

SMART WEIGHING SOLUTIONS



32x Series Digital Indicator Quick Start Manual

003R-632-200-M04

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SPECIAL NOTE Trade Use of the Instrument

This manual may occasionally make reference to Trade Use settings of the instrument.

Some individual settings may not be legal for trade use. Please check regulations with the appropriate Weights and Measures Authority.

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1.Introduction

This manual contains information on the installation, calibration and setup of the instrument.

1.1. Approvals

• C-tick approved and CE approved.

1.1.1. Trade Versions

- NSC approval (4000 divisions at 0.8μV/division).
- NMI approval (4000 divisions at 0.8µV/division).
- NTEP approval (10000 divisions at 0.8µV/division).

1.2. Manuals

For more information on this instrument refer to the **Reference Manual**, **Quick Start Manual** or **Communications Manual**.

2. Shipping Contents

The following table identifies the items shipped with the indicator. Please check that your packing box contains the specified items.

Shipped Items	Other Items (Optional)
Indicator	 opto-LINK Cable
 Operator Manual 	 Power Supply
 Quick Start Manual 	 Desk Mount with Battery
 Trade Label (plastic) 	Compartment
 Panel Mount Template 	 U Bracket
Function Key Overlay Stickers	

3.Specifications

Performa	nce	
Resolutior	ו	Up to 30,000 divisions, minimum of 0.25µV/division (K303 up to 60.000 divisions)
Zero Cano	cellation	±2.0mV/V
Span Adju	Istment	0.1mV/V to 3.0mV/V full scale
Stability/D	rift	Zero: $< 0.1\mu$ V/°C (+ 8ppm of deadload max)
,		Span < 8 ppm/°C. Linearity < 20ppm. Noise < 0.2µVp-p
Excitation		5 volts for up to 4 x 350 or 8 x 700 ohm load cells (4-wire or 6-wire plus shield)
		Maximum total load cell resistance: 1,000 ohms
A/D Type		24bit Sigma Delta with 8,388,608 internal counts
A/D Conve Rate	ersion	20Hz with FIR filtering > 80dB
Operating		Temperature: -10 to +50°C ambient
Environme	ent	Humidity: <90% non-condensing
		Storage: -20 to +50°C ambient
		IP65 when panel mounted
Case Mate	erials	ABS, Silicon Rubber, Nylon, Acrylic (no halogen used)
Packing V	Veights	Basic Indicator: 0.34kg
Digital		
Display		LED Backlit LCD with six 20mm high digits with units and
Setup and		Full digital with visual promoting in plain messages
Calibration	י ז	
Digital Filt	er	Sliding window average from 0.1 to 4.0 seconds
Zero Rang	ge	Adjustable from $\pm 2\%$ to $\pm 100\%$ of full capacity
Power In	out	
Standard	Power	7 to 24VDC, 4.8, 7.2, 9.6, 12 and 24V batteries (2.5 VA max)
Variante	AC	ΔC Plug pack: 110/240\/ ΔC 50/60Hz in 24\/DC 1 25A out
vanants	Rattery	A v A A batteries (Alkaline or rechargeable NiMH, NiCad
	Dattery	etc)
		12V battery pack (2.5Ah rechargeable NiMH)
Features		
onto-LINK	Data	Infra-red Connector for ontional onto-LINK PC cable (to RS-
Coupling	Dala	232 or USB PC nort)
Correction		Ten point linearity correction (K302 Only)
Outputs	I	RS-232 automatic transmit network or printer outputs
		Transmission rate: 2400, 4800 or 9600 baud
Assignable		Unit switching, counting, manual hold, peak hold, live weight, totalising
	nuts	2 isolated transistor drive outputs $(300\text{ m}\Delta \text{ total at } 50\text{ VDC})$
Battery Ra	acked	Battery life 10 years minimum
Clock Cal	endar	

4.Warnings

4.1. General

- Indicator not to be subject to shock, excessive vibration or extremes of temperature (before or after installation).
- Inputs are protected against electrical interference, but excessive levels of electro-magnetic radiation and RFI may affect the accuracy and stability.
- For full EMC or for RFI immunity, termination of cable shields and correct earthing of the instrument is essential.
- Indicator and load cell cable are sensitive to excessive electrical noise. Install well away from any power or switching circuits.

