Totalcomp
Scales & Components

MODEL
T500E SS

Digital Weight Indicator

Manual

Version 2.0   February 19, 2026

Contents

THIS EQUIPMENT CONTAINS NO USER SERVICEABLE COMPONENTS.
- Servicing of the equipment must only be carried out by trained and authorized personnel.
- Use only the AC adapter supplied with the scale. Other adapters may cause damage.

This manual covers the following product:

Model	Display	Enclosure	Power Source
T500ESS	LED	St. Steel	100-240 VAC, 50-60 Hz 0.8A

BASIC OPERATION

Getting Started

Simply plug the unit into a suitable AC wall outlet (100 – 240 VAC). After a brief initialization period, the scale will revert to a zero ("0") weight display.

Your scale is now ready for operation!

Operation

Before weighing it is necessary to check if the scale is unloaded and indicating zero weight in the desired unit of measure, for example lb for pounds.

If the indicator is not displaying the desired unit of measure, press the UNITS key a few times until it is indicated, e.g., lb for pounds, kg for kilograms, etc.

The indicator features an automatic zero correction meaning that small deviations will be zeroed automatically. If the indicator does not automatically determine the zero point, please press the ZERO key once briefly.

DISPLAY & KEYPAD DETAILS

This indicator uses a 6-digit LED (Light Emitting Diode) display. The Table below summarizes the display annunciators.

Annunciator	Display Indication
GROSS	The indicator is in Gross Weight mode.
NET	The indicator is in Net Weight mode.
TARE	A tare weight has been established in the system.
ZERO	Displays when the indicator reading is at "Center of Zero".
lb	The displayed weight reading is in pounds (lb).
kg	The displayed weight reading is in kilograms (kg).
PCS	The displayed reading is in pieces (piece counting).
STABLE	Displays whenever the indicator reading is at rest, i.e., not in motion.

The keypad comprises five (5) function keys.
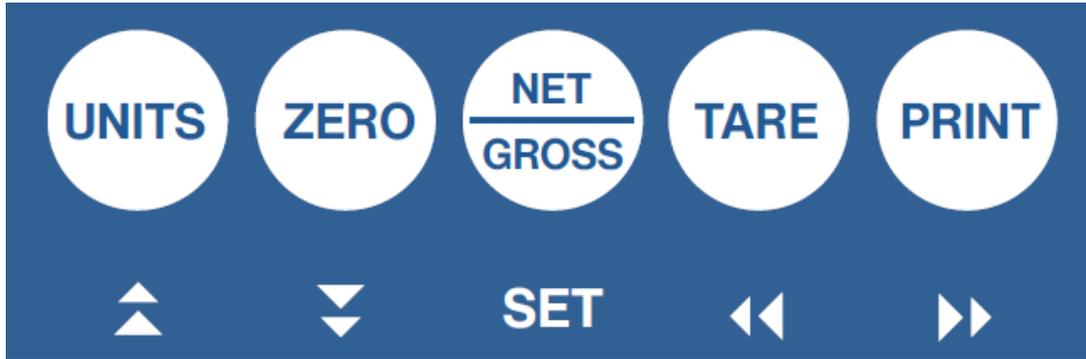
Marking	Keypad Function
Units	Selects the displayed unit of measure, e.g., lb or kg. This key can be disabled.
Zero	Zeroes the weight display reading, provided certain conditions are met.
Net/Gross	Selects the weighing mode, i.e., Gross weight or Net Weight.
Tare	Establishes a system Tare, provided certain conditions are met
Print	Sends the displayed weight reading to the serial communication port, provided certain conditions are met

Conditional keypad functions:

TARE
Indicator reading must not be in motion or displaying an error message. Gross weight must be greater than zero.

ZERO
Indicator reading must not be in motion or displaying an error message. Operation may be restricted by the Zero Reset Range setting (see F4 menu parameter).

PRINT
Indicator reading must not be in motion or displaying an error message.

INSTALLATION & OVERVIEW

Remember that the installer is ultimately responsible for assuring that a particular installation will be and remain safe and operable under the specific conditions encountered.

The indicator must be properly configured and calibrated prior to use.

Installation

Find a suitable location for the indicator and use the included bracket to mount the unit to a wall or table. Use this handy guide for mounting the bracket to a wall or table:
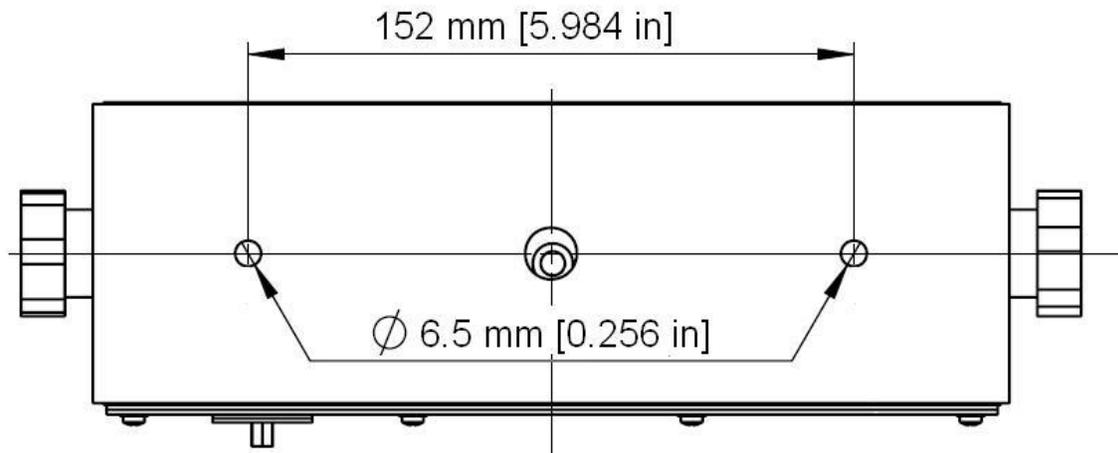
CONNECTIONS

The rear cover must first be removed to make the appropriate connections to the weigh platform, etc. To remove the rear cover, simply remove the screws that secure it to the enclosure and set aside.

