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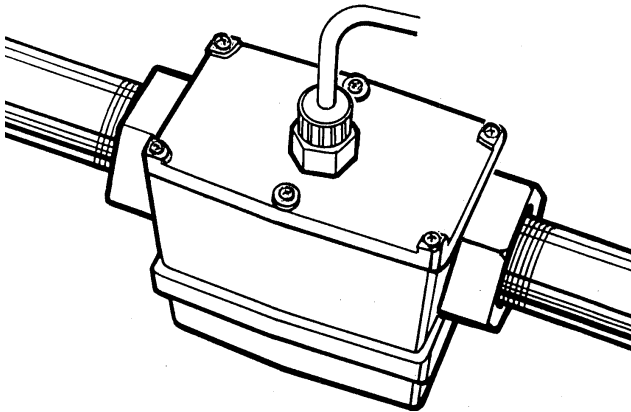


# User's Guide

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## **FLSC790-P** **Pulse Output Module** For use with FTB790 Series Turbine Meters with Display Electronics



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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.

## TABLE OF CONTENTS

Introduction .....	1
Installation and Wiring .....	1
Technical Specifications .....	2
Typical Wiring .....	3
Warranty/Disclaimer .....	5
Return Requests/Inquiries .....	5

## INTRODUCTION

**Caution: This Pulse Output Module is not FM Approved. Therefore, use of this module with an approved metering system, voids FM Approval.**

This module is designed to be used only with FTB790 Series Turbine Meters. More specifically, turbine housings with the following models: FTB791, FTB792, FTB793, FTB794, and FTB795.

Combine the Pulse Access Module with an FTB790 Series Turbine Electronics to create a low-cost flow sensor with both local read-out and pulse output which interfaces with various counters, controllers, and compatible process equipment.

The pulse output of this module provides an unscaled, amplified, digital signal capable of transmission up to 5,000 ft. (1,524m) without additional signal conditioning or amplification devices.

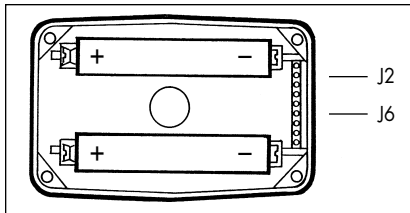
The Pulse Output Module comes complete, ready to install, with a circuit assembly, coverplate assembly, and 10 ft. (3m) of cable.

## INSTALLATION & WIRING

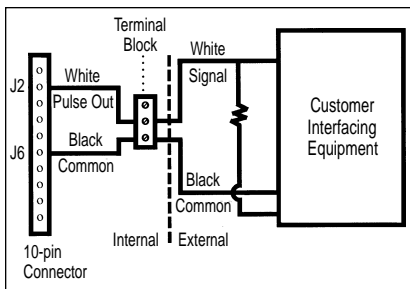
To install this module, follow the instructions given below.

1. Remove the back coverplate from the turbine housing.
2. Remove the display electronics from the front of the turbine.

**NOTE:** If you are installing more than one Pulse Access Module at a time, take care to keep the proper electronics paired with the original turbine.



3. The Pulse Access Module connects to a 10-pin connector located on the back side of the computer electronics next to the negative battery connectors. The 10-pin connector is sealed with a clear plastic sealant that must be carefully pried out with a small sharp tool inserted gently at the edges.
4. Remove the backing from the double-sided tape on the module's PC board.
5. Carefully align the top pin on the PC board with the J2 position on the 10-pin connector and gently press the PC board into position between the batteries. The bottom pin will align with the J6 position.
6. Guide the loose ends of the wires from the PC board through the housing's cavity to the back side of the turbine.
7. Install the display electronics to the front side of the turbine and tighten the four screws snugly.

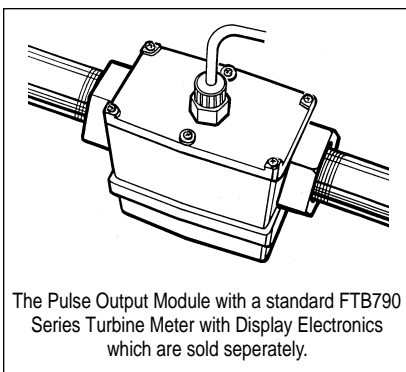


8. Connect the loose ends of the wires to the terminal block on the inside of the back coverplate provided with this module. Connect white (pulse out) to white and black (common) to black.

**Caution:** Do not connect the red wire. This module does not require connection of the red wire. Use of this wire will damage your equipment.

