

UFMV-Assembly Quick Start Guide

The UFMV Assembly is an easy-to-install combination flow meter & master valve product that is compatible with most major manufacturer’s controllers. This Quick Start Guide serves as a summary of the necessary installation steps you’ll need to complete. Please contact Tucor with specific inquires or questions.



UFMV-2-C1-BN/C



UFMV-A K Factor Conversion Module

Parts Included with every UFMV-Assembly

1. Ultrasonic Flow Meter (“UFM”)
2. Master Valve (*Brass or Plastic, Available in N/O or N/C*)
3. Quick-Connect Couplings (*Victaulic-Style, Grooved*)
4. UFMV-A K Factor Conversion Module

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1.0) Field Installation Overview

1.1) TIPS TO REMEMBER

1. The Ultrasonic Meter is designed to be installed at a slight angle. Every UFMV is pre-configured at the specified angle (Figure 1). **Do not straighten the meter.**
2. The UFMV-Assembly is designed to fit in most Jumbo Valve boxes and does not require the 10-in-5-out pipe diameter spacing rule.
3. Bring dish soap. We use it to more easily slide the couplings onto the pipe.

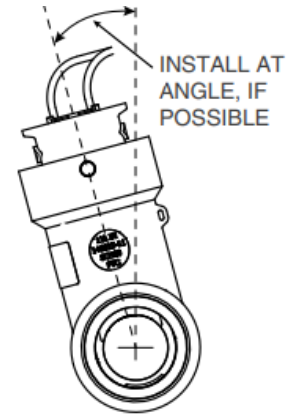


Figure 1

1.2) FIELD INSTALLATION USING TUCOR'S QUICK-CONNECT COUPLINGS

Tucor's Quick-Connect Couplings allow make joining the UFMV to existing pipe a simpler process. They allow for flexibility in joining the pipe, and then allow you to tighten the connection with the included bolts.

1. Push the gasket completely onto one side of the grooved connection (Figure 2).
2. Hold the grooved ends of the two fittings together and slide the gasket over, centering it between the two grooves (Figure 3).
3. Assemble the two clamp pieces over the gasket and assemble the bolts and nuts with washers (Figure 4).
4. Tighten the nuts. Do not apply excessive torque (Figure 5).

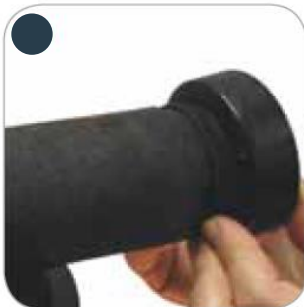


Figure 2



Figure 3



Figure 4



Figure 5



2.0) Wiring the UFMV Assembly

Tucor's UFMV Assembly is designed to work with any manufacturer's controller and wiring the flow meter and K Factor Conversion Module is easy for installing the raw board or if pre-wired and included in an enclosure.

2.1) WIRING DIAGRAM USING A NON-TUCOR CONTROLLER (FIGURE 6)

1. Wire the UFM Black Wire to the Flow (-) and Red Wire to the Flow (+) terminal labeled "Flow In" (Part A) on the UFMV-A K Factor Conversion Module.
2. Connect the UFMV-A K Factor Conversion Module to the controller terminals as shown in (Part B).

