



**FROG ENGINEERING**



**MICRO DATACENTER**

H-42U W800 D1000

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# MICRO DATACENTER H-42U W800 D1000

**OVERVIEW**



## Technical Details

### Features

19" Device Compatibility  
T-4000 Air Conditioning  
Electronic Swinghandle  
Water Sensor  
Heat Sensor  
Humidity Sensor  
Smoke Sensor  
Air Flow Sensor  
Switch  
PDU

### Dimensions

Size : 42U  
Width : 800 mm  
Height : 2218 mm  
Depth : 1000 mm

### Material

1.5 mm Galvanized

### Appearance

Finish Surface : Powder Coating  
Color : RAL9005

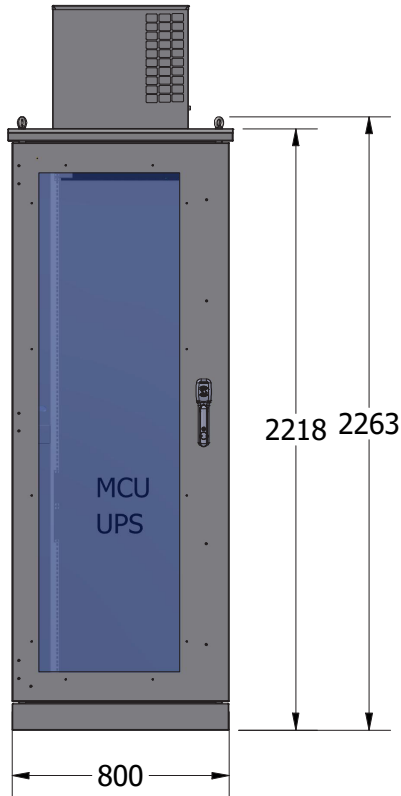


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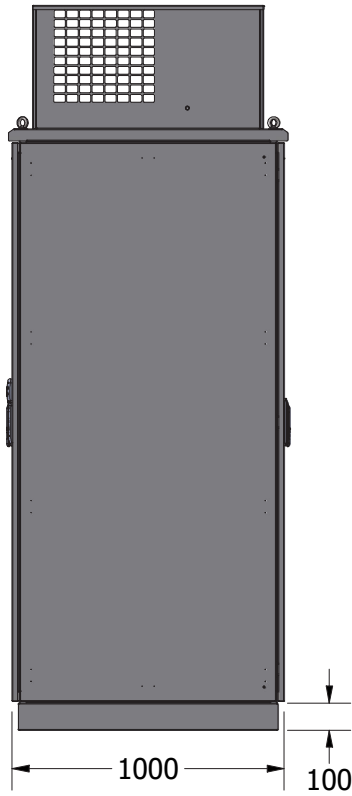
**MICRO DATACENTER  
H-42U W800 D1000**

