RFX Ag Scale Indicator
User's Manual

Intercomp Co.
3839 County Road 116
Medina, MN 55340, U.S.A.

(763)-476-2531
1-800-328-3336
Fax: 763-476-2613
www.intercompcompany.com

Manual : 7005063-H

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Declaration of Conformity

CE

We, Intercomp Company
3839 County Road 116
Medina, Minnesota 55340 USA

Declare under sole responsibility that the RFX AG Scale Indicator to which this declaration relates meets the essential health and safety requirements and is in conformity with the relevant EC Directives listed below using the relevant section of the following standards and other normative documents.

2004/108/EC - relating to electromagnetic compatibility and replacing Directive 89/336/EEC
EN 55011:2009, Class B - Industrial, scientific and medical equipment - Radio-frequency disturbance characteristics - Limits and methods of measurement
EN61000-6-1:2007 - Generic standards, Residential, commercial and light industry environment
EN 61000-6-2:2005 - Immunity for industrial environments
EN 61000-6-3:2007 - Emission standard for residential, commercial and light-industrial environments
EN 62311:2008 - Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz - 300 GHz)
EN 45501:1992 AC:1993 - Specification for metrological aspects of non-automatic weighing instruments
1999/5/EC - on radio equipment and telecommunications terminal equipment
EN 301 489-1 V1.9.2 (2011-09) - Common Technical requirements
EN 300 328 V1.7.1 (2006-10) - Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using wide band modulation techniques; Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive
EN60950-1:2006/A12:2011 - Information technology equipment. Safety. General requirements
2012/19/EU - on waste electrical and electronic equipment (WEEE) (Directive 20/96/EC Recast)
2013/56/EU amending Directive 2006/66/EC on batteries and accumulators
This product complies with all safety-relevant provision referring to protection against electrical hazards and other hazards, such as mechanical hazards, fire hazards, noise and vibration. The safety issues of this measurement equipment have been evaluated under the self-certification provisions of the relevant directives.

The related technical construction files are held for inspection in the U.K. at Intercomp Europe Limited.

The CE mark and WEEE marks must be affixed as required in the directives.

Mark Browne / Quality Manager

June 24, 2014

Safety Summary

The following general safety precautions must be observed during all phases of operation, service, and repair of this scale. Failure to comply with these precautions or with specific warnings elsewhere in this manual violates safety standards of design, manufacture, and intended use of the scale. Intercomp assumes no liability for the customer's failure to comply with these requirements. DO NOT SUBSTITUTE PARTS OR MODIFY SCALE

Because of the danger of introducing hazards, do not substitute parts or perform any unauthorized modifications of the scale.

Notice

 The information contained in this publication is derived in part from proprietary and patent data of the Intercomp Corporation. This information has been prepared for the express purpose of assisting operating and maintenance personnel in the efficient use of the instrument described herein. Publication of this information does not convey any rights to use or reproduce it or to use it for any purpose other than in connection with the installation, operation, and maintenance of the equipment described herein. While every precaution has been taken in the preparation of this manual, Intercomp Corporation assumes no responsibility for damages resulting from the use of the information contained herein. All instructions and diagrams have been checked for accuracy and ease of application; however, success and safety in working with tools depend largely upon the individual accuracy, skill, and caution. For this reason Intercomp Company is not able to guarantee the result of any procedure contained herein. Nor can they assume responsibility for any damage to property or injury to persons occasioned from the procedures. Persons engaging the procedures do so entirely at their own risk.

Warranty

INTERCOMP CORPORATION (hereafter called "the company") warrants the products which this document accompanies to be free of defects in materials and workmanship, and to operate according to design specifications for a period of one (1) year after receipt by the original purchaser. After authorized return to the company at the purchaser's expense, the company shall evaluate any returned equipment under warranty claim, and shall make such repairs or replacements as may be judged necessary, in as expeditious a manner as possible.

IN THE EVENT that the company determines the claim to be made as a result of improper use, abuse, modification, shipping damage, or other factors beyond the reasonable control of the company, the company will advise the purchaser of the estimated repair costs. The company makes no warranty other than that contained in this statement. No agent other than an executive officer of Intercomp Corporation is empowered to modify in any manner this statement of warranty.

Specifications

Controls

General: On/Off, Zero, Hold, Tare, Menu/Setup, Bin, Gross/Net, numeric keypad, Clear, Store/Enter

Display: 6 digit, LCD (1.0")

Electrical

Voltage: 4-15 VDC or 120/240 VAC with power supply

Environmental

Humidity: 10 to 95% non-condensing

Temperature: Storage: -40° C to +75° C. / -40° F to +170° F
Operating -10° C to +50° C. / +14° F to +122° F

