

LD720[™] INDICATOR



User Manual

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NOTIFICATIONS

SAFETY SUMMARY

The following general safety precautions must be observed during all phases of operation, service, and repair. Failure to comply with these precautions, or with specific warnings elsewhere in this manual, violates safety standards of design, manufacture, and intended use. Intercomp assumes no liability for the customer's failure to comply with these requirements.



WARNING Due to the risk of introducing hazards, do not substitute parts or perform any unauthorized modifications.

NOTICE

All rights reserved. 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. Intercomp Corporation assumes no responsibility for damages resulting from the use of the information contained herein.

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

ELECTRICAL

FUNCTION	SPECIFICATION
Voltage	6 - 15 VDC



NOTICE If Optional Power Surge Protection is not installed:

- Reversing polarity when connecting will damage the indicator
- Connecting to a 24 V system will damage the indicator.

OPTIONAL Power Surge Protection	Protected against 100 V automotive load dump, 24 V jump start, and reverse polarity.
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ENVIRONMENTAL

FUNCTION	SPECIFICATION
Humidity	10% to 95% non-condensing
Ambient Temperature	Storage: -40 °F to +170 °F / -40 °C to +75 °C Operating: -40 °F to +140 °F / -40 °C to +60 °C

PHYSICAL

FUNCTION	SPECIFICATION
Dimensions	10.2 in x 7.5 in x 4.0 in / 259 mm x 191 mm x 102 mm
Connections	RS232 Output OPTIONAL Relay Outputs: Quantity 2 OPTIONAL Digital Outputs: Quantity 2

RADIO

FUNCTION	SPECIFICATION
Radio Frequency	ISM 2.4 GHz, 802.15.4 DSSS*
License Requirements	None. Pre-approved US/FCC, CAN/IC, EUR/CE
Range	200 ft / 60 m indoor, 300 ft / 90 m line of sight

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



WARNING FCC Radio Frequency (RF) exposure requirements for mobile transmitting devices dictate that 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 other antenna or transmitter.

INDICATOR DISPLAY



DISPLAY SCREEN

5 Digits 1.5 in / 38 mm LED Display
6 Digits 1.2 in / 38 mm LED Display

PUSH BUTTONS

	ON / OFF		HOLD / UP ARROW		BIN / RIGHT ARROW		STORE / ENTER
	ZERO		MENU / SETUP		RM		LOAD
	TARE / LEFT ARROW		M+ / DOWN ARROW		NUMERIC KEYPAD		UNLOAD
	GROSS / NET		PRINT / EXPORT		CLEAR		START / STOP

PUSH BUTTON DESCRIPTIONS

PUSH BUTTON	FUNCTION	DESCRIPTION
	ON / OFF	<p>Press the ON/OFF Button (Red Button with Power Symbol) to power the indicator ON or OFF.</p> <p>Set Radio Settings to Match Remote: NOTE: Only perform this function if required to match the radio setting with a remote. With indicator powered OFF, press and hold the ON/OFF Button for 6+ seconds until RFCH screen appears. Enter the RFCH (1 - 12) and the RFPAN (0 - 655340) settings that match the remote. Both settings must match the radio settings of the remote for successful communication.</p>
	ZERO	<p>Press and hold the ZERO Button to zero the scale when there is no load.</p>
	TARE	<p>Press the TARE Button to set the displayed weight as the TARE weight.</p> <p>When accessing a Bin, press the TARE Button to zero the Bin. Press both the TARE Button and the CLEAR Button to clear a saved TARE weight and return to GROSS weight.</p>
	GROSS / NET	<p>Press the GROSS/NET Button to toggle between Gross and Net weight.</p> <p>A display screen indicator light will indicate if Gross or Net weight is being displayed.</p> <p>Press the GROSS/NET Button while in Bin Mode to display the Gross/Net weight.</p>
	HOLD	<p>Press the HOLD Button to lock the current weight.</p> <p>When operating in Hold Mode, the screen will alternate between displaying HOLD and the locked weight.</p> <p>Press the HOLD Button again to return to normal weighing Mode.</p> <p>DO NOT add or remove weight while in Hold Mode.</p> <p>If weight is added or removed while in Hold Mode, the weight difference will not be recorded.</p> <p>NOTE: The HOLD feature is disabled by default. To enable the HOLD feature, access the Mode Menu and change "Hold.E" from NO to YES or enter the code 1070.</p>
	MENU/ SETUP	<p>Press the MENU/SETUP Button to access the Mode Menu settings.</p> <p>Press and hold the MENU/SETUP Button to exit the menu.</p>

PUSH BUTTON	FUNCTION	DESCRIPTION
	M+	Reserved for future use.
	PRINT/ EXPORT	Reserved for future use.
	BIN	<p>Press the BIN Button to cycle through BIN numbers. The screen will display the BIN number selected or the GROSS/NET weight.</p> <p>Use the BIN Button to set a preset bin weight for up to ten (10) individual bins or seed boxes. When operating in Bin Mode, only the selected bin and TOTAL GROSS weight values will change. The other stored bin weight values will not change.</p> <p>To set up Bin Mode: Select the Number of Bins setting in the Mode Menu and enter the number of bins.</p> <p>When powered on, the indicator screen will display the current Bin number. Press and hold the BIN Button and enter the desired weight for the selected Bin number, then press the STORE/ENTER Button.</p> <p>NOTE: The ZERO Button will not function while in Bin Weight Viewing Mode.</p>
	RM	<p>Press the RM Button to:</p> <p>Start a Split Unload, if Split on Load is set to NO.</p> <p>Start a Load, if Split on Load is set to YES.</p>
	NUMERIC KEYPAD	Press the keypad buttons to enter numeric inputs into the system when accessing the Mode Menu and Calibration Menu.
	CLEAR	<p>Press the CLEAR Button to clear entry when setting menu parameters or to exit the Load/Unload Mode.</p> <p>When in Load/Unload Mode, the CLEAR Button will reset the relays and return to normal display.</p>
	STORE/ ENTER	Press the STORE/ENTER Button to store a numeric entry.
	LOAD	<p>Press the LOAD Button to:</p> <p>Start a Load, if Split on Load is set to NO.</p> <p>Start a Split Unload, if Split on Load is set to YES.</p>
	UNLOAD	Press the UNLOAD Button to control the unload operation.
	START/ STOP	Press the START/STOP Button to start and stop load and unload operations.

COMPATIBLE INTERCOMP PRODUCTS

The LD720™ Indicator is designed to be used with the:

- HH520™ Wireless Handheld
- RD800™ AG Remote Display

HH520™ Wireless Handheld



RD800™ AG Remote Display



MODE MENU

1. Press the **MENU/SETUP Button** to access Mode Menu. *ModE* will be displayed.
2. Enter the desired code (see table).

Some settings require a number to be entered with the keypad buttons. Some settings require using the arrow buttons to cycle through and select a preset option.

3. Press the **MENU/SETUP Button** to save the setting and exit the menu. When done editing settings, the indicator can be powered OFF.

NOTE: Enter code *0000* to cycle through all Mode Menu options.

CODE	DISPLAY	FUNCTION	SETTING	DEFAULT
<i>1010</i>	<i>t dISP</i>	Time After Unload / Dispense	Adjustable 0 - 60 seconds 0 = screen remains in unload mode	<i>5</i>
<i>1020</i>	<i>b inS</i>	Number of Bins	0 - 10	<i>00</i>
<i>1030</i>	<i>LEd_br</i>	LED Brightness	1 - 6 (6 is brightest)	<i>6</i>
<i>1040</i>	<i>Un ts</i>	Units	lb or kg	<i>lb</i>
<i>1050</i>	<i>A_ rt</i>	Average Rate	1 - 120	<i>012</i>
<i>1060</i>	<i>A oFF</i>	Auto OFF	000 = OFF 1 - 240 minutes	<i>000</i>
<i>1070</i>	<i>HoLd_E</i>	Hold Enable	YES or NO	<i>no</i>
<i>1080</i>	<i>Prt t</i>	Print / RS232 Type	OFF, STD, BAR, GTN	<i>9tn</i>
<i>1090</i>	<i>PbAUd</i>	RS232 Baud Rate	1200, 2400, 4800, 9600, 19200, 38400, 57600, or 115200	<i>9600</i>
<i>1100</i>	<i>SC id</i>	Scale ID	1 - 190	<i>001</i>
<i>1110</i>	<i>dISP_o</i>	Unload / Dispense Output Mode	1 = auger or clutch ON/OFF control 2 = open/close gate or +/- speed control	<i>01</i>
<i>1114</i>	<i>INP IC</i>	IN1 Input Control	MOMEN or LATCH	<i>MOPEM</i>
<i>1120</i>	<i>UP_t tE</i>	Uptime	Seconds the open/+speed relay is set at the start of Unload Output Mode 2 only. 0 - 60 seconds	<i>02</i>
<i>1130</i>	<i>r_oPEn</i>	Rear Gate Open Detection	YES or NO	<i>no</i>
<i>1140</i>	<i>tArE_S</i>	TARE Sync	0 = normal weight 1 = weight + tare/bin 2 = weight + tare + load/unload	<i>2</i>
<i>1150</i>	<i>A_ out</i>	Analog Output Capacity	For use with optional hardware: 0 = Analog Output disabled	<i>0</i>

MODE MENU SETTINGS

Press the **MENU/SETUP Button** to access the Mode Menu, *Mode* will be displayed.