**TECHNICAL DETAILS**

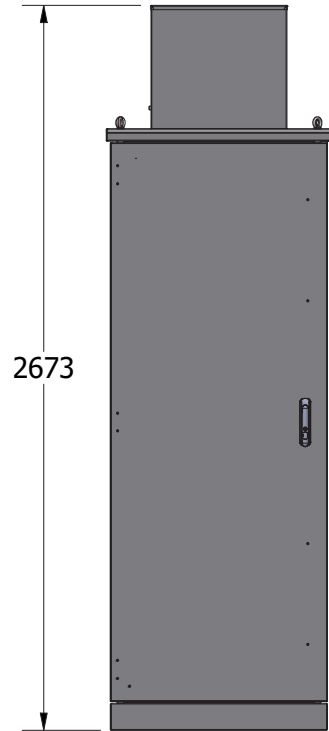
*Front View*



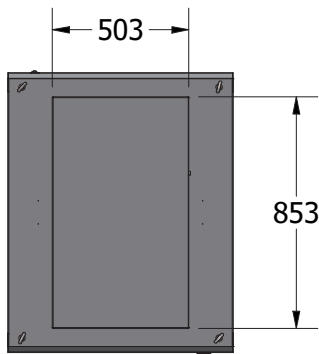
*Side View*



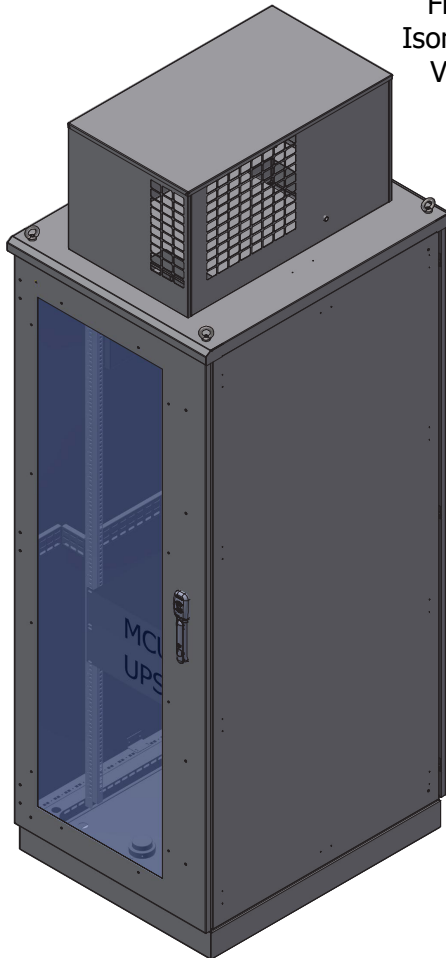
*Rear View*



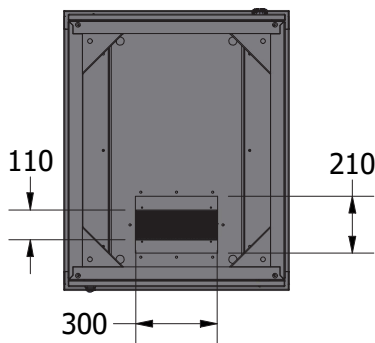
*Top View*



*Front Isometric View*



*Bottom View*

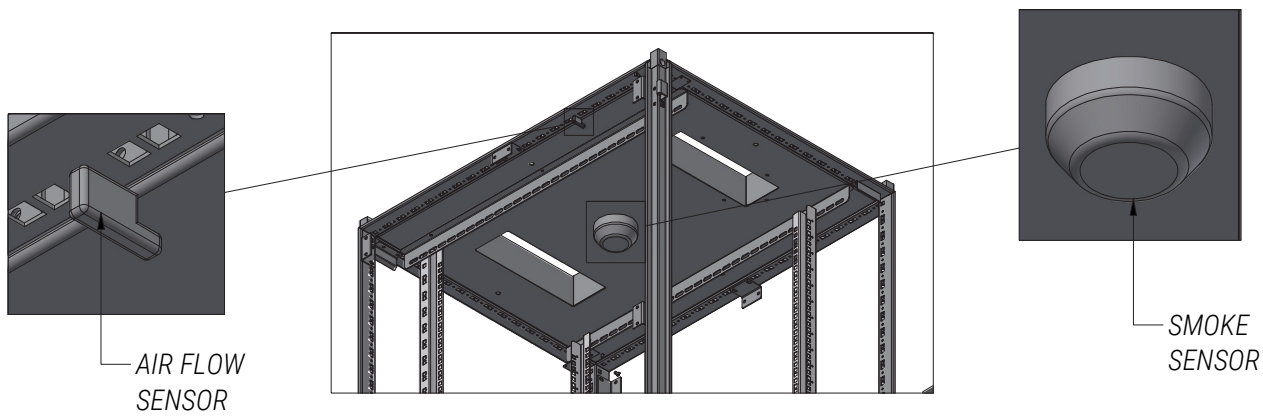
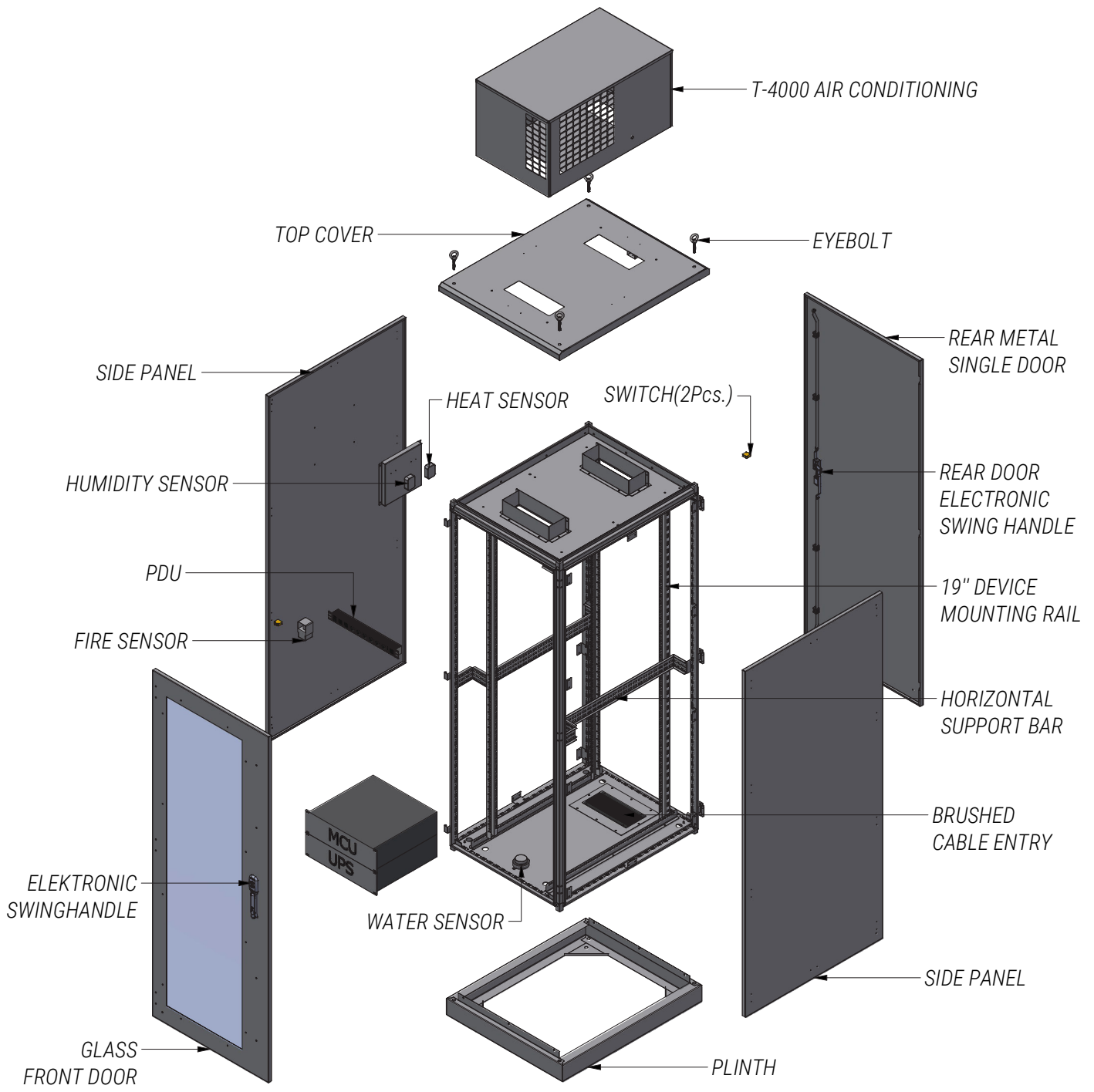




