

IDS DT-210

DATA TERMINAL OPERATION MANUAL

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1.0

PREFACE

The DT210 is a compact data collection terminal used in industrial weighing applications. It features the following:

- An 8 character numeric display.
- A 16 character alpha/numeric display (alpha display).
- An alpha/numeric keyboard with 10 fixed function keys and 10 programmable function keys.

The DT210 has the capability to read scale data from a weight indicator, store information in memory, print tickets, and print reports.

2.0

IMPORTANT INSTRUCTIONS

1. You must understand the scrolling menu system.
2. The DT210 must be INITIALIZED before being used.
3. The DT210 must be CONFIGURED to match your requirements.

2.1 THE DT210 SCROLLING MENU SYSTEM

There are 4 keys that control the operation of the DT210. Understanding the 4 keys puts you in full control of the DT210.

CONTINUE	Go to the next step.
REVIEW	Go to the previous step.
ENTER	Enter data and go to the next step.
CLEAR ENTRY	EXIT

The operation of the DT210 is based on "scrolling menu's". A scrolling menu is a list of operations that are viewed by pressing the CONTINUE key or the REVIEW key. The CONTINUE key advances the display to the next item in the menu, the REVIEW key retreats to the previous item. The ENTER key selects the item being displayed. The CLEAR ENTRY key is used to exit from a menu.

For example: the CLEAR MEMORY key presents the following menu.

CLEAR TOTALS
ERASE MEMORY
INITIALIZE SYSTEM

Press the CLEAR MEMORY key. Press the CONTINUE key several times. The above listed menu selections are displayed one after another. Press the REVIEW key several times. The list is displayed in reverse order. Press the CLEAR ENTRY key to exit the CLEAR MEMORY menu.

Note: When a menu is being scanned, the numeric display will show the current menu selection number in the form "----X" where X is the menu number.

2.2 INITIALIZE SYSTEM

Press the CLEAR MEMORY key. Press the CONTINUE key until the DT210 displays 'INITIALIZE SYS'. Press the ENTER key.

NOTE: DO THIS FUNCTION 1 TIME ONLY! (When installing the DT210.) Initialize system erases all of memory, writes the default page-printer data, and sets some of the configuration parameters to default values.

3.0 CONFIGURE THE DT210

The configuration process is used to tailor the DT210 to your exact requirements. The configuration procedure is described in 3 sections:

Section **3.1** CONFIGURE STANDARD PARAMETERS

Section **3.2** CONFIGURE PAGE PRINTER

Section **3.3** CONFIGURE APPLICATION PARAMETERS

The standard parameters are common to all DT210 applications. The application parameters differ from one application to the next.

3.1 CONFIGURE STANDARD PARAMETERS

The standard configuration parameters for the DT210 are as follows:

- | | | |
|--------------|-------------------------|---|
| 3.1.0 | SET CLOCK | Set time and date. |
| 3.1.1 | CONFIG SER PORT1 | Set baud rate and data format for port 1. |
| 3.1.2 | CONFIG SER PORT2 | Set baud rate and data format for port 2. |
| 3.1.3 | CONFIG SCALE | Select meter type, set units (ex. LB, KG...) and count-by (ex. 1, 2, 5, .). |
| 3.1.4 | CONFIG PRINTER | Select printer type. |
| 3.1.5 | CONFIG PASSWORD | Enable and set password protection. |
| 3.1.6 | PRINT 210 CFG | Send config data to the printer. |

Press the CONFIGURE key to begin the configuration process.

Press the CONTINUE key to scan the configure menu.

Press the ENTER key to activate a configure function.

