

5 October 2010

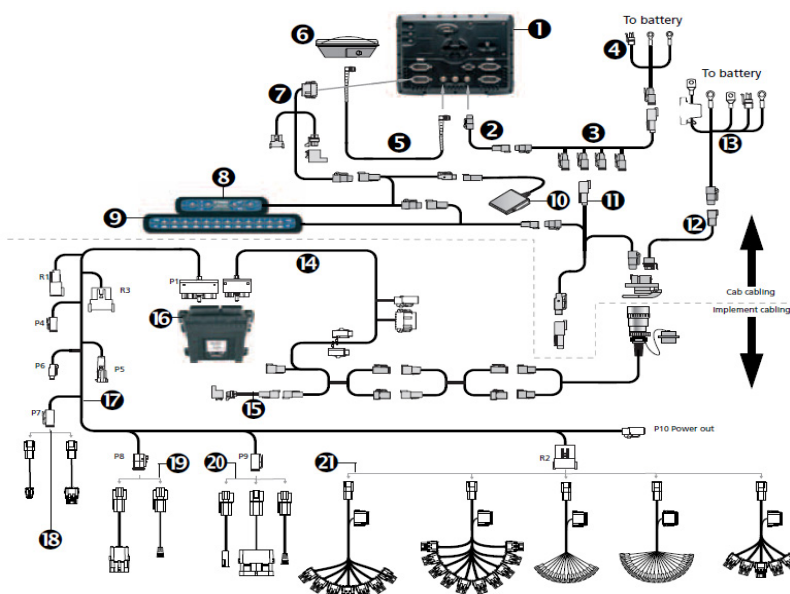
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Field-IQ Crop Input Control System: For Sprayers and Spreaders

This document describes the Trimble® Field-IQ™ crop input control system for sprayers and spreaders.

Cabling

The figure below is an example of the Field-IQ cabling. For a specific cabling diagram, refer to the particular platform installation instructions or the display cabling guide.



Item	Description	Trimble P/N
1	FmX [®] integrated display	93100-01
2	FmX power cable	66694
3	Power bus	67259
4	Basic power cable	67258
5	8 m GPS TNC/TNC RT angle cable	50449
6	Ag25 GNSS antenna	68040-00

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Item	Description	Trimble P/N
7	Display to Field-IQ cable	75834
8	Field-IQ master switch box	75050-01
9	Field-IQ 12-section switch box	75060-10
10	Optional: Remote foot switch	60490
11	Cab to hitch CAN cable	77368
12	IBRC to DPT adapter cable	77413
13	Power to cab cable	76941
14	Power/CANbus harness	75526
15	Field-IQ implement terminator adapter	75529
16	Rate and section control module	75774-00
17	Implement sensor harness	80540
18	Pressure sensor cable: - Field-IQ to Raven flowmeter - Field-IQ to Dickey-john pressure sensor adapter	80583 80575
19	Flow meter cable: - Field-IQ to Raven flowmeter adapter - Field-IQ to Dickey-john encode/flowmeter	80584 80539
20	Flow control adapter cable: - Field-IQ to Raven Fast Valve - Field-IQ to Raven control valve adapter - Field-IQ to Dickey-john control valve - Field-IQ to Dickey-john control valve adapter	80534 80586 80531 80960
21	Section valve adapter cable: - Field-IQ 5 boom adapter - Field-IQ 10 boom adapter - Raven 7 boom adapter - Raven 10 boom adapter	80587 80961 77541 78225

Definitions

Item	Definition or action
Application Type	Select the Field-IQ application type: Liquid Fertilizer, Granular Fertilizer, or Anhydrous.
Boom Switching	<ul style="list-style-type: none"> - When the Field-IQ system is controlling boom sections, select <i>On</i>. This enables you to adjust settings on the boom tab and the sections tab. - When the Field-IQ system is controlling rate only, select <i>Off</i>.
Rate Control	<ul style="list-style-type: none"> - Select <i>On</i> to have the Field-IQ system set the target application rate. - Select <i>Off</i> for boom switching only. The Rate and Tank/Bin tabs are unavailable when Rate Control is off.
Implement Lift	<ul style="list-style-type: none"> - Select <i>Enabled</i> for the system to use the implement lift to start and stop the application. - Select <i>Disabled</i> for the system to ignore the implement lift switch. Use this only when an implement switch is installed. If implement lift is enabled, you must calibrate it in the calibration screen.
Section Control Type	Select the control type: Air Clutch, Electric Clutch, Boom Valve, or LiquiBlock.