**FROG ENGINEERING**

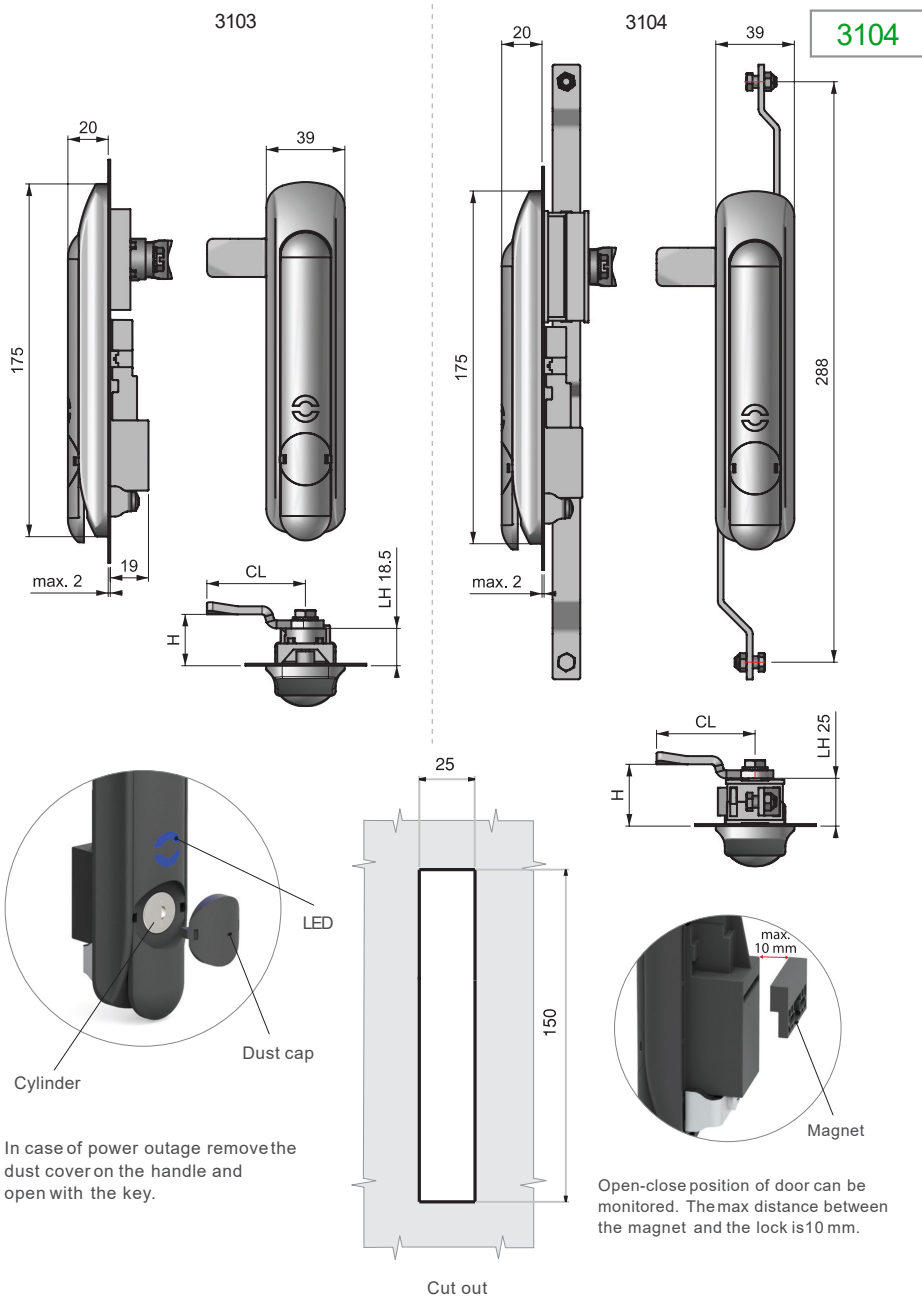
# MICRO DATACENTER H-42U W800 D1000

**EXPLODED VIEW**





**ELECTRONIC LOCKING SYSTEM**



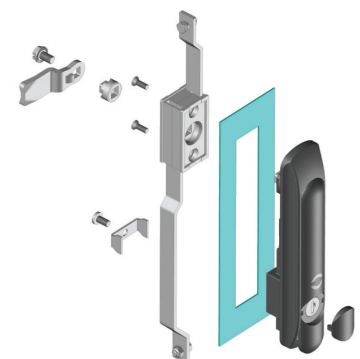
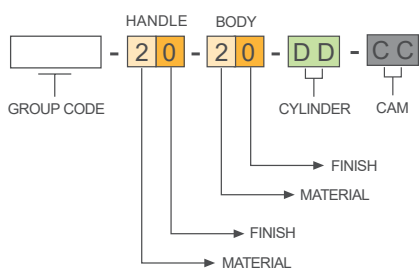
**3104 ELECTRONIC SWING HANDLE**



In case of power outage remove the dust cover on the handle and open with the key.