9. Install the back coverplate. Make sure the O-ring is securely seated and no wires are pinched.
10. Connect to the user interface device according to manufacturer's instructions.
11. Refer to the etched K-factor on the turbine. See Turbine Manual for location of K-factor.

**NOTE:** Please remember to supply a 820 ohm (minimum) Pull Up Resistor if the interface device does not have one. Reference illustration above as necessary.



The Pulse Output Module with a standard FTB790 Series Turbine Meter with Display Electronics which are sold separately.

## TECHNICAL SPECIFICATIONS

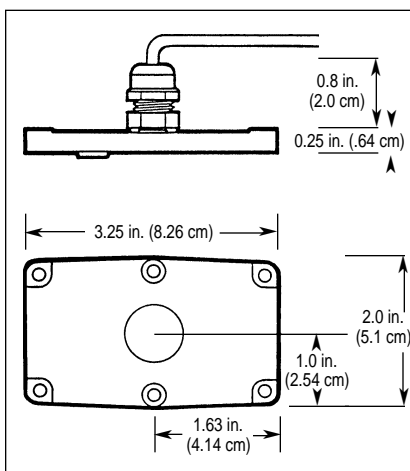
Frequency Range: 0 to 750 Hz  
 Housing Material: Nylon 6/6  
 Strain Relief: Hubble-PG7  
 Coverplate Thread: Female 1/2-20 UNF-2B  
 Cable: Belden 9363  
 Std. Cable Length: 10 ft. (3m)  
 Temperature: +14° to +140°F  
 (-10° to +60°C)

### Open Collector Current Sinking Output

Applied Voltage: 0 to 60 Volts DC  
 Connection: Two Wire  
 Allowable Current: Up to 100 mA  
 Output: Square Wave Pulse.  
 Amplitude same as supplied voltage.

**NOTE:** Display electronics, which work in conjunction with this module, continue to be powered with batteries.

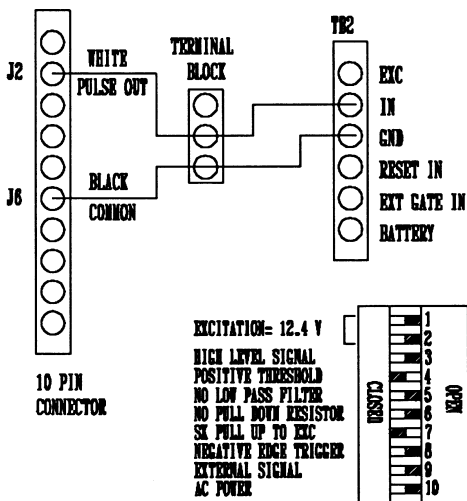
## Dimensions (FLSC790-P)



# TYPICAL WIRING

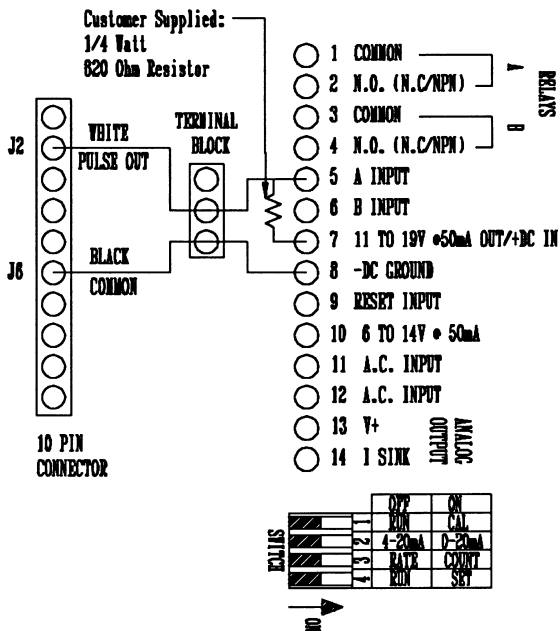
## Wiring to DPF700 Series Panel Meter

For connecting to the DPF700 meter, attach the white wire to Pin 2 on TB2, "SIG IN". The black wire goes to Pin 3 on TB2, "SIG GND". Set the S1 switches for 12.4 VDC OUT. No connection is made to "EXCITATION OUT"; the white wire is pulled up to the 12.4 VDC excitation inside of the DPF700.



## Wiring to DPF70 Series Panel Meter (DPF75, DPF76, DPF78)

For connecting to DPF70 Series panel meter, connect white wire to Pin 5 (A input), the black wire to Pin 8 (DC Ground), and connect a 820 ohm (minimum) pull up resistor between Pin 5 and Pin 7 (DC Excitation)



## NOTES



## 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.

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## 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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