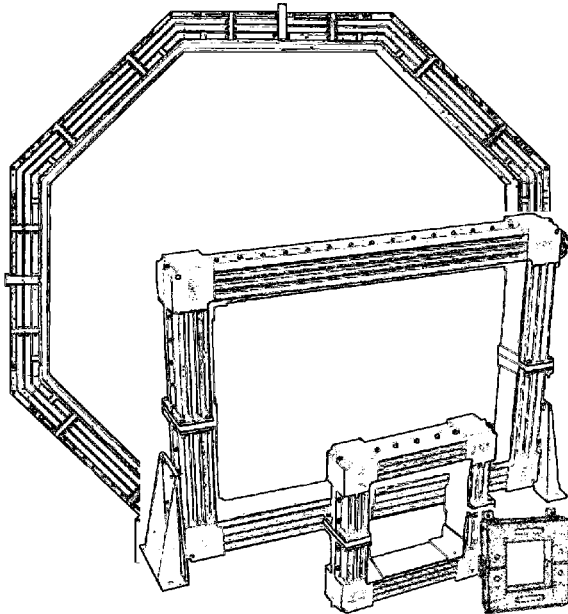




DynAmp

# LKP-180

## High Current Metering System



### Description

The LKP-180 is a high accuracy, "closed-loop" Hall effect system designed to accurately and reliably measure unidirectional dc bus currents up to 180 k amperes. This "system" consists of a two-piece measuring head, which installs around the bus, an electronics unit and four multiconductor cables connecting the two. In order to best fit the customer's bus, the LKP-180 measuring head is available in two versions. This model supersedes the following LEM and "Halmar" models : LKC180, CM7078, and 78FM.

### Application

The LKP-180 is particularly well suited to measure 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 180 kA  
Based on approved DynAmp Bus Analysis

#### Output

Voltage scaling 1 mV per bus kA  
Voltage full scale 180 mV  
Voltage accuracy  $\pm 0.1\%$  of FS \*\*  
Current scaling 200 mA per bus kA  
Current full scale 36 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 131° F  
-20 to 55° C  
Storage temperature -40 to 158° F  
-40 to 70° C  
Storage Humidity 85%, non-condensing  
Installation Restrictions: Ref. Tech. Bulletin 9907

#### Physical

Measuring head enclosure IP-649  
Measuring head weight 1488 lbs. / 675 kg  
Electronics unit enclosure IP-22  
Electronics unit weight 700 lbs. / 320 kg (Max.)  
Interconnecting cable(s) 33 Ft / 10 m standard  
(Head to Meter Unit) 4 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  $\pm 1$ Hz.

