



Dynamic Marine Systems

Ahead in stabilisation



DMS MagnusMaster

ELECTRICAL & POWERING REQUIREMENTS



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DMS MagnusMaster

GENERAL ELECTRICAL & POWERING REQUIREMENTS INTRODUCTION:

Please Note:

This document is only intended to provide a brief introduction to the electrical and powering requirements for DMS MagnusMaster installations. Please refer to the DMS MagnusMaster Installation Manual or contact DMS Holland for full information.

- There are two motors in each MagnusMaster rotor assembly;
- 1 x internally at the top of the unit, the 'Slew' motor, this is used to power the rotor out from the 'Park' position to the 'Stabilise' position.
- 1 x in the underwater 'Knee' of the unit which is the 'Rotation' motor used to spin the rotor in either clockwise or anti-clockwise directions as required.
- Both of these are 240VAC/50Hz. However, powering from 220VAC/60Hz is fine for both of these motors.
- The max continuous load is when both of these motors are operating i.e. immediately after you press 'Stabilise' when the 'Slew' motor and 'Rotation' motor are both operating. Max continuous load is 1500 W when both of these motors are running.
- Once the rotor has been fully deployed to the 'stabilise' position, the 'slew' motor stops working and only the 'Rotation' motor is operational. Average load for the 'Rotation' motor is circa. 1000 W but often less depending on sea conditions and the roll reduction level required.
- Deployment time from 'Park' to 'Stabilise' with both motors running is usually 12 seconds +/-
- Clearly the reverse happens when you 'Park' the rotor.
- The Monitor/Display is 24 VDC.
- The Power supply to the main electrical cabinet is 240 Volts & 24 Volts.
- Refer to the MagnusMaster Installation Manual for more information on power supply requirements.
- Wiring schematics and general diagrams can be found in the MagnusMaster Installation Manual.

MagnusMaster Powering Solutions:

- From the above introduction we can see that MagnusMaster systems require two sources of power, 240VAC/50Hz for the electrical cabinet and motors and 24VDC for the electrical cabinet and monitor/display.
- Note: 220VAC/60Hz power supply is also an acceptable power source for the main motors.
- Powering for MagnusMaster can be supplied from a suitably sized generator with the correct outputs or more commonly, from a suitably sized inverter with the correct outputs.
- In general, for a SINGLE ROTOR installation MagnusMaster will require a high quality inverter with a 2000 Watt output.
- In general for a TWIN ROTOR installation MagnusMaster will require a high quality inverter with a 3000 Watt output.
- For Four Rotor installation please consult DMS Holland.
- Clearly it is important to ensure that the vessel has sufficient battery capacity and alternator charging output to cope with any additional inverter loads.
- All of the MagnusMaster, control box/cabinet and monitor wiring schematics are shown in the MagnusMaster Installation Manual.

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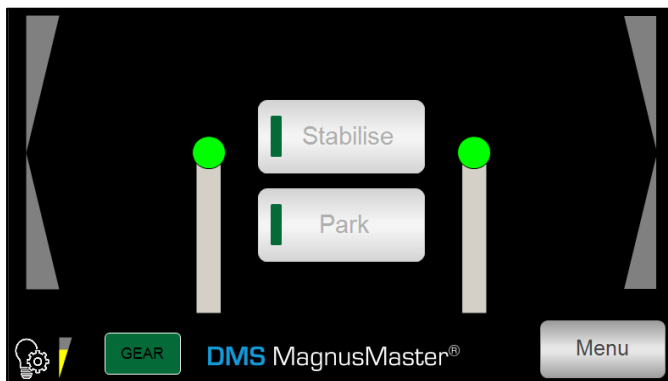
GENERAL ELECTRICAL & POWERING REQUIREMENTS INTRODUCTION:

Points to note:

- When the control box/cabinet is mounted in the vessel it can be mounted upright or on its back but it must be orientated in line with one of the primary axis of the vessel i.e. at 90/180/270 degrees to either centreline length or beam directions. There's a 3-Axis sensor in this cabinet and as long as we know the orientation of the cabinet, settings can be adjusted during commissioning setup (basically, the 3-Axis sensor needs to know where it is in relation to a primary vessel axis).
- You may notice mention of a 'Speed Sensor' in the price list or Installation Manual. This is only applicable to vessels with boat speeds exceeding 12 knots and is used to facilitate the self-park feature if the vessel speed exceeds 12 Knots. Sourcing from this is generally from NMEA data taken from either the vessel paddle wheel log or GPS speed across the ground.

It is important to specify the NMEA available on the vessel when ordering the speed sensor (either NMEA 2000 or NMEA 0183 speed sensors are available)

- Mention is made of 'Gear' connection in the manual. This function means that the engines must be in gear for the system to operate and conversely, if the system is in operational or 'stabilise' mode and the gear position is put into neutral, the rotor will auto-park as a safety feature. If you want to deploy the rotor again you must press 'stabilise' again to re-deploy the rotor. This connection is usually made from the gear position sensor on the gearbox.



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