CONFIGURE STANDARD PARAMETERS WORKSHEET

MENU SELECTION	PARAMETER	DEFAULT	FIELD SETTING
SET CLOCK	TIME	NOW	
	DATE	TODAY	
	ADJUST SEC / DAY		
CONFIG SER PORT 1	BAUD RATE	(no default)	
	DATA FORMAT	(no default)	
CONFIG SER PORT 1	BAUD RATE	(no default)	
	DATA FORMAT	(no default)	
CONFIG SCALE	METER TYPE	Condec/WS700T	
	WEIGHT UNITS	UNITS = LB	
	COUNT BY	COUNT BY 1	
CONFIG PRINTER	PRINTER TYPE	IDS150	
	ADD LF TO CR	TRUE	
	PAGE END PAUSE	TRUE	
	LINE LENGTH	LINE LEN = 40	
	END OF PRINT	FF(Formfeed)	
	SIZE TABLE	up to six entries	
CONFIG PASSWORD	ENABLE PASSWORD	N (disabled)	
	NEW PASSWORD	(no default)	
CONFIG PAGE	HEADER LABEL 1	(blank)	
	HEADER LABEL 2	(blank)	
	HEADER LABEL 3	(blank)	
	CONFIG PAGE 1	DEFAULT SET	
	CONFIG PAGE 2	AT INITIALIZE	
	CONFIG PAGE 3	SYSTEM	
PRINT DT210 CFG	This function sends configuration data to the printer.		

3.1.0 SET CLOCK

Activate the CONFIGURE menu and press the ENTER key when the DT210 displays 'SET CLOCK'.

The DT210 prompts: "TIME HHMM*"

where HH = hours, MM = minutes, and * = P for PM, A for AM or space for 24hr time. Enter the hours (2 DIGITS!), the minutes and then "A", "P", or space. Press the ENTER key to complete the time entry.

The DT210 prompts: "DATE MMDDYY"

where MM = months, DD = day, and YY = year. Enter the month (2 DIGITS!), the day, and the year. Press the ENTER key to complete the date entry.

The DT210 then displays entered time and date. Press the ENTER key to set the time and date into the clock.

The DT210 prompts: "ADJUST S/D- XXXX"

where XXXX = the number of seconds per day to adjust the clock. Enter a 0 when installing the DT210. If the clock is slow enter the number of seconds/day that the clock is slow. If the clock is fast enter the NEGATIVE number of seconds/day.

NOTE: The numeric display will show the number of days since the clock was last set.

3.1.1 & 3.1.2 CONFIGURE SERIAL PORT 1 and PORT 2

Activate the CONFIGURE menu and press the ENTER key when the DT210 displays 'CONFIG SER PORT1'.

The DT210 prompts: "BAUD = NNNN"

where NNNN = the current baud rate selection. The baud rate menu selections are:

"BAUD = 300" - selects 300 baud.
"BAUD = 600" - selects 600 baud.
"BAUD = 1200" - selects 1200 baud.
"BAUD = 2400" - selects 2400 baud.
"BAUD = 4800" - selects 4800 baud.
"BAUD = 9600" - selects 9600 baud.

Press the CONTINUE key to scan the baud rate selections . Press the ENTER key to complete the baud rate selection.

The DT210 prompts: "N DATA N STOP"

where N DATA = number of data bits per character, N STOP = number of stop bits per character.

The character format menu selections are:

"8 DATA 1 STOP"
"8 DATA 2 STOP"
"8 DAT PAR 1 STOP"
"8 DAT PAR 2 STOP"
"7 DATA 1 STOP"
"7 DATA 2 STOP"
"7 DAT PAR 1 STOP"
"7 DAT PAR 2 STOP"

Press the CONTINUE key to scan the character format selections.

Press the ENTER key to complete the character format selection.

If a data format was chosen that had "PAR" then the DT210 with the parity menu:

"PARITY ODD"
"PARITY EVEN"

Press the CONTINUE key to scan the parity selections.

Press the ENTER key to complete the parity selection.

NOTE : Do the same for PORT 2.

3.1.3 CONFIGURE SCALE

Activate the CONFIGURE menu and press the ENTER key when the DT210 displays 'CONFIG SCALE'.

The DT210 prompts: "CONDEC/WS700T" (or current meter that is selected.)
The meter select menu is:

"NCI5790"
"ANALOGIC AN5316"
"CONDEC / WS700T"
"AND / GENERAL"
"CARDINAL 738"
"TOLEDO 8142"
"WI 110"
"DR 10K"
"SSD800"

Press the CONTINUE key to scan the meter list. Press the ENTER key to select a meter type.