CODE	DESCRIPTION
0000	<p>Enter code 0000 to cycle through the Mode Menu options. Press the MENU/SETUP Button to save the entry and exit the setting.</p>
1010	<p>Enter code 1010 to access the Time After Unload/Dispense setting. The screen will display <i>Time SP</i>. Press the MENU/SETUP Button. The screen will display 00 or the current setting. The default setting is 5. Use the keypad to enter a time between 0 and 60 seconds. This is the time the display will stay in LOAD/UNLOAD Active Mode before returning to LOAD/UNLOAD Ready Mode, after the PRACT weight is reached, or when the load/unload operation is cancelled. Enter 0 to keep the display in LOAD/UNLOAD Mode indefinitely after the action has been completed. NOTE: Press the CLEAR Button to return the display to Normal Mode. Press the MENU/SETUP Button to save the entry and exit the setting.</p>
1020	<p>Enter code 1020 to access the Bins setting. The screen will display <i>Bin 5</i>. Press the MENU/SETUP Button. The screen will display 00 (the default setting) or the current setting. Use the keypad to enter the number, between 0 and 10, of bins or seed boxes. Press the MENU/SETUP Button to save the entry and exit the setting.</p>
1030	<p>Enter code 1030 to access the LED Brightness setting. The screen will display <i>LED.br</i>. Press the MENU/SETUP Button. Press any arrow button to select a number between 1 and 6 to set the LED brightness. The default setting is 6. When the desired number is displayed, Press the MENU/SETUP Button to save the entry and exit the setting.</p>
1040	<p>Enter code 1040 to access the Units setting. The screen will display <i>Unit 5</i>. Press the MENU/SETUP Button. The current unit of measurement will start blinking on the lower left corner of the display screen. The default setting is lb. Press any arrow button to toggle between lb and kg. When the desired unit of measure is flashing, Press the MENU/SETUP Button to save the entry and exit the setting.</p>

CODE	DESCRIPTION								
1050	<p>Enter code 1050 to access the Average Rate setting. The screen will display A. r.t. Press the MENU/SETUP Button. Use the keypad to enter a number between 1 and 120 for the Average Rate. The default setting is 012. Enter 1 to disable the averaging function. Press the MENU/SETUP Button to save the entry and exit the setting. NOTE: The Average Rate setting represents the number of readings used to calculate the average rate. Higher numbers (more readings) provide a more stable average, but the final value may take longer to calculate. The scale updates 4 times per second, so an Average Rate setting of 8 results in a 2 second rolling average weight displayed on the screen.</p>								
1060	<p>Enter code 1060 to access the Auto OFF setting. The screen will display A. oFF. Press the MENU/SETUP Button. Use the keypad to enter a number between 1 and 240. The default is 000. This number is how many minutes the scale can be idle before automatically powering OFF. When idle, press any button to reset the countdown. Set the number to 000 to disable Auto OFF. Press the MENU/SETUP Button to save the entry and exit the setting. NOTE: If the scale is used with a host indicator (wired or wireless), an active link with the indicator will prevent the scale from powering OFF.</p>								
1070	<p>Enter code 1070 to access the Hold Enable setting. The screen will display HoLd.E. Press the MENU/SETUP Button. Press any arrow button to toggle between YES and no. The default setting is no. When the desired option is displayed, Press the MENU/SETUP Button to save the entry and exit the setting.</p>								
1080	<p>Enter code 1080 to access the Print/RS232 Type setting. The screen will display Pr.t t. Press the MENU/SETUP Button. Press any arrow button to select a Print/RS232 Type. The default setting is GTN. When the desired option is displayed, Press the MENU/SETUP Button to save the entry and exit the setting. Refer to the Serial Output section for more information.</p> <p>Setting Options:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tbody> <tr> <td style="text-align: center;">oFF</td> <td>RS232 Output Disabled</td> </tr> <tr> <td style="text-align: center;">Std</td> <td>Standard Output</td> </tr> <tr> <td style="text-align: center;">bAr</td> <td>Output including bar graph data</td> </tr> <tr> <td style="text-align: center;">gtN</td> <td>GROSS, TARE, NET Output</td> </tr> </tbody> </table>	oFF	RS232 Output Disabled	Std	Standard Output	bAr	Output including bar graph data	gtN	GROSS, TARE, NET Output
oFF	RS232 Output Disabled								
Std	Standard Output								
bAr	Output including bar graph data								
gtN	GROSS, TARE, NET Output								

CODE	DESCRIPTION								
1090	<p>Enter code 1090 to access the Baud Rate setting.</p> <p>The screen will display PbAUD. Press the MENU/SETUP Button.</p> <p>Press any arrow button to select a RS232 Baud Rate setting. The default setting is 9600.</p> <p>Baud Rate is the speed data is transmitted through a continuous serial output connected to a scoreboard or secondary display.</p> <p>When the desired option is displayed, Press the MENU/SETUP Button to save the entry and exit the setting.</p> <p>Setting Options:</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>1200</td> <td>2400</td> <td>4800</td> <td>9600</td> <td>19200</td> <td>38400</td> <td>57600</td> <td>115200</td> </tr> </table>	1200	2400	4800	9600	19200	38400	57600	115200
1200	2400	4800	9600	19200	38400	57600	115200		
1100	<p>Enter code 1100 to access the Scale ID setting.</p> <p>The indicator screen will display SC ID. Press the MENU/SETUP Button.</p> <p>Use the keypad to enter a number between 1 and 190 to set the scale ID. The default setting is 001.</p> <p>Press the MENU/SETUP Button to save the entry and exit the setting.</p>								
1110	<p>Enter code 1110 to access the Unload/Dispense Output Mode setting.</p> <p>The screen will display d,SP.a. Press the MENU/SETUP Button.</p> <p>The indicator screen displays 00 or the current setting. The default setting is 01.</p> <p>Use the keypad to enter the desired setting for the Unload/Dispense Output Mode. Press the MENU/SETUP Button to save the entry and exit the setting.</p> <p>Setting Options:</p> <table border="1" style="width: 100%;"> <tr> <td style="text-align: center;">00</td> <td>Disables automatic control. Unload operation can be performed, but there is no automatic relay control or use of the Preact weight.</td> </tr> <tr> <td style="text-align: center;">01</td> <td>Mode 1 uses the auger or clutch ON/OFF control.</td> </tr> <tr> <td style="text-align: center;">02</td> <td>Mode 2 uses +/- speed or open/close gate control.</td> </tr> </table>	00	Disables automatic control. Unload operation can be performed, but there is no automatic relay control or use of the Preact weight.	01	Mode 1 uses the auger or clutch ON/OFF control.	02	Mode 2 uses +/- speed or open/close gate control.		
00	Disables automatic control. Unload operation can be performed, but there is no automatic relay control or use of the Preact weight.								
01	Mode 1 uses the auger or clutch ON/OFF control.								
02	Mode 2 uses +/- speed or open/close gate control.								

CODE	DESCRIPTION				
<p>Enter code 1114 to access the IN1 Input Control setting. The screen will display INP I.C. Press the MENU/SETUP Button. Press any arrow button to toggle between MOMEN and LATCH. The default setting is MOMEN. When the desired option is displayed, Press the MENU/SETUP Button to save the entry and exit the setting.</p> <p>Setting Options:</p>	<table border="1"> <tr> <td style="text-align: center; vertical-align: middle;">MOMEN</td> <td>The indicator starts an unload when the INPUT1 signal transitions from high to low. The RELAY1 output will increase and stay high until the Preact weight is reached. The indicator will start the next unload with the next momentary press (INPUT1 line high, then low). The indicator will stop an unload mid-process with another momentary press.</td> </tr> <tr> <td style="text-align: center; vertical-align: middle;">LATCH</td> <td>The indicator starts an unload when the INPUT1 signal is high and stays high. The RELAY1 output will increase and stay high until the Preact weight is reached. The indicator will start the next unload when the INPUT1 signal is low and then high again. The indicator will stop an unload mid-process if the INPUT1 signal is low.</td> </tr> </table>	MOMEN	The indicator starts an unload when the INPUT1 signal transitions from high to low. The RELAY1 output will increase and stay high until the Preact weight is reached. The indicator will start the next unload with the next momentary press (INPUT1 line high, then low). The indicator will stop an unload mid-process with another momentary press.	LATCH	The indicator starts an unload when the INPUT1 signal is high and stays high. The RELAY1 output will increase and stay high until the Preact weight is reached. The indicator will start the next unload when the INPUT1 signal is low and then high again. The indicator will stop an unload mid-process if the INPUT1 signal is low.
MOMEN	The indicator starts an unload when the INPUT1 signal transitions from high to low. The RELAY1 output will increase and stay high until the Preact weight is reached. The indicator will start the next unload with the next momentary press (INPUT1 line high, then low). The indicator will stop an unload mid-process with another momentary press.				
LATCH	The indicator starts an unload when the INPUT1 signal is high and stays high. The RELAY1 output will increase and stay high until the Preact weight is reached. The indicator will start the next unload when the INPUT1 signal is low and then high again. The indicator will stop an unload mid-process if the INPUT1 signal is low.				
<p>Enter code 1120 to access the Uptime setting. The screen will display UPTIME. Press the MENU/SETUP Button. The screen displays 00 or the current setting. The default setting is 02. Use the keypad to enter the desired UPTIME between 0 and 60 seconds. When Unload Output Mode 2 is selected (with code 1110), the unload action is started by pressing the START/STOP Button. The +speed/open relay is then set for UPTIME seconds and cleared at the end of the unload action. Press the MENU/SETUP Button to save the entry and exit the setting.</p>	<p>Enter code 1130 to access the Rear Gate Open Detection setting. The screen will display r.oPEN. Press the MENU/SETUP Button. Press any arrow button to toggle between YES and no. The default setting is no. When enabled, OPEN will blink on the screen when Input 2 (connect to rear gate open sensor) is pulled low. When the desired option is displayed, Press the MENU/SETUP Button to save the entry and exit the setting.</p>				