Item	Definition or action
Sections Off When Stopped	<ul style="list-style-type: none"> - Select <i>Yes</i> to automatically turn off sections when the vehicle is stopped. - Select <i>No</i> to keep sections on when stopped. <p>Typically, select <i>Yes</i> for liquid applications, select <i>No</i> when using Tru Count clutches.</p>
On/Off Latency	<p>Hardware delays may cause an application to start or stop a few seconds late. This setting enables you adjust for these delays.</p> <ul style="list-style-type: none"> - On Latency: Measure the time it takes for the system to reach the correct rate after it is switched on. Enter this value in seconds (0.0 – 10). Adjust <i>On Latency</i> to ensure that the system is applying at the correct time you move into an uncovered part of the field. - Off Latency: Measure the time it takes for the system to stop applying once it is switched off. Enter this value in seconds (0.0 – 10). Adjust Off Latency to ensure that the system is fully switched off at the moment you cross into an already covered area.
Rate 1	Controls the volume that the implement supplies when the Rate switch is in position 1.
Rate 2	Controls the volume that the implement supplies when the Rate switch is in position 2.
Rate Adjustment	When the Rate switch is in the Rate 1 or Rate 2 position, the current application rate increases or decreases by this amount each time you press the Rate adjustment (increment/decrement) switch on the master switch box.
Rate Snapping	<p>Due to pump constraints, liquid flow generally is inconsistent with the information on the display; enable this for a more steady reading of the applied rate.</p> <ul style="list-style-type: none"> - Enabled: Matches the applied rate to the target rate when within 10% of the value. - Disabled: Shows all fluctuations in the actual applied rate.
Density	Used in the system setup and calibration to ensure accuracy in applying the product. When changing materials for different operations, update this field with the correct material density.
Tank/Bin Capacity	<p>The amount the tank/bin holds when full.</p> <p><i>Note: Markings on tank/bin may not be accurate.</i></p>
Bin Level Sensor	<p>Disabled, Empty High (12 volts), or Empty Low (0 volts).</p> <p>If you have a bin level sensor, indicate which voltage reading will be empty.</p>
Warning Level	A warning appears on the screen when the tank/bin reaches a set threshold.
Current Volume	Quantity of product in the tank.
Spinner Pulses Per Revolution	Enter the number of magnetic pick up points per revolution.
Refill Tank/Bin	Refills the tank/bin to capacity.
Manual Flush	Manually allows you to flush out the tank and boom sections. This opens the boom valves and control valve to allow flow.
Jump Start Speed	<p>A manual override option to operate the system when the vehicle is stationary.</p> <p>Also used when GPS is unavailable.</p>
Minimum Override Speed	<p>Hold the operating speed at a preset minimum to prevent the control system from dropping below a controllable rate or pressure when driving at a slower speed.</p> <p>Commonly used to prevent spray nozzles from dropping to a pressure where they would not have an effective spray pattern.</p>
Gate Height	Enter the gate height opening of the spreader. Measure the distance from the bottom of the gate to the top of the spreader belt.
Pump Servo	To achieve rate control, the EZ-Boom [®] system sends speed changes to the solution pump. This setting controls an electric motor that activates a hydraulic valve, which then adjusts the hydraulic flow to the pump. This valve adjusts the application rate indirectly.

