

**LICKING VALLEY RURAL ELECTRIC  
COMISSION STAFF'S FIRST REQUEST FOR INFORMATION  
CASE NO. 2014-00256**

tem 1

Page 1 of 1

WITNESS: Mary E. Purvis

Q1: Refer to Licking Valley's e-mail address listed in Item 2 of the application ("Application") and Item 9 of the Terms & conditions of its proposed Prepay Service tariff. State the correct e-mail address and provide corrections as necessary.

A1: The correct email is psc@lvrecc.com.

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WITNESS: Mary E. Purvis

- Q2: Refer to paragraph 4 of the Application, which states, "This Application is for the purpose of requesting approval of a prepay metering program in accordance with the terms set forth in the Proposed tariff attached as Exhibit A of this application." Confirm the proposed tariff PREPAY SERVICE is Exhibit A.
- A2: Yes, the proposed Prepay Service is Exhibit A. Please see Exhibit A of this Data Request. For the Revised Prepay Service Tariff.

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WITNESS: Mary E. Purvis

- Q3: Refer to Item 1 of the Terms & Conditions of the proposed Prepay Service Tariff. Explain why all other rules and regulations apply only to residential customers with the Prepay Service is also available for Commercial and Small Power Service.
- A3: All rules and regulations apply to both Residential and Commercial and Small Power Services. Please see Exhibit A of this Data Request for the Revised Prepay Service Tariff, Item 1.

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WITNESS: Mary E. Purvis

Q4: Explain whether new Prepay Service customers would be subject to a membership fee in addition to the Customer Facility Charge and Prepay Service Fee.

A4: Yes, all new members will be subject to a membership fee as stated in Item 3 of the Agreement for Prepay Service (Exhibit B of the Application). This statement has been added to the Revised Prepay Service Tariff, Item 25 in Exhibit A of this data request.

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WITNESS: Mary E. Purvis

Q5: Refer to Item 10 of the Terms & Conditions of the Prepay Service Tariff. Explain what would happen to the accumulated interest when the deposit is converted into a credit of the Prepay account going forward.

A6: Any accumulated interest will also be converted into a credit on the Prepay account.

**LICKING VALLEY RURAL ELECTRIC  
COMISSION STAFF'S FIRST REQUEST FOR INFORMATION  
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Question 6

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WITNESS: Mary E. Purvis

Q6: Refer to Item 23 of the Agreement for Prepay Service where it states that the Prepay agreement "shall be in effect for (1) year".

- a. Identify where in the Prepay tariff a term of one year is required to receive the Prepay Service.
- b. Explain why a one-year term for Prepay Service is necessary when other cooperatives have not required a term for Prepay Service. See, for instance, the Prepay Service agreement approved in Case No. 2012-00437.

A6: a. A one year service agreement is not listed in the Prepay Service Tariff, but is found as Item 23 of the Prepay Agreement (Exhibit B of the Application). Item 23 of the Prepay Agreement has been added to the Revised Prepay Tariff in Exhibit A of this Data Request, Item 26.

- b. Other Cooperatives have a one year service agreement such as Bluegrass Energy (Case No.2012-00260), Cumberland Valley Electric (Case No.2014-00139) and Grayson RECC (Case No. 2013-00403 ). Like these other programs, if the prepay tariff is not working for the member within the first year, the member may request in writing to be moved to the standard residential tariff. Licking Valley will evaluate the reasons based on individual circumstances. If Licking Valley decides the reason(s) for the switch is valid, then the member's year contract will be terminated and billing will return to the standard residential tariff. After one year, at any time the member can return to the standard residential or commercial or small Power service, but his request must be made in writing.

**LICKING VALLEY RURAL ELECTRIC  
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Question 7

Page 1 of 1

WITNESS: Mary E. Purvis

- Q7: Refer to the response to Question 7 on page 2 of Exhibit C of the Application, which states, "LVE is estimating that 300 members will use the program. This number was calculated similarly to how Farmer's and Shelby calculated theirs in that 300 represents approximately three percent of its members." Also refer to page 44 of the 2013 Annual Report of Licking Valley Rural Electric Cooperative Corporation, which lists 16,258 residential customers.
- a. Confirm that the estimated 300 members proposed to use the program represent 3 percent of Licking Valley's residential customers at the end of 2013.
  - b. Provide the most recent number of residential customers as of the date of this response.
- A7:
- a. Currently, Licking Valley has 12,353 members and 17,395 meters. Three percent of 12,353 is 371 members. Updating the estimated costs and a rounding up of the three percent to 400 members results in an estimated monthly fee of \$5.13. This is still above the proposed monthly fee of \$5.00. Please see Exhibit B of this Data Request for the Revised Calculations of the monthly fee.
  - b. Licking Valley has 12,353 members.

**LICKING VALLEY RURAL ELECTRIC  
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WITNESS: Mary E. Purvis

Q8: Refer to the response to Question 8 on page 2 of Exhibit C of the Application, which states, "Service disconnection and reconnection will be automatic with the installation of an AMI meter equipped with a disconnect feature." Explain why Licking Valley did not chose to put a collar on the existing Advanced Metering infrastructure ("AMI") meter rather than purchasing a new one with the disconnect feature.

A8: The individual collar is no longer manufactured.