4.2. Configuration Issues

- Configuration and calibration can be performed from the front panel, using digital setup. When Full Setup is used, all menu items are accessible and care must be taken to ensure no accidental changes are made to calibration and trade settings.
- Enter a passcode to prevent unauthorised or accidental tampering. If the passcode is lost, the manufacturer should be contacted for further advice.

5.Installation

The following steps are required to set up the indicator.

- Inspect indicator to ensure good condition.
- Use connection diagrams to wire up load cell, power and auxiliary cables as required.
- Use the panel mount template provided for hole locations.
- Connect Power to indicator and press **<POWER>** key to turn the instrument on.
- Refer to the Instrument Setup section page 17 for information on configuring and calibrating the instrument.
- To turn instrument off press and hold **<POWER>** key for three seconds (until display blanks).

5.1. Electrical Safety

- For your protection all mains electrical hardware must be rated for environmental conditions of use.
- Pluggable equipment must be installed near an easily accessible power socket outlet.
- To avoid the possibility of electric shock or damage to the instrument, always switch off or isolate the instrument from the power supply before maintenance is carried out.

5.2. Panel Mount Template

Use the panel mount template for drill hole locations. The template indicates positions for the two 4mm mounting screws through the panel. Also displayed on the template is the position of the rectangular hole that should be cut to allow for the connection of cables. The template supplied with the indicator allows for front or rear machining of the panel.

5.3. Special Function Key

- The Special Function Key on the instrument ships as a blank key.
- If any of the special functions are to be used on the indicator it is important that the matching function key overlay sticker (supplied) is applied to the keypad.
- Ensure keypad is clean and dry before affixing sticker.

5.4. opto-LINK

The optional opto-LINK cable can be used to transfer setup and calibration information from a PC (eg. to be stored for later use and/or transferred to other instruments). It can also



be used to download software upgrades to the instrument from a PC.

- Attach the opto-LINK cable to the PC using the DB9 or USB connector.
- Attach the opto-LINK head to the left side of the instrument display using the permanent magnet located within the head of the opto-LINK.

WARNING: The opto-LINK head contains a strong magnet and care should be taken with its proximity to electronic media (eg. credit cards, floppy disks, etc.) and/or other electronic instrumentation.

5.4.1. opto-LINK Activation

A long press of the **<GROSS/NET>** key will toggle the opto-LINK infrared communications On/Off.

When the opto-LINK has been (enabled) the following will occur:

- The instrument briefly displays the prompt **opto-L**.
- The editing annunciators (ie. GRP, ITM, etc.) will flash for up to five minutes while the instrument searches for activity. During this period, the instrument also disables the RS-232 communications.
- After a 5 minute period of no activity, the opto-LINK will be disabled and the editing annunciators will stop flashing. The instrument will revert back to the normal RS-232 communications (ie. The SERIAL:TYPE setting will be reactivated).

6.Connections

6.1. Cable Connections

- All cable connections are made to the rear of the instrument using screwless terminals.
- Wires must be stripped of insulation by at least 10mm.
- To install, depress the orange lever beside the terminal required and push wire into the hole. Release the lever and pull gently on the wire to ensure it is securely trapped in the terminal.



6.2. DC Power (DC PWR + , DC PWR –)

- The DC supply need not be regulated, provided that it is free of excessive electrical noise and sudden transients.
- The instrument can be operated from a high quality plugpack as long as there is sufficient capacity to drive both it and the load cells.
- If an optional battery pack is fitted, then the supplied charging system must be used.

6.3. Load Cell Connection

The instrument may be connected for either 4-wire or 6-wire operation. For more information, refer to **BUILD:CABLE** setting page 19.

