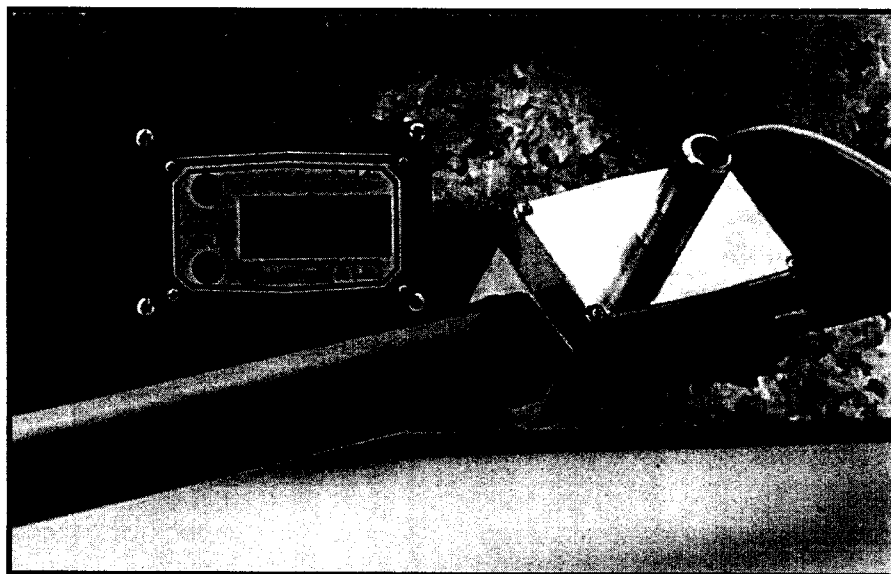


CE

 User's Guide

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e-mail: info@omega.com



Remote Kit installed with Electronic Digital Meter.

FTB790-RK REMOTE KIT ASSEMBLY



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Toll Free in Benelux: 0800 0993344
e-mail: nl@omega.com

Czech Republic: Rudé armády 1868, 733 01 Karviná 8
TEL: +420 (0)69 6311899 FAX: +420 (069 6311114
Toll Free in Czech Republic: 0800-1-66342 e-mail: czech@omega.com

France: 9, rue Denis Papin, 78190 Trappes
TEL: +33 (0)130 621 400 FAX: +33 (0)130-699-120
Toll Free in France: 0800-4-06342
e-mail: france@omega.com

Germany/Austria: Daimlerstrasse 26, D-75392 Deckenpfronn, Germany
TEL: +49 (0)07056 3017 FAX: +49 (0)07056 8540
Toll Free in Germany: 0800 TC-OMEGASM
e-mail: germany@omega.com

United Kingdom: One Omega Drive, River Bend Technology Centre
ISO 9002 Certified Northbank, Irlam, Manchester
M44 5EX, United Kingdom
TEL: +44 (0)161 777 6611 FAX: +44 (0)161 777 6622
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It is the policy of OMEGA to comply with all worldwide safety and EMC/EMI regulations that apply. OMEGA is constantly pursuing certification of its products to the European New Approach Directives. OMEGA will add the CE mark to every appropriate device upon certification.

The information contained in this document is believed to be correct, but OMEGA Engineering, Inc. accepts no liability for any errors it contains, and reserves the right to alter specifications without notice.

WARNING: These products are not designed for use in, and should not be used for, patient-connected applications.

GENERAL INFORMATION

The FTB790-RK Remote Kit Assembly is designed to allow for the use of FTB790 Series turbine meters in a wide range of specialized environments. The user has the flexibility of isolating the flow sensor from a panel-mounted digital indicator or a control device as well as safely and successfully measuring high and low-temperature fluids. The Remote Kit Assembly can be added to an existing FTB790 Series meter.

Purpose of this Manual

This manual is designed to assist you in installing, operating, and maintaining your Remote Kit Assembly. It furnishes information that will help you achieve years of dependable performance and trouble-free operation. This manual provides support for the Remote Kit Assembly only. Please refer to the appropriate owner's manuals for instructions on the use and maintenance of turbine meters or other equipment.

