

User's Guide



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WARNING: These products are not designed for use in, and should not be used for, human applications.

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SPECIFICATIONS

Truck IN/OUT operation: Up to 300 stored transactions

Smart Serial Setup: 8 custom print files plus 8 macro files, 30 characters each.

Batch Start/Stop: Control from front panel or remote input.

Setpoint Operation: 4 output relays configurable for normal setpoints, over/under or manual/auto batch modes.

LOAD CELL A/D CONVERTER

TYPE: 24 bit delta sigma
EXCITATION: 5 VDC, 120 mA max.
SIGNAL INPUT: 16 mv
SENSITIVITY: 0.1 uV/grad
UPDATE RATE: 30 update/second

DISPLAY: Six (6) Decades, 0.6 inch LED

KEYPAD: Full numeric plus controls

POWER INPUT: 117/217 VAC, 50-60 HZ, 20 watts, fuse 0.25 A Slo-Blow.

SERIAL PORTS:

Port 1: RS232C or 20ma
Port 2: RS485, RS232C or 20mA.

ENCLOSURE: Stainless Steel, NEMA 4x, Tilt - Stand Base, 7lbs.

CASE: 9" (w) x 6.44" (h) x 4" (d) Tilt or panel mount.

OPTIONS:

TIME & DATE: 12/24 hr, battery backed.

ANALOG OUTPUT: 0-10v, 4-20ma (16 bit D/A).

DIO: 4 AC/DC – inputs, 4 AC outputs (SS Relays, 0.5 amp)

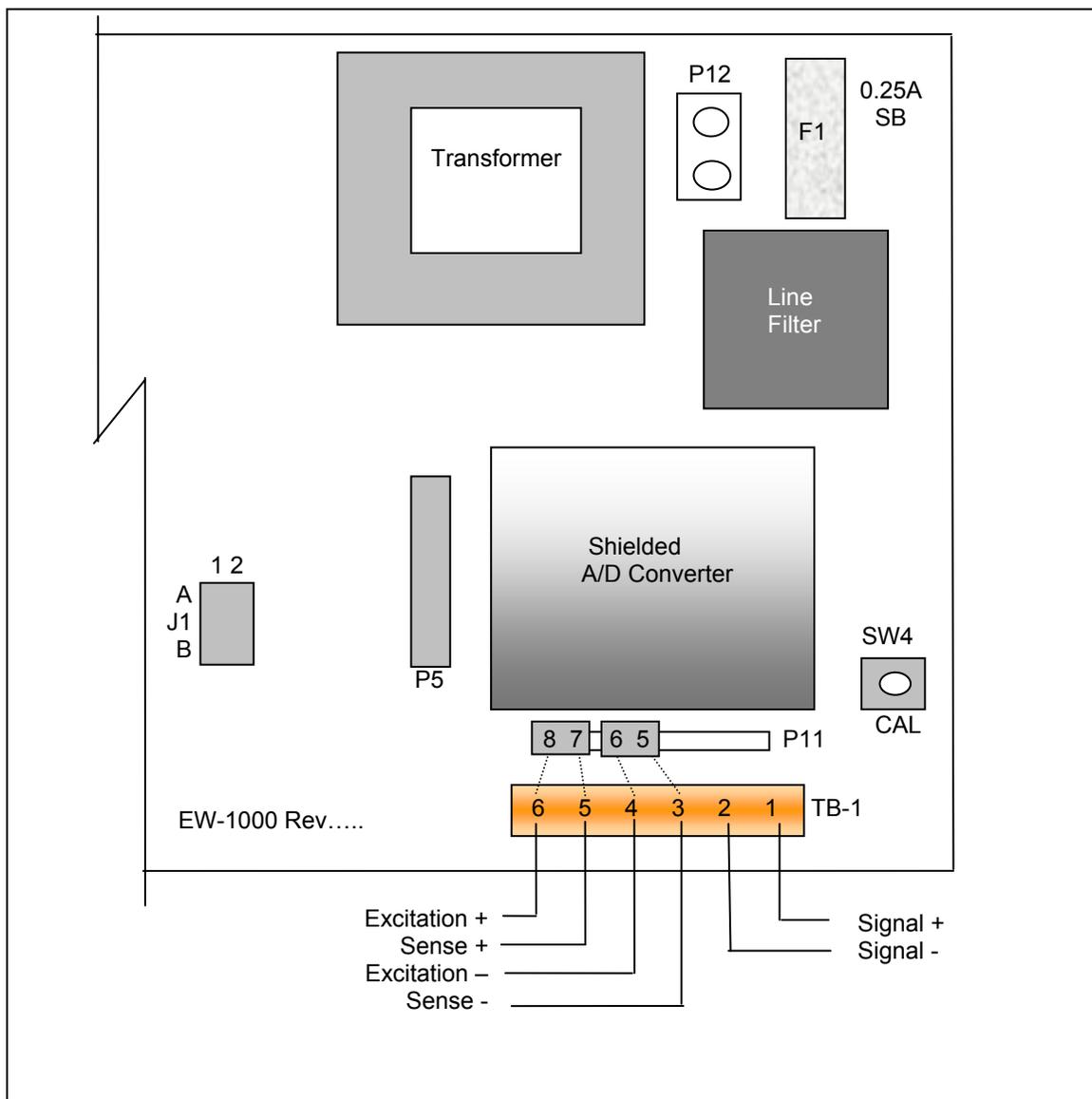
Optional Case: 10" (w) x 6.5" (h) x 4" (d) Tilt only.

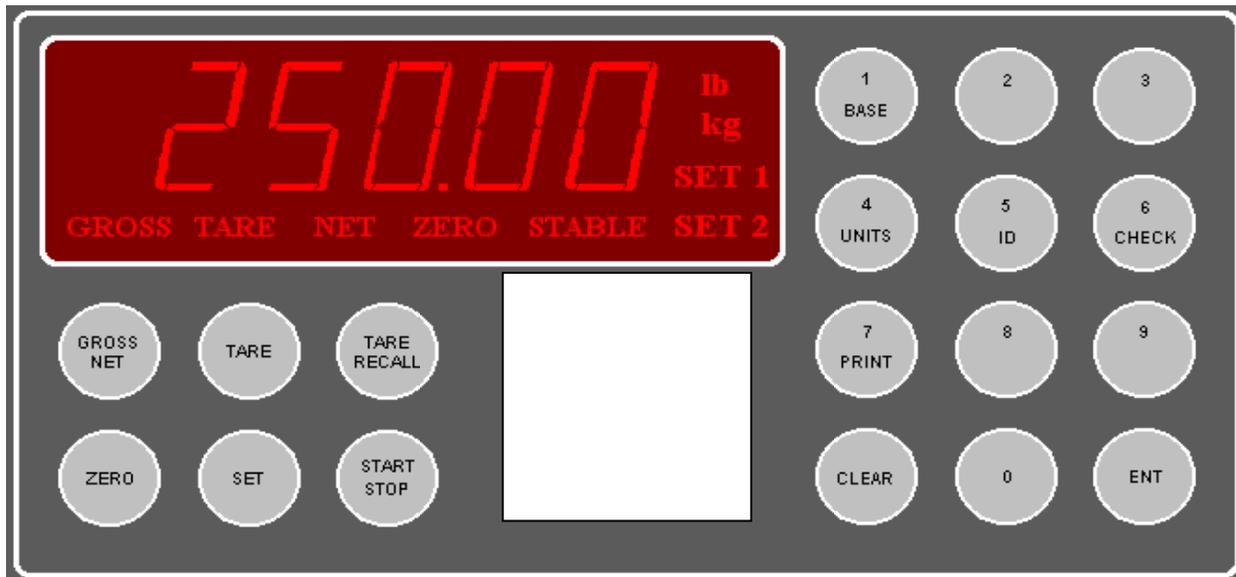
Panel Mount: Kit (replaces tilt stand).