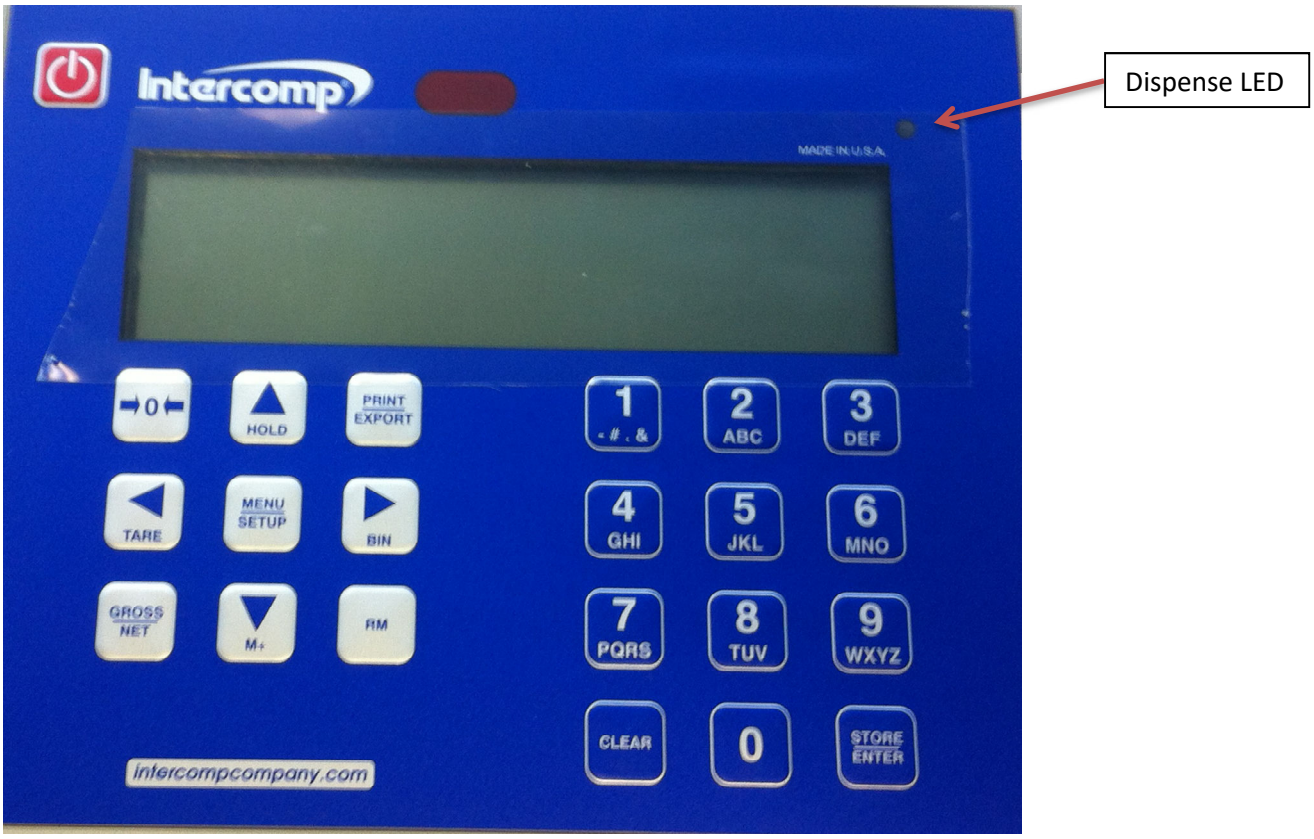
Radio

Radio frequency	ISM 2.4GHz, 802.15.4*
License requirements	None. Pre-approved US/FCC, CAN/IC, EUR/CE
Range	200' / 60m indoor, 300' / 90m line of sight

WARNING: To satisfy FCC RF exposure requirements for mobile transmitting devices, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during device operation. To ensure compliance, operations at closer than this distance is not recommended. The antenna used for this transmitter must not be co-located in conjunction with any

* Radio notes: Frequency: ISM 2.4GHz (2.400GHz - 2.483GHz), with 12 channels (CH 1-12) within that range with each center frequency = 2405MHz + (CH * 5) MHz.Power output 63mW (18dBm), 10mW (10dBm) for international variant. Antenna is internal surface mount with -1.5dbi gain, omni-directional.

Front Panel Controls



On/Off (RED Power Symbol Key)

Cycles power to the indicator when pressed.

Numeric Keypad

Used to enter numeric inputs into the system when in the menus.

CLEAR

Used to clear entry while in the menus or to exit dispense mode. In dispense mode, pressing this will clear all the relays and return to normal display.

STORE/ENTER

Used to store an entered numeric entry in the menus.

ZERO

Press and hold the Zero key to zero the scale when there is no load.

HOLD

Note: The HOLD feature is disabled by default. To enable, enter the MODE MENU and change ‘Hold.E’ from ‘no’ to ‘yes’.
Press this to lock the current weight. While in this mode, the display will alternate between showing ‘HOLD’ and the locked weight. Make sure not to add or remove any weight while in HOLD mode, as that weight difference will not be recorded. Press HOLD again to return to normal weighing mode.

TARE

Press to set the displayed weight as the TARE weight. Press TARE and CLEAR keys together to clear a saved TARE weight and return to GROSS weight.

MENU/SETUP

Press the Menu/Setup key to access the menus used to set the system up in the desired configuration. See Mode and Calibration menus for further information.

BIN

The ‘BIN’ mode function may be used to set a preset ‘BIN’ weight for up to ten (10)-individual bins or seed boxes. When operating in the ‘BIN’ mode, only the selected ‘BIN’ and ‘TOTAL GROSS’ weight values will change. The other ‘BIN’ weight values do not change. For first time use, set the ‘Number of Bins’ setting in the Mode Menu.

Press BIN to toggle through BIN numbers 1-x. The display will show which BIN you are switching to, or the GROSS (or Net) weight: “bin01”, “bin02” , …, “Gross”. Note that the indicator will also show the current BIN number when powered on.

Press and hold BIN to enter a bin weight for the currently selected BIN number. Enter the desired weight value for that BIN number and press STORE/ENTER.

Note: The ZERO key will not function while in BIN weight viewing mode.

GROSS/NET

Press to toggle between Gross and Net weight. The choice will show on the display.

M+

Press to start/cancel automatic dispense while in dispense mode.

RM

Press this to set the ‘dispense amount’,’preact weight’ and enter dispense mode.

“Note: Some features are only applicable for indicators installed with the optional internal relay control.”

Mode Menu

Press MENU/SETUP to advance through the menu to the desired setting. Some settings allow for a number to be entered, and the numeric keypad should be used for these. For other settings with preset choices to choose from, use the arrow keys to edit the selection. Either way, when the desired value is shown, press MENU/SETUP to save and advance. The setting is saved at this point, so the indicator can be turned off if no other settings need editing.

Step	Function	Note	Default
MODE	Mode menu code	0= no skip. 477= jump to Calibration Menu	000
t dISP	Time after dispense	0=screen stays in dispense mode after dispense 0-60 seconds	5
bINS	Number of bins	0-10	00
b.LITE	Back light	On, off, or Auto	AUto
UNITS	Units	lb or kg	lb
A.rt	Average rate	1 to 120	006
A oFF	Auto off	000 = off, 1 to 240	000
HoLd.E	Hold Enable	Yes or No	no
Prt t	Print/RS232 type	Off, STD, or BAR	oFF
PbAUd	RS232 baud rate	1200, 2400, 4800, 9600, 19200, 38400, 57600, or 115200	9600
SC id	Scale ID	1-190	001
dISP o	Dispense Output mode	0+No automatic control 1=Auger or Clutch on/off control 2=open/close gate or +/-Speed control	0
UPtIME	Uptime	Length that the open/+speed relay is set at the start of dispense (Dispense Output mode 2 only)	2

		0-60 seconds	
r_oPEn	Rear Gate Open detection	Yes or No	no
tArE_S	Tare Sync	No= normal weight message Yes = weight + tare/bin message	YES

Press the MENU/SETUP key. The display will show "MODE".