The DT210 prompts: "UNITS = XXXX"

where XXXX = the scale units being sent by the scale indicator.

Note: if the scale input units do not match the units configured the DT210 display will show the error message: -U-

The scale units menu selections are:

"UNITS = UNDEF." - units not set.
"UNITS = LB" - sets units to lbs.
"UNITS = KG" - sets units to kgs.
"UNITS = TON" - sets units to tons.
"UNITS = TNE" - sets units to metric tons.

Press the CONTINUE key to scan the scale units selections . Press the ENTER key to complete the scale units selection.

The DT210 prompts: "COUNT BY XX"

where XX = count-by graduations of the weight indicator. Press the ENTER key to use the displayed count-by or enter a new count-by number. The valid count-by's are:
.01 .02 .05 0.1 0.2 0.5 1 2 5 10 20 50

If the DT210 internal motion detect option is installed -

The DT210 prompts: "MOTION TIME XX"

where XX is the time between motion detect samples (tenths of seconds). Press ENTER to use the displayed time or enter a new motion detect interval time.

The DT210 prompts: "MOTION RANGE XX"

where XX is allowable weight deviation for the scale = not in motion. Press ENTER to use the displayed range or enter a new motion detect range.

3.1.4 CONFIGURE PRINTER

Activate the CONFIGURE menu and press the ENTER key when the DT210 displays 'CONFIG PRINTER'.

The DT210 displays one of the following menu items:

PARALLEL ASCII
SERIAL ASCII
IDS150
IDS152
IDS160

Press the CONTINUE key to scan the menu.

If the PARALLEL ASCII or SERIAL ASCII is selected the DT210 prompts for additional data. This enables the DT210 to be customized for different printers.

The DT210 prompts: "ADD LF TO CR N"

Enter a 'Y' to add a linefeed to each carriage return character, enter a 'N' to disable the additional line feed character.

The DT210 prompts: "PAGE END PAUSE N"

Enter a 'Y' to pause at the end of each page when printing reports, enter a 'N' if the printer has continuous paper.

The DT210 prompts: "LINE LEN = XX"

where xx is the current line length setting (26, 40 or 80). Press the CONTINUE key to scan the line length menu, press the ENTER key to select the line length that is displayed.

The DT210 prompts: "END OF PRINT XXXX"

where xxxx is the hexadecimal code that is sent to the printer at the end of each page or ticket that is printed (Usually the form feed character '0C'). Press the ENTER key to retain the displayed code or enter a new code string.

The DT210 prompts: "SIZE 1 XXXX"

where xxxx is the hexadecimal code for print size 1 (normal print size).

The DT210 prompts for sizes 2, 3, 4, 5, and 6.

THE CUSTOM PRINTER INTERFACE TABLE.

PRINTER TYPE	ADD LF TO CR	PAGE PAUSE	LINE LEN	END OF PRINT	SIZE 1	SIZE 2	SIZE 3	SIZE 4
IDS 310	N	N	80	0C	01	04	XX	XX
STAR MICRO. DP8340	N	N	80	0C	14	0E	XX	XX
EPSON RX80	DOP	N	80	0C	14	0E	XX	XX
EPSON X-80	DOP	N	80	0C	14	0E	XX	XX
OKIDATA u92	DOP	N	80	0C	1E	1F	XX	XX
OKIDATA u92 (IBM)	DOP	N	80	0C	14	0E	XX	XX
OKIDATA 320	DOP	N	80	0C	0F	0E	XX	XX

All values for END OF PRINT and SIZE(s) are in hexadecimal.

Definition of terms used in Custom Printer Interface Table.

DOP -- Depends on printer. This is used for the "ADD LF TO CR" configuration. Many printers have an automatic line feed after carriage return setting. If auto cr. after lf. is ENABLED on your printerT210.

N -- Indicates a yes or no response.

XX -- Indicates any hexadecimal value.

NOTE: Many printers use the same interfaces. If your printer is not listed above, check the users manual for cross compatibility.

3.1.5 CONFIGURE PASSWORD

There are 2 password levels. Password level 1 protects access to the ID functions and the clear memory functions. Password 2 protects access to the configure and system initialize functions.

