

**Return loss** is the term used to measure the transformers signal loss due to an impedance mismatch while the transformer is connected with its secondary loaded to the specified transmission lines impedance. **Impedance** mismatch losses due to frequency and core winding losses have the effect on signal power being reflected or returned to the transmission line.

In Figure 1 R3 is selected to be equal to the output line impedance of the intended circuit.

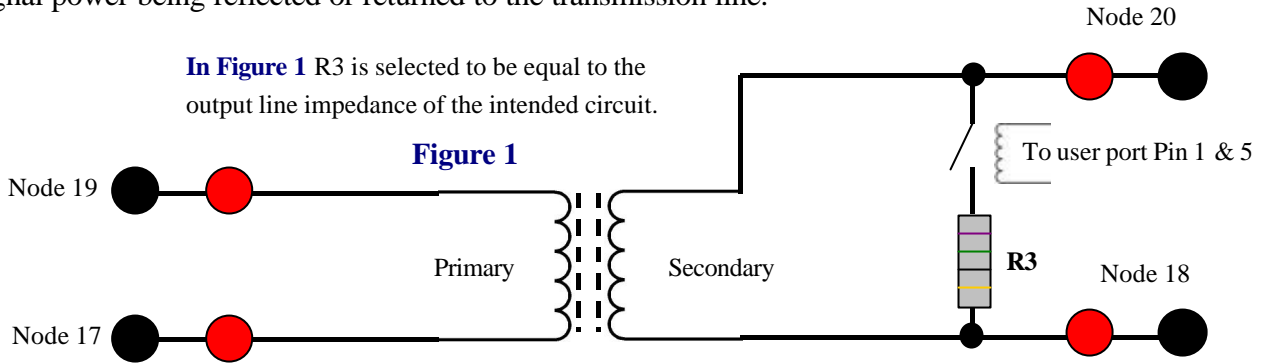
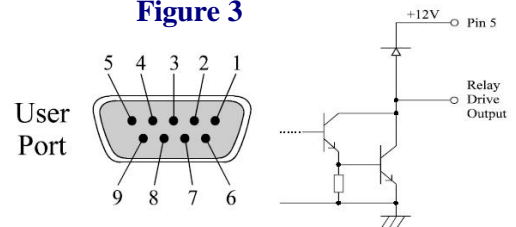


Figure 2

PIN	SIGNAL NAME	PIN	SIGNAL NAME
1	O/P USER RELAY DRIVE 0	6	O/P USER RELAY DRIVE 1
2	O/P USER RELAY DRIVE 2	7	O/P USER RELAY DRIVE 3
3	O/P USER RELAY DRIVE 4	8	O/P USER RELAY DRIVE 5
5	O/P +12V	4 & 9	I/P DO NOT USE

Figure 3



### Required parts: -

- 1 \* 10KV standoff relay VPN: 33-004.
- 1 \* ¼ or ½Watt resistor matching the circuit line impedance.

- 1 \* 9-way male D type connector.

**When** testing Return Loss (RLOS) nodes 19, 17 (Primary) and nodes 20 and 18 (Secondary) are used with the relay energised through the OUT test. A program structure example follows: -

1. OUT 0 on.
2. RLOS test.
3. OUT 0 off.
4. Other tests such as Inductance (LS), Resistance (DCR) etc using nodes 19 and 17.

**Figure 2** shows the pin configuration of the user port and

**Figure 3** shows the 9-way D and output circuitry.

**When** programming RLOS through the Editor software two parameters are asked for called 'Real' and 'Imaginary' impedance. **If** using resistive loads 'Imaginary' = 0 and 'Real' = R3 value. **If** using complex impedances such as a capacitor and resistor in series or parallel then 'Imaginary' =  $X_c (1 \div 2 \pi f C)$  and 'Real' = R3 value.



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