1. Press the MENU/SETUP key. The display will show "000". Press MENU/SETUP to continue to the rest of the mode menu.
2. The display will show "t d ISP". Press MENU/SETUP. The display will show "00". On the numeric keypad enter the time in second that you want the display to stay in dispense mode before returning to normal display after a target weight is reached or when dispense is cancelled. Enter '00' to keep the display in dispense mode indefinitely after dispense is done. Note that CLEAR can always be pressed to return the display to normal mode. The default setting is 5 seconds and the setting range is 0-60 second. Press MENU/SETUP to save and advance.
3. The display will show "b InS".Press MENU/SETUP. The display will show "00". On the numeric keypad enter the desired number of bins or seed boxes, and press MENU/SETUP to save and advance.
4. The display will show "b.L itE". Press the MENU/SETUP key. Press any of the arrow keys to toggle through the back light choices. Once the desired choice is shown on the display, press MENU/SETUP to save and advance.
5. The display will show "Un itS". Press the MENU/SETUP key and the current unit of weight will be flashing in the upper left corner of the display. Press any of the arrow keys to toggle between "lb" and "kg". Once the desired unit is flashing press MENU/SETUP to save and advance.
6. The display will show "A.rt". Press the MENU/SETUP key. Using the numeric keypad, enter the desired number for the system average rate. This number is how many readings will be averaged together. Higher values will result in a more stable reading, but will take longer to settle to the final value. Note that the scale updates at 4Hz, so an Average Rate of '8' equates to 2 seconds of averaging.

Enter a '1' to effectively disable averaging. Once the desired number is displayed press MENU/SETUP to save and advance.

7. The display will show "A oFF". Press the MENU/SETUP key. Using the numeric keypad, enter the desired number for the system automatic turnoff. The number displayed is the minutes that the scale can remain idle before it automatically shuts down. Any key press will reset the countdown. Also, if the scale is used in conjunction with a host indicator (wired or wireless), an active link with that indicator will prevent the scale from turning off. Setting this number to "000" will disable the function, meaning the scale will never shut itself off. Using the numeric keypad enter the desired number and press MENU/SETUP to save and advance.
8. The display will show "HoLd.E".Press the MENU/SETUP key. Press any of the arrow keys to toggle between "YES" and "no". See the "HOLD" function description in the front panel control section for more information. Once the desired choice is shown on the display, press MENU/SETUP to save and advance.
9. The display will show "Prt t" (Print/RS232 type). Press the MENU/SETUP key. Press any of the arrow keys to toggle through the available choices:
    a. "oFF" RS232 output disabled
    b. "Std" Standard output
    c. "bAr" Output including bar graph data
10. The display will show "PbAUd". Press the MENU/SETUP key. Press any of the arrow keys to toggle through the RS232 baud rate choices. The baud rates available are: 1200, 2400, 4800, 9600, 19200, 38400, 57600, and 115200. This baud rate affects the continuous serial output for use with a scoreboard or secondary display (See Serial Output). Once the desired choice is shown on the display, press MENU/SETUP to save and advance.
11. The display will show "SC id". Press the MENU/SETUP key. Press number 1 – 190to set the scale ID. Once the desired choice is shown on the display, press MENU/SETUP to save and advance.
12. The display will show "d iSP.o".Press MENU/SETUP. The display will show "00". On the numeric keypad enter the desired number for the Unload/Dispense Output mode:
    a. "00" to disable automatic control. Unload operation can still be performed but there is no automatic relay control or use of the preact weight.
    b. "0 1" for mode 1 that uses the auger or clutch ON/OFF control
    c. "02" for mode 2 that uses +/- speed or open/close gate control.

Press MENU/SETUP to save and advance.

13. The display will show "UP.t iME".Press MENU/SETUP. The display will show "00". On the numeric keypad enter the desired 'uptime' in seconds. In Dispense Output mode 2, the dispense operation is started by pressing the START/STOP button on the keypad. The +speed/open relay is then set for 'uptime' seconds then cleared after that. The default value is 2 seconds and the range is 0-60 seconds. Press MENU/SETUP to save and advance.
14. The display will show "r.oPEn".Press MENU/SETUP. The display will show "YES" or "no". On the numeric keypad, toggle the setting by pressing one of the arrow keys. Once the desired choice is shown on the display, press MENU/SETUP to save and advance. When enabled 'Yes', the indicator will blink 'OPEn' on the display when input #2 (connect to rear gate open sensor) is pulled low.
15. The display will show "tArE.S".Press MENU/SETUP. The display will show "YES" or "no". On the numeric keypad, toggle the setting by pressing one of the arrow keys. Once the desired choice is shown on the display, press MENU/SETUP to save and advance. When enabled, the indicator will sync tare and other information with compatible Host indicators.
16. The system will return to normal operation.

Automatic Dispense

Note: This feature is only applicable for indicators installed with the optional internal relay control.

Dispense Setup (dispense ready mode):

To enter 'dispense ready mode', press the RM key and the display will show briefly "d iSP" then "00100" (or previously saved value). Enter the dispense amount then press 'Menu/Setup' to save the dispense amount. After that the display will briefly display "PrEACt" then "00040" (or previously saved value). Enter the preact amount then press 'MENU/SETUP' to save it and enter the 'dispense ready mode'. In this mode, an LED will turn on RED. After that, multiple dispense operations can be run following the methods below. There are two modes of dispense operation, which should be set according to the type of equipment this indicator is installed on. This 'Dispense Output' setting can be changed in the Mode Menu. The 'dispense ready' status is indicated with an LED.

Preact Weight

This setting compensates for the seed that is still in-flight as the auger/conveyor is stopped, or while a door/gate is being closed, at the end of an 'Auto Dispense'. It may need to be adjusted based upon chute size or length, gate time opening and closing, or seed type and weight. For seed tenders dispensing too much seed, increase the PREACT WEIGHT setting value by the overfill amount weight. For seed tenders dispensing too little seed, decrease the PREACT WEIGHT setting value by the under fill amount weight. Example: If it is observed that the final dispense weights are overshooting by 10lbs, increase the PREACT WEIGHT setting by 10 lbs.

Dispense LED (located in the upper right corner of the indicator):

- OFF: Normal mode, dispense not ready. External button(s) operate in 'pass-through' mode and will not trigger a dispense operation.
- RED: Dispense Ready Mode. When in this mode the indicator is ready for the user to start a dispense operation.
- GREEN: Dispense in progress.