LEVEL 1 PROTECTED FUNCTIONS: ID1, ID2, ID3, TRANSACTION, & CLEAR MEMORY.

LEVEL 2 PROTECTED FUNCTIONS: CONFIGURE & INIT SYSTEM.

Activate the CONFIGURE menu and press the ENTER key when the DT210 displays 'CONFIG PASSWORD'.

The DT210 prompts: "EN PASSWORD 1 N"

Enter a 'Y' to enable the password or an 'N' to disable the password. If the password is enabled:

The DT210 prompts: "ENTER PASSWORD 1"

Enter up to 7 characters for the new password. Press the ENTER key to complete the password entry.

The above steps are repeated for password 2 .

WARNING: ONCE A PASSWORD IS ENTERED IT MUST BE MEMORIZED. IF YOU FORGET THE PASSWORD THERE IS NO WAY TO ACCESS THE PROTECTED FUNCTIONS.

The PASSWORD function inserts an additional step when accessing protected functions:

The DT210 prompts: "ENTER PASSWORD".

The correct password must be entered before proceeding.

3.1.0 PRINT DT210 CFG

Activate the CONFIGURE menu and press the ENTER key when the DT210 displays 'PRINT DT210 CFG'. The DT210 sends the configuration data to the printer. Activate this function after installation and keep the printout with the DT210 manual.

3.2 CONFIGURE PAGE PRINTER

Activate the CONFIGURE menu and press the ENTER key when the DT210 displays 'CONFIG PAGE'.

The DT210 prompts:

- "HEADER 1"
- "HEADER 2"
- "HEADER 3"

Enter up to 16 characters for each header label or press CONTINUE to skip a header label. The header labels are used for print a fixed labels on the ticket such as the company name and address, station id, etc.

The DT210 prompts with the following menu:

- CONFIG PAGE 1
- CONFIG PAGE 2
- CONFIG PAGE 3

Press the CONTINUE key to scan the page menu.

Press the ENTER key to begin a page data entry.

Each page may have up to 25 items printed on it. The pages are organized as follows:

LINE_NO	COLUMN	ITEM_NO	SIZE

line_no = line number to print item on.
column = column number to begin printing item.
item_no = item to be printed (see item list).
size = print size: 0 = no change, 1 = small,
2 = enhance, 3 = mixed

NOTE: When the IDS 150 Printer is used, the maximum number of characters that can be printed on one line is 40 in normal size print or 20 in enhanced mode.

THE PAGE CONFIGURATION PROCEDURE

1. Use the PAGE WORKSHEET provided section 3.2.2. Enter your ticket format into the worksheet using the item list in section 3.2.3.
2. Activate page configuration as described above.
3. Enter the data from the PAGE WORKSHEET into the DT210.
4. Enter a 0 for the line_no after the last data item.

3.2.1 PAGE CONFIGURATION EXAMPLE

EXAMPLE ITEM LIST

- 1 --- TICKET NUMBER
- 2 --- HEADER LABEL
- 3 --- GROSS WEIGH
- 4 --- TARE WEIGHT
- 5 --- NET WEIGHT
- 6 --- WEIGH-IN WEIGHT
- 7 --- TIME AND DATE

EXAMPLE TICKET

TICKET NO	1256
GROSS	54784LB
TARE	12541LB
NET	42243LB
TIME	03 : 45 PM
DATE	04/03/97

EXAMPLE WORK SHEET

LINE_NO	COLUMN	ITEM_NO	SIZE
1	1	1	1
4	8	3	1
5	8	4	1
6	8	5	1
8	4	7	1
0	0	0	0

NOTE : A zero in line no. column terminates printing. Use zero only after all required information has been entered.

The DT210 is easy to use yet it is able to solve many complex applications. This ease of use in the face of complexity is managed by the DT210's STANDARD FEATURES.

The DT210 communicates via it's 8 character NUMERIC display, 16 character ALPHA display, and it's 60 position KEYBOARD.

The NUMERIC display is used to display weight information, and as an adjunct to the alpha display.

The ALPHA display is used to prompt the operator for input and for displaying data.

