

1. Description

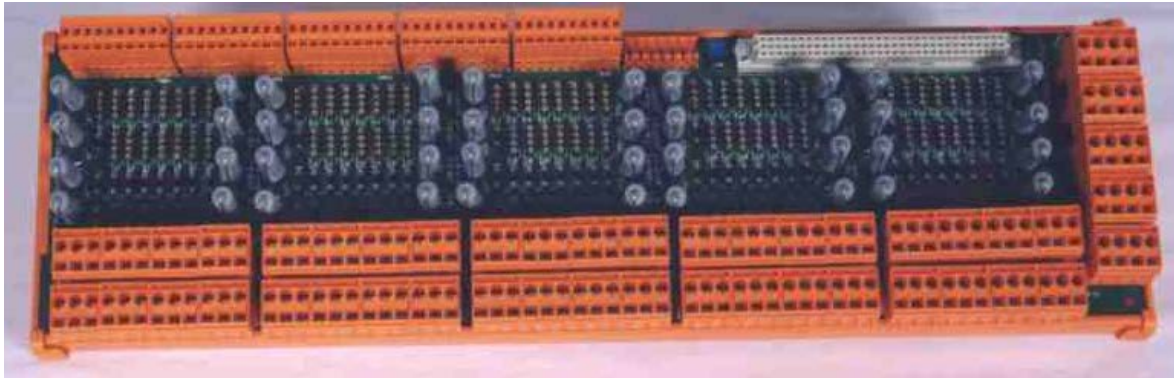


Figure 1 T8842 Layout

The Trusted Versatile FTA T8842 provides termination for a maximum of 40 input or output channels from various types of field devices. The input signals may be analogue (0 mA to 20 mA) or digital, whilst output signals are digital only with the T8448 Zone Interface Module. However, the Versatile FTA T8842 may be used with the T8480 Analogue Output module using the Digital Output configuration shown in this document.

The 40 channels are arranged in five power groups each comprising eight channels. Each channel circuit includes two resistors.

- High power 250 Ω 7 W 1 % resistors to limit short circuit current
- Precision 250 Ω 0.25 W 0.1 % resistors to measure analogue field current

Each circuit contains a set of link positions and can be configured with the following components supplied with the VFTA to enable the user to set the channel for the required input or output configuration.

- 50 mA plug-in TE5 series fuses to protect analogue current inputs
- 315 mA plug-in TE5 series fuses to protect digital inputs
- 2 A plug-in TE5 series fuses to protect digital outputs or act as low resistance links

The first channel of each power group may be configured as a power source for the other seven channels of the group, to allow fire loops to be hard reset by the application.

The cable linking the 40 channels on the Trusted Module to the VFTA is terminated at five 10-way connectors (TBG1 to TBG5). The dual 24 Vdc power supplies are connected to the VFTA via five 4-way connectors (TBFP1 to TBFP5). Forty 3-way connectors are used for the field loops (TB1 to TB40).

