

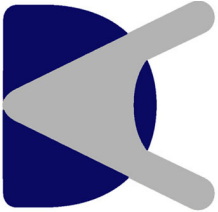


Electro-Process Systems

DynAmp



Power Conversion and Process
Measurement, Control & Protection



DynAmp

Global Leader in
Electro-Process
Systems

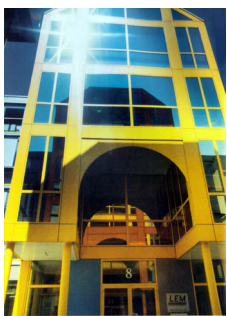
Formed with the integration of knowledge from LEM SA and Halmar, DynAmp has a unique, in-depth understanding of high current applications. With over 50 years of experience, thousands of systems have been installed in electro-chemical and other energy intensive processes throughout the world.



DynAmp Headquarters
Ohio, United States of America

DynAmp's know-how extends well beyond current measurement. We understand the value of the information our systems provide and how it is used in decision making.

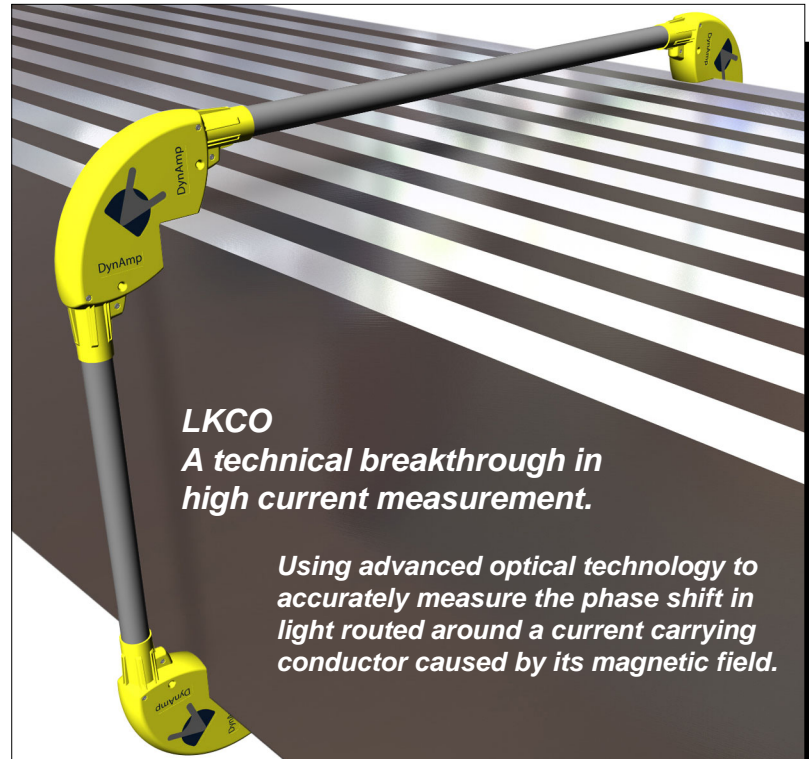
Our in-depth understanding of harsh industrial and electromagnetic environments allowed us to develop our exclusive OLOP™ technology as well as the only fully compensated, closed loop optical technology for a new generation measurement systems.



DynAmp Europe
Geneva, Switzerland

The need for energy intensive processes to increase efficiency, objectively compare multiple plants and improve power conversion has never higher. The DynAmp team stands committed to helping you meet the challenges you face today as well as preparing for the future.

LKCO : Fully Closed-loop, Optical Current Measurement System



LKCO
A technical breakthrough in high current measurement.

Using advanced optical technology to accurately measure the phase shift in light routed around a current carrying conductor caused by its magnetic field.

Measurement of high current involves a unique set of concerns. Errors of only 0.25% can hide significant process inefficiencies. As process currents and efficiencies increase, even small changes have large financial impacts.

LKCO utilizes a unique, patented, "fully compensated" closed-loop system developed over 8 years of lab and field experience, to ensure long-term 0.1% performance. This technology places the entire system (light source, opto-electronics, fiber optics and even the output signals) under closed-loop control automatically compensating for any long-term sensitivity, gain or zero point change.

Additional Key Features and Benefits

Superior rejection of external influences.

Provides the highest accuracy performance, even when installed on compact and complex bus work. No need for exact positioning to optimize performance.

Extremely compact and light weight.

Designed to be "bus bar mounted". Eliminates additional support and protection structures. Compact modular head allows installation with less than 20cm of bus clearance

Advanced Accuracy Diagnostics (A2D)

Immediately identifies specific installation problems, developing problems and faults. A2D even records events for subsequent analysis and root cause investigation.

LKP : High Accuracy for Process Mainline & Rectifier



Highly accurate and dependable measurement systems are needed to provide process experts with the information they need to positively identify any problems early and keep processes running efficiently.

LKP systems eliminate these concerns by providing globally proven 0.1% accuracy. All LKP systems include DynAmp's computerized Bus Analysis™ to ensure the highest performance in most any installation.