**LICKING VALLEY RURAL ELECTRIC  
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tem 9

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WITNESS: Mary E. Purvis

- Q9: Refer to the response of Question 9 on pages 2-3 of Exhibit C of the Application, which states, "The equipment cost is the cost of the software and hardware divided by the number of estimate participants. An amount of \$90.37 represents the additional cost associated with the disconnect device/collar." Also, refer to Table A of the response to question 9 of page 3 which refers to a New Disconnect AMI Meter for \$211.87 under the heading of Hardware.
- a. Provide a description, including the name of the manufacturer, of the New Disconnect AMI Meter that is to be installed.
  - b. Provide a description, including the name of the manufacturer, of the old AMI meter that is to be replaced.
- A9:
- a. At this time Licking Valley has not made a final determination of the type of prepay meter. The cost used in the cost estimation is from Landis and Gyr.
  - b. The current meter is a TS2 AMI meter from Landis & Gyr. Please see Exhibit B for information on this meter.

**LICKING VALLEY RURAL ELECTRIC  
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tem 10

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WITNESS: Mary E. Purvis

Q10: Refer to Table B of the response to Question 9 on page 4.

- a. Explain why there are no cost savings reflected in the Annual Expenses as a result of the Prepay Program.
- b. Identify and explain any expected cost savings resulting from the implementation of the proposed Prepay Program.

A10: a. At this time the cost savings resulting from the Prepay Program cannot be estimated due to the uncertainty of the number of participants and the behavior of the participants regarding usage.

- b. Please see A10a.

**LICKING VALLEY RURAL ELECTRIC  
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WITNESS: Mary E. Purvis

Q11: Refer to Table C of the response to Question 9 on page 4. There is no transaction fee listed as part of the proposed \$5.00 monthly rate.

- a. Identify the specific costs and expenses required to process a prepaid meter transaction.
- b. Identify the specific costs and expenses required to process a check transaction.
- c. Identify the specific costs and expenses required to process a credit card transaction.
- d. Identify the specific costs and expenses required to process a walk-in transaction.

A11: a. The estimated costs associated with any transaction fee is \$1.54 based on an average of three minutes per transaction regardless of the payment method.

Transaction Fee Processing

One CSR will avg approximately three minutes per transaction

Labor	\$ 18.06	\$18.06
Benefits	70.0%	<u>\$12.64</u>
		\$30.70
Number of transactions per hour		<u>20</u>
Cost per Transaction		<u><u>\$1.54</u></u>

- b. Please see A11a.
- c. Please see A11a.
- d. Please see A11a.

FOR All Territory Served

PSC KY NO. 0034

ORIGINAL SHEET NO. 31

Licking Valley Rural Electric  
(NAME OF UTILITY)

CANCELLING PSC KY NO. \_\_\_\_\_

\_\_\_\_\_ SHEET NO. \_\_\_\_\_

**PREPAY SERVICE**

**STANDARD RIDER:**

Licking Valley Rural Electric's Prepay Service ("Prepay") is an optional rider to Rate Schedule A – Residential, Farm, Small Community Hall and Church Service as defined by the Cooperative.

**AVAILABILITY:**

All Rate Schedule A – Residential, Farm, Small Community Hall and Church Services, excluding accounts on Levelized/Fixed Budget, Automatic Bank Draft, Net Metering, and accounts greater than 200 Amp Service within the territory served by Licking Valley Electric.

All Rate Schedule B – Commercial and Small Power Service, excluding account on Levelized/Fixed Budget, Automatic Bank Draft, Net Metering, and accounts greater than 200 Amp Service.

**MONTHLY RATE:**

Rate Schedule A:

Consumer Facility Charge:	\$ 9.32
Energy Charge per kWh:	\$ 0.09355
Prepay Service Fee:	\$ 5.00

Rate Schedule B;

Consumer Facility Charge:	\$ 20.71
Energy Charge per kWh:	\$ 0.08282
Prepay Service Fee:	\$ 5.00

**TERMS & CONDITIONS:**

Members who qualify as defined above in "Availability" may choose to voluntarily enroll their electric account(s) in the Prepay service and are subject to the following:

1. Each member electing Prepay will be subject to all other applicable rules and regulations which apply to members using the residential tariff or Commercial and Small Power Service, without the Prepay rider.

DATE OF ISSUE \_\_\_\_\_  
MONTH / DATE / YEAR

DATE EFFECTIVE \_\_\_\_\_  
MONTH / DATE / YEAR

ISSUED BY \_\_\_\_\_  
SIGNATURE OF OFFICER

TITLE \_\_\_\_\_

BY AUTHORITY OF ORDER OF THE PUBLIC SERVICE  
COMMISSION IN CASE NO. \_\_\_\_\_ DATED \_\_\_\_\_

FOR All Territory Served

PSC KY NO. 0034

ORIGINAL SHEET NO. 31

CANCELLING PSC KY NO. \_\_\_\_\_

SHEET NO. \_\_\_\_\_

Licking Valley Rural Electric  
(NAME OF UTILITY)

**PREPAY SERVICE (CONTINUED)**

2. Members should have internet access or the ability to receive electronic communications, including texting services to participate in the voluntary Prepay service.
3. Any member choosing to enroll in Prepay shall sign a *Prepay Service Agreement* (“Agreement”). The Agreement shall remain in effect until the member notifies Licking Valley Electric, in writing, to cancel the Agreement.
4. Upon written cancellation of the Agreement, the member shall be subject to the conditions of the applicable tariff, without the Prepay rider. In accordance with Licking Valley Electric’s current Rules and Regulations, this may require a security deposit to be paid by the member at the time of cancellation of the Prepay service.
5. Any special equipment issued to the member for participation in Prepay shall be returned in good working condition by the member. Refusal by the member to return the equipment shall result in replacement cost of the equipment being charged to the member.
6. The Consumer Facility Charge and Energy Charge will be the same as Licking Valley Electric’s applicable residential tariff. The Energy Charge per kWh will be calculated and deducted from the member’s account on a daily basis. The Consumer Facility Charge and Prepay Service Fee will be pro-rated and deducted from the member’s account on a daily basis.
7. The Fuel Cost Adjustment and Environmental Surcharge will be charged or credited to the account daily. The Fuel Adjustment and Environmental Surcharge will be the rates in effect for the time of update.
8. The Prepay account will not be subject to deposits, late fees, disconnect fees, and reconnect fees.
9. At the time Prepay is activated for an account, the initial purchase is recommended to be a minimum of \$100.00. Purchases beyond the point of activation will be at an increment of the member’s choosing, with a minimum purchase being \$20.00. Members may apply funds to their prepay account(s) by most methods as post pay and include the following: credit card, debit card, check and