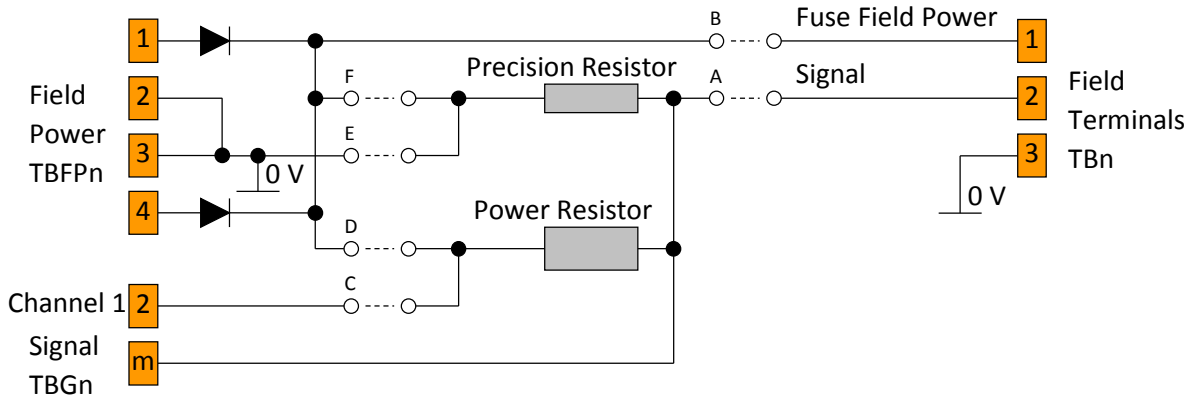


Figure 1 Layout for single channel showing all components

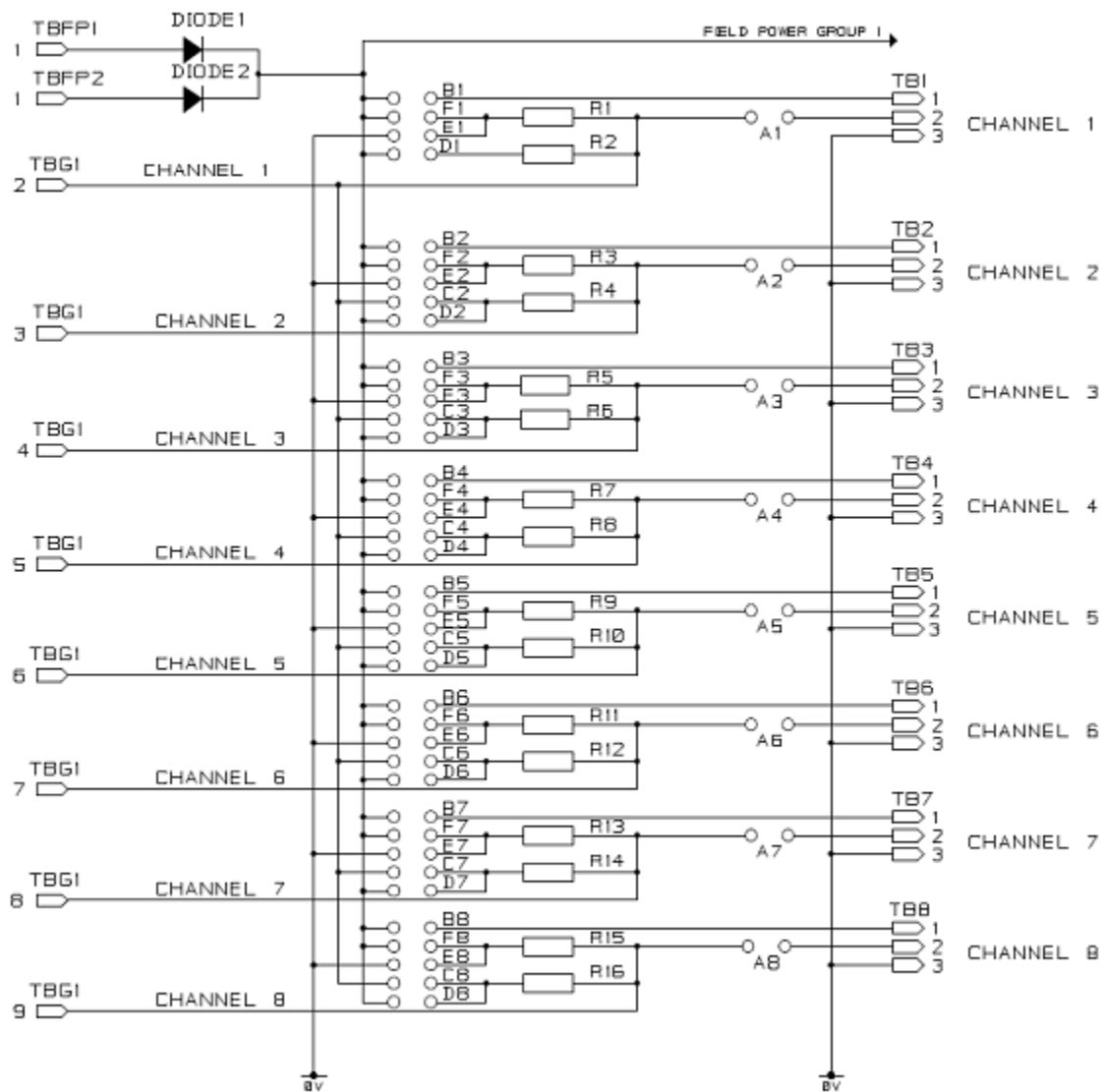


Figure 2 Power Group Configuration

The diagram above shows the full wiring for one power group of eight channels. This circuit is repeated for each of the five power groups.

