Wireless Tunnel™ Cabinet Analysis Sensor (WTS-CAS)

Differential Pressure, Thermal Maps and Dry Contacts

The Cabinet Analysis Sensor with Wireless Tunnel™ radio pairs with the WTG to give reports on a per cabinet basis. Use WTS-CAS 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 WTS-CAS 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.
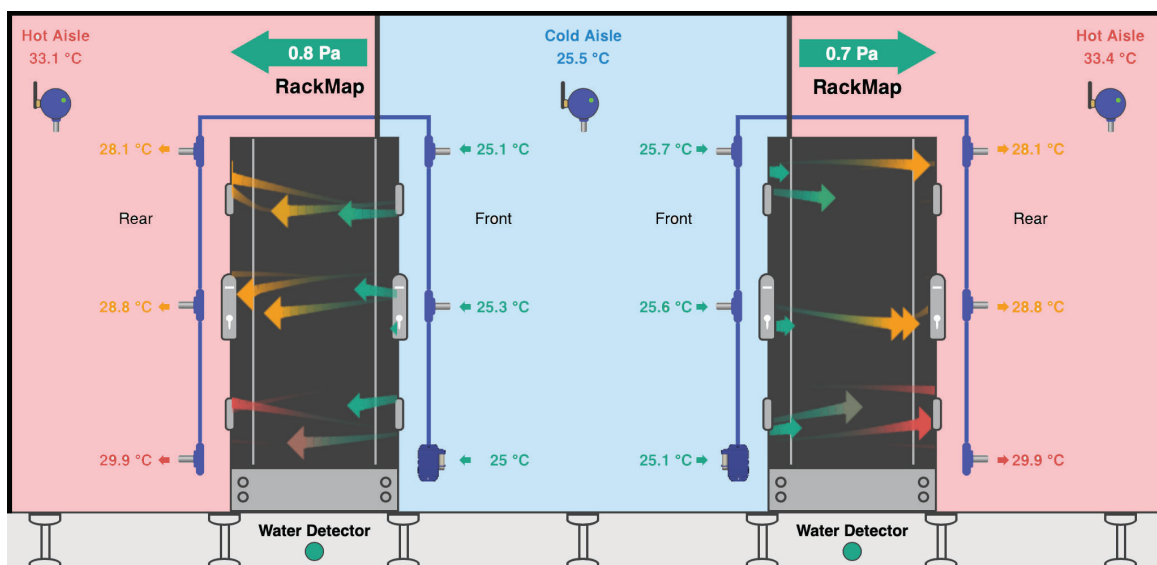
Thermal Map (TM)

