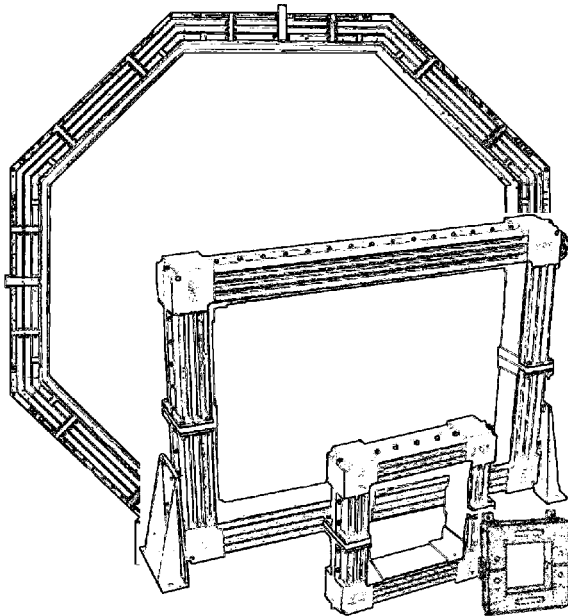




DynAmp

LKP-15

High Current Metering System



Description

The LKP-15 is a high accuracy, "closed-loop" Hall effect system designed to accurately and reliably measure unidirectional dc bus currents up to 15 k amperes. This "system" consists of a two-piece measuring head, which installs around the bus, an electronics unit and two multi-conductor cables connecting the two. This model supersedes the following LEM and "Halmar" models: LKC-15.

Application

The LKP-15 is particularly well suited to measure individual as well as total bus currents in Electro-chemical processes including aluminum, chlorine, copper, manganese, titanium, zinc as well as electroplating and coating processes.

Specifications

Input

Full Scale (FS) bus current 15 kA
Based on approved DynAmp Bus Analysis

Output

Voltage scaling 10 mV per bus kA
Voltage full scale 150 mV
Voltage accuracy $\pm 0.1\%$ of FS **
Current scaling 200 mA per bus kA
Current full scale 3 A
Current loop max burden 15 V
Current accuracy $\pm 0.1\%$ of FS **
Repeatability $\pm 0.02\%$ of FS
plus core set
Linearity (5...100% of FS) $\pm 0.03\%$ of FS
Temperature sensitivity $\pm 0.002\%$ of FS per °C

Mains

Available Input Ranges 100V: 85 to 110V RMS
120V: 102 to 132V RMS
200V: 170 to 220V RMS
220V: 187 to 242V RMS
240V: 204 to 264V RMS
Frequency 50Hz.: 45 to 55 Hz.
60Hz.: 55 to 65 Hz.
Power requirements 20 VA / bus kA typical
Impact of mains variation on accuracy 100, 120, and 200V:
 $\pm 0.001\%$ FS / V RMS
220, 240V:
 $\pm 0.0005\%$ FS / VRMS

Isolation

Bus to output 6 kVac for 1 minute with
25 mm air gap
Mains supply to output 1.5 kVac for 1 minute
Mains supply to chassis 1.5 kVac for 1 minute
Output to chassis 1.5 kVac for 1 minute
Bus to head structure 6 kVac for 1 minute with
25 mm air gap

Environmental

Operating temperature -4° to 130° F
-20° to 55° C
Storage temperature -4° to 150° F
-20° to 65° C
Installation Restrictions: Ref. Tech. Bulletin 9907

Physical

Measuring head enclosure IP-649
Measuring head weight 96 lbs. / 43 kg
Electronics unit enclosure IP-20
Electronics unit weight 62 lbs. / 28 kg (Max.)
Interconnecting cable(s) 33 Ft / 10 m standard
(Head to Meter Unit) 2 cables

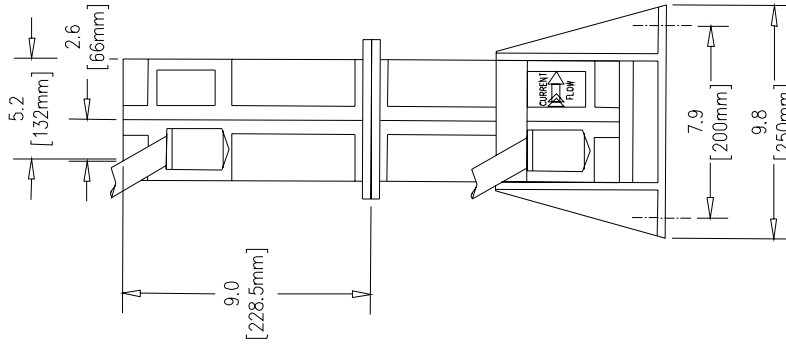
** At DynAmp reference conditions:
77° F $\pm 4^\circ$ F (25° C, $\pm 2^\circ$ C)
120/240 V RMS. $\pm 2\%$, 60 Hz ± 1 Hz.