CODE	DESCRIPTION						
	<p>Enter code 1 140 to access the TARE Sync setting.</p> <p>The screen will display TARE.5. Press the MENU/SETUP Button.</p> <p>The screen will display the current setting. The default setting is 2.</p> <p>Use the keypad to enter the desired setting.</p> <p>Press the MENU/SETUP Button to save the entry and exit the setting.</p>						
1 140	<p>Setting Options:</p> <table border="1" style="margin-left: 40px;"> <tbody> <tr> <td style="text-align: center;">0</td> <td>Normal Weight Only</td> </tr> <tr> <td style="text-align: center;">1</td> <td>Weight + Tare</td> </tr> <tr> <td style="text-align: center;">2</td> <td>Weight + Tare + Load/Unload NOTE: The LD720 must be set to number 2 when used with the HH520 Wireless Remote.</td> </tr> </tbody> </table>	0	Normal Weight Only	1	Weight + Tare	2	Weight + Tare + Load/Unload NOTE: The LD720 must be set to number 2 when used with the HH520 Wireless Remote.
0	Normal Weight Only						
1	Weight + Tare						
2	Weight + Tare + Load/Unload NOTE: The LD720 must be set to number 2 when used with the HH520 Wireless Remote.						
	<p>Setting for use with Optional Hardware:</p> <p>Enter code 1 150 to access the Analog Output Capacity setting.</p> <p>When this optional function is installed, the screen will display A. out.</p> <p>Press the MENU/SETUP Button.</p> <p>The screen will display the current setting. The default setting is 0.</p> <p>Use the keypad to enter a number between 1 - 999,999 (or 1 - 99,999 if using a 5-digit indicator) to enable the analog output capacity with the max 20 mA output scaled to the number entered.</p> <p>Enter 0 to disable the Analog Output Capacity function.</p> <p>Press the MENU/SETUP Button to save the entry and exit the setting.</p> <p>EXAMPLE:</p> <p>If an analog output capacity of 20,000 lb is entered, a gross weight of 10,000 lb will set the analog output to 12 mA (mid-point of the 4 - 20 mA range). The analog output is scaled to the gross weight even if a TARE or BIN weight is currently displayed. The value is entered using the current unit of measure (lb or kg) setting.</p>						

SERIAL OUTPUT

If the LD720 Indicator includes the Serial Output option:

- If the PRINT/RS232 type mode is set to STD, the output will transmit the current GROSS, NET or BIN weight (lb or kg) at a rate of four times per second on the RS232 output.
 - If a load/unload job is in progress, the weight loaded/unloaded will be transmitted instead.

EXAMPLE: STD

"3000 lb<cr><lf>"

"2865 lb<cr><lf>"

- If the PRINT/RS232 type mode is set to BAR, an additional command to control a bar graph display will also be transmitted.

EXAMPLE: BAR

"3000G<cr>@^100<cr>" (G for Gross or N for Net, 100% bar graph filled)

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

- If the PRINT/RS232 type mode is set to GTN, a 4-line output will send the GROSS, TARE and NET weights plus a blank line.

EXAMPLE: GTN

"G: 3000 lb<cr><lf>"

"T: 1200 lb<cr><lf>"

"N: 1800 lb<cr><lf>"

"<cr><lf>"

LOAD / UNLOAD OPERATION

LOAD / UNLOAD LED

The Load/Unload LED Indicator on the upper middle section of the screen indicates the status of the Dispense operation.

- **LED OFF:** Normal Mode. Dispense not ready. Optional external key(s) operate in Pass-Through Mode and will not trigger a dispense action.
- **LED SOLID RED:** Load / Unload / Dispense Ready. The indicator is ready to start a Load / Unload / Dispense action. Optional external key(s) can initiate a dispense operation.
- **LED BLINKING RED:** Load / Unload / Dispense In Progress.

PASS-THROUGH MODE: DEFAULT MODE – DISPENSE NOT READY

When the indicator is in Normal Mode (Dispense Not Ready, LED OFF), it will pass through the external key functions and will not trigger a dispense operation. Press the **CLEAR Button** to reset the LOAD/UNLOAD LED and return the indicator to Normal Mode.

STR REMOTE HANDHELD

When using an optional STR Remote to control the internal relay for the dispense operations, make sure the indicator is in Normal Mode (Dispense Not Ready, LED OFF). Press the **CLEAR Button** to reset the LOAD/UNLOAD LED and return the indicator to Normal Mode.

PREACT WEIGHT

The PREACT weight setting compensates for seed that is still in-flight as the auger/conveyor is stopped or a door/gate is being closed at the end of an Auto Dispense operation. Factors influencing the PREACT setting adjustment include chute size or length, gate time opening and closing, or seed type and weight.

If a seed tender is dispensing too much seed, increase the PREACT WEIGHT setting value by the overfill weight amount. **EXAMPLE:** If the final dispense weight is over by 10 lb, increase the PREACT WEIGHT setting by 10 lb.

If the seed tender is dispensing too little seed, decrease the PREACT WEIGHT setting value by the under-fill weight amount.

LOAD PROCEDURE

1. Press the **LOAD Button**. The screen will briefly display **LOAD** followed by 5 digits. The weight from the last load displays by default.
2. Enter the amount of weight to be loaded and press the **STORE/ENTER Button**. The **LOAD/UNLOAD LED** will be solid red. The screen will display the weight to load. The indicator is now in Load Ready Mode.
3. Press the **START/STOP Button** to start load operation. The **LOAD/UNLOAD LED** will blink. The screen will display the live weight and the weight remaining to be loaded. The displayed weight will decrease as the weight on the scale increases. If a scoreboard display with bar graph is used, the bar graph will increase from 0% to 100% during the load operation.
4. When loading is complete, the displayed weight will be near zero. The indicator may display a small positive or negative number representing the weight under or over the desired target weight. Press the **START/STOP Button** to stop and return to Load Ready Mode. The screen will display the weight to load. Pressing the **CLEAR Button** or **GROSS/NET Button** will also return the display to Load Ready Mode.
5. Press the **START/STOP Button** to repeat a load operation with the same weight.

UNLOAD – OUTPUT MODE 0: NO AUTOMATIC CONTROL

Unload Product in One Row/Tank:

1. Press the **UNLOAD Button**. The screen will briefly display *UNLOAD*, followed by 5 digits. The weight from the last unload displays by default.
2. Enter the weight to be unloaded. Press the **START/STOP Button** to save entry.
3. Unload the product. The displayed weight will decrease as the weight on the scale decreases. If a scoreboard display with bar graph is used, the bar graph will decrease from 100% to 0% during the unloading operation.
4. When unloading is complete, the displayed weight will be near zero. The indicator may display a small positive or negative number representing the weight under or over the desired target weight. Press the **START/STOP Button** to stop and return to Unload Ready Mode. The screen will display the weight to unload. Pressing the **CLEAR Button** or **GROSS/NET Button** will also return the display to Unload Ready Mode.
5. Press the **START/STOP Button** to repeat a load operation with the same weight.

Unload Product in Multiple Rows/Tanks:



NOTICE By default, the **LOAD Button** performs the LOAD function and the **RM Button** performs the SPLIT function. If desired, the functions of the **LOAD** and **RM Buttons** may be switched. Enable Split on Load for the **LOAD Button** to perform the SPLIT function and the **RM Button** to perform the LOAD function.

1. Press the **LOAD Button** (if Split on Load is set to YES) or the **RM Button** (if Split on Load is set to NO). This allows the product to be unloaded equally across a set number of rows/tanks.
2. The screen will briefly display *S.LOAd*, followed by the weight to be split between the rows/tanks. The weight can be edited. Enter the desired weight and press the **STORE/ENTER Button** to save the setting and move to the next step.
3. The screen will briefly display *SPLI E*, followed by the number of rows/tanks that will receive product. The number of rows/tanks can be edited. Enter the desired number and press the **STORE/ENTER Button**. The indicator will automatically calculate the split weight (total weight divided by the number of rows/tanks).
4. The screen will briefly display *ULDRd*, followed by the Split Weight Unload amount calculated in step 3. The Split Weight Unload amount can be edited. Enter the desired number and press either the **STORE/ENTER Button** or **START/STOP Button** to save the setting and move to the next step.
5. Unload the product. The displayed weight will decrease as the weight on the scale decreases. If a scoreboard display with bar graph is used, the bar graph will decrease from 100% to 0% during the unloading operation. When unloading is complete, the displayed weight will be near zero. The indicator may display a small positive or negative number representing the weight under or over the desired target weight.
6. Press the **START/STOP Button** to stop and return to Unload Ready Mode. The screen will display the weight to unload. Pressing the **CLEAR Button** or **GROSS/NET Button** will also return the display to Unload Ready Mode.
7. Press the **START/STOP Button** to repeat an unload operation with the same weight.

UNLOAD – OUTPUT MODE 1: AUGER OR CLUTCH ON/OFF CONTROL



NOTICE To stop the unload/dispense operation before the PRACT weight is reached, press the **START/STOP Button**. The indicator will return to Unload Ready Mode and a new operation can be started. Press the **CLEAR Button** at any time to return to normal mode (dispense not ready).

Unload Product in One Row/Tank:

1. Press the **UNLOAD Button**. The screen will briefly display *UNLOAD* followed by 5 digits. The weight from the last unload displays by default.
2. Enter the amount of weight to be unloaded and press the **STORE/ENTER Button**. If the unload weight is:
 - a. LESS than the Unload Timer weight, the screen will briefly display *SP Pr* (Speed PRACT). Enter a weight between 0 and 99999.9. The default setting is 200 lb. The Output Time (Unload Time) equals Unload Weight/Speed PRACT.

EXAMPLE: 150 lb Unload Weight with Speed PRACT setting of 20

$$\text{UNLOAD TIME} = 150 \div 20 = 7.5 \text{ seconds}$$

Output will stop automatically after 7.5 seconds have elapsed.

Enter the desired Speed PRACT weight and press the **STORE/ENTER Button**.

- b. GREATER than the Unload Timer weight, the screen will briefly display *PRACT* and the number 00040 (or previously saved value) followed by 5 digits. Enter the PRACT amount and press the **STORE/ENTER Button** (previously entered value will display as default).

The LOAD/UNLOAD LED will be solid red. The indicator is now in Unload Ready Mode standing by to begin unload operation.

