Any AG3000/iMAG4700 or AG/EX90, with or without an existing data logger can be updated to have a data logger with a Real Time Clock (RTC).

Any base model meter built before May 2023 can only fit one option or RTC board in the housing (no RTC Data Logger with any additional option on base model meters built before 5/1/23).

Hex connector (Base & 'r' Models) 104257-01	Hex connector ('p' Model) 104258-01
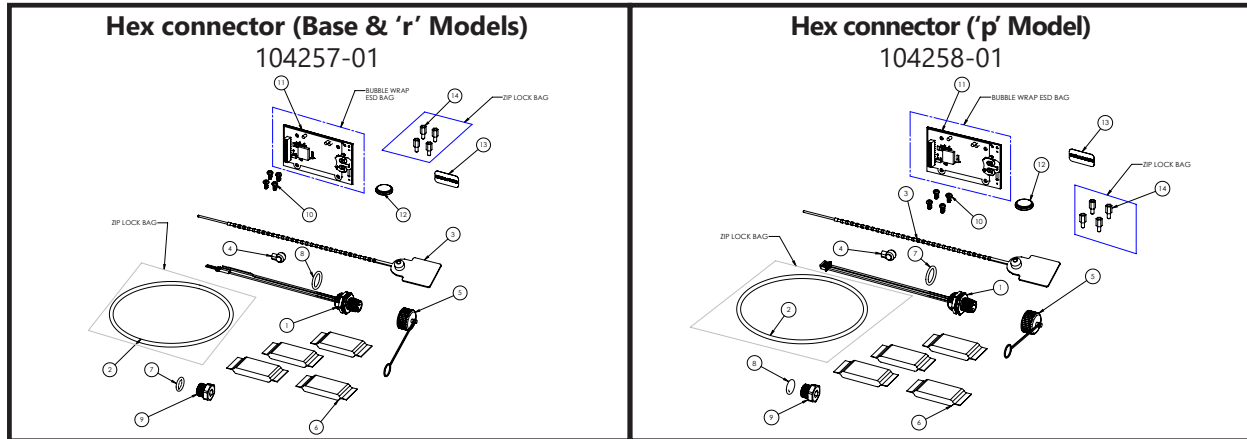
Your RTC Data Logger Installation Kit (104257-01, 104258-01) includes the following:

1) Data Logger Connector (Hex or Square depending on kit)
2) O-ring (with pre-applied lubricant)
3) Security Seal
4) Wire Splice
5) Data Logger Cap
6) Desiccant (Keep in bag until ready to install)
7) O-ring
8) O-ring
9) Replacement Plug
10) Option Screw
11) RTC Data Logger Option Board
12) RTC Data Logger Battery
13) Data Logger Label
14) Standoff

In the title blocks below, find the instructions appropriate for your situation and begin adding your datalogger

If the meter is already equipped with a data logger and no other option boards

Parts needed:
• 103241-04-250 option board screws (x4)
• 104163 RTC Data Logger battery (aka CR1632)
• 104166 RTC Data Logger option board
• 104213 DATA LOGGER label

1. Download any data on the current data logger
2. Open the meter display
3. Pull out the transmitter (display) assembly
4. Disconnect any meter power and disconnect the meter battery
5. Install the new 104166 RTC Data Logger option board by inserting the 24-pin plug
6. Secure with four 103241-04-250 option board screws
7. Install 104163 RTC battery with the writing (+ side) facing away from the board
8. The transmitter firmware must be at revision CP-15003_31.10 or higher for use with the RTC data logger.
   • If the firmware needs to be updated, this can be done by using the current version of the Seametrics Firmware Upgrader
   • For meters built before December 2023, see Technical Bulletin "Installing Firmware for RTC Data Loggers or Sensus in Meters built Before December 2023" LT-14742
   • Or, replace the transmitter board with a new board programmed with current firmware.
9. Reassemble the meter
10. Connect to the meter using FlowInspector 3.0, and initialize data logger (must use FlowInspector 3.0)
11. Flow Inspector instructions are available on the Seametrics website (Seametrics.com) under Support & Resources, Downloads, Instruction Manuals, FlowInspector 3.0
12. The FlowInspector firmware download is available on the Seametrics website (Seametrics.com) under Support & Resources, Downloads, Software, FlowInspector Software
13. Install the DATA LOGGER label to the housing just above the connector.