Dispense operation, output mode 1 (Auger or clutch ON/OFF control):

1. If necessary, enter 'dispense ready mode' following the 'Dispense Setup' instructions above. The LED should be RED.
2. Press the external button or the M+ button on the keypad to start the dispense operation. The LED will turn GREEN and the display will switch to show the dispensed weight. The indicator will trigger a relay to start the auger/conveyor, and the value of the dispensed weight on the screen should start decreasing as product is dispensed.
3. When the preact weight has been reached, the relay will be disabled to stop the auger/conveyor and the LED will turn RED. Product will continue to dispense for a short while as things slow down, stopping at the completion of the dispense operation. The display will return to the normal (Gross or BIN weight) display after a user adjustable 'Time after dispense' delay (see the Mode Menu).
4. To start a new dispense operation with the same settings press the external button or M+ button again, repeating steps 2 & 3. If a new dispense or preact weight is needed, press the RM key to enter those settings prior to starting the next dispense operation.

Note: To stop the dispense operation prior to reaching the preact weight, press the external button or M+ button. The indicator will return to 'dispense ready mode' and a new dispense can be started if desired at this point. Or press CLEAR at any time to return to normal mode (dispense not ready).

Dispense operation, output mode 2 (+/- speed or open/close gate control)

1. If necessary, enter 'dispense ready mode' following the 'Dispense Setup' instructions. The LED should be RED.
2. Press the external +SPEED/OPEN button or the M+ button on the keypad to start the dispense operation. The LED will turn GREEN and the display will switch to show the dispensed weight. The indicator will enable the +SPEED/OPEN relay for user adjustable 'Uptime' seconds (see Mode Menu). The value of the dispensed weight on the screen should start decreasing as product is dispensed.
3. When the preact weight has been reached, the –SPEED/CLOSE relay will be set and the LED will turn RED. Product will continue to dispense for a short while as things slow down, stopping at the completion of the dispense operation. The display will return to the normal (Gross or BIN weight) display after a user adjustable 'Time after dispense' delay (see the Mode Menu).
4. To start a new dispense operation with the same settings press the external +SPEED/OPEN button or M+ button again, repeating steps 2 & 3. If a new dispense or preact weight is needed, press the RM key to enter those settings prior to starting the next dispense operation.

Note: To stop the dispense operation prior to reaching the preact weight, press the external –SPEED/CLOSE button or M+ button. The indicator will return to 'dispense ready mode' and a new dispense can be started if desired at this point. Or press CLEAR at any time to return to normal mode (dispense not ready).

Pass-through mode (default mode – dispense not ready)

Whenever the indicator is in normal mode (dispense not ready, LED off), it will simply pass-though the external button functions and will not trigger a dispense operation. If needed press CLEAR to clear the LED and return the indicator to normal mode. Note this feature is only applicable for indicators installed with the internal relay control.

Use with optional wireless STR remote handheld

If using an optional STR remote to control the (optional) internal relay for dispense operation, simply make sure the indicator is in normal mode (dispense not ready, LED off). If needed press CLEAR to clear the LED and return the indicator to normal mode. Note this feature is only applicable for indicators installed with the internal relay control.

Calibration Menu

To initiate calibration press the MENU/SETUP button. The display will show "MODE". Enter '477' to jump to the calibration menu.

Press MENU/SETUP to advance through the menu to the desired setting. Some settings allow for a number to be entered, and the numeric keypad should be used for these. For other settings with preset choices to choose from, use the arrow keys to edit the selection. Either way, when the desired value is shown, press MENU/SETUP to save and advance. The setting is saved at this point, so the indicator can be turned off if no other settings need editing.

Step	Function	Note	Default
MODE	Mode menu code	Enter 477 to go to Calibration Menu	477
STEP	Calibration menu step code	000 = Advance to 'Radio Enable'	000
rAd io	Radio Enable	Yes or no	no
rF CH	Radio Channel	01 to 12	04
rF.PAn	Radio Network ID	0 to 65534	8000
rF.ECP	Radio encryption enable	Yes or no	no
	Radio Encryption Key	0 to 65534	00000
rF.dEF	Restore Radio Defaults	0 or 3	0
U. EnA	Unit switch enable	Yes or no	YES
AZt	AZT (auto zero tracking)	1 d, 3 d, .5 d, oFF, or.6 d	1 d
grAd	graduation size	1, 2, 5, 10, 20, 50, or 100	d 1
	SAvE	Displays for 1 sec and returns to normal display	

1. Press the MENU/SETUP key. If the display shows "MODE", enter '477' to switch to the calibration menu.
2. The display will show "STEP".
3. Press the MENU/SETUP key. Using the numeric keypad, enter the desired number to skip to a different menu, or press the MENU/SETUP key to continue to the rest of the calibration menu.
4. The display will show "rAd no".Press the MENU/SETUP key. Press any of the arrow keys to toggle between "YES" (radio enabled) and "no" (radio disabled). Once the desired choice is shown on the display, press the MENU/SETUP key.
5. The display will show "rF CH". Press the MENU/SETUP key. Using the numeric keypad, enter the desired number for the radio channel and press MENU/SETUP to save and advance.
6. The display will show "rF.PAn". Press the MENU/SETUP key. Using the numeric keypad, enter the desired number for the desired Personal Area Network ID setting (0-65534) and press MENU/SETUP to save and advance.
7. The display will show "rF.ECP". This is the encryption enable status and is either on or off. Press the MENU/SETUP key. Press the arrow keys to toggle between "YES" and "no". Once the desired choice is shown on the display, press the MENU/SETUP key. If you selected 'yes', you will have an opportunity to enter the encryption key (0-65534), then press MENU/SETUP to save and advance.
8. The display will show "rF.dEF". Press the MENU/SETUP key. Using the numeric keypad, enter "0" or "3". By default, enter "0" here. Setting the number to 3 will restore the default radio settings. Using the numeric keypad, enter the desired number and press MENU/SETUP to advance.
9. The display will show "U. EnA". Press the MENU/SETUP key. Press any of the arrow keys to toggle between "YES" and "no". When set to "no", the units will be locked and the mode menu entry "Un itS" will not allow switching units. Once the desired choice is shown on the display, press MENU/SETUP to advance.
10. The display will show "AZt". Press the MENU/SETUP key. Press any of the arrow keys to toggle through the auto zero tracking choices. (1 d, 3 d, .5 d. oFF, or 6 d). If the displayed weight is less than the number of grads shown for a given amount of time, the weight will be automatically zeroed off. Once the desired choice is shown on the display, press MENU/SETUP to advance.
11. The display will show "grAd". Press any of the arrow keys to toggle through the graduation size choices. Once the desired choice is shown on the display, press MENU/SETUP to advance.
12. "SAvE" is displayed and the display will then return to normal operation.

