

IDS 550 DATA TERMINAL

TECHNICAL MANUAL

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1. INSTALLATION

* Unpacking Instructions

Remove the IDS550 from the shipping container. Save the packing materials if the IDS550 is to be re-shipped.

PACKING LIST CHECKOFF

IDS550 PRINTER	_____
PRINTER RIBBON	_____
PRINTER MANUAL	_____
POWER LINE CORD	_____
MATING CONNECTOR or CABLE	_____

REMOVE THE SHIPPING RESTRAINT FROM THE PRINTER MECHANISM. The shipping restraint is a rectangular piece of black rubber located just above the document plate on the left side of the

mechanism. Install the printer ribbon as shown on the diagram affixed to the dot head cover.

* Get the IDS 550 ready for data input and printing

-
1. Be sure the print-mechanism shipping restraint has been removed.
 2. Connect the IDS550 to the weigh meter via the 25 pin 'D' connector at the back of the printer. See Appendix I for communication port wiring information.
 4. Connect the IDS550 to AC power.
 5. Turn power on. The IDS550 displays the sign-on message " IDS550 ". If the weigh meter is sending weight data AND if the IDS550 setup parameters are correct, the IDS550 displays the weight on the scale. If it does not then configure the IDS550 as described in section 2.

NOTE: The IDS550 circuit board has a slide switch that selects between RS232 and Current Loop input. Push the slide to the left (towards the print mechanism) for RS232. Push the slide to the right (away from the print mechanism) for Current Loop.

2. How To Change The IDS550 Configuration.

Press the Square Configure switch located inside the IDS550. This will activate the configure program.

To begin CONFIGURING the IDS550 you must understand the scrolling menu system.

```
-----  
|   |   |   |   |   |   |  
| 7 | 8 | 9 | F1 | F5 |   |  
|   |   |   |   |   |   |  
-----  
|   |   |   | Back Space |   | |
| 4 | 5 | 6 |   | F6 |   |  
|   |   |   |   |   |   |  
-----  
|   |   |   | Review | minus sign | |
| 1 | 2 | 3 |   | - |   |  
|   |   |   |   |   |   |  
-----  
|   |   |   | Continue | decimal pt |  
|Clear| 0 |Enter|   | . |   |  
-----
```

There are 4 keys that control the operation of the IDS550 when the configuration function is activated:

CONTINUE - Go to the next step.

REVIEW - Go to the previous step.

ENTER - Enter data and go to the next step.
CLEAR - EXIT

The configuration functions use "scrolling menus". A scrolling menu is a list of options 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 key is used to exit from a menu.

EXAMPLE: Press the Square Configure switch. The configuration menu has the following standard items:

INITIALIZE SYS
SELF TEST
ADJUST CLOCK
CONFIG SER PORT
CONFIG SCALE
CONFIG PRINTER
CONFIG PASSWORD
CONFIG TRANS
CONFIG PAGE

Press the CONTINUE key several times. The above listed menu options are displayed one after another. Press the REVIEW key several times. The list is displayed in reverse order. Press the ENTER key to activate a function, press the CLEAR key to exit.

CONFIGURE STANDARD PARAMETERS

The standard configuration parameters for the IDS550 are as follows:

- 1 INITIALIZE SYSTEM - Set all parameters to their default values.
- 2 SELF TEST - Activate the test program.
- 3 ADJUST CLOCK - Correct fast/slow clock.
- 4 CONFIG SER PORT - Set baud rate and data format to match scale indicator input.
- 5 CONFIG SCALE - Select meter type, set units (eg. LB, KG...) and count-by (eg. 1, 2, 5, .).
- 6 CONFIG PRINTER - Select printer type.
- 7 CONFIG PASSWORD - Enable and set password protection.
- 8 CONFIG TRANS - Change ticket label and ticket number.
- 9 CFG APPLICATION - Configure Application Specific Parameters.

NOTE: some applications may have additional configuration parameters.

