

# Autonomous Power Station - APS



 Solar Power

 Battery Storage

 Diesel Backup

-  Designed to operate over 10 years in harsh environments with only maintenance for the diesel unit
-  Operating temperature  $-15^{\circ}\text{C}$  -  $+50^{\circ}\text{C}$  ambient
-  Various communication capabilities

becker-aero's APS is a modular power supply system particularly designed for remote applications like ADS-B or MLAT ground stations, microwave relay stations or any communication stations.

Various configurations allow a tailored solution for a particular application.

### Solar Power First

The solar power is the preferred power source for the APS thus providing independent power throughout the year.

### Diesel Backup

The APS is fitted with a small efficient diesel engine providing primary power or as a backup if the solar power is not sufficient at times of higher power demand or lack of sun light.

### Battery Storage

During daytime the energy is stored in the APS batteries or if the solar power is too low, energy is provided directly to the outputs to increase the battery backup time.



### Control and Monitoring – X-CMS (option)

The unit comes with its own X-CMS graphical system including extensive statistics and is extendable to include other vendor's equipment.

### Communications

In addition to provide energy, the unit also comes with various communication capabilities. The SNMP interface allows the unit's integration into an RCMS from any other vendor.

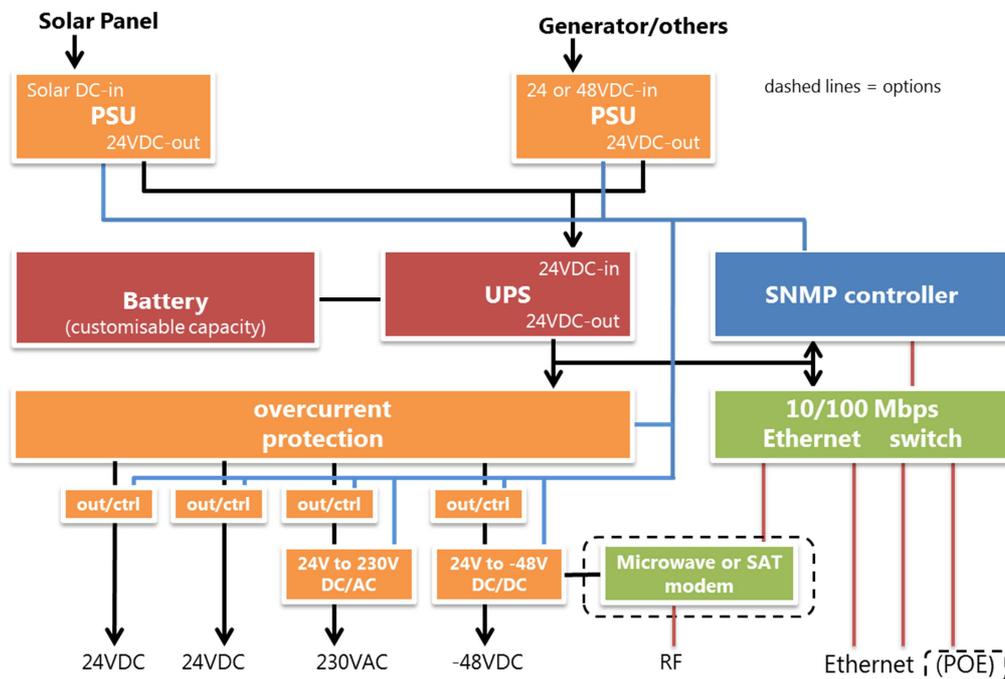
### Low Maintenance

The unit is designed to operate over 10 years in harsh environments with only maintenance for the diesel unit. Reset and future software updates are performed remotely.

## KEY FEATURES

- ✓ Outdoor power and communications unit
- ✓ Deployable in any climatic conditions (operating temperature -15°C up to 50°C ambient)
- ✓ Power input: solar panels and diesel generator
- ✓ Power output: 24VDC, 240VAC sinus outputs and 48VDC
- ✓ Batteries: Long lifetime 38Ah/24V (up to 5 units)
- ✓ Comms: 4x 10/100Mbps Ethernet connections (optional with PoE, 1x fibre)
- ✓ Optional: Built in Pasolink 100E microwave modem
- ✓ Management: SNMP V2c agent and MIB available
- ✓ Optional: X-CMS, Linux based control and monitoring system

# APS System Overview



## TECHNICAL SPECIFICATION\*

### Input power - solar panel DC

Input voltage range	30 V – 70V DC
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### Input power - diesel generator

Fuel	diesel fuel (spec: EN 590 or BS 2869 A1/A2 or ASTM D 975-1D/2D)
Generator	Nominal 500W/48V DC
Maintenance	Oil change after 250 hours of operation
Fuel consumption	Approximately 1 litre in 8 hrs.