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PSC KY NO. 0034

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CANCELLING PSC KY NO. \_\_\_\_\_

\_\_\_\_\_ SHEET NO. \_\_\_\_\_

Licking Valley Rural Electric  
(NAME OF UTILITY)

**PREPAY SERVICE (CONTINUED)**

cash. Payment can be made via the website, phone and in person at one of Licking Valley's offices. Payment methods are listed on Licking Valley Electric's website, www.lvrecc.com.

- 10. When an existing member selects to participate in Prepay and has a security deposit on file, the deposit and any accumulated interest will not be refunded. The deposit will be converted into a credit on the Prepay account going forward. No crediting of the deposit to the Prepay account shall occur if the deposit is needed to cover a pre-existing indebtedness by the member or the member has another account(s) which does not have a satisfactory credit history, the remaining credit will be transferred as a deposit to the unsecured account(s).
- 11. If a member who has not participated in Prepay is disconnected for non-payment, the member may request to be reconnected and enrolled in Prepay. If the member is unable to pay the account balance in full for the disconnected account, a payment plan whereby future purchases for Prepay will be split 70/30 until the old debt is retired will be established. Seventy percent (70%) of the payments will be applied to new purchases and thirty percent (30%) will be applied towards retirement of the previous balance minus any applicable deposit.
- 12. A prior member, who previously received service from Licking Valley Electric and discontinued service without paying his/her final bill, (i.e. an uncollectible account/bad debt) will be required to pay the past due amount prior to establishing prepay service. If the member is unable to pay the account balance in full, a payment plan whereby future purchases for Prepay will be split 70/30 until the old debt is retired will be established. Seventy percent (70%) of the payments will be applied to new purchases and thirty percent (30%) will be applied towards retirement of the previous balance.
- 13. Once an account is enrolled in Prepay, the account will no longer be eligible for additional payment arrangements.
- 14. Financial assistance from community action or other agencies received for a Prepay account will be credited to the balance of the Prepay account upon receipt of a voucher or other supporting official documents of commitment from the agency providing assistance.

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PSC KY NO. 0034

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Licking Valley Rural Electric  
(NAME OF UTILITY)

**PREPAY SERVICE (CONTINUED)**

- 15. When a Prepay account reaches a balance of \$25.00, an automated message(s) will be processed and sent to the member and no written notice will be sent by mail.
- 16. If a payment on a Prepay account is returned for any reason, the account is subject to the service fee as provided in Licking Valley Electric's Rules and Regulations.
- 17. Members presenting a Winder Hardship Reconnect, Certificate of Need or Medical Certificate as provided in 807 KAR 5:006, Sections 14, 15, and 16 will be removed from Prepay and the account will return to the status of a post-pay account.
- 18. A monthly paper bill will not be mailed to a member who elects to participate in Prepay. The member may view their Prepay account status on Licking Valley Electric's website. Based on the Prepay notification system, the account should not be eligible for past-due status, therefore; a delinquent notice will not be processed or mailed.
- 19. A Prepay account will be disconnected if the balance of the account becomes negative. The account will be disconnected regardless of weather/temperature as the member is responsible for ensuring that the Prepay account is adequately funded. Licking Valley Electric discourages participation in the Prepay program if the member cannot ensure proper funding.
- 20. If a Prepay account is disconnected due to lack of funds or any other reason, Licking Valley Electric shall be held harmless for any damages due to loss of energy service. Likewise, if the account is disconnected and the member applied funds to the Prepay account thus causing the account to be reconnected, the member accepts full responsibility for any damages to the location caused by the account being reconnected and holds the Cooperative harmless from any damages arising from such a reconnection.
- 21. Prepay accounts will be billed daily with a month-end billing being processed to finalize any applicable miscellaneous fees such as billing contracts, EnviroWatts, WinterCare, etc.

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PSC KY NO. 0034

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CANCELLING PSC KY NO. \_\_\_\_\_

\_\_\_\_\_ SHEET NO. \_\_\_\_\_

Licking Valley Rural Electric  
(NAME OF UTILITY)

**PREPAY SERVICE (CONTINUED)**

- 22. If a request is made to disconnect the service at a Prepay account, any remaining balance will be transferred to other active accounts, if applicable, or refunded in form of check.
- 23. Should damage occur to the equipment as a result of malice or neglect by the member, the member shall be billed for the replacement cost of the equipment.
- 24. Members may check the status of a Prepay account by utilizing Licking Valley Electric's website or by calling the office at any time.
- 25. The member shall pay any fees as applicable by the Cooperative bylaws and the Cooperative Rules and Regulations as approved by the Kentucky Public Service Commission and as may be required for the member to participate in the Prepay electric service program.
- 26. The Prepay agreement shall be in effect for (1) year. After one year, the member may elect to opt out of the Prepay program by submitting a request for cancelation to Licking Valley in writing. If Prepay service is ended, the member must meet the requirements of a post-pay account for continued service.

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# E330 FOCUS AX+E350 AX-SD Single Phase

## The Next Generation of Advanced Residential Metering

The FOCUS® AX-SD is an advanced meter platform with features that rival any meter in its class. With available service disconnect integrated into the meter base, utilities can take advantage of the 200 Amp relay to disconnect power or limit service remotely using an advance metering technology or manually at the meter. The combination of the FOCUS Service Disconnect base module and powerful AX register provides a flexible system that supports a variety of connect/disconnect and service-limiting applications.