6.3.1. 4-Wire Connection

The minimum connectivity requirements are the connection of four wires (ie. Excitation + and – along with Signal + and –).

The BUILD:CABLE option must be set to **4** to allow for 4-wire connection.



6.3.2. 6-Wire Connection

The excitation and signal lines are connected the same as for a 4-wire installation.

The BUILD:CABLE option must be set to **6** (the default) to allow for 6-wire connection.



6.4. Auxiliary Connections

6.4.1. RS-232 Serial to PC

Network: One Instrument to PC (DB9) (RXD,TXD,GND)



Network: One Instrument to PC (DB25) (RXD,TXD,GND)



Ring Networks: Multiple Instruments to PC (RXD,TXD,GND)

Instruments can be configured in a Ring Network. The Short Ring Network layout should only be used up to a total cable run length of about 150 m (500 ft) at 9600 baud in a clean EMC environment. If communications errors persist, or for longer cable runs, select lower baud rates and/or use the Long Ring Network below. For DB25 connector, see Network: One Instrument to PC (DB25) above.

In a Ring Network, the Instruments must have:

- same serial options, i.e., baud, parity, data bits, stop bits;
- unique addresses.

Short Ring Network



Long Ring Network

The Long Ring Network layout can be used where each leg of the cable run can be up to about 150 m (500 ft) at 9600 baud. If comms errors persist, lower the baud rate to 4800 or 2400.



6.4.2. Printer Connections (RXD/TXD, GND and DTR) RS-232 – Instrument to Printer (DB25)



6.4.3. Remote Display (TXD, GND)

• Connect TXD to RXD and GND to GND on the remote display.

6.4.4. Remote Input

 The indicator requires a voltage free contact between TXD and RXD to enable the remote input (ie. SPEC:REM.FN).
 Note: The remote input will not function when in setup or when using the opto-LINK.



WARNING

The remote input is a voltage free contact (eg. button, mechanical relay). Connection of any active circuitry may damage the instrument.

6.4.5. Outputs

- Output drivers for the instrument are isolated open emitter transistor drives that are capable of driving up to a total of 300mA.
- This configuration allows for the direct connection of the instrument outputs to most types of PLC.
- The voltage applied to the COM terminal appears on the output lines (ie. OUT1 and OUT2) when the outputs are active (eg. to connect to a PLC connect +24V to the common terminal). The outputs can then be connected directly to PLC inputs so when the outputs are active the PLC will see a 24V signal.
- To drive external loads (eg. relays), connect the relay coil positive supply to the output common and the output line directly to one side of the relay coil.
- Connect the other end of the relay coil to the negative supply. It is recommended that fly-back diodes or transient suppressors be fitted across relay coils to limit switching noise.

Outputs to Drive Relay



Outputs to Drive PLC



6.5. Connecting Shields

To obtain full EMC or for RFI immunity, cable shields MUST be connected to the earth lug on the rear of the instrument.

This figure shows the connecting cables restrained using cable ties fastened around the cable strain relief anchors.



6.5.1. Cable Shield Connection and Earthing

- Care should be taken when connecting shields to maximise EMC or RFI immunity and minimise earth loops and cross-talk (interference) between instruments.
- For full EMC or for RFI immunity, termination of the cable shields at the earth lug is very important. The earth lug of the instrument must be separately connected to ground potential via a reliable link.
- The instrument should only be connected to earth via a single reliable link to avoid earth loops.
- Where each instrument is separately earthed, interconnecting cable shields should be connected at one end only. This also applies to Ring Networks, see pages 10 and 11.
- Caution: Some load cells connect the cable shield directly to the load cell (and therefore the scale base). Connection of the load cell cable shield in this situation may be site specific.

6.6. Regulatory Sealing Requirements

To comply with regulatory sealing requirements for each instrument, (ie. to ensure instruments are not accidentally or deliberately tampered with), it is important that proper sealing procedures be adhered to.

