DYNAJET IC7140

RELEASE NOTES

Integrating DynaJet into a sprayer can be a significant undertaking. TeeJet Technologies has a team of dedicated DynaJet specialists ready to help our customers with this task. Please contact TeeJet Technologies so we may assist you.

DYNAJET IC7140

DynaJet IC7140 v1.11

December 2020

IMPORTANT! Notes regarding USB Drive updates from v1.01 to v1.11

- *Standard Turn Compensation requires an unlock code in v1.11. A no-charge unlock for Standard Turn Compensation is available for all v1.01 customers upgrading to v1.11. If upgrading from v1.01 to v1.11 please plan ahead and provide TeeJet Technologies with the IC7140 serial number so an unlock code can be provided.*
- *Doing a USB Drive update from v1.01 to v1.11 will not add the new languages available in v1.11. A second USB Drive update is required to add the new languages.*
  https://www.teejet.com/support/software.aspx

Associated Documentation:

- Manual 98-05347 R1

New Features:

- Individual Nozzle Shutoff (INS) – Supports the maximum number of boom sections that the ISOBUS Rate Controller (CF) and the ISOBUS Task Controller (TC) support, up to a maximum of 100 boom sections. Potentially 1 nozzle = 1 boom section.
  - Requires: i) TeeJet IC35 v1.00 rate controller or ii) TeeJet IC45 rate controller, or iii) a Third-Party rate controller that has implemented TeeJet Proprietary Protocol Rev10*, or iv) a Third-Party rate controller that has implemented TeeJet DynaJet OEM-2 CAN protocol Rev8*.
  - Requires: Purchase of an Unlock Code (unless 1 boom section=1 nozzle and the total number of nozzles is ≤30)
- Advanced Turn Compensation – Tight integration between DynaJet and the Rate controller results in the correct application rate being applied during turns when some boom sections are shutoff such that the boom is an asymmetric configuration
  - Requires i) TeeJet IC35 v1.00 rate controller or ii) TeeJet IC45 rate controller, or iii) a Third-Party rate controller that has implemented TeeJet Proprietary Protocol Rev10*, or iv) a Third-Party rate controller that has implemented TeeJet DynaJet OEM-2 CAN protocol Rev8*.
  - Requires the purchase of an unlock code
- Flow Mode – IC7140 controls the application rate (flow) by varying the PWM Duty Cycle while the rate controller controls the pressure by varying the speed of the solution pump. The rate controller sends the target application rate to the IC7140, and the IC7140 sends the target pressure to the rate controller.
  - Requires: Hydraulic speed control of a Centrifugal solution pump and a solution regulating valve. Note: Piston & Diaphragm solution pumps are not supported in this release.
  - Requires: i) TeeJet IC35 v1.00 rate controller or ii) TeeJet IC45 rate controller, or iii) a Third-Party rate controller that has implemented TeeJet Proprietary Protocol Rev10*, or iv) a Third-Party rate controller that has implemented TeeJet DynaJet OEM-2 CAN protocol Rev8*.
- Flow Feedback – When the solution flow rate drops below the minimum rating for the rate controller flowmeter the rate controller can continue to control the flow using flow data calculated by the IC7140.
  - Requires: i) TeeJet IC34 v2.03 rate controller, or ii) TeeJet IC35 v1.00 rate controller or iii) TeeJet IC45 rate controller, or iv) a Third-Party rate controller that has implemented TeeJet Proprietary Protocol Rev10*, or v) a Third-Party rate controller that has implemented TeeJet DynaJet OEM-2 CAN protocol Rev8*.
- Add 5 pairs of pre-set gain settings to conveniently handle gain changes that may be needed to accommodate different nozzles, application rates, and speeds.
- New Languages – A IC7140 delivered with v1.11 from the factory or those units updated with a factory-type install will support all the languages.
  - Doing a USB Drive update from v1.01 to v1.11 will not add the new languages available in v1.11. A second USB Drive update is required to add the new languages.
  - Non-English languages are only supported by the IC7140 if the ISOBUS Universal Terminal (UT) to which the IC7140 is connected also supports the target language.
  - New Languages Added:
    - BG [Bulgarian / Български]
    - CZ [Czech / Česky]
    - DA [Danish / Dansk]
    - DE [German / Deutsch]
    - ES [Spanish / Español] (Latin American)
    - ET [Estonian / Eesti]
    - FI [Finnish / Suomi]
    - FR [French / Français] (France)
    - HU [Hungarian / Magyar]
    - IT [Italian / Italiano]