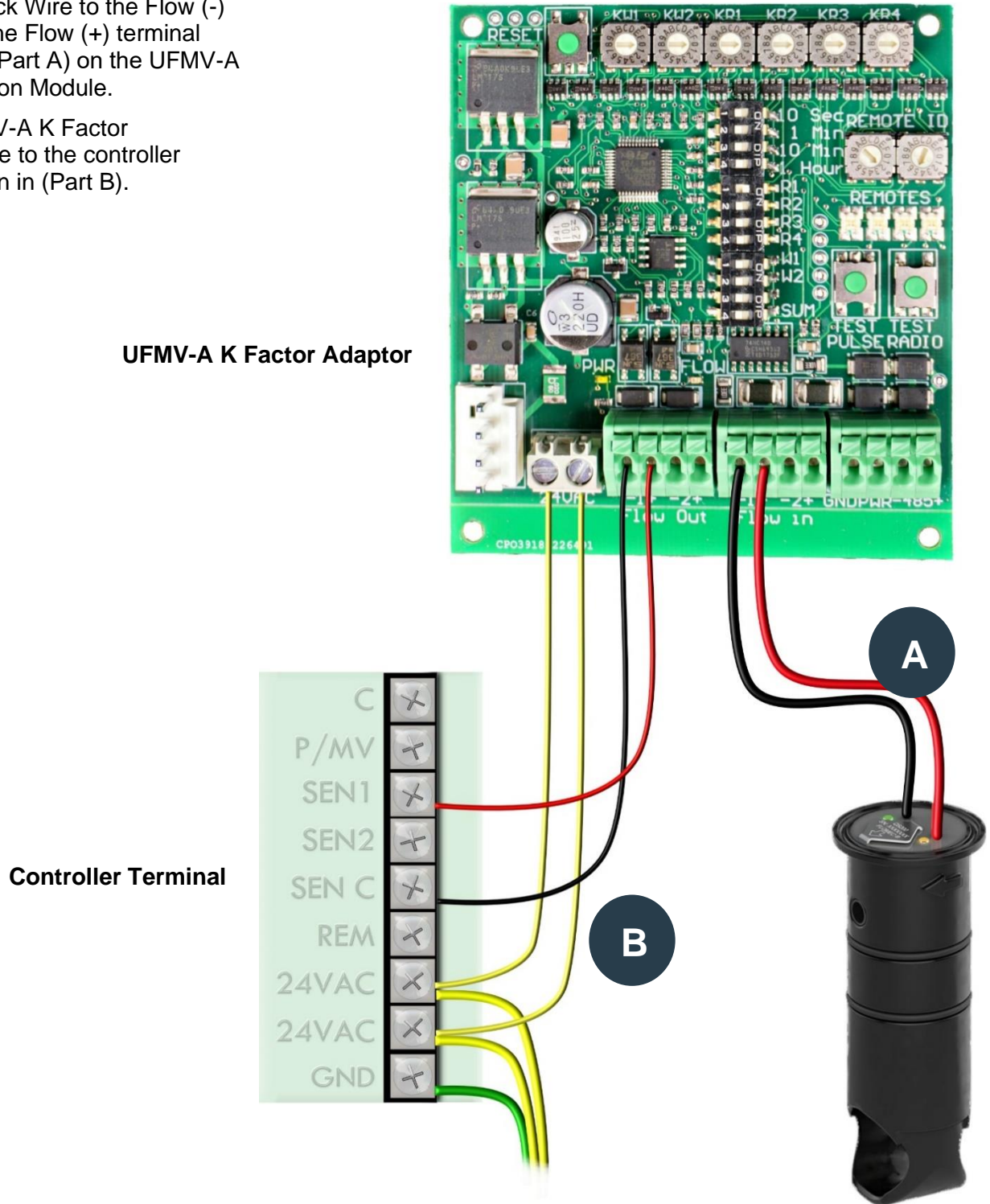


Figure 6

2.2) WIRING DIAGRAM USING A TWC-NV OR TWI CONTROLLER

1. Connect Flow Meter to TWI

If K Factor Conversion Module is Pre-wired and Included in Enclosure (Figure 7): Splice the UFM Red & Black Wires to the Red & Black Wires labeled “Flow In” of the K Factor Conversion Module. Attach Red to Red and Black to Black. Splice the SD-100 Red & Black Wires to the Red & Black Wires labeled “Flow Out” of the K Factor Conversion Module. Attach Red to Red and Black to Black.

If K Factor Conversion Module is Included as Raw Board (Figure 8): Attach the UFM Black Wire to the Flow (-) and Red Wire to the Flow (+) terminal labeled “Flow In” on the UFMV-A K Factor Conversion Module (Part A). Connect the SD-100 Black Wire to the Flow (-) and Red Wire to the Flow (+) of the “Flow Out” terminals on the UFMV-A K Factor Conversion Module (Part B). Connect the (2) Blue Wires of the SD-100 to the 24 VAC terminals of the K Factor Conversion Module (Part C).

2. Finish the Connection to the Flow Meter to TWI & Attach the Master Valve

If K Factor Conversion Module is Pre-wired and Included in Enclosure (Figure 8): Splice¹ the (2) LD-100 White Wires to the (2) Black Wires of the Master Valve. Make 2, 4-Way splices² with the (2) LD-100 Blue Wires, (2) SD-100 Blue Wires, the Red & Black wires of 2-Wire path, and the Red & Black wires labeled “2-Wire Path” of UFMV-A K Factor Conversion Module. Match Red to Red & Black to Black.

If K Factor Conversion Module is Included as Raw Board (Figure 7):

Splice¹ the (2) LD-100 White Wires to the (2) Black Wires of the Master Valve (Part D). Make a 3-Way splice¹ with the (2) LD-100 Blue Wires, the 2-Wire path, and the Red & Black wires coming from the 24 VAC terminals of the UFMV-A K Factor Conversion Module (Part E).



Figure 7

¹ Tucor recommends 3M-DBR/Y-6 Splice Kits

² Tucor recommends twisting two wires together, wrapping the third, then wrapping the fourth as the method for completing a 4-way splice. The 3M-DBR/Y-6 Splice Kits can be used in this scenario.

