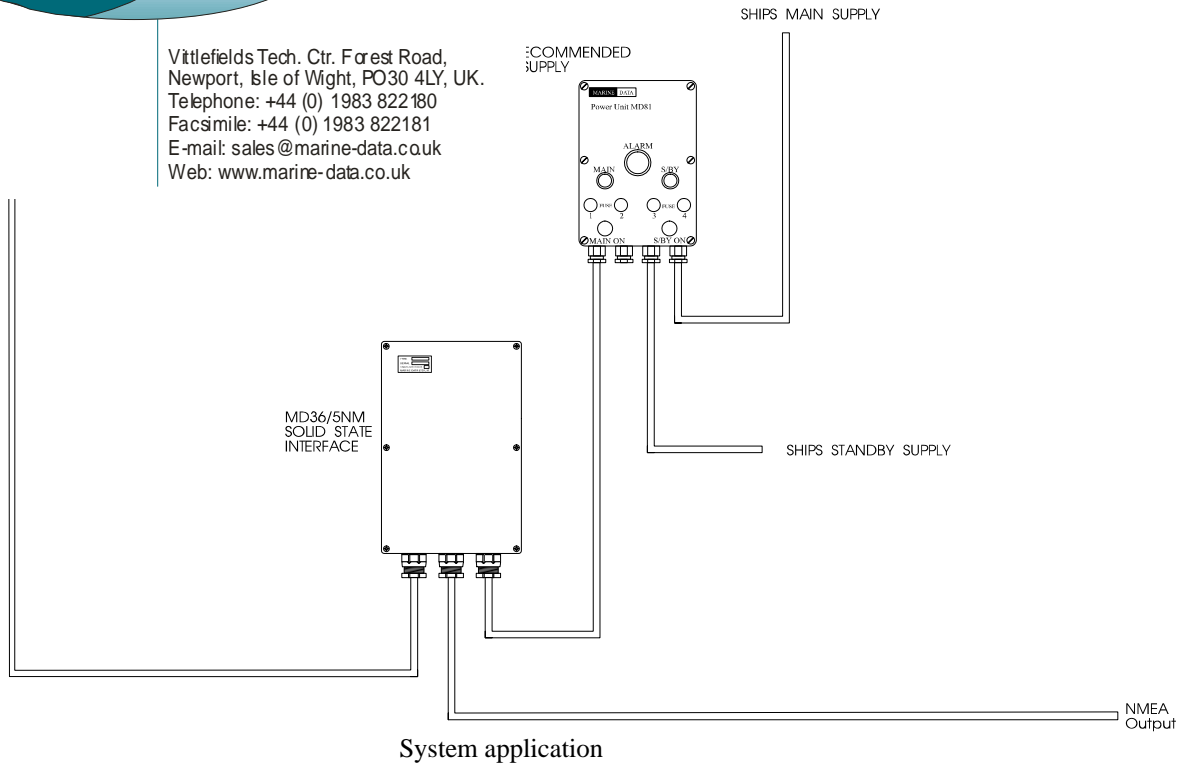


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System application

• Introduction

The MD36 Solid State Interface range of units is designed for applications where the need is for low power retransmission. It makes easy the task of incorporating a piece of equipment into a larger system which operates on a different transmission standard. The MD36 is a compact and robust unit which is easy to install especially in applications where space is restricted.

The MD36/5/NM is used as an interface between a gyro compass or TMC that provides a 400Hz (115V or 26V) output to receiving devices such as, a variety of displays or other navigational aids, that require a digital input. When suitably adjusted the MD36/5/NM reads the synchro input heading to within 1° and transmits a RS422 and RS232 output following a NMEA protocol with no errors.

• **Installation.**

Tools required : basic hand tools; D.V.M; megger

Step	Description	Remarks
1	Inspect the packing for contents.	Note any damage or exclusions.
2	Inspect the mounting position for suitable clearance and cable access.	Bulkhead or panel mounting option. (see specification for detail.)
3	Mechanically install the MD36/5/NM.	
4	Remove the six securing screws on the front of the lid to expose the barrier strip to connect to (refer to fig1)	The software fitted and data output type is affixed to the PCB protection plate verify correct version for your requirements is fitted.
5	Locate all incoming cables and terminate them .	Ensure all incoming supply and signal cables are either suitably isolated and connected or bonded to ships earth as per connection table below.
6	Installation is complete.	Do not apply power.