> **Caution!** Disconnect power source from indicator prior to removing rear cover.

Load Cell Connections

While this indicator supports both 4-wire and 6-wire load cells, it ships from the Factory configured for **4-wire load cells only**. A small hardware modification to the board is required to allow it to operate with 6-wire load cells / junction boxes.

Be sure to reference the included sheet for instructions on how to connect the cable shield.

Connect your shielded load cell cable to load cell terminal block using the table below.

Load Cell Terminal Block (J4)

Marking	Function		Marking	Function
-SIG	- Signal		-EXC	- Excitation
+SIG	+ Signal		+SEN	+ Sense
-SEN	- Sense		+EXC	+ Excitation

Load Cell Terminal Block

RS-232 Connections

Connect your RS-232 serial cable to the RS-232 terminal block using the table below.

RS-232 Terminal Block (J3)

Markings	Function		Markings	Function
TXD	Transmit Data		CTS	Clear to Send
RXD	Receive Data		GND	Signal Ground
RTS	Request to Send			

RS-232 Terminal Block

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Analog Output Connections (Optional)

If your indicator was shipped with the **analog output option**, make the connections as follows. See the ANALOG OUTPUT section for more information.

Analog Output Terminal Block)

Markings	Function		Markings	Function
O	A_{OUT}		G	Ground

Analog Output Terminal Block

Power Connections (AC version)

The T500ESS indicator ships with a pre-installed AC line cord. It has been pre-wired to Terminal Block J1 at the factory. Simply plug the unit into a standard wall outlet.

INDICATOR CONFIGURATION

Configuration Menus

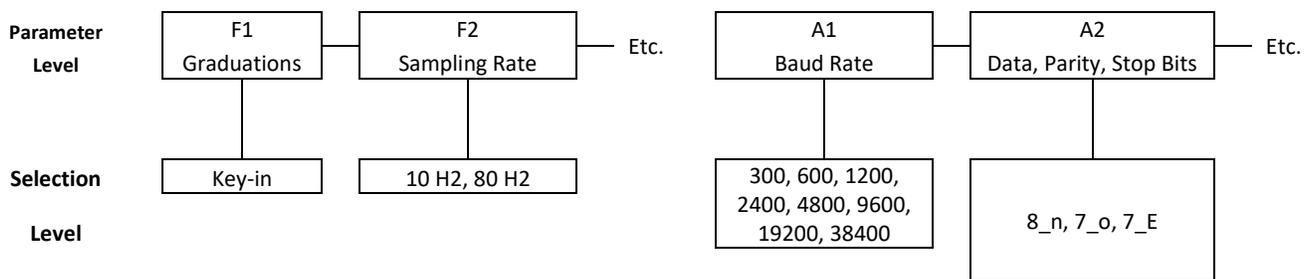The T500ESS contains two (2) menus to configure the indicator:

Setup ("F") Menu **–** Configures all metrologically-related parameters including calibration procedures.

User ("A") Menu **–** Configures communication parameters and other misc. parameters, e.g., Units key behavior.

The configuration menus are laid out in the following vertical arrangement:

- Parameter level
- Selection level (or function level, e.g., span calibration)

Please review the following chart to get a feel for how to navigate among the various menus and parameters.

Parameter Level	F1 Graduations	F2 Sampling Rate	Etc.	A1 Baud Rate	A2 Data, Parity, Stop Bits	Etc.
Selection Level	Key-in	10 H2, 80 H2		300, 600, 1200, 2400, 4800, 9600, 19200, 38400	8_n, 7_o, 7_E	

Entering the Setup ("F") Configuration Menu

To access this menu, please follow these directions:

1. Unplug the indicator from the AC wall outlet.

2. Locate the slide switch on the rear cover and move it to the opposite position.
   NOTE: A metal plate conceals the slide switch; remove the two drilled-head fasteners and cover plate to access the slide switch:

3. Plug in the indicator to the AC wall outlet. The display shows "F   1".

4. Move from one "F" menu parameter to the next by using the TARE (left) or PRINT (right) keys. For example, to go from F1 to F2, press the PRINT key. To go from F2 back to F1, press the TARE key.

5. Once you have arrived at the proper "F" menu parameter, e.g.," F 1", press the ZERO (down) key once to arrive at the selection level. The indicator displays the current parameter setting.

6. If there is a selection list, scroll through the available parameter settings, use the TARE (left) or PRINT (right) keys. Otherwise, use the arrow keys to adjust the displayed value to the new value.

7. Once the setting you want is displayed on the screen, press the NET/GROSS (set) key to save this value.

8. Press the UNITS (up) key to return to the parameter level, e.g., "F   1".

Setup ("F") Menu Descriptions

This section provides more detailed descriptions of the selections found in the Setup Menu Chart. Factory-set defaults are shown in **bold** with a checkmark; **($\sqrt{}$)**.