3. Press the **START/STOP Button** to start the unload operation.

When the PRACT weight is reached, the relay will be disabled, and the auger/conveyor will stop. The LOAD/UNLOAD LED will be solid red. Product will dispense until the operation is complete. The screen will display the unload weight after an adjustable Time After Dispense delay.
4. Press the **START/STOP Button** to start a new unload operation using the same settings. If a new unload or PRACT weight is required, press the **UNLOAD Button** to enter the new weight.

Unload Product in Multiple Rows/Tanks:



NOTICE By default, the **LOAD Button** performs the LOAD function and the **RM Button** performs the SPLIT function. If desired, the functions of the **LOAD** and **RM Buttons** may be switched. Enable Split on Load for the **LOAD Button** to perform the SPLIT function and the **RM Button** to perform the LOAD function.

1. Press the **LOAD Button** (if Split on Load is set to YES) or the **RM Button** (if Split on Load is set to NO). This allows the product to be unloaded equally across a set number of rows/tanks.
2. The screen will briefly display *S.LDRd*, followed by the weight to be split between the rows/tanks. The weight can be edited. Enter the desired weight and press the **STORE/ENTER Button** to save the setting and move to the next step.
3. The screen will briefly display *SPLI L*, followed by the number of rows/tanks that will receive product. The number of rows/tanks can be edited. Enter the desired number and press the **STORE/ENTER Button**. The indicator will automatically calculate the split weight (total weight divided by the number of rows/tanks).
4. The screen will briefly display *ULDRd*, followed by the Split Weight Unload amount calculated in step 3. The Split Weight Unload amount can be edited. Enter the desired number and press either the **STORE/ENTER Button** or the **START/STOP Button** to save the setting and move to the next step.
5. If the unload weight is:
 - a. LESS than the Unload Timer weight, the screen will briefly display *SP Pr* (Speed PREACT). Enter a weight between 0 and 99999.9. The default setting is 200 lb. The Output Time (Unload Time) equals Unload Weight/ Speed PREACT.
EXAMPLE: 150 lb Unload Weight with Speed PREACT setting of 20
$$\text{UNLOAD TIME} = 150 \div 20 = 7.5 \text{ seconds}$$
Output will stop automatically after 7.5 seconds have elapsed.
Enter the desired Speed PREACT weight and press the **STORE/ENTER Button**.
 - b. GREATER than the Unload Timer weight, the screen will briefly display *Pr-EARL* and the number 00040 (or previously saved value) followed by 5 digits. Enter the PREACT amount and press the **STORE/ENTER Button** (previously entered value will display as default).
The LOAD/UNLOAD LED will be solid red. The indicator is now in Unload Ready Mode standing by to begin unload operation.
6. Press the **START/STOP Button** to start the unload operation.
7. Press the **START/STOP Button** at the end of each row/tank. The screen will display *End* and the live weight.

8. Press the **START/STOP Button** to start the unload operation.

When the PRACT weight is reached, the relay will be disabled, and the auger/conveyor will stop. The LOAD/UNLOAD LED will be solid red. Product will dispense until the operation is complete. After an adjustable Time After Dispense delay, the indicator will return to Unload Ready Mode with the previously entered dispense weight showing on screen.

9. Press the **START/STOP Button** to start a new unload operation for the next row using the same settings. If a new unload or PRACT weight is required, press the **UNLOAD Button** to enter the new weight.

UNLOAD – OUTPUT MODE 2: +/- SPEED OR OPEN/CLOSE GATE CONTROL



NOTICE To stop the unload/dispense operation before the PRACT weight is reached, press the **START/STOP Button**. The indicator will return to Unload Ready Mode and a new operation can be started. Press the **CLEAR Button** at any time to return to normal mode (dispense not ready).

Unload Product in One Row/Tank:

1. Press the **UNLOAD Button**. The screen will briefly display *UNLOAD* followed by 5 digits. The weight from the last unload displays by default.
2. Enter the amount of weight to be unloaded and press the **STORE/ENTER Button**.
3. If the unload weight is:
 - a. LESS than the Unload Timer weight, the screen will briefly display *SP Pr* (Speed PRACT). Enter a weight between 0 and 99999.9. The default setting is 200 lb. The Output Time (Unload Time) equals Unload Weight/ Speed PRACT.

EXAMPLE: 150 lb Unload Weight with Speed PRACT setting of 20

$$\text{UNLOAD TIME} = 150 \div 20 = 7.5 \text{ seconds}$$

Output will stop automatically after 7.5 seconds have elapsed.

Enter the desired Speed PRACT weight and press the **STORE/ENTER Button**.

- b. GREATER than the Unload Timer weight, the screen will briefly display *PrACT* and the number 00040 (or previously saved value) followed by 5 digits. Enter the PRACT amount and press the **STORE/ENTER Button** (previously entered value will display as default).

The LOAD/UNLOAD LED will be solid red. The indicator is now in Unload Ready Mode standing by to begin unload operation.

4. Press the **START/STOP Button** to start the unload operation.

The indicator will enable the +SPEED/OPEN relay for adjustable UPTIME seconds. The weight displayed on screen will decrease as product is dispensed.

When the PRACT weight is reached, the -SPEED/CLOSE relay will be set. The LOAD/UNLOAD LED will be solid red. Product will dispense until the operation is complete. After an adjustable Time After Dispense delay, the indicator will return to Unload Ready Mode with the previously entered unload weight displayed on screen.
5. Press the **START/STOP Button** to start a new unload operation using the same settings. If a new unload or PRACT weight is required, press the **UNLOAD Button** to enter the new weight.

Unload Product in Multiple Rows/Tanks:



NOTICE By default, the **LOAD Button** performs the LOAD function and the **RM Button** performs the SPLIT function. If desired, the functions of the **LOAD** and **RM Buttons** may be switched. Enable Split on Load for the **LOAD Button** to perform the SPLIT function and the **RM Button** to perform the LOAD function.

1. Press the **LOAD Button** (if Split on Load is set to YES) or the **RM Button** (if Split on Load is set to NO). This allows the product to be unloaded equally across a set number of rows/tanks.
2. The screen will briefly display **5.LOAD**, followed by the weight to be split between the rows/tanks. The weight can be edited. Enter the desired weight and press the **ENTER Button** to save the setting and move to the next step.
3. The screen will briefly display **SPLIT**, followed by the number of rows/tanks that will receive product. The number of rows/tanks can be edited. Enter the desired number and press the **ENTER Button**. The indicator will automatically calculate the split weight (total weight divided by the number of rows/tanks).
4. The screen will briefly display **UNLOAD**, followed by the Split Weight Unload amount calculated in step 3. The Split Weight Unload amount can be edited. Enter the desired number and press either the **STORE/ENTER Button** or the **START/STOP Button** to save the setting and move to the next step.
5. If the unload weight is:
 - a. LESS than the Unload Timer weight, the screen will briefly display **SP Pr** (Speed PRACT). Enter a weight between 0 and 99999.9. The default setting is 200 lb. The Output Time (Unload Time) equals Unload Weight/Speed PRACT.

EXAMPLE: 150 lb Unload Weight with Speed PRACT setting of 20

$$\text{UNLOAD TIME} = 150 \div 20 = 7.5 \text{ seconds}$$

Output will stop automatically after 7.5 seconds have elapsed.

Enter the desired Speed PRACT weight and press the **STORE/ENTER Button**.

- b. GREATER than the Unload Timer weight, the screen will briefly display **PRACT** and the number 00040 (or previously saved value) followed by 5 digits. Enter the PRACT amount and press the **STORE/ENTER Button** (previously entered value will display as default).

The LOAD/UNLOAD LED will be solid red. The indicator is now in Unload Ready Mode standing by to begin unload operation.

6. Press the **START/STOP Button** to start the unload operation.

When the Preact weight is reached, the -SPEED/CLOSE relay will be set. The LOAD/UNLOAD LED will be solid red. Product will dispense until the operation is complete. After an adjustable Time After Dispense delay, the indicator will return to Unload Ready Mode with the previously entered unload weight displayed on screen.

7. Press the **START/STOP Button** to start a new unload operation for the next row using the same settings. If a new unload or Preact weight is required, press the **UNLOAD Button** to enter the new weight.

CALIBRATION MENU

1. Press the **MENU/SETUP Button** to access Calibration Menu. *modE* will be displayed.
2. Enter the desired code (see table).

Some settings require a number to be entered with the keypad buttons. Some settings require using the arrow buttons to cycle through and select a preset option.

3. Press the **MENU/SETUP Button** to save the setting and exit the menu. When done editing settings, the indicator can be powered OFF.

NOTE: Enter code 477 to cycle through all Calibration Menu options.

CODE	DISPLAY	FUNCTION	SETTING	DEFAULT
2010	<i>UeL</i>	Unload Timer Load	0 - 99999.9	<i>0</i>
2020	<i>SPL.Ld</i>	Split on Load	YES or NO	<i>no</i>
2024	<i>rEu.LC</i>	Reverse Load Cell Signal Wires	YES or NO	<i>no</i>
2030	<i>rAd io</i>	Radio Enable	YES or NO	<i>no</i>
n/a	<i>rF CH</i>	Units Radio Channel	01 - 12	<i>04</i>
n/a	<i>rF.PAn</i>	Radio Network ID	0 - 65534	<i>8000</i>
n/a	<i>rF.ECP</i>	Radio Encryption Enable	YES or NO	<i>no</i>
n/a	n/a	Radio Encryption Key	0 - 65534	<i>00000</i>
2050	<i>rF.dEF</i>	Restore Radio Defaults	0 or 3	<i>0</i>
2054	<i>U. EnA</i>	Unit Switch Enable	YES or NO	<i>YES</i>
2060	<i>AZt</i>	AZT (Auto Zero Tracking)	0.5 d, 0.6 d, 1 d, 3 d, or OFF	<i>1 d</i>
2070	<i>GrAd</i>	Graduation Size	0.02, 0.05, 0.1, 0.2, 0.5, 1, 2, 5, 10, 20, 50, or 100	<i>d 2</i>
2080	<i>CAP</i>	Capacity	Enter scale capacity	<i>199999</i>

CALIBRATION SETTINGS

Press the **MENU/SETUP Button** to access the Calibration Menu, *ModE* will be displayed.

