

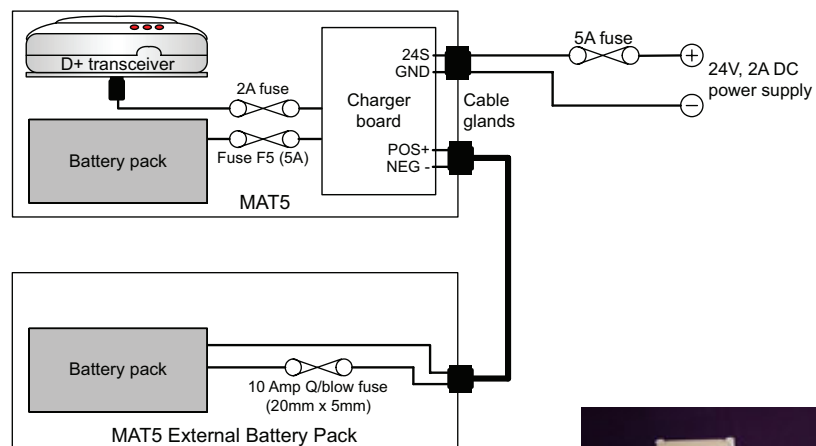
Marine Asset Tracker

Technical Specification for MAT5

Pole Star's Marine Asset Tracker system (MAT) is a reliable satellite tracking transceiver linked to a powerful and flexible "pay as you go" web-based service. The system enables the operator of any marine asset to monitor the location or safe passage of their powered assets through adverse weather and sea conditions or through high security risk areas.

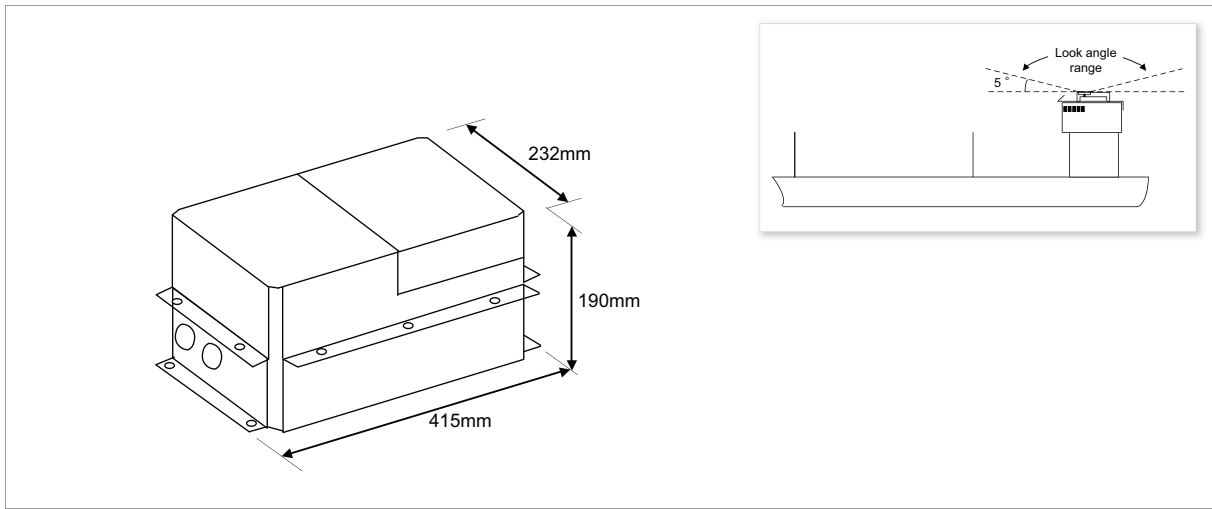
The MAT5 satellite transceiver is ideally suited for the Oil & Gas sector and has been specifically designed for Rig/Platform Monitoring Management where existing power supply onboard can be connected to the unit to provide a constant power source to the Internal Battery Management system. The unit will transmit position reports on a 6 hourly pre-programmed interval as default or a tracking interval at the discretion of the Shore based Operators as required. Should the Oil Rig experience extreme weather conditions or be transported to a different location causing the existing power supply onboard to be temporarily disrupted, the MAT5 will independently operate for up to 14 days.

The MAT5 consists of a satellite transceiver, 21 Ah SLA battery pack and a multistage charger unit. It requires a stable external DC supply to maintain the battery charge. On disconnection of external power, the unit will operate for approximately 14 days. Operation of the unit is completely automatic, and the only user intervention that should be required after installation is to restore the external power supply in the event of disconnection.



Schematic Diagram – Charging the battery





PHYSICAL	
Overall Dimensions	Length: 415 mm x Width: 232 mm x Height: 190 mm
Weight	18kg
External Power Pack Weight	17 Kg

ENVIRONMENTAL	
Operating Temperature Range	-40° to +70° C
Storage Temperature Range	-40° to +85° C
Humidity	95% Relative Humidity at 30° C
Vibration	5-20 Hz: 1.92 m2/s3 random noise 20-500Hz: -3dB octave random noise
Shock (survival)	Half sine 6ms, 300m/s2
Transceiver environmental rating	IP56

ELECTRICAL	
Power Consumption (typ.@12Vdc)	Receive: 0.9W, Idle: 0.25W, GPS Active: +1.0W; Heater Active: +5.0W, Transmit: 10W; Sleep mode: 6mW

SATELLITE	
Coverage	Global, four overlapping regions
Frequency Range	Rx: 1525.0 to 1559.0 MHz Tx: 1626.5 to 1660.5 MHz
Sensitivity	>-25dB/K
EIRP	0 dBW to 9 dBW (0dBW at < 5 degrees)
Elevation Angle Range	5 to 90 degrees
Modulation	Forward channel: 32-ary FSK, 20bps Reverse Channel: binary FSK, 4-128bps
Forward Error Correction	Forward channel: Reed-Solomon (31,15) Reverse channel: Half-rate convolutional (k=7)

GPS	
Frequency	1575.42 MHz
Channels	16 parallel

CERTIFICATIONS	
	Inmarsat D+ Type Approval , CEMark