Calibration Methods

This indicator has a number of calibration methods:

- **Code calibration with mV/V:** Calibrate the system by entering the load point (lb or kg) per load cell, signal (mV/V), and number of load cells. Optionally, the mV/V calibration can be adjusted in the “mV/V calibration” section.
- **Field Calibration Weight Entry Adjustment:** Use this method if the scale is working but the weights are off. Adjust the displayed weight by entering the Displayed Weight and a Certified Weight. This will automatically calculate an internal factor which is applied to all displayed weights going forward.
- **Field Calibration Factor Adjustment:** Use this method to view or edit the Field Cal Factor directly.
- **Weight Calibration:** Use this method only if the calibration has been lost somehow. With this method apply known weight(s) and enter the value of those weights into the indicator. The scale must be unloaded at the start of this operation, with a known weight ready to be loaded. Note that whenever a ‘Weight Calibration’ operation is performed, the ‘Field Calibration Adjustment’ is automatically reset back to the default of 1.0000.

mV/V Calibration

The mV/V calibration of the indicator is typically done only at the factory. A certified load cell simulator is required to perform this adjustment. Note: If performing this on a system with multiple cell channel inputs, only adjust the simulator on the CH1 input, leaving the other inputs stable. Alternatively set the number of cell inputs to ‘1’ prior to this operation, returning to the desired number of cells afterwards.

MODE	Mode menu code	Enter 477 to go to Calibration Menu	477
STEP	Calibration menu step code	Enter 20 for mV/V Calibration	020
55-00	Simulator set to 0.0 mV/V		
55-01	Simulator set to x.x mV/V	Enter simulator setting	2.0000
	SAVE	Displays for 1 sec and returns to normal display	

1. Press MENU/SETUP to enter the menu. After MODE enter ‘477’ to enter the calibration menu.
2. Press MENU/SETUP. After STEP enter ‘20’ for mV/V Calibration.
3. Display shows “55-00”. With the simulator set to 0mV/V press MENU/SETUP.
4. Display shows “55-01”. Set the simulator to the desired value. Enter this value and then press MENU/SETUP.
5. The display will show “SAVE” and then return to normal operation.

Code Calibration

MODE	Mode menu code	Enter 477 to go to Calibration Menu	477
STEP	Calibration menu step code	Enter 21 for Code Calibration	021
CC-01	Load Point (in lb or kg)	1 to 999999	40000
CC-02	Signal (mV/V)	0.1000 to 99.9999	0.4500
CC-03	Number of load cells	1-99	1
	SAVE	Displays for 1 sec and returns to normal display	

1. Press MENU/SETUP to enter the menu. After MODE enter '477' to enter the calibration menu.
2. Press MENU/SETUP. After STEP enter '21' for Code Calibration.
3. Display shows "CC-00". Enter the load that each load cell is rated at for a particular mV/V output. This load or cell capacity may be listed on the load cell label or data sheet. Press MENU/SETUP to advance.
4. Display shows "CC-02". Enter the mV/V output corresponding to the load used above. This value may be listed on the load cell label or data sheet. Press MENU/SETUP to advance.
5. Display shows "CC-03". Enter the number of cells in the system. Press MENU/SETUP to advance.
6. The display will show "SAVE" and then return to normal operation.

Field Calibration Weight Entry Adjustment

Adjust the displayed weight by entering the Displayed Weight and a Certified Weight. This will automatically calculate an internal factor which is applied to all displayed weights going forward. Note: Performing a field calibration adjustment should only be done if the user has a certified or trusted weight to compare the displayed gross weight against. The indicator should be displaying the gross weight prior to starting this operation.

MODE	Mode menu code	Enter 477 to go to Calibration Menu	477
STEP	Calibration menu step code	Enter 31 for Field Calibration Weight Entry Adjustment	031
d.SP.Ld	Displayed load (weight)	1-999999	
CErt.Ld	Certified load (weight)	1-999999	

1. Press MENU/SETUP to enter the menu. After MODE enter ‘477’ to enter the calibration menu.
2. Press MENU/SETUP. After STEP enter ‘31’ for Field Calibration Weight Entry Adjustment.
3. Display will show d iSP.Ld. Press MENU/SETUP and then enter the current displayed gross weight. If there is a load currently on the scale, this weight will automatically be populated into the display but can be edited. Press MENU/SETUP to enter the value.
4. Display will show CErt.Ld. Press MENU/SETUP and then enter the certified or trusted gross weight. Press MENU/SETUP to enter the value. An internal Field Cal Factor will be calculated and applied to all displayed weights going forward.

Field Calibration Factor Adjustment

View or edit the Field Cal Factor directly.

MODE	Mode menu code	Enter 477 to go to Calibration Menu	477
STEP	Calibration menu step code	Enter 30 for Field Calibration Adjustment	030
FLd.Ad	Field Cal Adj value	0.1000 to 9.9999	1.0000

1. Press MENU/SETUP to enter the menu. After MODE enter ‘477’ to enter the calibration menu.
2. Press MENU/SETUP. After STEP enter ‘30’ for Field Calibration Adjustment.
3. Display will show FLd.Ad. Press MENU/SETUP to view the current Field Cal Adjustment value.
4. Calculate and enter the new Field Cal Adjustment value and press MENU/SETUP to save. This factor will be applied to all displayed weights going forward.

Example: To increase the weights by 1%, increase the factor by 1%. If the factor is set at the default 1.0000, change it to 1.0100 to increase weights by 1%.

The default Field Cal Factor is 1.0000. This factor is also reset to 1.0000 whenever performing a new Code or Weight calibration.

Weight Calibration

The scale must be unloaded at the start of this operation, with a known weight ready to be loaded. *Warning: Take care when performing this operation as the previous calibration will be overwritten.*

MODE	Mode menu code	Enter 477 to go to Calibration Menu	477
STEP	Calibration menu step code	Enter 1 to advance to Weight Calibration	001
CAP	capacity	Enter scale capacity	199999
LL-00	No weight applied		
HH-01	First weight	Enter first weight	
LL-01	First weight	Load first weight	
	Up to 3 cal points available to enter	Turn indicator off to stop adding cal points.	

1. Press MENU/SETUP to advance through the menu. After MODE enter '477' to enter the calibration menu.
2. Press MENU/SETUP. After STEP enter '1' for Weight Calibration.
3. Display shows CAP. Press MENU/SETUP and enter the scale capacity. After entering this value the capacity is saved and the unit can be turned off before starting the weight calibration that follows.
4. Display shows LL-00. With no weight on the scale press MENU/SETUP.
5. Display shows HH-01. Press MENU/SETUP.
6. Enter the first calibration weight to be applied and press MENU/SETUP.
7. Display shows LL-01. With the first load applied to the scale and stable, press MENU/SETUP.
8. Display shows HH-02. You can now turn off the scale to lock in a 1-point calibration, or repeat steps #5-7 for up to 3 calibration points.