CODE/NAME	DESCRIPTION	SELECTION LIST
F1 Graduations	Sets the number of full-scale graduations, i.e., max capacity ÷ display division (d). Scrolling down with the ZERO key one level begins the procedure.	Key-in 100 - 50000 **5000 $\sqrt{}$**
F2 Sampling Rate	Sets the sampling rate in Hertz (measurements per second). Use 10 Hz for most applications or 80 Hz for extra fast response time	**10 $\sqrt{}$** 80
F3 Zero Track Band	Selects the range within which the scale will automatically zero. Selections are in display divisions per second (d/s).	0 **0.5 $\sqrt{}$** 1 3 5
F4 Zero Range	Selects the range within which the scale may be zeroed. Selections are expressed as a percentage of maximum capacity.	**100 $\sqrt{}$** 1.9 2 20
F5 Motion Band	Selects the level at which motion is detected. Selections are expressed as display divisions per second (d/s). Scrolling down with the ZERO key one level begins the procedure.	Key-in 0.0d/s – 32.0d/s **1.0d/s $\sqrt{}$**
F6 Digital Filter	Averages weight readings to produce higher stability. Choose the speed that works best for your application. "FASt" = Fast "nnEd" = Medium "SLo" = Slow	FASt **nnEd $\sqrt{}$** SLo
F7 Overload Limit	Selects the desired formula which determines the point at which the indicator shows an overload message. All selections are based on the primary unit selected in F8. "FS" = Full scale capacity (max).	FS **FS + 2% $\sqrt{}$** FS + 5% FS + 1d FS + 9d
F8 Calibration Unit	Selects the primary base unit to be used in the calibration process. Also, the default unit for normal operation. "1" = primary unit is lb. "2" = primary unit is in kg.	**1 $\sqrt{}$** 2

| CODE/NAME	DESCRIPTION	SELECTION LIST
F9 Display Divisions	Sets the interval value. Use together with F10.	**1** √ 2 5
F10 Decimal Pt.	Sets the decimal point value. Use together with F9.	**0** √ 0.0 0.00 0.000 0.0000 00
F11 Power-on zero (IZSM)	Allows you to enable or disable power-on zero. (IZSM) "0" = IZSM is disabled "1" = IZSM is enabled	**0** √ 1
F14 Units Conver- sion	Allows the lb/kg key to be disabled so that an operator cannot acci- dentally press the key and change the displayed units. "0" = Disable the Units key "1" = Enable the Units key	0 **1** √
F16 Zero Calibra- tion	Places indicator into live zero-calibration mode. Scrolling down with the ZERO key one level begins the procedure.	Press **ZERO** key to begin sequence
F17 Span Calibra- tion	Places indicator into live span calibration mode. Scrolling down with the ZERO key one level begins the procedure.	Press **ZERO** key to begin sequence
F18 View Calibra- tion Data	Activates the function that allows you to view calibration values. Scrolling down with the ZERO key one level begins the procedure.	Press **ZERO** key to begin sequence
F19 Key-in Zero	Allows you to key-in a known zero calibration value. Scrolling down with the ZERO key one level begins the procedure.	Press **ZERO** key to begin sequence
F20 Key-in Span	Allows you to key-in known span calibration values. Scrolling down with the ZERO key one level begins the procedure.	Press **ZERO** key to begin sequence
F21 Factory Reset	This sub-menu will reset all parameters in the "F" and "A" menu to the default settings. It will not overwrite any previously saved calibration data. **USE WITH CAUTION!**	Press the **ZERO** key twice to exe-cute
F22 Factory Reset Europe	This sub-menu will reset all parameters in the "F" and "A" menu to the default settings for Europe. USE WITH CAUTION!	Press the **ZERO** key twice to exe-cute.
F23 Fine Tune 4-20 mA	Actuates the function that allows you to fine-tune the optional 4-20 mA analog output.	Press the **ZERO** key to begin se-quence

F24
Option Select
	Used to select the option board installed into the 4-pin Expansion Slot.
	       "0" = No Option installed, "1" = 4-20mA analog output
	         "2" = 0-10V analog output, "3" = Time / Date
		0 √
		1
		2
		3

F30
Special Appli-
cation
	Used to select one special application feature, subject to local legal requirements.
	
	       "0" = None (Gross/Net), "2" = Remote Display,
	          "3" = Piece Count, "5" = Peak Hold
		0 √ 2
		3 5

CODE/NAME	DESCRIPTION	SELECTION LIST
F31 Gross Zero Band	Selects the range within which the scale will automatically clear the tare and switch to Gross mode. Selections are in display divisions (d). Scrolling down with the ZERO key one level begins the procedure. "0" = Disabled	Key-in 0 - 10 **0** √
F32 Center of Zero Band	Selects the range around gross zero within which the scale will display the Center of Zero annunciator. Selections are in display divisions (d).	**.25d** √ .5d
F34 Auto Print Min. Weight	Selects the minimum weight at which the auto print function will work if enabled. Selections are in display divisions (d). Scrolling down with the ZERO key one level begins the procedure. "0" = Disabled	Key-in 0 - 100 **1** √

Entering the User ("A")

If you are already in the Setup ("F") menu, the User ("A") Menu is in-line with the top level. Simply scroll right or left until you see "A 1" or "A 34".