Item	Definition or action
PWM	To achieve rate control, the EZ-Boom system sends speed changes to the solution pump. This setting controls an electric solenoid valve that adjusts the hydraulic flow to the pump. This valve adjusts the application rate indirectly.
Fast Servo	A four-wire electric motor turns a ball or butterfly valve to increase or decrease flow. For example, DICKEY-john servo, Mid-Tech servo, or Raven Fast Valve.
Servo	A two-wire electric motor turns a ball or butterfly valve to increase or decrease flow. For example, Raven standard servo.
Hardi % bypass scenario	Most commonly used on Hardi sprayers equipped with three-way section valves that return the flow to the tank when the boom section is off.
Inline	This valve is in the solution line going to the boom. It opens to increase the application rate.
Bypass	This valve is in the Return to Tank line. It closes to increase the application rate.
Auxiliary Valve	An auxiliary valve is placed after the control valve and is activated when the system is turned off and on. <ul style="list-style-type: none"> - Master: Valve closes when the system is turned off. - Dump: Valve opens to dump flow to the return line when the system is turned off.
Pump Disarming Switch	If the applicator is equipped with a pump disarming switch that is connected to the controller, this enables a tab on the run screen to turn the pump on and off.
Gain	Adjusts the speed response of the control drive. <ul style="list-style-type: none"> - Higher values: Faster response - Lower values: Slower response
Minimum Response	Minimum command applied to the valve to initially open the valve. This valve command overcomes the resistance of the control drive hardware.
Allowable Error	The percentage of target rate that the control system accepts. When the error is greater, the drive starts to be commanded. Too low a value causes excessive valve oscillation.
Valve Behavior on Zero Flow:	<ul style="list-style-type: none"> - Close: When all sections are off, the control valve returns to the closed position. - Lock in Last Position: When all sections are off, the control valve remains in the last position. This setting allows the system to return to the target rate faster. - Minimum Flow: This setting prevents the system from going below the physical limits of the control valve or flow meter.

Calibration

This section describes how to calibrate the Field-IQ control valve.

1. Enter the correct valve type and flow meter constant into the system, select the values for Gain, Allowable Error, and Minimum Response and enter them in the appropriate valve calibration area. See the following list of [Supported platforms](#).
2. In the Field-IQ diagnostics screen, do the following:
 - a. Set the target speed.
 - b. Select *Rate 1* or *Rate 2* on the Field-IQ master switchbox.
 - c. Touch each of the section tabs to enable the boom sections.
 - d. Turn on the master switch.

The sprayer begins applying material at the selected speed and rate.

Change rates and speeds to determine the performance of the system. If the system does not perform satisfactorily, use the following settings to tune it.

Setting	Description	When to adjust
Gain	Adjusts the speed at which the valve responds. If the gain is too high, the valve overshoots the target rate, resulting in a fluctuation in flow. If the gain is too low, the system takes too long to respond to rate and speed changes.	<ul style="list-style-type: none"> - Decrease if the applied rate is fluctuating rapidly and overshooting the target rate. Lower the setting until the system is holding within the allowable error and then fine tune the system by adjusting the minimum response and allowable error. - Increase if the system is slow to adjust for rate or speed changes. Raise the value until the system quickly changes from one rate to another without overshooting. <p>Use the allowable error and minimum response to fine tune the system performance when close to the target rate.</p>
Minimum Response	On a servo valve, this value sets the minimum rate the valve will move at when a command is sent. When a PWM valve is selected, it is the minimum starting point required for the pump to produce flow. If this setting is too high, it can cause the flow rate to overshoot the target rate and then oscillate. If the setting is too low, the valve may not respond, allowing the flow to stay above or below the target rate.	<ul style="list-style-type: none"> - Decrease when the system is holding close to within the allowable error, but is oscillating across the target rate. Lower the value to allow the valve to adjust in smaller increments, and therefore reach the required rate. If the rate is oscillating much more than the allowable error, lower the gain setting. - Increase when the system is holding outside the allowable error. Raise the value until the system adjusts the rate, but does not overshoot or oscillate. <p>If the valve begins to overshoot the target rate after you raise the minimum response to get the valve to adjust, increase the gain setting and then readjust the minimum response.</p>
Allowable Error	Sets the “dead zone” for the valve. When the flow rate is within the allowable error, the Field-IQ system will not send an open/close command. Once the flow rate is outside the allowable error, the system will send a command to open or close the valve to correct the flow rate. If you set this too low, the valve may be overly active around the target rate. If you set this too high, the system will not maintain an acceptable flow rate.	<ul style="list-style-type: none"> - Decrease when the flow rate is not maintaining the flow rate as close to the target as required. Lower the value until the system will steadily hold an acceptable rate. If the system continues to hold off rate, adjust the minimum response. - Increase when the flow rate is fluctuating. If the allowable error is too low, the system will be overactive and will not “settle” on a rate. Raise the value until the rate will steadily hold an acceptable rate. If the system will still not hold a steady rate, adjust the minimum response.