6.6.1. Sealing



7. Instrument Setup

7.1. Calibration Counter

The built-in calibration counter(s) monitor the number of times trade critical settings are altered. Refer to Trade Critical Settings below for more information and to the **OPTION:USE** setting page19.

The table below describes when the counter(s) will increment.

Industrial, NSC or OIML: The **Calibration Counter** increments when trade critical settings are changed. An example of the counter is **C.00019**.

NTEP: Two counters display.

The **Calibration Counter** increments when trade critical settings in the Calibration (**CAL**) menu are changed. An example of the counter is **C.00010**.

The **Configuration Counter** increments when other trade critical settings (ie. **not** in the **CAL** menu) are changed. An example of the counter is **F.00009**.

7.1.1. Trade Critical Settings

Trade critical settings can affect calibration and/or legal for trade performance. In this document the \otimes symbol indicates the setting is trade critical. Each time a trade critical setting is altered, the calibration counter will be incremented by one.

7.2. opto-LINK

For information on setting up using the opto-LINK cable refer to opto-LINK page 6.

7.3. Access Full Setup

Full Setup provides access to configure and calibrate the instrument. All items in all menus will be enabled in Full Setup.

WARNING: Care should be taken to avoid inadvertently altering the Build or Calibration settings.

- Ensure the instrument is on.
- Press and hold the <POWER> and
 <PUNCTION> keys together for two seconds.



7.4. Access Safe Setup

Safe Setup restricts access to the trade critical settings (marked with \otimes).

- Ensure the instrument is on.
- Press and hold the <POWER> and <ZERO> keys together for two seconds.

ZERO

 \bigcirc

7.5. Exit Full or Safe Setup

To save settings, exit setup and return to the normal weighing mode use one of the following methods:

- Method 1: Press <POWER> and <FUNCTION> keys together for two seconds.
- Method 2: Press <POWER> and <ZERO> together for two seconds.
- Method 3: Select End from the menus.

Warning: If the power is interrupted while in setup (ie. by disconnecting the power cable or pressing the **<POWER>** key), unsaved settings will be lost.

7.6. Settings

The following tables identify the settings available for the instrument.

GROUP	ITEM	SELECT	EDIT	OK
(GRP)	(ITM)	(SEL)	(EDT)	
-0-				\int
ZER0	TARE	GROSS/NET	PRINT Underline = Defaults	
BUILD	DP⊗	Decimal Point Position	<u>000000</u> , 00000.0, 0000.00, 000.000, 00.0000, 0.00000	Accept
	CAP⊗	Maximum Capacity	000100 to 999999 Default = <u>003000</u> <sel></sel> changes position. <edt></edt> changes digit.	Accept
	RES⊗	Resolution (Count-By)	<u>1</u> , 2, 5, 10, 20, 50, 100	Accept
	UNITS⊗	Units	kg, lb, t, none, g (K303: kg, <u>lb</u> , t, none, g)	Accept
	GRADS⊗	Graduations (Range 1)	000100 to 030000 Default = <u>003000</u>	Accept
	(K305 only)		<sel> changes position, <edt> changes digit.</edt></sel>	
	HI.RES⊗	Resolution x 10 Mode	OFF, ON	Accept
	CABLE⊗	4-Wire or 6-Wire	4, <u>6</u>	Accept
OPTION	USE⊗	Scale Use	INDUST, NSC, OIML, NTEP	Accept
	FILTER	Reading Average (time in seconds)	none, 0.2, <u>0.5</u> , 1.0, 2.0, 3.0, 4.0	Accept
	MOTION⊗	Motion Detection	OFF, <u>0.5-1.0</u> , 1.0-1.0	Accept
			Default = 0.5 Graduations per Second	
	INIT.Z	Initial Zero on Startup	OFF, ON	Accept
	Z.TRAC⊗	Zero Tracking Sensitivity	OFF, SLOW (0.5 grads/sec), FAST (10 grads/sec)	Accept
	Z.RANGE⊗	Zero Operating Range	<u>-2_2</u> , -1_3, -20_20, FULL	Accept
			Default = -2_2 (-2% to +2%)	
	Z.BAND⊗	Zero 'Dead' Band	<sel> changes position, <edt> changes digit.</edt></sel>	Accept
			Default = <u>0</u>	

