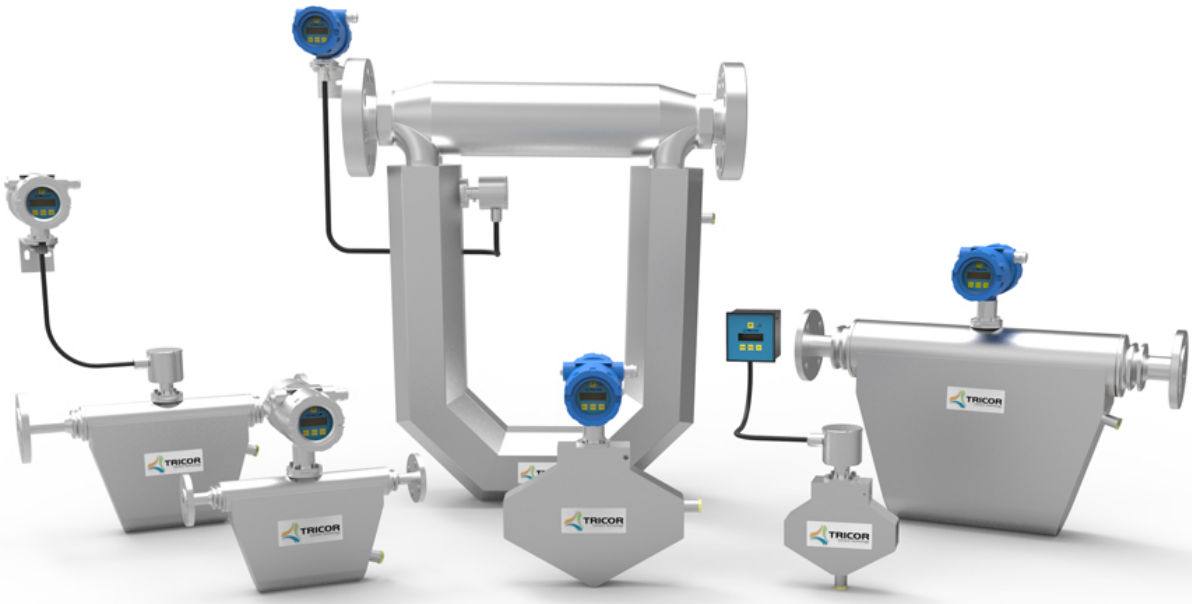
V3.52 Release Notes

TCM_V352_RELEASE_NOTES



TRICOR®

Coriolis Mass Flow Meter

TRICOR Coriolis Technology

Manual Version

TCM_V352_RELEASE_NOTES

SW Version

This manual is valid for

Main SW: Mv3.52 (Build E13A4238)

Display SW: Dv3.52

TRICOR Configurator: Tv3.52

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1. Declaration of Compatibility

Release 3.50 was a minor functional release from November 2017 that covered all TRICOR software/firmware related parts:

- Mainboard firmware (TCE 8000 and TCE 6000)
- Display (direct mount and remote mount)
- TRICOR Configurator

There are four Hotfixes to the 3.50 release and they are explicity called out as Mv3.51 and Mv3.52, for the mainboard firmware, as well as Dv3.52 for the display firmware and Tv3.52 is for the TRICOR Configurator:

- Hotfix Mv3.51 is for correcting a communiation stability issue that manifested only when using the Modbus 9600 baud rate configuration. Hotfix Mv3.51 is associated with Mv3.51 and is described within this document explicitly as Mv3.51.
- Hotfix Mv3.52 improves the pressure compensation feature.
- Hotfix Dv3.52 is for changing the way Log data is presented. This is associated with the Dv3.52 version and is described in this document explicitly as Dv3.52.
- Hotfix Tv3.52 TRICOR Configurator improves only the support for the meter mode “Reference Volume”

To use all the features described above, version 3.50 or newer should be used by all components. Some incompatibility can occur when combining this firmware version with older board versions.

