

## INSTALLATION

This section is intended for the engineer who is going install the equipment and it tells him how to connect the TDV 2114 to the Remote Computer.

The information is intended for someone who is familiar with the physical and electrical layout of TDV 2114, and knows the specifications of the system in which TDV 2114 is going to operate. It is an advantage to have some knowledge of the CCITT standards V24 and V28. However, an extract of definitions for the V24 circuits used in TDV 2114 is included.

This section may also be of some help in choosing the appropriate type of communication to the Remote Computer.

### Contents:

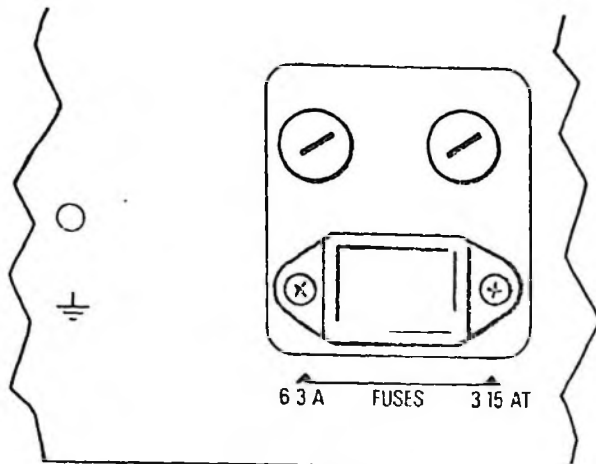
	Page
Power requirements .....	1
Connecting to the Remote Computer .....	1
Transmission line via modem .....	2
Full/half duplex .....	2
Modem circuits used in the TDV 2114 .....	3
Current loops .....	4
Direct connection on V28 levels .....	5

OP. INSTR

## INSTALLATION

### POWER REQUIREMENTS

The display unit is delivered for either 230V or 115V a.c. operation. Changing from one voltage to the other can only be done by qualified service personell.



The figure shows the location of the fuses and the mains connector.

### CONNECTING TO THE REMOTE COMPUTER

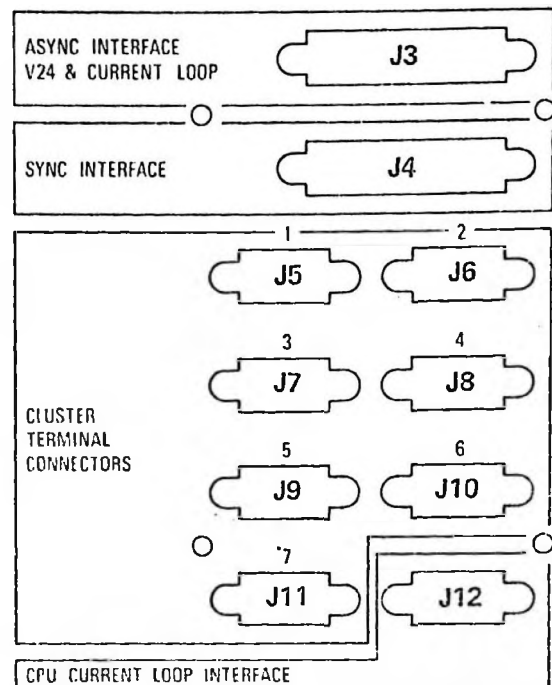
Installing the display terminal involves establishing connection with the Remote Computer and making the initial setting up required to ensure that the display terminal complies with the system in which it will be operating.

The types of communication links that can be used for connection to the Remote Computer fall in three categories:

- Transmission line via modem.
- Current loops
- Direct link at V28 levels

Each of these three links is explained in this section of the book.

There are ten signal connectors on the back panel, as shown in the figure below.



The figure shows the signal connectors on the back panel.

The J-numbers refer to the connector numbers on the Connector board schematic.

Connector J13 is intended for an Asynchronous modum or Current Loop connected direct to the Remote Computer.

Connector J4 is intended for a Synchronous modem or a Card/Paper tape Reader.

J5 to J11 are intended for the seven devices in a Cluster system.