In the diagram, odd-numbered resistors are precision 250 Ω and even numbered resistors are power 250 Ω . Links E and F cannot be fitted simultaneously, and links C and D cannot be fitted simultaneously.

Note that 24 V field power is required for a Zone Interface Module even if all channels are configured as volt-free inputs. This may be connected via the plug at the chassis end of the cable to a T8290 or T8297 distribution unit (for cables without power wires) or at the VFTA (for integral power cables).

Each power group is supplied from dual 24 Vdc feeds which are 'commoned' via diodes on the VFTA. The supply is then fed to each channel within the group. The feeds are rated at 3 amps maximum and are designed for input circuit power.

The following sub-paragraphs detail each type of input or output configuration.

1.1. Digital Inputs (Powered)

Figure 3 shows a channel configured to accept digital input signals from the field from devices which require power from the loop, e.g. fire input devices.

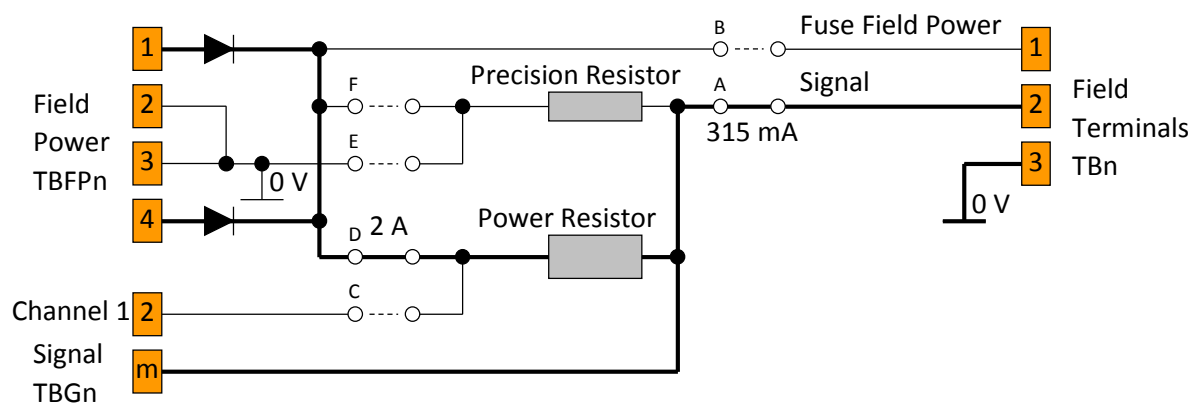


Figure 3 Digital Inputs (with power)

The configuration shown above enables powered digital input devices to be interfaced to the Trusted TMR Zone Interface module. The channel is configured by fitting a 315 mA fuse in position A, which provides circuit protection. Power for the field loop is derived from the dual 24 Vdc source via the 2 A fuse in position D, which acts as a link. The 250 Ω resistor (7 W 1 %) allows the field device status to be monitored via the resistor voltage drop. It also acts as a field current limiter (96 mA at 24 V). The voltage at the field side of the resistor is detected by the module and used to determine the healthy/alarm state from the field device.

For inputs which directly short the input or apply a fixed voltage (e.g. zener diode line monitoring), to a Zone Interface or Valve Monitor module, a 1 k 0.6 W resistor is required in position A. This is because the module requires an impedance to allow internal testing. Note that this will change the voltages seen by the module.

1.2. Digital Inputs (Line Monitored)

Figure 4 shows a channel configured to accept line monitored digital input signals.

