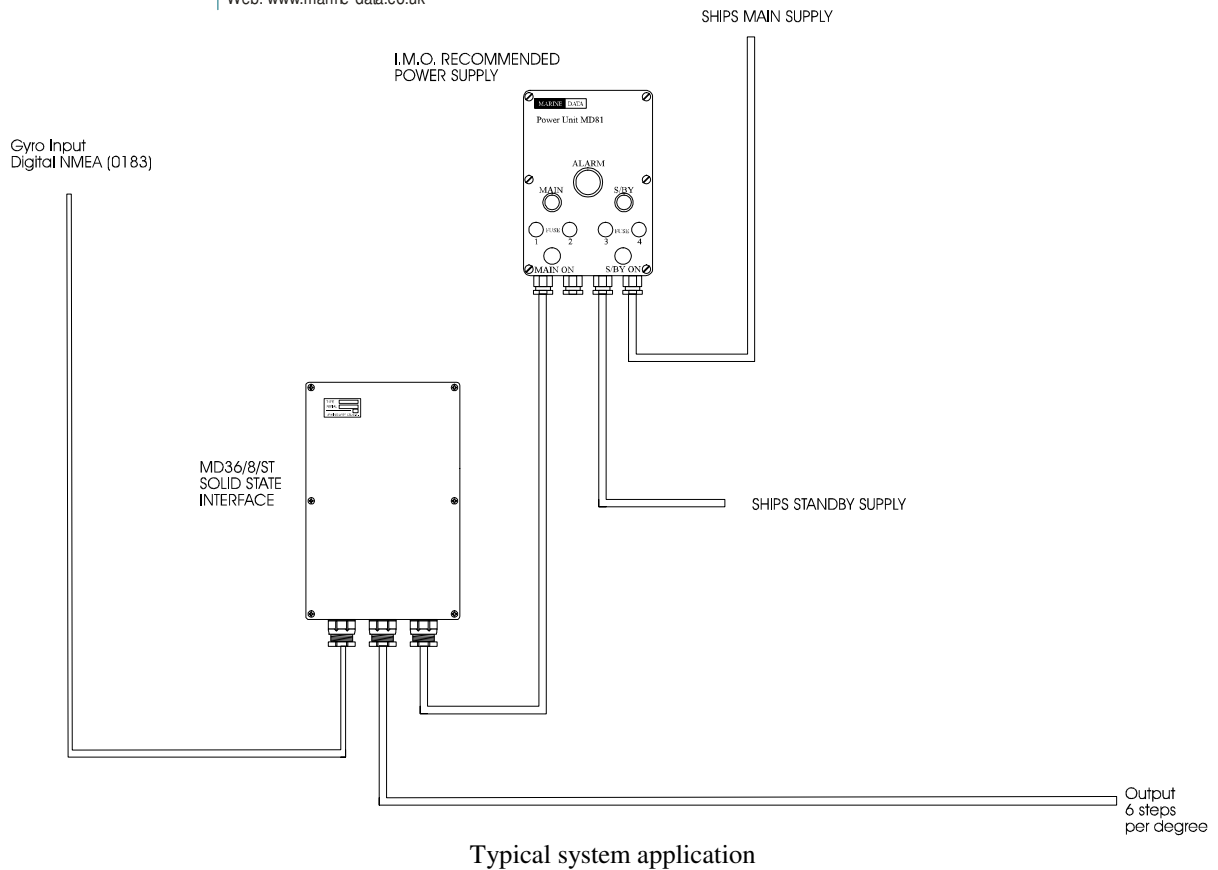


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● Introduction

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 MD36/8/ST is used as an interface between a gyro compass or TMC that provides a digital output, (NMEA format RS422 transmission standard), to receiving devices such as, a variety of displays or other navigational aids, that require a step input. When suitably adjusted the MD36/8/ST reads the transmitted heading with no errors and transmits its step output to within $1/6^\circ$.

