TFCompanion Release Notes

Version 6.7.1 | Build 102626 | October 27, 2026

This maintenance release corrects Modbus thickness confidence and PLC result output, and adds DataServer output for calculations using imported reflectance or intensity spectra. These notes cover changes since Version 6.7, build 101326. Related Modbus libraries and customer examples are supplied separately in Release261026.

Modbus thickness confidence

- The server now places only thickness confidence in the thickness-error register. Confidence from another fitted parameter, such as Scale, can no longer overwrite it when calculation results are processed.
- getThicknessError(channel) returns thickness confidence in angstroms. getGOF(channel) remains the fit MSE; other fitted parameters retain their own confidence values in getParameters(). The confidence calculation itself is unchanged.

PLC measurement output

- The PLC data writer now sends the numeric measurement values supplied by the PLC sensor image. It no longer requests a calculation DataID or named-parameter payload from that image, correcting the failure that prevented calculated PLC results from reaching DataServer.
- Ordinary PLC results use functions 80, 81 or 82, selected by include_mse_data and include_mse_exc_data. Calculation-server results retain functions 86, 87 or 88 with DataID and named values. Spectral output formats 84 and 85 are unchanged.

Imported spectrum calculation output

- Successful calculateData() and calculateFromIntensity() calls now forward their results through the existing data connection opened by startDataClientPLC(). Results remain available through the Modbus getters as before.
- Each forwarded result contains an eight-byte DataID based on the calculation timestamp and named parameter values in the configured units. MSE and status fields are included according to the calculation-output settings below.
- The acquisition outlier filter does not suppress imported-spectrum results. In function 88, the outlier flag is zero and the high-MSE flag follows the MSE-filter setting. Failed calculations remain available through Modbus status rather than producing a successful-result packet.

Calculation output selection

Set these properties in init\PLC.properties on the TFCompanion server:

- Function 86: include_mse_data_calc=false and include_mse_exc_data_calc=false. Sends DataID and named values; this is the default when both settings are absent.
- Function 87: include_mse_data_calc=true and include_mse_exc_data_calc=false. Adds MSE after the named values.
- Function 88: include_mse_exc_data_calc=true. Adds exception/warning status, filter flags and MSE. This setting takes precedence regardless of include_mse_data_calc.

Restart TFCompanion after changing the properties, then reconnect startDataClientPLC(). Properties without the _calc suffix select ordinary PLC output, not imported-spectrum calculation output.

Companion Modbus library update

- Use Modbus.jar version 3.9.5, build 102626, on the client and TFCompanion server. Status requests now retain the required register header and declare the correct payload length, allowing measurement and status calls to be repeated on one connection.
- Normal client disconnects close the connection without an erroneous response or error log. Fragmented TCP headers are read completely; malformed or truncated requests still produce errors.
- The client now reads channel two's own thickness-confidence register. Thickness confidence and MSE remain separate for both channels after measurements and both calculation operations.

DataServer and client examples

- DataServerExample 1.2 decodes functions 86–88 with DataID, named parameters and optional MSE. The corrected parser avoids interpreting MSE bytes as another parameter, which previously could produce a spurious large negative number.
- Function 85 decoding includes wavelength/intensity pairs and the final integration time in milliseconds. The optional --save-intensity launcher argument saves complete spectra as CSV files suitable for calculateFromIntensity() testing with the matching recipe.
- ModbusTest supplies an x64 GUI and Visual Studio C++ example. Reflectance imports accept two columns or three columns with the middle angle column ignored. Successful DLL/JVM selections are remembered. The customer launchers use C:\TFCompanion\jre by default.

Deployment and compatibility

- Stop TFCompanion, back up the installed tfcomp.jar, and replace the active copy with the JAR supplied in this release. Install the matching Modbus.jar wherever the server and native client load it, then restart those processes. Keep the existing configuration, recipes, calibration data and other installation libraries.
- For streamed output, start the TCP or UDP DataServer receiver and match data_output_type=tcp or data_output_type=udp on the server. Connect startDataClientPLC() to the receiver's IP and port before requesting results. The example receiver uses port 501; the Modbus command port is normally 502.
- The application version is 6.7.1 and its build identifier remains 102626. The supplied JAR was packaged on October 27, 2026. Java 8 remains the build baseline. The native client uses ModbusClientDLL 4.9.3; the customer examples are packaged for 64-bit Windows.
- The separate Release261026 package contains the Modbus libraries, ModbusTest and DataServer examples, API manual revision 4.9.3, and DataServer specification revision 3.7. Consult the specification for byte layouts, filtering behavior and packet-size limits.

Validation

Local regression checks cover status/measurement sequences, connection reuse, disconnect handling, confidence mapping and data-frame parsing. Live testing confirmed corrected thickness confidence, PLC output and function 88 calculation results. Validate the updated installation with the intended recipe, calibration and receiver configuration before production use.