoRa™ sensor should be USB powered, with the internal battery as a backup power source. The spot water sensor will alarm when water is detected, using the same technology as our wired spot water detector, it can even detect the presence of de-ionised water.

Dimension	Ø77 X 47mm
Mounting	DIN Rail, Magnetic, Wall Hanging
Power source :	Via micro-USB port (Internal non-removable batteries for backup)
Power Consumption :	Average 12 mWatt, without sensor connected
Status Indication	LED indication for Mode
Components	Manufactured using highly integrated, low power surface mount technology to ensure long term reliability.
Operating Environment	Temperature : Min. -35° C – Max.80° C Humidity: Min. 20% – Max. 80% (Non-Condensing)
LoRa (R) Radio	- EU : 863~870Mhz Max TX Power +14dBm Duty Cycle 1% - US : 902~915Mhz Max TX Power +20dBm - AS: 920~925Mhz Max TX Power +14dBm Duty Cycle 1%
Certification	FCC Part15C, CE EN300220-2
Measurement Range	Wet or Dry (-20°C +60°C)
Measurement Accuracy	able to measure distilled water
Sensor Type	patent pending, microprocessor controlled, capacitance measurement technology
Communications Cable	RJ45 jack to sensor using UTP Cat 5 wire, Maximum extension cable length 150m (500 ft.) with approved low capacitance shielded cable or UTP.
Measurement Rate	multiple readings every second
Measurement Range	Wet or Dry (-20°C +60°C)
Measurement Accuracy	able to measure distilled water
Sensor Type	patent pending, microprocessor controlled, capacitance measurement technology
Measurement Rate	multiple readings every second
Important Note:	We do not recommand to use the Spot Water Sensor without USB power.

LBWS-5 - Technical Drawing



LoRa™ Cabinet Analysis Sensor (LBCAS)

Differential Pressure, Thermal Maps and Dry Contacts

The Cabinet Analysis Sensor with LoRa™ radio pairs with the L-DCIM to give reports on a per cabinet basis. Use LBCAS to identify hotspots and problem areas in your data center. Powered by 4x rechargeable AA batteries or USB power. Mounting of the sensor is by magnetic attachment or DIN rail. The sensor is also available in a wired sensor port verison for use with the SPX+.

The LBCAS is one of the sensors included in the Data Center Analysis Toolkit that can be used to diagnose problems and for data center audits.

A : External Di-Pole Antenna
B : USB Power / Recharge
C : Differential Pressure Ports
D/E : RJ45 connection for thermal map string
F/G : Dry Contact I/O / AC Voltage Detection
H : Mode Button

Differential Pressure and Thermal Maps

Differential Pressure (DP)

The DP sensor check that you have a positive airflow through the cabinet. As air flows from high to low pressure it is imperative to check the pressure differential. Good airflow, equates to efficient cooling. The greater the pressure differential, the faster the airflow and the higher the cooling capacity. A low differential pressure can lead to CPU fans working harder and reducing their lifespan.

Thermal Map (TM)

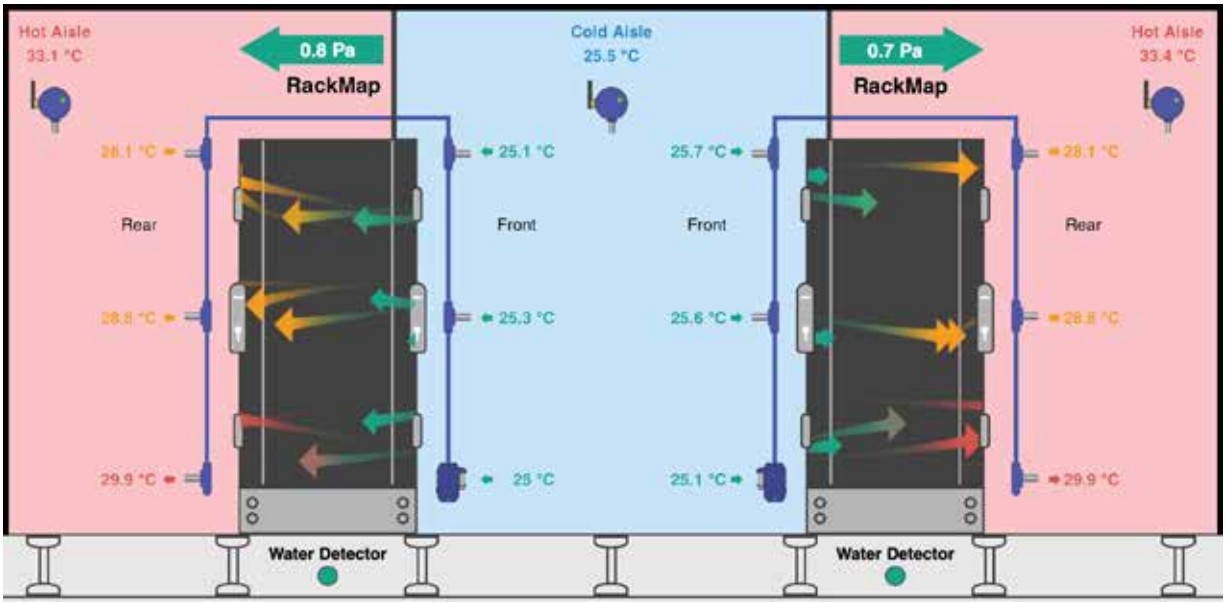
The thermal map sensor consists of 6 sensors in a string (2x strings of 3). Sensors are positioned at the top, middle and bottom of the rack, front and rear. Monitoring the inlet and outlet air temperatures, and the temperature differential from front to rear (Delta T).Combined with the DP sensor you can identify if hotspots are due to poor airflow.