### Output power

Protection against overvoltage	max. 35V DC
Overcurrent protection (per out channel)	0.5 - 10A (protected and switchable), magnetic fuse tripping B2
Ch1 - nominal output voltage/current	24V DC (optional via PoE), typ. 1A (protected and switchable)
Ch2 - nominal output voltage/current	24V DC (optional via PoE), typ. 1A (protected and switchable)
Ch3 - internal AC converter output	240V AC, typ. 0.5A - sinusoidal 50Hz output (protected and switchable)
Ch4 - internal DC converter output	48V DC, typ. 1A (protected and switchable)

### Battery data

Nominal voltage	24V DC (2 x 12V DC)
Nominal capacity	38Ah
Battery type	VLRA (Valve regulated Lead Acid)
Battery module service life	10 years (20°C) / 6 years (30-40°C)

### Panasonic LC-P1238APG

### Communication data

Ethernet	4x 10/100 Mbps Ethernet (optional PoE, 1x fibre)
Microwave Pasolink (optional)	7-15Ghz – 10 Mbps communication link

### Remote Control and Monitoring

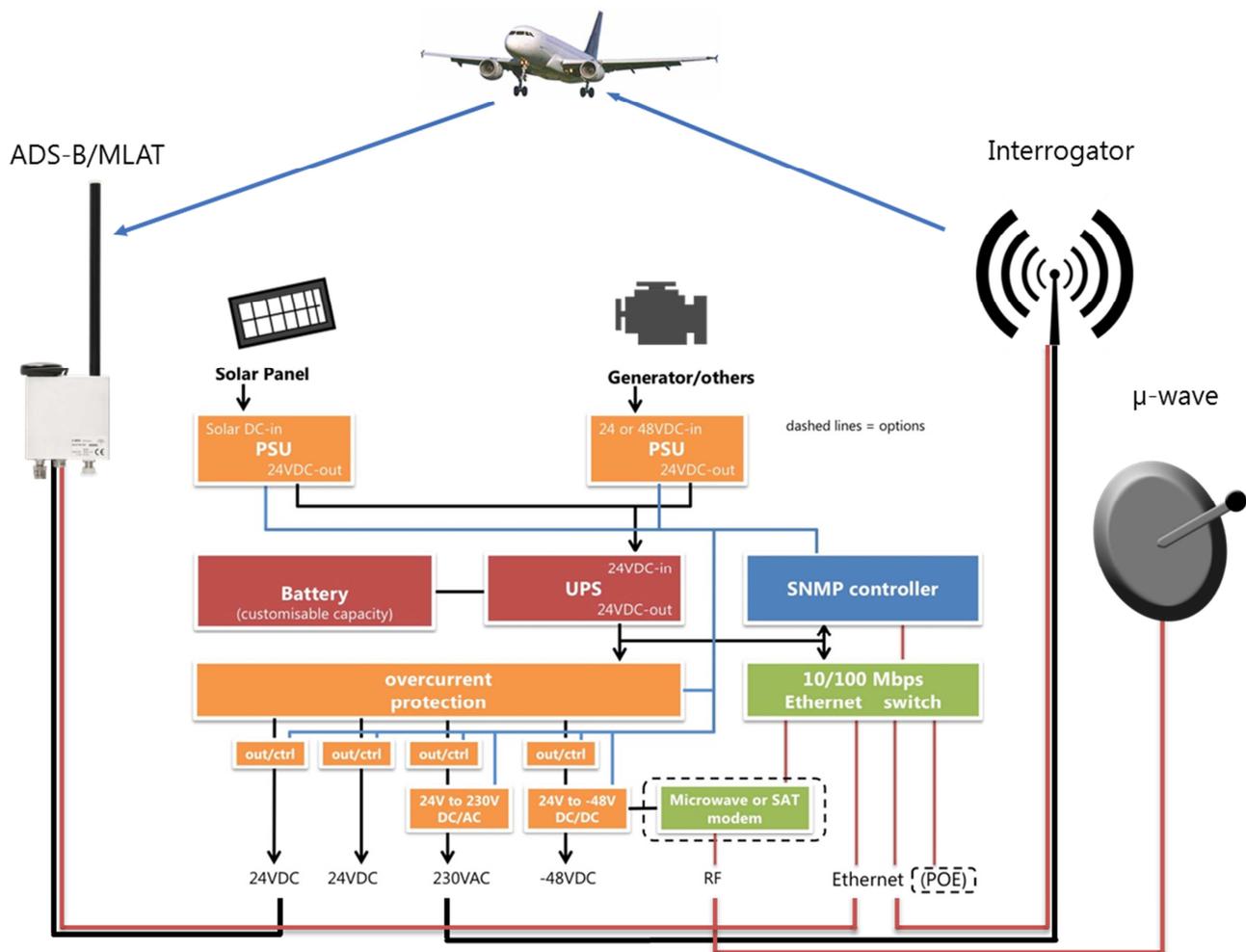
SNMP v2c	monitoring of batteries, engine, solar parameter controlling of switchable outputs, engine.
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### General data

Isolation voltage (input/output)	4 kV AC
Ambient temperature (operating)	-15°C ... 50°C
Weight	< 100Kg depending on battery units
Dimensions (L x H x W)	1050mm x 1280mm x 550mm

\*subject to change without notice

# Application Example



## Brief Description

### Power:

APS providing 24VDC power over Ethernet to an ADS-B/MLAT receiver  
 APS providing 230VAC power to the interrogator

### Local Data:

APS providing Ethernet connection to the interrogator  
 APS with build in micro-wave modem connecting micro wave antenna

### Remote Connectivity:

Of-site data connectivity to the ATCC via microwave network

### Optional Expansion:

A second ADS-B/MLAT receiver could be installed if redundancy required