Quick Setup Guide for IntelliAg Model YP24 Twin Row Air Pro

The Quick Setup Guide assumes the Virtual Terminal, Master Switch, Working Set Master Module, Working Set Member Module, and all sensors have been connected and properly installed. Reference Operator’s manual for installation instructions. NOTE: The master switch is only required for hydraulic control systems. Reference the manual for instructions to assign a master switch as an auxiliary input.

STEP 1: Pre-Programming Preparation:
1. Power on via ignition switch to activate Virtual Terminal (VT). Main menu will display pre-programmed default settings.
2. If errors are detected (e.g., failed sensors, incorrect configuration) an alarm and code displays. Alarms are silenced by pressing the Alarm Cancel button. Refer to Operator’s manual for troubleshooting assistance.
3. The system has three user levels. The system loads in User Level 1 (operator level) at every power cycle. Access to User Level 2 and 3 screens to setup constants (system configuration) requires a password.

STEP 2: Change User Level to Dealer Level
To change the user level, a 6-digit password is required. Password includes the five-digit serial number found on the label of the Working Set Master or Information screen.

1. On the IntelliAg Main Work screen, press the Diagnostics button.
2. At the Diagnostics screen, press the Information button.
3. At the Information screen, record serial number of WSMT.
4. Press the Password button.
5. On the Password screen, enter the 6-digit password as follows: enter the first digit as 2 for User Level 2. The next five digits, enter the Working Set Master serial number taken from the WSMT or Information screen.
6. Press the OK button. “Dealer screens on” appears at the bottom of screen confirming the password and dealer screens are activated.
7. Press the Work Screen button to return to the Main Work screen.

STEP 3: Auto Configuration (Identifies sensors connected to each module)
Auto config is performed at the factory, but may need to be done in the field as changes are made to the system or if options are added to the base planter.

1. Verify Auto Config results are correct. Check that the correct number of rows are assigned to the correct module and number of hopper sensors are assigned accurately.

To Run Auto Config:
1. Press the Next Page button until the Module Configuration button appears.
2. Press the Module Configuration button.
3. Press the AUTO CONFIG button.
4. Hour glass will indicate system is being configured detecting the presence of seed or hopper sensors connected to each module and will be automatically assigned to the appropriate module.
5. When Auto Config completes, press the Row Assign button to display the Row Assignment screen to verify correct Row # is assigned to the correct module based on serial number.
6. Enter # of rows assigned to each module.

TABLE A: Row Status/Row Width Setup

<table>
<thead>
<tr>
<th>Default Value or Value to Enter</th>
<th>Instructions/Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>15&quot;</td>
<td>Enter row width in inches to calculate seed rate correctly. NOTE: Using 15&quot; planter in 30&quot; mode should change On/Off Pattern to Every 2nd Row Off.</td>
</tr>
<tr>
<td>Enabled</td>
<td>When enabled, implement width will automatically calculate. If disabled, manually enter implement width.</td>
</tr>
<tr>
<td>Every Row On</td>
<td>On/Off Pattern indicates specific row patterns to be on or off. Select pre-defined planter All Row On pattern. For other pre-defined planter patterns or individual row settings, reference Operator’s manual.</td>
</tr>
<tr>
<td>Every Row Population</td>
<td>Determines which sensors are used to calculate population and those used only for blockage detection. Select pre-defined Every Row Population. For other pre-defined patterns, reference Operator’s manual.</td>
</tr>
</tbody>
</table>

To proceed to channel setup screen.

STEP 4: Row Status/Row Width Setup
1. At the Row Assignment screen, press the Row I/O button.
2. Begin entering desired values using Table A as reference.
3. Press the Work Screen button when Row Status/Row Width configurations are complete to return to the Main Work screen.

STEP 5A: Material Configuration Setup (Controlled Hydraulic Drive)
15 different materials can be configured for use as planter controls. Reference the System Configuration section in the Operator’s manual for additional information.

1. At the Main Menu screen, press the Control Setup button.
2. Select and press one of the Material buttons (Material 1-15).
3. Enter desired values from Table B.
4. Press the Control Setup button to return to the Control Setup screen.
5. Repeat steps 2-4 for additional materials.
6. Press the Channel Setup button to proceed to channel setup screen.