For a detailed compatibility scheme, please refer to the following two matrices (see Table 1 and Table 2):

Mainboard Firmware	Display Firmware									
	Dv3.05	Dv3.12	Dv3.14	Dv3.20	Dv3.40	Dv3.41	Dv3.42	Dv3.43	Dv3.50	Dv3.52
Mv3.05	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
Mv3.17	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
Mv3.20	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
Mv3.34	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
Mv3.35	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
Mv3.37	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
Mv3.38	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
Mv3.40	✗	✗	✗	✗	✓	✓	✓	✓	✓	✓
Mv3.41	✗	✗	✗	✗	✓	✓	✓	✓	✓	✓
Mv3.42	✗	✗	✗	✗	✓	✓	✓	✓	✓	✓
Mv3.43	✗	✗	✗	✗	✓	✓	✓	✓	✓	✓
Mv3.44	✗	✗	✗	✗	✓	✓	✓	✓	✓	✓
Mv3.50	✗	✗	✗	✗	✗	✗	✗	✗	✓	✓
Mv3.51	✗	✗	✗	✗	✗	✗	✗	✗	✓	✓
Mv3.52	✗	✗	✗	✗	✗	✗	✗	✗	✓	✓

Table 1: Compatibility matrix for mainboard + display

Mainboard Firmware	TRICOR Configurator										
	3.16	3.17	3.19	3.21	3.40	3.41	3.42	3.43	3.44	3.50	3.52
Mv3.05	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗
Mv3.17	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗
Mv3.20	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗
Mv3.34	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗
Mv3.35	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗
Mv3.37	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗
Mv3.38	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗
Mv3.40	✗	✗	✗	✗	✓	✓	✓	✓	✓	✓	✓
Mv3.41	✗	✗	✗	✗	✓	✓	✓	✓	✓	✓	✓
Mv3.42	✗	✗	✗	✗	✓	✓	✓	✓	✓	✓	✓
Mv3.43	✗	✗	✗	✗	✓	✓	✓	✓	✓	✓	✓
Mv3.44	✗	✗	✗	✗	✓	✓	✓	✓	✓	✓	✓
Mv3.50	✗	✗	✗	✗	✓	✓	✓	✓	✓	✓	✓
Mv3.51	✗	✗	✗	✗	✓	✓	✓	✓	✓	✓	✓
Mv3.52	✗	✗	✗	✗	✓	✓	✓	✓	✓	✓	✓

Table 2 Compatibility matrix for mainboard + TRICOR Configurator

2. Change Log

2.1. General enhancements and corrections

This document describes the changes contained with in the 3.50 release of firmware and software. There was one change associated with Mv3.51 that is described and explicitly stated as the Mv3.51 Hotfix. All other functional descriptions were made as part of the v3.50 release.

2.1.1. Fault Current of the Analog Output (4-20mA)

Error detection was altered in 3.50 and is now completely compliant with the NAMUR standard. The analog output can be customized to a current output upon failure. The output can be assigned to either a 3.5 mA or 21 mA output on fault detection. The default setting is 21 mA.

The configuration can done by using a Modbus coil, the display, or the TRICOR Configurator (see Figure 1).

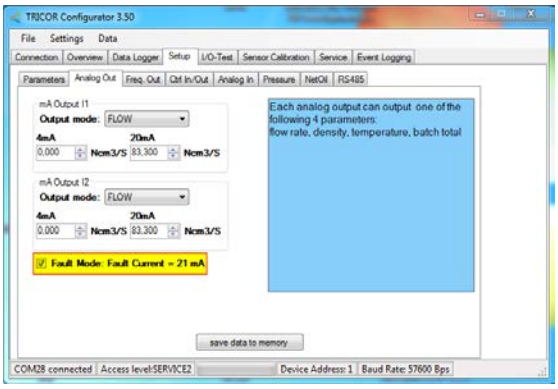


Figure 1 Configuration of the Fault Current

2.1.2. Error Handling / IO Deactivation

For mainboard firmware versions Mv3.40 to Mv3.44:

If a critical error for frequency or sensor voltages has been detected, the outputs (frequency, analog, etc.) were deactivated and some process values like the sensor temperature were then set to default values, as long as the error was present.

With Mv3.50:

The behavior for the output deactivation on detecting critical errors is now customizable and by default not activated. If “output deactivation on error detection” is not intentionally enabled, then the outputs are never deactivated regardless of which errors are detected. Custom output deactivation configuration can be done via a new Modbus coil, the display, or the TRICOR Configurator (see Figure 2).