GROUP	ITEM	SELECT	EDIT		OK
(GRP)	(ITM)	(SEL)	(EDT)		
-0-					f
ZERO	TARE	GROSS/NET	PRINT	Underline = Defaults	
OPTION (continued)	R.ENTRY⊗	Enable Rear Pushbutton for Full Setup Entry	<u>OFF</u> , ON		Accept
CAL	ZERO⊗	Zero Calibration Routine	<sel> key to start. Cur</sel>	rent weight displays.	
		Set between zero and full	Remove all weight.		
		scale	<pre><sel>, <edt> or <ok< pre=""></ok<></edt></sel></pre>	> starts routine (Z.in P displays).	
		(Current weight displays)	<itm> key to exit, <sel< th=""><th>->, <edt> or <ok> to repeat routine.</ok></edt></th><th></th></sel<></itm>	->, <edt> or <ok> to repeat routine.</ok></edt>	
	SPAN⊗	Span Calibration Routine Set between zero and full scale (Current weight displays)	SEL> key to start SEL points (CLr.L y displated and the select alternative of th	 T> key to select clear linearisation ays). or not (CLr.L n displays). rnative. w calibration weight value. CL> changes position, <edt> changes position, <edt> changes position, <edt> changes position (S.in P displays).</edt></edt></edt> ->, <edt> or <ok> to re-edit repeat routine.</ok></edt> 	

GROUP	ITEM	SELECT	EDIT		OK
(GRP)	(ITM)	(SEL)	(EDT)		
~ 0~					f
ZERO	TARE	GROSS/NET	PRINT	Underline = Defaults	
CAL	ED.LIN⊗	Edit Linearisation Points	<sel> to step through list</sel>	st of points.	
(continued)	(K302 only)	Set between zero and full	<ok> to change selected</ok>	d point or <itm></itm> to exit.	
		scale	After <ok></ok> current weigl	ht displays.	
		L1 Select Linearisation	Add test weight.		
		point 1 to 10 (L1, L2, L3, L4 ,	<ok> to enter corrected</ok>	weight. <sel></sel> changes position,	
		L5, L6, L7, L8, L9, L10).	<edt></edt> changes digit.		
		(Approx. % of full scale)	<pre><ok> starts routine (L.in</ok></pre>	n P displays).	
			<itm> key to exit, <ok></ok></itm>	to repeat routine.	
	CLR.LIN⊗	Clear Linearisation Points	<sel> to step through list</sel>	st of points.	
	(K302 only)	L1 Select Linearisation	<ok> to select point to c</ok>	clear or <itm></itm> to exit.	
		point 1 to 10 (L1, L2, L3, L4 ,	After <ok> press <itm></itm></ok>	to choose Cont. Y (Yes) or Cont. N	
		L5, L6, L7, L8, L9, L10)	(No).		
			<itm> to return to CLR.L</itm>	_IN.	
	DIR.ZER⊗	Direct Zero Calibration	<ok> key to start. Curre</ok>	nt weight displays.	
		(Current weight displays)	<ok> to enter direct zero</ok>	o setting (in mV/V).	
			<sel> changes position</sel>	on, <edt></edt> changes digit.	
			<ok> key to store new z</ok>	zero calibration.	
			<itm> to exit or <ok> to</ok></itm>	repeat operation.	
	DIR.SPN⊗	Direct Span Calibration	<ok> key to start. Curre</ok>	nt weight displays.	
		(Current weight displays)	<ok> to enter direct spa</ok>	n setting (in mV/V).	
			SEL> changes position	on, <edt></edt> changes digit.	
			<ok> key to store new s</ok>	pan calibration.	
			<itm> to exit or <ok> to</ok></itm>	repeat operation.	