- 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 MD36/8/ST. | |
| 4 | remove the six securing screws on the front of the lid to expose the barrier strip to connect to (refer to fig1) | |
| 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. |

MD36/8/ST Connection tables

Table 1 Connections power and signal.

| Incoming systems ident* | Description | Terminal |
|-------------------------|-----------------------------|----------|
| | +24VDC power supply (input) | 1 |
| | DC supply return (input). | 2 |
| | Data positive (TDA) | 3 |
| | Data negative (TDB). | 4 |

Table 2 Connections step output

| Incoming systems ident* | Description | Terminal |
|-------------------------|--|----------|
| | Step supply output +ve (24, 35, 50Vdc) | 5 |
| | Step supply output return (-ve) | 6 |
| | Step output L1 | 7 |
| | Step output L2 | 8 |
| | Step output L3 | 9 |

- System Commissioning**

| Step | Description | Remarks |
|------|---|--|
| 1 | Ensure the installation is satisfactory. | |
| 2 | Apply system power(24VDC) to the complete TMC and ensure that the digital signal is connected and valid See NOTE1 | The MD36/8/ST will start to transmit step information to any receiving devices.. |
| 3 | Align the receiving devices. | |
| 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 2). 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 |
|-------------------|------------------------------------|---|
| 12/8 V3.10 | Digital input Nmea Step out put | Input : RS422 4800 baud, 8 data bits, 1 stop bit, no parity. Word format : \$xxHDT,xxx.x,T CR LF Output: s-type six steps per degree. |

Note 1 If corrupt data or invalid data is sent to the interface it will remain on the last valid transmitted heading If the unit does not appear to respond correctly at installation it may be that the RS422 lines TDA and TDB are crossed this may be rectified by simply reversing the wires.

* 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.**

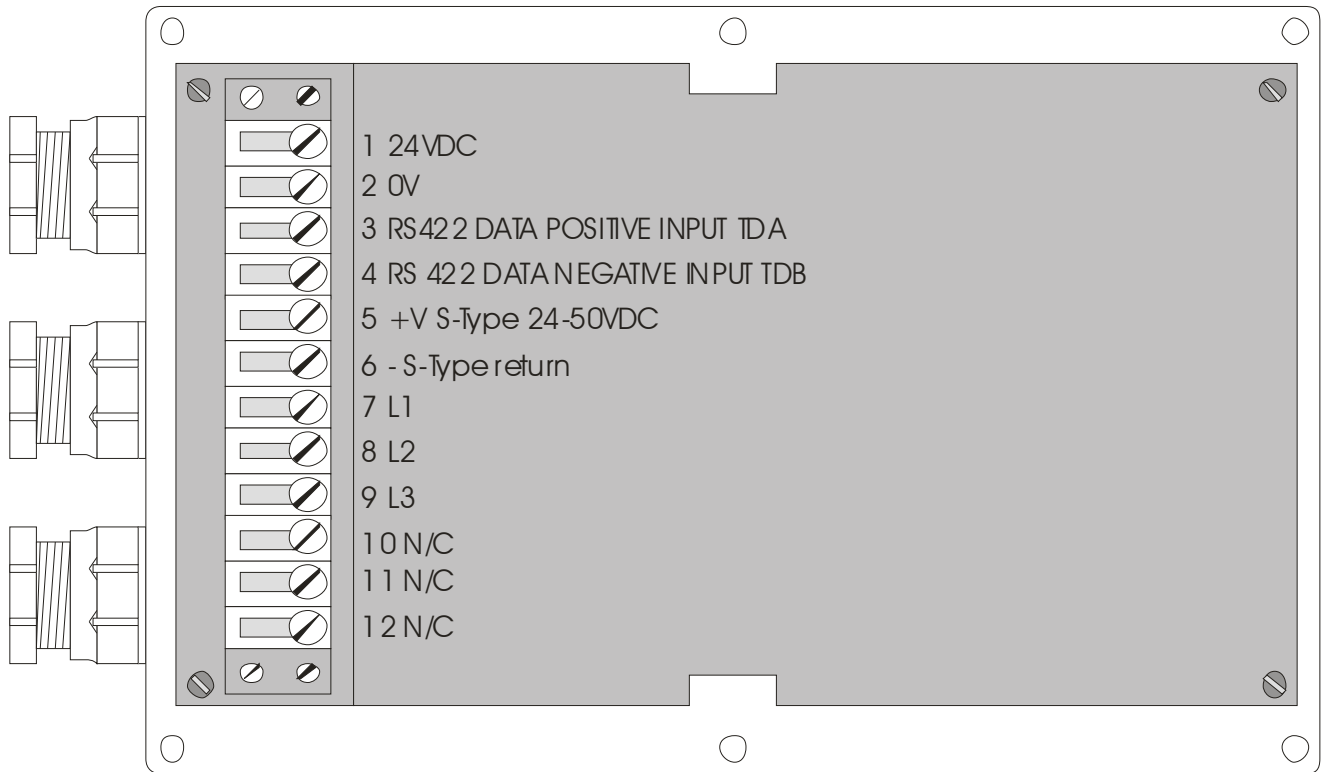


Fig 2 Internal Identification

- **Operator Controls.**

There are no operator controls to the MD36/8/ST.