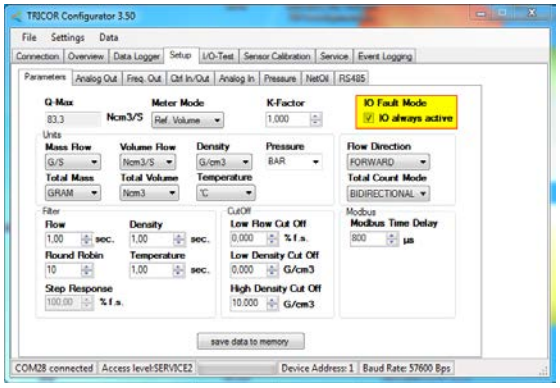


Figure 2 Configuration of the IO deactivation

2.1.3. Revamped Display Labels & Pressure Units

Some TRICOR Configurator and display labels were confusing for customers. The text labels have been updated to more clearly convey information. (See Table 3 and Table 4.)

Old value before 3.50	New value changed with 3.50
“LOW DENSITY FILTER” (flow filter)	“DENSITY FILTER”

Table 3 Changed labels in only the transmitter display by version 3.50

Old value before 3.50	New value changed with 3.50
“DEFAULT” (context of flow direction)	“BIDIREC” (= bidirectional flow direction)

Table 4 Changed labels in both the transmitter display and configurator by version 3.50

In earlier firmware versions, the pressure units and Total Count Mode could not be set from TRICOR Configurator (see Figure 3).

In version 3.50, pressure units and Total Count Mode can now be altered using TRICOR Configurator.

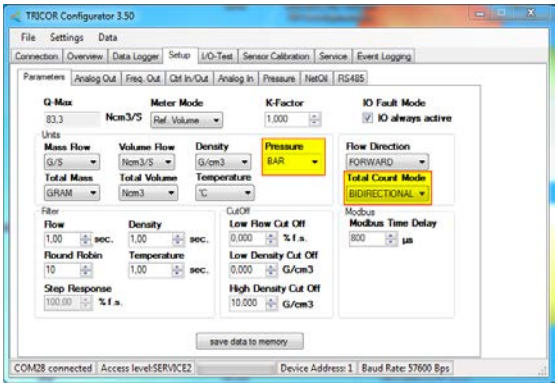


Figure 3 Pressure Units & changed label for Total Count mode

2.1.4. Set Mainboard Modbus ID

A new feature to better support Modbus multidrop mode (more Modbus devices on the same RS485 bus) is the ability to assign a Modbus ID to the mainboard.

By default, all displays try to connect to a mainboard with Modbus ID #1. The display will show the error message “INTERNAL COMM. ERROR” if the mainboard is set to an ID number other than 1 (by the customer).

With the new Dv3.50, the Modbus ID can be adjusted while this error message is shown by pressing the P-Button (the new Modbus ID will be stored permanently).

2.1.5. Modbus multi-drop mode

The Modbus handling has been improved to better conform to the Modbus standard, and now allows multi-drop functionality (multiple slaves on the same bus).

2.1.6. Hotfix Mv3.51 Mainboard Firmware

The Mv3.50 version and Mv3.50 pre-release custom version exhibited communication errors and disconnections when using Modbus configured at 9600 baud rate. This Hotfix re-establishes normal Modbus 9600 baud rate capability.

2.1.7. Hotfix Mv3.52 Mainboard Firmware

The Hotfix version Mv3.52 corrects an issue for the the pressure compensation feature.

2.1.8. Hotfix Dv3.52 Display Firmware

The Hotfix Dv3.52 makes it more convenient when troubleshooting meter errors by changing the view sequence when pressing the [Info] button. In Dv3.50 and earlier releases, the “Event Log” displays before users can display “Overview Info” on the screen. Dv3.52 changes the behavior so, that when pressing the “Info”-button now causes the two diagnosis screens first to show and then the “Event Log” will appear.

Furthermore this version corrects a problem with the I/O-test for the CTRL_IN and and shows now a warning, when the “Event Log” has reached its maximum capacity. After this warning, no new event log can be stored until old events are manually cleared by the user.

2.1.9. Hotfix Tv3.52 TRICOR Configurator

The Hotfix Tv3.52 of the TRICOR Configurator has fixed a problem from the version Tv3.50 for the meter mode „Reference Volume“ and the following parameters of this meter mode has been swapped to the “Setup → Paramters” tab (see Figure 4).