GROUP	ITEM	SELECT	EDIT	OK
(GRP)	(ITM)	(SEL)	(EDT)	
				ſ
ZERO	TARE	GROSS/NET	PRINT Underline = Defaults	
CAL	G.INST⊗	Installation Gravity	9.750 to 9.860 Default = <u>9.810</u>	Accept
(continued)	(K305 only)	(Current setting displays)	Gravity Compensation Only	
	G.FAC⊗	Factory Gravity	9.750 to 9.860 Default = <u>9.810</u>	Accept
	(K305 only)	(Current setting displays)	Gravity Compensation Only	-
	G.FIRST⊗	First Powerup Prompt	ON <u>, OFF</u>	Accept
	(K305 only)	(Current setting displays)	Prompts user to enter G.INST on first powerup	-
	FAC.CAL⊗	Factory Calibration	Cont. N	Accept
		Cont. Ň (No)	Warning: Choosing Cont. Y will restore default factory	-
		Cont. Y (Yes)	calibration in BUILD and CAL menus.	
SPEC	SAFE.PC	Safe Setup Passcode	(000000 no passcode). Set up to 6 digit passcode.	Accept
			<sel> changes position, <edt> changes digit.</edt></sel>	-
			Activated only when FULL.PC is also set.	
	FULL.PC	Full Setup Passcode	(<u>000000</u> no passcode). Set up to 6 digit passcode.	Accept
			<sel></sel> changes position, <edt></edt> changes digit.	
	KEY.LOC	Front Panel Key Locking	P12345	Accept
		P12345	Character indicates key is unlocked.	
		(P for Power key.	(–) Dash indicates key is locked.	
		Other keys numbered from	<sel></sel> changes position, <edt></edt> changes digit.	
		the left, ie. Zero=1.)		
	KEY.FN	<pre><function> Key Setting</function></pre>	NONE, TEST, COUNT, UNITS, HOLD, PEAK.H, LIVE.WT,	Accept
			SHOW.T, HI.RES, A.TARE, SET.PT	

GROUP	ITEM	SELECT	EDIT	OK
(GRP)	(ITM)	(SEL)	(EDT)	
-0+		Z		f
ZER0	TARE	GROSS/NET	PRINT Underline = Defaults	
SPEC	AUT.OFF	Auto Power Off / Battery	NEVER , 1 , 5 , 10 (time in minutes)	Accept
(continued)		Operation	Default = Never powers off automatically	
			(Battery Mode: powers down after 30 minutes)	
	B.LIGHT	Backlight Operation	<u>ON</u> , OFF	Accept
			(Automatically turns backlight off after 10 seconds of	-
			inactivity)	
			FORCED (Permanently on)	
	REM.FN	Remote Function	NONE, KEY1 to KEY5, BLANK	Accept
			(Activated only when SERIAL:TYPE is set to AUTO, PRINT or	-
			AUTO.PR)	
	REM.CHR	Remote Input Transmit Idle	000 to 255 Default = 005	Accept
		Character	<sel> changes position, <edt> changes digit.</edt></sel>	-
	BAT.VLT	Battery Voltage	4.8, 7.2, 9.6, 12, 24, PWR (External Power)	Accept
SERIAL	TYPE	Serial Output Type	NET, AUTO, SINGLE, PRINT, AUTO.PR	Accept
	FORMAT	Serial Output Format	MASTER, CUSTOM, FMT_1, FMT_2,	Accept
	BAUD	Serial Baud Rate	2400, 4800, <u>9600</u>	Accept

