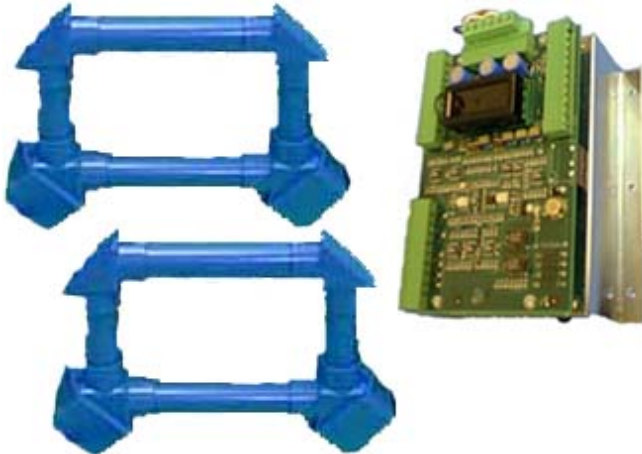




DynAmp

LKAT Sigma

Dual-Head, Bi-Directional High Current Measurement with Advanced "OLOP" Technology



Description

The LKAT Sigma provides high current measurement in a single rugged system ideal for rectifier OEMs. Utilizing innovative OLOP™ technology, LKAT Sigma is designed to accurately and reliably measure uni- and bi-directional DC and AC bus currents up to 100kA. The LKAT Sigma consists of two measuring heads, each constructed to match the dimensions of the measured buses, a metering unit, mounting hardware and interconnection cables.

Application

The LKAT Sigma is specifically designed for dual/parallel bus applications where a single, totalized measurement is desired. Typically, its two heads are mounted inside power rectifiers which have been designed with two collector buses.

Key Features

- Dual measurement heads with totalizing
- True bi-directional performance. Ideal for difficult magnetic applications.
- Extremely compact for installation flexibility.
- Accuracy Diagnostics monitors performance and signals potential measurement problems
- Optional on-board display of total measured current.

Specifications

Input

Totalized Full Scale Current 5kA to 100 kA FS

Output

Digital panel meter On metering unit
Output Signal Range -20mA... 20mA
10V maximum burden

Typical Output Signal Scaling	<u>BUS</u>	<u>Signal Output</u>
DC	0kA =	0mA or 4mA
	+ FS =	20mA or 20mA
DC w/ reverse or AC	- FS =	4mA or -20mA
	0kA =	12mA or 0mA
	+ FS =	20mA or 20mA

Measurement accuracy**	±0.75% of FS or better
Repeatability	± 0.1% of FS or better
Linearity	± 0.1% of FS or better
Temperature sensitivity	< 200 ppm / ° C
Accuracy Diagnostics	LED and Relay output

Mains

Mains power input	85 to 264 VAC RMS, @ 47 to 440Hz or 110 to 250 VDC
Power requirements	30VA max.
Mains impact on accuracy (Variation per Vrms)	120VAC: ±0.001% FS 240VAC: ± 0.0005% FS

Isolation (Hi-Pot tested at 60Hz)

Heads to output	6.0kVAC for 1 minute
Mains supply to output	1.0kVAC for 1 minute
Mains supply to chassis	2.0kVAC for 1 minute
Output to chassis	2.0kVAC for 1 minute

Environmental

Environmental	Heads	IP67
	Electronics	IP21
Temperature		
Operation : Heads		-4 to 176°F /; -20 to 80°C
	Metering Unit	14 to 149°F / -10 to 60°C
Storage Temperature		-40 to 158°F / -40 to 70°C
Storage Humidity		85%, non-condensing

Physical

Measuring head weight (ea)	2...8 lbs/1...4 kg typical
Metering unit weight	10 lbs / 5.5 kg estimate
Head connection cabling	2 per head @ 10 m std.

