

***AC and DC  
Current Transducers  
for Protection, Monitoring  
and Control Systems***



# AC Current Transducers

AK and AKR Series, RMS Outputs

Many apertures, forms, and sizes to choose from.



## Applications

### AKR Series

- VFD Controlled Loads
- SCR Controlled Loads
- Switching Power Supplies and Electronic Ballasts

### AK Series

- Automation Systems
- Data Loggers
- Panel Meters
- Measuring generator outputs
- Electric Heating Elements



Combining a transformer & signal conditioner into a single package

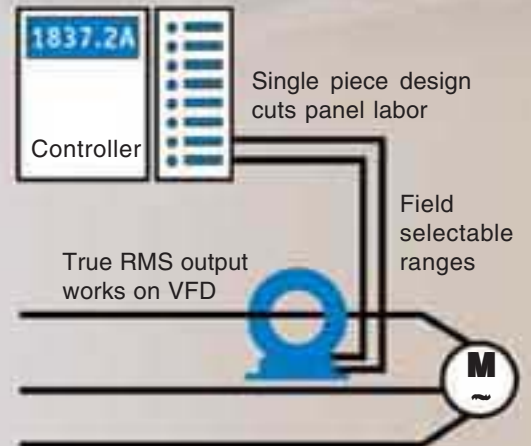
Case type	Aperture diameter	Measurement range	Type	
			Average output 5 V, 10 V or 4-20 mA	True RMS output 4-20 mA
Solid	14 mm $\varnothing$ or 19 mm $\varnothing$	0-2, 0-5 0-10, 20, 50 0-100, 150, 200	AK 5 C420L AK 50 C- AK 200 C-	AKR 5 C420L AKR 50 C420L AKR 200 C420L
	76 mm $\varnothing$	0-375, 500, 750 0-1000, 1333, 2000	AK 750 C420L AK 2000 C420L	AKR 750 C420L AKR 2000 C420L
Split	21.7 mm $\varnothing$	0-2, 5 0-10, 20, 50 0-100, 150, 200	AK 5 B420L AK 50 B AK 200 B	AKR 5 B420L AKR 50 B420L AKR 200 B420L

### RMS Output for VFD & SCR Waveforms

**Select AKR transducers for non-linear loads or in “noisy” power environments:** VFD and SCR output waveforms are rough approximations of a sine wave. There are numerous spikes and dips in each cycle. AKR transducers use a mathematical algorithm called “True RMS”, which integrates the actual waveform over time. True RMS is the only way to accurately measure distorted AC waveforms.

### RMS Output for Pure Sine Waves

**Select AK transducers for strictly linear loads on “clean” power:** The current waveform of a typical linear load is a pure sine wave. AK transducers measure the peaks of these sine waves, then calculate the average amperage. This works well on constant speed linear loads in a “clean” power environment.





# DC Current Transducers

Large range current measurement for nearly all applications

## Features DK Series

- Three jumper selectable ranges
  - Reduces inventory
  - Eliminates Zero & Span Pots.
- Internal Power Regulation
  - Works with unregulated power
  - Cuts installation costs
- Easy Installation
  - Split Core Design with built-in mounting Brackets makes installation a snap



## Applications DK Series

- Battery banks
  - Monitors load current
  - Monitors charging current
  - Verifies operation
  - Monitor current leakage
- Transportation
  - Measures traction power and auxiliary loads
- Electric heating elements
  - Faster responses than temperature sensors