If you are <u>not</u> already in the Setup ("F") menu, please follow these directions to access this menu:

1. Unplug the indicator from the AC wall outlet.

2. Locate the slide switch on the rear cover and move it to the opposite position.
   NOTE: A metal plate conceals the slide switch; remove the two drilled-head fasteners and cover plate to access the slide switch:
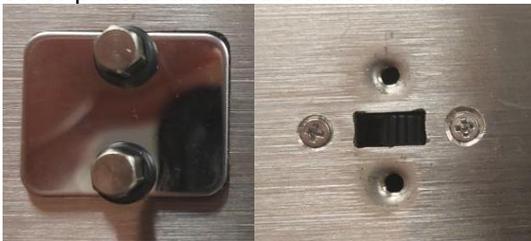
3. Plug in the indicator to the AC wall outlet. The display shows "F   1".

4. Use the TARE (left) or PRINT (right) keys to move right or left in the Setup ("F") menu until the indicator shows "A   1".

5. Move from one "A" parameter to the next by using the TARE (left) or PRINT (right) keys. For example, to go from A1 to A2, press the PRINT key. To go from A2 back to A1, press the TARE key.

6. Once you have arrived at the proper "A" menu parameter, e.g. "A 1", press the ZERO (down) key once to arrive at the selection level. The indicator displays the current parameter setting.

7. If there is a selection list, scroll through the available parameter settings, use the TARE (left) or PRINT (right) keys. Otherwise, use the arrow keys to adjust the displayed value to the new value.

8. Once the setting you want is displayed on the screen, press the NET/GROSS (set) key to save this value.

9. Press the UNITS (up) key to return to the parameter level, e.g., "A   1".

User ("A") Menu Descriptions

This section provides more detailed descriptions of the selections found in the User Menu Chart. Factory-set defaults are shown in **bold** with a checkmark; **(√)**.

CODE/NAME	DESCRIPTION	SELECTION LIST
A1 Baud Rate	Selects the baud rate for data transmission through the serial (COM) port.	1200, 2400, 4800, **9600 √,** 19200, 38400, 300, 600
A2 Data Bits and Parity	Selects the number of data bits and parity of serial transmission. "8n" = 8 data bits with no parity bit and one stop bit "7o" = 7 data bits with odd parity bit and one stop bit "7E" = 7 data bits with even parity bit and one stop bit	**8n √** 7o 7E
A3 Serial Port Mode	Selects how data will be sent out of the serial (COM) port to a printer or computer: "0" = Demand Duplex "1" = Continuous Duplex "2" = Auto Print "3" = Test and Measurement	**0 √** 1 2 3
A4 Display Check	Actuates the function that illuminates all digit segments, decimal points, and LED annunciators in a test sequence. Pressing the **ZERO** key to scroll down one level begins the test sequence.	Press **ZERO** key to begin sequence
A6 Serial (COM) Port Output String	Selects the output string of the serial (COM) port: Refer to Serial Port Information for more details. "0" = Text Print Ticket "1" = String Format 1 (Condec Demand) "2" = String Format 2 (Condec Continuous) "3" = 6L.BAS = 6 lines, Label "4" = 6P.BAS = 6 lines, Paper (Default) "5" = 6LB.BAS = 6 lines, Label, Barcode "6" = 6PB.BAS = 6 lines, Paper, Barcode "7" = CUSTOM.BAS	0 1 2 3 **4 √** 5 6 7
A7 ID No. Enable	Allows the ID number to be disabled in the Print Ticket mode. "0" = Disable the ID No. "1" = Enable the ID No.	**0 √** 1
A8 ID No. Entry	Actuates the function that allows entry of a new ID No. Pressing the **ZERO** key to scroll down one level begins the sequence.	0 – 999999 **99 √**
A9 No. of Line Feeds	Actuates the function that allows entry of the desired number of line feeds to be printed in Print Ticket Mode. Pressing the **ZERO** key to scroll down one level begins the sequence.	0 - 99 **8 √**
A10 Communication Speed	Enables high speed communication on the serial port (COM1). "0" = Normal Speed, "1" = High Speed	**0 √** 1
A11 Handshaking Enable	Selects handshaking for serial port. "0" = Off (no handshaking), "1" = RTS/CTS	**0 √** 1

CODE/NAME	DESCRIPTION	SELECTION LIST
A14 Time Format	Selects the printed format for time. "0" = 24 Hour, "1" = AM/PM	0 **1** √
A15 Set Time	Allows you to set the system time.	Press **ZERO** key to begin sequence
A16 Set Date	Allows you to set the system date.	Press **ZERO** key to begin sequence
A17 Date Format	Selects the printed format for date. "1" = mm/dd/yy "2" = dd/mm/20yy "3" = dd/mm/yy "4" = dd/mm/20yy "5" = yy/mm/dd "6" = 20yy/mm/dd	**1** √ 2 3 4 5 6
A34 Decimal Point	Selects the printed decimal point character. "0" = Comma (','), "1" = Period ('.'),	0 **1** √

Exiting The Menus

Exit any configuration menu by moving the slide switch back to its original position. The display will go through a digit check, and then settle into Normal Operating mode. All front panel keys will now return to their normal mode of operation.

INDICATOR CALIBRATION

Calibration Overview

You will be calibrating a scale platform to the indicator using actual loads, e.g., test weights. The calibration procedure comprises two steps: **zero** calibration (F16) and **span** calibration (F17). We recommend doing **zero** calibration (F16) first.