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.
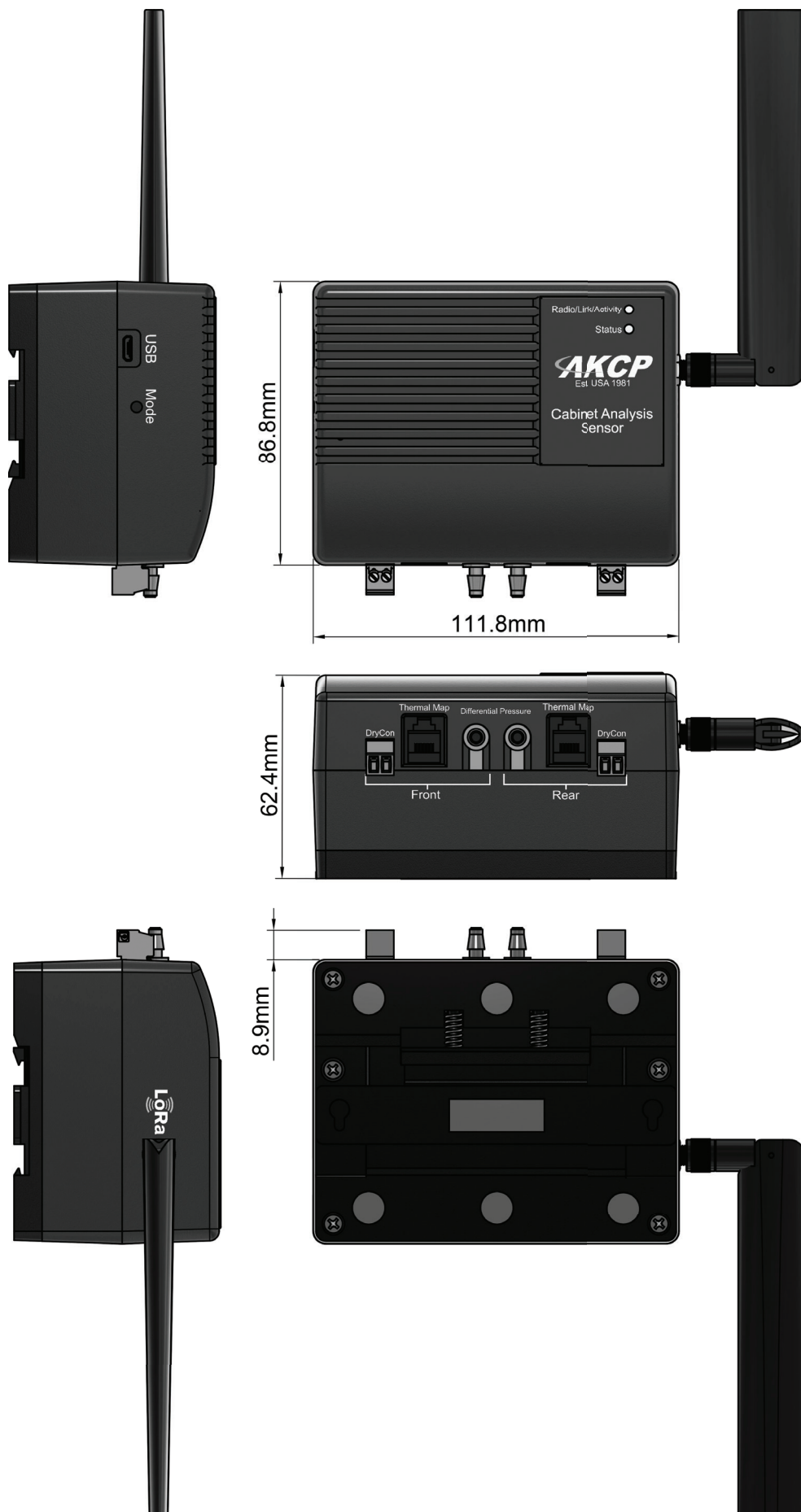
Dry Contacts

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 containment maps in AKCPro Server.

WTS-CAS- Technical Drawing

USB

Mode

86.8mm

Radio/Link/Activity
Status

AKCP
Est USA 1981

Cabinet Analysis
Sensor

111.8mm

DryCon Thermal Map Differential Pressure Thermal Map DryCon

62.4mm

Front   Rear

LoRa

8.9mm

WTS-CAS- Technical Specification

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 : 863~868Mhz, Max TX Power +14dBm, Duty Cycle 1% - US915: 903~915Mhz, Max TX Power +17dBm - AS923 : 920~925Mhz, 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
Interface	Micro-USB port for powering, adding and upgrading to the Gateway base unit
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	Typical 20mA
Environment monitoring	
Temperature	6x Temperature sensor values 3x Differential Temperature sensor values
Measurement Range	Typical : * ±0.3 from -40ºC to +75ºC * ±0.4 from -40ºF to +167ºF Maximum : * ±0.4 at -40ºC and ±0.4 at +75ºC * ±0.7 at -40ºF and ±0.7 at +167ºF
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%
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
Gateway sensor count	19 (3 + 16)
Important Note	Note 1: for 5V pull-up non-isolated, they all share the same ground. Care should be taken on grounding when connecting the inputs to the dry contacts Note 2: for 5V pull-up non-isolated, don't apply any voltage to the dry contact inputs