J12 is intended for a printer.

## TRANSMISSION LINE VIA MODEM

Transmission via a modem has no restrictions on distance but the maximum distance between the TDV 2114 and the modem is 15m.

Modems are available in many types and must be chosen according to the desired transmission speed and type of communication (full/half duplex, asynchronous/synchronous).

In addition to the circuits for received data and transmitted data, the modem and interface have other interchange circuits for transfer of control signals and timing signals. There are several types of modems and the number of interchange circuits may vary from one type to another. The pin allocation for the various circuits in the connector on the modem is, however, standardized. The interchange circuits utilized by the interface are listed in the table below.

V24	Circuit name	Mnemonic	Pin no.in Modem Connector	Pin no.on Connector Board
CT101	Protective ground		1	J3-1
CT102	Signal ground or common return		7	J3-7
CT103	Transmitted data		2	J3-2
CT104	Received data		3	J3-3
CT105	Request to send	RQTS	4	J3-4
CT106	Ready for sending	RFS	5	J3-5
CT107	Data set ready	DSR	6	J3-6
CT108	Connect data set to line	CON	20	J3-20
CT109	Data channel received line signal	RCVS	8	J3-8
CT125	Calling indicator	CALLIND	22	J3-22

See next page for a detailed description of these circuits.

If one or more of the circuits listed above do not exist in the modem to be used, the interface might not work unless the missing circuits are simulated by appropriate strapping of the input/output plug.

Strapping information is given in the table on the next page.

### FULL/HALF DUPLEX

Full duplex communication can only be established when the modem at both ends have separate carrier frequencies for received data and transmitted data, or if a separate line is available in each direction. In the latter case the modem must be a 4-wire type.

If the link is full duplex the EXT.ECHO switch on the back panel must be set to the YES position.

If the link is half duplex it must be set to the NO position.

Non-existent V24 circuit in modem	Mnemonic	Pins to be strapped in the input/output plug *)
CT106	RFS	5 and 4
CT107	DSR	6 and 20
CT109	RCVS	8 and 20

\*) Plug J3 on the Connector Board

#### MODEM CIRCUITS USED IN THE TDV 2114

The circuit numbers (CT) listed below refer to CCITT recommendation V24. The corresponding circuit names used in the TDV 2114 are also referred to.

#### CT101 Protective Ground

Chassis ground.

#### CT102 Signal Ground (Common Return)

Common cart to modem. Establishes common reference potentials for all interchange circuits in 100 series (except 101).

#### CT103 Transmitted Data

Data signal from the TDV 2114 interface to modem. The signal is started by the interface when circuits 105, 106, 107 and 108 are ON. In intervals between characters and whenever no data is being transmitted the interface shall hold this circuit in the binary 1 condition.

#### CT104 Received Data

Data signal generated by modem in response to line signals received from the Remote Control are transferred to the interface on this circuit.

#### CT105 Request to Send

From interface to modem. When the circuit is in the ON condition the interface requests permission to send data. The modem's response to this signal will come on CT106 (RFS).

#### CT106 Ready for Sending (RFS)

From modem to interface. The circuit is in the ON condition when the modem is ready to send data.

#### CT107 Data Set Ready (DSR)

From modem to interface. When the circuit is in the ON condition it indicates that the modem is ready to operate.

#### CT108 Connect (CON)

From interface to modem. When the circuit is in the ON condition it tells the modem to connect the signal conversion equipment to the line.

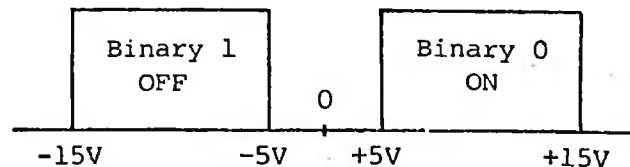
#### CT109 Data channel line signal (RCVS)

From modem to interface. When the circuit is in the ON condition it indicates that the received datacarrier signal is within prescribed limits.

