SPRITE

VRM10 Digital Audio Variometer

Recorded alarm messages including undercarriage warning

Installation manual

Contents

1.0 Introduction.

This document describes how to install the Tasman VRM10 Variometer. It should be consulted whenever the instrument is installed or removed.

1.1 Installation procedure.

1.Read this manual.
2. Decide on the best position in the a/c panel.
We recommend a high central location for best visibility.
3. Check and identify TE connection.
4. Check and identify suitable electrical connection.
5. Install making all necessary connections.

1.2 Materials supplied.

VRM10 Variometer
Power lead
6mm pneumatic "T"
Operators manual.
This document

1.3 Optional equipment.

VRM05 Slave display.
PK312 Standby battery pack.
SP100 External speaker.
PA325 80mm adaptor plate.

1.4 Other materials required.

Tube for TE probe connection.
4.5 to 6mm IDTygon or Silicon material, not Nylon.
Undercarriage warning switches/cable.

1.5 Positioning.

The VRM10 is designed for installation in a standard 57mm (1 ¼") or 80mm (3 1/8") panel opening with the optional PA325 adaptor plate. Note M3 screws are used.
Standard instrument 57mm opening drawing can be found at the end of this document.
Because the Instrument contains a magnet, although well magnetically shielded, the effect on the a/c compass should be assessed when choosing the installation location.

2.0 Electrical installation.

Should only be performed by suitably qualified personnel, or under the supervision of qualified persons.
The connectors for Power and Data are made with RJ style connectors, 4 way RJ11 and 6 way RJ12 respectively. Refer to Apendix A at the end of this document for wiring details.