Open-close position of door can be monitored. The max distance between the magnet and the lock is 10 mm.

- MATERIALS**  
**BODY:** Polyamide DIN-EN ISO 1043-1 PA6 GFR30  
**HANDLE:** Polyamide DIN-EN ISO 1043-1 PA6 GFR30  
**CAM:** Steel



SPECIFICATIONS	
Stainless steel dust cap (Keyed alike)	40
Stainless steel dust cap (Keyed differ)	32

**ELECTRONIC LOCKING SYSTEM**

**ELECTRONIC SWINGHANDLE**

**3111**



High security electronic products to protect your organisation's data

**APPLICATIONS:**

- Rack cabinets
- Serverrooms
- Telecommunication
- Kiosks
- GSMnetwork cabinets









**Electrical Specifications:**

Operating Voltage: 12VDC  
 Operating Temperature: +60/-10 C  
 Nominal Operating Current:  
 Standby: 6mA  
 Lock/ Unlock: 75mA  
 Max. Current: 400mA

**PIN Connections;**

- PIN 1- GND
- PIN 2- +12V
- PIN 3- N/A
- PIN 4- Door Position Sensor
- PIN 5- Control Signal
- PIN 6- Handle Position Sensor

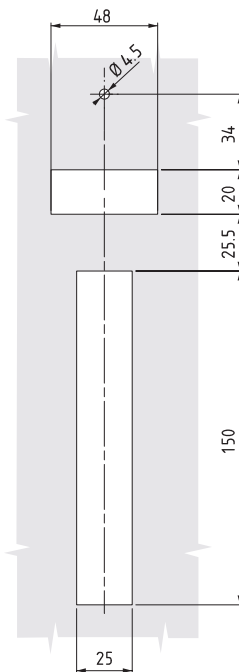
**Lock Warning Signs**

Signal 1		While opening the lock	LED 1 blinks fast.
Signal 2		While closing the lock	LED 2 blinks fast.
Signal 3		When the lock is open	Both LEDs blink fast.
Signal 4		When the handle is open	Both LEDs not lit
Signal 5		Error	Both LEDs blink slow.
Signal 6		Ready	Both LEDs are lit.

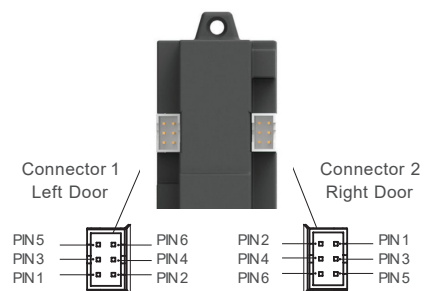
- Integrated RFIDreader.
- Ability to work mechanically in case of power outage
- Capable to inform door and handle status
- LED indicators both on lock and reader
- Supports RS485 protocol for other protocols please contact to Essentra
- Can be control a swinghandle (3101,3102,3103 and 3104) other than itself
- 12VDC working voltage
- LED indicators

**MATERIALS**

- BODY:** Polyamide DIN-EN ISO 1043-1 PA6 GFR30
- HANDLE:** Polyamide DIN-EN ISO 1043-1 PA6 GFR30
- CAM:** Steel



**PIN DETAILS**



**Connection Cable**



The same connectors are crimped both ends of the cable.

Cut out



### Monitoring of Cabinet Door & Lock

Physical Security



Thanks to this solution of the CL series, we separate the security of the cabinets with high importance from the authorization of the room and ensure that they are inaccessible without your knowledge and permission.

With our solutions, it can be cabin-based authorization as well as door-based. With the authorization method you prefer (card or password), you can instantly monitor and manage the status of the cabinet doors in all your locations via the Sensaway central management software.

#### CL 1004 / 1008 / 1016 Control Modules



- It provides control and management of cabinet doors and locks.
- The cabinet keeps key user authorizations and event logs in its memory.
- It communicates with Sensaway over the network connection.

#### Cabin Lock Solutions



- It provides authorization and remote management of cabinet doors.
- There are two different options, keypad and Mifare card.
- Depending on the need, solutions are offered so that the front and back doors can be managed separately or together.

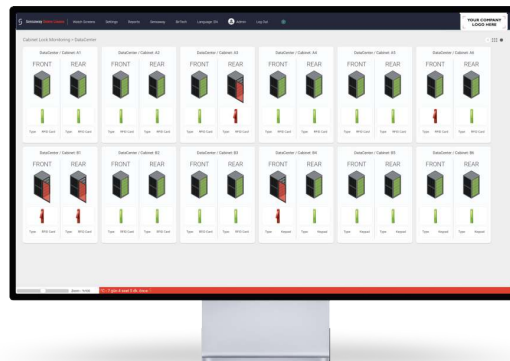
#### CL 1000 Cabinet Lock Interface



- It provides the connection between the cabinet door locks and the control modules.
- It provides energy to the locks over long distances and in case of insufficient energy.
- One for each cabinet is recommended.

### Monitoring of Cabinet Door & Lock

Physical Security



#### What can be done ?

- You can authorize the cabinets separately located in the data center.
- You can ensure that the access rights of the cabinets in the field can be managed centrally.
- You can see the door open/closed status and lock lever positions of your cabinets instantly.
- By getting historical reports through Sensaway management software; you can access information such as who opened the cabinets, by what method and for how long.
- You can manage user operations (add, move, delete users).
- You can receive notifications for entries or vandalism attempts outside the time you set.
- Optionally, you can open the door remotely



## SENSORS

### Climatic Sensors



#### TEMPERATURE SENSOR

It measures the temperature of the environment between -40 °C and +80 °C with 0.5 °C precision and 0.1 resolution.