GROUP	ITEM	SELECT	EDIT	OK
(GRP)	(ITM)	(SEL)	(EDT)	
•O•				f
ZERO	TARE	GROSS/NET	PRINT Underline = Defaults	
SERIAL	BITS	Serial Format Options	N 8 1 - (Default Serial Format Options)	Accept
(continued)		Position 1: Parity	<sel> changes position, <edt> changes digit.</edt></sel>	
		Position 2: Data Bits	Parity: N None, O Odd, E Even	
		Position 3: Stop Bits	Data Bits: 7 or 8 data bits	
		Position 4: DTR Handshake	Stop Bits: 1 or 2 stop bits	
			DTR: (-) DTR disabled or d DTR enabled	
	ADDRES	Instrument Address	01 to 31	Accept
			<sel> changes position, <edt> changes digit.</edt></sel>	•
	RST.CON⊗	Reset Printed Consecutive	Cont. N	Accept
		Numbers to 1	<itm> to choose Cont. Y (Yes) or Cont. N (No)</itm>	-
		Cont. N (No)		
		Cont. Y (Yes)		
SET.PTS	SETPT.1	Control Type	OFF, ON, OVER, UNDER, MOTION, ZERO, NET, ERROR	Accept
		Setpoint 1 (Output 1)	(Displayed)	•
	SRC.1	Weight Source	GROSS, DISP, NET (Displayed)	Accept
	TARG.1	Target for Over and Under	-99999 to 999999	Accept
		Weight	Default = <u>000000</u>	
		Setpoint 1 (Output 1)		
	SETPT.2	Control Type	OFF, ON, OVER, UNDER, MOTION, ZERO, NET, ERROR	Accept
		Setpoint 2 (Output 2)	(Displayed)	
	SRC.2	Weight Source	GROSS, DISP, NET (Displayed)	Accept

GROUP	ITEM	SELECT	EDIT	OK
(GRP)	(ITM)	(SEL)	(EDT)	
► ○ ◄		Ż		ſ
ZERO	TARE	GROSS/NET	PRINT Underline = Defaults	
SET.PTS	TARG.2	Target for Over and Under	-99999 to 999999	Accept
(continued)		Weight	Default = <u>000000</u>	
		Setpoint 2 (Output 2)		
CLOC	FORMAT	Date Format Setting	dd.mm.yy or mm.dd.yy	Accept
		_	(K303: mm.dd.yy or dd.mm.yy)	_
	YEAR	Year Setting	2000 to 2099	Accept
			<sel> changes position, <edt> changes digit.</edt></sel>	
	MONTH	Month Setting	01 to 12	Accept
			<sel> changes position, <edt> changes digit.</edt></sel>	
	DAY	Day Setting	01 to 31	Accept
			<sel></sel> changes position, <edt></edt> changes digit.	
	HOUR	Hour Setting	00 to 23	Accept
			<sel> changes position, <edt> changes digit.</edt></sel>	
	MINUTE	Minute Setting	00 to 59	Accept
			<sel> changes position, <edt> changes digit.</edt></sel>	
TEST	SCALE	Scale Base Test Display	Display reads in millivolts-per-volt	
			(factory calibrated to 0.1%)	
			Verify the correct load cell capacity and/or load cell wiring is	
			used. Remove weight from scale.	

GROUP	ITEM	SELECT	EDIT	OK	
(GRP)	(ITM)	(SEL)	(EDT)		
~ 0~				f	
ZERO	TARE	GROSS/NET	PRINT Underline = Defaults		
TEST	FRC.OUT	Force Outputs	<edt> advances through outputs</edt>		
(continued)			(ie. ON.1 and ON.2)		
			OK > turns outputs off and exits test.		
			Default = <u>OFF</u>		
	O.LOAD	Input Overload Count	Displays the number of occurrences of an input overload.	Return	
	CLR.OLD	Clear Overload Count	Cont. N	Accept	
		Cont. N (No)	Choosing Cont. Y will clear the overload count.	-	
		Cont. Y (Yes)	5		
FACTRY	DEFLT	Restore Factory Defaults	Cont. N	Accept	
		Cont. N (No)	Warning: Choosing Cont. Y will clear all stored data except	-	
		Cont. Y (Yes)	BUILD and CAL menus.		
- END -	EXIT SETUP	Save settings and return to		Accept	
		normal weighing mode		-	