104166 RTC board

If the meter is equipped with a data logger and DOES have another option board (including Base model meters built after 5/1/23)

Parts needed:
- 103241-04-250 option board screws (x4)
- 103032-04-281-1 standoffs (x4)
- 104213 DATA LOGGER label
- 104166 RTC data logger option board
- 104163 RTC Data Logger battery (aka CR1632)

104166 RTC board

1. Download any data on the current data logger
2. Open the meter display
3. Pull out the transmitter (display) assembly
4. Disconnect any meter power and disconnect the meter battery
5. Remove the T-10 Torx head screws on the option board
6. Replace the screws with 103032-04-281-1 standoffs
7. Install 104166 RTC data logger option board by inserting the 24 pin plug and secure with T-10 Torx head screws.
8. If the original option board had components taller than the standoffs, the two boards will need to exchange positions.
9. Install 104163 RTC battery with the writing (+ side) facing away from the board
10. The transmitter firmware must be at revision CP-15003_31.10 or higher for use with the RTC data logger.
    - If the firmware needs to be updated, this can be done by using the current version of the Seametrics Firmware Upgrader
    - For meters built before December 2023, see Technical Bulletin "Installing Firmware for RTC Data Loggers or Sensus in Meters built Before December 2023" LT-14742
    - Or, replace the transmitter board with a new board programmed with current firmware.
11. Reassemble the meter
12. Connect to the meter using FlowInspector 3.0, and initialize data logger (must use FlowInspector 3.0)
13. Flow Inspector instructions are available on the Seametrics website (Seametrics.com) under Support & Resources, Downloads, Instruction Manuals, FlowInspector 3.0
14. The FlowInspector firmware download is available on the Seametrics website (Seametrics.com) under Support & Resources, Downloads, Software, FlowInspector Software
15. Install the DATA LOGGER label to the housing just above the connector.

If the meter does not have an existing data logger, you will need to install a data logger connector as shown below and then install the Real Time Clock data logger as described above

Adding the connector is quite simple but there are a few possible combinations. You will need to choose the correct housing and cable from the instructions below.

Your AG3000/iMag4700 flow meter will come in one of three models, or you may have an AG90/EX90:

Base Model (Most Common)   The Remote 'r' Model   The Premium 'p' Model   AG90/EX90

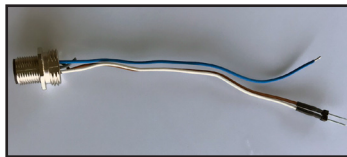The data logger will come in one of two mounting designs:
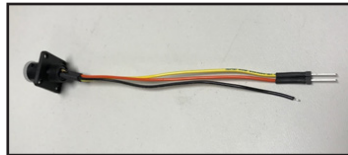

A threaded hexagonal flange

A square flange with four T-10 Torx head screws
(Contact factory for parts and instructions)

The base model, remote 'r' model and AG90/EX90 use a data logger connector with one wire header and one ground wire.
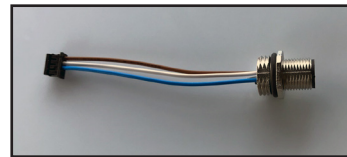

Hex connector **In Kit: 104257-01**
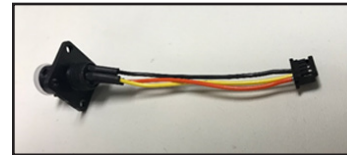After 8/2017

Square connector **In Kit: 104047-02**
Before 8/2017
(Contact factory for parts and instructions)

The premium 'p' model unit uses a data logger connector with one plug.

Hex connector **In Kit: 104258-01**
After 10/2018

Square connector **In Kit: 104048-02**
Before 10/2018
(Contact factory for parts and instructions)

INSTALL THE DATA LOGGER CONNECTOR TO THE HOUSING

Open Housing

On Base, Remote(r), or AG90/EX90 Meters

1. Cut security seal, if used, remove and discard.

2. Unscrew the glass cover from over the display and remove. Be sure the o-ring seal stays in place. If lid is threaded, use a strap wrench to protect the coating or a pipewrench or large pliers.

