

**Landis+Gyr  
TS2 FOCUS AL Module  
Data Sheet**

**Publication: PUBS-0624-0001 Rev G**



## Limitation on Warranties and Liability Proprietary Rights Notice

Information in this document is subject to change without notice. This manual or any part of it thereof may not be reproduced in any form unless permitted by contract or by written permission of Landis+Gyr.

In no event will Landis+Gyr be liable for any incidental, indirect, special, or consequential damages (including lost profits) arising out of or relating to this publication or the information contained in it, even if Landis+Gyr has been advised, knew, or should have known of the possibility of such damages.

© 2010 Landis+Gyr, Inc. All Rights Reserved

Landis+Gyr TS2 FOCUS AL Module Data Sheet

Publication: PUBS-0624-0001 Rev G

Revision History			
Modification Date	Revision	Description	Author
7/20/2010	G	Released	Kim Utesch

Landis+Gyr  
6436 County Road 11  
Pequot Lakes, MN 56472  
Website: [www.landisgyr.com](http://www.landisgyr.com)  
E-mail: [solutionsupport.na@landisgyr.com](mailto:solutionsupport.na@landisgyr.com)  
Technical Support: 1-888-390-5733

Copyright© 2010 Landis+Gyr, Inc.

All rights reserved.

# Landis+Gyr TS2 FOCUS AL Module Data Sheet



## General

The Landis+Gyr TS2 FOCUS AL module is designed to accommodate the Landis+Gyr FOCUS AL meter for use in residential and light industrial services. The module monitors power consumption by reading a data table in the FOCUS AL meter. The module accumulates kWh usage, service voltage, and demand data and transmits this information to a TS2 collector via power line carrier.



**Figure 1. Landis+Gyr FOCUS AL Meter and TS2 Module**

- i** In 3S and 4S applications, CT and PT multipliers must be programmed into the Landis+Gyr meter (not the endpoint).
- i** The TS2 module should not be customer-retrofitted into Landis+Gyr FOCUS AL meters. Due to physical variations in early Landis+Gyr FOCUS AL meters, customers should contact their Landis+Gyr distributor for more information and retrofit instructions.
- i** Should you choose to customer-retrofit this meter, you will need specific items from your Landis+Gyr distributor in order to be successful. These items include the Landis+Gyr Application Notes that will give you instructions on how to properly retrofit the meter and a meter patch. Without the Application Notes and the correct meter patch, the module will not log properly.

## Streaming Data

Landis+Gyr's TS2 FOCUS AL (Retrofit) modules, firmware version 12 or later, are capable of providing hourly kWh data in direct register read or load profile mode. A minimum or maximum voltage measured over an hour can also be delivered. Prior to remotely activating streaming data in any module, the TS2 system including the SPU3000 and Command Center must be capable of supporting streaming data endpoints. To learn the details of using this very powerful feature, check the Landis+Gyr website for training opportunities offered on a regular basis. After completion of training, Landis+Gyr will provide you with the ability to upgrade your TS2 System.



Existing modules can be re-flashed in the field to support streaming using Command Center MAS or EAS version 3.2 or later.

## Supported Meters

The TS2 FOCUS AL module is compatible with all of Landis+Gyr FOCUS AL meter forms. Table 1 lists the Landis+Gyr FOCUS AL meters that are supported by the model 0624 TS2 FOCUS AL endpoint:

**Table 1. TS2 FOCUS Endpoint Compatibility**

Form	Current Class	Voltage	Endpoint Part Number
1S	100	120 VAC	FASY-0624-0003
3S	20		
12S/25S	200		
2S	200	240 VAC	FASY-0624-0004
2SE	320		
2K	480		
3S	20		
4S	20		

## Programming Information:

The TS2 FOCUS AL module can be programmed using a standard Opto Wand holder, positioned as shown in Figure 2.



**Figure 2. TS2 FOCUS Endpoint with Universal Opto Wand Holder and Programming Station**

240 V TS2 FOCUS AL modules (installed in 240 V FOCUS meters) can be programmed at 120 V, but the meter will not operate correctly. Refer to the TS2 Handheld Programmer User Manual (PUBS-0585-0101) for more information on programming TS2 FOCUS endpoints with TS2 MAS.

## Detent Status

Detent status indicates whether the meter will measure power flow in both directions or only in one direction. A detent status of **No (Non-Detent)** indicates that the meter will measure power flow in both directions. With detent status **No (Non-Detent)**, the transceiver will accumulate kWh usage when there is forward or reverse power at the site. A detent status of **Yes (Detent)** indicates that the meter will only measure power flow in one direction (from the grid to the service installation). When detent status is **Yes (Detent)**, the TS2 module will accumulate kWh when there is forward power at the site and will ignore reverse power.



---

It is recommended that the meter display is programmed to coincide with the detent status of the endpoint.

---

## Net Metering

The TS2 FOCUS AL (Retrofit) module supports net metering in Firmware version 17 or later. Net metering allows the endpoint to report the net power flow of energy in both directions when power is generated locally at a customer’s site (wind, solar, etc.)



---

**The detent status MUST be changed to “Yes” with MAS or EAS.**

---



---

Net values cannot be streamed.

---

## Time of Use

The TS2 FOCUS AL (Retrofit) module supports up to four TOU rates for five-dial reads. TOU allows utilities to charge custom rates during various phases of off-peak and critical/peak-demand usage periods. TOU schedules are user-configurable via Command Center without accessing the meter in the field.

## Meter Display

The FOCUS AL meter allows 16 display items. The TS2 FOCUS AL (Retrofit) module (after firmware version 17) has the ability to add items to the display list of the FOCUS AL meter; however, it will never remove any display items that are already programmed into the meter.



To take advantage of the TS2 FOCUS AL (Retrofit) endpoint's ability to display, ensure that the meter displays no more than 5 items, including different scroll times for different displays where only 2 items actually display but 8 may have actually been used. Display items can be removed by reprogramming the meter using the FOCUS configuration tool provided by Landis+Gyr.

In a case where the meter has more than 5 items displayed, the endpoint will send an error bit in InterfaceBIT that indicates the max number of display records was reached. In this case the endpoint will display what it can until it hits the limit.

**Figure 3. Set Display**



You cannot implement this “meter display” feature in FOCUS AL meters purchased prior to September 2007.

# Functional Specifications

Following is a list of specifications for the Landis+Gyr's TS2 FOCUS AL (Retrofit):

**Table 2. FOCUS AL Module Specifications**

Category	Specification	Value or Range	
Compatible Meters	Meter Forms	120V	240V
		1S, 3S, 12S/25S	2S, 2SE, 2K, 3S, 4S
Electrical	Voltage	120±20% VAC, 60±5% Hz	240±20% VAC, 60±5% Hz (will program at 120VAC)
	Power	5 Watts max (2-3 Watts typical)	8 Watts max (1 Watt typical)
	VA	58 VA Max (38 VA typical)	130 VA Max (50 VA typical)
	Transient Protection	Installation Category I (Outside Home)	
	Isolation to Meter	2500VAC 60 Hz 1 minute (< 1 mA leakage)	
Optical Communications Port	General Interface	Standard Optical Communications Interface	
Environmental	General Environmental	Self-contained within the FOCUS meter	
	Operating Temperature Range	-40 to +75 degrees Celsius (ambient temperature)	
	Storage Temperature Range	-40 to +85 degrees Celsius (ambient temperature)	
	Humidity	0 to 95% Relative Humidity non-condensing	
Mechanical	Size	4.0 L x 2.2 W x 1.0 H inches, typical	
	Weight	2.0 ounces (56.7 g), typical	