8. Error Messages

8.1. Weighing Errors

 Check Setup = This item can be checked on site by service personnel

Error	Description	Resolution
(U)	The weight is below the minimum allowable weight reading.	Increase the weight or decrease the minimum allowable weight reading.
(O)	The weight is above the maximum allowable weight reading. Warning - overloading may damage mechanical scale elements.	Check the condition of load cell connections. Check for damaged load cell.
(ZERO) (ERROR)	The weight reading is beyond the limit set for Zero operation. The operation of the <zero></zero> key is limited in the setup during installation. The indicator cannot be Zeroed at this weight.	Increase the Zero Range (Z.RANGE) or use the <tare></tare> key instead.
(STABLE) (ERROR)	Scale motion has prevented a <zero></zero> , <tare></tare> or <print></print> operation from occurring on command.	Try the operation again once the scale is stable.

8.2. Setup and Calibration Errors

Error	Description	Resolution
(ENTRY) (DENIED)	The instrument may be in Safe Setup and an item that needs Full Setup has been selected for editing.	Access Full Setup to edit the item.
	When accessing setup, more than three attempts have been made with the incorrect passcode.	Turn the instrument off. When the instrument is turned back on, enter the correct passcode to access setup.
(LIN.PT) (LO)	An attempt has been made to place a linear- isation point below zero.	Incorrect linearisation point entered (must be between zero and full scale).
(PT.TOO) (CLOSE)	An attempt has been made to place a calibration point too close to an existing calibration point.	Re-enter the calibration point. Points must be spaced by at least 2% of full scale from each other.
(RES) (LO)	The scale build is configured for less than 100 graduations.	Check the resolution (count-by) and capacity settings.
(RES) (HIGH)	The scale build is configured for more than 30,000 graduations. (K303 60,000 graduations)	Check the resolution (count-by) and capacity settings.
(SPAN) (LO)	The load cell signal range (span) is too small for these settings.	Incorrect span weight entered (must be between zero and full scale). Scale wiring incorrect. Wrong load cell capacity (too large). Wrong or no calibration weight added to scale.
(SPAN) (HI)	The load cell signal range (span) is too large for these settings.	Incorrect span weight entered (must be between zero and full scale). Scale wiring incorrect. Load cell capacity too small for application.

Error	Description	Resolution
(ZERO) (LO)	An attempt has been made to calibrate zero below -2mV/V.	Scale wiring incorrect.
(ZERO) (HI)	An attempt has been made to calibrate zero above +2mV/V.	Remove all weight from scale. Scale wiring incorrect.

8.3. Diagnostic Errors

- Check: This item can be checked on site by service personnel.
- Return for Service: The instrument must be returned to the manufacturer for factory service.

Error	Description	Resolution
(E0001)	The power supply voltage is too low.	Check supply
(E0002)	The power supply voltage is too high.	Check scale / cables
(E0010)	The temperature is outside of allowable limits.	Check location
(E0020)	Scale build is incorrect. The number of graduations has been set too low or too high.	Fix up scale build
(E0100)	The digital setup information has been lost.	Re-enter setup
(E0200)	The calibration information has been lost.	Re-calibrate
(E0300)	All setup information has been lost	Enter setup and calibrate
(E0400)	The factory information has been lost.	Return for Service
(E0800)	The EEPROM memory storage chip has failed	Return for Service
(E2000)	ADC Out of Range Error. This may be caused from a broken load cell cable.	Check BUILD:CABLE setting. Check load cell cable, wiring, etc.
(E4000)	The battery backed RAM data has lost data.	Re-enter setup
(E8000)	The FLASH program memory is incorrect	Return for Service

The E type error messages are additive. For example if instrument is running off batteries and the temperature drops, the battery voltage may be too low. The resulting error messages will be E0011 (0001 + 0010). The numbers add in hexadecimal as follows: 1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - A - B - C - D - E - F

(For example, 2 + 4 = 6, or 4 + 8 = C)

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