#### TEMPERATURE - HUMIDITY SENSOR

It measures; the environment temperature between -40 °C and +80 °C with 0.5 °C precision and 0.1 resolution; and measures the environment humidity between %0 and %100 RH with 1.8 % precision and 1 resolution.



#### INDUSTRIAL TEMPERATURE SENSOR

Thanks to thermo couple sensor, you may measure the temperature between -270 °C and +1260 °C values in industrial environments.



#### AIR FLOW SENSOR

It is the sensor that detects whether there is any air flow in the systems such as air conditioning systems and ventilation systems.

### Energetic Sensors



#### VOLTAGE / FREQUENCY MEASUREMENT

Between 0 and 285 VAC interval, 1% precision (Network/UPS)

Between 0 and 100 Hz interval, 1 Hz precision (Network/UPS)



#### MEASUREMENT OF GROUNDING VOLTAGE

It provides a reference value in terms of grounding quality, by measuring Earth - Neutral Voltage between 0 and 30 VAC with 2% precision in the range.



#### ENERGY AVAILABLE / UNAVAILABLE SENSOR

You may follow instantly whether the energy available or unavailable.



#### ENERGY AVAILABLE / UNAVAILABLE and SWITCH ON/OFF CONTROLLER

You may not only monitor instant available / unavailable situation of your energy but also you may switch on / off any device remotely, which was connected to the control unit.

### Environmental Sensors



#### AIR QUALITY

[CO, H2, CH4, Ethanol, Isobutane, 1:10 ppm] It enables to evaluate the change of ambient air quality with the effect of smoke or pollutant gases with a sensitivity of 0-100. The recommended ideal range is rated as 70-100



#### MEDICAL GAS SENSORS

These sensors detect the leaks that may occur from O2, NHS, CO2 gas cylinders existed in the medical gas chambers of the hospitals and provide quick informing.



#### CABLE TYPE WATER LEAK

It is used for local detection of water leaks that may occur on the ground. Options for 1, 2, 5 meters are available.



#### POINT TYPE WATER LEAK

It is used for the detection of point water leaks that may occur on the floor of the environment.



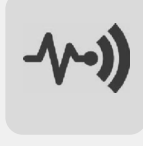
#### DOOR SENSOR (OPEN / CLOSED)

Controls whether the environment / media or cabinet doors are open / closed.



#### SMOKE DETECTOR

It detects and informs the smoke caused by fire or cigarette in the environment.



#### DRY CONTACT (YES / NO)

It provides integration of alarm conditions of the devices to the system, such as UPS, air conditioner, generator, fire extinguishing systems that give dry contact outputs.



#### MOVEMENT SENSING (PIR)

Detects the movements occurring in the environment. The option for taking pictures during the movement is available in our IP camera supported models.



#### EARTHQUAKE SENSOR

It detects earthquake motion in vibrations with acceleration value that were specified in the TSE standards. During the earthquake, outputs can be taken for indoor gas and electricity cuts or for audio-visual siren.



#### IMPACT / SHOCK SENSOR

It detects vandal attacks and jolts that units such as System cabinets, outdoor ATMs will expose.



**FROG ENGINEERING**

**MICRO DATACENTER  
H-42U W800 D1000**

**ACCESSORIES**

**TEOS+ 100RT  
6-10kVA**



DATA CENTER



HOME & OFFICE



MALLS & FACILITIES

**Advanced DSP and 3-Level Technology**

**High Efficiency**

**Power Factor 1.0**



TOWER RACK



UPS ONLINE



POWER FACTOR



SERVICE/TECH SUPPORT



ECOFRIENDLY



## GENERAL SPECIFICATIONS

- Advanced DSP and 3-Level technology
- Output power factor 1.0
- Active power factor correction (APFC), input power factor up to 0.99
- High efficiency 95% (up to 98% in ECO mode)
- Advanced digital parallel technology
- Wide input voltage range (110 - 288 Vac) and frequency range (40 - 70Hz)
- 50 / 60 Hz frequency auto sensing
- Two modes of frequency conversion: 50Hz input / 60Hz output or 60Hz input / 50Hz output
- Hot-swappable battery
- Flexible battery configuration (settable 16 - 20 pcs batteries)
- Digitally controlled charger
- High charging current available (Max. 12 A)
- Charging voltage and current configured by demands
- Linear debating in low voltage input reducing battery discharging times, extending the service life of battery
- Intelligent battery management, automatic floating / equalizing charge control, charger dormancy control, increasing battery life by 50%
- Ability to switch on the UPS with batteries
- Settable delayed start time when mains power is restored, reducing the impact on power grid or generator
- Fan speed varies intelligently with temperature, reducing noise and extending its service life
- Equipped with self-aging function
- Compact internal layout, miniaturized the complete unit for small footprint
- LCD+LED display, multi-functional keys operation, friendly human-machine interface
- Powerful background software for parameters configuration
- Advanced multi-platform communications: RS232, USB, RS485, SNMP and dry contacts communication interfaces
- Effective software and hardware protection function, robust and self-diagnostic function, and abundant event log for check
- Available Options
- RS232 and smart card slot included
- Optional parallel function, battery temperature compensation, SNMP card, USB, RS485 card, dry contacts, EMD, and SMS alarms