Dry Contacts

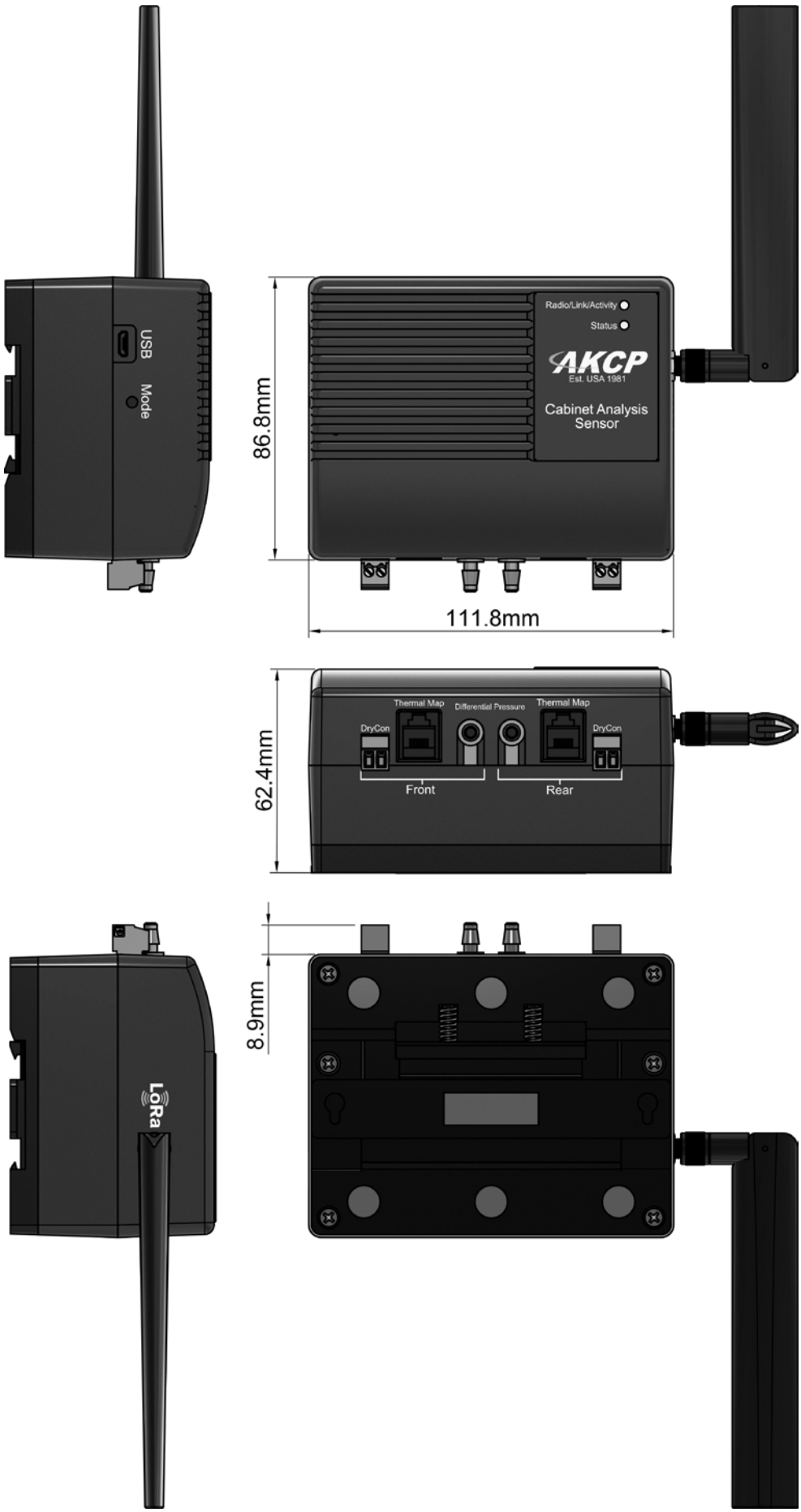
Use the dry contacts to monitor the front and rear door status, or an alarm output other equipment (eg. UPS).

Data Center Analysis and Intelligent Containment

Rack map views will display the thermal map data, front to rear temperature differentials and pressure gradient.Move the sensor from cabinet to cabinet easily with the magnetic mounts, and create a complete analysis report of your data center, or install for 24/7 monitoring and utilize intelligent aisle contianment maps in AKCPro Server.