3. Remove the 3 silver screws holding the display assembly and remove it from the meter. If the display is held in place by white or silver tabs with straight slots, rather than screws, simply grasp the finger recess and pop the display up and out of the meter.

On Premium(p) Meters

Open the black cover on the opposite end from the glass cover

> **CAUTION!** Before removing display lid, take precautions to prevent water or wind-born dust from getting into the display enclosure while the cover is off.

> **IMPORTANT:** If water usage regulation is in effect, only a person authorized by your regulatory agency should break the seal and replace it when finished.

Install Hex Connector

1. Remove one of the large M16 hex plug connectors with a socket, crescent or allen wrench.

2. Insert the hex connector and O-ring.

3. When tightening the hex connector be certain to torque to at least 6-inch pounds. If the connector is not tight enough, it may come loose when the dust cap is removed.

Install Square Connector

1. Remove the square cap (T-10 Torx head screws)

2. Insert the square connector and gasket

3. When tightening the screws, make two complete circuits around the connector (compression of the gasket while tightening the last screws will leave the first screws a bit loose)
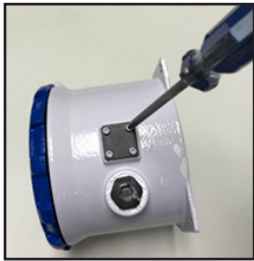
Remove the square cap

Tighten connector screws

**Note: Meters built before April 2020 will have a smaller M12 size data Logger port.
Meters built after April 2020 will have a larger M16 port.**

CONNECTIONS INSIDE THE METER (CONTINUED)

Base, Remote 'r' and AG90/EX90 Models (Both connector versions)

1. Turn the display over, so you are looking at the back of the circuit board. There will be one short black wire with a white insulator on its end that terminates into the 6-pin green terminal strip.

2. Cut the white insulator off the end of the black wire.

3. The two end slots of the 6-pin green terminal strip will be open. The orange and yellow (or brown and white) wires plug into these open slots. The orange (or brown) pin goes to the outside.

4. Insert the black (or blue) wire from the data logger connector, AND the black wire you cut the insulator from, into the wire splice and crimp them together. This connection must be made, or the data logger cannot communicate.


Cut the white insulator
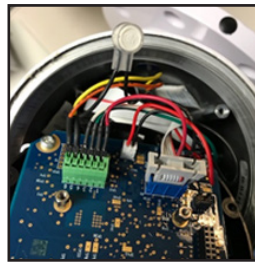
Splice black wires

Premium 'p' Models (Both connector versions)

1. Plug the connector of the wire harness into the receiver on the circuit board. If your 'p' unit is an AC powered unit, the AC/DC power supply will need to be temporarily removed to gain access to the connector on the circuit board. If the meter is DC powered, you will need to remove the battery holder.
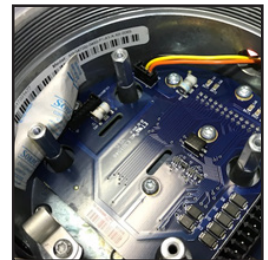
'p' model connector

FINAL STEPS (ALL MODELS)

1. Return the display (transmitter) board to the housing on base model and 'r' model units and secure.

2. Install the cap on the data logger connector. The connector is water tight without the cap, but the cap helps keep the connector clean.

3. Be sure the window (Base and 'r' models) or the black cover ('p' model) is screwed snugly onto the housing of the meter to assure a watertight seal.

The cover should be tight and sit flush to the top of the head giving sufficient compression of the O-ring.

Always be sure the meter cover is sealed to prevent water ingress.

Warranty could be void if seal is not completely seated to housing.

Seametrics • 19026 72nd Avenue South • Kent, Washington 98032 • USA
(P) 253.872.0284 • (F) 253.872.0285 • 1.800.975.8153 • www.seametrics.com

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