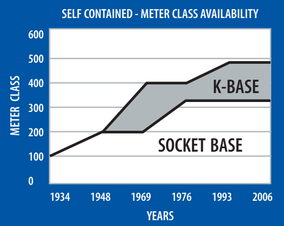
K-BASE Extended Range Metering

Landis+Gyr extends the range of self-contained electricity metering with the introduction of the solid state FOCUS™ and S4e meters for both the residential and commercial & industrial markets. K-Base metering is the metering of continuous electrical loads greater than 320 amperes, using self-contained watthour meters and no external current transformers. This includes 400 ampere continuous duty and 480 continuous/600 ampere maximum duty meters.

S4/S4e CLASS 480

FOCUS CLASS 480



EMBEDDED COIL CURRENT SENSOR

Why K-Base Metering?

Competitive pressure of deregulation and retail wheeling are major industry forces demanding reduced costs, increased profits and improved relationships with utility customers. Many of these requirements are being fulfilled through the use of K-Base metering.

When an electrical load exceeds 320 amperes, there are two ways of metering these loads: One is by the age-old, costly method of using current transformers, housed in large, special enclosures, consisting of multiple wire connections. The other alternative is safe, lower cost, more accurate K-Base metering.

LOWER COST, LESS TESTING, MORE VALUE

Utility Benefits

GREATER ACCURACY
- Current transformer is part of meter. Inaccuracies can be compensated for during meter calibration
- Fixed burden, no problems associated with CT secondary burdens and accuracy classes
- Starting watts for 480 ampere installation is approximately 1/3 of the amount of power required to start the meter compared to transformer rated installations
- High end load curve performance is more accurate compared to transformer rated installation

REDUCED LABOR AND MATERIAL COSTS
- No external current transformers, eliminates material and CT testing time
- Eliminates secondary wiring expense
- Allows using a lower labor classification of meterman to install and test the meter
- Meter is a true self-contained unit, reducing periodic calibration testing required compared to transformer rated meters

REDUCED OPERATING COSTS
- Contractor may purchase and install self-contained mounting devices to help reduce utility's cost
- Inventory carry costs are less because of less inventory of current transformers, cabinets, brackets and test switches
- Meters use standard components (covers, registers, etc.) and are calibrated the same - no additional training is required
- No current transformer testing
- Eliminates engineering costs associated with CT installations

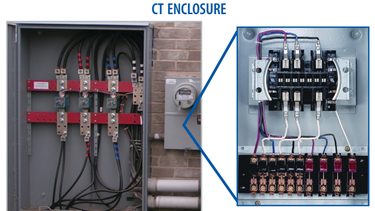
AESTHETICS
- Neater, cleaner-looking installations
- Less bulky equipment used
- Enclosure can be adapted to become a CT cabinet should the installation load grow

FLEXIBLE AMR TECHNOLOGY
- PLC
- Radio Frequency
- Wireless Mesh
- Modem
- Pager

REDUCED CHANCE FOR CURRENT DIVERSION
- Asymmetrical baseplate design prevents meter from being turned upside down
- No current transformer secondaries to be short circuited or voltage connections to be open circuited

SAFE INSTALLATIONS/FEWER ERRORS
- Field proven for over 35 years
- Higher fault current withstand capability, up to 4 times that of conventional self-contained meters
- High fault current rating allows circuit breaker or fuse to clear fault without causing structural damage within the mounting device
- Mounting devices are listed by Underwriters Laboratories*
- No meter multipliers
- Easier to wire
- Fewer connections, less than one-half the connections compared to transformer rated installations
- Added optional safety mounting device accessories such as Lexan® safety shield, insulated T-handle wrench and others

CT ENCLOSURE



ERROR PRONE • CONFUSING • EXPENSIVE
47 CONNECTIONS • 3 PHASE

K-BASE INSTALLATION

SIMPLE • CLEAN • LOW COST
9 CONNECTIONS • 3 PHASE

*The K-type meter mounting device may also be listed by Underwriters Laboratories, which allows the homeowner and contractor to be responsible for the installation of the mounting device. On a current transformer installation, the utility typically installs the current transformers and the secondary wiring from the current transformer to the test switch and the meter terminal block.