LBCAS - Technical Drawing



LBCAS - Technical Specification

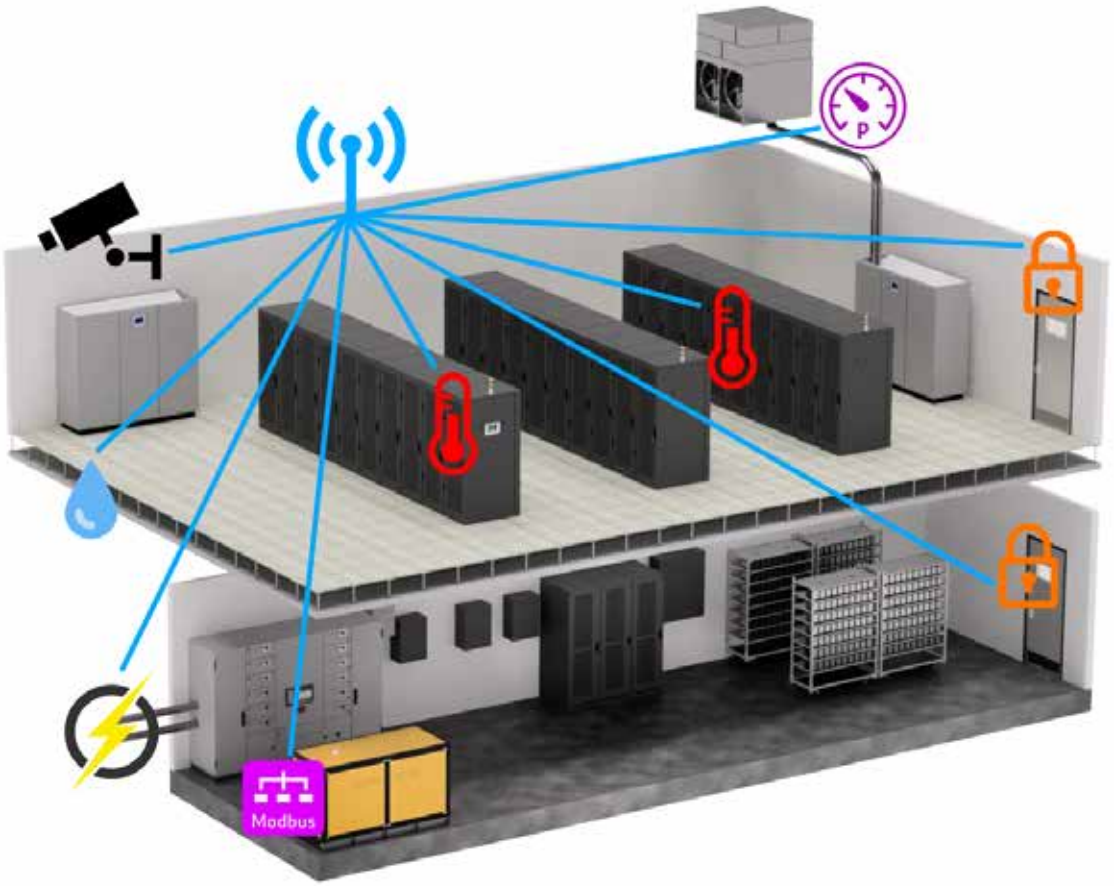
LBCAS	**Wireless Cabinet Analysis Sensor (Differential pressure, thermal maps and 2x dry contact door inputs)**
Dimension	86mm X 111mm X 63mm
Mounting	Desktop, Wallmount, Din rail, Magnetic
Power source :	4xAA Internal recheargeable NiMH batteries or via micro-USB port
Power Consumption :	20mA
Status Indication	LED indication for Connectivity LED indication for Status
Components	Manufactured using highly integrated, low power surface mount technology to ensure long term reliability.
Operating Environment	Temperature : Min. -35° C – Max.80° C Humidity: Min. 20% – Max. 80% (Non-Condensing)
LoRa (R) Radio Regional plans	- EU868 : 863~870Mhz Max TX Power +14dBm Duty Cycle 1% - US915: 903~915Mhz Max TX Power +17dBm - AS923 : 923~925Mhz Max TX Power +14dBm Duty Cycle 1% - KR920 (Korea) : 922~923Mhz Max TX Power +14dBm Duty Cycle 1% - IL917 (Israel) : 915~917Mhz Max TX Power +14dBm Duty Cycle 1%
Certification	FCC Part15C, CE EN300220-2
Environment monitoring	
Temperature	6x Temperature sensor values 3x Differential Temperature sensor values
Measurement Range :	-40°C to +75°C -40°F to +167°F
Measurement Resolution :	0.1°C increments 0.2°F increments
Measurement Accuracy :	Maximum ±0.3 at -40°C, minimum ±0.3 at +25°C and ±0.3 at +75°C Maximum ±0.6 at -40°F, minimum ±0.6 at +25°C and ±0.6 at +167°F
Humidity	2x Humidity sensor values
Measurement range :	0 to 100% Relative humidity
Resolution :	1%RH increments, 0.01%RH sensor reading
Accuracy at :	25°C ±2%RH
Differential Pressure	1x Differential Pressure value
Measurement range :	± 125 Pa (±0.5 inH2O / ±1.25 mbar)
Resolution :	0.01 Pa increments
Accuracy at :	25°C ±0.5%
Dry Contact	1x Discrete Dry Contact inputs
Input	Switch type dry contact input: open or close Edge counters
Type	- Isolated (5 to 24V DC/AC) - 5V pull-up, non-isolated
Important Note:	Note 1: for 5V pull-up non-isolated, they all share the same ground. Care should be taken on grounding when connecting th inputs to the dry contacts Note 2: for 5V pull-up non-isolated, don't apply any voltage to the dry contact inputs

Data Center Monitoring

AKCP has been the worlds leading supplier of data center monitoring solutions for over 30 years. Deploy our wired or wireless sensor technology for monitoring the environmental conditions, security and power in your data center.

- Secure individual cabinets with RFID Swing Handle Locks
- Secure doors and containment aisles with RFID access control
- Monitoring of temperature and humidity for individual cabinets or aisles.
- Underfloor water leak detection
- Monitoring complete power train with live PUE calculations
- Integration to third-party equipment via SNMP or Modbus virtual sensors
- HVAC control and monitoring of pipe pressures and temperatures
- Synchronize sensor events with IP video cameras

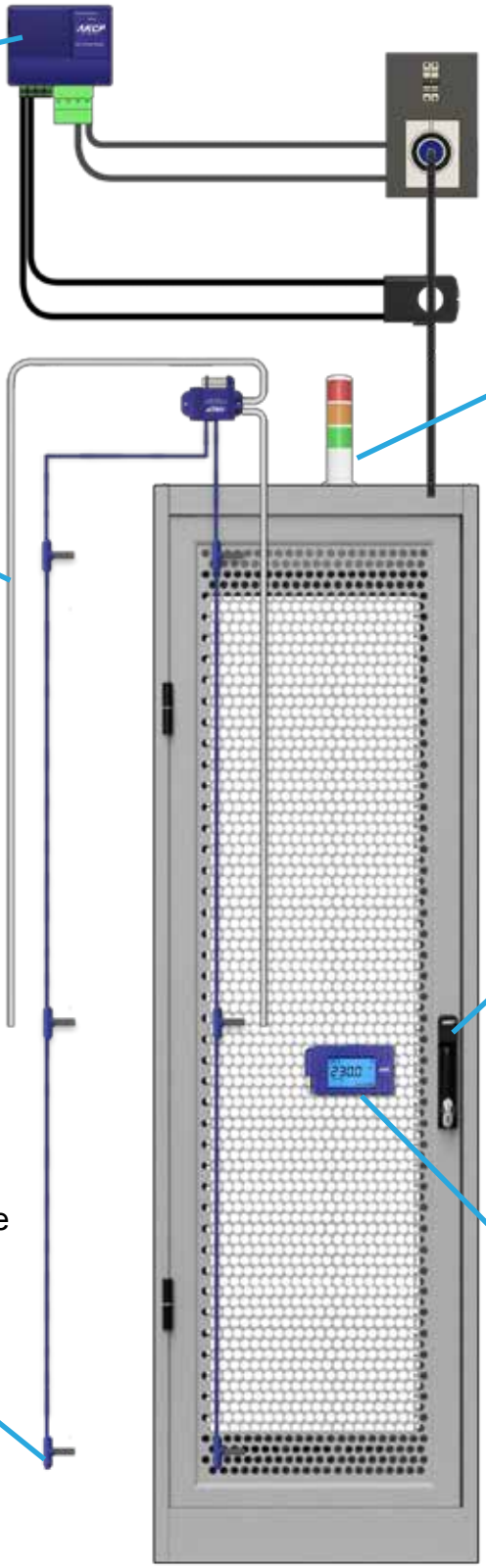
Rapid deployment of the LoRa™ wireless sensor system with a single L-DCIM gateway, embedded software (AKCPro Server) and battery powered sensors.