Supported platforms

Valve Type	Control Valve	Recommended Field-IQ Values		Minimum Response
		Gain	Allowable Error	
Raven 3/4 in (Standard)	Inline or Bypass	34	2	20
Raven 1 in (Standard)	Inline or Bypass	17	2	20

Valve Type	Control Valve	Recommended Field-IQ Values		Minimum Response
		Gain	Allowable Error	
Raven 1-1/2 in (Standard)	Inline or Bypass	22	2	20
Raven Accu-Flow - 20 GPM - Two Valve System (Standard Valve)	Inline Servo	13	2	20
Raven Accu-Flow - 30 GPM - Two Valve System (Standard Valve)	Inline Servo	13	2	20
Raven 2 in (Standard)	Inline or Bypass	8	2	20
Raven 3 in (Standard)	Inline or Bypass	4	2	20
Raven Accu-Flow - 20 GPM - Single Valve System (Fast Valve)	Inline Servo	5	2	8
Raven Accu-Flow - 30 GPM - Single Valve System (Fast Valve)	Inline Servo	5	2	8
Raven 3/4 in (Fast)	Inline or Bypass	3	2	8
Raven 1 in (Fast)	Inline or Bypass	3	2	8
Mid-Tech -- 3/4 in	Inline or Bypass	1	2	8
Mid-Tech -- 1 in	Inline or Bypass	1	2	8
Dickey-John NH3 Heat Exchanger	Inline Servo	5	2	8
Mid-Tech -- 1-1/2 in	Inline or Bypass	1	2	8
Raven 2 in (Fast)	Inline or Bypass	2	2	8
Mid-Tech -- 2 in	Inline or Bypass	2	2	8
Case IH SPX 4260 without AIM (Standard Raven Butterfly Valve) 2008 and earlier	Inline Servo	19	2	20

Valve Type	Control Valve	Recommended Field-IQ Values		Minimum Response
		Gain	Allowable Error	
Case IH SPX 3150 without AIM (Standard Raven Butterfly Valve) 2008 and earlier	Inline Servo	19	2	20
Case IH SPX 3185 without AIM (Standard Raven Butterfly Valve) 2008 and earlier	Inline Servo	19	2	20
Case IH SPX 3200 with AIM 2008 and earlier	Inline Servo	19	2	20
Case IH SPX 4260 with AIM 2008 and earlier	Inline Servo	19	2	20
Case IH SPX 3150 with AIM 2008 and earlier	Inline Servo	19	2	20
Case IH SPX 3185 with AIM 2008 and earlier	Inline Servo	19	2	20
Case IH SPX 3310 with AIM 2008 and earlier	Inline Servo	11	2	20
Case IH SPX 4410 with AIM 2008 and earlier	Inline Servo	11	2	20
Tyler Patriot with Raven Controller (Standard Raven Butterfly Valve)	Inline or Bypass	21	22	20
Tyler Patriot II with Raven Controller (Standard Raven Butterfly Valve)	Inline or Bypass	21	2	20
Tyler Patriot XL with Raven Controller (Standard Raven Butterfly Valve)	Inline or Bypass	21	2	20
Tyler Patriot 150 (XL) with Raven Controller (Standard Raven Butterfly Valve)	Inline or Bypass	21	2	20

Valve Type	Control Valve	Recommended Field-IQ Values		Minimum Response
		Gain	Allowable Error	
Tyler Patriot WT with Raven Controller (Standard Raven Butterfly Valve)	Inline or Bypass	21	2	20
Hagie 284, 284xp, DTS 8 - Raven Butterfly valve (Standard)	Pump Servo	21	2	20
Nitro N1 (all 2200 models) (Standard Raven Hydraulic servo Valve), N2	Pump Servo	3	2	20
Hagie STS 10/12 Model year 2005 Raven 30 GPM Hydraulic valve (Standard)	Pump Servo	16	2	20
Hagie 2100, 2101, DTS 10 - Raven 16 GPM Hydraulic valve (Standard)	Pump Servo	16	2	20
Case IH SPX 3200 without AIM (KZKCO Valve)	Bypass Servo	5	2	8
Case IH SPX 4260 without AIM (KZKCO Valve)	Bypass Servo	5	2	8
Case SPX 2009 and later w/o AIM	PWM	76	3	30
Case SPX 2009 and later w/ AIM	Pump PWM set up as Inline Servo because of AIM command	11	3	24
Househam	Inline Servo	8	3	5
Gold Acres	Inline Servo	2	2	0.5
JVV Sonic Boom Spray	Bypass Servo	5	2.5	2
Miller Nitro	Pump Servo	20	2	24