INSTALLATION

POWER WIRING: The indicator is designed to be operated from 117/217 VAC, 50-60 Hz. The unit power cord must be plugged into a grounded 3 - wire polarized AC wall socket. All normal wiring and grounding precautions should be observed, including use of a "clean" AC power line.

SCALE WIRING: The unit is equipped with cable gland entry for load cell cable insertion and internal (pluggable) terminal strip for 4 / 6 wire connection. Remove sense jumpers P11-8/7, P11-6/5 for six wire.





SETUP ACCESS

To access instrument configuration, calibration or to enable options, depress the “Zero” key for five seconds.

The Audit Trail counters (“Pxxxx” and “Cxxxx”) are displayed first followed by access code request (“AC?”). The initial factory setting is “0000” which can be entered with four steps of the “0” key (“AC0000”) and “ENT”. If no entry is made, instrument returns to operate mode.

The access code can be changed to any four digit combination during setup exit when display again shows “AC?”.

The “Check” key provides the software version “V 1.XX” followed by the display test routine. Use the “ENT” key to advance to the keyboard test and to exit tests.

After entry, use the “Tare Recall” key to select a main menu; configuration (“SEL.CFG”), calibration (“SEL.CAL”), or options (“SEL.OPX”) and “Start/Stop” to back step.

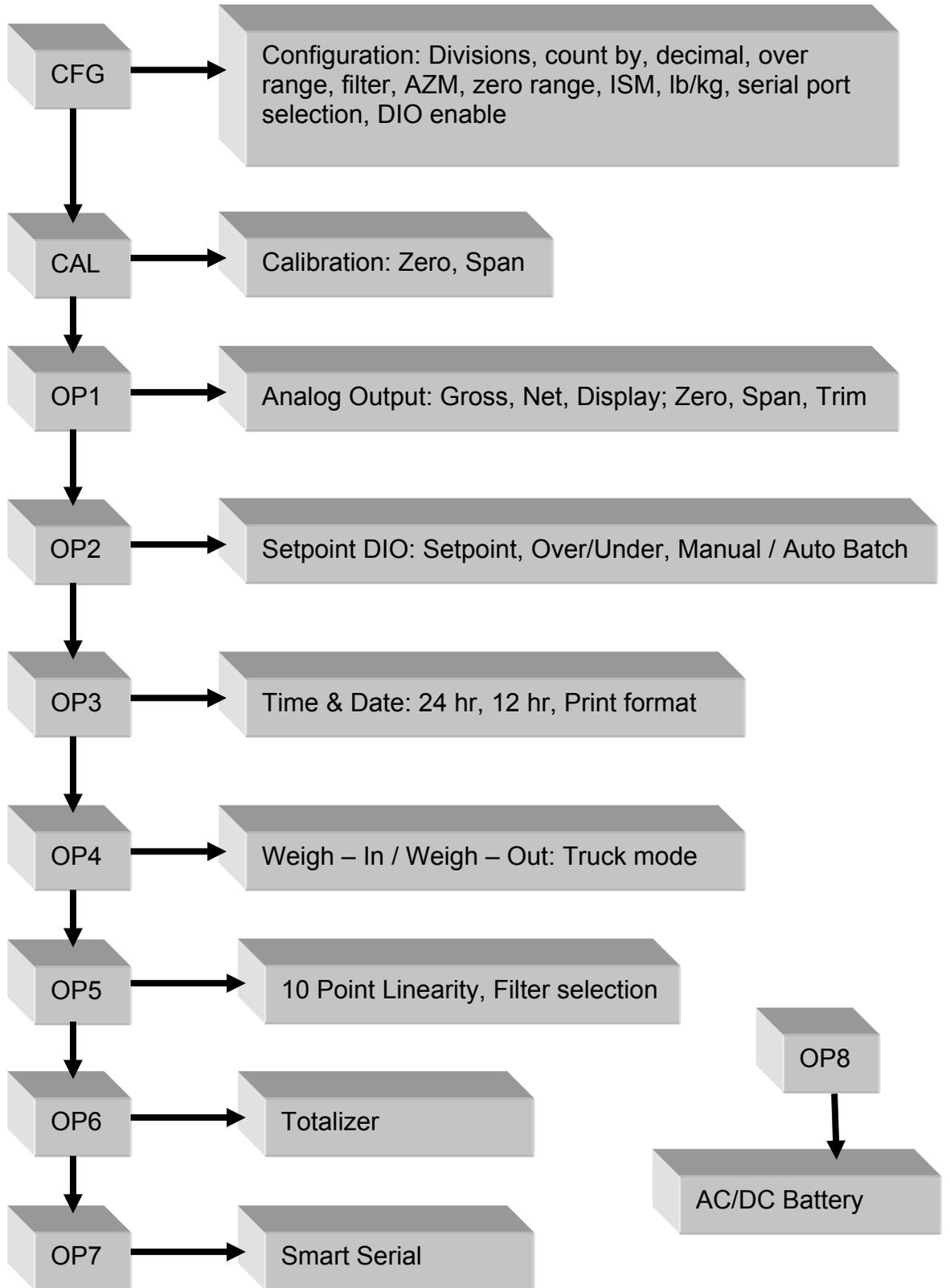
The “Gross/Net” key enters selected menu and is used to step through sub categories. Individual parameter selection is made with the “Tare/Recall” key, which then steps through the parameter choices (“Zero” key back steps within the menu).

The “ENT” key is used at any point to “back” up from categories to menus and to “save?” and “AC?” and exit.

During the exit steps, if changes were made, the display is “save?” with alternate “no”. To save changes, use the “Units” key to select “yes” and “ENT” to exit. Calibration numeric entries are entered directly followed with the “ENT” key.

Front panel access is inhibited if conventional “sealing” is applied by setting jumper J1-1 in the B position. The board mounted “CAL” button is then used for access.

Menu Layout



CONFIGURATION: “SEL.CFG” Use Gross/Net to enter the menu and step to each category, Tare Recall to select parameters. ENT to return to menu selection.

Capacity is the combination of “1”, “2” and “3”.