Data Center Monitoring - Wired Rack+ Solution

The wired Rack+ solution is a comprehensive monitoring system that can be installed on each cabinet. Sensors are connected to an SPX+ base unit. Sensor data is displayed on AKCPro Server DCIM central monitoring software installed on a PC or L-DCIM

Power Monitoring (PMS)
Monitor power with billable grade accuracy, 1ph and 3ph power with split CT for easy installation. Alternative 6 channel current only monitoring available.



Sensor Status Light (SSL)
Visual representation of cabinets status with green, orange and red status light

Differential Pressure
Check pressure differential between front and rear of cabinet, ensure proper airflow and cooling of your cabinet.

RFID Swing Lock (SHL)
Control access to the cabinet, monitor door status, generate access reports and monitor side panels for removal

Cabinet Thermal Map
Check front and rear temperature and humidity at top, middle and bottom of cabinets, as well as front to rear temperature differential (ΔT)

LCD (LCD-TMP)
LCD Display shows sensor data, status and includes built in temperature sensor

Data Center Monitoring - Wireless LoRa™ Rack+ Solution

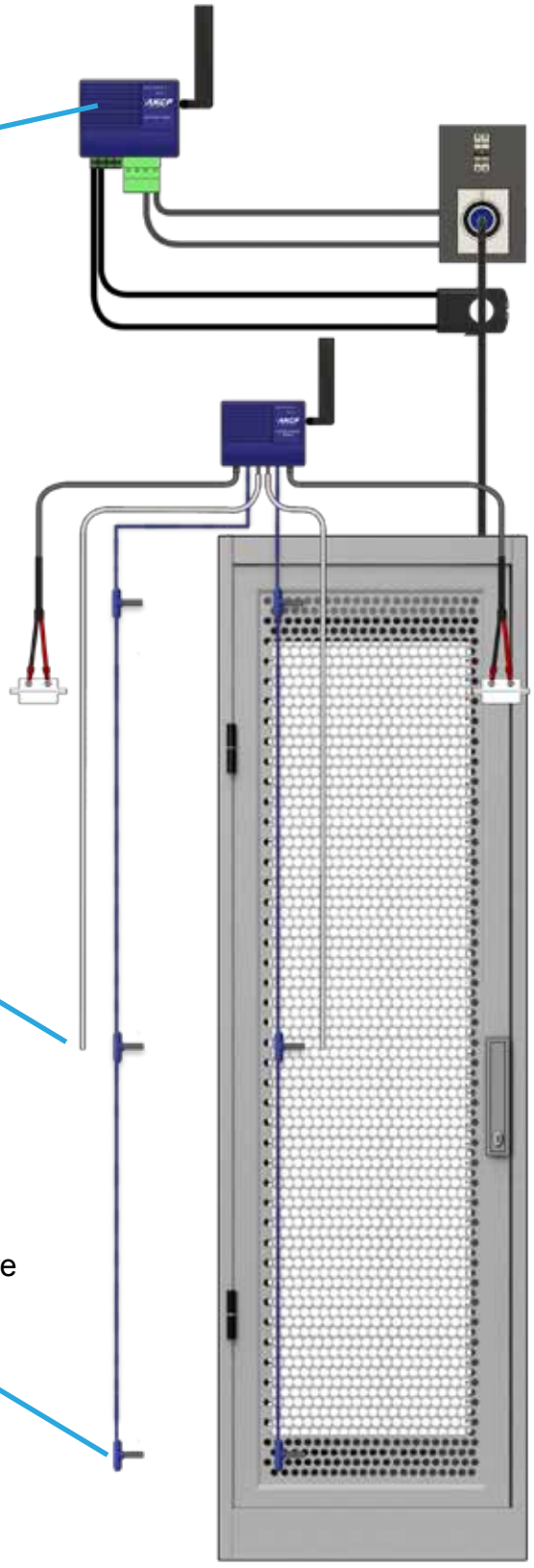
The wireless Rack+ system can be rapidly deployed, LoRa™ long range radio technology with low power battery powered sensors and the L-DCIM gateway with integrated AKCPro Server gives a secure, private wireless network for your Data Center monitoring system.

Power Monitoring (PMS)
Monitor power with billable grade accuracy, 1ph and 3ph power with split CT for easy installation. Alternative 6 channel current only monitoring available.

Door Status
Monitor front and rear cabinet door status (open or closed) with security sensors

Differential Pressure
Check pressure differential between front and rear of cabinet, ensure proper airflow and cooling of your cabinet.