Please take a few moments to read through this manual before installing and operating your kit. If you have problems with this equipment in the months or years ahead, refer to the Troubleshooting section.

If you need assistance, contact the Omega Customer Service Department.

Read Me!

Use caution when handling hazardous substances or working in potentially dangerous environments and follow appropriate safety practices and manufacturer's recommendations.

Specific part names used in this manual are shown in the Illustrated Parts Drawing.

Damage Inspection

Upon receipt of your kit, refer to the Illustrated Parts Drawing to ensure all parts are enclosed and no visible signs of damage are evident. Note that this kit is a turbine meter accessory and does not include the turbine meter itself. If any items are damaged or missing, please contact the Omega Customer Service Department.

INSTALLATION

Use the following procedures to install the Remote Kit Assembly using an FTB790 Series turbine meter.

Tools needed for kit installation:

- small Phillips screwdriver
- drill with #18 drill bit
- wire stripper
- wire cutter
- wire crimper

Installation with an FTB790 Series Turbine Meter

Mounting preparation:

1. Select a remote location for mounting the display assembly.
2. Check for clearance of the dustcover in the mounting location.
3. Determine the path for routing cable from the turbine location.
4. Make sure the connecting cable length is sufficient to reach between the turbine and the display assembly.

NOTE: Ten feet of cable is provided with the kit. If extra cable is required, refer to Step 4 in Mounting the Turbine instructions below.

5. Use the supplied template to mark the mounting location for the dustcover and computer assembly. Cut a hole in the mounting surface and drill screw holes using a #18 drill bit.
6. Separate the display assembly and turbine by removing the four mounting screws on the face of the meter. Retain these screws for mounting the coverplate to the turbine.

Mounting the turbine:

1. Install the coverplate onto the top of the turbine housing, using the four screws removed in Step 6 above.
2. Install the turbine in the flow path, as follows:
 - a. Wrap the male threads of the hose or pipe fittings with 3 to 4 wraps of Teflon® tape. To avoid meter inaccuracies or damage to the turbine, make sure the tape does not intrude into the flow path.

b. Hand-tighten the turbine to the fittings. Ensure a snug fit to avoid leaks but **DO NOT** use a wrench since it could damage the turbine housing.

3. Install the magnetic pickoff into the center hole of the coverplate on the turbine. Hand-tighten until the pickoff is snug against the turbine.

4. Route the cable from the pickoff to the computer mounting area and cut the cable to length. Allow an extra 5 to 8 inches for installation.

NOTE: The magnetic pickoff is supplied with 10 feet of cable. To lengthen, splice in additional cable, not to exceed 100 feet total length. Refer to the Technical Specifications for cable type.

5. If the cable is cut or spliced, strip 1-1/2 inches of outer insulation from the cable end using a wire stripper. Also strip 1/4-inch of insulation from the red and black 22 gauge conductor wires.

6. Using a wire crimper, crimp the solderless connectors onto the two stripped wire ends.

4. Remove the coil from the back of the computer assembly. When the coil is removed, two sockets are exposed for installation to the jumper pin connectors.

NOTE: Some coils may be pulled from their plug-in sockets. Others will require clipping the wire on the side of the coil.

5. Insert the two jumper pin connectors extending from the housing of the dustcover into the sockets on the back of the computer assembly.

6. Ensure the foam is in the dustcover housing to secure the placement of the batteries and jumper connections.

7. Place the display assembly in position on the dustcover. Make sure jumper connections and batteries are secure.

8. Fasten the display assembly to the dustcover, using the four fillister head screws provided.

When the above steps are successfully completed, the meter is ready for use.

Mounting the display assembly:

1. Pull the cable end through the back of the cut-out area. Remove the lower nut and place the connector against the upper nut. Replace the lower nut and tighten. Repeat for the second connector.