The KEYBOARD is the primary data input device. It is divided into 4 sections:

1. The top row of keys are PROGRAMMABLE FUNCTION keys. They can be changed to fit the application at hand.
2. The second row of keys are FIXED FUNCTION keys. They are used for various test and maintenance functions.
3. The CONTROL keys are found on the second row of keys and on the bottom row of keys. They control the operation of the DT210.

The SCALE INTERFACE permits the DT210 to be used in a wide range of weighing applications.

The PRINTER INTERFACE is used to print transaction tickets and summary reports.

The following are described in more detail in this section:

4.1 CONTROL KEYS

4.2 FIXED FUNCTION KEYS

4.3 SCALE INTERFACE

4.4 PRINTER INTERFACE

4.5 SELF TEST

4.1 CONTROL KEYS

There are 4 keys that control the operation of the DT210. Understanding the 4 keys puts you in full control of the DT210.

CONTINUE The CONTINUE key is used for scanning "scrolling menu's" and skipping past data entry steps. It is also used to confirm the last step in data entry before storing data in memory and printing.

REVIEW The REVIEW key is used to scroll a menu backwards and for reviewing previous data entry steps.

ENTER The ENTER key is used to select a menu item and to complete a data entry step.

CLEAR The CLEAR ENTRY key is used exit from a menu and to ENTRY abort a function in progress.

The operation of the DT210 is based on "scrolling menu's". A scrolling menu is a list of operations that are viewed by pressing the CONTINUE key or the REVIEW key. The CONTINUE key advances the display to the next item in the menu, the REVIEW key retreats to the previous item. The ENTER key selects the item being displayed. The CLEAR ENTRY key is used to exit from a menu.

Note: When a menu is being scanned, the numeric display will show the current menu selection number in the form "----X" where X is the menu number.

4.2 FIXED FUNCTION KEYS

The fixed function keys are used for various test and maintenance functions. The fixed function keys are on the second row from the top row of the DT210 keyboard.

The fixed function keys are:

- .2.1 Lamp Test - Test fluorescent displays.
- .2.2 Configure - Set programmable options (section 3).
- .2.3 Clear Memory - Clear totals, id memories or initialize the system (section 2.2).
- .2.4 Time - Display the time and date.
- 4.2.5 Date - Display the time and date.
- 4.2.6 Print - Print the weight on the scale.
- 4.2.7 Paper Feed - Send paper feed to the printer.
- 4.2.8 Decimal Point - Allows the entry of a period or a decimal point in data entry.

4.2.1 LAMP TEST

The LAMP TEST key is used to test the fluorescent displays of the DT210.

1. Press the LAMP TEST key.
2. All display segments should light up.

4.2.2 CLEAR MEMORY

The CLEAR MEMORY key is used to clear totals, erase id memory, initialize the DT210 system.

1. Press the CLEAR MEMORY key.
2. If the password is enabled the DT210 will prompt "ENTER PASSWORD". Enter the password if needed.
3. The CLEAR MEMORY menu is now available.

CLEAR TOTALS -- Erase id total registers.

ERASE MEMORY -- Erase all id information.

INITIALIZE SYS -- Erase memory and initialize the DT210 system variables.

Press the CONTINUE key to select a clear memory function.
Press the ENTER key to activate a clear memory function.

4.2.3 CONFIGURE

The CONFIGURE function is described in SECTION 3.

4.2.4 TIME

The TIME key is used to display the time and date.

1. Press the TIME key.
2. The DT210 displays date and time on the alpha and numeric displays in the form:

NUMERIC DISPLAY 02-35 P For 2:35 p.m.

ALPHA DISPLAY 05 JUL. 87 For July 5, 1987.

4.2.5 DATE

The DATE key performs the same as the TIME key.

4.2.6 PRINT

The PRINT key is used to send the weight, time, and date to the printer. Press the PRINT key.

The DT210 prompts: 'PRINT SCALE WT'.

Press the ENTER key to print the weight.

4.2.7 PAPER FEED

The PAPER FEED key is used to send line feed characters to the printer.

4.2.8 DECIMAL POINT

The DECIMAL POINT key is used to enter the decimal point for numeric data.