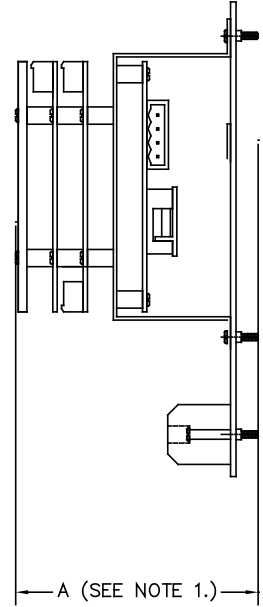
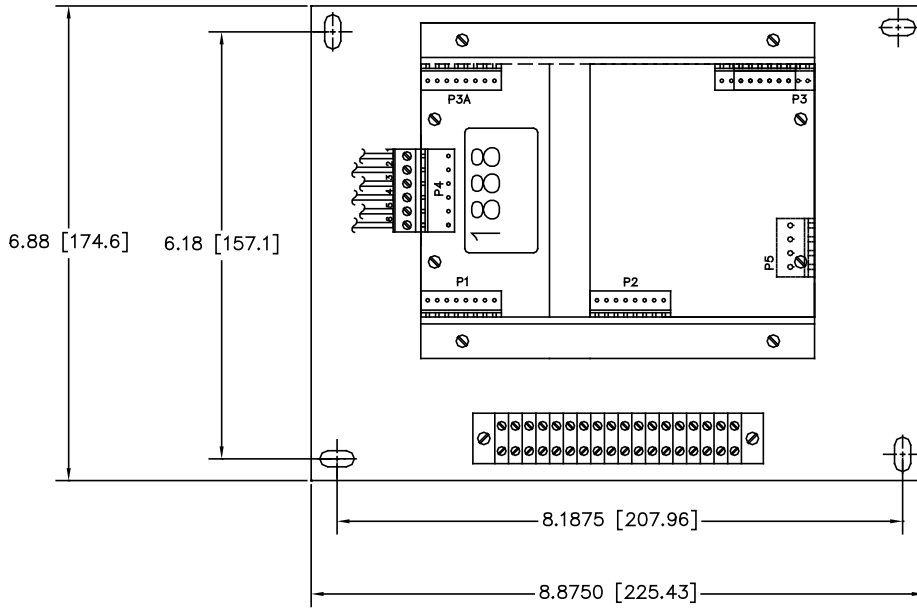
** At DynAmp reference conditions :
77°F ± 4°F (25°C ± 2°C)
120/240Vac RMS ± 2%, 60Hz ± 1Hz
≤20m head interconnecting cable length

Specifications subject to change without notice



LKAT Sigma

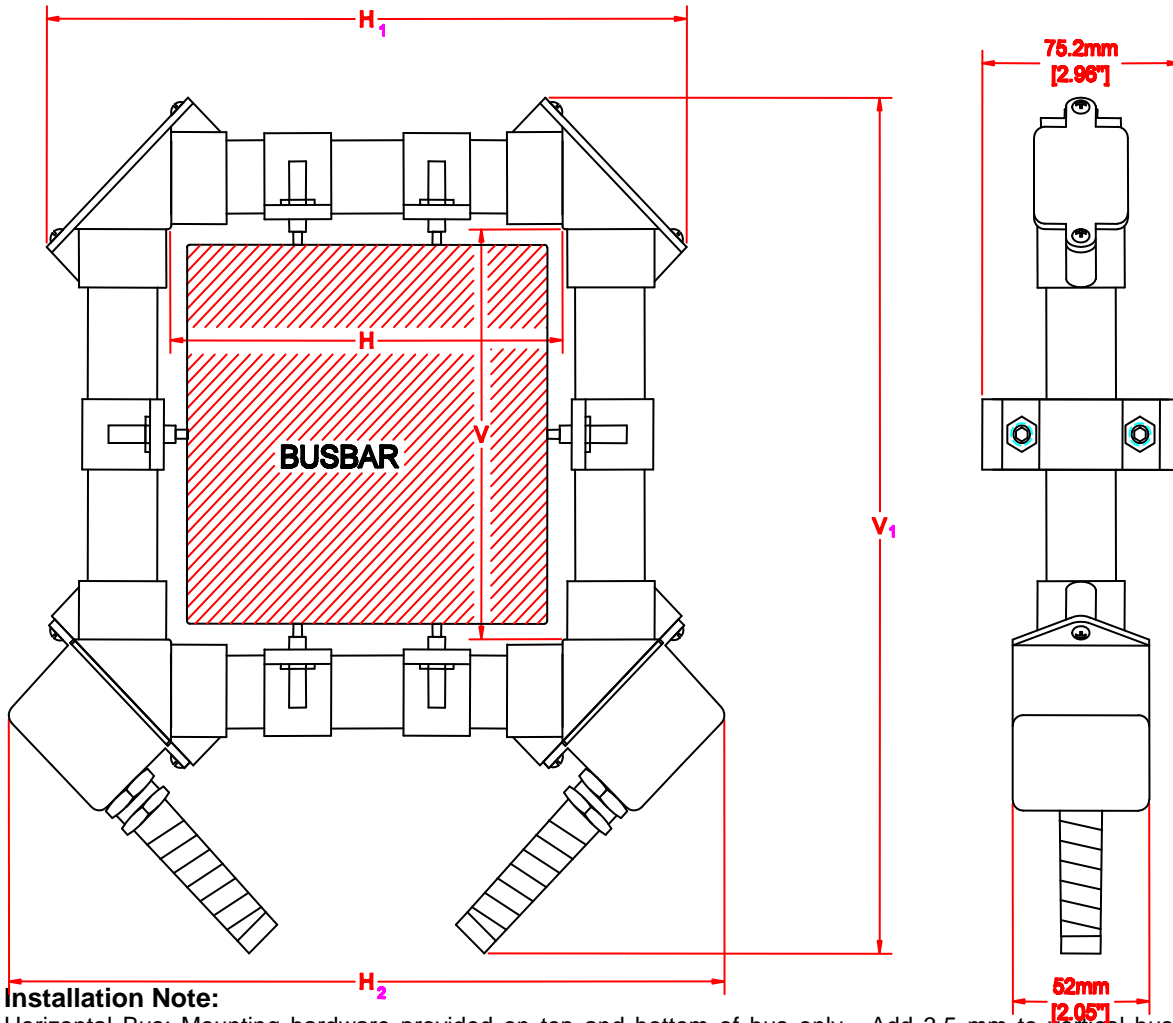
Metering Unit Outline and Mounting Diagram