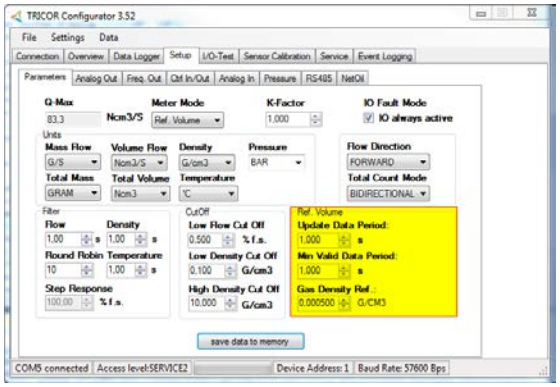


Figure 4: Parameters for meter mode Ref. Volume changed

2.2. Netoil computation (optional feature)

2.2.1. Permanent storage of Netoil-specific totalizers

All Netoil specific totalizers are now saved in non-volatile memory over any power cycle (power off/on) and only the specific totalizers of the selected mode are totalizing now (the others are permanently set to zero).

2.2.2. Netoil-specific information in the display

When the Netoil mode is active, the corresponding accumulators will be shown instead of the standard accumulators. To cover all Netoil Modbus registers, new line modes were added and can be set on the display.

2.2.3. Netoil-specific information in the TRICOR Configurator

When the Netoil mode is active, the corresponding accumulators will be shown in the overview tab (see Figure 6 and Figure 5) instead of the standard accumulators.

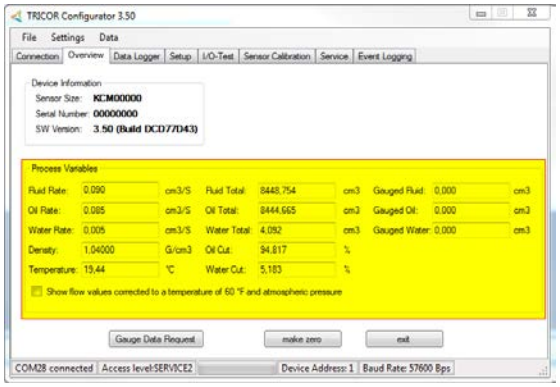


Figure 6 Overview tab for meter mode Netoil

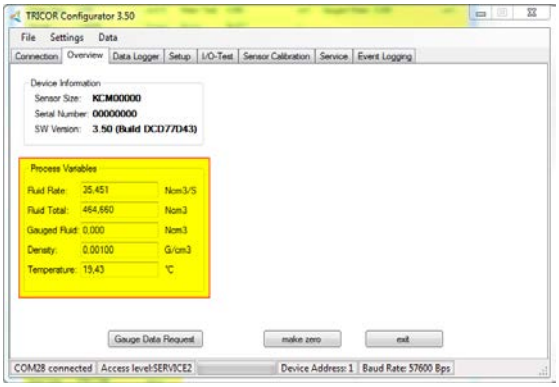
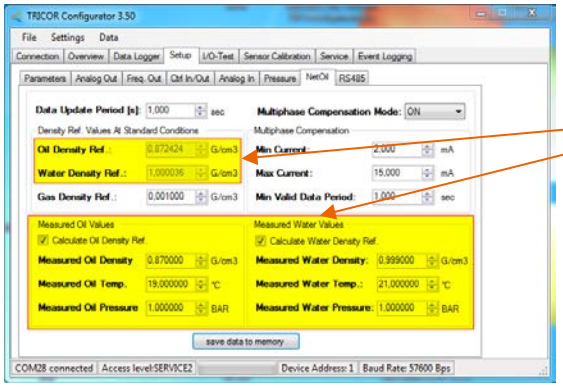


Figure 5 Overview tab for meter mode Reference Volume

2.2.4. Configuration of Netoil Reference Densities

In the tab “Setup” > “Netoil”, it is now possible to enter the reference densities for water and for oil. Alternatively, those reference densities can be calculated from a measurement (see Figure 7).



Select to enter the reference densities or use the calculation

Figure 7: Netoil Reference Densities: can be directly entered (top) or calculated (bottom)

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