4.3 SCALE INTERFACE

The SCALE INTERFACE permits the DT210 to be used in a wide range of weighing applications. The weigh meter interface is connected to the DT210's serial channel 1 input. Channel 1 can accept 2 types of input: RS232 or CURRENT LOOP.

The DT210 uses the weight from the scale for:

1. Display the weight on the scale.
2. Display the calculated net weight.
3. For calculating, printing, and storing weigh transactions.

The DT210 monitors the status of the scale and displays the status in the following form:

<Blank status>	-- Scale data valid.
-M-	-- Scale in motion.
OVR	-- Scale overload.
NEG.	-- Weight below 0.
-I-	-- Scale status = inhibit.
-U-	-- Received units differ from configured units.
-G-	-- Scale not in gross mode.
CBY	-- Count-by error.

4.4 PRINTER INTERFACE

The PRINTER INTERFACE is used to print transaction tickets and summary reports. The DT210's standard printer interface connection is serial channel 1 output. Channel 1's output is available in both RS232 and open collector TTL.

4.5 SELF TEST

The self test diagnostics that are available are:

- 4.5.1** TEST SCALE PORT -- Test the scale input port 1.
- 4.5.2** TEST SERIAL IN2 -- Test the input of port 2.
- 4.5.3** TEST SERIAL OUT1 -- Test serial output (printer) port 1.
- 4.5.4** TEST SERIAL OUT2 -- Test serial output (printer) port 2.
- 4.5.5** TEST PARALLEL -- Test parallel output port.
- 4.5.6** UNUSED ID'S -- Display the number of unused id memory locations.
- 4.5.7** TEST MEMORY -- Test the DT210 ram memory.
- 4.5.8** REBUILD DATA -- Rebuild ID memory.
- 4.5.9** PROGRAM VERSION -- Display program id.

Press the SELF TEST key to access the self test diagnostics.

4.5.1 TEST SCALE PORT

Activate the SELF TEST menu and press the ENTER key when the DT210 displays 'TEST SCALE PORT'.

The scale port test provides 2 menu options:

DISPLAY DATA -- Displays serial data as it is received.

DISPLAY ERRORS -- Displays framing errors, parity errors and over run errors.

Use the scale test functions if the scale data does not appear on the DT210 display.

TEST	SYMPTOM	PROBABLE CAUSE
DISPLAY DATA	No data appears.	Wiring between the DT210 and the scale indicator is incorrect. The DT210's RS232 or Current loop jumper is in the wrong position.
DISPLAY DATA	Data is unintelligible	The configured BAUD rate is incorrect.
DISPLAY ERRORS	Parity errors (PE) or framing errors (FE).	The configured data format is incorrect

4.5.2 TEST SERIAL IN2

Activate the SELF TEST menu and press the ENTER key when the DT210 displays 'TEST SERIAL IN2'.

The scale port test provides 2 menu options:

DISPLAY DATA -- Displays serial data as it is received.

DISPLAY ERRORS -- Displays framing errors, parity errors and over run errors.

Use the scale test functions if the scale data does not appear on the DT210 display.

TEST	SYMPTOM	PROBABLE CAUSE
DISPLAY DATA	No data appears.	Wiring between the DT210 and the scale indicator is incorrect. The DT210's RS232 or Current loop jumper is in the wrong position.
DISPLAY DATA	Data is unintelligible	The configured BAUD rate is incorrect.
DISPLAY ERRORS	Parity errors (PE) or framing errors (FE).	The configured data format is incorrect

4.5.3 TEST SERIAL OUT1

Activate the SELF TEST menu and press the ENTER key when the DT210 displays 'TEST SERIAL OUT1'.

The DT210 prompts: "ENTER TEST DATA".

Enter up to 16 characters of data via the DT210 keyboard. Press the ENTER key. The DT210 transmits the test data out its serial channel #1.

NOTE: If the error message "NOT CLR TO SEND" appears the data can not be transmitted because the handshake signal (CTS Pin #5 on DB25 connector) is low. Connect to the printer handshake signal or connect to pin 20 on DT210.

Press the ENTER key to re-transmit the test data or press the CONTINUE key to enter new test data.