Cabinet Thermal Map
Check front and rear temperature and humidity at top, middle and bottom of cabinets, as well as front to rear temperature differential (ΔT)



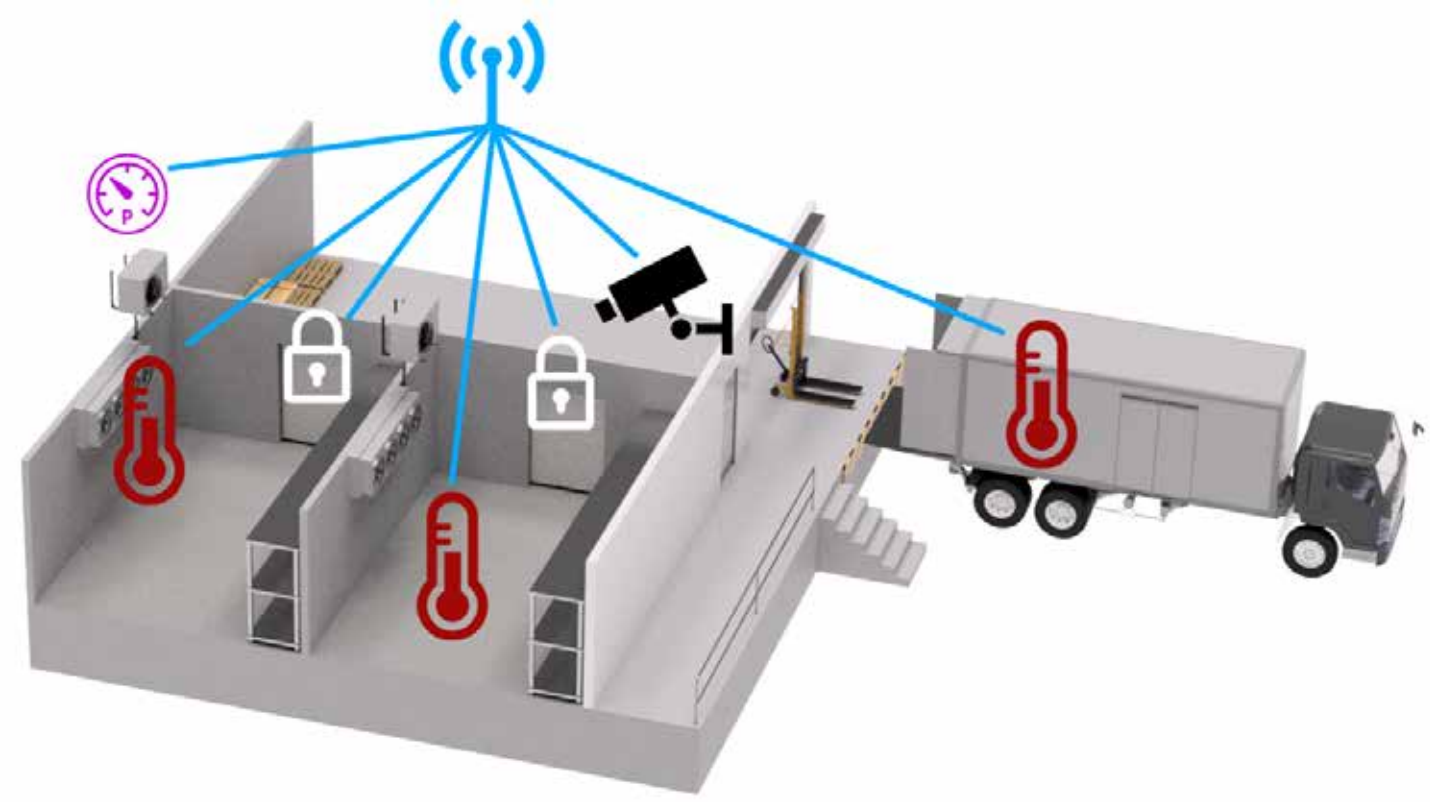
Data Center Monitoring - Data Center Analyzer (DCA)

Self contained LoRa™ wireless, portable toolkit. Conduct troubleshooting on a per cabinet basis, or audit the complete data center with individual cabinet analysis reports. Identify hotspots, airflow issues and power problems. No need to connect with the data center network, connect directly to the L-DCIM

Cold Storage and Distribution

Cold storage facilities and cold chain distribution can be monitored utilizing the AKCP LoRa™ wireless sensor solution. This makes for easy installation to monitor your complete cold storage facilities. From temperature and humidity monitoring, HVAC and refrigeration compressors, door security and full access control AKCP has you covered.

- Monitor the temperature and humidity within cold storage rooms
- Check doors are closed, synchronize door events with CCTV camera feeds
- Monitoring of refrigeration systems, compressors and pressures
- Install LoRa™ wireless sensors in cold chain distribution trucks
- Realtime monitoring of trucks location and temperature over cellular network
- Integration to third-party equipment via SNMP or Modbus virtual sensors
- HVAC control and monitoring of pipe pressures and temperatures
- Monitoring from your cellphone, tablet or PC
- Private network with no recurring fees, or cloud service optional.



Customer - Naivas Cold Storage Monitoring

naivas
saves you money

Naivas, Kenya's largest supermarket and online delivery service, selected AKCP Wireless LoRa™ based monitoring system for quality control temperature and humidity monitoring of their cold storage environment.