Specifications subject to change without notice

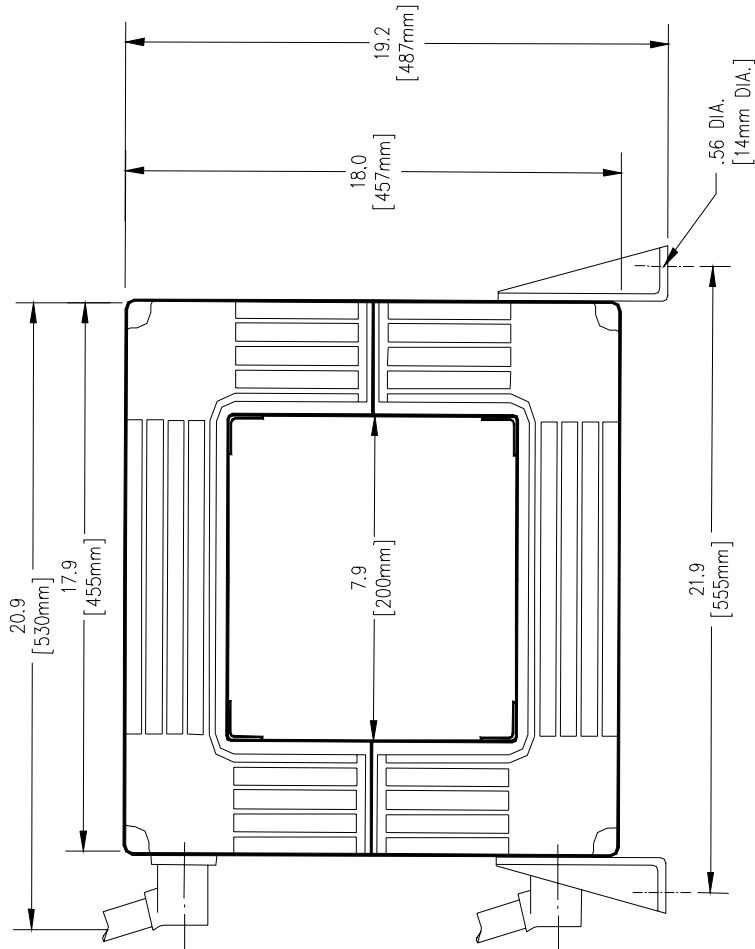


LKP-15

Measuring Head Outline and Mounting Diagram and Information



LEFT SIDE VIEW

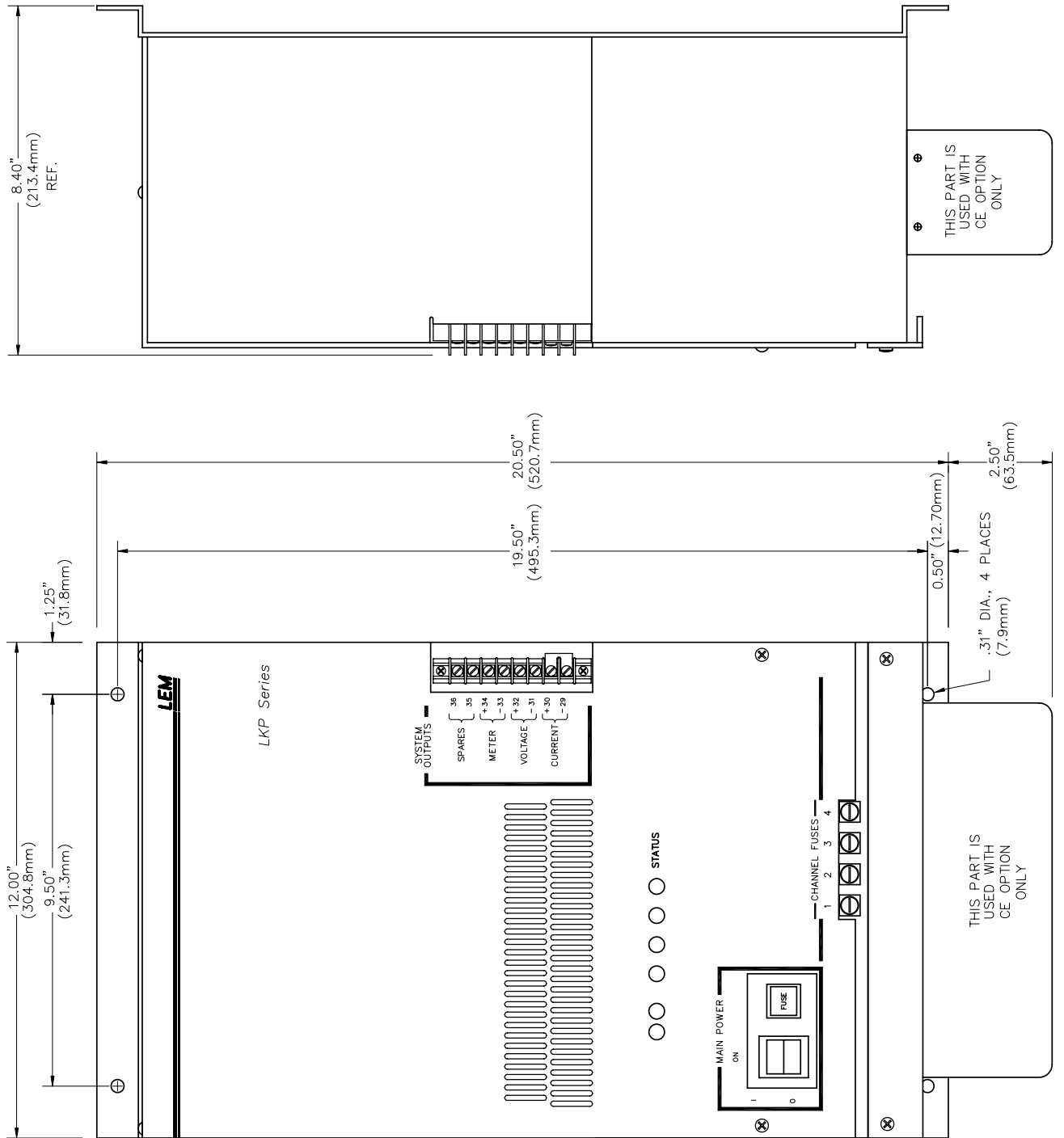


UNIT SHOWN WITH OPTIONAL MOUNTING FEET.



LKP-15

Metering Unit Outline and Mounting Diagram and Information





Ordering Information

1. Specify model LKP-15, item number 42098.
2. Specify item number and description of options and/or accessories.
3. Complete System Worksheet BEN068 and worksheets for options and accessories as required.

Standard System Includes

Split apart measuring head
10 meter / 33 feet head to meter connecting cables
Metering Electronics
Operator / installation manual
Calibration result data tables and graphs
One internally mounted shunt
Meter enclosure is to standard IP-20
4 hours operation before final test/calibration
2 year warranty
DynAmp bus analysis of installation location
(subject to availability of customer drawings)
Weather resistant shipping crate

Options

Accuracy Diagnostics:

Provides an SPDT relay output if a channel amplifier or power supply voltage is out of normal range. Detects errors due to excessive or reversed magnetic fields and failures in electrical components such as amplifiers, fuses, or sensors.

Specify Item Number: 41325

Measuring Head Mounting Feet:

Brackets to allow mounting of measuring head.

Specify Item Number: 42067

Special OEM Version:

See LKP-OEM supplemental data sheet.

Second Internal Shunt:

Standard system includes one internally mounted shunt. A second internal shunt is available to provide an additional scaled and calibrated millivolt output.

Requires completed Shunt Worksheet BEN055.

Specify Item Number: 28696

Meter Unit Enclosure Upgrade*:

Standard meter unit enclosure is rated to IP-20. An upgrade to IP-54 is available to provide better protection in harsh environments.

Specify Item Number: 41967

Compliance With CE Requirements*:

A CE certified version is available including all required components, tags, certifications and documentation. CE compliance may not extend to all options and accessories. Consult factory for determination.

Specify Item Number: 40965