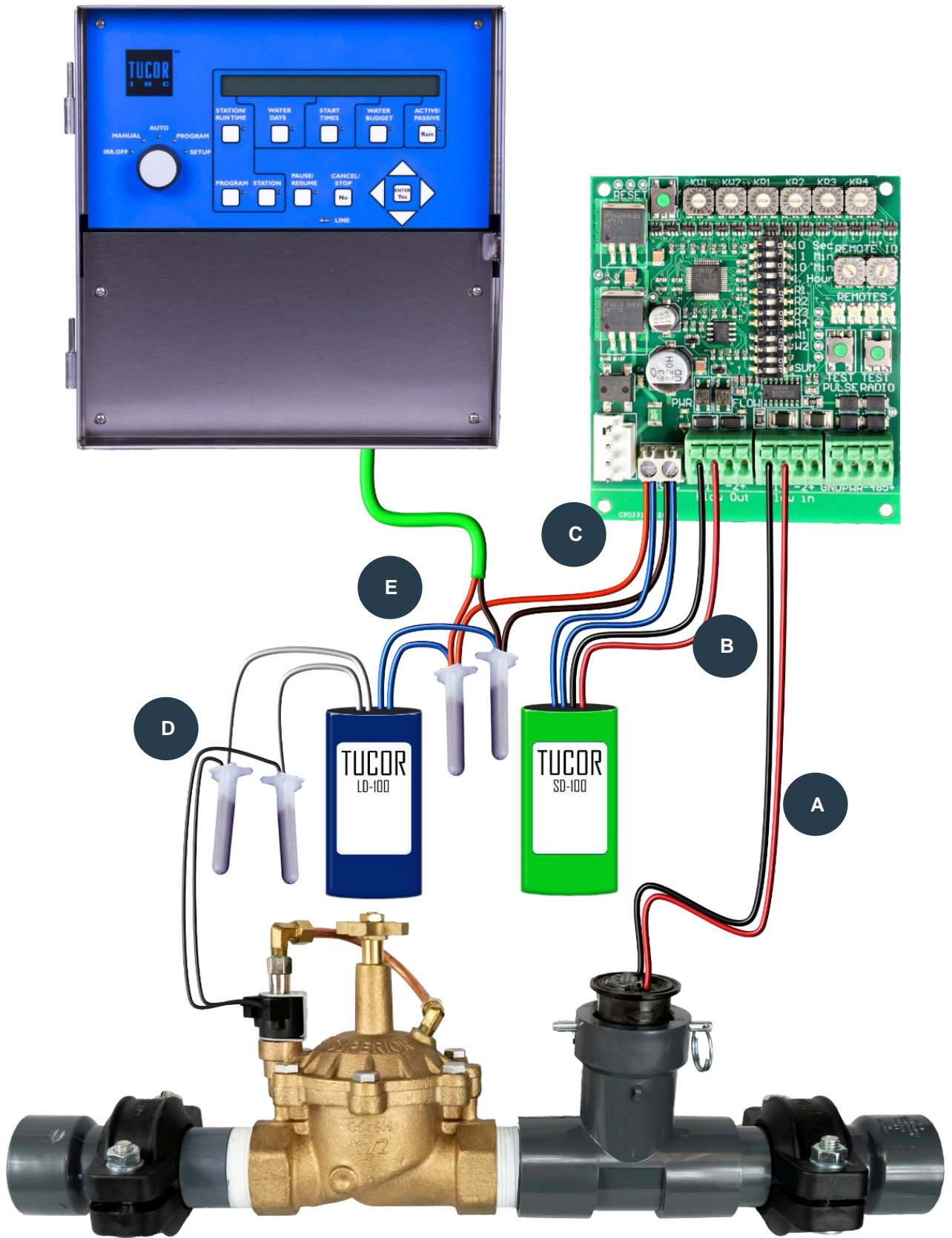


Figure 8

2.3) FOR NEW RKD+, RKS+ & LTD CONTROLLERS (FIGURE 8)

1. The K Factor Conversion Module will be pre-wired and pre-installed inside the controller cabinet. Attach the Red & Black wires of the UFMV-A's ultrasonic flow meter to the Red & Black Wires of the K Factor Conversion Module (Part 9).