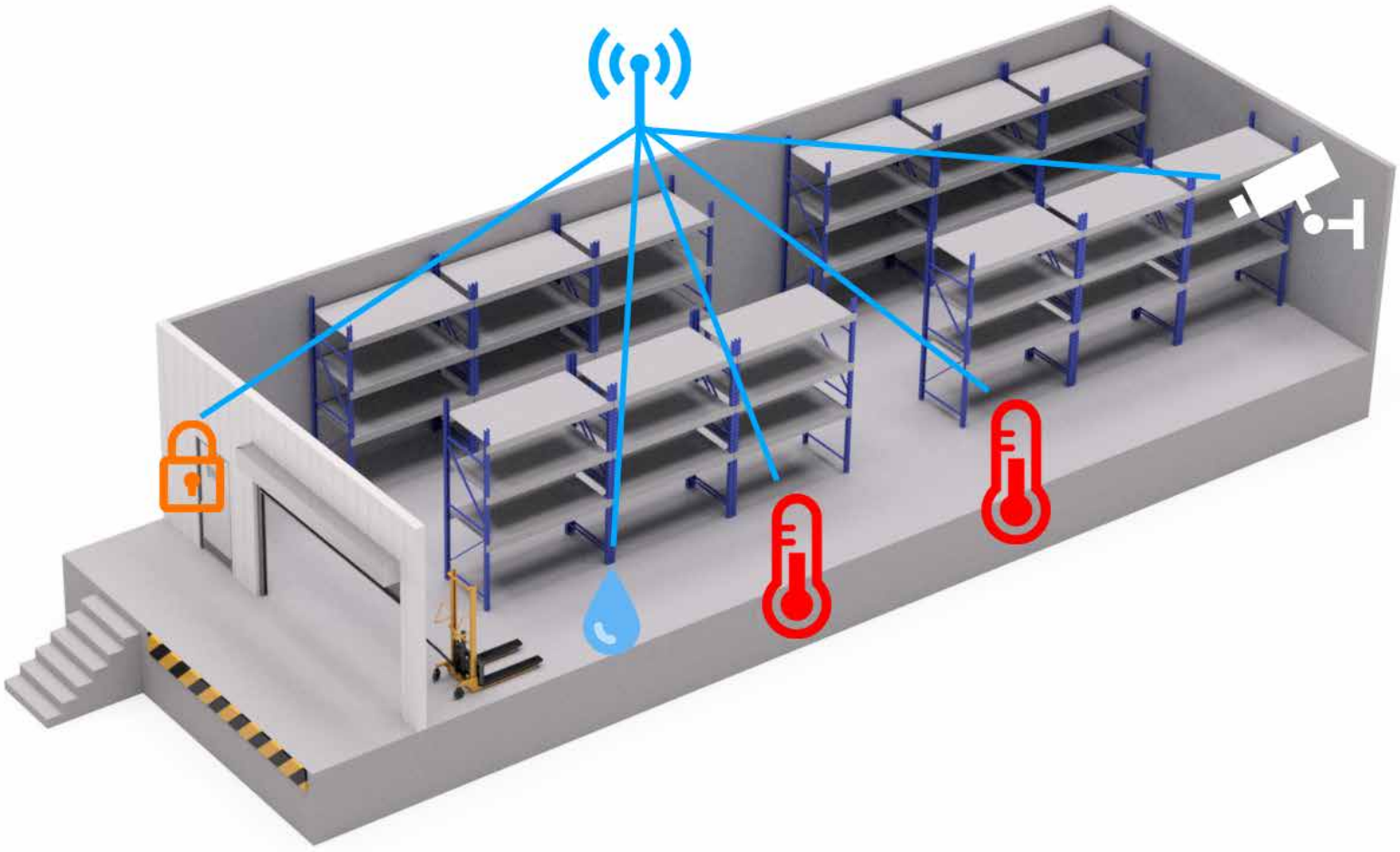
Installed at the Naivas Beef Butchery, cold storage and dispatch areas the L-DCIM provided centralized monitoring, graphing and alerting. LBTH, LoRa™ Battery-powered dual temperature and humidity sensors were deployed in key areas. Easy installation with no communication cables or power required. Expansion to other areas of the building after the initial trial period was simple, by deploying additional LBTH sensors.

The project was done in conjunction with our dealer in Kenya, BSA (www.bsa.co.ke)

Warehouse Monitoring

Warehouse environmental monitoring is critical when storing products that require a specific temeprature range. Typically warehouse spaces are vast, and bringing cables and power into the racking is prohibited for safety reasons. This makes the AKCP wireless sensor solution an ideal choice.

- Temperature and humidity monitoring in your warehouse environment
- Water leak detection, protect products from water damage
- Door contacts with access events sycnhronized to video footage
- Private network with no recurring fees, or cloud service optional
- Realtime monitoring over your cellphone, tablet or PC



Customer - Lufthansa Technik Warehouse Monitoring

Lufthansa Technik, the maintenance arm of the German airline Lufthansa, have selected AKCP monitoring devices for use in several of their maintenance hubs worldwide.

In the business of aircraft maintenance time plays a crucial role, and so does the timely supply of the mechanical, consumable and expendable spare parts, thus Lufthansa Technik keeps thousands of part numbers permanently in stock at each of their hubs.

There are industry regulations regarding the storage of many of these parts. There is a wide range of temperature and humidity thresholds for different parts, such as batteries, composites, oils or solvents. In order to constantly monitor the storage conditions AKCP technology has been deployed.

Lufthansa Technik Logistik Services (LTLS) implemented the AKCP environmental monitoring solution at their warehouses in Germany. The system is mainly based on the sensorProbe4 and sensorProbe8 devices.