Valve Type	Control Valve	Recommended Field-IQ Values		Minimum Response
		Gain	Allowable Error	
Hardi Sprayer	Bypass Servo	200	4	0
Landaco Spreader	PWM	33	2	33

Troubleshooting

Message in the FmX UI	Explanation
Field-IQ devices not found - check implement selection - check cabling and fuses - check Field-IQ Diagnostics to identify missing modules - check Field-IQ Setup	
New Field-IQ devices need configuring Please go to the Field-IQ Setup	One or more Field-IQ devices are not configured in the Field-IQ Setup screen.
The Master Switch Box has been disconnected %PLUGIN_NAME% has been shut down.	The Field-IQ system cannot be used without the master switch box.
The 12 Section Switch Box has been disconnected Sections will be controlled automatically.	The Field-IQ system can operate without the 12-section switch box. Section switching will depend only on existing coverage, field boundaries, and exclusion zones. To get on-screen buttons for controlling sections, cycle power to the FmX display.
One or more %PLUGIN_NAME% devices were disconnected	
Rate not achievable For current target rate, the maximum speed is XX mph.	The target application rate cannot be achieved within the configured maximum RPM at the current speed. The Field-IQ system is limiting the RPM to the configured maximum.
Target rate may not be achieved For current target rate, the minimum speed is XX mph.	At the current speed and target application rate, the required RPM is below the configured minimum RPM limit. The Field-IQ system is attempting to run at the required RPM but the application rate may vary.
The current coverage pattern will degrade system performance.	A "combing" coverage pattern is being generated because of a mix of on and off boom sections. This causes generation of many coverage polygons, possibly leading to degraded system performance.
Hydraulic motor overspeed	The hydraulic motor is not running at the commanded speed.
Hydraulic motor underspeed	
Rate control stopped due to hydraulic motor overspeed	
Rate control stopped due to hydraulic motor underspeed	
Hydraulic motor stalled Rate control has been disabled. Toggle the master switch to re-enable rate control.	

Message in the FmX UI	Explanation
Check the hydraulic motor It ran too fast	The hydraulic motor is not running at the commanded speed
Rate control width mismatched to multiples of row width Please check your configuration	The rate control width does not align to a multiple of the row width.
Degraded GPS Automatic section control has been disabled. Use switches to control sections.	The GPS positions are uncorrected. Due to potential inaccuracy of the positions, the Field-IQ system will not switch the boom sections automatically. You must control the sections manually through the switches.
No GPS Automatic rate and section control has been disabled. Please maintain speed at XX mph.	The Field-IQ system is no longer adjusting the application rate. You are prompted to maintain the current speed. The last sentence appears only if the master switch was on at the time of the warning.
Tank/bin level is getting low.	
Using jump start speed Please maintain speed at XX mph	The GPS speed has been overridden with the jump start speed. You must drive at that speed to maintain the current target application rate.
A power brown-out has occurred - check cabling and fuses - check power supply	
Section controller reported over-current Possible causes: - controller is drawing too much current; - there is an electrical short somewhere. Section and rate control have been disabled. Toggle the master switch to re-enable control.	
Rate and Section Control Module Not Configured Please set the number of nozzles in the %PLUGIN_NAME% Setup	
Controller Requires Valve Calibration	Go to the Valve Calibration screen to set the valve type.
Unable to configure controller Recommended action: - check firmware versions - report this fault to Trimble Support	The Field-IQ system cannot apply the configured settings to the rate and section control module. This is probably due to a firmware mismatch or comms failure.
Sprayer configuration error Check the settings on the Valve Calibration screen	The valve type, plumbing, or auxiliary valve setting is incorrect.
Flow meter configuration error Check the flow meter calibration	The flow meter number has not been set.
Shaft encoder configuration error Check the Shaft Encoder Constant in the Flow Calibration screen	The shaft encoder constant has not been set.
Valve configuration error Check the valve calibration	The valve settings are not valid for the selected valve type.
Unknown %PLUGIN_NAME% configuration error Recommended action: - check firmware versions - report this fault to Trimble Support	This message appears if the FmX display does not understand the fault code that was received from the rate and section control module.
No flow detected	The Field-IQ system attempted to apply material, but the flow