You can have up to three span calibration points, denoted as C1 through C3. The value of each subsequent calibration point should be higher than the last, e.g., the C2 value should be greater than the C1 value, etc.

Zero Calibration Instructions (F16)

1. While in the Setup mode, scroll to "**F 16**", and then scroll down once using the ZERO (down) key. The display will momentarily show "**C 0**" followed by a value. This value is the internal A/D count and can prove useful when trying to troubleshoot setup problems.

2. Assure a no-load condition on the scale platform and then press the ZERO key again to zero the display reading. Do <u>NOT</u> skip this step!

3. Press the NET/GROSS (set) key to save the zero-point value. The display will show "**SET**" and "**EndC0**" momentarily, and then revert up to F16.

Span Calibration Instructions (F17)

1. While in the Setup mode, scroll to "**F 17**", and then scroll down once using the ZERO (down) key. The indicator will briefly display '**C 1**' and then prompt you to enter the data for the span calibration point (C1).

2. Place the actual calibration load (weights) onto the scale platform.

3. Use the four directional keys to enter in the actual calibration weight value, e.g., 5000 lb. Increase the flashing digit by pressing the UNITS key. Decrease the flashing digit by pressing the ZERO key. Pressing the TARE key or the PRINT key will change the position of the flashing digit.

4. Press the NET/GROSS (set) key to save the value. The indicator briefly displays **'SEt'** and then moves to the next calibration point (C2).

5. Repeat steps 2 through 4 to enter data for the remainder of the calibration points. **You need not enter data for all three calibration points. To cease entering additional calibration points, simply press the NET/GROSS (set) key.**

6. At the end of C3 or last calibration point, the indicator reverts up to "F17".

If the calibration was *not* successful, one of the following error messages will appear.

- **"Err0"** - The calibration test load or the keyed-in load is larger than the full capacity of the indicator. Change the calibration test load or check the input data.

- **"Err1"** - The calibration test load or the keyed-in load is smaller than 1% of the full capacity of the indicator. Change the calibration test load or check the input data.

- **"Err2"** – There is not enough "signal" from the scale platform to complete the calibration process. Most common causes include incorrect weight sensor wiring, a mechanical obstruction or a faulty (damaged) load cell.

Take the indicated action to correct the problem, and then perform a new calibration. Exit calibration mode by moving the slide switch back to its original position.

ADVANCED OPERATION

Piece Counting Mode

This function calculates ("counts") the number of items you have placed onto the scale platform. To ensure accuracy, the items you wish to count must be consistent in weight. To activate this mode, set F30 to "3" in the Setup Menu.

The indicator uses the sampling to determine the average piece weight (APW) of the items you wish to count. When sampling items, always count the items in your hand and place them onto the platform all at once. If the APW is too light or the weight of the sample size is too light, accuracy cannot be guaranteed. You will see an error message, but piece counting will still be allowed. This indicator does not retain the piece weight when powered off.

1. If the items you will be counting require a container, you must first tare off the weight of the container by pressing the TARE key.

2. Press the UNITS key a few times until "5   0" is indicated on the display. The indicator is prompting you to place five identical items onto the scale platform. Note: If the screen does not show "5   0", press the ZERO key once.

3. Place the samples onto the scale platform all at once and allow the weight indication to stabilize. The screen will change from "5   0" to "5   – ".

4. Press the NET/GROSS key to take the sample. The indicator now displays the number of pieces on the platform and the "PCS" annunciator is lit.

5. To exit the piece count mode, press the UNITS key. Note: The APW will NOT remain in scale memory when you exit piece counting mode.

If error messages are encountered, please refer to the notes below and then take the indicated actions to correct the problem.

- If you wish to change the sample size (see Step 2), simply press the UNITS key a few times until the desired sample size appears. Available choices are 5, 10, 20, 50 and 100. If you continue to press the UNITS key, the indicator will resort back to weighing mode and you must start again from Step 2.

- If the sampling process was not successful, the indicator briefly displays "Lo" and automatically increments the sample size. Repeat Steps 3 and 4 with the new sample size. If the indicator continues to display "Lo" even after sampling 100 pieces, then the unit weight of the items you wish to count is too light for your scale to process accurately.

Peak Hold Mode

This mode is used to capture peak forces measured during a specific process. These peak force values are held (frozen) on the screen. A common application is determining the breaking point of a part or assembly. The T500ESS records both positive and negative peak forces. Peak forces are not retained when the indicator is powered OFF.

To activate this mode, set F30 to "5" in the Setup Menu.

1. Push the UNITS key to activate peak hold. The indicator briefly displays "HoLd".
2. Apply force to the item under test. The measured peak force is displayed on the screen.
3. To reset both peak values to zero, press the ZERO key. Repeat Step #2 as needed.
4. Press the UNITS key again to disarm peak hold. The indicator briefly displays "-HoLd". This action also clears the peak value. Repeat this procedure as required.

Remote Display Mode

This mode is used to emulate a remote display for a separate indicator. For it to work properly, a remote indicator must be transmitting information to the T500ESS continuously and at the same transmission (baud) rate configured in A1.

To activate this mode, set F30 to "2" in the Setup Menu.

SERIAL (COM) PORT INFORMATION

SERIAL PORT MODES

DEMAND DUPLEX MODE

The Demand Duplex Mode provides a two-way serial transmission mode. In this mode, the output information is transmitted on demand; either by pressing the PRINT key or upon receiving a recognized command from a host.