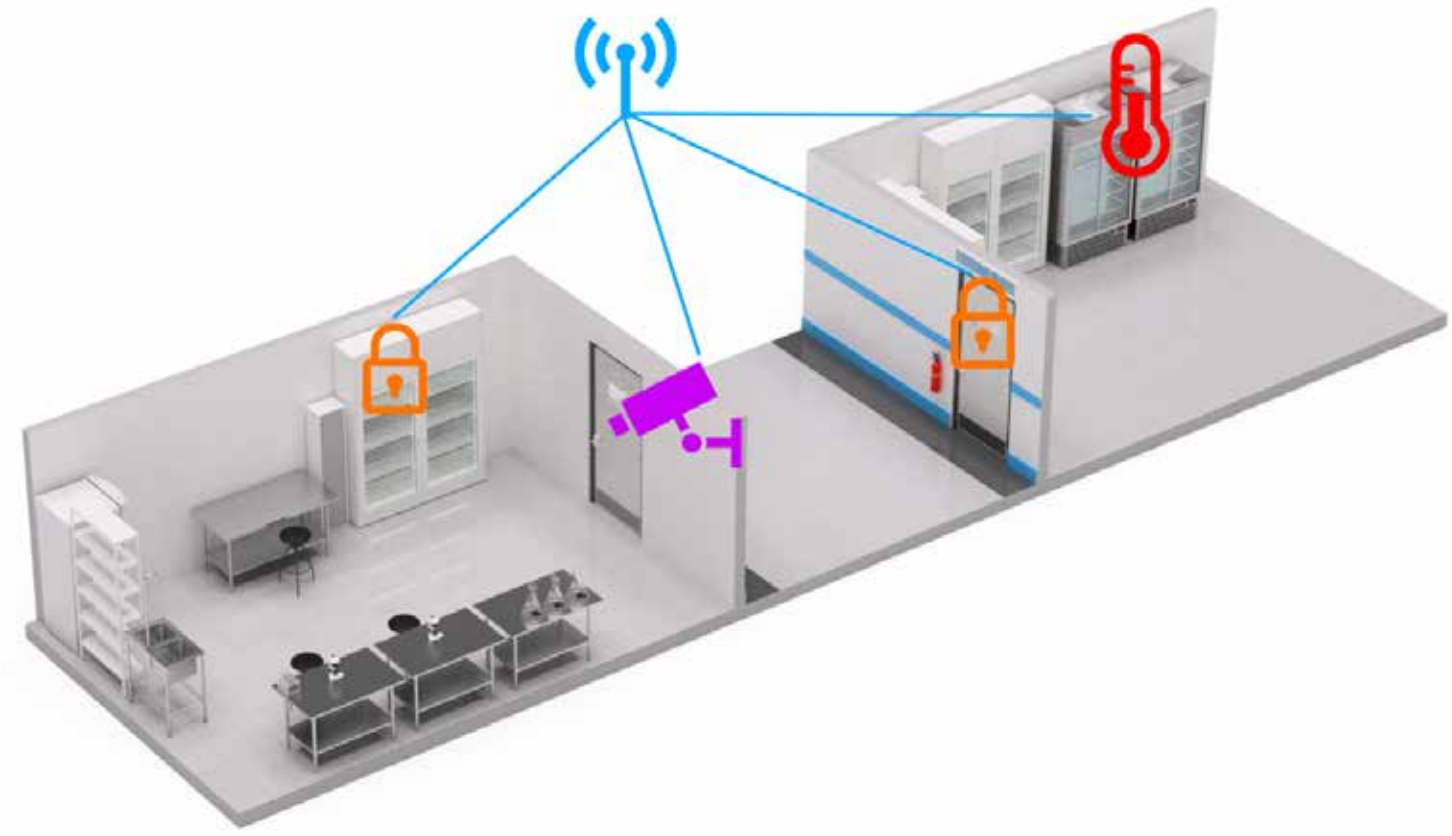
These are coupled with single port dual temperature and humidity sensors, for general warehouse and humidity controlled areas, and the waterproof version, which is used to monitor cold storage areas. In addition to this, a GSM system based on the SP2+ with internal GSM modem is in place at remote warehouses that are not connected to the company's main network.

After the initial installation at their German warehouses, Lufthansa Technik have begun the installation at their other global locations. Sofia (Bulgaria) has already been installed, and now Aguadilla (Puerto Rico), Budapest (Hungary) and Shannon (Ireland) are to follow with similar setups at each, ensuring the warehouse teams have all the information they need to ensure the safe storage of aircraft materials.

Pharmaceutical Monitoring

Laboratories, Pharamcies and Hospitals are required by government regulatory requirements to store vaccines, drugs and other materials in a monitored environment. Certain controlled drugs require secure cabinets and storage. Using the AKCP LoRa™ solutions you can fulfil these monitoring requirements in a simple to install system. LoRa™ technology gives excellent penetration through walls and refrigerators and even secured re-inforced cabinets.

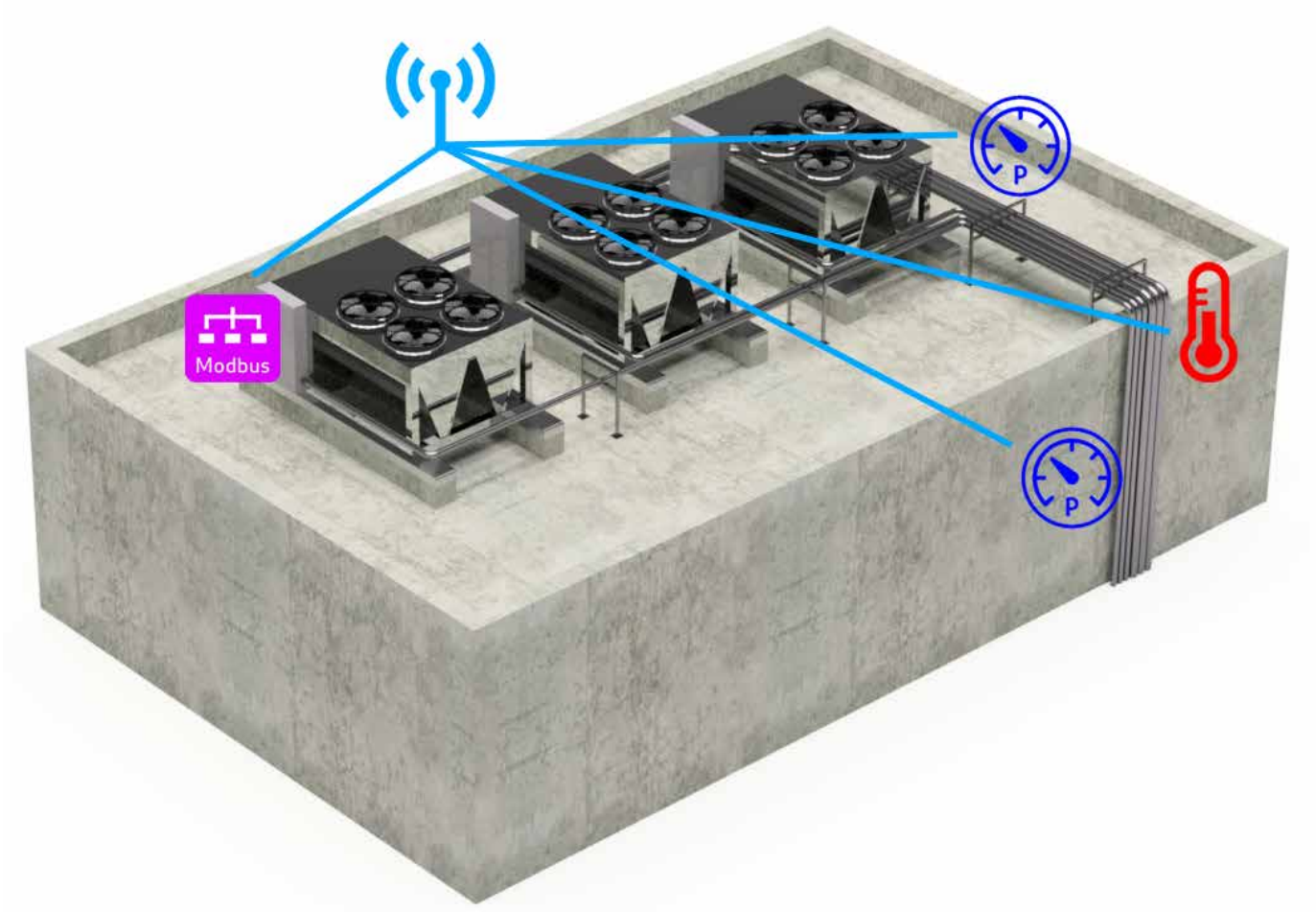
- Temperature and humidity monitoring in your drug cabinets and refrigerators
- Door contacts for with synchronization of access events with video feeds
- RFID access control system for laboratories and secure storage
- Private network with no recurring fees, or cloud service optional
- Realtime monitoring over your cellphone, tablet or PC
- Battery powered sensors, no need for drilling holes in refrigerators