MD36/5/NM Connection tables

Table 1 Power and signal connections.

Note incoming 400Hz supply is derived externally also ensure that you have the correct voltage input as per your sales order requirement (115V or 26V)

Incoming systems ident*	Description	Terminal
	+24VDC power supply (input)	1
	DC supply return (input).	2
	Synchro input R1	3
	Synchro input R2	4
	Synchro input S1	5
	Synchro input S2	6
	Synchro input S3	7

Table 2 RS422 output connections.

Note this output is optically isolated..
And RS232 output non-isolated

Incoming systems ident*	Description	Terminal
	Data positive	12
	Data negative.	13
	Data common.	14
	Select output type.**	15
	RS232 output with respect to -DC supply	16

• **System Commissioning**

Step	Description	Remarks
1	Ensure the installation is satisfactory.	
2	Apply system power(24VDC) to the complete system	The MD36/5/NM will start to transmit digital information to any receiving devices.
3	The MD36 is configured to BR2508 null if the transmitted heading has a constant offset the sending synchro must be adjusted.	Slacken the synchro clamping screws in the transmitter device and rotate synchro until the heading reads correct then retighten.
4	Rotate the compass backwards and forwards	Ensure all receiving devices follow correctly.
5	Fill out and return commissioning form.	Send copy to MDL failure to do so may affect warranty.

• **Software.**

There is a range of software variations available to the customer the types covered are detailed in the table below. To confirm the software type fitted to your unit remove the lid of the unit and a label is fixed to the PCB protection plate (refer to fig 1). this label details the software installed Further confirmation can be obtained by removing the PCB protection plate and reading the label on the EPROM.

software version.	Description	Remarks about data type
MD36/9-S1	Synchro 400Hz 1:1 input NMEA output	4800 Baud, 27C64 EPROM, Magnetic (Yokogawa format) \$HCHDM,XXX*Checksum CR LF Gyro (For RASCAR Radar) \$HEHDT,XXX.X,T CR LF
MD741X1	Synchro 400Hz 1:1 input NMEA output	2400 Baud, 27C64 EPROM Magnetic (Yokogawa format) \$HCHDM,XXX*Checksum CR LF Gyro \$HEHRC,XXXXX,XXXX*Checksum CR LF

* left intentionally blank to be filled out by installer.

** Make no connection to this for magnetic format.

Connect to terminal block 2 for gyro format.

- **Internal Identification Diagram.**

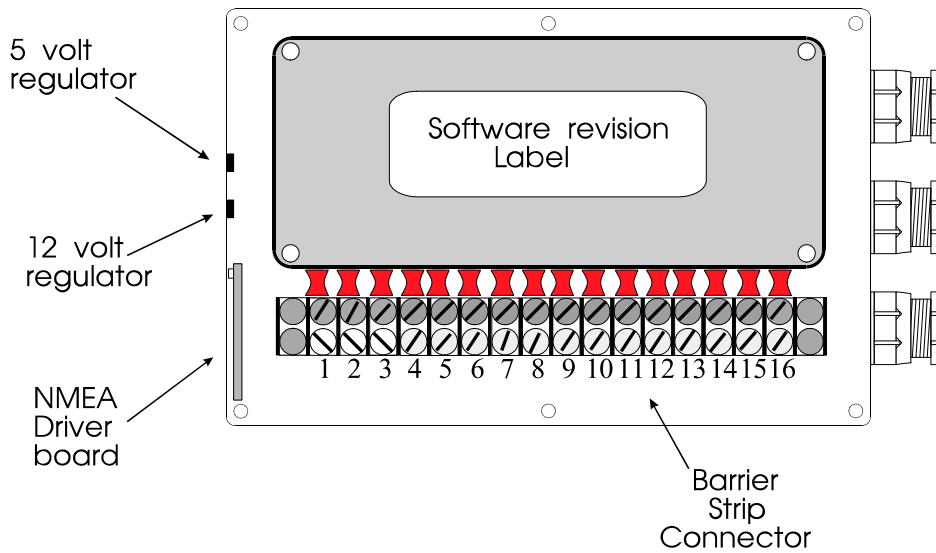


Fig 1. Internal Identification diagram

- **Operator Controls.**

There are no operator controls to the MD36/5/NM.