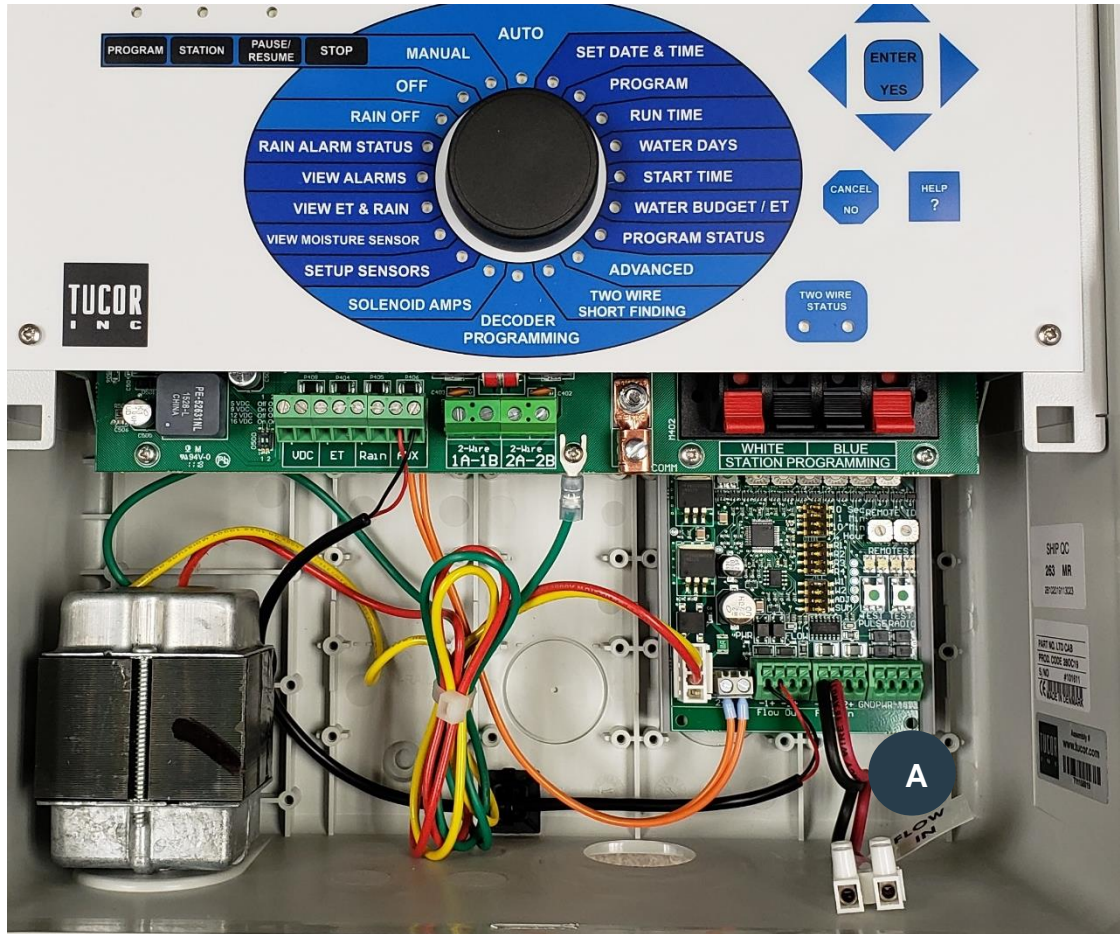


Figure 9

3.0) Controller K Factor Input

The specific K Factor for the UFMV-Assembly is not published and is instead embedded in the UFMV-A K Factor Calibrator. The Calibrator converts the output to pulses per gallon, which needs to be programmed in the existing controller.

3.1) FOR NON-TUCOR CONTROLLERS

1. Input a K Factor of 1 in the controller. The UFMV-A has no moving parts to create the need for an offset.

K Factor	Offset
1	0

3.2) FOR TUCOR CONTROLLERS

1. **Any New Tucor Controller:** For UFMV-A's ordered with a new Tucor controller, no action is needed. The K Factor has been pre-installed for you.
2. **Existing Tucor TWC-NV/TWI:** The K Factor of 1.0 can be installed using either Tucor RMS software (TWC-NV) or Cycle Manager (TWI). Please contact Tucor for more information.
3. **Existing RK+ or LTD Controller:** Add the UFMV's K Factor of 1 by the following method:
 - (1) Turn the dial to "ADVANCED".
 - (2) Using the Down Arrow () on the key pad, scroll to "FloGuard" then hit the "ENTER" button.
 - (3) Using the Down Arrow () on the key pad, scroll to "Flow Sensor Setup" then hit the "ENTER" button.
 - (4) Select "Flow Sensor Type", hit "ENTER".
 - (5) Use the Up & Down Arrows until you see "Custom" as the selection. Hit "ENTER".
 - (6) To adjust the K Factor Number, use the arrows on the keypad. The digit that is blinking can be changed by using either the Up or Down Arrows. To move to the next digit in the series, select the Right Arrow. To modify the previous digit, use the Left Arrow.
 - (7) Once you have entered "1.000", select "ENTER" to save your work.
 - (8) To check that your K Factor entry was saved, go back to the menu by pressing "ENTER" on "Flow Sensor Type" and "ENTER" again on "Custom"

**For additional support, please contact Tucor directly:
1-800-272-7472**

www.tucor.com