A single circuit board design, mounted at the front of the meter, allows room for modular advanced metering communications or a KYZ option output board. Fewer parts and connectors throughout the board design increase reliability and contribute to better overall endpoint performance. Highly accurate load performance and the use of a field-proven Digital Multiplication Measurement Technique ensure reliability and dependability during the entire life of the FOCUS meter.

Meter reconfiguration can be accomplished optically through the configuration port located on the front cover.

- Select from displayable positive, negative, net and added (security) metrics
- Change the displayed information, order or digits
- Configure a CT/PT meter multiplier to obtain a direct reading
- Preset or reset kWh

With a focus on customer satisfaction, we are committed to providing the best metering solution in terms of capability, technology and affordability. By utilizing our experience and technology with that of our strategic allies and development partners, we provide metering solutions that cover the range of utilities' residential metering needs.



## Key Benefits

- Digital Multiplication Measurement technique
- Non-volatile memory
- Designed for a 20+ year life
- Meets or exceeds industry and ANSI standards
- Uses ANSI protocol (between meter and advanced metering device)
- 6 digit LCD and 3 Alpha ID
- Selectable meter multiplier
- Service limiter function
- Event log of 500+ entries
- 77 kb of load profile memory, 1–8 channels
- Advanced second generation over-the-air-flashable firmware

Landis  
|Gyr+  
manage energy better

**Specifications**

General Specifications	Active Energy “kWh-kW” meter	
	Digital Multiplication Measurement Technique	
	Non-Volatile Memory	
	Designed for 20+ years life	
	Meets ANSI standards for performance	
	Utilizes ANSI protocol (between meter and AMI device)	
	9-Digit LCD	
	Display scroll sequence programmable (factory or end user)	
	Configuration Port – cover does not have to be removed or optional ANSI C12.18 optical port available	
Operating Temperature	-40C to +85C under cover	
Nominal Voltage	120V or 240V	
Operating Voltage	80% to 115% of Vn	
Frequency	60Hz +/- 5%	
Humidity	5% to 95% relative humidity, non condensing	
Starting Load (Watts)	Class 20	0.005 Amp (0.6W)
	Class 100	0.030 Amp (3.6W)
	Class 200	0.050 Amp (12W)
	Class 320	0.080 Amp (19.2W)
	Class 480	0.120 Amp (28.8W)
Voltage Burden	≤ 1.9W Max	
Load Performance Accuracy	Accuracy Class 0.5% – typical accuracy 0.2%	
	Exception: Form 36S 0.5%	
Available Forms	Self-Contained	1S, 2S, 2SE, 12S, 25S
	Transformer Rated	3S, 4S
	K-Base	2K
Display Options	Energy Metrics: +kWh, -kWh, Net kWh, and added kWh (Security)	
	Metric Energy Display Format – 4x1, 4x10, 5x1, 5x10, 6x1 or 6x10	
	Time of Use and Demand Billing	
AMI Platform	Modular or Integrated	
Selectable Meter Multiplier	Up to 4096 as result of PT ratio • CT ratio	
Applicable Standards	ANSI C12.1 for electric meters	
	ANSI C12.10 for physical aspects of watt hour meters	
	ANSI C12.18 Protocol specifications for ANSI Type 2 Optical Port	
	ANSI C12.19 Utility Industry End Device Data Tables	
	ANSI C12.20 for electricity meters, 0.2 and 0.5 accuracy classes	
	CAN3-C17-M84 Canadian specifications for approval of type of electricity meters	
Service Disconnect	10,000 operations at full rated current (disconnect/connect)	
	Available forms: 1S, 2S, 12S, 25S	

2800 Duncan Road  
Lafayette, IN 47904 U.S.A  
Phone: **765.742.1001** • Tech Support: **800.777.2774**  
FAX: **765.429.0936**  
www.landisgyr.com



# E130 FOCUS AL

## Leading-Edge Technology for Advanced Residential Metering Applications

The FOCUS® family of metering products provides the utility industry with an advanced, reliable and economical solid-state meter platform for advanced metering applications. The FOCUS AL was designed to be a low cost, active energy kWh-only meter. Utilizing a single circuit board design, the FOCUS AL allows room for installation of a modular communications board or a KYZ option output board. Fewer parts and connectors through the design increase reliability and contribute to better overall endpoint performance. Highly accurate load performance and the use of field-proven Digital Multiplication Measurement Technique ensure reliability and dependability during the entire life of the meter. The FOCUS AL technology includes measurement circuit, microprocessor, non-volatile memory, selectable metrics, flexible display functionality, factory programming option and is designed for a 20+ year life.

Meter reconfiguration can be accomplished optically through the configuration port located on the front cover.