6-10kVA

**TECHNICAL SPECIFICATIONS**

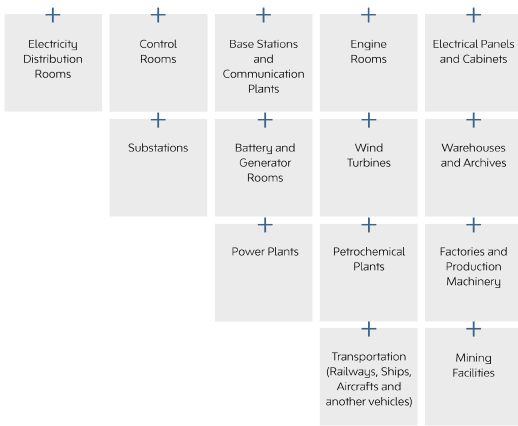
MODEL	Teos+ 106RT	Teos+ 110RT
Capacity	6 kVA / 6 kW	10 kVA / 10 kW
<b>INPUT</b>		
Input wiring	Single-phase three-wire (16+ N + PE)	
Rated voltage	208 / 220 / 230 / 240 Vac	
Voltage range	110 - 176 Vac (linear derating between 50% and 100% load); 176 - 288 Vac (no derating)	
Rated frequency	50/60Hz (auto-sensing)	
Frequency range	40 - 70 Hz	
Power factor	0.99	
Bypassvoltage range	- 40% ~ +15% (settable)	
Total harmonic distortion (THDi)	≤ 5 %	
<b>OUTPUT</b>		
Output wiring	Single-phase (L-N)	
Rated voltage	208 (PF= 0.9)/ 220 / 230 / 240 Vac	
Voltage regulation	± 1%	
Frequency	Synchronized to bypassin mainsmode;50/60 Hz + 0.1%Hzin battery mode	
Waveform	Sinusoidal	
Power factor	1.0	
Total harmonic distortion (THDv)	≤ 1%(linear load);≤ 4%(non-linear load);	
Crest factor	3:1	
Overload	105% -110% for 10 min, 110% - 125% for 1 min, 126% - 150% for 30 s	
<b>BATTERIES</b>		
DC voltage	192Vdc (192-240Vdc settable)	
Number of battery	16 pcs (16 - 20 settable)	
Inbuilt battery (standard model)	12V / 7 Ah x 16	12V / 9 Ah x 16
Charging current	Standard model: 1 A; Long time model: 5 A (default), 1 - 5 A settable, 12 A (optional; PF 0.9)	
Recharge time	Standard model:90%capacity restored in 8 hours;Long time model:depend on the capacity of battery	
<b>SYSTEM</b>		
Efficiency	94% at 100% load, max. 94.5% at 60% load, a 98% in ECO mode	
Transfer time	0 ms	
Protections	Short-circuit,overload,overtemperature,battery low voltage,overvoltage,undervoltage and fan failure	
Max.number of parallel connections	4	
Communications	RS232(standard),USB/ RS485/ dry contacts/ SNMP/battery temperature compensation (optional)	
Display	LCD + LED	
<b>GENERAL</b>		
Operating temperature	0°C ~ 40°C	
Storage temperature	-25°C~ 55°C(without battery)	
Relative humidity	0 - 95% (non-condensing)	
Altitude	≤ 1000 m,debating 1%for each additional 100 m	
IP rating	IP 20	
Noise level at 1 m	≤ 55 dB	≤ 58 dB
Dimensions (HxWxD) (mm) (*)	88x440x580 (H) 176x440x660 (S)	
Packaged dimensions (HxWxD) (mm) (*)	168x514x696 (H) 418x554x792 (S)	
Net weight (kg) (*)	12 (H), 58 (S)	14 (H), 63 (S)
Gross weight (kg) (*)	14 (H), 68 (S)	16 (H), 73 (S)
(*)Smeansstandard model;H meanslong time model.		



Types of Fires Which Aerosol Fire Extinguishers Are Effective

- The aerosol fire extinguishers are used effectively in the following fire classes in a closed environment.
- Class A Fires: Fires of solid organic materials such as wood, coal, paper, grass, textile products, plastics and similar products.
- Class B Fires: Fires of liquid combustible materials such as gasoline, diesel oil, fuel oil, mineral oils, paint, varnish, thinner, alcohol, acetone, glue.
- Class C Fires: Fires of combustible gases such as LPG (liquefied petroleum gas), propane, natural gas, methane, hydrogen, acetylene and fires of gaseous material liquefied under pressure.
- Fires in electrical and electronic equipment, transformers, electrical distribution systems and panels, computer and data processing system cabinets, telecommunication devices.

Usage Areas of Aerosol Fire Extinguishing Systems



GRAND HAFEX UNITS  
HFX-1100  
HFX-2200  
HFX-3400  
HFX-4500  
HFX-6000  
HFX-7600

MINI HAFEX UNITS  
HFX-20  
HFX-50  
HFX-100  
HFX-200  
HFX-500

k type  
hafex aerosol

02

K TYPE HAFEX AEROSOL



GRAND HAFEX UNITS

HFX1100

Model	HFX-1100
Compound	K (Potassium Nitrate Based)
Gross Weight	10300 gr ±%3
Compound Weight	1100 gr
Dimensions (mm)	210 (W) x 287 (L) x 200 (H)
Discharge Time	15-16 Seconds
Activation Method	Electrical, Thermal (Optional)
Suitable Fire Classes	NFPA 10, A, B, C (Electrical Equipment) EN 2: A, B, C, F