2. Insert the dustcover into the cut-out opening in the display location.

3. Fasten the dustcover to the mounting surface using the four tapping screws provided.

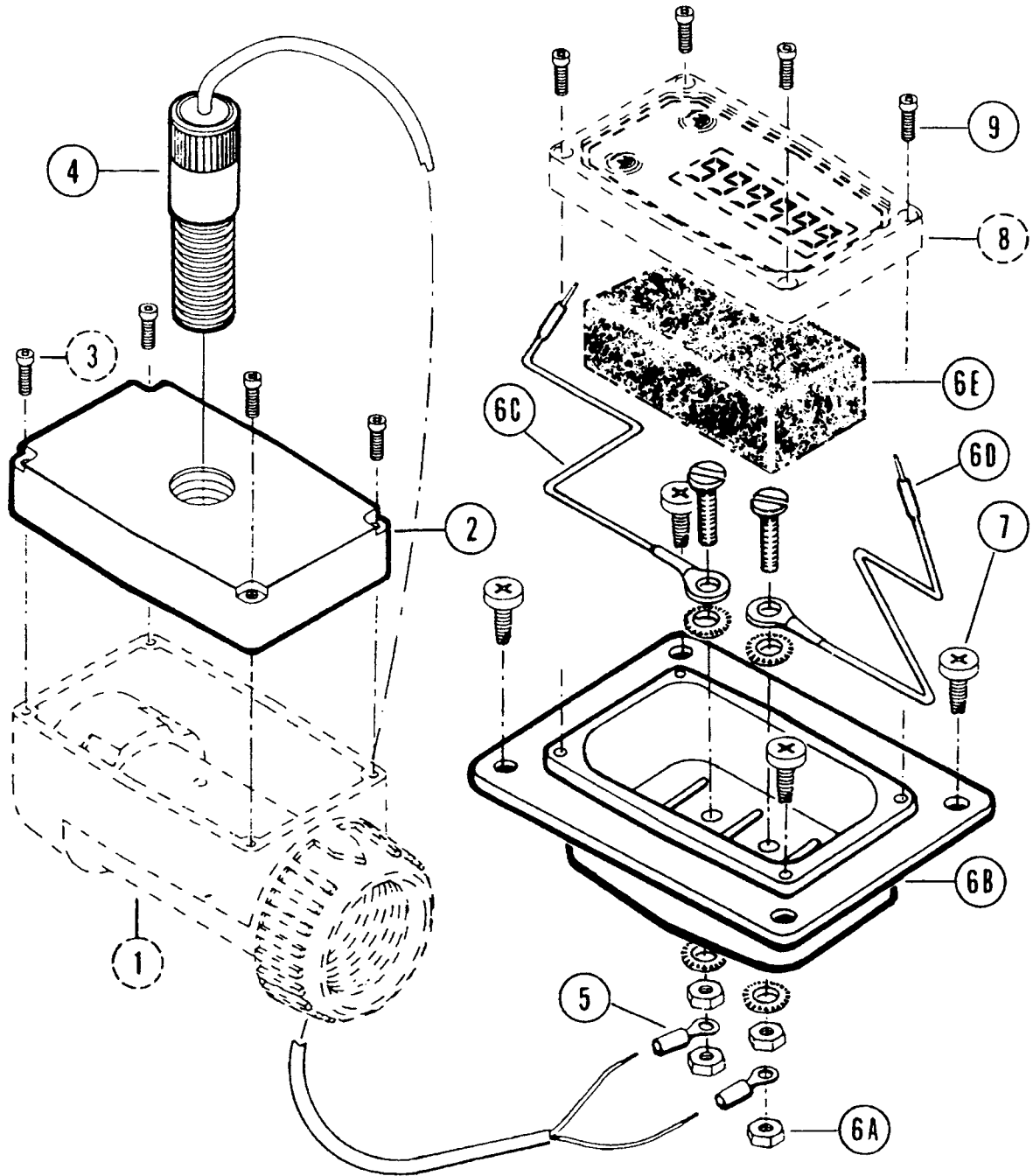
Operation and Maintenance

During daily use, meters and the Remote Kit Assembly are virtually maintenance-free. It is important, however, that the turbine rotor moves freely. Refer to the meter owner's manual or other support documentation for instructions on meter use, maintenance, and calibration. Also refer to the Troubleshooting section below. Remote Kit Assembly installation should not affect meter calibration.