- Select from displayable positive, negative, net and added (security) metrics
- Change the displayed information, order or digits
- Configure a CT/PT meter multiplier to obtain a direct reading
- Preset or reset kWh
- Adjust calibration



## Key Benefits

- Digital Multiplication Measurement Technique
- Non-volatile memory
- Designed for a 20+ year life
- Meets or exceeds industry and ANSI standards
- Uses ANSI protocol (between meter and AMR device)
- 6 digit LCD and 2 Alpha ID
- Selectable meter multiplier up to 240 (1200:5 CT)

Product Specification and Schedule Sheet

**Specifications**

General Specifications	Active Energy “kWh-only” meter
	Digital Multiplication Measurement Technique
	Non-Volatile Memory
	Designed for 20+ years life
	Meets ANSI standards for performance
	Utilizes ANSI protocol (between meter and AMI device)
	8-Digit LCD
	Display scroll sequence programmable (factory or end user)
	Configuration Port – cover does not have to be removed
Operating Temperature	-40C to +85C under cover
Operating Voltage	80% to 115% of Vn
Frequency	60Hz +/- 5%
Humidity	5% to 95% relative humidity, non condensing
Voltage Burden	≤ 1.8W Max
Load Performance Accuracy	Accuracy Class 0.5% – typical accuracy 0.2%
Display Options	Energy Metrics: +kWh, -kWh, Net kWh, and added kWh (Security)
	Metric Energy Display Format – 4x1, 4x10, 5x1, 5x10, 6x1 or 6x10
AMI Platform	Modular or Integrated
Selectable Meter Multiplier	Up to 240 as result of PT ratio • CT ratio
Applicable Standards	ANSI C12.1 for electric meters
	ANSI C12.10 for physical aspects of watt hour meters
	ANSI C12.19 Utility Industry End Device Data Tables
	ANSI C12.20 for electricity meters, 0.2 and 0.5 accuracy classes
	CAN3-C17-M84 Canadian specifications for approval of type of electricity meters
Landis+Gyr Communication	2 Way Gridstream RF
	2 Way Gridstream PLC
	1 Way PLC
	1 Way Fixed network RF
	1 Way Airpoint RF Drive-By
Third Party Communication	Aclara STAR Network – RF
	Aclara TWACS Technology – PLC
	Trilliant 2 Way SecureMesh

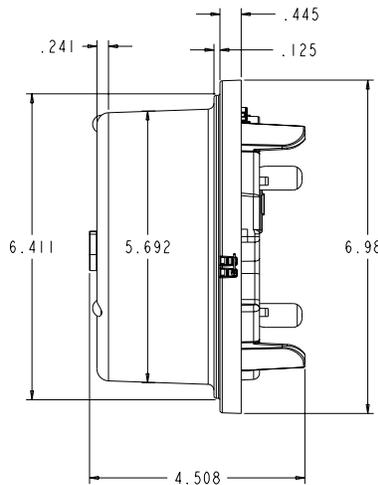
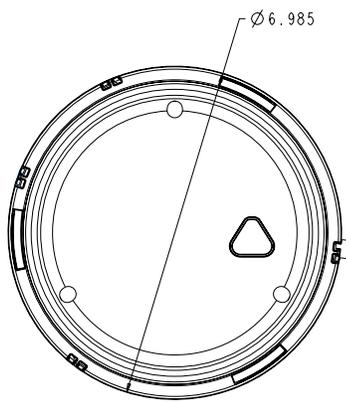
The kWh FOCUS meter is available in the following forms:

Form	Nominal Voltage	Current Class	Test Amps	Starting Load	Kh
1S	120V	CL 100	15.0	0.030 Amp (3.6W)	1.8
2S	240V	CL 200	30.0 / 50.0	0.050 Amp (12W)	7.2
2SE	240V	CL 320	30.0 / 50.0	0.080 Amp (19.2W)	12.0
2K	240V	CL 480	30.0 / 50.0	0.120 Amp (28.8W)	14.4
3S	120V	CL 10/20	2.5	0.005 Amp (0.6W)	0.3
3S	240V	CL 10/20	2.5	0.005 Amp (0.6W)	0.6
4S	240V	CL 10/20	2.5	0.005 Amp (0.6W)	0.6
25S	120V	CL 200	30.0	0.050 Amp (12W)	14.4
12S	120V	CL 200	30/50	0.050 Amp (12W)	14.4

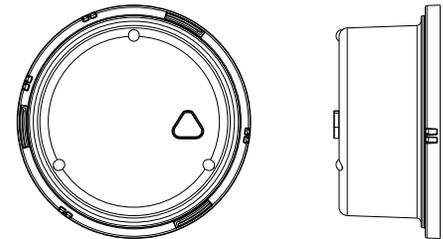
Form	Net Lbs.	Single Pack Weight	Single Pack Dimensions	Four Pack Weight	Four Pack Dimensions	Pallet Weight	Pallet Dimensions
1S	2	3 lbs.	8 3/4" x 8 3/4" x 7"	9 lbs.	15 1/2" x 7" x 15 1/2"	190 lbs.	31" x 46" x 31"
2S	2	3 lbs.	8 3/4" x 8 3/4" x 7"	10 lbs.	15 1/2" x 7" x 15 1/2"	190 lbs.	31" x 46" x 31"
2SE	2	3 lbs.	8 3/4" x 8 3/4" x 7"	10 lbs.	15 1/2" x 7" x 15 1/2"	190 lbs.	31" x 46" x 31"
3S	2	3 lbs.	8 3/4" x 8 3/4" x 7"	9 lbs.	15 1/2" x 7" x 15 1/2"	190 lbs.	31" x 46" x 31"
4S	2	3 lbs.	8 3/4" x 8 3/4" x 7"	10 lbs.	15 1/2" x 7" x 15 1/2"	190 lbs.	31" x 46" x 31"
12S	2	3 lbs.	8 3/4" x 8 3/4" x 7"	10 lbs.	15 1/2" x 7" x 15 1/2"	190 lbs.	31" x 46" x 31"
25S	2	3 lbs.	8 3/4" x 8 3/4" x 7"	10 lbs.	15 1/2" x 7" x 15 1/2"	190 lbs.	31" x 46" x 31"
2K	4 1/2	6 lbs.	12 1/2" x 12 1/2" x 9"	N/A	N/A	195 lbs.*	31" x 46" x 43"

Standard pallet size of 96 meters  
\* Denotes alternate pallet size of 30 meters