HFX2200

Model	HFX-2200
Compound	K (Potassium Nitrate Based)
Gross Weight	17800 gr ±%3
Compound Weight	2200 gr
Dimensions (mm)	287 (W) x 287 (L) x 240 (H)
Discharge Time	14-17 Seconds
Activation Method	Electrical, Thermal (Optional)
Suitable Fire Classes	NFPA 10, A, B, C (Electrical Equipment) EN 2: A, B, C, F



HFX3400

Model	HFX-3400
Compound	K (Potassium Nitrate Based)
Gross Weight	22400 gr ±%3
Compound Weight	3400 gr
Dimensions (mm)	287 (W) x 287 (L) x 284 (H)
Discharge Time	14-17 Seconds
Activation Method	Electrical, Thermal (Optional)
Suitable Fire Classes	NFPA 10, A, B, C (Electrical Equipment) EN 2: A, B, C, F



HFX4500

Model	HFX-4500
Compound	K (Potassium Nitrate Based)
Gross Weight	28600 gr ±%3
Compound Weight	4500 gr
Dimensions (mm)	361 (W) x 361 (L) x 288 (H)
Discharge Time	15-16 Seconds
Activation Method	Electrical, Thermal (Optional)
Suitable Fire Classes	NFPA 10, A, B, C (Electrical Equipment) EN 2: A, B, C, F



HFX6000

Model	HFX-6000
Compound	K (Potassium Nitrate Based)
Gross Weight	33000 gr ±%3
Compound Weight	6000 gr
Dimensions (mm)	361 (W) x 361 (L) x 302 (H)
Discharge Time	15-19 Seconds
Activation Method	Electrical, Thermal (Optional)
Suitable Fire Classes	NFPA 10, A, B, C (Electrical Equipment) EN 2: A, B, C, F



HFX7600

Model	HFX-7600
Compound	K (Potassium Nitrate Based)
Gross Weight	33800 gr ±%3
Compound Weight	7600 gr
Dimensions (mm)	361 (W) x 361 (L) x 288 (H)
Discharge Time	17-20 Seconds
Activation Method	Electrical, Thermal (Optional)
Suitable Fire Classes	NFPA 10, A, B, C (Electrical Equipment) EN 2: A, B, C, F



HFX20

Model	HFX-20
Compound	K (Potassium Nitrate Based)
Gross Weight	500 gr ±%2
Compound Weight	20 gr
Dimensions (mm)	50 (W) x 50 (L) x 93 (H)
Discharge Time	2-5 Seconds
Activation Method	Electrical, Thermal (Optional)
Suitable Fire Classes	NFPA 10, A, B, C (Electrical Equipment) EN 2: A, B, C, F



HFX50

Model	HFX-50
Compound	K (Potassium Nitrate Based)
Gross Weight	700 gr ±%2
Compound Weight	50 gr
Dimensions (mm)	50 (W) x 50 (L) x 130 (H)
Discharge Time	2-5 Seconds
Activation Method	Electrical, Thermal (Optional)
Suitable Fire Classes	NFPA 10, A, B, C (Electrical Equipment) EN 2: A, B, C, F



GRAND HAFEX UNITS

MINI HAFEX UNITS

02

K TYPE HAFEX AEROSOL



K TYPE HAFEX AEROSOL

#### 02 MINI HAFEX UNITS



### HFX100

Model	HFX-100
Compound	K (Potassium Nitrate Based)
Gross Weight	1550 gr ±1%4
Compound Weight	1300 gr
Dimensions (mm)	80 (W) x 80 (L) x 115 (H)
Discharge Time	4-6 Seconds
Activation Method	Electrical, Thermal (Optional)
Suitable Fire Classes	NFPA 10, A, B, C (Electrical Equipment) EN 2: A, B, C, F



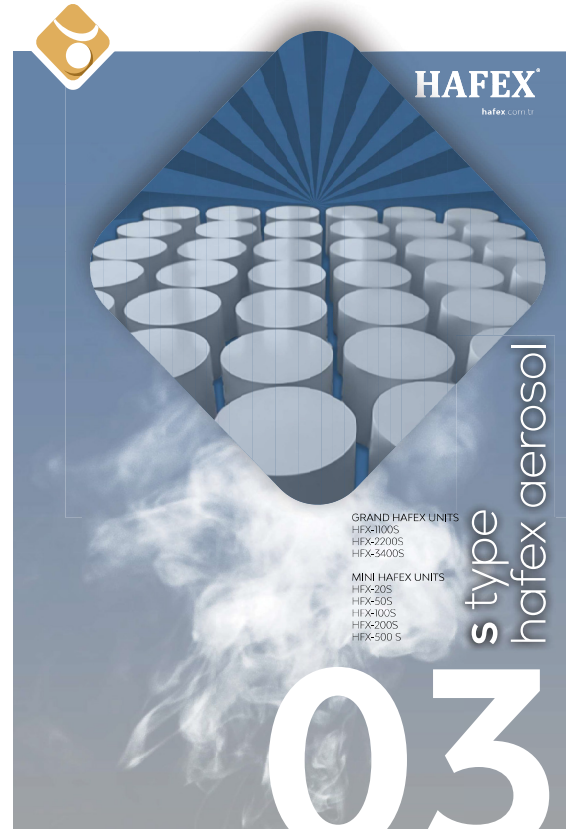
### HFX200

Model	HFX-200
Compound	K (Potassium Nitrate Based)
Gross Weight	1760 gr ±1%4
Compound Weight	200 gr
Dimensions (mm)	80 (W) x 80 (L) x 147 (H)
Discharge Time	4-6 Seconds
Activation Method	Electrical, Thermal (Optional)
Suitable Fire Classes	NFPA 10, A, B, C (Electrical Equipment) EN 2: A, B, C, F