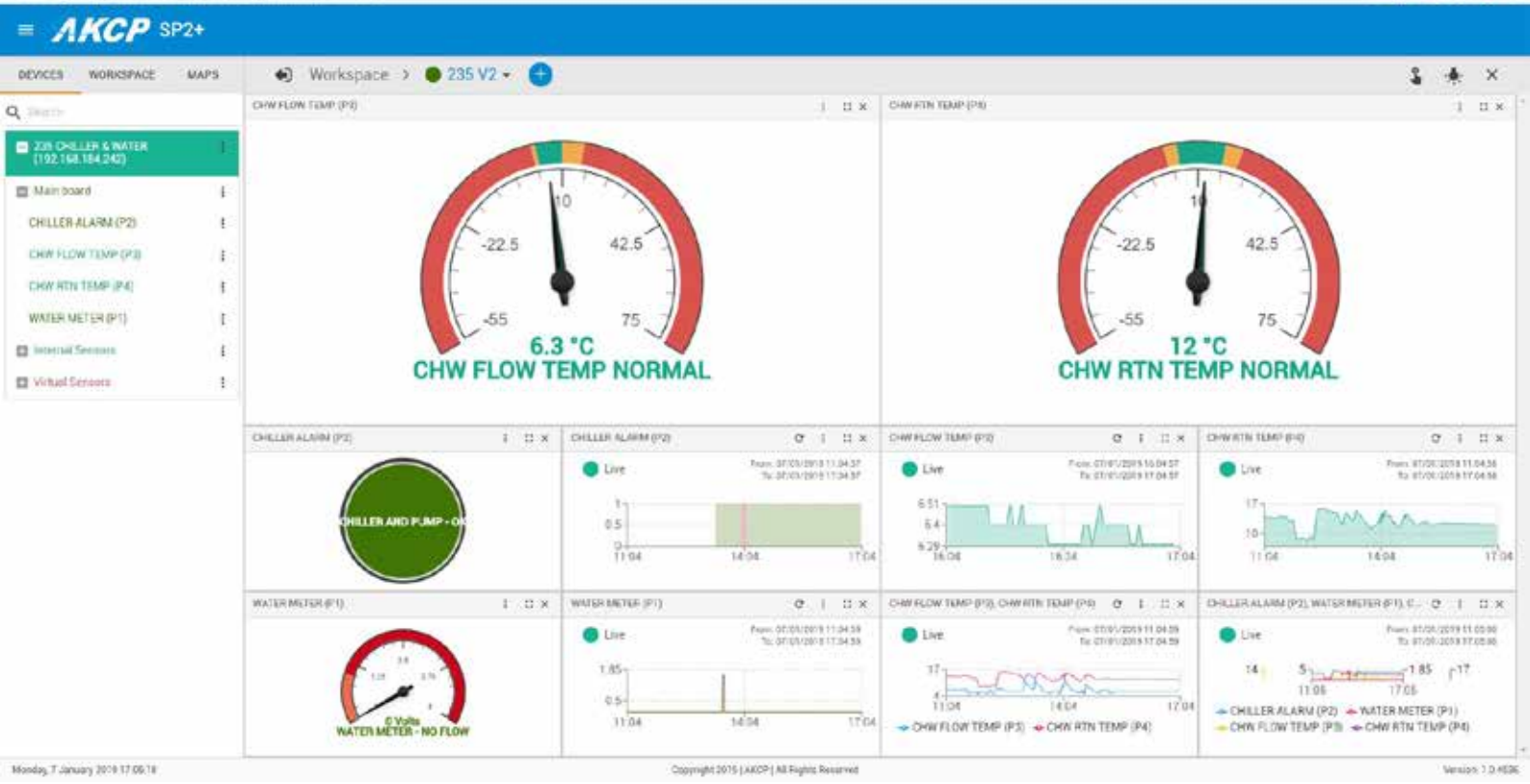
HVAC Monitoring

Large building HVAC systems require monitoring to ensure proper and efficient operation. Regular and preventative maintenance saves money in expensive repairs and downtime. Battery powered LoRa™ sensors can be deployed in difficult to reach areas that HVAC ducting and pipes are fixed.

- Modbus - LoRa™ gateway interfaces your HVAC system to the AKCP platform
- Monitoring of compressor efficiency, heat and vibration
- Sensors measure pressure at important points in your HVAC system
- Temperature sensors on pipes for outgoing and return flow temperatures
- Integration to BMS systems via SNMP



Customer - HVAC Monitoring in New Zealand



AKCP have installed monitoring for HVAC chillers at several locations in New Zealand. In these cases the HVAC systems had an old analog control system for the central plant. The SP2+ was deployed to add intelligence and remote monitoring capabilities to the installation. The SP2+ was selected for its compact size, low cost and rugged design.

The SP2+ interfaced to a Siemens flow meter through our isolated digital voltmeter. A dry contact input monitored the chiller fault alarm output, and two temperature sensors monitored the chilled water out and return flow temperature.

A customized dashboard display was setup in the SP2+ web UI. The AKCP monitoring solution provided the end user with a simple and low cost upgrade path to bring intelligent HVAC monitoring to their building and facilities management system.