Message in the FmX UI	Explanation
Possible causes: - incorrect flow calibration - damaged or disconnected feedback sensor - broken valve wiring	sensor failed to detect any flow.
Attention Minimum flow XX gal/min is applying	The current target application rate and speed require a flow that is less than the configured minimum flow limit. The flow will be at that limit instead. Therefore, the actual applied rate will probably be above the target rate.
Rate not responding Verify correct setup on the Valve Calibration screen. Perform a valve calibration. Inspect feedback sensor and rate control valve for damage.	The flow sensor indicates that the actual flow is not changing as expected.
Unstable flow control - check the Plumbing setting on the Valve Calibration screen - reduce %PLUGIN_NAME% aggressiveness	The rate and section control module is having difficulty maintaining the target flow, possibly due to an incorrect setup.
Valve controller reported over-current Possible causes: - control valve is drawing too much current; - there is an electrical short somewhere.	
Valve drive fault	
Unknown valve error Recommended action: - check firmware versions - report this fault to Trimble Support	This message appears if the FmX display does not understand the fault code that was received from the rate and section control module. Probably due to incompatible firmware versions. Make sure that the correct firmware versions are installed on the FmX display, and the rate and section control module.
Unable to lock valve position An error occurred when attempting to lock the position of the control valve	Probably due to incompatible firmware versions. Make sure that the correct firmware versions are installed on the FmX display, and the rate and section control module.
Unable to start flow An error occurred when attempting to control the valve	
Failed to start plumbing calibration An error occurred when starting the plumbing calibration	
Failed to start range calibration An error occurred when starting the range calibration	
Failed to start gain calibration An error occurred when starting the gain calibration	
Failed to start breakout calibration An error occurred when starting the breakout calibration	
%PLUGIN_NAME% command error An error occurred when commanding the Rate and Section Control Module	
Plumbing calibration error Verify correct plumbing setup	A failure occurred during calibration, possibly due to an incorrect

Message in the FmX UI	Explanation
Range calibration error	configuration setting, or a wiring or plumbing problem.
Gain calibration error	
Breakout calibration error	
%PLUGIN_NAME% calibration error	
%PLUGIN_NAME% unknown internal error Recommended action: - check firmware versions - report this fault to Trimble Support	This message appears if the FmX display does not understand the fault code that was received from the rate and section control module. Probably due to incompatible firmware versions. Make sure that the correct firmware versions are installed on the FmX display, and the rate and section control module.
The second pressure entry must differ from the first Please enter a different pressure	The pressure calibration process requires calibration at two different pressures. This message indicates that you entered the same pressure twice. <i>Note - Zero is a valid pressure for calibration.</i>
No pressure change has been detected Please change the system pressure	The pressure calibration process requires calibration at two different pressures. This message indicates that the report from the pressure sensor did not change when the second reading was taken. The pressure in the system must be changed between readings, for example, by opening or closing a valve, or starting or stopping the pump. If this message persists after the pressure is changed, check the installation and wiring of the pressure sensor.
Invalid setup for flow calibration - check the Total Nozzles in the Boom tab in Field-IQ Setup - check the Width in the Hardware tab in Field-IQ Setup - check the flow meter number	
Invalid setup for granular calibration - check the Shaft Encoder Constant - check the Width in the Hardware tab in Field-IQ Setup	
The second gate height entry must differ from the first Please enter a different height	The gate height calibration process requires calibration at two different gate heights. This message indicates that you entered the same gate height twice. <i>Note - Zero is a valid gate height for calibration.</i>
No gate height change has been detected Please change the gate height	The gate height calibration process requires calibration at two different gate heights. This message indicates that the report from the gate height sensor did not change when the second reading was taken. The gate must be raised or lowered between readings. If this message persists after the gate is moved, check the installation and wiring of the gate height sensor.
Gate not open Please open the gate	The Field-IQ system is attempting to dispense material, but the gate height sensor indicates that the gate is closed, or if the gate height sensor is disabled, you did not enter a non-zero gate height. Open the gate, or enter a non-zero gate height. If the gate is already open, check the installation and wiring of the gate height sensor.
The spinner pulses per revolution setting is invalid Please check the spinner sensor setup	