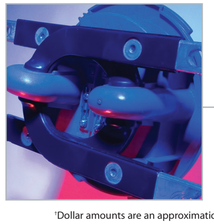
Installation Cost Single Phase

Transformer	K-Base
Form 4S meter	FOCUS™ meter
6 terminal meter socket	K-4 meter mounting device
2 CTs	1/2 hour/technician
Wires and connectors	**$250†**
2 hours/technician	
$335†	

Installation Cost Polyphase

Transformer	K-Base
Form 9S meter	Form 16K meter
13 terminal meter socket	K-7 meter mounting device
Test switch	2 hours/technician
Transformer enclosure	**$522†**
3 CTs	
Wires and connectors	
5 hours/technician	
$769†	

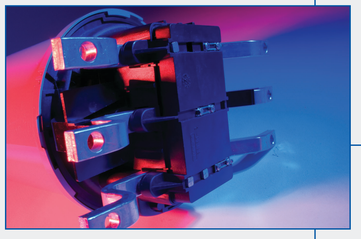
Higher System Accuracy
- Current transformers and meter are tested and calibrated at the same time
- Secondary burden is fixed and the effect is calibrated out
- Calibrated on light load at 5 amperes as compared to the transfer rated meter (calibrated at 10 amperes)



†Dollar amounts are an approximation

MORE ADVANTAGES OF K-BASE

More Advantages of K-Base

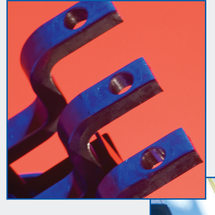


- Test board adapters are available to convert the K-Base to Socket-Base, which allows the K-Base meters to be tested on conventional test boards. Field test adapters are also available.

- When the meter is stored in the out-of-service position, it is connected to the line bus, thus keeping the meter potential coil energized to generate heat and keep moisture out of the meter. If it is a time-of-use meter, it keeps the time clock going without the need to go on battery carry-over. If an AMR module is installed, it will also remain powered. A sliding plate on the meter socket cover with the words "Out of Service" printed on it alerts meter men and meter readers that the meter is out of service.

- The primary current conductors of K-Base meters are asymmetrical. This prevents the meters from being installed upside down and reduces the risk of current diversion.

- The "K" single phase meter baseplates have a special potential disconnect link configuration. This configuration allows the installation to be top fed or bottom fed. By changing the polarity of the potential circuit with respect to the current, the line side terminals may be wired at either the top or bottom of the socket block assembly. This flexibility is helpful in retrofit installations where the service entrance is upgraded and the line conductors are not long enough to reach the top terminals of the socket.



- "K" mounting devices can be bypassed with manual bypass devices. The bypass clamps bridge from the line to the load bus and are capable of carrying 480 amperes continuously. The insulated handles on the bypasses prevent the enclosure cover from being installed with the bypass in place. Other types of bypasses are also available.

- The "K" metering system is designed to provide an out-of-service storage position for the watthour meter allowing utilities to store the meter in the socket when it is taken out of service. This saves on remove/set orders and associated paper-work, and eliminates the need to bring the meter back to the meter shop and retest it before it goes back into service.

- If the load increases beyond the 400 or 480 amperes respectively, current transformers may be mounted in the K-Base enclosure by removing the existing block and using an adapter kit.

CUSTOMER SERVICE APPLICATION TABLE - METER/MOUNTING DEVICE

CLASS RATING	SERVICE CONFIGURATION	CURRENT RATINGS (AMPS) CONTINUOUS	INTERMITTENT	METER MODEL	METER FORM	MOUNTING DEVICE
SINGLE PHASE:						
480	3-WIRE	480	600	ALTIMUS, FOCUS	2K	K-4
480	3-WIRE	480	600	S4, S4e	12k	K-5
POLYPHASE:						
400	3-WIRE	400	400	MT-K	12K	K-5
	4-WIRE WYE				14K, 16K	K-7
	4-WIRE DELTA				15K	K-7
480	3-WIRE	480	600	S4, S4e	12K	K-5
	4-WIRE WYE				16K	K-7
	4-WIRE DELTA				15K	K-7

PRODUCT SPECIFICATIONS

MOUNTING DEVICES

SPECIFICATION	K-4	K-7
VOLTAGE	300 VAC	600 VAC
AMPACITY	400 OR 480/600	400 OR 480/600
MAX. CONDUCTOR SIZE	-ONE 800 MCM PER PHASE -TWO 500 MCM PER PHASE -THREE 250 MCM PER PHASE	
ENCLOSURE	-14 GAUGE GALVANIZED STEEL -POLYESTER POWDER PAINT -STAINLESS STEEL LATCHES	
TERMINALS	-1/2" - 20 STUDS WITH NUTS AND CAPTIVE BELLEVILLE WASHERS -WIDE VARIETY OF DIRECT OR SIDE-ENTRY LUGS AVAILABLE	

METERS

SPECIFICATION	ALTIMUS - K, FOCUS - K	S4, S4e K-BASE
STARTING LOAD	213 mA	120 mA
BURDEN	.86	<0.25 VA
CLASS*	0.5%	0.5%

*TEST RACK STANDARDIZATION MUST BE TAKEN INTO CONSIDERATION

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KBASE EXTENDED RANGE METERING

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