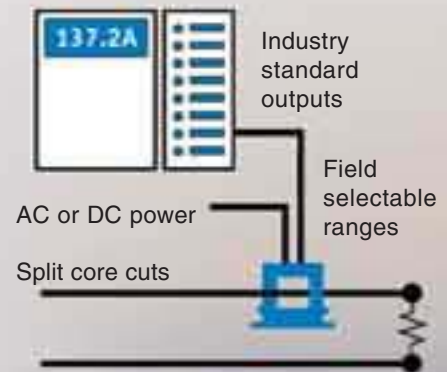
Case type	Aperture	Range (A)	Type	Outputs
Solid	25 mm $\varnothing$	0.01	DF 0.01 C	0-5 VDC 0-10 VDC
		0.02	DF 0.02 C	
		0.05	DF 0.05 C	
		0.1	DF 0.1 C	
		0.3	DF 0.3 C	
		0.5	DF 0.5 C	
Split	21.5 mm $\varnothing$	50, 75, 100	DK 100 B	0-20 mA 4-20 mA 0-3 VDC 0-5 VDC 0-10 VDC
		100, 150, 200	DK 200 B	
		150, 225, 300	DK 300 B	
		200, 300, 400	DK 400 B	

## Features DF Series

- Easy installation
- Resistance to harsh EMC conditions
- Measurement of large current-ranges suitable to many applications
- Mechanical mounting to reduce handling time
- Adapted output
- Large aperture for low current or differential current measurement

## Applications DF Series

- Human and material protection from current leakage produced by batteries, DC power supplies, and DC industrial machines.
- Monitoring of current consumption in assorted DC applications.
- Control systems or machines by current measurement like primary current in circuit breaker or polarisation current in cleaner rooms.



# AC Ground Fault Sensors

## AKS Series, Solid State Output



Protect people, products and processes from ground faults by monitoring all current-carrying wires in grounded single or 3-phase systems.

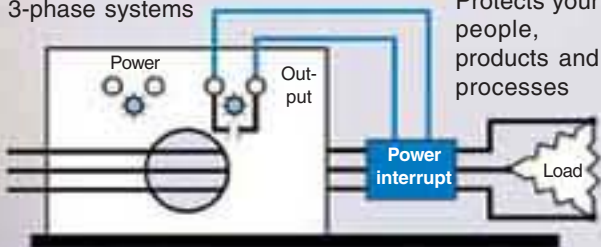
### Features

- Several voltage power supply available: 24 VDC/AC, 120, 200, 240 VAC.
  - Setpoint options to match your needs: Tri-set - Field select 5, 10 or 30 mA.
- Fast and convenient.  
Single-set - Factory adjusted setpoint.

### Applications

- Personal protection (typically 5 mA). Senses low fault currents and alarms to shut power off before injury occurs.
- Equipment protection (typically 30 mA). When personal protection is not an issue, select a higher set point to protect equipment.

Easy to apply for single or 3-phase systems



Normally Energized Models (-FS Option)			
Protection from faults and loss of control power	Control power applied		
	No Power	No Fault	Fault
N.C. Normally Closed	Closed	Open	Closed
N.O. Normally Open	Open	Closed	Open
Normally Deenergized Models (-NF Option)			
Protection from faults only when control power is applied	Control power applied		
	No Power	No Fault	Fault
N.C. Normally Closed	Closed	Closed	Open
N.O. Normally Open	Open	Open	Closed

# Applications

Battery Monitoring



Conveyers



Chemical  
Industrial Processes



Industrial  
Automation Processes



AC/DC  
Power Monitoring



Pump & Fan Control/  
Monitoring



AC/DC Motor & Drive  
Control/Monitoring



## Easy to Install & Integrate Into Your Current Systems

- Solid mechanical mounting, units feature integrated mounting brackets for either Panel or DIN installations.
- Several outputs adapted to your applications (0-5 V<sub>DC</sub>, 0-10 V<sub>DC</sub>, 4-20 mA, solid states...).



**Our technical support team is always available to provide you with the best monitoring solutions.**

For product information don't hesitate to contact us or to consult our web site [www.lem.com](http://www.lem.com).