Example: 1__100, 2__2 and 3__0.0 = 2,000 x 0.2 lb

Step	Parameters	Definition
1	5, 10, 15, 20...100, 120...1000	Number of divisions x100 100 = 10,000 divisions
2	1, 2, 5, 10, 20, 50, and 100.	Count by selection 10,000 divisions, count by 2 = 20,000
3	0, 0.0, 0.00, 0.000, and 0.0000	Decimal point selection
4	105P, 9 d (105% or 9 divisions)	Overrange selection
5	1, 2, 3, 4, 5, 6, 8, 10, 12, 15.....90	Digital filter selection (averaging)
6	off, 0.5, 1, 3, 5, 10 (divisions)	Auto Zero Maintenance (AZM)
7	1.9, 5, 10, 20, FS (% of capacity)	Zero range selection 1.9% of 2,000 x 0.2 = 38.0 lb
7.1	off, on (ISM)	Zero’s scale on power-up
8	off, 1, 3, 5,10 (divisions)	Motion Band selection
9	lb, kg, con	Units selection and convert
10	nt, Gtn, n.nt, n.Gtn.	Port 1 serial output selection nt display only, Gtn is Gross Tare Net and n.nt/n.Gtn inhibit negative gross printing
11	off, co, de	Off, Continuous, or Demand
12	7o, 7E, 8n	7- odd, 7- even or 8- none
13	12, 24, 48, 96	Baud rate selection
14	off, 1, 2, 3, 5, 10, 15 (seconds)	Delay between lines or continuous output.
19	A, b	A : adds “STX” in continuous b : No “STX” in continuous
20	nt, Gtn, n.nt, n.Gtn	Port 2 serial output selection
21	off, co, de, Ln	Off, Continuous, Demand, Network
22	7o, 7E, 8n	7- odd, 7- even or 8- none
23	12, 24, 48, 96	Baud rate selection
24	off, 1, 2, 3, 5, 10, 15 (seconds)	Delay between lines or continuous output.
25	1 – 16 (RS485/RS422)	Network address selection
30	off, on	DIO Inputs

Remote Serial Display (RSD) Option

In RSD mode the instrument can be set to work with another unit as a “remote” either as the main or the slave unit. Communication is pre-set for channel two only on both units.
(RS232, 9600, 8, none)

When in remote mode, re-access to the following selections requires using the internal “cal” switch.

Remote unit can have full or partial control of the main unit. Devices are available to replace the cable for wireless communication.

40	rd.OF, rd.En, rd.re	rd.En : Selects Indicator as Remote Display (RSD) rd.re : Allows indicator to operate w/RSD
41	En.On	Allow remote keypad operation
42	Zr.On	Enable/Disable zero key
43	tr.On	Enable/Disable tare key
44	Un.On	Enable/Disable unit key
45	Pr.On	Enable/Disable print key
46	Fn.On	Enable/Disable all other functions

CALIBRATION: "SEL.CAL" Use Gross/Net to enter the menu indicated by a flashing "C" on the left and live weight is displayed. Scale zero (dead load) or adjusting span (single or multi-point) are independent. Therefore either can be done and repeated as necessary before exciting calibration. If an error has been made, exit without "storing" will return to prior setup.

KEY (FUNCTION)	DISPLAY	Definition
(Live weight 123 lb)	"C"__123	Cal mode scale reading
Zero (acquire dead load)	"-----" to "C__0.0"	acquires new dead load
(Live weight 5000 lb)	"C"__4995	Scale reading with load

Enter numeric value directly:

(Adjustment complete)	005000	adjusted value
-----------------------	--------	----------------

Then ENT:

(Adjust span)	"-----" to "C" 5000	displays new span
---------------	---------------------	-------------------

Repeat as required then ENT to exit CAL

"Save ?" "No" or "Save ?" "Yes" use Units to select and ENT to store "yes" with changes or "no" to exit without changes.

Continue with ENT to "Ent AC" which allows access code change by entering a new four digit code and ENT or ENT with no entry to maintain current password.

Option 5 Ten point calibration: Allows up to 10 span points (pt1.....pt10). Zeroing the scale clears the existing values. Points are assigned incrementally with error indication if the addition is not above the prior point or exceeding scale capacity.
Filter selection included for rolling or box averaging.

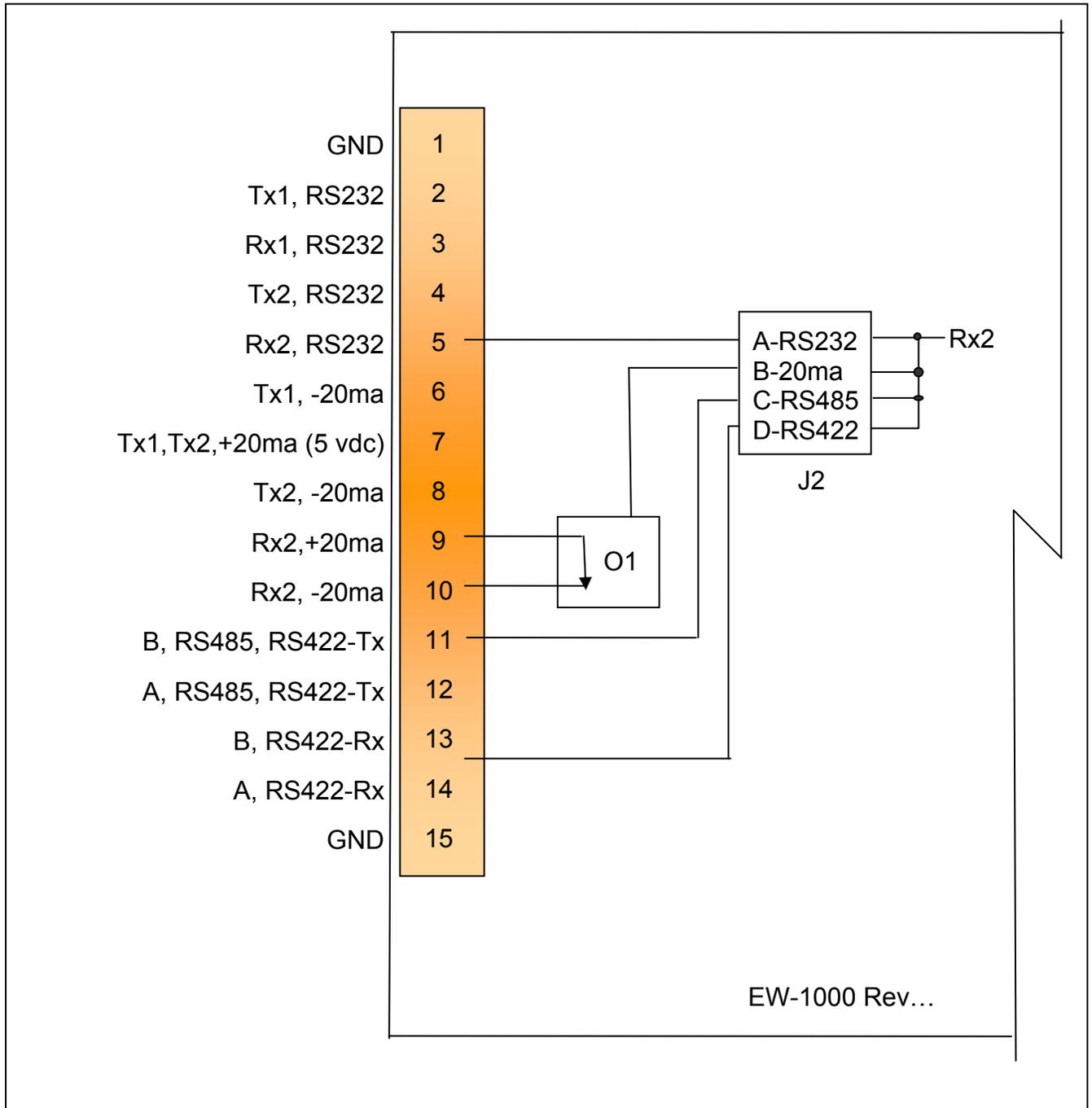
5.1	OFF, On	Enable 10 point span
5.2	A, b	A : Rolling average B : Box average

SERIAL PORTS

Port 1: RS232 duplex (Rx,Tx), 20ma (Tx).