4.5.4 TEST SERIAL OUT2

Activate the SELF TEST menu and press the ENTER key when the DT210 displays 'TEST SERIAL OUT2'.

DT210 prompts: "ENTER TEST DATA".

Enter up to 16 characters of data via the DT210 keyboard. Press the ENTER key. The DT210 transmits the test data out its serial channel #2.

NOTE: If the error message "NOT CLR TO SEND" appears the data can not be transmitted because the handshake signal (CTS Pin #5 on DB25 connector) is low. Connect to the printer handshake signal or connect to pin 20 on DT210.

Press the ENTER key to re-transmit the test data or press the CONTINUE key to enter new test data.

4.5.5 TEST PARALLEL

Activate the SELF TEST menu and press the ENTER key when the DT210 displays 'TEST PARALLEL'.

The DT210 prompts: "ENTER TEST DATA".

Enter up to 16 characters of data via the DT210 keyboard. Press the ENTER key. The DT210 transmits the test data out it's parallel port.

Press the ENTER key to re-transmit the test data or press the CONTINUE key to enter new test data.

4.5.6 UNUSED ID'S

Activate the SELF TEST menu and press the ENTER key when the DT210 displays 'UNUSED ID'S'.

The DT210 numeric displays: "USE NNN"

The DT210 alpha displays: "UNUSED ID'S NNN"

where the NNN's are the number of used and unused ids.

4.5.7 TEST MEMORY

Activate the SELF TEST menu and press the ENTER key when the DT210 displays 'TEST MEMORY'.

The DT210 displays: "TESTING MEMORY" while the memory test is in progress.

The DT210 displays: "32K MEMORY OK" (1 memory chip installed)
"64K MEMORY OK" (2 memory chips installed)
"96K MEMORY OK" (3 memory chips installed)

If a memory error is detected the DT210 displays the number of good blocks (i.e. "72K MEMORY OK").

4.5.8 REBUILD DATA

The REBUILD function attempts to repair corrupted ID data. Use this function if the DT210 locks up when accessing ID or transaction data.

Activate the SELF TEST menu and press the ENTER key .

The DT210 prompts "REBUILD DATA".

Press ENTER to continue.

The DT210 prompts: "DATA RECOVERY N".

Press the 'Y' key and the ENTER to continue.

The DT210 prompts "ARE YOU SURE N".

Press the 'Y' key and then the ENTER key to REBUILD the ID data files.

4.5.9 PROGRAM VERSION

The DT210 can perform many different applications. An application program is installed into the DT210 via a Read Only Memory (ROM). The application program ID is viewed by pressing the 'V' key when the DT210 is in the 'idle' mode.

1. SCALE INPUT ERROR on Power Up.

The DT210 is jumpered for Current Loop Input and no idle current is detected.

The signal wires may be reversed or connected to the wrong pins. The meter may not be sending.

2. NO DISPLAY, NO AUDIO ON POWER UP.

Check power cable. Check fuse on back of DT210.

3. NO WEIGHT DISPLAY. (--READING SCALE--)

Check meter cable. Use section 5.5.1 to test scale port. If there are no errors in 'test scale port - sec. 5.5.1', the meter may be sending the wrong data format or the DT210 may be programmed for the wrong meter.

4. PRINTER DOES NOT PRINT. (Using DT210 serial output port #1).

If using the IDS150, make sure the FORM LIGHT is ON. Check printer cable. Make sure the baud rate and data format for printer & DT210 are the same (see section 3.1.3). Use section 5.5.2 to test the serial output port. Verify that the PAGE PRINTER is configured properly (3.2).

5. MEMORY FULL.

The memory full message is displayed when ID memory is full. This most often happens when the transaction report is turned on. Erase all transactions to regain memory space.

6. THE DT210 LOCKS UP.

Turn the DT210 off and then back on. Verify that the ID memory has not been corrupted by scanning to the end of each ID file (or use the display function to access record 'ZZZZ'). If the DT210 locks up accessing ID's then rebuild the ID memory (section 5.5.6).