<table>
<thead>
<tr>
<th>TABLE B1: Material Setup</th>
<th>Default Value/Value to Enter</th>
<th>Controlled Hydraulic Drive Instructions/Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matrl Label</td>
<td>Material Name can be customized to accurately define the material’s type. Creating a name allows for quick identification at the Control Setup screen.</td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>Desired type of application control channel being used for a specific material. The Material Type must correctly match the Control Type to be able to select Material from the Material Summary screen and operate properly.</td>
<td></td>
</tr>
<tr>
<td>Units</td>
<td>Automatically changes with the type of material application selected. Changes units for target application.</td>
<td></td>
</tr>
<tr>
<td>Preset Method</td>
<td>Enabled. Enables to adjust the Main Work screen Inc or Dec buttons. A Disabled Preset Method increases/decreases the target rate based on the % values set at the Material Setup screen.</td>
<td></td>
</tr>
<tr>
<td>Disc Low Limit (Air Pro)</td>
<td>Set to desired min seed disc RPM.</td>
<td></td>
</tr>
<tr>
<td>Disc High Limit (Air Pro)</td>
<td>Set to desired max seed disc RPM.</td>
<td></td>
</tr>
<tr>
<td>High Pop Alarm</td>
<td>This is the percentage above the target population of the planter channel if rows are assigned to the planter channel. If rows are not assigned to a planter, this is the percentage above average planter population for all unassigned rows.</td>
<td></td>
</tr>
<tr>
<td>Low Pop Alarm</td>
<td>This is the percentage below the target population of the planter channel if rows are assigned to the planter channel. If rows are not assigned to a planter channel, this is the percentage below average planter population for all unassigned rows.</td>
<td></td>
</tr>
<tr>
<td>Product Level Alarm</td>
<td>Sets the level to trigger an alarm alerting of low product levels. Entered value is an estimate in volume.</td>
<td></td>
</tr>
<tr>
<td>Row Fail Rate</td>
<td>Set to desired number of seeds per second to trigger seed sensor failure alarm.</td>
<td></td>
</tr>
</tbody>
</table>

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STEP 5B: Planter Control Channel Setup  
(Controlled Hydraulic Drive)

1. Select Channel 1 and verify that the channel is set to Planter Control.
2. Enter desired values using Table B2 as reference.
3. After planter control setup, calibrate hydraulic valve by pressing the Valve Cal button.
4. Ensure implement is raised. With brakes locked and transmission in PARK position, start engine.
5. Engage hydraulics and run engine at normal speed until hydraulic fluid is at operating temperature.
6. Verify point row clutches are turned ON.
7. Do NOT perform this step unless meters are installed in all locations across planter row units or drive damage will occur.
   Press the START button. Turn the master switch to the ON position.
   The valve calibration will immediately start. Keep the hydraulics engaged until the calibration completes.
8. When the screen indicates calibration is complete, press the Channel Setup button to return to Channel 1 home screen.
9. Turn the master switch OFF.
10. To set up additional control channels (planter or fertilizer control), press the Next Channel button.
11. Press the Work Screen button when channel configurations are complete to return to the Main Work screen.

Once a control channel has been established as Planter Control, any new materials established as Planter Control on the Material Setup screen will automatically be added as optional materials for Planter Control channels on the Control Setup screen.

STEP 6A: Material Configuration Setup (Split Air Regulation)
It is recommended that when setting a control channel for split air, the material name be created as “Air” to eliminate confusion between the actual material and the control used.

1. At the Main Menu screen, press the Control Setup button.
2. Press Material button 16 for Split Air Control.
3. Create Material Name as “Air”.
4. Enter desired values from Table C1.
5. Press the Channel Setup button to proceed to the Channel Setup screen.

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### Table B2: Planter Control Setup

<table>
<thead>
<tr>
<th>Material Name</th>
<th>Planter Control Setup</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Set desired Channel Type as Planter Control</td>
</tr>
</tbody>
</table>

### Table C1: Material Setup

<table>
<thead>
<tr>
<th>Type</th>
<th>Default Value/Value to Enter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Units</td>
<td>In Hz2O Oz in²</td>
</tr>
<tr>
<td>Preset Method</td>
<td>Disabled</td>
</tr>
<tr>
<td>Target Rate</td>
<td>2.00 Establishes the desired rate of application in inches of Hz2O.</td>
</tr>
<tr>
<td>Max Rate</td>
<td>5.00 Maximum application rate in inches of Hz2O.</td>
</tr>
<tr>
<td>Min Rate</td>
<td>1.00 Minimum application rate in inches of Hz2O.</td>
</tr>
<tr>
<td>Inc/Dec %</td>
<td>5% Percentage of change of the entered target rate applied each time the Increment/Decrement button is pressed on the Main Work screen.</td>
</tr>
</tbody>
</table>
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**STEP 6B: Planter Control Channel Setup**