NOTE: Ensure that your cabling has a crossover (null modem) and contains the proper handshaking lines.

CONTINUOUS DUPLEX MODE

The Continuous Duplex Mode provides a two-way serial transmission mode. In this mode, the output information is transmitted continuously making it a popular choice for remote displays and other remote devices requiring a constant data stream. The transmission automatically occurs at the end of each display update.

RECOGNIZED HOST COMMANDS

ASCII code (Hex)	Symbol	Action by the instrument
50	P	Transmit the displayed weight through the serial port.
5A	Z	Zero the scale
54	T	Tare the scale
47	G	Puts the scale into Gross display mode
4E	N	Puts the scale into Net display mode
43	C	Change the displayed unit of measure, e.g., lb or kg

Please note that host commands may be ignored if the scale is in motion, in positive overload or in negative overload.

AUTO PRINT MODE

The Auto Print Mode provides a one-time serial transmission once a non-zero, stable condition has been achieved.

Note: this option may not be available on all models

TEST AND MEASUREMENT MODE

The indicator will unconditionally respond to a PRINT command, even if the scale is in motion, in positive overload, or below Gross zero.

OUTPUT STRINGS

Text Print Ticket

[A6 = "0" and A3 = "0"]
The Text Print Ticket is designed specifically for a serial line printer.

```
GROSS          1000.0  lb
```
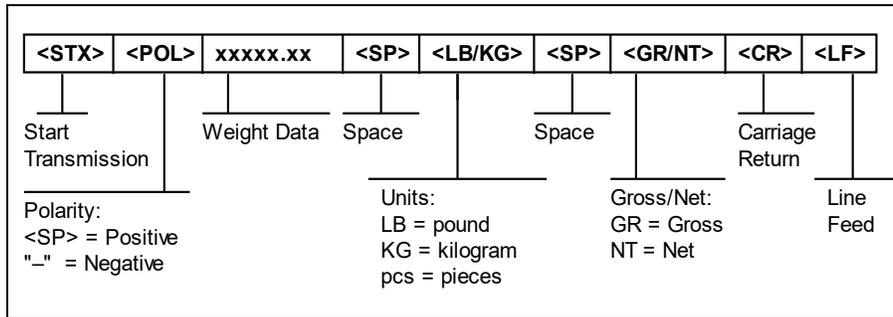
Use the following parameter settings to customize further:
- A7: ID Number
- A9: Line Feeds
- A10: Handshaking

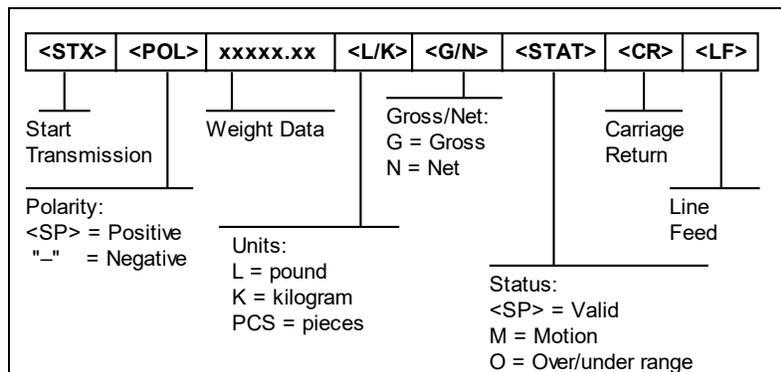## Condec Demand String

[A6 = "1" and A3 = "0"]
Condec Demand String is designed for two-way communication.

<STX>	<POL>	xxxxx.xx	<SP>	<LB/KG>	<SP>	<GR/NT>	<CR>	<LF>

Start Transmission

Weight Data   Space   Space   Carriage Return

Polarity:
<SP> = Positive
"–" = Negative

Units:
LB = pound
KG = kilogram
pcs = pieces

Gross/Net:
GR = Gross
NT = Net

Line Feed

Condec Continuous String

[A6 = "2" and A3 = "1"]
Condec Continuous String is designed for one-way communication.

<STX>	<POL>	xxxxx.xx	<L/K>	<G/N>	<STAT>	<CR>	<LF>

Start Transmission

Weight Data

Gross/Net:
G = Gross
N = Net

Carriage Return

Polarity:
<SP> = Positive
"–" = Negative

Units:
L = pound
K = kilogram
PCS = pieces

Line Feed

Status:
<SP> = Valid
M = Motion
O = Over/under range

6L, 6P, 6LB, 6PB and CUSTOM Strings

These strings are designed for use with the **TDP-225** serial printer. Use the A6 menu to select the format you want.

1. 6L.BAS: 6 lines, formatted for 2" Labels, human readable only

2. 6P.BAS: 6 lines, formatted for Paper Roll, human readable only

3. 6LB.BAS: 6 lines, formatted for 2" Labels, human readable + barcode

4. 6PB.BAS: 6 lines, formatted for Paper Roll, human readable + barcode

5. CUSTOM.BAS: Custom print formatting is available, please contact your sales representative for more details

6. The fields to be printed – and the order in which they are printed - are defined by the indicator

7. Certain indicator models may not support all 6 fields. If there are only 4 fields to be printed, the printer prints all 6 lines. Any blank lines will be "printed" as blank

8. The format of the barcode is Code 128

Examples of information printed using various formats:

6P.BAS

6PB.BAS

ANALOG OUPUT (OPTIONAL)

GENERAL INFORMATION

This digital indicator provides an active analog output from two terminals on the piggyback option board: "O" is A_{OUT} and "G" is Ground.