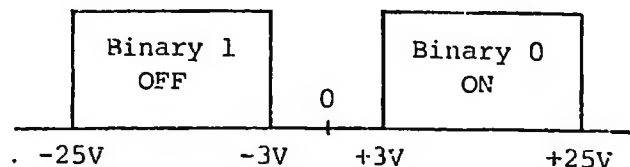
#### CT125 Calling indicator (CALLIND)

From modem to interface. When the circuit is in the ON condition it indicates that a calling signal from the Remote Computer is being received by the modem.

Standard signal levels for the V24 circuits as defined by V28:



Signal levels for V28 drivers



Signal levels for V28 receivers installation-3

OP. INSTR

### CURRENT LOOPS

Current loops are useful for intermediate distances depending on loop current and transmission rate.

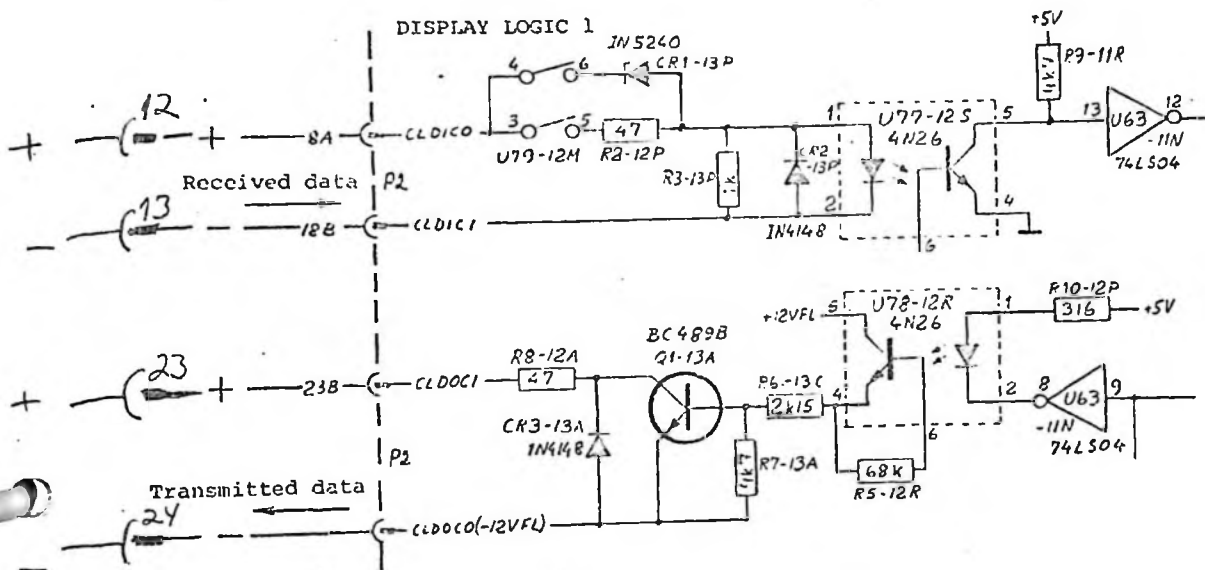
The current loop connection allows full duplex communication, but since no control signals are generated, the control signals required by Display Logic Interface must be simulated by strapping the appropriate pin on the input/output plug.

See table in right column.