(Split Air Regulation)

**NOTE:** Split Air Regulation must be configured as Control Channel 2 only.

1. At the Channel Setup screen, press the Next Channel button.
2. At Channel 2 screen, select Split Air Regulation as the Type.
3. Enter desired values from Table C2.
4. Press the Work Screen button to return to the Main Work screen.

**STEP 7: Row Monitor Setup**

1. At the Main Work screen, press the Row Monitor button.
2. Enter desired values using Table D as reference.
3. Press the Work Screen button to return to the Main Work screen.

**STEP 8: Speed Set Calibration Setup**

1. At the Main Work screen, press the Speed Set button.
2. Enter desired values using Table E as reference.
3. Press the Work Screen button when ground speed calibration configurations are complete to return to the Main Work screen.

### TABLE C2: Control Setup

<table>
<thead>
<tr>
<th>Default Value or Value to Enter</th>
<th>Split Air Regulation Instructions/Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>Configure Control Channel 2 as Split Air Regulation.</td>
</tr>
<tr>
<td><strong>Material Name</strong></td>
<td>Air Create Material Name as “Air”.</td>
</tr>
<tr>
<td><strong>Control Mode</strong></td>
<td>Auto Control channel feedback based on air pressure sensor.</td>
</tr>
<tr>
<td><strong>Drive Type</strong></td>
<td>Air Reg 2 Selects Air Reg 2 as drive type.</td>
</tr>
<tr>
<td><strong>Input Filter</strong></td>
<td>79% Amount of filtering applied to the control channel feedback frequency.</td>
</tr>
<tr>
<td><strong>Pressure Drop</strong></td>
<td>0 Difference in pressure sensor mounting location to the seed disk in inches of H2O.</td>
</tr>
<tr>
<td><strong>Pressure Slope</strong></td>
<td>447.229 The change in pressure sensor voltage to a frequency readable by the IntelliAg system and measured in inches of H2O. Should only be adjusted by qualified personnel.</td>
</tr>
<tr>
<td><strong>Pressure Offset</strong></td>
<td>800 Takes a zero point reading that provides a frequency when the fan is off. Press the Zero Pressure button to calculate frequency.</td>
</tr>
<tr>
<td><strong>Planter Selection</strong></td>
<td>YP24 Select Planter Selection of YP24 to automatically adjust to the appropriate calibration settings.</td>
</tr>
<tr>
<td><strong>Sensitivity Adjust</strong></td>
<td>0 Increases or decreases the calibration parameters in the ranges of -10 to +10. Increasing response time makes the system respond quicker.</td>
</tr>
</tbody>
</table>

### TABLE D: Row Monitor Setup

<table>
<thead>
<tr>
<th>Default Value or Value to Enter</th>
<th>Instructions/Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Material Name</strong></td>
<td>See Instructions Material Name only appears on the Row Monitor Setup screen when all control channels are disabled and material is set for Monitor Only. This is only used for ground drive/nonhydraulic applications to monitor population with high and low alarms. A material must be configured and selected to activate alarms.</td>
</tr>
<tr>
<td><strong>High Alarm Delay</strong></td>
<td>5 Desired number of seconds that high population can be above high alarm point before alarm will sound.</td>
</tr>
<tr>
<td><strong>Low Alarm Delay</strong></td>
<td>5 Desired number of seconds that low population can be below low alarm point before alarm will sound.</td>
</tr>
<tr>
<td><strong>Population Adjust</strong></td>
<td>100 Enter a % to allow for seed sensor population inaccuracies to achieve the desired population display. 100% represents true calculation.</td>
</tr>
<tr>
<td><strong>Population Filter</strong></td>
<td>50 Set filter value to stabilize the monitored population display. Number can be set to 0% for no filtering and 99% for high level filtering.</td>
</tr>
<tr>
<td><strong>Row Fail Rate</strong></td>
<td>2/1 (2 seeds every 1 second) Set to desired number of seeds per second to trigger seed sensor failure alarm.</td>
</tr>
</tbody>
</table>