### HFX500

Model	HFX-500
Compound	K (Potassium Nitrate Based)
Gross Weight	3980 gr ±1%3
Compound Weight	500 gr
Dimensions (mm)	100 (W) x 100 (L) x 243 (H)
Discharge Time	5-7 Seconds
Activation Method	Electrical, Thermal (Optional)
Suitable Fire Classes	NFPA 10, A, B, C (Electrical Equipment) EN 2: A, B, C, F



S TYPE HAFEX AEROSOL

03

S TYPE HAFEX AEROSOL

GRAND HAFEX UNITS  
HFX-1100S  
HFX-2200S  
HFX-3400S

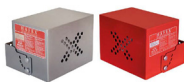
MINI HAFEX UNITS  
HFX-200  
HFX-500  
HFX-100S  
HFX-200S  
HFX-500 S

# 03



S TYPE HAFEX AEROSOL

#### 03 GRAND HAFEX UNITS



### HFX1100S

Model	HFX-1100 S
Compound	S (Strontium Nitrate Based)
Gross Weight	10000 gr ±1%3
Compound Weight	1100 gr
Dimensions (mm)	217 (W) x 287 (L) x 200 (H)
Discharge Time	16-19 Seconds
Activation Method	Electrical, Thermal (Optional)
Suitable Fire Classes	NFPA 10, A, B, C (Electrical Equipment) EN 2: A, B, C, F



### HFX2200S

Model	HFX-2200 S
Compound	S (Strontium Nitrate Based)
Gross Weight	16800 gr ±1%3
Compound Weight	2500 gr
Dimensions (mm)	287 (W) x 287 (L) x 240 (H)
Discharge Time	21-25 Seconds
Activation Method	Electrical, Thermal (Optional)
Suitable Fire Classes	NFPA 10, A, B, C (Electrical Equipment) EN 2: A, B, C, F



### HFX3400S

Model	HFX-3400 S
Compound	S (Strontium Nitrate Based)
Gross Weight	19600 gr ±1%3
Compound Weight	3400 gr
Dimensions (mm)	287 (W) x 287 (L) x 264 (H)
Discharge Time	21-26 Seconds
Activation Method	Electrical, Thermal (Optional)
Suitable Fire Classes	NFPA 10, A, B, C (Electrical Equipment) EN 2: A, B, C, F



### HFX20S

Model	HFX-20 S
Compound	S (Strontium Nitrate Based)
Gross Weight	495 gr ±1%2
Compound Weight	60 gr
Dimensions (mm)	50 (W) x 50 (L) x 93 (H)
Discharge Time	4-6 Seconds
Activation Method	Electrical, Thermal (Optional)
Suitable Fire Classes	NFPA 10, A, B, C (Electrical Equipment) EN 2: A, B, C, F



### HFX50S

Model	HFX-50 S
Compound	S (Strontium Nitrate Based)
Gross Weight	895 gr ±1%2
Compound Weight	90 gr
Dimensions (mm)	80 (W) x 50 (L) x 130 (H)
Discharge Time	4-6 Seconds
Activation Method	Electrical, Thermal (Optional)
Suitable Fire Classes	NFPA 10, A, B, C (Electrical Equipment) EN 2: A, B, C, F



### HFX100S

Model	HFX-100 S
Compound	S (Strontium Nitrate Based)
Gross Weight	1500 gr ±1%4
Compound Weight	100 gr
Dimensions (mm)	80 (W) x 80 (L) x 115 (H)
Discharge Time	5-7 Seconds
Activation Method	Electrical, Thermal (Optional)
Suitable Fire Classes	NFPA 10, A, B, C (Electrical Equipment) EN 2: A, B, C, F

S TYPE HAFEX AEROSOL

03

MINI HAFEX UNITS



MINI HAFEX UNITS

03

S TYPE-HAFEX AEROSOL



HFX200S

Model	HFX-200 S
Compound	S (Strontium Nitrate Based)
Gross Weight	1750 gr ±34
Compound Weight	250 gr
Dimensions (mm)	80 (W) x 80 (L) x 147 (H)
Discharge Time	≥7 Seconds
Activation Method	Electrical, Thermal (Optional)
Suitable Fire Classes	NFPA 10, A, B, C (Electrical Equipment) EN 2: A, B, C, F



HFX500S

Model	HFX-500 S
Compound	S (Strontium Nitrate Based)
Gross Weight	3950 gr ±13
Compound Weight	500 gr
Dimensions (mm)	100 (W) x 100 (L) x 243 (H)
Discharge Time	8-8 Seconds
Activation Method	Electrical, Thermal (Optional)
Suitable Fire Classes	NFPA 10, A, B, C (Electrical Equipment) EN 2: A, B, C, F

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HAFEX ELECTRONICS  
200A+ VEHICLE FIRE CONTROL PANEL  
HFX-495M COMPACT CONVENTIONAL FIRE CONTROL PANEL DESIGNED FOR THE TELECOM INDUSTRY  
200L VEHICLE FIRE CONTROL PANEL  
BPA BATTERY POWERED ACTIVATOR  
HFX-SQR SEQUENTIAL ACTIVATOR  
HFX-TBA THERMOBULB ACTIVATOR 68°C 79°C 93°C 141°C

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AFI FABRICATIONS