LKAT Sigma

Measuring Head Outline (each) and Mounting Diagram and Information



Installation Note:

Horizontal Bus: Mounting hardware provided on top and bottom of bus only. Add 3.5 mm to vertical bus dimension to accommodate mounting hardware.

Vertical Bus: Mounting hardware provided on all sides of bus. Add 3.5 mm to both vertical and horizontal bus dimensions to accommodate mounting hardware.

DIMENSION	Metric (mm)	Unified (inches)
H(min) & V(min) =	60.0mm	(2.36")
H(max) & V(max) =	1080mm	(42.50")
H ₁ =	H + 94mm	H + (3.70")
H ₂ =	H + 160mm	H + (6.31")
V ₁ =	V + 122mm	V + (4.81")

Measurement head dimensions made to order in 30mm increments.

For accurate sizing, simply provide DynAmp with actual bus dimensions for both buses



Standard System Includes

- Two “split apart” / 2-piece measuring heads
- Two Busbar head mounting kits
- Two 10 meter / 33 foot head to meter unit connecting cable pairs
- Metering unit with local digital readout of total current plus Accuracy Diagnostics including local LED indication and relay output
- Operator / installation manual
- Calibration result data tables and graphs
- 2 year warranty
- Weather resistant packaging for shipment

Options

• **Protection Extensions**

The optional LKAT “Protection Extensions”, (PE), provides additional functionality for protection of high current rectifiers. This option provides two additional key features:

Second Analog Output : This second analog output is independently scaled and fully isolated from the standard LKAT measurement output. In typical applications, it is scaled to provide accurate measurement above the rectifier standard operating range for advanced protection purposes.

Using a 50kA application for example, the primary LKAT output would be scaled to 50kA to provide the highest degree of accuracy and resolution for normal rectifier control. The second output would be scaled to 75kA to provide the rectifier control system with the information to intelligently manage overcurrent situations. Using this signal, the rectifier control system could integrate overcurrent operation to allow 5 minutes at 110%, 1 minute at 120%, 10 sec at 140%.

Two Additional Relays : These relays bring the total number of user configurable relays to three, each of which can be configured to provide reverse or various degrees of over current protection

Specify Item 46387

• **Display and RMS conversion**

Provides a 3.5 digit integral display in the meter unit for bus current. The option also includes an RMS converter to provide accurate display in AC measurement applications.

Specify Item 46390

• **Custom Head Cable Length**

Systems are supplied with a standard recommended 10 meters (33 ft.) of interconnecting cable. Cable lengths of up to 50 meters (165 ft.) are available in 1m increments. Cable lengths of >20m may exhibit increased temperature sensitivity up to $\pm 200\text{ppm} / ^\circ\text{C}$ per 10m of additional cable. Specify additional length required when ordering.

Specify Item 43623

Accessories

• **Extended Burn-In :**

Standard systems are operated for 4 hours before final tests and calibration. Extended burn-in periods can be ordered in 24-hour increments.

$\leq 60\text{kA}$: Specify Item 99920

$>60\text{kA}$: Specify Item 99922

Suggested Support Services

On-Site Commissioning: Factory trained technicians and specialized equipment on-site to verify correct operation in application during start-up.

Contact DynAmp

Annual / Bi-Annual Calibration: Experienced field service technicians and specially calibrated equipment are available to verify proper operation and calibrate your system to internationally traceable standards.

Contact DynAmp

Ordering Information

1. Accurately measure and provide maximum bus width (H), and maximum bus height (V) for each bus.
2. Specify options and accessories by item number.
3. Complete LKAT System Worksheet BEN093.
4. Submit completed worksheet to DynAmp for quotation and to receive complete measurement system item numbers for ordering.