### TABLE E: Speed Set

<table>
<thead>
<tr>
<th>Default Value or Value to Enter</th>
<th>Instructions/Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Source</strong></td>
<td>Digital Frequency Select CAN Ground if radar is connected to ISO tractor cab harness. Select Digital Frequency if radar or hall-effect is connected to WSMT actuator harness.</td>
</tr>
<tr>
<td><strong>Gspd Constant</strong></td>
<td>12192 Input based on pulse count produced by the ground speed sensor over 400’ distance. See Operator’s manual for calibration instructions.</td>
</tr>
<tr>
<td><strong>Shutoff Speed</strong></td>
<td>0.5 mph Set desired minimum ground speed allowed before the system shuts off.</td>
</tr>
<tr>
<td><strong>Minimum Override</strong></td>
<td>2.0 mph Set to operate when actual ground speed falls below the designated value. Control will operate at this speed until actual ground speed rises above minimum override speed or actual speed drops below shutoff.</td>
</tr>
<tr>
<td><strong>Master Sw Timeout</strong></td>
<td>10 Set to desired number of seconds system shuts off if the master switch is turned on and there is no ground speed. Toggle master switch to restart the system and turn off alarm.</td>
</tr>
<tr>
<td><strong>Gspd Fail Alarm Delay</strong></td>
<td>5 Set to desired number of seconds alarm sounds after the ground speed is zero and seed flow continues. (Monitor only)</td>
</tr>
<tr>
<td><strong>Precharge Ground Speed</strong></td>
<td>0 Set to the desired speed the system will use when a precharge time has been enabled for a control channel. Refer to Table C1: Planter Control Setup for Precharge Time. This setting will only display when a Precharge Time has been entered.</td>
</tr>
<tr>
<td><strong>Implement Lift</strong></td>
<td>Enabled Implement lift switch, when enabled, displays an implement lift indicator on the Main Work screen indicating implement lift position as up or down. Control channels can be turned on and off without using the master switch.</td>
</tr>
</tbody>
</table>
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**STEP 9: Accessory Sensor Setup**

**RPM Assignment**
1. At the Module Configuration screen, press the Acc Assign button.
2. Press the RPM Setup button.
3. Enter # of RPMs, if required. NOTE: There must be at least 1 RPM sensor configured before the RPM Setup button appears on the screen.
4. Enter desired RPM values using Table F as reference.

**Hopper Assignment**
1. At the Main Work screen, press the Next Page button.
2. Press the Module Configuration button to display the Module Configuration screen.
3. At the Module Configuration screen, press the Hopper Assign button.
4. Press Hopper Set button.
5. Enter desired hopper values using Table F as reference.

**STEP 10: Clutch Folding Module (CFM) Setup**
The CFM is installed in the cab to control row clutches, marker, fold, fertilizer on/off, lift and hitch.

1. At the Main Work screen, press the Clutch CFG button to access the Clutch Setup screen and verify that the correct # of clutches are configured for the system.
2. The Clutch CFG button only appears as a top level button when a planter output module and clutch folding module are installed.

### Table F: Accessory Setup

<table>
<thead>
<tr>
<th>Channel</th>
<th>Default Value or Value to Enter</th>
<th>Instructions/Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RPM Setup</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Alarm (fan speed)</td>
<td>4000 RPM</td>
<td>Value at which a high RPM warning error is generated in RPM.</td>
</tr>
<tr>
<td>Low Alarm (fan speed)</td>
<td>2300 RPM</td>
<td>Value at which a low RPM warning error is generated in RPM.</td>
</tr>
<tr>
<td>High Alarm Delay</td>
<td>10 sec</td>
<td>Delay between the detection of a high RPM alarm condition and the resulting alarm display entered in seconds.</td>
</tr>
<tr>
<td>Low Alarm Delay</td>
<td>10 sec</td>
<td>Delay between the detection of a low RPM alarm condition and the resulting alarm display entered in seconds.</td>
</tr>
<tr>
<td>RPM Constant</td>
<td>3 pul/rev</td>
<td>Number of pulses per shaft revolution.</td>
</tr>
<tr>
<td>RPM Filter</td>
<td>0</td>
<td>Value is used to filter the signal out of the RPM sensor. Standard value is set at 0% and typically no filtering is required.</td>
</tr>
<tr>
<td>Disable Control on Low Alarm</td>
<td>Disabled</td>
<td>Shuts down ALL active control channels if the RPM value of the sensor falls below the low alarm level setting. ENABLED shuts down the control channels when the RPM value falls below the low warning setting. DISABLED disables the function.</td>
</tr>
</tbody>
</table>