Key Features and Benefits

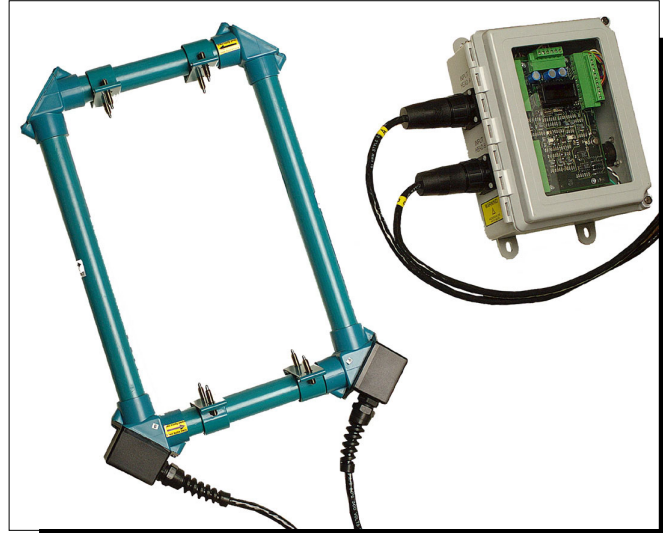
Industry Standard Accuracy and Performance

Tighter and more accurate measurements enable tighter process control and better process "visibility". This enables better process management and lower product costs.

Automatic, Self Monitoring of Performance

The "Accuracy Diagnostics" option continuously monitors for hardware failures and external influences which could compromise accuracy, allowing your management and control decisions to be made with confidence.

LKAT : Integrated Rectifier Measurement & Protection



LKAT *plus* utilizes DynAmp-developed OLOP technology to provide AC/DC current measurement for high power rectifier measurement and control applications. Available "Protection Extensions" add advanced rectifier protection functions for a single, dependable rugged system.

Key Features and Benefits

Two systems in one.

The LKAT Plus system provides both a current measurement output and a set point relay output for overcurrent or reverse current protection. Optional Protection Extensions add a second independently scaled measurement output plus two additional relay outputs for additional alarm points.

Superior application flexibility and performance.

Thanks to the OLOP technology utilized in the LKAT Plus and practically infinite head size possibilities, LKAT can be installed on practically any bus configuration. This allows bus construction to be simplified and installation costs reduced.

Compact design enables simple, "on-bus" mounting

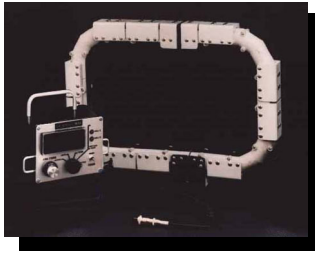
The small, lightweight measurement head is easily mounted directly on buswork. The IP67 rating allows the system to be mounted almost anywhere.

Automatic, self monitoring ensures performance

All LKAT systems include "Accuracy Diagnostics" which continuously monitor the system for hardware failures and external influences which could effect accuracy.

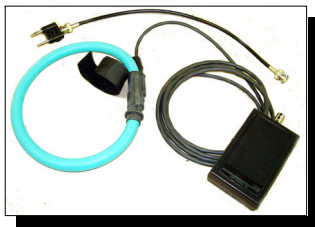
Portable Measurement

• Clamp-on DC Current Measurement



The COP system is a proven, highly reliable system ideal for harsh environments. Its rugged lightweight measurement head is available in a wide variety of configurations.

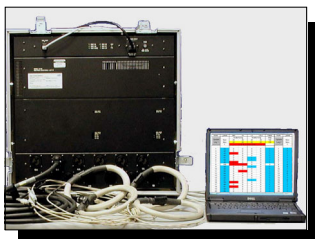
• Snap-around AC Current Measurement



The RR-60000's unique flexible measurement head installs easily to monitor high AC currents to 60kA.

Rectifier Monitoring, Analysis and Protection

• Rectifier Monitoring and Analysis System



The RCEM system allows users to analyze rectifier performance down to the individual rectifying device for balance and capacity optimization.

• Reverse and Over-current Protection



The BRP system provides rectifiers with the highest degree of dependable reverse current and optionally over current protection.

Service and Support

DynAmp provides expert services for high current system users. Our global network of service centers, subsidiaries and agents support industry's need for accurate, high current measurement.



Commissioning - Ensure that all systems are properly installed and are functioning perfectly on start-up.

Calibration Verification - Because our systems operate for many years, periodic examination assures correct operation and production efficiency.

On-site Troubleshooting - The best way to restore performance.

Upgrade - Specifications and performance of some older systems can be improved via hardware upgrade.


Equipment Rental - Temporarily need a system? Some models can be rented through DynAmp's Service Department.

Training - Equip in-house staff to handle and prevent problems.

Preventive Maintenance - Eliminate downtime and unexpected costs with less expensive, scheduled maintenance.

Statistical Characterization - Accurate, automated data acquisition provides permanent records of many readings

DynAmp History

- 1961 **HALMAR** Halmar founded and develops DynAmp current measurement systems
- 1985 **LEM** LEM introduces LKC high-current measurement systems
- 1992 **HALMAR ROBICON GROUP** Halmar-Robicon sells DynAmp business to LEM
- 1995 **HCS** LEM establishes High Current Systems business unit
- 1997 **LKP** LEM HCS introduces next generation LKP systems
- 1999 **LEM** Dedicated European Market Service Center established
- 2003  Existing HCS Managers purchase business with LEM support to establish DynAmp
- 2005 DynAmp introduces LKCO closed-loop optical technology systems

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