* Affects meter unit outline and mounting. See page 3.

Accessories

Remote Digital Display:

Digital panel meters are available for remote indication of the bus current.

Requires completed DPM Worksheet BEN056.

Specify Item Number: 41909

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, and can be performed with multiple units.

Specify item number: 99920

Standard Spare Part Package:

Allows swap of major assemblies as well as single components to ensure fast return to operation.

Specify Item Number: 43785

Spare System Components:

Measuring Head - **Specify Item Number: 41288**

Metering Unit - **Specify Item Number: 41169**

External Shunt:

Converts system feedback current to low voltage. Refer to Shunt data sheet for detailed specifications.

Requires completed Shunt Worksheet BEN055.

Contact DynAmp

Totalizing Shunt:

Totalizes the output of multiple systems. A special assembly is available to properly interconnect many units. Refer to Shunt data sheet for detailed specifications.

Requires completed Shunt Worksheet BEN055.

Contact DynAmp

Custom Head To Meter Unit Cable Length:

Standard systems are supplied with 10 m (33 ft.) of interconnecting cable. Cable lengths of up to 50 m (165 ft.) can be readily provided. Consult factory for lengths greater than 50 m (165 ft.). Specify additional length required in meters.

Specify Item Number: 41449

Current & Voltage Output (External Isolator):

CE compliant Model SI2284 provides isolated voltage and 0-20mA or 4-20mA output proportional to current. Refer to SI2284 data sheet for detailed specifications.

Requires completed Isolator Worksheet BEN061.

Specify Item Number: 42315

Busbar Mounting Kits:

Non-conductive brackets to mount LKP head directly to bus.

Specify Item Number: 42077

Suggested Support Services

On-Site Commissioning:

Factory trained technicians and specialized equipment on-site during start-up.

Contact DynAmp

Annual / Biannual Calibration:

Experienced field service technicians and specially calibrated equipment are available to verify proper operation and calibrate your system to internationally traceable standards, ensuring the most reliable data for decision making and cross plant comparisons.

Contact DynAmp