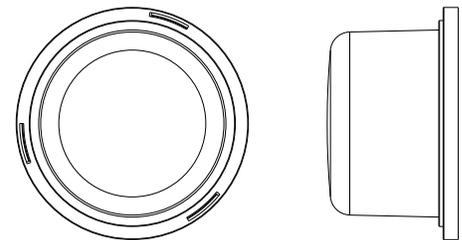
FOCUS AL S-Base



Cover Options

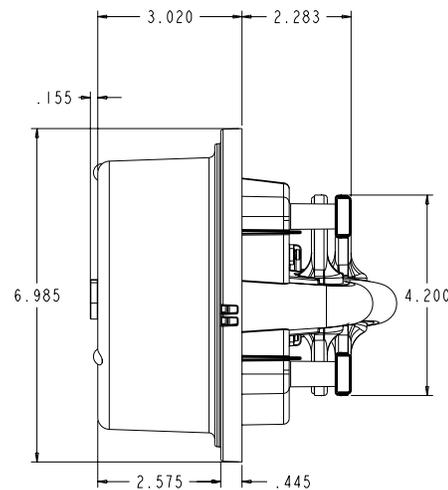
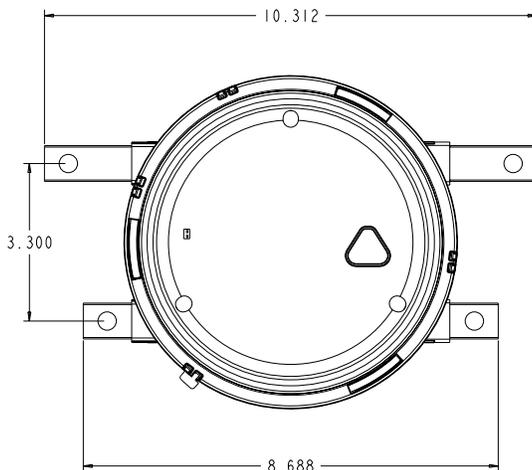


FOCUS AL Short Cover



FOCUS AL Tall Cover

FOCUS AL K-Base





With focus on customer satisfaction, we are committed to providing the best metering solution in terms of capability, technology and affordability. By utilizing our experience and technology with that of our strategic allies and development partners, we provide metering solutions that cover the range of utilities' residential metering needs.



2800 Duncan Road  
Lafayette, IN 47904 U.S.A  
Phone: **765.742.1001**  
Tech Support: **800.777.2774**  
FAX: **765.429.0936**  
[www.landisgyr.com](http://www.landisgyr.com)

# FOCUS AX

E330 FOCUS AX • E350 FOCUS AX-SD Single Phase • E330 FOCUS AX Polyphase

## The FOCUS family of meters featuring advanced residential metering and light commercial applications.

The FOCUS® AX platform features a single circuit board design, mounted at the front of the meter, allows room for modular advanced metering communications or a KYZ option output board. Fewer parts and connectors throughout the board design increase reliability and contribute to better overall end point performance. Highly accurate load performance and the use of a field-proven Digital Multiplication Measurement Technique ensure reliability and dependability during the entire life of the FOCUS AX meter.

## The Next Generation of Advanced Residential Metering

The FOCUS AX-SD is an advanced meter platform with features that rival any meter in its class. With available service disconnect integrated into the meter base, utilities can take advantage of the 200 Amp relay to disconnect power or limit service remotely using an advanced metering technology or manually at the meter. The combinations of FOCUS Service Disconnect base module and powerful AX register provides a flexible system that supports a variety of connect/disconnect and service-limiting applications.

## Economical and Reliable Option for Light Commercial Applications

The FOCUS AX Polyphase meter provides a cost-efficient alternative for light commercial metering applications that do not require all of the functionality of the S4e meter. The FOCUS AX Polyphase meter contains a 120V to 277V auto-ranging power supply suitable for both 277/480V, 4W, WYE and 240/480V 4-wire Delta Services. As an addition to the FOCUS family of meters, the AX Polyphase brings the same proven solid-state performance utilities have come to expect from FOCUS meters, in an economical and AMI-ready platform for commercial and industrial applications.



## Key Benefits

- Digital Multiplication Measurement Technique
- Non-volatile memory
- Designed for a 20+ year life
- Meets or exceeds industry and ANSI standards
- Uses ANSI protocol (between meter and communication device)
- 6 digit LCD and 3 Alpha ID
- Selectable meter multiplier up to 240 (1200:5 CT)