Signal	Pins to be strapped
RFS	5 and 6
DSR	6 and 20
RCVS	8 and 20

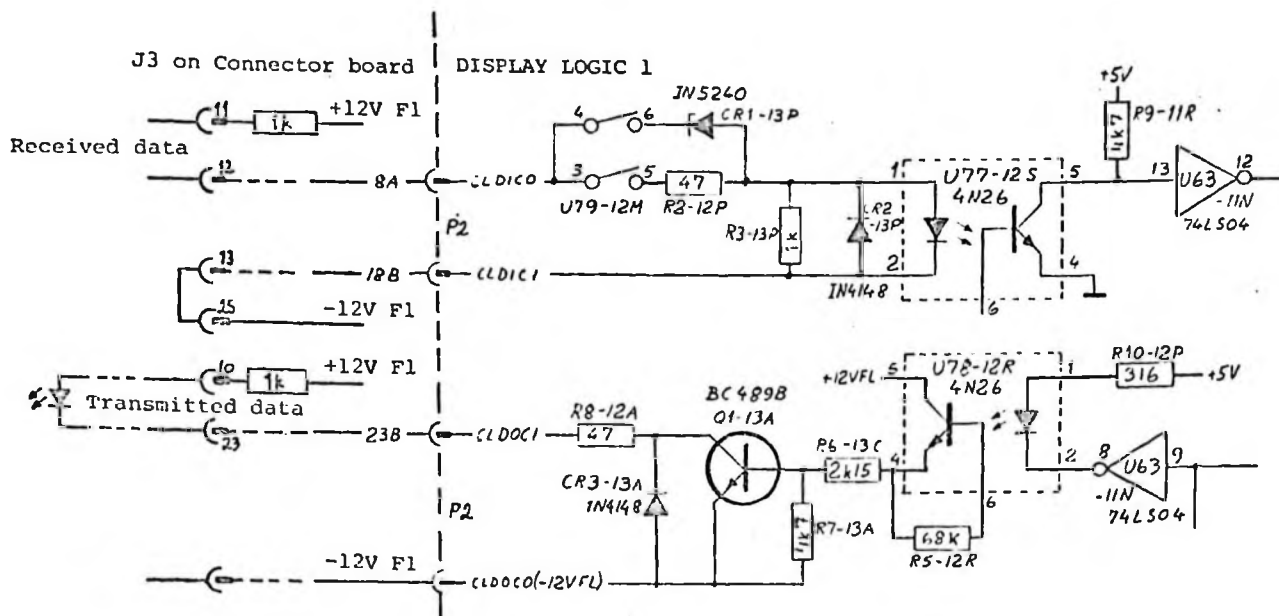
Strapping RCVS to pin 20 will make the CARRIER indicator light when ON LINE.

Current supplied from the Remote Computer.



Check the polarity of the loop wires from the Remote Computer and connect as shown.

Current supplied from the Display Unit.  
 (For receiving loop and transmitting loop).



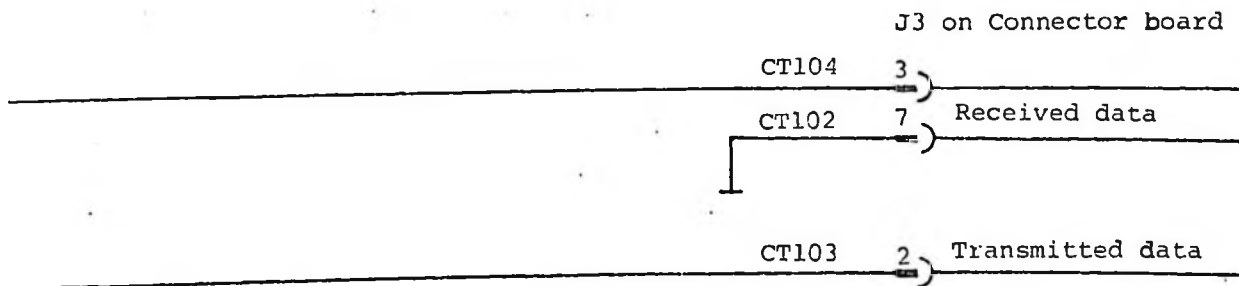
Before connecting, check that the diode in the loop coupler in the Remote Computer has the polarity shown.

The loop current is fixed at 20mA by a resistor in each loop.

Direct connection on V28 levels

This type of connection is used if the Remote Computer is near enough to allow connection with a 15m (45ft) cable. Direct connection allows full duplex communication.

The data signal will have to be within the standard V28 levels as defined for the modem connection.



If the Remote Computer interface does not provide the control signals required by the Display Logic, they must be simulated by strapping the input/output plug as shown in the table on the right.

Signal	Pins to be strapped
RFS	5 and 4
DSR	6 and 20
RCVS	8 and 20

OP. INSTR