Message in the FmX UI	Explanation
The tank/bin is empty Please refill tank/bin	The tank/bin level sensor has reported that the tank/bin is empty. If this is incorrect, check the tank/bin sensor installation and wiring.
Valve Calibration Not Started The vehicle is moving too slow to begin the automatic valve calibration. Increase the speed of the vehicle and start the valve calibration again.	This appears only during auto valve calibration, which is not available in FmX firmware version 4.0. For safety reasons, when running an auto valve calibration for anhydrous, the vehicle must be moving at a speed of at least 2 mph. If the vehicle speed is above 2 mph, check that the FmX display is receiving valid GPS positions.
Valve Calibration Failed The vehicle is moving too slow to continue the automatic valve calibration. Increase the speed of the vehicle and start the valve calibration again.	
Please turn off the master switch	The Field-IQ system is in a mode in which material application is not expected. It is asking for the master switch to be turned off to make the system safe.
NH3 is an irritant and corrosive to the skin, eyes, respiratory tract and mucous membranes and is dangerous if not handled properly. May cause severe burns to the eyes, lungs and skin. Skin and respiratory related diseases could be aggravated by exposure. It is recommended that protective gloves, boots, slicker and/or pants and jacket, and chemical-splash goggles that are impervious to anhydrous ammonia are worn at all times.	The application type is set to Anhydrous
Application width is different from the control width. Please visit Field-IQ setup to reconfigure settings.	The total of the rate controller widths in the Hardware tab of the Field-IQ Setup must match the application width in the Implement Setup. A difference of about 0.4 inches is tolerated.
Application width is different from the control and section width. Do you want the control and section width to be automatically adjusted to match the application width?	This message could appear when you exit the Field-IQ Setup. The total of the rate controller widths in the Hardware tab of the Field-IQ Setup must match the application width in the Implement Setup. A difference of about 0.4 inches is tolerated.
Please select your NH3 unit	This messages appears if the application type is anhydrous and you attempt to exit the Field-IQ Setup without selecting the Anhydrous Units type ("lbs Actual N" or "lbs NH3") in the Features tab.
The total number of rows assigned to sections (XX) exceeds the number of rows on the implement (XX) Press Continue to exit the Field-IQ Setup or press Edit to edit the row assignments.	This message could appear when you exit the Field-IQ Setup. The total of the numbers in the fields in the Sections tab exceeds the number of rows configured in the Implement Setup.
XX implement rows are not assigned to sections Press Continue to exit the Field-IQ Setup or press Edit to edit the row assignments.	
Sections assigned to switches (XX) does not match implement (XX).	
Sections assigned to switches (XX) does not match section controller setup (XX).	

Message in the FmX UI	Explanation
The number of nozzles must not be less than the total number of sections.	This message could appear when you exit the Field-IQ Setup. The total number of sections in the Hardware tab exceeds the Total Nozzles setting in the Rate tab. There must be at least as many nozzles as sections.
Some devices have not been identified by serial number.	This message appears when you exit the Field-IQ Setup, if one or more of the serial number selection fields in the Hardware tab has no serial number selected.
None of the expected %PLUGIN_NAME% devices were found on the implement. Do you want to switch to another implement configuration?	The rate and/or section controllers that are identified in the current Field-IQ configuration were not detected on the CAN bus.
None of the configured %PLUGIN_NAME% devices are connected. Do you want to remove all of the missing devices from the %PLUGIN_NAME% hardware configuration?	The rate and/or section controllers that are identified in the current Field-IQ configuration were not detected on the CAN bus.
nnnnn Control Module (S/N 123456789A) was not found. Has it been replaced by nnnnn Control Module (S/N 123456789A)?	One of the modules listed in the Field-IQ configuration was not found on the CAN bus. The Field-IQ system has detected an unconfigured module that would be a suitable replacement. If you select <i>Yes</i> , the new module is substituted for the missing module. <i>nnnnn</i> could be any of "Rate", "Section", or "Rate and Section".
nnnnn Control Module (S/N 123456789A) was not found. Do you want to remove it from the configuration?	One of the modules listed in the Field-IQ configuration was not found on the CAN bus and no acceptable replacement module was detected. <i>nnnnn</i> could be any of "Rate", "Section", or "Rate and Section".
Too many nnnnn Control Modules The maximum number of nnnnn Control Modules that can be used with %PLUGIN_NAME% is 4	No more than four rate/section/rate and section control modules can be used with the Field-IQ system.
Fence nozzle is enabled The configured sections exceed the maximum that is supported Please reduce the number of sections	<ul style="list-style-type: none"> - If the left fence nozzle is enabled in the Sections tab of the Field-IQ Setup, the leftmost section controller must not have more than 11 sections. - If the right fence nozzle is enabled in the Sections tab of the Field-IQ Setup, the rightmost section controller must not have more than 11 sections.
Cannot flush because the system is not calibrated.	This message appears if you try to use the Manual Flush button in the Tank/Bin tab of the Field-IQ Setup when a rate controller is not yet calibrated.
Rate and Section Control Module and Rawson Control Module can not be present at the same time. Please disconnect either device before continuing setup.	When using multiple rate controllers, they must all be of the same type.
Field-IQ has been disabled Rate and Section Control Module and Rawson Control Module can not be present at the same time.	