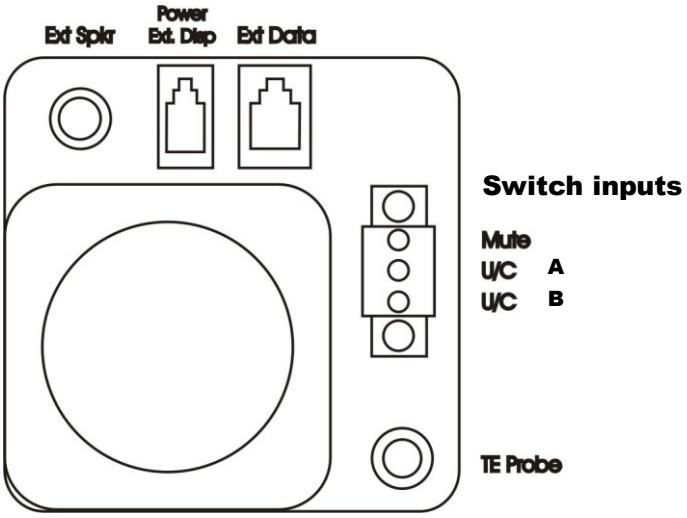


Fig 2. Rear connections

2.1 Power supply.

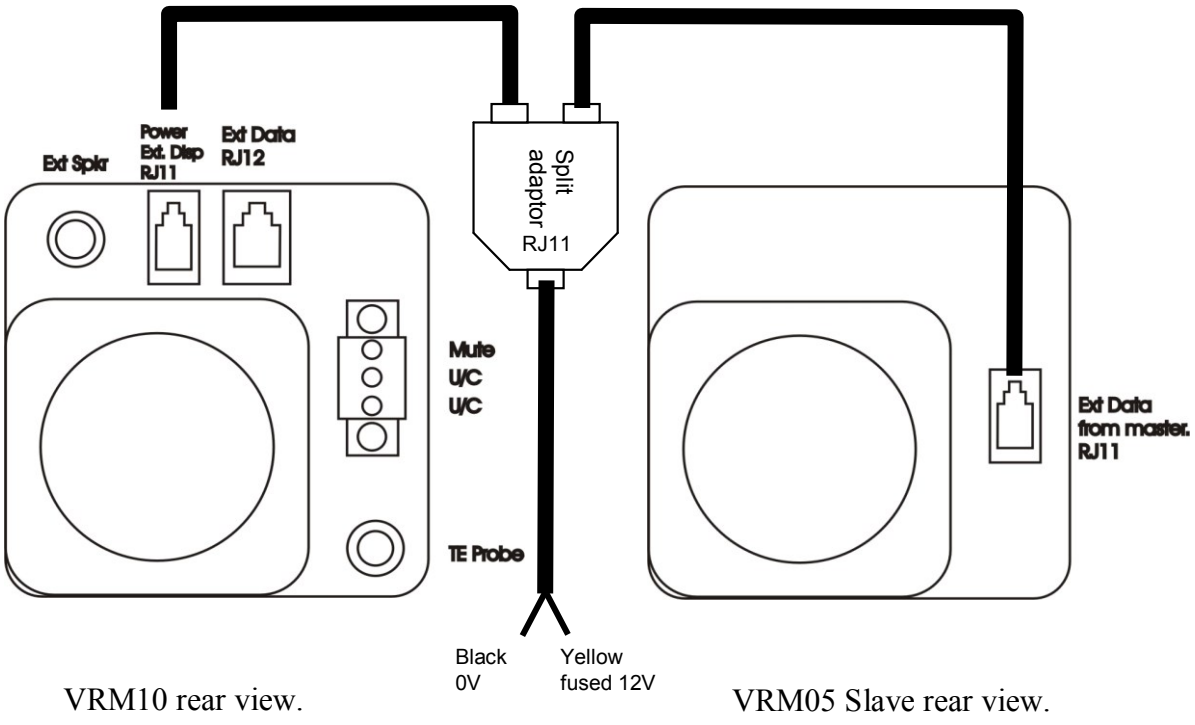
A nominal 12volt protected power supply with a min 1 amp or max 2 amp fuse or circuit breaker must be used to supply power.
A resettable circuit breaker is ideal but a delay type fuse is acceptable.
The supply should not be shared with the a/c radio.

2.5 External Data.

For connection of external devices such as Tasman Instruments Flight Pack.

2.6 Slave Display.

When a second or Slave display is required its installation requires the Power/Data cable to be split for its connection. Refer operation manual for more information.
The primary or Main display communicates via this cable. The cable also provides power for the Slave display. No extra power connection is required. See Fig5.
The Slave display VRM05, also contains a speaker. The VRM05 will be supplied with the required splitter and cables.



VRM10 rear view.

VRM05 Slave rear view.

Note: green/red not connected.

Slave display installation wiring.

2.7 External Speaker.

An external speaker, SP100 or any 8ohm speaker, can be connected via a 3.5mm stereo plug to the socket provided.
When an external speaker is used the internal speaker is disabled to reduce power drain.
Note that the speaker is driven via a balanced output which has no connection to power gnd. See fig 4.

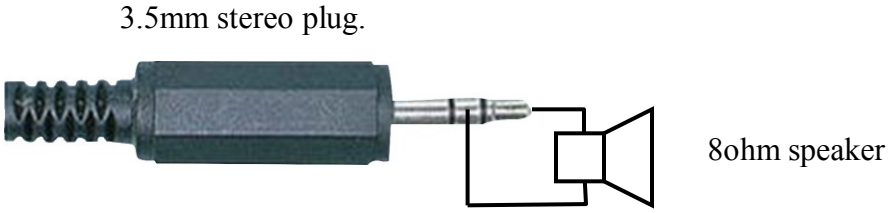


Fig 4.External speaker connection.

3.0 Switch Inputs.

A removable connector is provided to input status of external switches.
The connector is a compression screw type. For reliable connections use only bare wires or wires fitted with bootlace ferrules.
The connecter can be removed with wires connected by loosening of the outer screws and withdrawing the plug.

3.1 Undercarriage warning.

Wiring for the alarm system requires switches to be installed to sense the position of the control rods. Switches are connected to **Switch Inputs** see fig 2.

Switches either magnetic (reed) switches or micro-switches are most suitable. We are unable to recommend which switches are suitable for each aircraft installation.

Switches can be configured in two ways to generate an alarm.
see fig 3.
1. Switches **closed** when gear down and brakes locked.
2. Switches **open** when gear down and brakes locked.