The DT210 has 3 interface ports:

1. SERIAL CHANNEL 1: RS232 or CURRENT LOOP
The input of Channel 1 is normally used for interfacing to a weigh meter. The output of Channel 1 is used for connecting to a printer.
2. SERIAL CHANNEL 2: RS232, CURRENT LOOP, or RS485.
Channel 2 is used for interfacing to a second weigh meter, a second printer, or a computer.
3. PARALLEL TTL: 9 TTL outputs, 2 TTL inputs
Used for optional Centronix compatible printer output and control functions (bulk-weigh, red light/green light, etc.)

6.1 SERIAL CHANNEL 1 WIRING LIST (25 PIN 'D' CONNECTOR)

SIGNAL NAME	PIN #
#1 RS232 RXD	3 Jumper W2 IN
#1 RS232 TXD	2 Jumper W3 OUT
#1 RS232 CTS	5
#1 RS232 RTS	4
GND	7
#1 CUR LOOP IN +	8 Jumper W2 OUT
#1 CUR LOOP IN -	22 Jumper W3 IN
#1 CUR LOOP OUT	24
#1 TTL RTS OUT	25
+5R (soft 5V)	6

SERIAL CHANNEL 1 EXAMPLE CONNECTIONS

RS232 INPUT CONNECTIONS: (usually used for scale input)

RXD pin # 3
GND pin # 7

RS232 OUTPUT CONNECTIONS: (usually used for printer output)

TXD pin # 2
CTS pin # 5 -- handshake input from printer
GND pin # 7

CURRENT LOOP INPUT: (usually used for scale input)

CL IN + pin # 8
CL IN - pin # 22

CURRENT LOOP OUTPUT: (usually used for printer output)

CL OUT - pin # 24
CL OUT + pin # 20

6.2 SERIAL CHANNEL 2 WIRING LIST (25 PIN 'D' CONNECTOR)

SIGNAL	PIN #
#2 RS232 RXD	9 ---- Jumper W1 IN
#2 RS232 TXD	10
#2 RS485 -	11 ---- Jumper W IN
#2 RS485 +	12
#2 CUR LOOP IN +	18 ---- Jumper W16 IN
#2 CUR LOOP IN -	19
#2 RS422 IN +	18 ---- Jumper W IN
#2 RS422 IN -	21
+5R (soft 5V)	23
GND	13

6.3 PARALLEL TTL WIRING LIST (15 PIN 'D' CONNECTOR)

SIGNAL NAME	CENTRONIX	PIN NO.
OUTPUT 0	+ Data 0	9
OUTPUT 1	+ Data 1	2
OUTPUT 2	+ Data 2	10
OUTPUT 3	+ Data 3	3
OUTPUT 4	+ Data 4	11
OUTPUT 5	+ Data 5	4
OUTPUT 6	+ Data 6	12
OUTPUT 7	+ Data 7	5
OUTPUT 8	- Strobe	1
INPUT 0	- Fault	6
INPUT 1	+ Busy	14
GND	Grnd	8,15
+ 5R (soft 5V)		7
+ 5V		13

6.4 25 PIN 'D' CONNECTOR WIRING LIST

PIN #	SIGNAL NAME
1	CHASSIS GND
2	#1 RS232 TXD
3	#1 RS232 RXD
4	#1 RS232 RTS
5	#1 RS232 CTS
6	+5 R
7	GND
8	#1 CUR LOOP IN +
9	#2 RS232 RXD
10	#2 RS232 TXD
11	#2 RS485-
12	#2 RS485 +
13	GND
14	
15	#1 PULSE INPUT
16	TTL INPUT
17	TTL INPUT
18	#2 CUR LOOP IN + (#2 RS422 IN +)
19	#2 CUR LOOP IN -
20	+5 R
21	#2 RS422 IN -
22	#1 CUR LOOP IN -
23	+5 V
24	#2 CUR LOOP OUT
25	#1 TTL RTS

NOTES: When using RS232 INPUT, set DT210 jumper W2 on and W3 off. When using current loop set jumper W3 on and W2 off.
When not using handshake jumper CTS to RTS (pin 5 to 4).

When using the Star Micronics DP8340, use pin 20 on the DP8340 for "CTS" signal.