- **Maintenance and fault finding.**

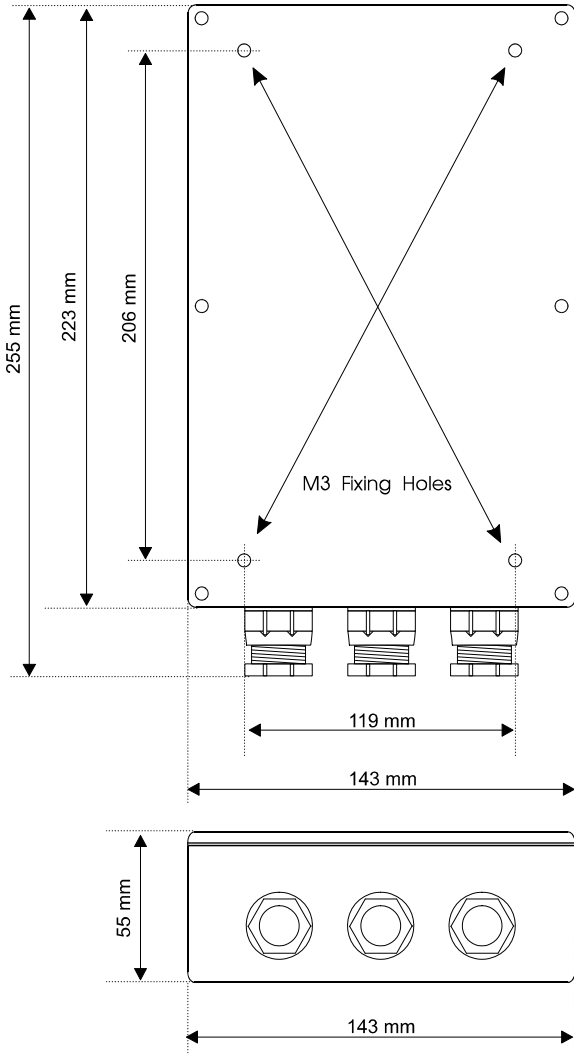
No maintenance is required beyond wiping dust from the MD36/5/NM periodically.

Symptom	Probable fault	Remedy
MD36/5/NM does not operate.	No power. System fuse damaged.	Check incoming power supply. Replace damaged fuse in main system junction box and locate fault which caused fuse damage.
	Incompatible data word being sent Wrong transmission baud rate	Reconfigure receiving device Incorrect software fitted
MD36/5/NM receiving devices heading increases slowly or fails to respond in a particular quadrant.	Unconnected Synchro or, damaged Synchro., or disconnected phase(s).	Check Synchro power is disconnected. Remove power and wiring to CX Verify following resistance's. 26V11CX R1-R2=80-100ohms between phases 15 ohms 115V11CX R1-R2 = 300 ohms. between phases 650 ohms
Repeater devices do not receive heading information	Incorrect wiring. Excess loading on transmitted output.	Check data connections. Check with light load for correct operation, the output must be boosted.

- **Available Finished Items and Spare Parts**

In the Event that spare parts are needed please contact your dealer or MDL direct.

SPECIFICATION FOR MD36/5/NM



Physical

- Weight: 1.2 Kg
- Mounting: Bulkhead
- Finish: Black/Grey
- Connections: 1 X Internal Barrier Strip
- Construction: Aluminium Enclosure

Electrical

- Power Supply: 24v DC (200 mA)
- Data Input: Synchro 400Hz 1:1 (26V or 115V)
- Data Outputs: RS422 optically isolated output Suitable to drive 5 x NMEA loads. RS232 non isolated -DC

Operational

- Performance: $\pm 1^{\circ}$ Accuracy
- Follow up rate: 12⁰/sec

Environmental

- Rating: IP53
- Temperature: -10⁰ C to + 70⁰ C

Additional Information

- The MD36/5/NM is not fuse Protected
- Any optional output will require a power source

