

# FlexSmart™ TRMS Module

(Part No: S-FS-TRMSA & S-FS-TRMSA-D)



## Quick Start Guide

Inside this package:

- FlexSmart TRMS Module
- Detachable screw terminal connector
- Imprintable label
- This guide

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 Manual Part No: MAN-S-FS-TRMSA  
 Doc No: 10093-D

**Note: Refer to the documentation provided with the Onset HOBOWare® Energy Logger Pro™ and HOBOWare® Pro software for additional information on using and configuring the FlexSmart TRMS Module.**

## Introduction

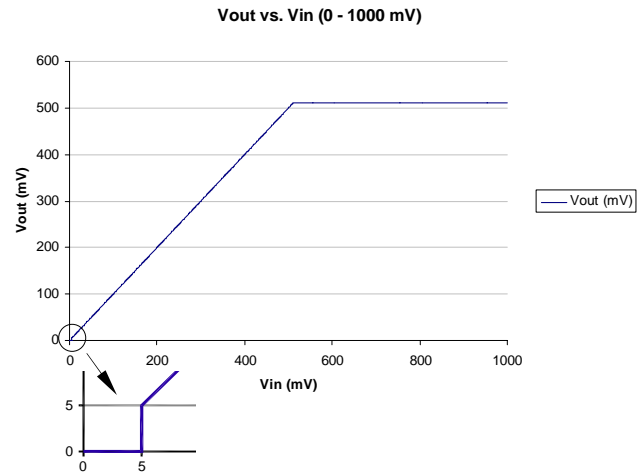
Thank you for purchasing an Onset FlexSmart TRMS Module. With proper care, it will give you years of accurate and reliable measurements.

The S-FS-TRMSA and S-FS-TRMSA-D are easy-to-configure, True-RMS input measurement modules. The S-FS-TRMSA is compatible with Onset’s H22-001 HOBOWare Energy Logger Pro. The S-FS-TRMSA-D is compatible with the both the HOBOWare U30 Station and the HOBOWare Energy Logger Pro. The “-D” variant has a modular jack for connecting to an available smart-sensor port. Both 2-channel modules have an input range of 512 millivolts RMS full-scale. Thus, they are fully compatible with industry-standard voltage and current transformers (PT and CT) which output 333 millivolts RMS full-scale.

The module features extremely low-power operation, resulting in long battery life for unattended data logging applications.

## Specifications

<b>Input Channels</b>	Two, AC-coupled
<b>Field Wiring</b>	Two-wire via screw terminals on detachable connector, 16-24 AWG Replacement detachable connectors: Part of spares kit, Onset part no: A-FS-TRMSA-4P-1
<b>Input Range</b>	5 to 512 mVRMS
<b>Minimum Input Voltage</b>	5mVRMS; Input voltages < 5mV will be clipped to zero (see graph at right)
<b>Maximum Input Voltage</b>	+/- 1V referred to AC- terminals (pins 2 and 4)
<b>Input Frequency</b>	50/60 Hz
<b>Accuracy</b>	+/- 0.3% of reading +/- 0.5% of FSR
<b>ADC Resolution</b>	15 bits
<b>AC Waveform</b>	< 4 Crest Factor
<b>Power Requirements</b>	+3.3V @ 3mA active, 6µA sleep
<b>Transfer Function</b>	$V_{RMS} = \sqrt{\frac{1}{T} \cdot \int_0^T [V(t)]^2 dt}$



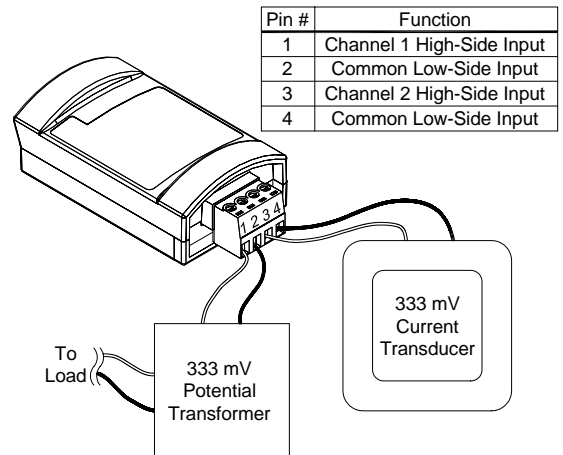
## Module Connections

**Tip:** The module is a single-ended device. Pins 2 and 4 are connected to signal ground and to each other.

PTs and CTs are connected to the module via a four-pin Phoenix-style detachable screw terminal connector. Once the PTs and/or CTs are connected, the module can then be configured using HOBOWare Pro software (with the module installed on the HOBOWare Energy Logger Pro).

The diagram at right illustrates *typical* connections for a PT and CT. For module connection instructions specific to PTs and CTs purchased from Onset, refer to the documentation provided with each PT and CT.

**Note:** For three-phase monitoring, each of the three modules should be wired so that similar parameters are connected to corresponding pin numbers. For example, voltage inputs pins 1 and 2 on each module; current inputs pins 3 and 4 on each module.



## Service and Support

HOBO products are easy to use and reliable. In the unlikely event that you have a problem with this instrument, contact the company where you bought the logger: Onset or an Onset Authorized Dealer. Before calling, you can evaluate and often solve the problem if you write down the events that led to the problem (are you doing anything differently?) and if you visit the Technical Support section of the Onset web site at [www.onsetcomp.com/support.html](http://www.onsetcomp.com/support.html). When contacting Onset, ask for technical support and be prepared to provide the product number and serial number for the logger and software version in question. Also completely describe the problem or question. The more information you provide, the faster and more accurately we will be able to respond.

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Internet: [www.onsetcomp.com](http://www.onsetcomp.com)

## Warranty

Onset Computer Corporation (Onset) warrants to the original end-user purchaser for a period of **one year** from the date of original purchase that the HOBO® product(s) purchased will be free from defect in material and workmanship. During the warranty period Onset will, at its option, either repair or replace products that prove to be defective in material or workmanship. This warranty shall terminate and be of no further effect at the time the product is (1) damaged by extraneous cause such as fire, water, lightning, etc. or not maintained in accordance with the accompanying documentation; (2) modified; (3) improperly installed; (4) repaired by someone other than Onset; or (5) used in a manner or purpose for which the product was not intended.

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## Returns

Please direct all warranty claims and repair requests to place of purchase.

Before returning a failed unit directly to Onset, you must obtain a Return Merchandise Authorization (RMA) number from Onset. You must provide proof that you purchased the Onset product(s) directly from Onset (purchase order number or Onset invoice number). Onset will issue an RMA number that is valid for 30 days. You must ship the product(s), properly packaged against further damage, to Onset (at your expense) with the RMA number marked clearly on the outside of the package. Onset is not responsible for any package that is returned without a valid RMA number or for the loss of the package by any shipping company. Loggers must be clean before they are sent back to Onset or they may be returned to you.

## Repair Policy

Products that are returned after the warranty period or are damaged by the customer as specified in the warranty provisions can be returned to Onset with a valid RMA number for evaluation.

**ASAP Repair Policy.** For an additional charge, Onset will expedite the repair of a returned product.

**Data-back™ Service.** HOBO data loggers store data in nonvolatile EEPROM memory. Onset will, if possible, recover your data.

**Tune Up Service.** Onset will examine and retest any HOBO data logger.

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