Port 2: RS232 duplex (Rx,Tx), 20ma (Rx,Tx), RS485, or RS422.

Note: Position jumper on J2 for Port 2 receive selection.



Serial Communications

Remote Commands

<Z><cr>	Zero Scale	“Gross” mode, no motion, inside zero range.
<N><cr>	Switch to Net	“Gross” mode with Tare stored.
<G><cr>	Switch to Gross	“Net” mode.
<T><cr>	Auto Tare	Switch to Net, no motion, not at “Gross” zero.
<P><cr>	Print	Valid display, No motion

Data Formats

Demand Mode: <stx><pol><DATA><sp><lb/kg><sp><GR/NT><cr/lf>

Continuous Mode: <stx><pol><DATA><L/K><G/N><status><cr/lf>

Brackets “<>” are not sent

Stx: “Start of Text” character (ASCII 002) (can be removed in continuous: config 19)

pol: Polarity sign, “SPACE” (ASCII 032) for positive or (-) sign (ASCII 045) for negative

sp: Space character (ASCII 032)

DATA: Seven (7) digit data field including decimal point or fixed (dummy) zero if selected.
“Leading Zero Suppression” with leading zeros transmitted as “space” characters.

lb/kg: Two (2) character field data identification for weight units, in demand (printer) mode.

Weight in lb = “lb” (ASCII 108,098), weight in kg = “kg” (ASCII 107,103)

L/K: One (1) character field data identification for weight units in continuous (computer) mode.

Weight in lb = “L” (ASCII 076), weight in kg = “K” (ASCII 075)

GR/NT: Two (2) character field data identification for weighing mode in demand (printer) mode.

Gross Mode = “GR” (ASCII 071,082), Net Mode = “NT” (ASCII 078,084)

G/N: One (1) character field data identification for weighing mode in continuous (computer) mode.

Gross Mode = "G" (ASCII 071), Net Mode = "N" (ASCII 078)

status: One (1) character data identification used in the continuous (computer) output mode to identify the status of the indicator. Characters are listed below in order of priority.

Calibration/configuration	<D> (ASCII 068)
Over/Under Range	<O> (ASCII 079)
Motion	<M> (ASCII 077)
Center of Zero	<C> (ASCII 067)
None of the above	<sp>(ASCII 032)

cr/lf: Two (2) character field, "Carriage Return" (ASCII 013), "Line Feed" (ASCII 010)

Guidelines for Serial Output:

Demand format will inhibit "print" when scale is in "motion" or with negative "Gross" weight, even in "Net" mode (based on setting "CFG 10").

Local Network Protocol:

Command to the indicator:

<*><DD><00><cmd><data entry><CR>

Response from indicator:

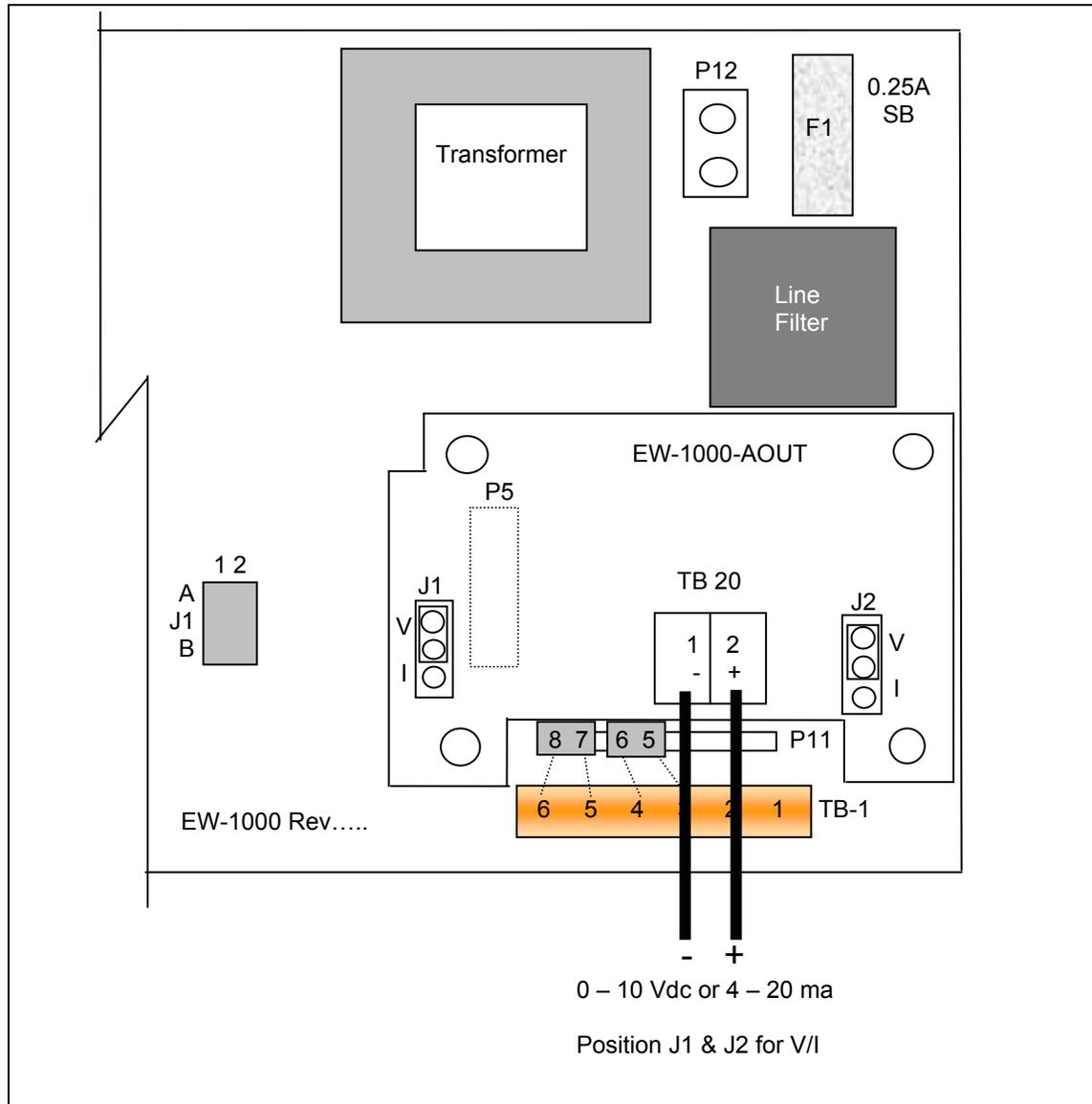
<:><00><DD><cmd echoed><data resp><CR>

Where: (<,> brackets not sent)

*	= Message from master (2AH)
DD	= Indicators address
00	= Master address (fixed at 00)
CR	= Message terminator (ODH)
:	= Response from indicator (3AH)
cmd	= Command to indicator
cmd ech	= Command echoed from indicator
data ent	= Data entered into indicator
data resp	= Data response from indicator

OPTION 1: Analog Output

0 – 10 Vdc or 4 – 20 ma, select with jumpers J1 and J2



Option 1 Analog Output: “SEL.OP1” Use Gross/Net to enter the menu and step to each category, Tare Recall to select parameters. ENT to return to menu selection.