CODE	DESCRIPTION
477	Enter code 477 to cycle through the Calibration Menu options. Press the MENU/SETUP Button to save the entry and exit the setting.
2010	Enter code 2010 to access the Unload Timer Load setting. The screen will display <i>U.L.L.</i> Press the MENU/SETUP Button . Use the keypad to enter a weight between 0 and 99999.9 for the Unload Timer Load function. The default setting is 0. The Unload Timer Load setting is used when the Unload weight is less than the PREACT weight setting. Press the MENU/SETUP Button to save the entry and exit the setting.
2020	Enter code 2020 to access the Split On Load setting. The screen will display <i>SPL.Ld</i> . Press the MENU/SETUP Button . Press any arrow button to toggle between <i>YES</i> (LOAD Button starts a Split Unload, RM Button starts a Load) and <i>NO</i> (LOAD Button starts a Load, RM Button starts a Split Unload). Press the MENU/SETUP Button to save the entry and exit the setting.
2024	Enter code 2024 to access the Reverse Load Cell Signal Wires setting. The screen will display <i>r.E.V.L.C.</i> Press the MENU/SETUP Button . Press any arrow button to toggle between <i>YES</i> (Load cell signal, -SIG and +SIG, inputs are reversed) and <i>NO</i> . The default setting is NO. Press the MENU/SETUP Button to save the entry and exit the setting.

CODE	DESCRIPTION
2030	<p>Enter code 2030 to access the Radio Enable setting. The screen will display <i>rAd id</i>. Press the MENU/SETUP Button. Press any arrow button to toggle between YES (radio enabled) and no (radio disabled). The default setting is no. If no, Press the MENU/SETUP Button to save the entry and exit the setting. If YES, The screen will display <i>F CH</i>. Press the MENU/SETUP Button. Use the keypad to enter the desired Radio Channel setting (01 - 12). The default setting is 04. Press the MENU/SETUP Button to save the entry. The screen will display <i>rF.PAn</i>. Use the keypad to enter the Radio Network ID setting (0 - 65534). The default setting is 8000. Press the MENU/SETUP Button to save the entry. The screen will display <i>rF.ECP</i>. Press any arrow button to toggle between YES and no to set the Radio Encryption Enable status. The default setting is no. Press the MENU/SETUP Button when the desired setting is displayed. If YES was selected, enter the encryption key number (0 - 65534). The default setting is 00000. Press the MENU/SETUP Button to save the entry and exit the setting.</p>
2050	<p>Enter code 2050 to access the Restore Radio Defaults setting. The screen will display <i>rF.dEF</i>. Press the MENU/SETUP Button. Use the keypad to enter either 0 (no changes) or 3 (restore factory default radio settings). The default setting is 0. Press the MENU/SETUP Button to save the entry and exit the setting.</p>
2054	<p>Enter code 2054 to access the Unit Switch Enable setting. The screen will display <i>U. EnA</i>. Press the MENU/SETUP Button. Press any arrow button to toggle between YES and no. The default setting is YES. If no is selected, the units will be locked and Mode Menu setting <i>Un iES</i> will be prevented from toggling the unit of measure between lb and kg. When the desired setting is displayed, Press the MENU/SETUP Button to save the entry and exit the setting.</p>

CODE	DESCRIPTION												
2060	<p>Enter code 2060 to access the Auto Zero Tracking (AZT) setting. The screen will display AZt. Press the MENU/SETUP Button. Press any arrow button to select an AZT setting. The default setting is 1d. If the displayed weight is within the number of grads shown for a specific amount of time, the weight will be automatically zeroed. When the desired setting is displayed, Press the MENU/SETUP Button to save the entry and exit the setting.</p> <p>Setting Options:</p> <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; padding: 2px 10px;">0.5 d</td> <td style="border: 1px solid black; padding: 2px 10px;">0.6 d</td> <td style="border: 1px solid black; padding: 2px 10px;">1 d</td> <td style="border: 1px solid black; padding: 2px 10px;">3 d</td> <td style="border: 1px solid black; padding: 2px 10px;">oFF</td> </tr> </table>	0.5 d	0.6 d	1 d	3 d	oFF							
0.5 d	0.6 d	1 d	3 d	oFF									
2070	<p>Enter code 2070 to access the Graduation Size setting. The screen will display GrAd. Press any arrow button to select a Graduation Size setting. The default setting is d2. When the desired setting is displayed, Press the MENU/SETUP Button to save the entry and exit the setting.</p> <p>Setting Options:</p> <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; padding: 2px 10px;">0.02</td> <td style="border: 1px solid black; padding: 2px 10px;">0.05</td> <td style="border: 1px solid black; padding: 2px 10px;">0.1</td> <td style="border: 1px solid black; padding: 2px 10px;">0.2</td> <td style="border: 1px solid black; padding: 2px 10px;">0.5</td> <td style="border: 1px solid black; padding: 2px 10px;">1</td> <td style="border: 1px solid black; padding: 2px 10px;">2</td> <td style="border: 1px solid black; padding: 2px 10px;">5</td> <td style="border: 1px solid black; padding: 2px 10px;">10</td> <td style="border: 1px solid black; padding: 2px 10px;">20</td> <td style="border: 1px solid black; padding: 2px 10px;">50</td> <td style="border: 1px solid black; padding: 2px 10px;">100</td> </tr> </table>	0.02	0.05	0.1	0.2	0.5	1	2	5	10	20	50	100
0.02	0.05	0.1	0.2	0.5	1	2	5	10	20	50	100		
2080	<p>Enter code 2080 to access the Capacity setting. The screen will display CAP. Use the keypad to enter the capacity of the scale. The default setting is 199999. Press the MENU/SETUP Button to save the entry and exit the setting.</p>												

CALIBRATION PROCEDURES

The LD720 Indicator has multiple calibration options available for conducting a comprehensive calibration of the weigh system.

- **mV/V CALIBRATION**

The mV/V calibration can be adjusted only if: A certified Load Cell Simulator is available and there is a requirement to change the mV/V calibration.

- **CODE CALIBRATION**

Calibrate the system by entering the load point (lb or kg) per load cell, signal (mV/V), and number of load cells in the system. This information is typically on the load cell label.

- **FIELD CALIBRATION FACTOR ADJUSTMENT**

Field Calibration Factor Adjustment is used to view or edit the Field Cal Factor directly.

- **FIELD CALIBRATION WEIGHT ENTRY ADJUSTMENT**

The Field Calibration Weight Entry Adjustment should only be attempted if the scale is working, but the weights are inaccurate. Adjust the displayed weight by entering the Displayed Weight and a Certified Weight. The indicator will automatically calculate an internal factor which is applied to all displayed weights for future weighing. It is best to perform field calibration only if the scale system is operating at 25% or greater of its expected peak operating capacity.

- **WEIGHT CALIBRATION**

Weight Calibration should only be attempted if the calibration has been lost. Apply known weight(s) and enter the value of those weights into the indicator. The scale must be unloaded at the start of the procedure, with a known weight ready to be loaded.



NOTICE When a Code or Weight Calibration is performed, the Field Calibration Adjustment is automatically reset to the default setting of 1.0000.

CALIBRATION MODE MENU



NOTICE Diagnostic Use Only

Contact Intercomp Service before proceeding.

NOTE: Enter Calibration Mode number after *SLEEP* Calibration Menu.

CODE	DESCRIPTION
0020	mV/V Calibration. Calibrate mV/V input using a certified LC simulator.
002 1	Code Calibration. Set system calibration by entering cell load and mV/V info.
0030	Field Calibration Factor Adjustment.
003 1	Field Calibration Weight Entry Adjustment.
0072	Output Rate. Select 4H or 8H. Set to 8H for faster RS232 output rate and display update rate. When set to 8H, the display will update 8 times per second, the RS232 continuous output will transmit a message 8 times per second, and the averaging will be based on 8 reads per second (set to 16 for 2 second averaging).
0 1 1 1	Individual cell read diagnostic. Enter specific load cell number 1 - 8.
0 12 1	Raw Counts display diagnostic. 0 mV/V = 131072 (6-digit display) or 31072 (5-digit display). 8375 per mV/V.
0 122	Raw mV/V display. Output based on mV/V calibration.
0 13 1	Constant power to all load cells diagnostic.
020 1-0208	Corner adjust cell 1 - 8. EXAMPLE: Enter 202 to adjust load cell #2 span.
022 1	Cell Span Entry. Manually enter cell spans for cells 1 - 8.
03 1 1	Default and save all radio settings to the radio.
07 1 1	Default and save all settings, leave calibration and cornering untouched.
08 1 1	Default and save corner compensation to nominal values.
09 1 1	Default and save all board memory (settings, calibration, and corners).
100 1	Weight Calibration. Apply weight(s) to calibrate.
1003	Set number of load cell inputs, followed by corner calibration.

MV/V CALIBRATION



NOTICE The mV/V Calibration parameters will be overwritten when advancing through the mV/V Calibration menu.

Do not advance through the mV/V Calibration menu unless the following conditions are met:

1. A certified Load Cell Simulator is available.
2. There is a requirement to change the mV/V calibration.

The mV/V calibration of the indicator is done at the factory prior to shipment. A certified load cell simulator is required to perform the mV/V adjustment.

NOTE: When performing an mV/V Calibration on a system with multiple cell channel inputs, adjust the simulator on **CH1 input only**, leave the other inputs stable. An alternative is to set the number of cell inputs to 1 before the calibration, returning to the required number of cells after the calibration is complete.

1. Press the **MENU/SETUP Button**. The screen will display *LOAD*.
2. Enter code **0020** to access mV/V Calibration. Press the **MENU/SETUP Button** to save the entry.
3. The screen will display **55-00**. Set the simulator to 0 mV/V. Press the **MENU/SETUP Button** to save the entry.
4. The screen will display **55-01**. Set the simulator to the desired value. Press the **MENU/SETUP Button** to save the entry.
5. The screen will display **SCALE** and return to normal operation.