Cell Span Entry

This procedure will adjust the relative output of the cells compared to one another. This only applies to systems with multiple digital channels, and typically also only for systems that use different types of load cells in the same system. For most systems this should be left at the default settings of "1.0000" for each cell, meaning each cell contributes equally to the total system weight. Special configurations may require different settings.

MODE	Mode menu code	Enter 477 to go to Calibration Menu	477
STEP	Calibration menu step code	Enter 221 to advance to Cell Span Entry	221
CH 1.SP	Cell #1 span	0.0001 to 9.9999	1.0000
CH2.SP	Cell #2 span	0.0001 to 9.9999	1.0000
	Up to 6 cells available…		
	SAVE	Displays for 1 sec and returns to normal display	

Calibration "Step" codes

Cal Mode #	Enter Cal Mode # After "STEP" in Cal Menu Diagnostic use only – contact Intercomp Service before proceeding
000	Advance through normal calibration menu.
001	Weight calibration (apply weight(s) to calibrate)
003	Set number of load cell inputs, followed by corner calibration
005	Enter Mode menu. (the same menu that is entered if the cal strap is in the Run position)
020	mV/V calibration (calibrate mV/V input using a certified LC simulator)
021	Code calibration (set system calibration by entering cell load and mV/V info)
030	Field Calibration Adjustment
031	Field Calibration Weight Entry Adjustment
111	Individual cell read diagnostic. Next enter specific load cell number 1-8.
121	Raw Counts display diagnostic. 0mV/V = 131072. 8375 per mV/V
122	Raw mV/V display. Output based on mV/V calibration.
131	Constant power to all load cells diagnostic
201-208	Corner adjust cell 1-8. (Example: 202 will enter mode to adjust cell span #2).
221	Cell Span Entry (manually enter cell spans for cells 1-8)
311	Default and save all radio settings to the radio
711	Default and save all settings (Leave calibration and cornering untouched)
811	Default and save corner compensation to nominal values
911	Default and save all board memory (settings, calibration, and corners)

Serial output

For indicators with this option included, the RS232 output will transmit the current GROSS, NET, or BIN weight, whichever is currently being displayed, four times per second on the RS232 output. Or if a dispense operation is in progress, the dispense weight will be transmitted instead. If PRINT/RS232 type set to “BAR”, then an additional command meant to control a bar graph display will be sent (see MODE MENU – PRINT/RS232 Type). Example:

PRINT/RS232 Type = STD

“ 3000 lb<cr><lf>” (lb or kg)

“ 2865 lb<cr><lf>”

PRINT/RS232 Type = BAR

“ 3000G<cr>@^100<cr>” (G for gross or N for net) (100% bar graph filled)

“ 2856G<cr>@^22<cr>” (22% bar graph filled)

Error codes

Error messages, displayed in priority order:

Message	Meaning
EEPE	**EEPROM FAILURE Calibration information lost or corrupted**
Calibration information is held in a special permanent memory area. A checksum code is generated and written to this memory during the calibration process. Each time the power is turned on this code is regenerated and compared to the stored value. If a change is found this error message is displayed. Recalibration may clear the error display, but if the problem persists the control panel will have to be replaced.	
Ad 1	**A/D converter failure**
The A/D circuit board has indicated a fault and needs to be repaired or replaced.	
LCb 1	**Power-up Self-Test has detected a load cell errors**
The load cell may have failed or there is a bad connection. In this example cell #1 has failed. If there is a 2 digit code, use the LC error conversion table on the following page.	
LC 1	**Run-time checking has detected a load cell errors**
The load cell may have failed or there is a bad connection. In this example cell #1 has failed. If there is a 2 digit code, use the LC error conversion table on the following page.	
Lo.bAt	**Low battery (supply) voltage**
This message indicates that the indicator has measured the supply voltage and found it to be too low. Check the power supply voltage and wiring.	
CAP	**Overload or calibration information lost or bad load cell**
The control panel has detected a weight reading that is larger than expected. This may be caused by the application of too much weight to the platform. If this display is seen when there is no weight on the platform, then the most likely causes are a defective load cell or defective control panel.	
d ,SP	**Number can't be displayed**
The most common cause of this error is pressing the zero key with a full load on the scale. When the load is removed, the full number with a minus sign will not fit on the display. Press the ZERO key to clear this error.	

LC error conversion table

The 'LCbxx' and 'LC xx' error messages indicate one or more cell(s), connecting cable(s), and/or connector(s) has failed. If there is only one cell input failure, this error message shows as a single digit number: 1-6, indicating which cell has failed. If there is more than one failure, the single digit is replaced with a two-digit hexadecimal code representing multiple cells. Use the table below to decode which cells have failed. For example, if you see the code 'LC 0C', look for '0C' on the chart below to find '00**00' (highlighted below in the table). Each '*' indicates a cell (or connection) failure, in this case referring to cells #4 and #3.