Product Specification and Schedule Sheet

**Specifications**

General Specifications	Active Energy “kWh-kW” meter	
	Digital Multiplication Measurement Technique	
	Non-Volatile Memory	
	Designed for 20+ years life	
	Meets ANSI standards for performance	
	Utilizes ANSI protocol (between meter and AMI device)	
	9 digit LCD	
	Display scroll sequence programmable (factory or end user)	
	Configuration port – cover does not have to be removed or optional ANSI C12.18 optical port available	
Operating Temperature	-40C to +85C under cover	
Operating Voltage	80% to 115% of Vn	
Frequency	60Hz +/- 5%	
Humidity	5% to 95% relative humidity, non condensing	
Voltage Burden	≤ 1.9W Max	
Load Performance Accuracy	Accuracy Class 0.5% – typical accuracy 0.2%	
	Exception: Form 36S 0.5%	
Display Options	Energy Metrics: +kWh, -kWh, Net kWh, and added kWh (Security)	
	Metric Energy Display Format – 4x1, 4x10, 5x1, 5x10, 6x1 or 6x10	
	Time of Use and Demand Billing	
AMI Platform	Modular or Integrated	
Selectable Meter Multiplier	Up to 4096 as result of PT ratio • CT ratio	
Applicable Standards	ANSI C12.1 for electric meters	
	ANSI C12.10 for physical aspects of watt hour meters	
	ANSI C12.18 Protocol specifications for ANSI Type 2 Optical Port	
	ANSI C12.19 Utility Industry End Device Data Tables	
	ANSI C12.20 for electricity meters, 0.2 and 0.5 accuracy classes	
	CAN3-C17-M84 Canadian specifications for approval of type of electricity meters	
Service Disconnect	10,000 operations at full rated current (disconnect/connect)	
Landis+Gyr Communication	FOCUS AX Single Phase	2 Way Gridstream RF
		2 Way Gridstream PLC
	FOCUS AX-SD	2 Way Gridstream RF
		2 Way Gridstream PLC
	FOCUS AX Polyphase	2 Way Gridstream RF
	Third Party Communication	FOCUS AX Single Phase
Aclara TWACS Technology - PLC		
Sensus 2 Way RF Flex Net		
Silver Spring 2 Way RF Mesh		
Trilliant 2 Way SecureMesh		
FOCUS AX-SD		Aclara STAR Network – RF
		Aclara TWACS Technology – PLC
		Sensus Flex Net
		Silver Spring Network 2 Way RF Mesh
		Trilliant 2 Way SecureMesh
FOCUS AX Polyphase		Aclara STAR Network – RF
		Aclara TWACS Technology – PLC
		Metrum CDMA/1xRTT and GSM/GPRS under glass
		Sensus Flex Net
		Silver Spring 2 Way RF Mesh
	Trilliant 2 Way SecureMesh	

Product Specification and Schedule Sheet

The FOCUS AX Single-phase meter is available in the following forms:

Form	Nominal Voltage	Current Class	Test Amps	Starting Load	Kh
1S	120V	CL 100	15.0	0.030 Amp (3.6W)	1.8
1S	240V	CL 200	30.0	0.050 Amp (12W)	7.2
2S	240V	CL 200	30.0 / 50.0	0.050 Amp (12W)	7.2
2SE	240V	CL 320	30.0 / 50.0	0.080 Amp (19.2W)	12.0
2K	240V	CL 480	30.0 / 50.0	0.120 Amp (28.8W)	14.4
3S	120V	CL 10 or 20	2.5	0.005 Amp (0.6W)	0.3
3S	240V	CL 10 or 20	2.5	0.005 Amp (0.6W)	0.6
4S	240V	CL 10 or 20	2.5	0.005 Amp (0.6W)	0.6

The FOCUS AX Service Disconnect meter is available in the following forms:

Form	Nominal Voltage	Current Class	Test Amps	Starting Load	Kh
1S	120V	CL 100	15.0	0.030 Amp (3.6W)	1.8
2S	240V	CL 200	30.0/50.0	0.050 Amp (12W)	7.2
12S	120V	CL 200	30.0/50.0	0.050 Amp (12W)	14.4
25S	120V	CL 200	30.0 / 50.0	0.050 Amp (12W)	14.4

The FOCUS AX Polyphase meter is available in the following forms:

Form	Nominal Voltage	Current Class	Test Amps	Starting Load	Kh
9S/8S	120V – 277V	CL 20	2.5	0.005 Amp (0.6W)	1.8
12S	120V – 277V	CL 200	30.0/50.0	0.050 Amp (12W)	14.4
12SE	120V – 277V	CL 320	50.0	0.080 Amp (19.2W)	14.4
16S	120V – 277V	CL 200	30.0/50.0	0.050 Amp (12W)	21.6
16SE	120V – 277V	CL 320	50.0	0.080 Amp (19.2W)	21.6
25S	120V – 277V	CL 200	30.0/50.0	0.050 Amp (12W)	14.4
25SE	120V – 277V	CL 320	50.0	0.080 Amp (19.2W)	14.4
36S (6S)	120V – 277V	CL 20	2.5	0.005 Amp (0.6W)	1.8
45S (5S)	120V – 277V	CL 20	2.5	0.005 Amp (0.6W)	1.2