- **Maintenance and fault finding.**

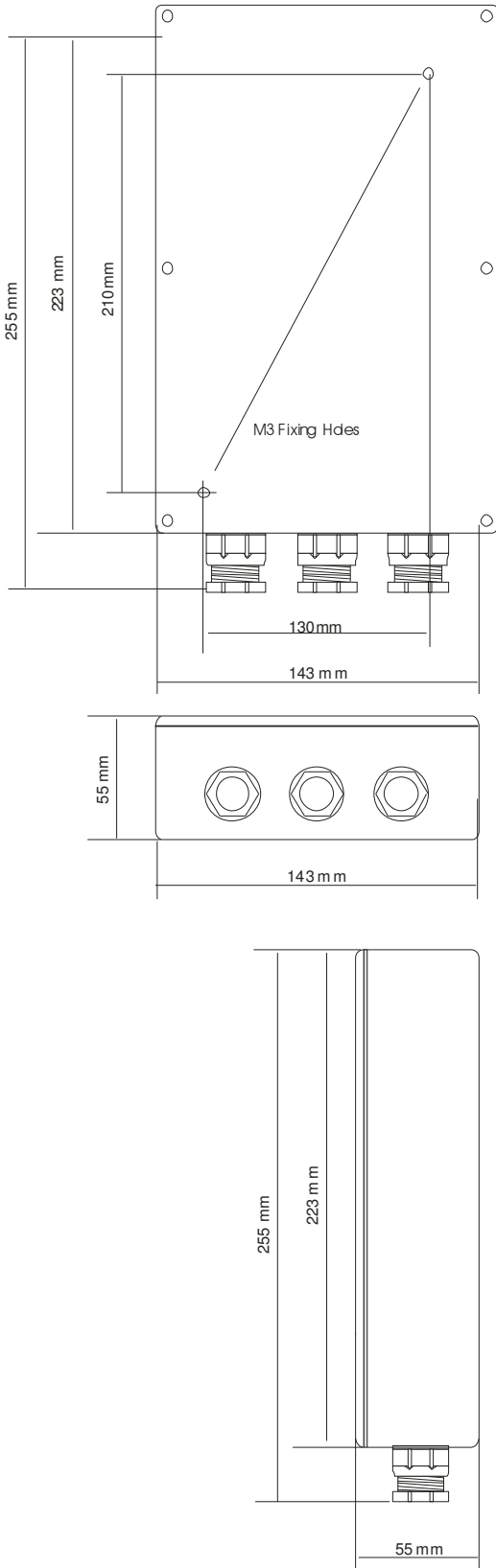
No maintenance is required beyond wiping dust from the MD36/8/ST periodically.

| Symptom | Probable fault | Remedy |
|--------------------------------------|---|---|
| MD36/8/ST does not operate. | No power. Incorrect word sent, invalid word see not1 page 3. | Check incoming power supply. Replace damaged fuse in main system junction box and locate fault which caused fuse damage. |
| Repeater devices operate in reverse. | Incorrect wiring. | Swap a pair of step phase lines. |
| No retransmission output | No supply power. Damaged step output PCB. System short circuit or system overloaded | Check step power is connected Check output Transistors Remove short circuit. Boost power by installing a MD42. |

- **Available Finished Items and Spare Parts**

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

• SPECIFICATION FOR MD36/8/ST



• Physical

- Weight 1.3 Kg
- Mounting Bulkhead
- Finish Black/Grey
- Connections 1 X Internal Barrier Strip
- Construction Aluminium Enclosure

• Electrical

- Power Supply 24v DC (50 watts)
- Data Input RS422 NMEA protocol see software variations
- Data Outputs 24, 35 or 50V Step DC (6 step per degree). step power supplied by user

• Operational

- Performance $\pm 1/6^{\circ}$ Accuracy
- Follow up rate $12^{\circ}/\text{sec}$
- Step O/P $\pm 1/6^{\circ}$ Accuracy

• Environmental

- Rating IP53
- Temperature -10°C to $+70^{\circ}\text{C}$

• Additional Information

- The MD36/8/ST is not fuse Protected
- Any optional output will require a power Source