DISPLAY	FUNCTION	SETTING	DEFAULT
55-00	Simulator Set to 0.0 mV/V	0	n/a
55-01	Simulator Set to x.x mV/V	Enter simulator setting	2.0000

CODE CALIBRATION

1. Press the **MENU/SETUP Button**. The screen will display *radE*.
2. Enter code *002 1* to access Code Calibration. Press the **MENU/SETUP Button** to save the entry.
3. The screen will display *CC-01*. Enter each load cell's rated capacity at a specific mV/V output. The capacity may be listed on the load cell label or data sheet. Press the **MENU/SETUP Button** to save the entry.
4. The screen will display *CC-02*. Enter the mV/V output corresponding to the load entered in step 3. The value may be listed on the load cell label or data sheet. Press the **MENU/SETUP Button** to save the entry.
5. The screen will display *CC-03*. Enter the number of cells in the system. Press the **MENU/SETUP Button** to save the entry.
6. The screen will display *5ALe* and return to normal operation.

DISPLAY	FUNCTION	SETTING	DEFAULT
<i>CC-01</i>	Load Point (lb or kg)	1 - 999999	<i>40000</i>
<i>CC-02</i>	Signal (mV/V)	0.1000 - 99.9999	<i>0.4500</i>
<i>CC-03</i>	Number of Load Cells	1 - 99	<i>1</i>

FIELD CALIBRATION FACTOR ADJUSTMENT

View or edit the Field Calibration Factor directly.

EXAMPLE: To increase the weight by 1%, increase the factor by 1%. If the factor is set at the default setting of 1.0000, change the setting to 1.0100 to increase weights by 1%.

NOTE: The Field Calibration Factor is reset to 1.0000 when performing a new Code or Weight calibration.

1. Press the **MENU/SETUP Button**. The screen will display *modE*.
2. Enter code *0030* to access Field Calibration Factor Adjustment. Press the **MENU/SETUP Button** to save the entry.
3. The screen will display *FLd.Ad*. Press the **MENU/SETUP Button** to view the current Field Calibration Adjustment value.
4. Calculate and enter the new Field Calibration Adjustment value. Press the **MENU/SETUP Button** to save the entry. The new factor will be applied to all subsequent displayed weights.

DISPLAY	FUNCTION	SETTING	DEFAULT
<i>FLd.Ad</i>	Field Cal Adj Value	0.1000 - 9.9999	<i>1.0000</i>

FIELD CALIBRATION WEIGHT ENTRY ADJUSTMENT



NOTICE Do not perform a Field Calibration Weight Entry Adjustment unless the following conditions are met:

1. A certified or trusted weight is available to compare against the displayed gross weight.
2. The indicator displays the gross weight prior to starting the adjustment.

Adjust the displayed weight by entering the Displayed Weight and a Certified Weight. The indicator will automatically calculate an internal factor to be applied to all subsequent displayed weights.

1. Press the **MENU/SETUP Button**. The screen will display *radE*.
2. Enter code *003 1* to access Field Calibration Weight Entry Adjustment. Press the **MENU/SETUP Button** to save the entry.
3. The screen will display *d iSP.Ld*. Press the **MENU/SETUP Button** and enter the current displayed gross weight. Press the **MENU/SETUP Button** to save the entry.
NOTE: If there is a load on the scale, the weight will automatically display, but it can be edited.
4. The screen will display *CErt.Ld*. Press the **MENU/SETUP Button** and enter the certified or trusted gross weight. Press the **MENU/SETUP Button** to save the entry. An internal Field Cal Factor will be automatically calculated and applied to all subsequent displayed weights.

DISPLAY	FUNCTION	SETTING	DEFAULT
<i>d iSP.Ld</i>	Displayed Load (weight)	1 - 999999	n/a
<i>CErt.Ld</i>	Certified Load (weight)	1 - 999999	n/a

WEIGHT CALIBRATION



NOTICE The Weight Calibration parameters will be overwritten when advancing through the Weight Calibration menu.

Do not advance through the Weight Calibration menu unless the following conditions are met:

1. The required number of known weight(s) is available.
2. There is a requirement to change the Weight Calibration.

The scale must be unloaded at the start of the calibration. A known weight(s) must be readily available to be loaded on the scale.

1. Press the **MENU/SETUP Button**. The screen will display *radE*.
2. Enter 477 to access the Calibration menu.
3. Enter code *2000* to access Scale Capacity. Enter the capacity of the scale. Press the **MENU/SETUP Button** to save the entry.
4. Enter code *100 1* to access Weight Calibration. Press the **MENU/SETUP Button** to save the entry.
5. The screen will display *CAP*. Press the **MENU/SETUP Button** and enter and save the scale capacity. The indicator can be powered OFF before starting the Weight Calibration.
6. The screen will display *LL-00*. Make sure no weight is on the scale. Press the **MENU/SETUP Button**.
7. The screen will display *HH-0 1*. Press the **MENU/SETUP Button**.
8. Enter the first calibration weight to be applied. Press the **MENU/SETUP Button**.
9. The screen will display *LL-0 1*. Apply and stabilize the first load on the scale. Press the **MENU/SETUP Button**.
10. The screen will display *HH-02*. Power OFF the scale to lock in a 1-point calibration. Repeat steps 6 - 8 to enter up to 3 calibration points.

DISPLAY	FUNCTION	SETTING	DEFAULT
<i>LL-00</i>	No Weight Applied	-	n/a
<i>HH-0 1</i>	Weight to be Applied	Enter first weight	n/a
<i>LL-0 1</i>	Weight Applied	Load first weight	n/a

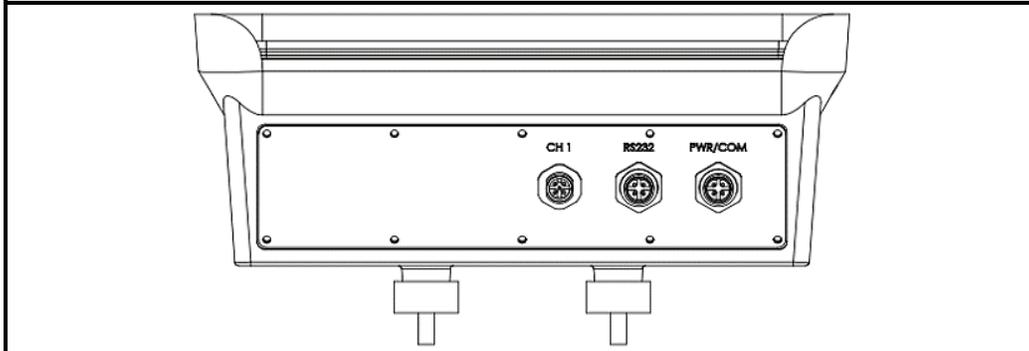
TROUBLESHOOTING

ERROR MESSAGES

DISPLAY	DEFINITION	DESCRIPTION
<i>EEPE</i>	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 the memory during the calibration process. Each time the indicator is powered ON, the code is regenerated and compared to the stored value. If a change is detected, the error message is displayed. Recalibration may clear the error. If the problem persists, the control panel will need to be replaced.
<i>Ad 1</i>	A/D Converter Failure	The A/D circuit board has detected a fault and needs to be repaired or replaced.
<i>LCb 1</i>	Power Up Self-Test Has Detected Load Cell Error	A load cell may have failed or there may be a bad connection to the load cells.
<i>LC 1</i>	Run-Time Checking Has Detected Load Cell Error	A load cell may have failed or there may be a bad connection to the load cells.
<i>Lo.bAt</i>	Low Battery (Supply) Voltage	The indicator measured the supply voltage and it is too low. Check the power supply voltage and wiring.
<i>[AP</i>	Overload or Calibration Information Lost or Bad Load Cell	The control panel has detected a weight reading larger than expected. The error may be caused by the application of too much weight to the platform. If the message is displayed when there is no weight on the platform, the most likely causes are a defective load cell or control panel.
<i>d .5P</i>	Number Cannot Be Displayed	A common cause is pressing the ZERO Button 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 Button to clear the error.

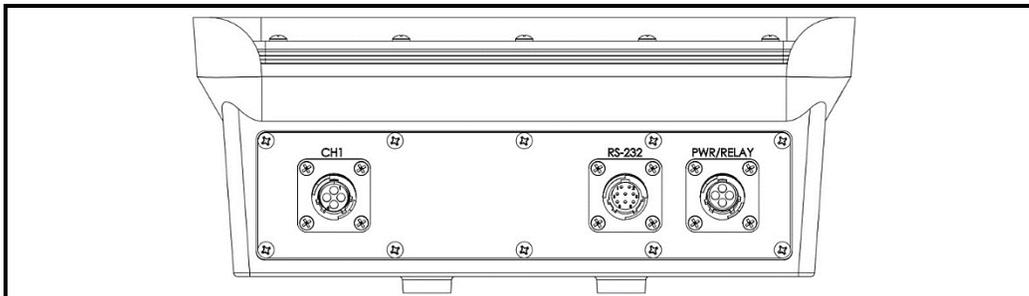
INDICATOR PIN CONNECTIONS

1 INPUT OPTIONS



1CH (M12 5-pin plug) / RS232 (M12 4-pin plug) / Power & RS485 (M12 4-pin plug)

