



EMS

Basic Parameters

Integrated Control	Device Integration ¹	Number of Supported Devices	12
		Polling Data Units (PDU)	900
		Power Input [V AC]	230
	Power Output	12V DC	Max: 2A (24W)
		24V DC	Max: 1A (24W)
		Operating Current	250mA @230V AC
	Edge Gateway	Battery Capacity (Usable)[Wh]	144
		Integrated Control	Intel N100 4-core CPU
		Memory (RAM)	4GB
		Local Storage (SSD)	128GB
PLC	Cooling	Fanless Design	
	PLC	Control failsafes, additional I/O, temperature measurement	

Communication

Serial Interface	Modbus RTU	Baud Rate [bps]	9600	
		Data bits	8	
		Stop bits	1	
	Modbus TCP	Parity	None	
		Communications Interface	Ethernet WAN	
		System Connectivity	DHCP	
Embedded Communications	Ethernet	Managed Network IP Range	192.168.35.XXX	
		Subnet Mask	255.255.255.1	
		WAN Input	1	
	Device Cross Compatibility	Ethernet	5-Port 100Mbps Industrial Ethernet Switch	
		GSM (Support Only)	GPRS, LTE	
		Application	Hybrid inverters PV grid tie inverters Generator controllers	Power meters, power analyzers Temperature sensors Fire suppression systems
	Reporting & Analytics	Monitoring Portal	Via Freedom Won Cloud Monitoring Dashboard	
		Cloud Connectivity	Via Polar Monitoring Glacier Edge Gateway 100Mbps ethernet connection to uplink internet (to be supplied by client)	

I/O

Serial Ports	RS-485	4 (isolated)
	Modbus TCP	3
	Digital Inputs	7 x Digital inputs
	Digital Outputs	4 x Relay outputs
	Temperature Probe	4 x PT100 inputs
	12V Output	1
	24V Output	1
	Panel Dimensions - H x W x D [mm]	650x500x250

Physical

Enclosure	Material	Powder Coated Steel
	Weight [kg]	23.2
	Ingress Protection	IP65
	Mounting	Wall mount
	Operating Temperature [°C]	0°C to +40°C
	Storage Temperature [°C]	0°C to +40°C
	Operating Humidity	85% relative humidity
	Antenna Interface	SMA Female
	Power Supply System ²	24V 120W
	Backup Power ²	2 x 98Wh lithium battery (12V)
Warranty		1 Year Warranty

Notes to Specification Sheet

1. Device integration over RS-485 / Ethernet (Modbus TCP) Network Switch (supporting internal and external connections).
2. 230VAC 1-PH Power Input (6A) (via screw terminals) Incoming AC Power Isolation Breaker Backup Power via Integrated Lithium Battery.

DISTRIBUTORS AND RESELLERS

Contact your nearest Accredited Freedom Won Distributor or Accredited EPCs for further sales and technical support.

Plug into The Current Future

www.freedomwon.co.za

FW EMS Packages: Scalable Control for Any Site

To simplify the quoting and deployment process, Freedom Won offers the EMS in three pre-defined packages—Essential, Pro, and Ultra—with a fourth Custom option for more complex requirements. Each package includes the robust standard features of the EMS platform and can be further upgraded to match the unique characteristics of each site.

These packages are designed to give clients and project engineers a fast, clear starting point that ensures full compatibility with site architecture while reducing quoting complexity and commissioning lead time.

Package Breakdown

EMS Essential

Ideal for small-scale or single-inverter sites.

- Supports: 1 Hybrid Inverter + 1 Grid-Tied Inverter + 1 Generator
- Includes all **Standard Features**
- 5-Year Cloud License with **50 Tags**
- Suitable for grid-tied setups that run off generator output during grid failure

EMS Pro

Perfect for mid-sized or growing energy systems.

- Supports: Up to **2 Hybrid Inverters in Parallel** (non-isolated DC bus)
- Includes **2x RTF Control Modules**
- Supports multiple generators, grid-tie inverters, and DC-Coupled PV
- 5-Year Cloud License with **150 Tags**
- Optional: **DNP3 Module, External Data Provider (Read or Read/Write)**

EMS Ultra

For bespoke applications with specialized integration needs, The EMS ultra is Engineered for high-performance and complex energy sites.

- Built from the ground up based on exact site specs
- Unlimited scaling of hybrid systems, tags, and modules
- Ideal for utility-scale projects, remote microgrids, or advanced integration environments
- Designed in collaboration with Freedom Won's technical and commissioning teams

Optional Extra Ideas:

- Irradiance sensors
- Weather Stations
- Humidity probes
- Temperature sensors

Feature/Package	EMS Essential	EMS Pro	EMS Ultra
Hybrid Inverter Support	1	2 (Parallel, No IDC Bus)	Custom
RTF Modules	-	2	Custom
Grid-Tied Inverters	1	Multiple	Multiple
Generators	1	Multiple	Multiple
DC-Coupled PV Systems	1	Supported	Supported
Standard Features	✓	✓	✓
DNP3/Utility Protocols	-	Optional	Optional
External Data Provider (SCADA/BMS)	-	Optional	Optional
5-Year Tag License	50	150+	250+
Expandable/Upgradable	-	✓	✓

Optional Extra Ideas

- Irradiance sensors
- Weather stations
- Humidity probes
- Temperature sensors

Scalable Control for Any Site