TROUBLESHOOTING

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
DISPLAY LIT BUT NOT COUNTING	1. Cable too long 2. Wiring broken or unconnected 3. Magnetic pickoff not connected	Shorten cable to 100 feet or less. Inspect all wires and connections. Repair or connect, as necessary. Hand-tighten the pickoff in the coverplate by turning in a clockwise direction until it is snug against the turbine.

ILLUSTRATED PARTS DRAWING



Item No.	Part No.	Description	No. Req'd.
1*		Turbine	1
2	113409-4	Coverplate	1
3*		Screw	4
4	113261-1	Magnetic pickoff with 10 ft. 2-conductor cable	1
5	902004-51	Solderless connectors	2
6	113264-1	Dustcover assembly	1
6-A	904004-50	Nut, hex (#6)	4
	904004-51	Washer, lock	2
6-B	113260-1	Dustcover housing	1

Item No.	Part No.	Description	No. Req'd.
	904004-52	Washer, flat (#6)	2
	902004-51	Ring terminals	2
6-C	113262-1	Jumper wires (22 AWG-7/30)	2
6-D	902004-27	Pin connectors	2
	904004-49	Screw, machine (6/32 x .375)	2
6-E	113259-2	Pad, foam	1
7	904001-82	Screw, self-tapping (10-24x1/2)	4
8*		Computer assembly	1
9	904003-88	Screw, fillister hd. (4-20x7/8)	4

* These components are associated with the Turbine Meter or Turbine Kit and are not part of the Remote Kit Assembly.

SPECIFICATIONS

Dustcover	Molded plastic with terminal block connection
Coverplate	Cast aluminum / burnished finish
Magnetic Pickoff	1.5 k Ohm, 700 mH, 5/8-18 thread
Cable	10 ft., 2-conductor shielded, Belden #1266A or 8451
Transmission Distance	Up to 300 ft. (91.4m)
Signal Type	Sine wave
Fluid Temperature Range	-40° F to +250° F -40° C to +121° C
Computer Operational Range	+14° F to +140° F -10° C to +60° C



WARRANTY / DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of **13 months** from date of purchase. OMEGA Warranty adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components which wear are not warranted, including but not limited to contact points, fuses, and triacs.

OMEGA is pleased to offer suggestions on the use of its various products. However, OMEGA neither assumes responsibility for any omissions or errors nor assumes liability for any damages that result from the use of its products in accordance with information provided by OMEGA, either verbal or written. OMEGA warrants only that the parts manufactured by it will be as specified and free of defects. OMEGA MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND WHATSOEVER, EXPRESS OR IMPLIED, EXCEPT THAT OF TITLE, AND ALL IMPLIED WARRANTIES INCLUDING ANY WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED. LIMITATION OF LIABILITY: The remedies of purchaser set forth herein are exclusive, and the total liability of OMEGA with respect to this order, whether based on contract, warranty, negligence, indemnification, strict liability or otherwise, shall not exceed the purchase price of the component upon which liability is based. In no event shall OMEGA be liable for consequential, incidental or special damages.

CONDITIONS: Equipment sold by OMEGA is not intended to be used, nor shall it be used: (1) as a "Basic Component" under 10 CFR 21 (NRC), used in or with any nuclear installation or activity; or (2) in medical applications or used on humans. Should any Product(s) be used in or with any nuclear installation or activity, medical application, used on humans, or misused in any way, OMEGA assumes no responsibility as set forth in our basic WARRANTY/DISCLAIMER language, and, additionally, purchaser will indemnify OMEGA and hold OMEGA harmless from any liability or damage whatsoever arising out of the use of the Product(s) in such a manner.

RETURN REQUESTS / INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. **BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS).** The assigned AR number should then be marked on the outside of the return package and on any correspondence.

The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR WARRANTY RETURNS, please have the following information available **BEFORE** contacting OMEGA:

1. Purchase Order number under which the product was **PURCHASED**,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR NON-WARRANTY RETURNS, consult OMEGA for current repair charges. Have the following information available **BEFORE** contacting OMEGA:

1. Purchase Order number to cover the **COST** of the repair,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problems relative to the product.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

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