Two types of analog output are available: **4-20 mA** and **0-10 V**. The unit ships from the factory preconfigured to 4-20 mA. Select between the two types by:

1. Positioning the JP1 shunt block inside of the unit.
2. Configuring F24. ("1" = 4-20 mA, "2" = 0-10 V)

The output tracks the displayed weight, so you must first have the indicator configured and calibrated correctly for it to work properly. The unit is pre-calibrated at the factory to transmit 0V/4mA at 0 mV/V and 10V/20mA at 1 mV/V. Once everything is connected and working, you can use F23 to fine-tune the output if necessary.

Note: Unlike typical 2-wire transmitters, an external DC power supply is <u>not required</u> when the indicator is configured for 4-20 mA.

How to configure the analog output for 4-20 mA (default configuration):

1. Remove power and carefully open the unit.

2. Locate the small PCBA marked "C&V AD5422 07152K14" and position the shunt block between pins 1 and 2 of JP1 as shown below:
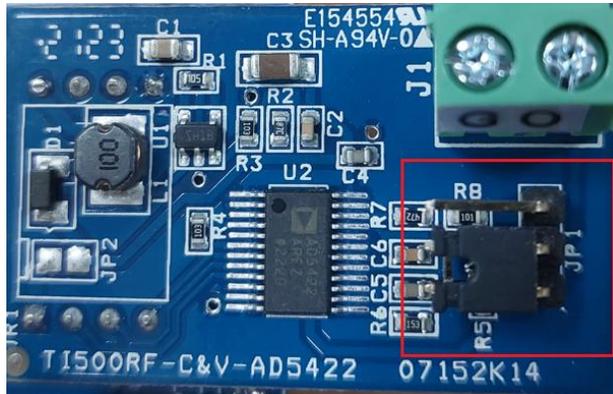
3. Set F24 to "1".

How to configure the analog output for 0-10 V:

1. Remove power and carefully open the unit.

2. Locate the small PCBA marked "C&V AD5422 07152K14" and position the shunt block between pins 2 and 3 of JP1 as shown below:
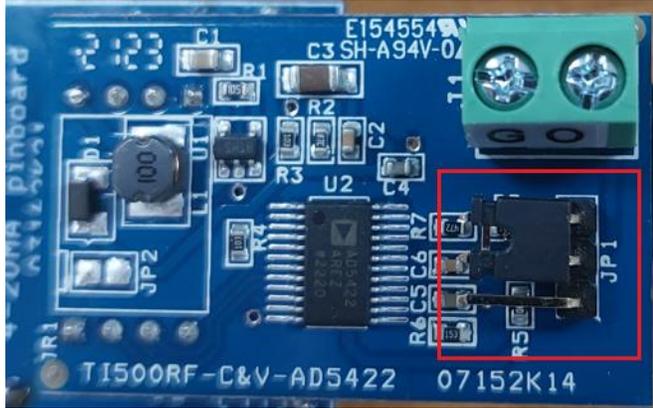
3. Set F24 to "2".

Coarse Calibration

Coarse calibration of the analog output is done in conjunction with scale calibration (F16 and F17). Therefore, once F16 and F17 have been successfully performed, the indicator will transmit 0V/4mA at zero and 10V/20mA at full-scale.

After the coarse calibration has been completed, use F23 to fine-tune the analog output if desired.

4-20 mA Analog Output

A 16-bit DAC is used along with a current loop transmitter. The current flows out of the A_{OUT} terminal and back into the Ground terminal.

Here is a working connection diagram used at the factory to test:

In most current loop applications, a receiver resistor (R_R) is used to convert the current into voltage. This voltage output is then connected to the analog input of your controller, e.g., a PLC.
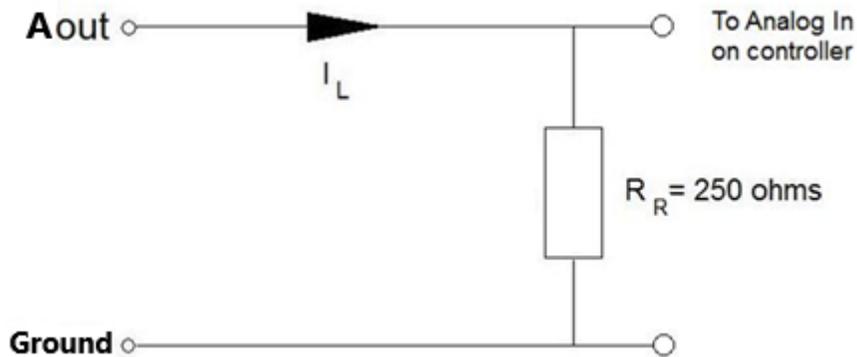
<u>Test to see that it is working correctly:</u>

1. Configure and calibrate the indicator to your weighing platform (or load cell simulator) and ensure that the weighing function is working properly.

2. Connect the A_{OUT} and Ground wires to an external 250 Ω precision resistor as shown in the test diagram above.

3. When the indicator is at zero, the output should be 4 mA and the voltage across R_R should be 1 Vdc. (4 mA * 250 Ω)

4. When the indicator is at full-scale, the output should be 20 mA and the voltage across R_R should be 5 Vdc. (20 mA * 250 Ω)

- You may also use an ammeter in series with the resistor to measure the current.