Specifications subject to change without notice

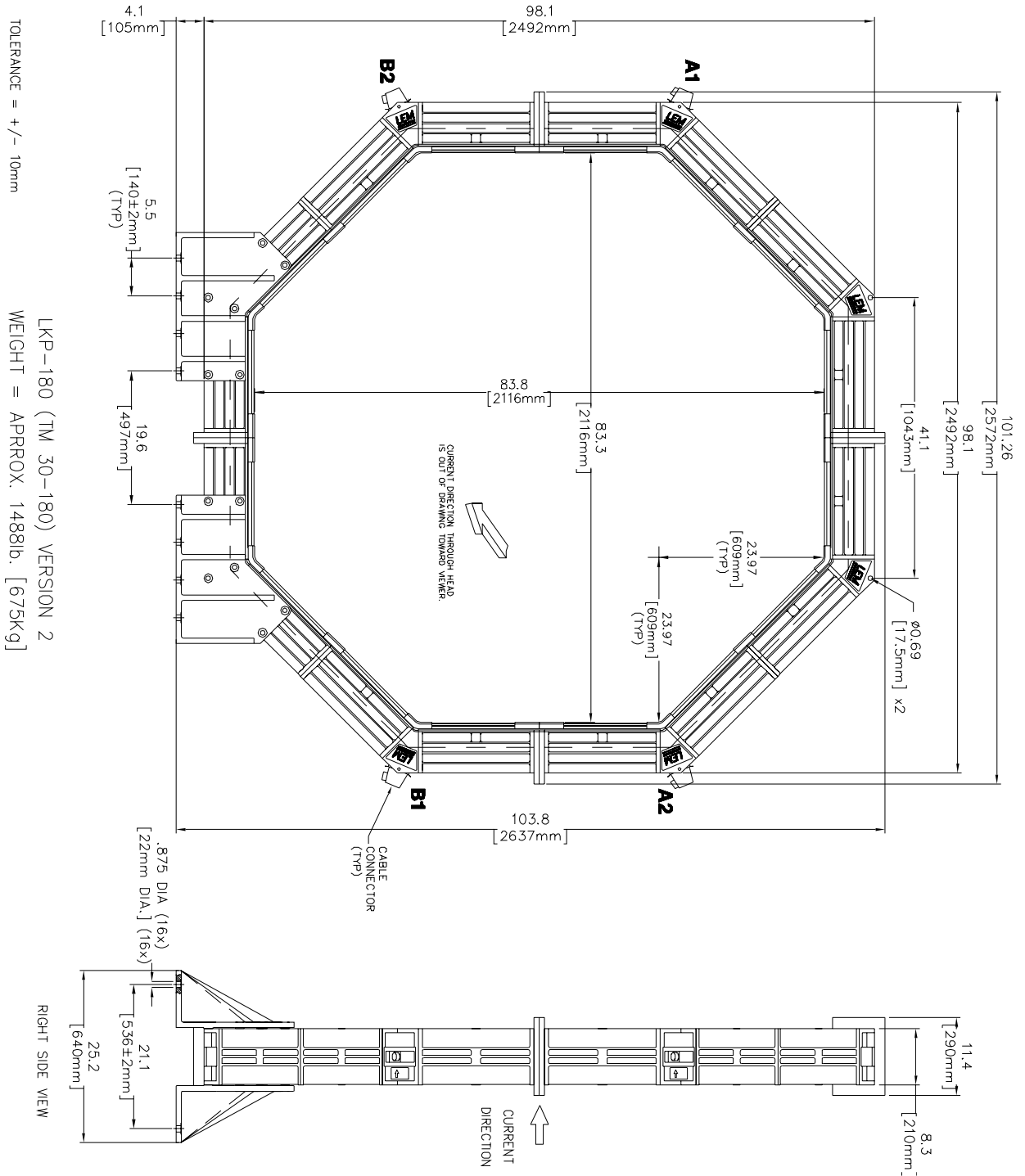




DynAmp

# LKP-180

## Measuring Head Outline and Mounting Diagram and Information    Version 2

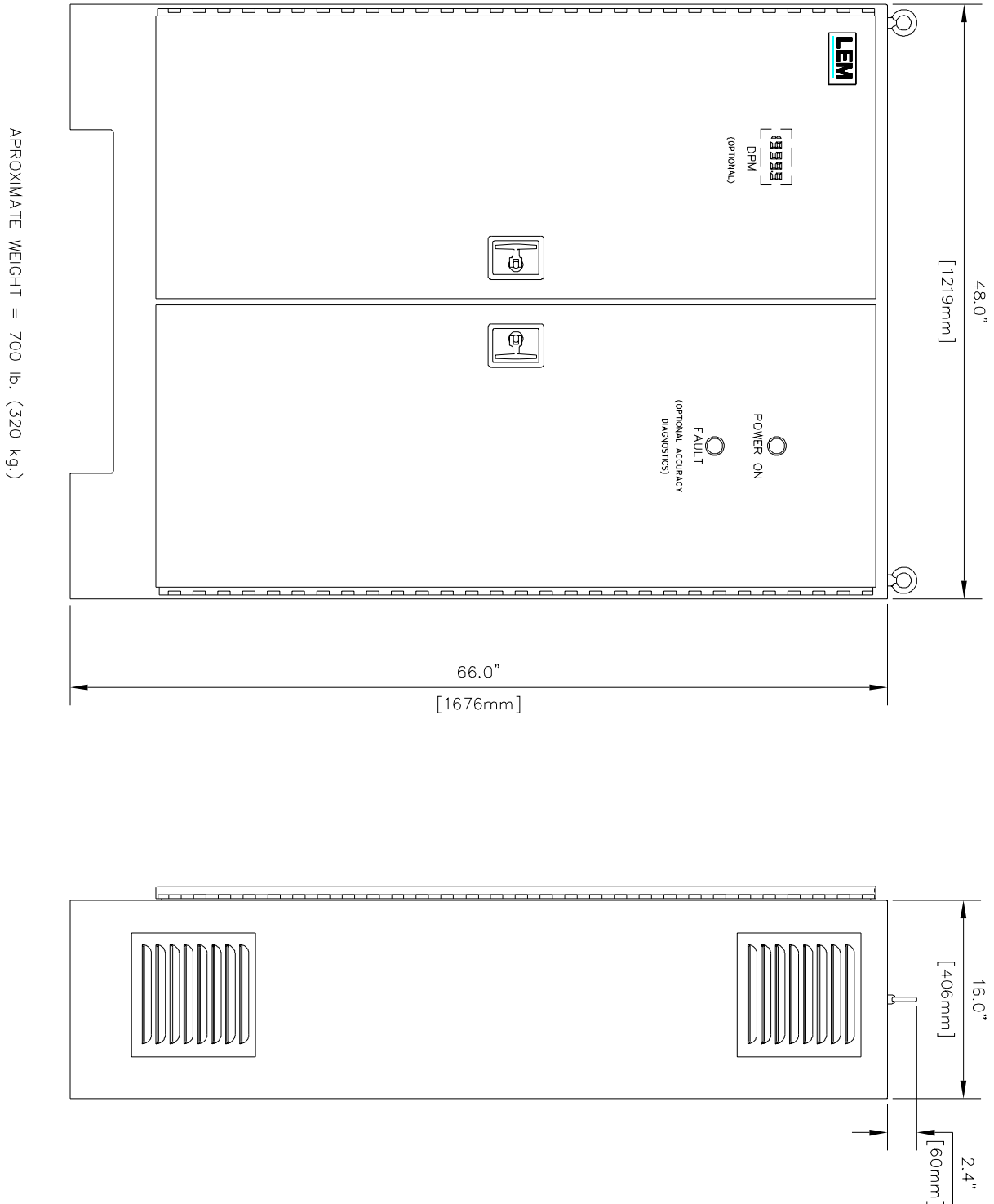




DynAmp

# LKP-180

## Metering Unit Outline and Mounting Diagram and Information





## Ordering Information

1. Specify model LKP-180, (see pages 2 & 3 for versions.)  
**Version 1 Specify Item Number: 42113**  
**Version 2 Specify Item Number: 42535**
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  
Mounting Feet  
Operator / installation manual  
Calibration result data tables and graphs  
One internally mounted shunt  
Meter enclosure is to standard IP-22  
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: 41431**

### **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: 28698**

### **Local Digital Display:**

Mounted on the surface of the enclosure to provide local display of bus current.

Requires completed DPM Worksheet BEN056.

**Specify Item Number: 41909**

### **Current & Voltage Output (Internal 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**

### **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: 41540**

## Accessories

### **Remote Digital Display:**

Additional 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.

**Specify item number: 99922**

### **Standard Spare Part Package:**

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

**Specify Item Number: 43793**

### **Spare System Components:**

**Measuring Head –Version 1 Specify Item Number: 41727**

**Version 2 Specify Item Number: 42416**

**Metering Unit - Specify Item Number: 41428**

### **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: 41450**

### **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**

## 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**