DISPLAY	Parameters	Definition
1.1__Gr	Gr, Net, DSP	Analog tracks gross, net or display

“1.5__Zr” “000” (flashes current analog starting point)

Adjust value and ENT to adjust starting point.

“1.6__FS” “500” (flashes current analog span point)

Adjust value and ENT to adjust full scale.

1.7__ZrA While monitoring the output, use Start/Stop to decrease, Tare Recall to increase the analog reading (Zero trim digi-pot).

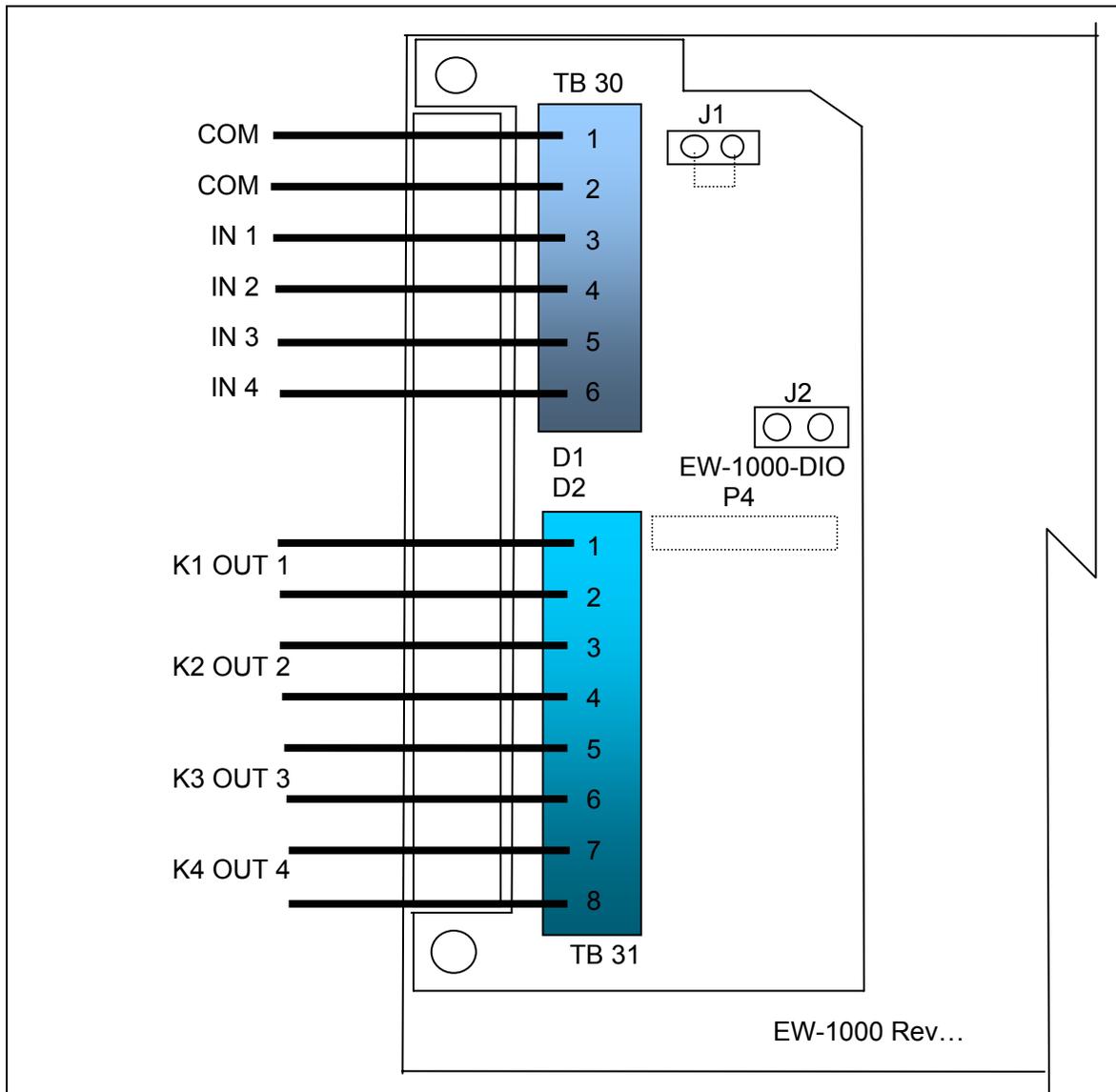
1.8__FSA While monitoring the output, use Start/Stop to decrease, Tare Recall to increase the analog reading (Span Trim digi-pot).

ENT to exit OP1.

OPTIONS 2: DIO

AC Inputs; D1, D2 are not installed, J1 = short (underside), J2 = open, R1 – R4 = 18k (3w, 5%, flame proof).

DC Inputs; D1, D2 are installed, J1 = open (cut trace), J2 = short, R1 – R4 = 1.5k (1/2w, 5%, carbon film). AC Outputs; Solid State Relays, 120VAC, 0.5A.



Option 2 DIO: “SEL.OP2” First select the operating mode for “Setpoint”, “Over/Under”, “Manual or Auto Batch”. After setup, the parameters for the selection are entered from the weighing mode.

Use Gross/Net to enter the menu and step to each category, Tare Recall to select parameters. ENT to return to menu selection.

Note: external Inputs are enabled in Configuration with “CFG 30”.
DIO Inputs can be configured for 120vac, 5vdc or dry contact.

	Normal	Batch
IN 1	Gross/Net	Stop
IN 2	Tare	Start
IN 3	Zero	Zero
IN 4	Print	Print

DIO Outputs are 120vac (0.5 amp) or optional 24 vdc, based on operating mode:

	Dual	Setpt 1	Setpt 2	Ov/Un	Man B	Auto B
Out 1	Setpt1-A	Main 1	Main 1	Low	Main 1	Main 1
Out 2	Setpt1-B	Fast F1	Fast F1	Accept	Fast F1	Fast F1
Out 3	Setpt2-A	Tol	Main 2	High	Main 2	Main 2
Out 4	Setpt2-B	Zero B	Fast F2	Zero	Zero	Fast F2

Checkweigher “Bar” graph legends:

Ck1-3	Out Low	Low	Accept	High	Out High
-------	---------	-----	--------	------	----------

Setpoint values are entered from “Weighing Mode” by the SET key and direct numeric entry.

Weight errors of any kind (e.g., ol, ul, etc) will de-energize all relay outputs and abort a batch if one is in progress.

Four outputs are available to use as two setpoints with main and fast feed, single setpoint main and fast feed plus tolerance and zero band. Also Pre-Act can be applied to the main, for material in-flight compensation.