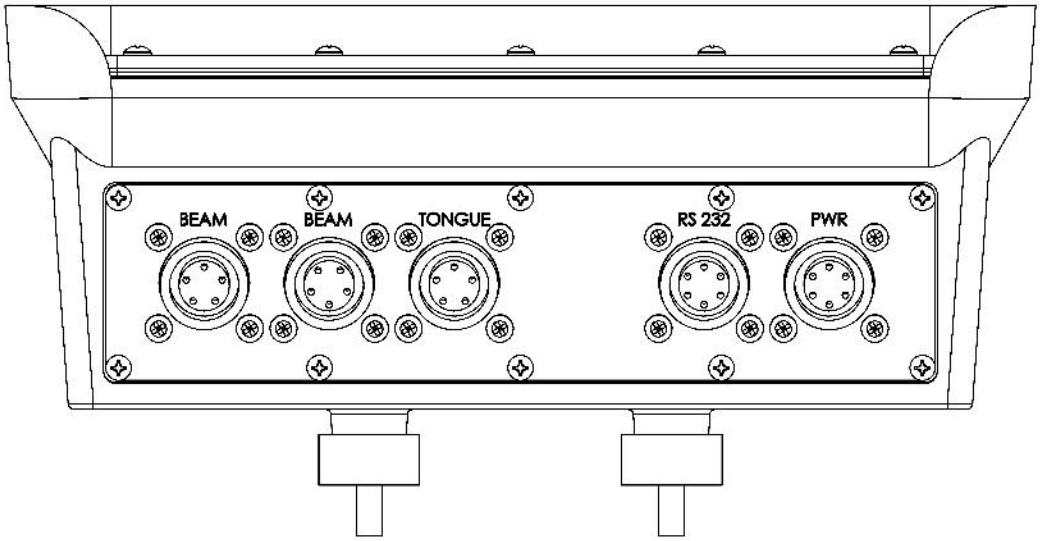
Cell error code table

Code	Cell Number 654321	Code	Cell Number 654321	Code	Cell Number 654321	Code	Cell Number 654321	Code	Cell Number 654321
1	00000*	0E	00***0	1b	0**0**	28	*0*000	34	**0*00
2	0000*0	0F	00****	1C	0***00	29	*0*00*	35	**0*0*
03	0000**	5	0*0000	1d	0***0*	2A	*0*0*0	36	**0**0
3	000*00	11	0*000*	1E	0****0	2b	*0*0**	37	**0***
05	000*0*	12	0*00*0	1F	0*****	2C	*0**00	38	***000
06	000**0	13	0*00**	6	*00000	2d	*0**0*	39	***00*
07	000***	14	0*0*00	21	*0000*	2E	*0***0	3A	***0*0
4	00*000	15	0*0*0*	22	*000*0	2F	*0****	3b	***0**
09	00*00*	16	0*0**0	23	*000**	30	**0000	3C	****00
0A	00*0*0	17	0*0***	24	*00*00	31	**000*	3d	****0*
0b	00*0**	18	0**000	25	*00*0*	32	**00*0	3E	*****0
0C	00**00	19	0**00*	26	*00**0	33	**00**	3F	******
0d	00**0*	1A	0**0*0	27	*00***	28	*0*000		

Code: **Refers to the 1 or 2 digit code in the 'xx' spot of the 'LCbxx' or 'LC xx' error message**

Cell Number: **Identifies with an '*' each cell input that has failed or has been disconnected. This failure could be in the cable, connector, or load cell itself.**

Indicator Pin Connections



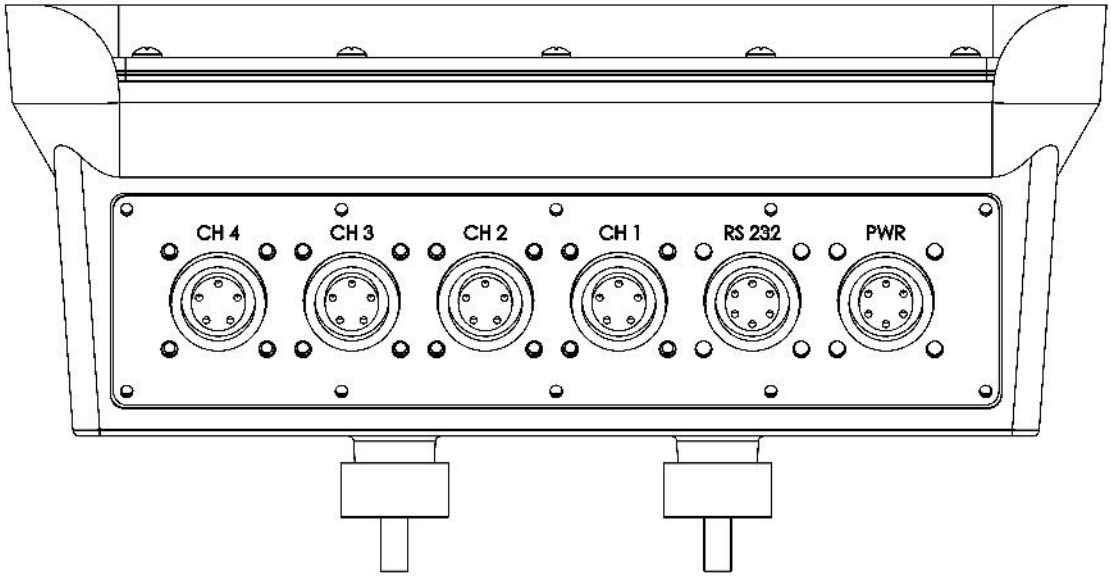
2CH, 3 Input

BEAM		BEAM		TONGUE		RS232		PWR	
A	-SIG	**A**	-SIG	**A**	-SIG	**A**	12V Switched	**A**	+12V INPUT
B	+EXC	**B**	+EXC	**B**	+EXC	**B**	GND	**B**	GND
C	+SIG	**C**	+SIG	**C**	+SIG	**C**	RS232 TX	**C**	RELAY 1*
D	-EXC	**D**	-EXC	**D**	-EXC	**D**	RS232 GND	**D**	INPUT 1*
E	-SHIELD	**E**	-SHIELD	**E**	-SHIELD	**E**	N/A	**E**	RELAY 2*
						F	N/A	**F**	INPUT 2*

1CH, 2 Input

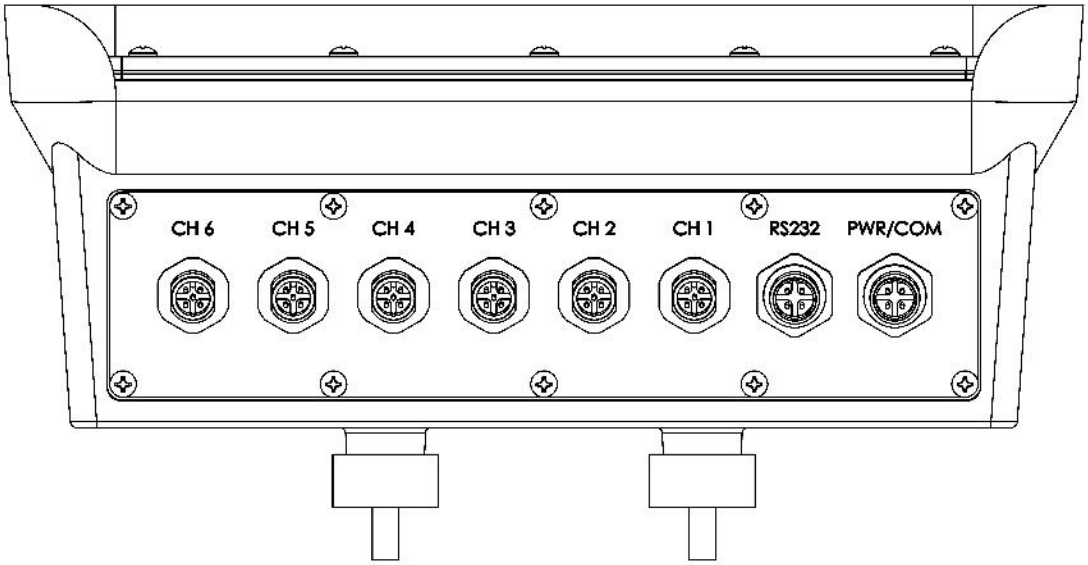
BEAM		BEAM		TONGUE		RS232		PWR	
A	-SIG	**A**	-SIG	**A**	N/A	**A**	12V Switched	**A**	+12V INPUT
B	+EXC	**B**	+EXC	**B**	N/A	**B**	GND	**B**	GND
C	+SIG	**C**	+SIG	**C**	N/A	**C**	RS232 TX	**C**	RELAY 1*
D	-EXC	**D**	-EXC	**D**	N/A	**D**	RS232 GND	**D**	INPUT 1*
E	-SHIELD	**E**	-SHIELD	**E**	N/A	**E**	N/A	**E**	RELAY 2*
						F	N/A	**F**	INPUT 2*

