AC LEAKAGE CURRENT TESTER SERIES

**KEW SNAP MODEL 2432**
AC LEAKAGE CURRENT TESTER
AC 4mA/40mA/100A/2432
AC 40mA/400mA/400A/2433

**KEW SNAP MODEL 2434**
AC LEAKAGE CURRENT TESTER
AC 400mA/4A/100A

**KEW SNAP MODEL 2431F**
AC LEAKAGE CURRENT TESTER
AC 200mA/2/20/200/1000A

**KEW SNAP MODEL 2431**
AC LEAKAGE MINI CURRENT TESTER
AC 20mA/200mA/200A

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**FEATURES**
- Frequency Selector Switch to eliminate the effect of harmonics.
- Peak hold function.
- Sleep function to save battery.
- High Sensitive Model (40)

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- Data hold function.
- Sleep function to save battery.

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### MODEL 2432F

<table>
<thead>
<tr>
<th>Mode</th>
<th>Frequency Response</th>
<th>Output</th>
<th>Effect of External Stray Magnetic Field</th>
<th>Conducted</th>
<th>Safety Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC A</td>
<td>50/60Hz</td>
<td>4mA</td>
<td>4/40mA/100A</td>
<td>1/20/50A</td>
<td>IEC61010-1 CAT.</td>
</tr>
<tr>
<td>AC B</td>
<td>50/60Hz</td>
<td>4mA</td>
<td>4/40mA/100A</td>
<td>1/20/50A</td>
<td>IEC61010-1 CAT.</td>
</tr>
<tr>
<td>Conductor Size</td>
<td>6/8mm max.</td>
<td>40mA max.</td>
<td>2/28mm max.</td>
<td>24mm max.</td>
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<tr>
<td>Safety Standard</td>
<td>IEC61010-1 CAT.</td>
<td>300V Pollution Degree 2</td>
<td>IEC61010-2-032</td>
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<td></td>
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</tbody>
</table>

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**TABLE**

<table>
<thead>
<tr>
<th>MODEL</th>
<th>MODEL 2432F</th>
<th>Model 2432</th>
<th>Model 2433</th>
<th>Model 2434</th>
<th>Model 2431</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC A</td>
<td>50/60Hz</td>
<td>4/40mA/100A</td>
<td>1/20/50A</td>
<td>1/20mA</td>
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<td>Conductor Size</td>
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**APPLICATION NOTE**

Quality and reliability is our tradition.

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**ACCESSORIES**

- Instruction Manual
- Model 2432
- Model 2433
- Model 2434
- Model 2431F
- Model 2431

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**CONTACT INFORMATION**

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**TEAR-DROP-SHAPED JAWS FOR EASE OF USE IN CROWDED CABLE AREAS**

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**FACILITIES**

- Analogue output terminal
- Frequency Selector Switch
- Peak hold function
- Data hold function
- Sleep function to save battery
- Auto power-off function
Identifying deterioration of installation and other causes of "nuisance tripping" in live circuits is not always a straightforward matter. Problem of access and isolation may make the inspection costly. Then, let's look at KEW Leakage Clamp Meters designed to take the stress out of inspecting live installations.

If an RCD trips

Imagine an electrical contractor is called in to deal with a fault which has shut down a complete installation, or part of it. He finds that the supply has been lost, because a 30mA RCD protecting the faulty circuits has tripped. He closes the RCD only to find that tripping occurs again.

What steps should he take to trace the fault?

Since an RCD senses an imbalance between the phase and neutral currents in a circuit, the contractor is faced with identifying the source of the leakage current to earth which is causing the device to trip.

One possible path this leakage current may take is through the phase/earth insulation resistance and, therefore, he decides to perform an insulation test.

But to perform the insulation test in order to trace the fault means to disconnect and separate the different lines, the appliances from the installation. His customer, however, is anxious to minimize installation downtime.

In addition, the faulty circuit may serve sensitive electronic systems which are likely to be damaged by the high voltage generated by insulation test.

How can the contractor resolve this problem?

KEW Leakage Clamp Meters help

Now, thanks to unique AC Leakage Clamp Meters developed by KYORITSU, he can make not only a precise measurement of the earth leakage current in a circuit, but also an instant assessment of the cause of that leakage without shutting down the installation.

Five models are available for him to choose; model 2431, model 2413F, model 2432, model 2433, and model 2434. The substantial time and money saved in using these instruments will repay their costs after only a few visits on site.

How do they work?

At the first glance, the KEW Leakage Clamp meters appear to be conventional clamp ammeters. However, the special construction of the clamp shielding, allows the contractor to measure tiny out-of-balance currents between any conductors enclosed within the transformer jaws.
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KEW LEAKAGE CLAMP METERS  
FOR FAULT FINDING ON LIVE INSTALLATION

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How do they work?

Let's go back to the customer's problem. If the RCD trips, it should be temporarily "bridged out". The contractor now simply clamps the Leakage Clamp Meter around both phase and neutral conductors on the supply side of the RCD ( for 3-phase systems, all three live conductors and the neutral conductor should be enclosed ). The instrument display will then directly read the leakage current to earth in the installation with a high resolution.

Suppose the display reads 43.5 mA, simply tracing the leakage current the fault will be found. In the fig below there is a practical example how to trace the fault measuring the leakage current.

Normally, using this tracing system the fault will be found but sometimes the earth leakage current will not be caused exclusively by low insulation resistance. In fact could happen that performing an insulation test there is not a low value of insulation resistance even if the RCD still trips!
Leakage Through Capacitors

In fact there is also some leakage through the capacitive components of an installation, particularly with extensive circuits or where there are a lot of data processing equipments connected. At mains frequency (50 or 60 Hz), this phenomenon is of negligible significance. However, at higher frequencies, such as those found in power supplies for computer systems and microwave apparatus, capacitive links can produce quite large leakage currents.

How to measure leakage at high frequency
KEW Leakage Clamp Meters are so unique because can determine the level of earth leakage current including or not the high frequency. The electrical contractor simply switches a special frequency response setting and obtains these two values directly on the instrument display.

If the leakage clamp meter measures a leakage current at high frequency, the electrical contractor infers that the cause of the RCD tripping is not poor insulation resistance, but is higher frequency earth leakage current, probably through filters in his customer’s data processing equipment.

Versatility
The KEW Leakage Clamp Meters enable the electrical contractor to:

- Measure earth leakage currents on single or three phase systems (see picture below)
- Identify the causes of leakage to earth
- Assess the deterioration of insulation in a live circuit without carrying out an insulation test.
- Trace faults while avoiding insulation shutdown time and possible damage to sensitive loads.
- Measure the AC current like the conventional clamp meters ranging from 100A (with model 2432) to 1000A (with model 2413F).

In the fig below there are some other basic examples how use the KEW Leakage Clamp Meters on Single and Three Phase systems.