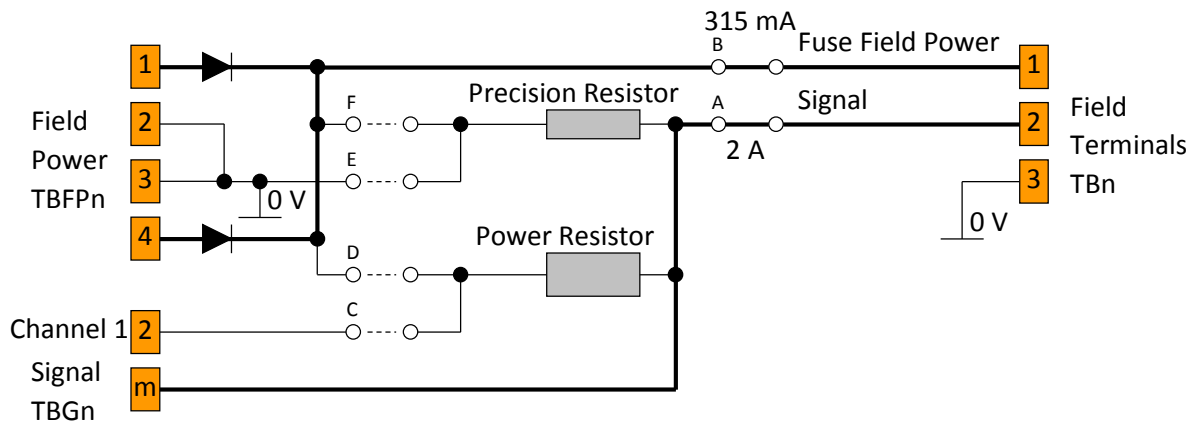


Figure 4 Digital Inputs (Line Monitored without power)

The configuration shown above enables line monitored digital input devices to be interfaced to the Trusted TMR Zone Interface module (or a TMR Digital Input module). The channel is configured by fitting a 315 mA fuse in position B, which provides circuit protection. Power for the field loop is derived from the dual 24 Vdc source. The input signal is returned via a 2 A fuse in position A, which acts as a link.

For inputs without line monitoring components or using zener diodes, to a Zone Interface or Valve Monitor module, a 1 K 0.6 W resistor is required in position A. This is because the module requires an impedance to allow internal testing. Note that this will change the voltages seen by the module.

1.3. Digital Output

Figure 5 shows the configuration required to provide digital outputs to the field.

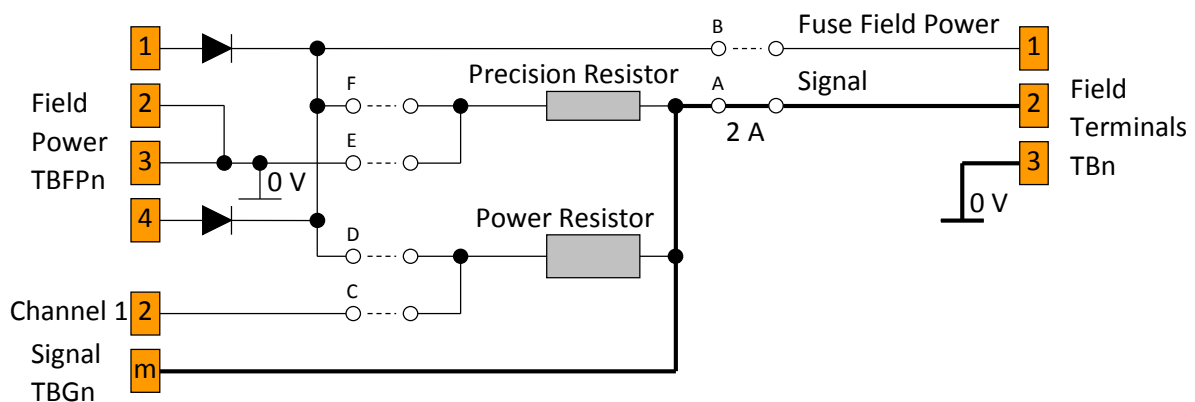


Figure 5 Digital Outputs

Powered digital outputs to the field may be provided by fitting a 2 A fuse in fuse position A, acting as circuit protection.