Step	Parameter	Definition
2.0	OFF, SP, OU.UN, bAt1, bAt2	Mode select: setpoint, over/under (check weighing), Manual Batch, Auto Batch
2.0	SP	Setpoint
2.2	Off, s1, s1.p, s1.d, s.p.d, Dual	Setpoint. 1 + pre-act, + drib, + both, Set1-A&B.
2.3	Gr, nt, dSP, Count	Setpoint 1 tracks Gross, Net, Display, Count
2.4	POS, ZER	Output on below reading (POS), inverted (ZER)
2.6	Off, s2, s2.p, s2.d, s2.p.d, tOL, Dual	Setpoint. 2 + pre-act, + dribble, + both, Tolerance, Set2-A&B.
2.7	Gr, nt, dSP, Count	Setpoint. 2 + pre-act, + dribble, + both
2.8	POS, ZER	Output on below reading (POS), inverted (ZER)
2.10	ZbO	Zero band output (input weight value)
2.11	Off, On	Hysteresis, provides 3 grads to prevent relay chatter
s.p.d example	SP1.trG (Target) = 1000 SP1.PrE (Pre-act) = 5 SP1.drb (Dribble) = 10	Main and Fast Feed are on until reading reaches 990, then Fast Feed turns off and Main continues until Pre-act at 995

2.0	OU.UN	Over/Under – check weighing
2.2	Off, HL, tGt, Ck1, Ck2, Ck3	High/Low band, Target and +/- band, Check Weigher 1-3.
2.3	Gr, net, dSP	Outputs track Gross, Net, Display
2.4	POS, ZER	Invert low
2.5	POS, ZER	Invert accept
2.6	POS, ZER	Invert high
2.10	ZbO	Zero band output (input weight value)
2.11	Off, On	Hysteresis, provides 3 grads to prevent relay chatter
2.12	Off, On	Enables “Bar” graph legends
HL example	Low = 950 High = 1050	Then low is on until 950, then accept is on until 1050 and high is on above 1050.
tGt example	Target = 1000 Low = 50 High = 50	Outputs match above example for HL

Note:	Batch printouts are from Port 1 only	
2.0	Bat 1	Manual Batch mode, pauses between setpoints
2.1	Prn, tAr, dIn	7400 uses print, tare or external (DIO) for start. Pressing any key other than “start” will pause and a second push will abort. 7600E uses Start/Stop panel switch
2.2	Off, s1, s1.p, s1.d, s.p.d	Setpoint. 1 + pre-act, + dribble, + both
2.3	Gr, nt, dSP, Count	Setpoint 1 tracks Gross, Net, Display, Count
2.4	POS, ZER	Output on below reading (POS), inverted (ZER)
2.6	Off, s2, s2.p, s2.d, s2.p.d	Setpoint. 2 + pre-act, + dribble, + both
2.7	Gr, nt, dSP, Count	Setpoint. 2 + pre-act, + dribble, + both
2.8	POS, ZER	Output on below reading (POS), inverted (ZER)
2.10	ZbO	Zero band output (input weight value), available if S2 dribble not used

2.0	Bat 2	Auto Batch mode, continues without pause
2.1	Prn, tAr, dIn	7400 uses print, tare or external (DIO) for start. Pressing any key other than “start” will pause and a second push will abort. 7600E uses Start/Stop panel switch
2.2	Off, s1, s1.p, s1.d, s.p.d	Setpoint. 1 + pre-act, + dribble, + both
2.3	Gr, nt, dSP, Count	Setpoint 1 tracks Gross, Net, Display, Count
2.4	POS, ZER	Output on below reading (POS), inverted (ZER)
2.5	Off, 1, 2, 3,, 10	Time Delay (settling) before print
2.6	Off, s2, s2.p, s2.d, s2.p.d	Setpoint. 2 + pre-act, + dribble, + both
2.7	Gr, nt, dSP, Count	Setpoint. 2 + pre-act, + dribble, + both
2.8	POS, ZER	Output on below reading (POS), inverted (ZER)
2.9	Off, 1, 2, 3,, 10	Time Delay (settling) before print
2.10	ZbO	Zero band output (input weight value), available if S2 dribble not used

OP3	Time & Date	
3.1	---, 24H, 12A, 12P	Skip time, 24 hour, 12 hour am, 12 hour pm
3.2	T1	Set time: hh mm ss
3.3	dA	Set date: mm dd yy
3.4	S.no, no, Let	Month print selection, short numerical (mm/dd/yy), number 01 thru 12, month spelled out
3.5	Off, Un, Ab, On	Print under, above or on the same line

OP4	Weigh – In / Weigh - Out	See page 19
OP5	10 Point Linearity	On, Off see page 9
OP6	Totalizer	
6.1	Off, On	Enable Totalizer (operates with Batch or Print)
6.2	Off, 1.....50	Totalizer reset band

Option 6 Totalizer: Operates with “print” function in normal mode or batch mode.

In normal mode, current value is added to the totalizer with each “Print” command. The reset band is used to inhibit a double add when not in Batch Mode.

View the Total with the “2” key and during the display (AC..XXXX), the “Print” key is used to print the total, the “Ent” key returns to weigh mode.

The “Clear” key is used to clear the totalizer by first changing the message from “Clr.ACC...no” to “Clr.ACC...yes” with the “Units” key and “Ent” to complete. A “Cleared” message is provided for conformation.

Note: Totalizer works with port 1 only and the “Print” key is disabled when Batch Mode and Totalizer are both enabled.

OPTION 4: Weigh – In / Weigh – Out

Truck Scale Application: Provides storage up to 300 transactions with six digit Identification. Operates in “Gross” only.

This mode provides a system for single scale applications to determine net weight by storing incoming weight and completing the transaction with out going weight. Options are provided to maintain “store” Tares or to manually input tare weight.



4.1	Off, On	Turn on Weigh-in / Weigh-out
4.2	No, Yes	Delete record after weigh-out transaction
4.3	No, Yes	Enable manual tare
4.4	1, 2	Select print port 1 or 2
4.5	8n1, 7e1, 7o1	Data setup, 8 bit no parity one stop, 7 bit even one stop, 7 bit odd one stop
4.6	1200.....9600	BAUD rate selection
4.7	Off, 1, 2, 3	Line feed delay

Note: Print format based on smart serial setup or unlabeled default.

Full Truck IN

Truck enters scale full, scale indicates "Stable".
Operator inserts ticket and pushes "Print" key.
Display responds with "Id no" prompt.
Operator enters truck "ID Number", up to 6 – digits.
Operator pushes "Ent" key.

Printer prints: Time/Date (optional)
 (xxxxxx) ID. NO.
 (xxxxxx) lb GR

Truck goes to empty load.
Empty truck returns to scale, scale indicates "Stable".
Operator pushes "Print" key and "Id no" prompt appears.
Operator enters same ID Number as previously printed.
Operator pushes "Ent" key.

Printer prints complete transaction:

 Time/Date (optional)
 (xxxxxx) ID. NO.
 (xxxxxx) lb GR Recalled
 (xxxxxx) lb TR
 (xxxxxx) lb NT

Empty Truck IN

Truck enters scale empty, scale indicates "Stable".
Operator inserts ticket and pushes "Print" key.
Display responds with "Id no" prompt.
Operator enters truck "ID Number", up to 6 – digits.
Operator pushes "Ent" key.

Printer prints: Time/Date (optional)
 (xxxxxx) ID. NO.
 (xxxxxx) lb GR

Truck goes to fill load.
Full truck returns to scale, scale indicates "Stable".
Operator pushes "Print" key and "Id no" prompt appears.
Operator enters same ID Number as previously printed.
Operator pushes "Ent" key.