STANDARD PARAMETERS WORKSHEET

MENU SELECTION	PARAMETER	DEFAULT	FIELD SETTING
1	INITIALIZE SYS	none (resets all parameters to factory settings)	
2	SELF TEST	TEST SCALE PORT	
		TEST SERIAL OUT	
		UNUSED ID'S	
		TEST MEMORY	
3	ADJUST CLOCK	ADJUST SEC/DAY 0	
4	CONFIG SER PORT	BAUD RATE	(no default)
		DATA FORMAT	(no default)
5	CONFIG SCALE	METER TYPE	CONDEC/WS700T
		WEIGHT UNITS	UNITS = LB
		COUNT BY	COUNT BY 1
6	CONFIG PRINTER	PAGE END PAUSE	Y (YES)
		INVERT PRINT	N (NO)
		MULTI-STRIKE	0
7	CONFIG PASSWORD	ENAB PASSWORD 1	N (disabled)
		NEW PASSWORD	*****
		ENAB PASSWORD 2	N (disabled)
		NEW PASSWORD	*****
8	CONFIG TRANS	TRANS LABEL	TICKET
		TRANS NUMBER	1
9	CONFIGURE APPLICATION PARAMETERS		
10	CONFIG PAGE (Section 3)	HEADER LABEL	(blank)
		CONFIG PAGE 1	Defaults set by
		CONFIG PAGE 2	INITIALIZE SYS.
		CONFIG PAGE 3	
			see page work-sheet, section

1 INITIALIZE SYSTEM

This function ERASES memory and RESETS all the parameters to their default setting!!! When INITIALZIE SYSTEM is activated the IDS550 prompts: "ENTER=INITIALIZE". Press the ENTER switch to initialize the system or press the CONTINUE (or CLEAR) key to exit WITHOUT initialization.

2 SELF TEST

The SELF TEST selection activates the test menu shown below:

TEST SCALE PORT: displays data received from the scale port.
TEST SERIAL OUT: transmits data out the serial port.
UNUSED ID'S: displays the number of unused ID's.
TEST MEMORY: tests memory.

TEST SCALE PORT:

The scale port test has 2 selections:

DISPLAY DATA: displays data received from the scale port.
DISPLAY ERRORS: displays parity and framing errors.

TEST SERIAL OUT:

The IDS 550 prompts: "ENTER TEST DATA". Enter up to 16 digits of data. Press the ENTER key to transmit the data. Press ENTER again to transmit again. Press the CONTINUE key to enter new data, press the CLEAR key to exit.

UNUSED ID'S:

The IDS 550 displays the number of used and un-used ID locations in the form: "F= 540 U= 20", where F is the number of FREE or unused ID locations and U is the number of used ID locations.

TEST MEMORY:

The IDS550 displays the amount of memory that tests good in the form: "32K MEMORY OK" where 32K means 32767 bytes of memory.
NOTE: 32K is the standard size of IDS550 memory.

3 ADJUST CLOCK

The IDS550 prompts: "ADJUST S/D- XXXX"
where XXXX = the number of seconds per day to adjust the clock.
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.

4 CONFIGURE SERIAL PORT

The IDS550 prompts: "BAUD = NNNN"
where NNNN = the current baud rate selection. The baud rate 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 IDS550 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 IDS550 prompts 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.