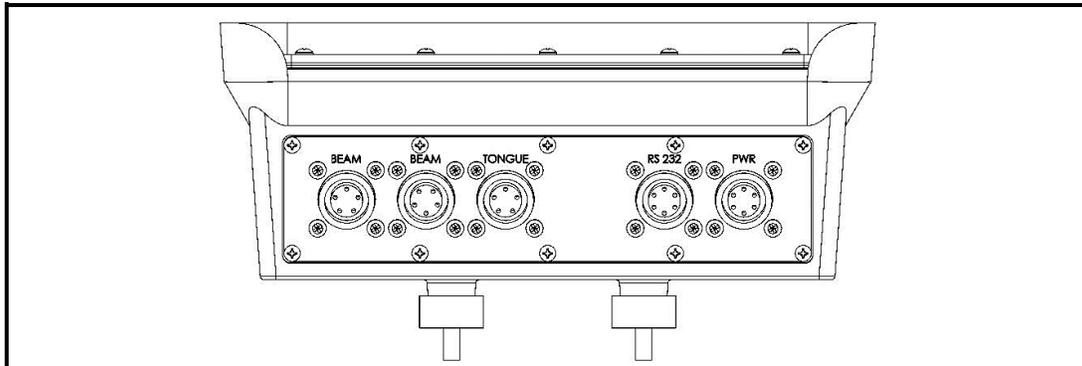
CH 1		RS232		PWR/COM	
1	+EXC	1	RS232 TX	A	+12V INPUT
2	+SIG	2	N/A	B	GND
3	-SIG	3	RS232 GND	C	RS485 A
4	-EXC	4	12V SWITCHED	D	RS485 B
MID	SHIELD				



1CH (AMP 4-pos socket) / RS232 (AMP 8-pin plug) / Power (AMP 4-pin plug)

CH 1		RS232		PWR/COM	
1	+EXC	1	N/A	1	+12V INPUT
2	+SIG	2	RS232 TX1	2	GND
3	-SIG	3	RS232 RX1	3	N/A
4	-EXC	4	N/C	4	N/A
MID	SHIELD	5	+12 VDC OUT		
		6	GND		
		7	N/C		
		8	GND		

2 INPUT OPTIONS

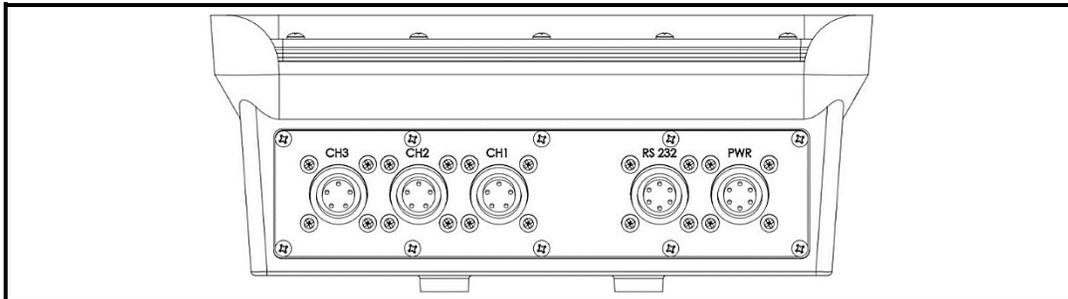


1CH 2 Input (MIL 5-pos socket) / RS232 (MIL 6-pos socket) / Power & Relay (MIL 6-pos socket)

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, RELAY 2, INPUT 1, and INPUT 2 connections are only applicable to indicators with the optional internal relay control installed.

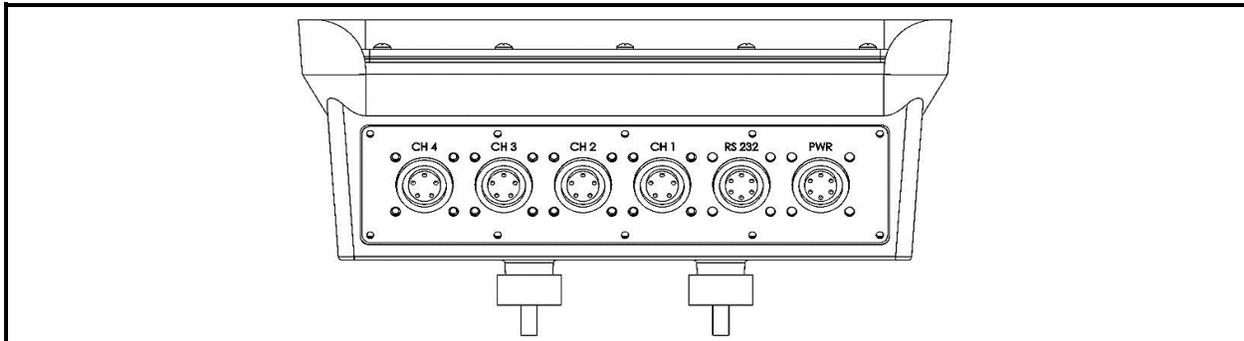
3 INPUT OPTIONS



1CH 3 Input (MIL 5-pos socket) / RS232 (MIL 6-pos socket) / Power (MIL 6-pos socket)

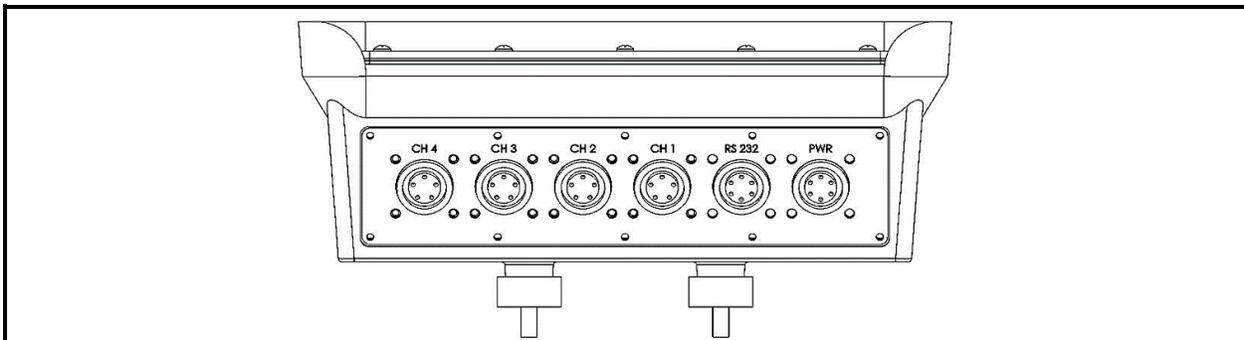
CH 3		CH 2		CH 1		RS232		PWR
A	-SIG	A	-SIG	A	-SIG	A	12V SWITCHED	+12V INPUT
B	+EXC	B	+EXC	B	+EXC	B	GND	GND
C	+SIG	C	+SIG	C	+SIG	C	RS232 TX	N/A
D	-EXC	D	-EXC	D	-EXC	D	RS232 GND	N/A
E	-SHIELD	E	-SHIELD	E	-SHIELD	E	N/A	N/A
						F	RS232 GND	N/A

4 INPUT OPTIONS



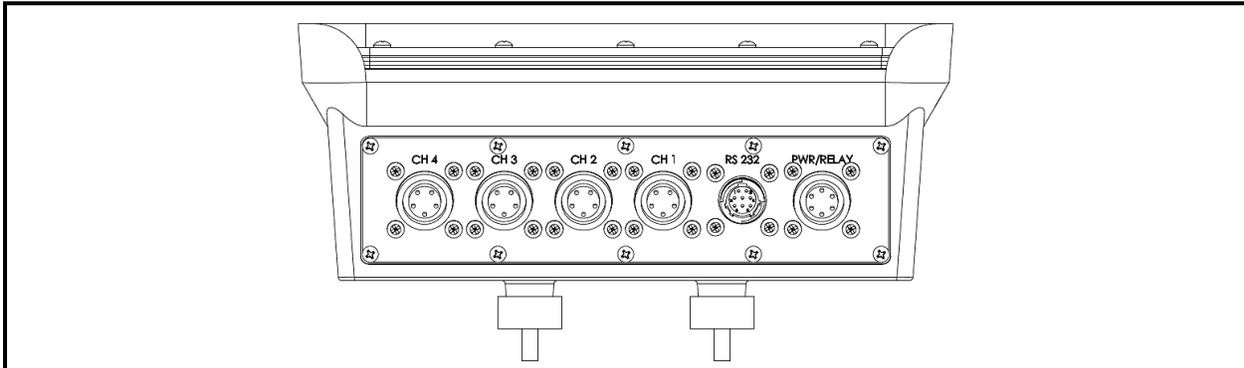
1CH 4 Input (MIL 5-pos socket) / RS232 (MIL 6-pos socket) / Power & Relay (MIL 6-pos socket)

CH 4		CH 3		CH 2		CH 1		RS232		PWR	
A	-SIG	A	-SIG	A	-SIG	A	-SIG	A	12V SWITCHED	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	RELAY 1
D	-EXC	D	-EXC	D	-EXC	D	-EXC	D	RS232 GND	D	INPUT 1
E	-SHIELD	E	-SHIELD	E	-SHIELD	E	-SHIELD	E	N/A	E	RELAY 2
								F	N/A	F	INPUT 2



1CH 4 Input (MIL 5-pos socket) / RS232 (MIL 6-pos socket) / Power (MIL 6-pos socket)

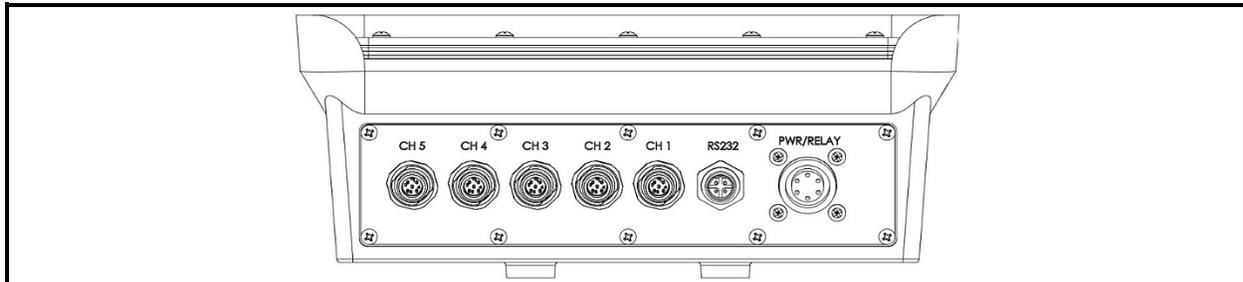
CH 4		CH 3		CH 2		CH 1		RS232		PWR	
A	-SIG	A	-SIG	A	-SIG	A	-SIG	A	12V SWITCHED	A	+12V INPUT
B	+EXC	B	+EXC	B	+EXC	B	+EXC	B	GND	B	GND
C	+SIG	C	+SIG	C	+SIG	C	+SIG	C	RS232 TX	C	RS485-A
D	-EXC	D	-EXC	D	-EXC	D	-EXC	D	RS232 GND	D	RS485-B
E	-SHIELD	E	-SHIELD	E	-SHIELD	E	-SHIELD	E	N/A	E	N/A
								F	N/A	F	N/A