# LEM International Sales Network

Europe • Middle East

**Austria**  
**LEM NORMA GmbH**  
Liebermannstraße F 01  
A-2345 Brunn am Gebirge  
Tel. 02236/69 15 02  
Fax 02236/69 14 00  
e-mail: ina@lem.com

**BeNeLux**  
**LEM Belgium sprl-bvba,**  
Route de Petit-Roeulx, 95  
B-7090 Braine-le-Comte  
Tel. +32 67 55 01 14  
Fax +32 67 55 01 15  
e-mail: lbe@lem.com

**Croatia**  
Proteus Electric  
Via di Noghère 94/1  
I-34147 Muggia-Aquolina  
Tel. +39/40/232 188  
Fax +39/40/232 440  
e-mail: dino.fabiani@proteuselectric.it

**Czech Republic**  
PE & ED Spol. S.R.O.  
Koblovska 101/23  
CZ-71100 Ostrava/Koblovska  
Tel. 069/6239256  
Fax. 069/6239531  
email: petr.chlebis@vsb.cz

**Denmark**  
Deltron-Conelec A/S  
Banemarksvej 50 B  
2605 Broendby  
Tel. 45/43 43 43 42  
Fax 45/43 29 37 00  
e-mail: sales@conelec.dk

**Finland**  
Etra-Dielectric Oy  
Lampputie 2  
SF-00740 Helsinki 74  
Tel. 09/3699366  
Fax 09/3699311  
e-mail: hans.akerberg@etra.fi

**France**  
**LEM France Sarl,**  
La Ferme de Courtaboeuf  
19 avenue des Indes  
F-91969 Courtaboeuf Cedex  
Tel. 01/69 18 17 50  
Fax 01/69 28 24 29  
e-mail: lfr@lem.com

**Germany**  
**LEM Deutschland GmbH**  
Frankfurter Straße 74  
D-64521 Grob-Gerau  
Tel. 06152/9301-0  
Fax 06152/846 61  
e-mail: postoffice.lde@lem.com

**Hungary**  
Orszaczky Trading Co. Ltd  
Korányi Sandor U. 28  
H-1089 Budapest  
Tel. 1/314 42 25  
Fax. 1/314 42 25  
email: orszaczky@axelero.hu

**Italy**  
**LEM Italia Srl**  
via V.Bellini, 7  
I-35030 Selvazzano Dentro, PD  
Tel. 049/805 60 60  
Fax 049/805 60 59  
e-mail: lit@lem.com

**Israel**  
Ofer Levin Technological Application  
PO Box 18247  
IL-Tel Aviv 611 81  
Tel. 03/55 862 79  
Fax 03/55 862 82  
e-mail: ol\_teap@netvision.net.il

**Norway**  
Holst & Fleischer A/S  
Box 5404 Majorstuen  
N-0305 Oslo  
Tel. 22 06 63 50  
Fax 22 06 63 51  
e-mail: knut.ameberg@oslo.online.no

**Poland**  
DACPOL Co., Ltd.  
Teren Zakladu Lamina  
Ul. Pulawska 34  
PL-05-500 Piaseczno  
Tel. 022/757 07 13  
Fax 022/757 07 64  
e-mail: dacpol@dacpol.com.pl

**Portugal**  
Maquindus Engenharia e  
serviços, Lda  
Rua da Ponte, 5  
P-4435 Rio Tinto  
Tel. 01/2485 02 80/1  
Fax 01/2485 02 90  
e-mail: xcarvalho@mailtelepac.pt

**Rumania**  
SYSCOM-18 S.r.l.  
Calea Plevnei 139, sector 6  
R-77 131 Bucarest  
Tel. 1/222 91 76  
Fax 1/222 91 76  
e-mail: georgeb@syscom.ro

**Russia**  
**TVLEM**  
Marshall Budionny Str.  
170023 TVER  
Tel. 0822/44 40 53  
Fax 0822/44 40 53  
e-mail: tvelem@lem.com

**Slovenia**  
Proteus Electric  
Via di Noghère 94/1  
I-34147 Muggia-Aquolina  
Tel. +39/40/232 188  
Fax +39/40/232 440  
e-mail: dino.fabiani@proteuselectric.it

**Spain**  
SUMELEC  
Doris de Schade S.L.  
Avd. Sancho Rosa 66  
E-28708 San Sebastian de los Reyes  
Tel. 91/623 68 28  
Fax 91/623 67 02  
e-mail:  
abisum@santandersupernet.com