**Hopper Setup**

<table>
<thead>
<tr>
<th># of Hoppers</th>
<th>2 (base unit) 2 more (optional)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logic Level</td>
<td>Active Lo</td>
</tr>
<tr>
<td>Alarm Delay</td>
<td>5 sec</td>
</tr>
<tr>
<td>Channel</td>
<td>Assigns hopper sensor to a specific channel.</td>
</tr>
</tbody>
</table>

**STEP 11: Clutch Folding Module Operation**

1. The planter section controls turn the left, center, and right clutch controls on and off.
2. The master switch must be in the ON position to activate any planter section. When a clutch control is ON, a green light will illuminate.
3. Marker/Fold Switch should be in the UP (Marker) position during planting. In the DOWN (Fold) position, the switch controls the fold of the main frame.
4. The fertilizer pump switch is turned ON when in the UP position. Press the switch in the DOWN position to turn OFF.
5. Lift/Hitch switch should be in the UP (Lift) position during normal operation. In the hitch position, the switch should be in the DOWN (Hitch) position to unlock and extend the telescoping tongue in preparation of folding the implement for transport.
6. Lift/Hitch switch MUST be in the hitch position and hydraulic circuit in FLOAT when transporting planter equipped with hydraulic-operated tongue hitch. NOTE: Lift/Hitch switch has no function if planter has standard 3-point hitch operated tongue hitch.

**STEP 12: 5 Revolution Test**

1. Press the Control Setup button.
2. Press the Channel Setup button.
3. Press the Next Page button.
4. Ensure implement is raised before starting 5 Rev Test.
5. With brakes locked and transmission in PARK position, start tractor engine.
6. Engage hydraulics and run engine at normal speed until hydraulic fluid is at operating temperature.
7. Press the 5 Rev button.
8. Test Ground Speed and Row data must be entered to perform test.
9. Press and hold remote test button to initiate 5 Rev Test.

**STEP 13: Summary Screen**
The Summary screen provides an overview of setup constants for active control channels.

1. At the Main Work screen, press the Next Page button.
2. Press the Summary button.
3. To view specific control channel configurations, press the respective control channel box 1-4.
4. Press inside a yellow highlighted box to open a specific screen for editing.
5. Press the Work Screen button to return to the Main Work screen.

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Note: Connect the WSMT Actuator Harness and the Dj Planter Harness to the mating connectors of the WSMT Module Harness. Modules connect to the WSMT harness connection. Plug all unused connectors with included dust plugs.

Connect to Optional Hydraulic Tongue Harness or to Extension

Connect to Actuator Harness 467980130

Connect to Hydraulic Tongue Option

Standard QJ SE Style Planter Harness
467891100S1
Rows 1-18

WSMB Module Harness
467981201A

WSMB Module Speed Monitor
467981100S1

Note: Connect the WSMT Actuator Harness and the QJ Planter Harness to the mating connectors of the WSMT Module Harness.

Connect to Tractor Harness

Connect to Optional Hydraulic Tongue Harness or to Extension

Output 2 Hitch B1
Output 2 Hitch B2
Output 1 LH

WSMB Module Harness
467981201A

WSMB Module Speed Monitor
467981100S1

Standard QJ SE Style Planter Harness
467891100S1
Rows 1-18

Standard QJ SE Style Planter Harness
467891100S1
Rows 19-30

Standard QJ SE Style Planter Harness
467891100S1
Rows 21-48

Standard QJ SE Style Planter Harness
467891100S1
Rows 1-18

Tractor Harness

ACTUATOR HARNESS

467980160

Fertilizer Pump Option

System Component Installation

1. Locate and install system components as shown in the diagram. Note how the modules are identified and which modules are located on which sections in this system.

2. Connect WSMB module harnesses together with included extensions. Modules connect to the WSMT harness connection. Plug all unused connectors with included dust plugs.

3. Secure any excess wires with tie wraps.

4. See Operator’s manual for additional installation information.

5. Power on monitor and program with correct constants as described on this Quick Start Guide.