1CH 4 Input (MIL 5-pos socket) / RS232 (AMP 8-pin plug) / Power & Relay x 2 (MIL, 6-pos socket)

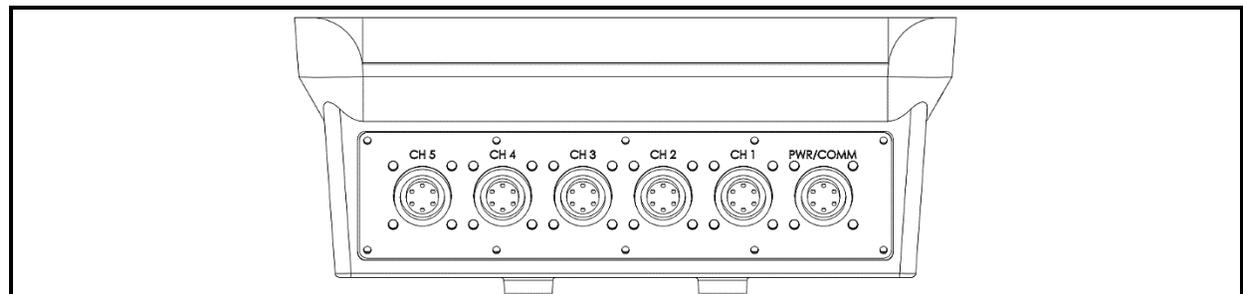
CH 4		CH 3		CH 2		CH 1		RS232		PWR/RELAY	
A	-SIG	A	-SIG	A	-SIG	A	-SIG	1	N/A	A	+12V INPUT
B	+EXC	B	+EXC	B	+EXC	B	+EXC	2	RS232 TX	B	GND
C	+SIG	C	+SIG	C	+SIG	C	+SIG	3	N/A	C	RELAY 1
D	-EXC	D	-EXC	D	-EXC	D	-EXC	4	RS232 RX	D	INPUT 1
E	-SHIELD	E	-SHIELD	E	-SHIELD	E	-SHIELD	5	GND	E	RELAY 2
								6	GND	F	INPUT 2
								7	+12V SWITCHED		
								8	+12V SWITCHED		

5 INPUT OPTIONS



1CH 5 Input (M12 5-pin plug or M12 5-pos socket) / RS232 (M12 4-pin plug) / Power & Relay x 2 (MIL 6-pos socket)

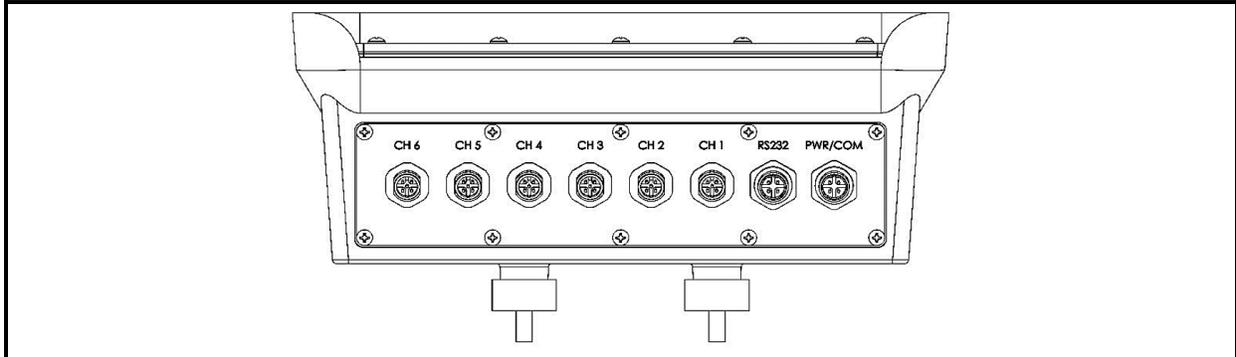
CH 5		CH 4		CH 3		CH 2		CH 1		RS232		PWR/COMM	
1	+EXC	1	RS232 TX	A	+12V INPUT								
2	+SIG	2	N/A	B	GND								
3	-SIG	3	RS232 GND	C	RELAY 1								
4	-EXC	4	12V Switched	D	INPUT 1								
MID	SHIELD			E	RELAY 2								
												F	INPUT 2



1CH 5 Input (MIL 5-pos socket) / Power & Relay & RS232 (MIL 6-pos socket)

CH 5		CH 4		CH 3		CH 2		CH 1		PWR/COMM	
A	-SIG	A	+12V INPUT								
B	+EXC	B	GND								
C	+SIG	C	RELAY 1								
D	-EXC	D	INPUT 1								
E	-SHIELD	E	RS232 TX								
										F	RS232 GND

6 INPUT OPTIONS



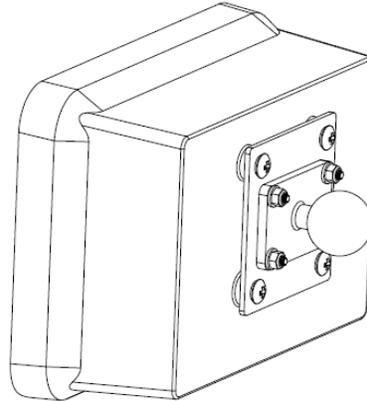
6CH (M12 5-pos socket) / RS232 (M12 4-pin plug) / Power/COM-RS485 (M12 4-pin plug)

CH 6		CH 5		CH 4		RS232		PWR/COM		Alt w/ Relay Output	
1	+EXC	1	+EXC	1	+EXC	1	RS232 TX	1	+12V INPUT	1	RS232 TX
2	+SIG	2	+SIG	2	+SIG	2	N/A	2	GND	2	Relay OUT
3	-SIG	3	-SIG	3	-SIG	3	RS232 GND	3	RS485 A	3	RS232 GND
4	-EXC	4	-EXC	4	-EXC	4	+12V Switched	4	RS485 B	4	Relay GND
MID	SHIELD	MID	SHIELD	MID	SHIELD						
CH 3		CH 2		CH 1							
1	+EXC	1	+EXC	1	+EXC						
2	+SIG	2	+SIG	2	+SIG						
3	-SIG	3	-SIG	3	-SIG						
4	-EXC	4	-EXC	4	-EXC						
MID	SHIELD	MID	SHIELD	MID	SHIELD						

ACCESSORY OPTIONS

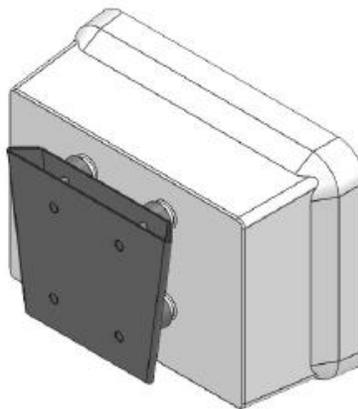
RAM MOUNT

An optional ram style mount is available for securing the LD720 Indicator to a mounting point on a vehicle or tender. The mount is installed on the rear of the indicator. Refer to part number 137258.



WEDGE MOUNT

An optional wedge style mount is available for securing the LD720 Indicator to a mounting point on a vehicle or tender. The mount is installed on the rear of the indicator. Refer to part number 137073.



EU DECLARATION OF CONFORMITY



Product Description: LD720™ Indicator

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

Declare under the sole responsibility of Intercomp Company that the LD720™ Indicator to which this declaration relates is in conformity with the relevant Union harmonization legislation, and 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.

Directive 2001/95/EC	On general product safety
Directive 2014/30/EU	Electromagnetic Compatibility (EMCD) Directive
BS EN 55011:2016+A2:2021	Industrial, scientific and medical equipment; Radio-frequency disturbance characteristics
EN61000-6-1:2019	Generic standards, Residential, commercial and light industry environment
EN 61000-6-2:2019	Immunity for industrial environments
EN 61000-6-3:2020	Emission standard for residential, commercial and light-industrial environments
EN 62311:2020	Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz - 300 GHz)
Directive 2014/53/EU	Radio Equipment Directive (RED)
EN 300 328 V2.2.2 (2019)	Wideband transmission systems
Directive 2015/863/EU	on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS 3)
Directive 2012/19/EU	on waste electrical and electronic equipment (WEEE)
45501:2015	Metrological aspects of non-automatic weighing instruments

The safety issues of this measurement equipment have been evaluated under the self-certification provisions of the relevant directives. This product complies with all safety-relevant provisions referring to protection against electrical hazards and other hazards, such as mechanical hazards, fire hazards, noise, and vibration.

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

Signed for and on the behalf of Intercomp Company:



Mark Browne / Quality Manager
Medina, Minnesota USA
June 19, 2024

SERVICE CONTACT INFORMATION

For service and support, contact your Equipment OEM or Local Dealer.

Inform the Service Department the product is an AG Scale System.

Be prepared to provide the following information:

1. Serial Number(s) of the System and/or Components.
2. Date the system was purchased.
3. Location where the system was purchased.

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Corporate Office

3839 County Road 116
Medina, MN 55340 U.S.A.
Telephone: 1-763-476-2531
Toll Free: 1-800-328-3336
Fax: 1-763-476-2613
www.intercompcompany.com

Intercomp Service Department

3839 County Road 116
Medina, MN 55340 U.S.A.
Telephone: 1-763-476-2531
Toll Free: 1-800-328-3336
Fax: 1-763-476-2613