**Sweden**  
Beving Elektronik A.B.  
Jägerhorns väg 8  
S-14105 Huddinge  
Tel. 08/680 11 99  
Fax 08/680 11 88  
e-mail:  
information@bevingelektronik.se

**Switzerland**  
SIMPEX Electronic AG  
Binzackerstrasse, 33  
CH-8622 Wetzikon  
Tel. 01/931 10 10  
Fax 01/931 10 11  
e-mail: contact@simpex.ch

**Switzerland**  
**LEM SA**  
8, Chemin des Aulx  
CH-1228 Plan-les-Ouates  
Tel. 022/706 11 11  
Fax 022/794 94 78  
e-mail: lsa@lem.com

**Turkey**  
Özdisan Elektronik Pazarlama  
Galata Kulesi Sokak N°34  
TR-80020 Kuledibi/Istanbul  
Tel. 0212/252 0884  
Fax 0212/244 59 43  
e-mail: oabdi@ozdisan.com

**United Kingdom and Eire**  
**LEM U.K.Ltd**  
Geneva Court, 1  
Penketh Place, West Pimbo,  
Skelmersdale  
Lancashire WN8 9QX  
Tel. 01695/72 07 77  
Fax 01695/507 04  
e-mail: luk@lem.com

America

**Brazil**  
Intech Engenharia Ltda  
5 Andar CJ 52  
Av. Adolfo Pinheiro, 1010  
BR-04734-002 Sao Paulo  
Tel. 011/554 81433  
Fax 011/554 81433  
e-mail:  
intech@intech-engenharia.com.br

Asia • Pacific

**Australia**  
Fastron Technologies Pty Ltd.  
25 Kingsley Close  
**Rowville**  
Melbourne  
Victoria 3178  
Tel. 61-(0)397635155  
Fax. 61-(0)397635166  
e-mail: sales@fastron.com.au

**China**  
**Beijing LEM Electronics Co. Ltd**  
No. 1 Standard Factory  
Building B  
Airport Industria Area  
CN-Beijing 101300  
Tel. 10/80 49 04 70  
Fax 10/80 49 04 73  
e-mail: hzh@lem.com

**India**  
Globetek  
122/49, 27th Cross  
7th Block, Jayanagar  
IN-Bangalore-560082  
Tel. 80/663 57 76  
Fax 80/658 1556  
e-mail: globetek@blr.vsnl.net.in

**Japan**  
**NANALEM K.K.**  
1-27-14 Morino, Machida  
J-194-0022 Tokyo  
Tel. 042/725 8151  
Fax 042/728 8119  
e-mail: nle@lem.com

**Korea**  
Youngwoo Ind. Co.  
P.O.Box 10265  
K-Seoul  
Tel. 02/593 8146  
Fax 02/535 04 41  
e-mail: ygwoo@korea.com

**Singapore**  
Overseas Trade Center Ltd.  
03-168 Bukit Merah L.1  
BLK 125/Alexandra VII  
RS-150125 Singapore  
Tel. 272 60 77  
Fax 278 21 34  
e-mail: octpl@signet.com.sg

**Taiwan**  
Tope Co., Ltd.  
P.O.Box 101-356  
3F, No. 344, Fu Shing Road  
ROC-10483 Taipei  
Tel. 02/509 54 80  
Fax 02/504 31 61  
e-mail: tope@ms1.hinet.net

**Taiwan**  
LECTRON Co., Ltd.  
9F, NO 171, SEC.2,  
Tatung, RD. Hsichih City  
Taipei Hsien 221  
Taiwan, R.O.C  
Tel. 886 2 8692 6023  
Fax. 886 2 8692 6098  
e-mail: silas@lectron.com.tw

BAC/E, 04.02



LEM Components

8, Chemin des Aulx, CH-1228 Plan-les-Ouates  
Tel. +41/22/706 11 11, Fax +41/22/794 94 78  
e-mail: lsa@lem.com; www.lem.com

Publication CH 22105 E/US (05.02 • 4 • CDH)

Distributor