Undercarriage warning cont.

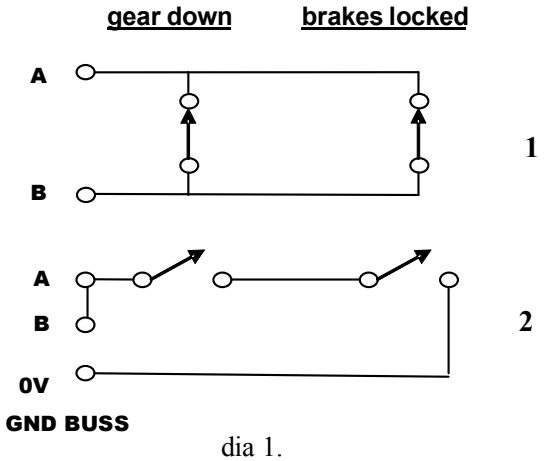
If switches **closed** is chosen then the switches are wired in **parallel**, if switches **open**, then switches are wired in **series**. See dia 1 for wiring connections for either method.

Tasman Instruments preference is **1 Switches closed**, because it provides a degree of safety as the alarm will likely be active in the event of defective wiring/switch.

Magnetic switches can be epoxy glued to the a/c fuselage with spacer blocks with magnets attaches by nylon tie to the control rod. The cockpit wall is often a convenient place for location of switches where control rod motion is fore and aft.

Ensure that all switches, their mounts, and wiring can not interfere with any control, landing gear or safety mechanism even if the switch or its mount fails.

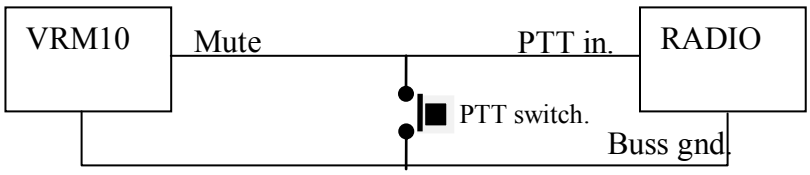
If other switches are installed and used for other instruments/systems then wiring must not be shared due to differing voltages etc. In case where other switches are present then multiple switches will have to be installed.



dia 1.

3.2 Mute.

Mute input is a high resistance connection that designed not to effect the radio PTT operation. Connect to the radio PTT switch terminal.
During radio transmission Variometer tone will be muted.



4.0 TE probe connection.

It is recommended that for the best performance of your Tasman Instruments VRM10 Variometer:
1. Connect the VRM10 Variometer first in the line to the TE. Probe.
2. If the above is not practical, ensure no restrictors and capacities are in the line before the VRM10 Variometer.
With 6mm or 6.4mm id tubing used in most sailplane plumbing more than enough air flow is available to supply the VRM10 Variometer and a mechanical display with capacity flask.

NOTE: As the VRM does not require any "flow" of air from the TE. Probe, it will have no effect on any instrument that uses a capacity.

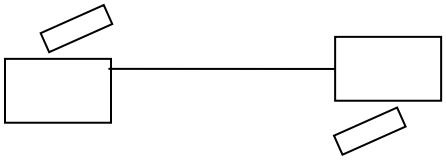
5.0 Maintenance.

VRM10 has no user-serviceable parts inside.
In the event of equipment failure, contact Tasman Instruments or sales agent.
The best care for your instrument:
• Protect the instrument from dust and damp conditions.
• Protect the instrument from extreme heat.
Keep the glider's canopy cover on when the aircraft is parked in hot sunny conditions for extended periods of time.

• Do not apply extreme loads to instrument switches.
• Gently use a soft cloth damped with water only for cleaning the display window.

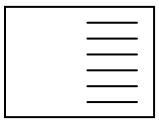
Appendix A

General connector wiring.



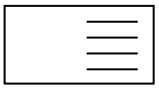
Connector orientation

External data RJ12



WHITE
BLACK
RED
GREEN
YELLOW

Power/remote. Display RJ11



Pin side view

YELLOW
GREEN
RED
BLACK

} Not connected for power cable.

Appendix B

Dimensions.