**FOCUS Single Phase/Polyphase:**

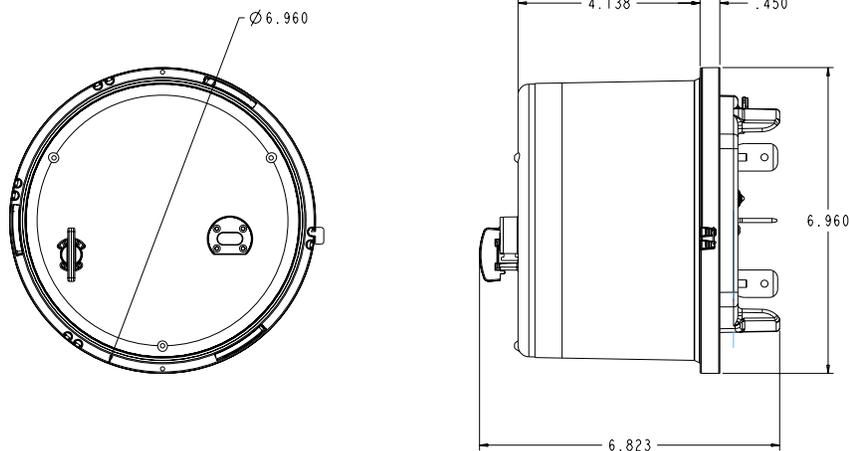
	Net	Single Pack	Single Pack	Four Pack	Four Pack	Pallet	Pallet
<b>Form</b>	<b>Lbs.</b>	<b>Weight</b>	<b>Dimensions</b>	<b>Weight</b>	<b>Dimensions</b>	<b>Weight</b>	<b>Dimensions</b>
1S	1.8	2.7 lbs.	8 3/4" x 8 3/4" x 9"	9.5 lbs.	15 1/2" x 7" x 15 1/2"	350 lbs.	31" x 46" x 37"
2S(E)	1.9	2.8 lbs.	8 3/4" x 8 3/4" x 9"	9.6 lbs.	15 1/2" x 7" x 15 1/2"	350 lbs.	31" x 46" x 37"
2K	3.35	5.5 lbs.	12 9/16" x 12 9/16" x 9"	N/A	15 1/2" x 7" x 15 1/2"	195 lbs.*	31" x 46" x 37"
3S	1.8	2.7 lbs.	8 3/4" x 8 3/4" x 9"	9.5 lbs.	15 1/2" x 7" x 15 1/2"	350 lbs.	31" x 46" x 37"
4S	1.9	2.8 lbs.	8 3/4" x 8 3/4" x 9"	9.6 lbs.	15 1/2" x 7" x 15 1/2"	350 lbs.	31" x 46" x 37"
5S/45S	1.8	2.7 lbs.	8 3/4" x 8 3/4" x 9"	9.5 lbs.	15 1/2" x 7" x 15 1/2"	350 lbs.	31" x 46" x 37"
6S/36S	1.8	2.7 lbs.	8 3/4" x 8 3/4" x 9"	9.5 lbs.	15 1/2" x 7" x 15 1/2"	350 lbs.	31" x 46" x 37"
8S/9S	1.8	2.7 lbs.	8 3/4" x 8 3/4" x 9"	9.5 lbs.	15 1/2" x 7" x 15 1/2"	350 lbs.	31" x 46" x 37"
12S(E)	2.0	2.9 lbs.	8 3/4" x 8 3/4" x 9"	10.3 lbs.	15 1/2" x 7" x 15 1/2"	350 lbs.	31" x 46" x 37"
16S(E)	1.9	2.8 lbs.	8 3/4" x 8 3/4" x 9"	9.6 lbs.	15 1/2" x 7" x 15 1/2"	350 lbs.	31" x 46" x 37"
25S(E)	2.0	2.9 lbs.	8 3/4" x 8 3/4" x 9"	10.3 lbs.	15 1/2" x 7" x 15 1/2"	350 lbs.*	31" x 46" x 37"

Standard pallet size of 96 meters  
\* Denotes alternate pallet size of 30 meters

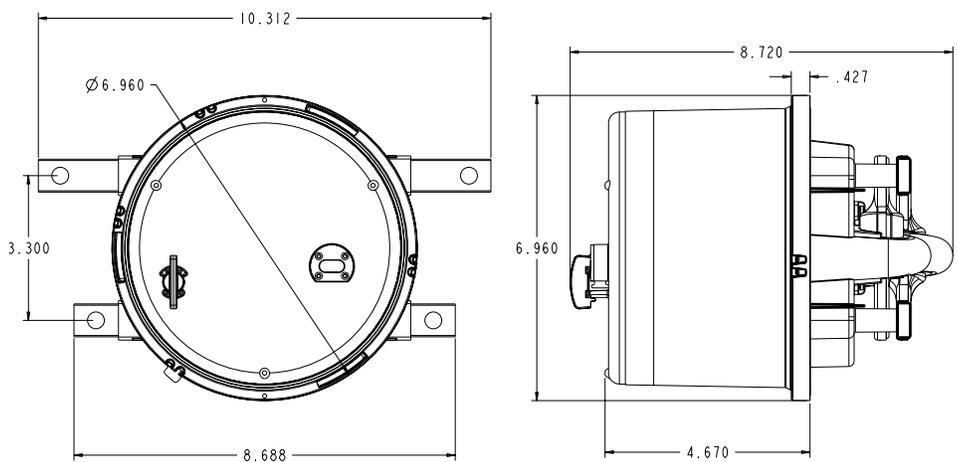
**FOCUS AX-SD:**

	Net	Single Pack	Single Pack	Four Pack	Four Pack	Pallet	Pallet
<b>Form</b>	<b>Lbs.</b>	<b>Weight</b>	<b>Dimensions</b>	<b>Weight</b>	<b>Dimensions</b>	<b>Weight</b>	<b>Dimensions</b>
1S	2.04	2.94 lbs.	8 3/4" x 8 3/4" x 9"	10.31 lbs.	15 1/2" x 7" x 15 1/2"	370 lbs.	31" x 46" x 37"
2S	2.04	2.94 lbs.	8 3/4" x 8 3/4" x 9"	10.31 lbs.	15 1/2" x 7" x 15 1/2"	370 lbs.	31" x 46" x 37"
12S	2.04	2.94 lbs.	8 3/4" x 8 3/4" x 9"	10.31 lbs.	15 1/2" x 7" x 15 1/2"	370 lbs.	31" x 46" x 37"
25S	2.04	2.94 lbs.	8 3/4" x 8 3/4" x 9"	10.31 lbs.	15 1/2" x 7" x 15 1/2"	370 lbs.	31" x 46" x 37"

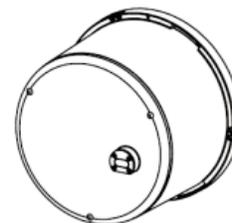
FOCUS AX S-Base



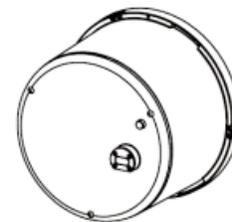
FOCUS AX K-Base



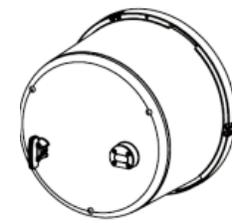
Cover Options



Optical Port Only



Optical Port/Reconnect Only



Optical Port/Reset (No Options)



Optical Port/Reset/Reconnect Switch



Configuration Port Only



Configuration Port/Reconnect Only



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