Printer prints complete transaction:

Time/Date (optional)
(xxxxxx) ID. NO.
(xxxxxx) lb GR
(xxxxxx) lb TR Recalled
(xxxxxx) lb NT

Fixed Tare

Truck enters scale full, scale indicates "Stable".
Operator inserts ticket and pushes "Print" key.
Display responds with "Id no" prompt.
Operator enters truck "ID Number", up to 6 – digits.
Operator pushes "Tare" key.
Display responds with "Tare" prompt.
Operator enters tare weight.
Operator pushes the "Ent" key.

Printer prints: Time/Date (optional)
 (xxxxxx) ID. NO.
 (xxxxxx) lb GR
 (xxxxxx) lb TR (Recalled*) Keyed
 (xxxxxx) lb NT

**"Recalled" added if from stored Tare.

Transaction Buffer: Select / Print / Clear / Clear All

Select ID: With "ID" displayed, user can select a stored ID by pressing "Set" (up) or "Start/Stop" (down) to scroll through the buffer.

Print Buffer: Pushing Gross/Net with ID displayed will cause output of the complete buffer (ID with Tare).

Clear ID: Pushing clear with ID displayed will clear that ID and step to the next.

Clear ALL: With "ID", holding the clear switch will prompt "Rec.Clr" and using unit to switch to "yes" and enter will clear entire buffer.

Option 7: SMART SERIAL I/O

The SMART SERIAL I/O option now offers a wide degree of flexibility for an operator to customize the serial output format for individual system requirements. The custom print currently supports:

- Specifying starting and terminating characters (**stx**, **cr**, **lf**, etc.).
- Adding printer control characters.
- Custom **headers**, **titles**, etc..
- Customized parameters such as "**GROSS WEIGHT**" instead of "**GR**".
- Custom insertion of special parameters such as **time/date** and **identification no.**
- Truck mode custom printing.
- Custom continuous serial protocol.
- Custom '**P**' print out in duplex mode.

FEATURES:

- * Eight (8) custom print files automatically assigned.
- * Eight (8) macro files for easy setup of headers, titles, etc. .
- * Capability to upload and download the custom print files to a host computer.
- * Maximum file length is 30 characters and/or parameters. Maximum number of characters in an output string is (250).

Note! Custom print does **not** support RS485 protocol

STANDARD SERIAL CONFIGURATION:

The SMART SERIAL I/O Option allows standard serial output ports to be modified and imported into the serial output data stream.

The table below lists configuration parameters and Option modes that are associated with the customized print.

CUSTOM PROTOCOL FILE SELECTION:

The selection of the associated custom print file is performed automatically by serial port and the data mode (GROSS, NET, TOTAL RECALL, or SPECIAL) that the instrument is currently in at the time of a print. In other words, if Ports 1 & 2 were selected for demand print (dE) and the instrument was in the "GROSS" mode at the time of a print request of the data, the serial output for Port 1 would use the contents of file 1 (7.1) and the contents of file 5 (7.5) for Port 2.

GENERAL:

The selections under Option 7 may be divided into three main functional groups; the first 8 files (7.1 to 7.8), each of which can store up to 30 ASCII and/or parameter codes, are files pertaining to the actual customization of serial output data and are themselves further subdivided into Port 1 files (7.1 to 7.4) and Port 2 files (7.5 to 7.8), the second functional group pertains to the 8 MACRO files (7.9 to 7.16) that may be entered into the primary files (7.1 to 7.8) by their associated parameter codes 600 to 607 (7.9 = parameter code 600 etc.), each of these files can also store up to 30 ASCII and/or parameter codes.

		CUSTOMIZING			
	FILE	NORMAL MODE	TRUCK MODE	MACROS (8)	MACRO Parameter codes
PORT 1	7.1	Gross data	Truck Mode Output Port is selected under option 4, Port 1 selection mirrors Port 2 below.	7.9	600
	7.2	Net data		7.10	601
	7.3	Total data		7.11	602
	7.4	Special (for future use)		7.12	603
PORT 2	7.5	Gross data	Truck Entry	7.13	604
	7.6	Net data	Truck Out Empty	7.14	605
	7.7	Total data	Truck Out Full	7.15	606
	7.8	Special (for future use)	Truck Fixed Tare	7.16	607

Notes:

If Option 7 is enabled ("on") but a designated file is set to **off** then that print mode will print its default format (eg. file 7.1 **off** - the GROSS data from Port 1 is sent out in its default format).

MACRO FILES (7.9 TO 7.16):

There are eight (8) macro files that can be accessed in any of the prime Print Files 1 - 8 (7.1 to 7.8) using the "600" series codes. Each macro file holds up to 30 ASCII characters and/or parameter codes.

Example: A header stating the company's name **Scrap inc.** is desired when Port 1 outputs GROSS mode weight data.

Printout = Scrap inc.
30000 LB GR 05/13/2005 12:30am

PRINT FILE 1 (7.1 - Port 1 "GROSS" mode data)

LINE #	CODE	CODE definition
01	002	STX (start of text)
02	600	* macro file #1 (7.9)
03	200	gross wt. with "LB/KG GR"
04	032	SP (space)
05	601	*macro file #2 (7.10)
06	013	CR (carriage return)
07	010	LF (line feed)
08	999	END OF FILE

CODE 600 (MACRO FILE 7.9)

LINE #	CODE	CODE definition
01	083	S character
02	099	c character
03	114	r character
04	097	a character
05	112	p character
06	032	SP (space)
07	105	i character
08	110	n character
09	099	c character
10	046	. (period)
11	013	CR (carriage return)
12	010	LF (line feed)
13	999	END OF FILE

CODE 601 (MACRO FILE 7.10)

LINE #	CODE	Definition
01	402	Date
02	032	SP
03	401	Time
04	999	END

CREATING AND EDITING FILES: OPTION 7 CONFIGURATION

7.0	Off, On	Enables smart serial
7.X	Off, On	Enables each print buffer 7.1.....7.16
	Key	Description
7.1	SET	Access buffer 7.1 and exit when done
	0-9	Use numeric keys to enter code 0-999
	ENT	Enter code
	CLEAR	Clear the code
	START/STOP	Insert code
	TARE RECALL	Clear entire (current) buffer
	GROSS/NET	Steps to next buffer position
	TARE	Go to first buffer position
	ZERO	Go to last buffer position

IMPORTANT! All files **must** be terminated with code 999

CUSTOM PRINT FILES REMOTE READ AND WRITE

SSC (Smart Serial Codes) command is provided to read or write buffer data 7.1...7.16.

Example:

Read

SSC<CR>

```
SSC 1 2 600 200 32 601 13 10 999
SSC 9 83 99 114 97 112 32 105 110 99 46 13 10 999
SSC 10 402 32 401 999
```

Write

SSC<sp><X><yyy><yyy><cr> Where X = buffer 1...16 (7.1...7.16), yyy = code

With a txt editor (such as Windows Notepad) and the serial loader program, buffers can be created and edited.

Text strings can also be entered directly surrounded by quotes:

```
SSC 9 "Scrap inc." 702 999
```

Note: the 702 command CR/LF (13 10).