Message in the FmX UI	Explanation
Field-IQ has been disabled One or more of the Field-IQ devices requires calibration	Go to the calibration screen to calibrate a controller.
Please enter a valid flowmeter calibration constant	The flow meter constant must be greater than zero.
Weighed NH3 (End) must be less than Weighed NH3 (Start).	This appears during anhydrous flow calibration. The process requires you to enter the weighed amounts of NH3 at the start and end of a run. If this warning appears, it is likely that you transposed the two amounts.
No target rate The flush cannot be performed until a target rate has been set Please select a target rate	This will appear if you try to flush when the current target rate is zero.
The calibration cannot be completed because the quantity dispensed is zero. Press Edit to edit the quantity or Restart to restart the calibration.	The granular flow calibration requires you to enter the amount that was dispensed. This message appears if the entered amount was zero.
Calibration Failed The flow calibration was cancelled	The granular calibration failed because you canceled the calibration or an error occurred.
Calibration Failed No flow was detected	The granular flow calibration failed because there were no pulses reported from the shaft encoder. Check that the shaft turns during calibration. Check the installation and wiring of the shaft encoder.
Calibration Failed No material was dispensed	The granular calibration failed because you entered zero for the actual amount of material dispensed.
The selected target rate and speed cannot be achieved. Reduce target speed or target rate.	This appears during granular calibration if the target rate and target speed that you entered require the shaft to turn faster than the maximum RPM that is set in the Limits tab in the flow calibration screen.
The selected target rate and speed may not be achieved. It is recommended that the target speed be increased. Do you want to continue?	This appears during granular calibration if the target rate and target speed that you entered require the shaft to turn slower than the minimum RPM that is set in the Limits tab in the flow calibration screen. If you choose to continue, the Field-IQ system tries to run the system below the minimum RPM limit.
The calibration constant changed significantly. For best results it is recommended that the calibration be repeated.	This warning appears at the end of the granular calibration process, if the calibration constant changed by more than 30%.
Motor failed to start	This message appears if the hydraulic motor fails to start during the Rawson Control Module Hydraulic Test.
Motor stopped unexpectedly	This message appears if the hydraulic motor stops unexpectedly during the Rawson Control Module Hydraulic Test.
The number of seeds dispensed did not match the number of seeds expected. Do you want to adjust the calibration constant in order to attain the target rate? Adjusting the calibration constant will alter the seed spacing.	This message may appear during calibration of a Rawson Control Module in a planter application. If the calibration test does not dispense the expected number of seeds, it is likely that the seed pick up is not operating perfectly. You can adjust the calibration constant to compensate for this but the seed spacing will be inconsistent where seeds are missed or doubled up.

Message in the FmX UI	Explanation
<p>Calibration Failed The motor failed to turn</p>	<p>This message appears if the hydraulic motor fails to turn during calibration of a Rawson Control Module.</p>
<p>Speed Too Low The vehicle is moving too slow for safe anhydrous application. Increase the speed of the vehicle.</p>	<p>For safety reasons, the Field-IQ system will not apply anhydrous in auto rate control mode at speeds below 2 mph. Either increase the speed or switch to manual mode.</p>