Electrical power supply GMDSS Range for Global Maritime Distress and Safety System (GMDSS)

The power supply range FCA / ICA / FCC for GMDSS covers all vessel nationalities in the following areas of application:

- Type of ship
- Scope of application – title 2 and 3
- Operation zones A1/A2/A3/A4

Installed on ship, these power supplies provide power from several available sources of energy to the radio system and the emergency communication system.

They insure an automatic switchover without cut-off between the main power source and the emergency power source.

This power supply range is compliant with the requirements of the International Maritime Organisation (IMO), the French regulations (Division 219 – October 2000) and for equipment installed on the Bridge (CEI 945 Standard)

The complete range is certified by Bureau Veritas - CERTIFICATE N° 10528/D1/BV

The power supplies integrate the following functions: connection, protection, display, warning and switchover. The display can be integrated on the cabinet or can be remotely installed on a support close to the user.

With the configuration of 6 protected outputs, the system can power for example:
1 emitter MF, 1 VHF ASN, 1 VHF ASN (duplication), 1 Immarsat C, 1 GPS, 1 emergency light indicator.

Power Supply selection

1. Power supply systems specified in the field of application for Chapter 2 or for all ships equipped with an INMARSAT system. A1/A2/A3/A4 oceanic areas - French or foreign ships

Functions provided by ENAG power supply systems in accordance with Division 219-13 and IMO regulation

- Automatic switchover, without disconnection of 3 power supply sources,
- Regulated and filtered power supply charger unit in accordance with CEI 945 standard,
- Protection of the radio electric equipment against primary source voltage surge,
- Control of the charge/discharge voltage and current of the standby battery,
- Automatic control of the standby battery charge and of continuity of its electronic circuits. Charge fault or periodic autonomy test ,
- Under voltage test of the 3 source power supplys,
- Display of power supply sources status by light indicators,
- Control of the alarms by light indicators and audible alarm with manual reset.

Recommended ENAG equipment (see range description on the following pages)
⇒ **FCA** range ⇒ **ICA** range ⇒ **FCC-RAE** range

2. Power supply and control systems specified in the field of application for Chapter 3. A1/A2/A3/A4 oceanic zones – French or foreign ships (Foreign ships: please refer to the law in force in each country)

Functions provided by ENAG power supply or control systems in accordance with Division 219 of October 2000.The operation standards must not be inferior to the IMO Regulation.

➲Minimal configuration listed today in the regulation:

- Regulated filtered power supply charger in accordance with IEC standards 945 or DC generator,
- Control of the charge/discharge and voltage of the stand-by battery,
- Protections of the sources by fuses and blocking diode,
- Switch over of primary source, emergency source and stand-by source.

➲ Minimal configuration recommended for the security of radio electric installation. These functions are recommended in addition to the above-mentioned requirements.

- Protection of the radio electric installation against main power supply over voltage,
- Over and under voltage visual and audible alarm,
- Indicator light confirming that sources are connected and indication of the active source.

➲ Recommended configuration of maximum security:

- All power supplies mentioned in the field of application for Chapter 2.

Recommended ENAG equipment (see range description on the following pages)
⇒ **ICA** range ⇒ **FCC** range

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Technical Specification:

	FCA Range	ICA Range		
Description	FCA GMDSS 60/70	ICA GMDSS 30.RAE	ICA GMDSS 30.RAE	ICA GMDSS 60.RAE
Part N°	SEEL003436A	SEEL004875A	SEEL006715	SEEL007558
Input Characteristic				
On-board network	Dual alternative current network	One AC network		
Primary AC source	230 Vac 50Hz or 115 Vac 60 Hz	230 Vac 50Hz or 115 Vac 60 Hz		
Backup AC source	230 Vac 50Hz or 115 Vac 60 Hz	no		
Primary DC source	no	no		
Backup source	Integrated Power supply	External service battery		
Emergency source	External radio battery	External radio battery		
Blocking Diode	yes	yes		
Output Characteristic				
Output voltage	24Vcc	24Vcc		
Main Functions				
Charger – Main power supply	integrated - 60A	integrated - 30A	integrated - 30A	integrated - 60A
Emergency Power supply	integrated - 70A	no		
Detection of over and under voltage.	yes	yes		
Automatic switchover of the power supply sources	yes	yes		
DFC system – Automatic periodic testing of charging	yes	yes		
RAE system – Automatic Energy Search	yes	yes		
Interface & display				
Warning console	Remote detection, Voltmeter & Ammeter	Integrated Voltmeter & Ammeter	Remote detection, Voltmeter & Ammeter	Remote detection, Voltmeter & Ammeter
Mechanical and environmental characteristics				
Working temperature : Storage temperature :	-10 à 45°C -20 à 70°C			
Dimension and weight (mm & Kg)	545 x 570 x 250 – 32 Kg	350 x 450 x 170 – 12 Kg	350 x 450 x 170 – 12 Kg	545 x 570 x 250 – 30 Kg

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	FCC Range		
Designation	FCC GMDSS 30.RAE	FCC GMDSS 30.RAE	FCC GMDSS 30 (chapter 3)
Article	SEEL004743A	SEEL006413	SEEL008462
Input Characteristic			
On board network	One DC current on board network		
Primary alternative current source	No		
Backup alternative current source	No		
Primary DC current source	On board network 24 VCC		
Backup source	External Service battery		no
Emergency source	External Radio battery		External service & radio batteries
Blocking Diode	yes		
Output Characteristic			
Utilisation voltage	24Vcc		12V et 24V
Main Functions			
Charger – Main power supply	No		
Emergency Power supply	No		
Detection of over and under voltage.	Yes		
Automatic switchover of the power supply sources	Yes		
DFC system – Automatic periodic testing of charging	Yes		No
RAE system – Automatic Energy Search	Yes		No
Interface & display			
Alarm system	Display, Voltmeter & Ammeter integrated	Remote Display, Voltmeter & Ammeter	Voltmeter & Ammeter integrated
Mechanical Characteristics and environmental			
Functional temperature : Storage temperature :	-10 à 45°C -20 à 70°C		
Dimension and weight (mm & Kg)	315 x 200 x 130 – 4 Kg	315 x 200 x 130 – 4 Kg	160 x 145 x 80 – 1.5 Kg

Note:

- In an existing installation with AC main network, the **FCC GMDSS RAE** system may be installed in association with a battery charger. In this case, the charger must satisfy the following requirements:
  - It must have type approval or be certified by an approved organisation (BV, LLOYDS, …),
  - It must meet the CISPR 16 standard (able to operate as a DC power supply),
  - It must have the "OVER SHOOT INHIBITED" function,
  - Any other configuration is prohibited as specified by regulations.

- **The FCC-GMDSS reference SEEL008462 can be used for Title 3** only and **cannot** be associated with a battery charger as a main AC source converter. It cannot replace the FCC-GMDSS 30RAE model. It must not be installed on vessels operating in international waters.

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