*** RELAY 1/2 and INPUT 1/2 connections are only applicable for indicators installed with the optional internal relay control."**



4CH, 4 Input

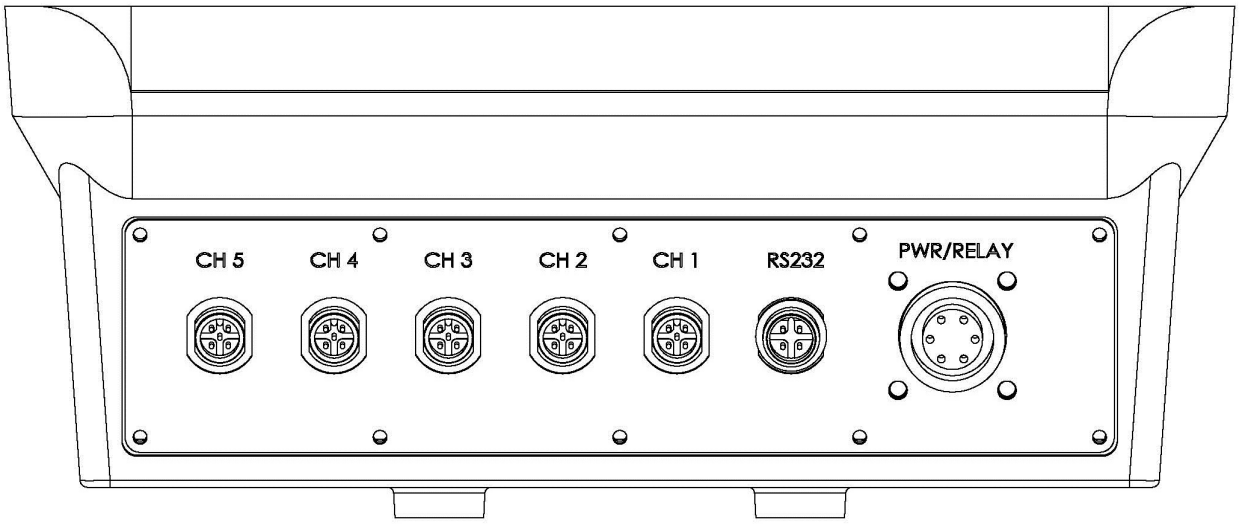
CH 4		CH 3		CH 2		CH 1		RS232		PWR	
A	-SIG	**A**	-SIG	**A**	-SIG	**A**	-SIG	**A**	12V	**A**	+12V INPUT
B	+EXC	**B**	+EXC	**B**	+EXC	**B**	+EXC	**B**	GND	**B**	GND
C	+SIG	**C**	+SIG	**C**	+SIG	**C**	+SIG	**C**	RS232 TX	**C**	N/A
D	-EXC	**D**	-EXC	**D**	-EXC	**D**	-EXC	**D**	RS232 GND	**D**	N/A
E	-SHIELD	**E**	-SHIELD	**E**	-SHIELD	**E**	-SHIELD	**E**	N/A	**E**	N/A
								F	N/A	**F**	N/A



6CH, 6 Input

CH 6		CH 5		CH 4		CH 3		CH 2		CH 1	
1	+EXC	**1**	+EXC	**1**	+EXC	**1**	+EXC	**1**	+EXC	**1**	+EXC
2	+SIG	**2**	+SIG	**2**	+SIG	**2**	+SIG	**2**	+SIG	**2**	+SIG
3	-SIG	**3**	-SIG	**3**	-SIG	**3**	-SIG	**3**	-SIG	**3**	-SIG
4	-EXC	**4**	-EXC	**4**	-EXC	**4**	-EXC	**4**	-EXC	**4**	-EXC
MID	SHIELD	**MID**	SHIELD	**MID**	SHIELD	**MID**	SHIELD	**MID**	SHIELD	**MID**	SHIELD

RS232		PWR/COM	
1	RS232 TX	**1**	+12V INPUT
2	N/A	**2**	GND
3	RS232 GND	**3**	RS485 A
4	N/A	**4**	RS485 B



5 Channel with Relay In/Out

CH 5		CH 4		CH 3		CH 2		CH 1	
1	+EXC	**1**	+EXC	**1**	+EXC	**1**	+EXC	**1**	+EXC
2	+SIG	**2**	+SIG	**2**	+SIG	**2**	+SIG	**2**	+SIG
3	-SIG	**3**	-SIG	**3**	-SIG	**3**	-SIG	**3**	-SIG
4	-EXC	**4**	-EXC	**4**	-EXC	**4**	-EXC	**4**	-EXC
MID	SHIELD	**MID**	SHIELD	**MID**	SHIELD	**MID**	SHIELD	**MID**	SHIELD

RS232		PWR/RELAY	
1	RS232 TX	**A**	+12V INPUT
2	N/A	**B**	GND
3	RS232 GND	**C**	RELAY 1
4	12V Switched	**D**	INPUT 1
		E	RELAY 2
		F	INPUT 2

How to reach Intercomp Service

Things to know: Inform the Service Dept. that the product is an AG scale system. Supply serial numbers of system and/or components.
When was the system purchased?
Where was the system purchased?
For Intercomp Service call or fax:

FAX # (763)-476-2613
(763)-476-2531
1-800-328-3336

or fill out Service Support Form at:

www.intercompcompany.com