- Use F23 to digitally fine-tune the output if desired.

0-10 V Analog Output

You can measure the output directly across the A_{OUT} and Ground terminals. Connect the output directly to the analog input terminal of your controller. A receiver resistor is not required.

Fine-tune the Analog Output (F23)

1. Enter the Setup Menu and scroll to F23. For directions on how to enter the Setup Menu, see the Configuration section of this manual.

2. Push the down (ZERO) key once.
   4-20 mA: The indicator outputs 4 mA, displays "DA C0" briefly and then displays a number.
   0-10V: The indicator outputs 0V, displays "DA U0" briefly and then displays a number.

3. While monitoring the output, use the left (TARE) or right (PRINT) keys to change the displayed value until the measured output is exactly what's expected.
   TIP: For a larger change, use the up (UNITS) or down (ZERO) keys to change the displayed value by 10

4. Press the SET (Net/Gross) key to save.
   4-20 mA: The indicator outputs 20 mA, displays "DA C1" briefly and then displays a number.
   0-10V: The indicator outputs 10V, displays "DA U1" briefly and then displays a number.

5. While monitoring the output, use the left (TARE) or right (PRINT) keys to change the displayed value until the measured output is exactly what's expected.
   TIP: For a larger change, use the up (UNITS) or down (ZERO) keys to change the displayed value by 10

6. Press the SET (Net/Gross) key to save and revert to F23.

SPECIFICATIONS

Indicator Specifications
Enclosure: Stainless Steel (IP67)
Display: 0.56" (14 mm) 7-segment, LED, 6 Digit
A-to-D converter: AD-01
Resolution: Approximately 400,000 counts @ 3mV/V input
Sampling Rate: 10 Hz or 80 Hz (selectable)
Excitation Voltage: +5 VDC, 4 x 350Ω load cells
Input Signal Range: ±3.125 mV/V
Serial Port: Full Duplex RS-232C
Operating Temperature: 14°F to 104°F (-10°C to 40°C)

Power
- 100-240 VAC, 50-60 Hz, 0.8A
- DC Power Consumption: 200mA + 15mA/350Ω Load Cell
- Internal Fuse: 1A 250V SLOW BLOW

ERROR MESSAGES

CODE	MODE	MEANING / POSSIBLE SOLUTION
"oooooo"	Normal Operating Mode	Gross Overload. A load greater than the rated capacity has been applied to the scale. Remove the load from the platter. Or try re-calibrating the scale. Otherwise, check for a bad load cell connection or load cell damage due to overloading.
"------"	Normal Operating Mode	Under Gross Zero. The indicated load is below gross zero. Try pressing the ZERO key or re-calibrating the scale. Otherwise, check for a bad load cell connection or load cell damage due to overloading.
Err 0	Span Calibration Mode (F17)	Keyed-in weight value is larger than full-scale capacity. Use a smaller test weight or check keyed-in value.
Err 1	Span Calibration Mode (F17)	Keyed-in weight value is less than 1% of full-scale capacity. Use a larger test weight or check keyed-in value.
Err 2	Span Calibration Mode (F17)	There is not enough signal from the load cell to produce the internal counts necessary to properly calibrate the scale. First check all load connections. Use F16 mode to view internal counts.
Err 3	All Modes	Non-volatile memory read error. One or more setup parameters have been lost.
Err 4	All Modes	Non-volatile memory write error. Indicator needs service.
Err 5	Key-in Span Calibration Mode (F20)	You have attempted to enter a zero value for C1. Enter a known calibration value greater than zero.
Err 9	Normal Operating Mode	Span calibration value has been lost. Re-calibrate the scale.

TROUBLESHOOTING

Issue / Recommendation

Unit will not power on
- Check for AC power at the wall outlet
- Check output voltage of internal AC-DC adapter; replace if faulty
- Check the internal fuse; replace if open
- Internal fault: Call TOTALCOMP Tech Support or installer

The indicator displays six small zeros.
- The scale is overloaded. Remove weight from scale.
- Cut, damaged, loose, pinched cable between indicator and platform or within platform with multiple load cells
- A Load cell is damaged on the scale platform
- Internal fault with indicator; call TOTALCOMP Tech Support

Display is erratic (unstable reading)
- Check underneath the scale for any obstructions or foreign debris
- Loose or faulty connection between the indicator and the scale platform (homerun cable)
- Damaged load cell (electrical overload and/or physical overload)
- Floods can also damage load cells as well as junction boxes
- Electromagnetic Interference (EMI). Call TOTALCOMP Tech Support or installer
- Internal fault: Call TOTALCOMP Tech Support or installer

Weight reads out lower at one end of the weighing platform than the other end.
- Check for any type of mechanical binding or impingement of scale that is displaying the lower weight
- Check underneath the scale for any obstructions or foreign debris
- Make sure that the scale feet are not screwed in so far as to restrict downward movement of the scale.
- Adjust platform corners using variable trimmer junction box (if supplied)

TOTALCOMP Tech Support: 201.797.2718

<u>**Limited 12-month Warranty**</u>

This product is warranted by TOTALCOMP against manufacturing defects in material and workmanship under normal use for twelve (12) months from the date of purchase. For complete warranty details and service information, please contact us at the address below.

Contents subject to change without notice.

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