5 CONFIGURE SCALE

The IDS550 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"  
"HR 50 LIBERATOR"  
"FB90-165"
```

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

The IDS550 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 IDS550 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 IDS550 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 IDS550 internal motion detect option is installed -

The IDS550 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 IDS550 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.

If the IDS550 setup matches the meter setup and the scale weight is NOT displayed on the IDS550 then see the section: "IDS550 Troubleshooting Guide".

NOTE: The IDS550 circuit board has a slide switch that selects between RS232 and Current Loop input. Push the slide to the left (towards the print mechanism) for RS232. Push the slide to the right (away from the print mechanism) for Current Loop.

6 CONFIGURE PRINTER

The IDS550 prompts: "INHIBIT ON PE x" for inhibit print if Paper Empty. The x is 'Y' for yes or 'N' for no. Enter a 1 for 'Y' or 0 for 'N'. Press the ENTER key to complete the entry.

The IDS550 prompts: "INVERT PRINT x" where x is 'Y' for yes or 'N' for no. Enter a 1 for 'Y' or 0 for 'N'. Press the ENTER key to complete the entry.

The IDS550 prompts: "MULTI-STRIKE x" where x is a number between 0 and 9. This function is used to make multi-part forms more legible by printing each line multiple times. Enter a 0 to disable multi-strike or enter the number of extra times to print each line. If multi-strike is enabled, bi-directional printing is disabled.

7 CONFIGURE PASSWORD

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

LEVEL 1 PROTECTED FUNCTIONS: (Application dependant)

LEVEL 2 PROTECTED FUNCTIONS: CONFIGURE

Activate the CONFIGURE menu and press the ENTER key when the IDS550 displays 'CONFIG PASSWORD'.

The IDS550 prompts: "EN PASSWORD 1 N"
Enter a 'Y' (1) to enable the password or an 'N' (0) to disable the password. If 'Y' (1) is entered the IDS550 prompts: "ENTER PASSWORD 1". Enter up to 7 digits 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 IDS550 prompts: "ENTER PASSWORD".
The correct password must be entered before continuing.

8 CONFIGURE TRANSACTION

Activate the CONFIGURE menu and press the ENTER key when the IDS550 displays 'CONFIG TRANS'.

The IDS550 prompts: "NAME TICKET".
Enter up to 8 characters for the TICKET label.
The IDS550 prompts: "TRANS NUMB XXXX", where xxxx is the
current transaction number. Press ENTER to retain the displayed
number or enter a new number and press ENTER.

NOTE: the maximum transaction number is 65535.

follows the PAGE WORKSHEET.

2. Activate page configuration.
3. Enter the data from the PAGE WORKSHEET into the IDS550.
4. Enter a 0 for the line_no after the last data item.

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 -----

1111111111222222222233333333334
COLUMN NO.1234567890123456789012345678901234567890

L	1	TICKET NO	1256
I	2		
N	3		
E	4	GROSS	54784 LB
	5	TARE	12541 LB
N	6	NET	42243 LB
O	7		
.	8	TIME 03:45 PM	DATE 06/23/86
	9		
	10		

----- EXAMPLE WORK SHEET -----

line_no	columno	item_no	size
1	1	1	1
4	8	3	0
5	8	4	0
6	8	5	0
8	4	7	0

4. TROUBLESHOOTING GUIDE

1. SCALE INPUT ERROR on Power Up.
The IDS550 internal switch is set 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 the fuse on the back of the IDS550.
3. NO WEIGHT DISPLAY. (--READING SCALE--)
Check meter cable. Use the IDS550 self test function:
test scale port: display data.
If no data is displayed:
 1. Verify that the meter is sending data.
 2. Verify that the cable connections are correct.
 3. Verify that the IDS550 RS232/Current Loop select switch is in the correct position.If the data displayed is not recognizable:
 1. Verify that the meter baud rate is the same as the IDS550 baud rate.
 2. Verify that the meter parity selection is the same as the IDS550 parity selection.
If there are no errors in "test scale port":
 1. Verify that the IDS550 meter selection is correct.
 2. Verify that the meter is sending the correct data.
4. 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.
5. MISSING DOT TROUBLESHOOTING.
Missing dots are caused by 1 or more of the following:
 1. Blown fuse.
 2. Blown transistor.
 3. Blown drive diode.
 4. Broken needle.

The table below lists the dot driver components in order of dot position. If a dot is missing, check ALL of the dot driver components for the missing dot. If one of the drive diodes has failed (shorted) then IC# U16 (8255) may have also failed.

DOT POSITION (top of page)	FUSE	TRANS- ISTER	DRIVE DIODE	SNUBBER DIODE
. 7	F7	Q7	CR9	CR19
. 6	F6	Q6	CR8	CR18
. 5	F5	Q5	CR7	CR17
. 4	F4	Q4	CR6	CR16

```

. 3   F3   Q3   CR5   CR15
. 2   F2   Q2   CR4   CR14
. 1   F1   Q1   CR3   CR13

```

5. Interface Port Connections

The IDS550 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.
2. SERIAL CHANNEL 2: RS232, CURRENT LOOP, or RS485.
Channel 2 is used for interfacing to a second weigh meter 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.)

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

SIGNAL	PIN #	
#1 RS232 RXD	3	---- Switch inside IDS550 in
#1 RS232 TXD	2	RS232 position.
#1 RS232 CTS	5	-----
#1 RS232 RTS	4	X
GND	7	-----
#1 CUR LOOP IN +	8	---- Switch inside IDS550 in
#1 CUR LOOP IN -	22	Current Loop position.
#1 CUR LOOP OUT	24	-----
		X
#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

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

SIGNAL	PIN #
#2 RS232 RXD	9 ---- Jumper W3 IN
#2 RS232 TXD	10
#2 CUR LOOP IN +	18 ---- Jumper W5 IN
#2 CUR LOOP IN -	19
#2 CUR LOOP OUT	24
#2 RS422/485 IN +	18 ---- Jumper W4 IN
#2 RS422/485 IN -	21
#2 RS422/485 OUT +	11
#2 RS422/485 OUT -	12
+5R (soft 5V)	23
GND	13

PARALLEL TTL WIREING LIST (15 PIN 'D' CONNECTOR)

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

PIN	SIGNAL
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	+8 R
21	#2 RS422 IN -
22	#1 CUR LOOP IN -
23	+5 V
24	#2 CUR LOOP OUT

NOTES: Set the switch inside the IDS550 to the RS232 position for RS232 input (slide to left - towards the print mechanism) or Current Loop position (slide to right - away from print mechanism).