ASCII CONTROL CODE CHART 1

CONTROL		CONTROL		SYMBOLS		NUMBERS	
CHAR	CODE	CHAR	CODE	CHAR	CODE	CHAR	CODE
NUL	000	DLE	016	SP	032	0	048
SOH	001	DC1	017	!	033	1	049
STX	002	DC2	018	"	034	2	050
ETX	003	DC3	019	#	035	3	051
EOT	004	DC4	020	\$	036	4	052
ENQ	005	NAK	021	%	037	5	053
ACK	006	SYN	022	&	038	6	054
BEL	007	ETB	023	'	039	7	055
BS	008	CAN	024	(040	8	056
HT	009	EM	025)	041	9	057
LF	010	SUB	026	*	042	:	058
VT	011	ESC	027	+	043	;	059
FF	012	FS	028	,	044	<	060
CR	013	GS	029	-	045	=	061
SO	014	RS	030	.	046	>	062
SI	015	US	031	/	047	?	063

ASCII CONTROL CODE CHART 2

UPPER CASE		UPPER CASE		LOWER CASE		LOWER CASE	
CHAR	CODE	CHAR	CODE	CHAR	CODE	CHAR	CODE
@	064	P	080	`	096	p	112
A	065	Q	081	a	097	q	113
B	066	R	082	b	098	r	114
C	067	S	083	c	099	s	115
D	068	T	084	d	100	t	116
E	069	U	085	e	101	u	117
F	070	V	086	f	102	v	118
G	071	W	087	g	103	w	119
H	072	X	088	h	104	x	120
I	073	Y	089	i	105	y	121
J	074	Z	090	j	106	z	122
K	075	[091	k	107	{	123
L	076	\	092	l	108		124
M	077]	093	m	109	}	125
N	078	^	094	n	110	~	126
O	079	_	095	o	111		

PARAMETER CONTROL CODE CHART

CODE	DESCRIPTION	CODE	DESCRIPTION
200	GROSS WT & 'LB/KG GR'	240	TRUCK GROSS 'LB/KG GR'
201	GROSS WT & 'LG/KG'	241	TRUCK GROSS ONLY
202	GROSS WT	242	TRUCK TARE 'LB/KG TR'
203	GROSS WT(no 0 blanking)	243	TRUCK TARE ONLY
		244	TRUCK NET 'LB/KG NT'
210	NET WT & 'LB/KG NT'	245	TRUCK NET ONLY
211	NET WT & 'LN/KN'		
212	NET WT	300	STATUS CHARACTER
213	NET WT (no 0 blanking)	400	TIME & DATE PER SETUP
		401	TIME PER SETUP
220	TARE WT & 'LB/KG TR'	402	DATE PER SETUP
221	TARE WT & 'LT/KT'	500	IDENT NO. & 'ID. NO.'
222	TARE WT	501	IDENT NO. ONLY
223	TARE WT(no 0 blanking)		
230	TOTAL WT & lb/kg		
231	TOTAL WT & LA/KA	510	TICKET NO & COUNT
232	TOTAL WT ONLY	511	COUNT ONLY
233	TATAL WT (no "0" blanking)	702	CR/LF

CUSTOM SERIAL ENTRY WORKSHEET

LINE	COD E	DESCRIPTION	LINE	COD E	DESCRIPTION
1			16		
2			17		
3			18		
4			19		
5			20		
6			21		
7			22		
8			23		
9			24		
10			25		
11			26		
12			27		
13			28		
14			29		
15			30		

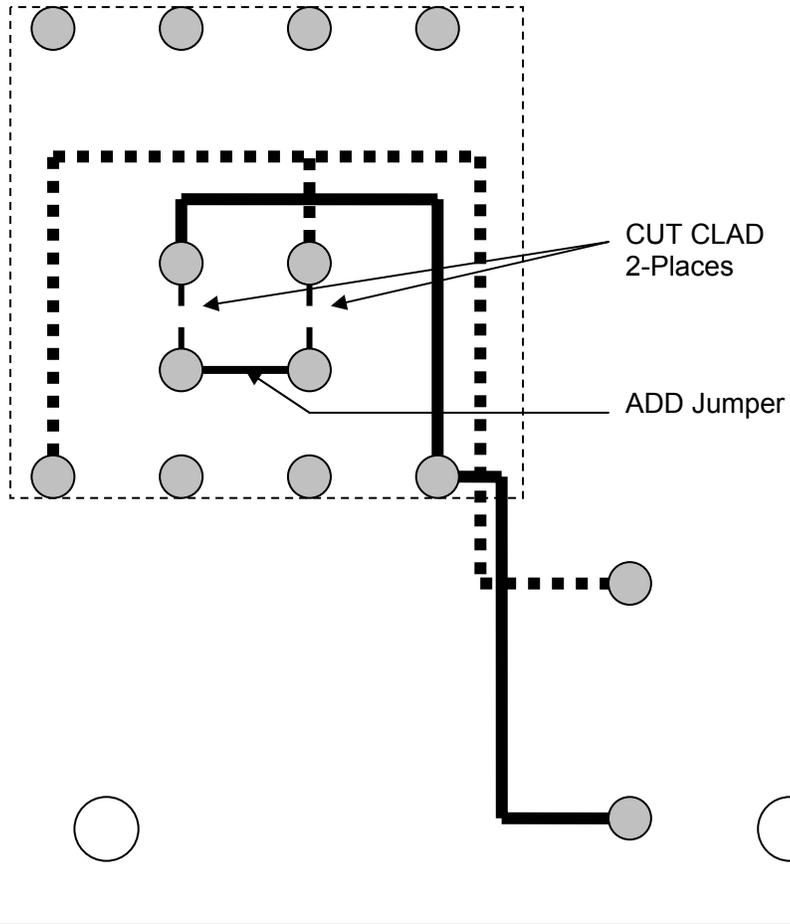
Option 8: AC/DC operation

8.1	Off, On	Enables battery charger
8.2	Off, 5, 15, 30, 90, 120	Auto shutoff in minutes, timer resets with motion

DISPLAY MESSAGES

MESSAGE	DESCRIPTION
DAC	D/A card detected - Displayed under the check function.
IIC.ERR	IIC short - Power-up hardware failure indication.
RST	EEPROM is reset by EER command - Power-up message
ON	Displayed on power-up when the DC power push-button is pressed.
AUTO	EEPROM is reset - Power-up message
ERR6.x	Key-pad key is stuck.
-232-	Serial calibration/setup is active.
UPDATE	Enhancement calculation in progress.
LO.BATT	Low battery
D BATT	Dead battery
ULULUL	Under-load (-400 graduations under dead-zero)
OLOLOL	Over-load (+9 graduations or 105% from dead-zero reference)
-----	A/D acquisition is in progress.
7x00	Instrument mode selection.
Err 10	Number > 999999
Err 13	Number < -99999
ADC.Err	A/D hardware failure (channel one only).
CHECK	Check mode accessed.
rC.xxxx	Lower four-digits of the ROM check-sum.
Err.80	Serial command data error.
Err.81	Unknown serial command.
-CAL-	Remote calibration
Err.OFF	Hardware failure of the D.C. power on/off circuitry.
RTC.RST	The clock is reset to 01:01:04 12:00:00am.
RST ID	The ID EEPROM has been reset since it was detected as corrupt.
AC OK	Access code entered has been accepted.
E-1234	EEPROM set 1,2,3, and/or 4 have been fixed.
Err 40	Positive or negative signal overload (check sense connections).
Err 31	Bad tare entry
Err 30	Push to Zero out of range
PC Err	Piece Weight Entry is out of range

115 to 220 VAC Conversion : EW1000 Bottom Side



WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of **13 months** from date of purchase. OMEGA's WARRANTY adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

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Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:

1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problems relative to the product.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

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