  - LV [Latvian / Latvietis]
  - LT [Lithuanian / Lietuviškai]
  - NL [Dutch / Nederlands]
  - NO [Norwegian / Norsk]
  - PL [Polish / Polski]
  - PT-BR [Portuguese BR-Brazil / Português BR-Brasil]
  - RO [Romanian / Română]
  - RU [Russian / Русский]
  - SK [Slovak / Språk]
  - SV [Swedish / Svenska]
  - UK [Ukrainian / Українська]
- Rate Controller Communication of Number of Boom Sections, Nozzles per Boom Section, and Nozzle Spacing – Data will be automatically populated in IC7140 if that data is available from the rate controller.
  - Requires i) TeeJet IC35 v1.00 rate controller or ii) TeeJet IC45 rate controller, or iii) a Third-Party rate controller that has implemented TeeJet Proprietary Protocol Rev10*.
- 100% Duty Cycle Softkey – Added in Manual Mode for 1-button access to 100% Duty Cycle (full open) of the solenoids.
- DynaJet Disengage Mode Softkey – Added for 1-button activation of a DynaJet Disengage Mode.
  - An OEM setting determines if the Disengage Mode results in solenoids being driven at 100% (full open) or 0% (closed).
- No Pressure Interface [78-05137] Required – The boom pressure sensor can now be connected directly to an ADC input on the IC7140.
- Multiple changes to align nozzle specifications with international standard ISO 25358, including but not limited to changing the Coarse droplet size category color from Blue to Green, and the Very Coarse droplet size category color from Green to Blue. Previous alignment of nozzle specifications was with ASABE Standard S572.
- System detects if individual solenoids are not opening completely and warns the operator. Note: this is an OEM enabled feature that is disabled by default.
- Added OEM setting that determines the solenoid state as 100% (open) or 0% (closed) when system is in error state.
- Significant changes to the way alarms and warnings work including a reduction in the number of full-screen alarms. These changes improve the user experience while further enhancing the ability for users to diagnose and troubleshoot system errors.
- Updated from ISO11783 Working Set Version 3 to Version 4
- Speed Message Additions and Updates
  - A system now can use:
    - NMEA2000 speed messages (ISO_PGN_NMEA_COG_SOG, PGN 0x01F802, 129026d)
    - Machine Selected Speed messages (ISO_PGN_MACHINE_SELECTED_SPEED, PGN 0x00F022, 61474d)
  - System automatically selects which ISOBUS speed message to apply, based on the following priority:
    - Machine selected speed (0x00F022)
    - Ground based speed (0x00FE49)
    - Wheel based speed (0x00FE48)
    - Vehicle speed (0x00FEE8)
    - NMEA speed (0x01F802)

** The features supported by a Third-Party rate controller manufacturer who has implemented TeeJet Proprietary Protocol Rev10 or TeeJet DynaJet OEM-2 CAN protocol Rev8 is at the discretion of that manufacturer. Please check with the Third-Party rate controller manufacturer to confirm feature availability and functionality.*

Fixes:

- Corrects problem where deleting and reloading the object pool in the same power cycle resulted in the boom status not being reported correctly.
- Multiple changes to text content, format, soft-keys and icons to make the User Interface easier to understand and operate
- Coarse Gain renamed to Proportional Gain, and Fine Gain renamed to Derivative Gain.
- Proportional Gain setting now has the range 1-30.
- Lower limit for Derivative Gain (formerly called Fine Gain) changed from 1 to 0.
- Multiple improvements to better handle different resolution UTs and UTs without touchscreen
- Turn compensation cannot be enabled if the UT is not broadcasting a valid ISOBUS speed message, and the system will broadcast an error message and disable Turn Compensation if valid ISOBUS speed messages are lost while Turn Compensation is active.
- Corrects problem where speed source 0x00FEE8 previously was interpreted as vehicle traveling in reverse, which in turn prevented turn compensation from working
- Operation Mode settings including Pressure Adjustment are restored after a power cycle.

DynaJet IC7140 v1.01

April 2020

Associated Documentation:

- Manual 98-05347 R0

Key Features and Benefits:

- Global first release of the DynaJet IC7140 series
- Turn Compensation – accurate application across the boom while spraying around curves
- 3 operation modes:
  - Droplet Mode – controls to a target droplet size range
  - Pressure Mode – controls to a target boom pressure
  - Manual mode – controls to a target PWM Duty Cycle
- US & Metric units
- Hardware support
  - Maximum 30 boom sections
    - One Boom Interface Module (BIM) accommodates Booms 1-15
    - Second BIM required for Booms 16-30
  - Single Sensor bus
  - Dual and 8-output drivers
- 5 selectable TeeJet Nozzle favorites
- Demo Mode
- Diagnostic pages
- International English language only