

So Brain



Company Profile

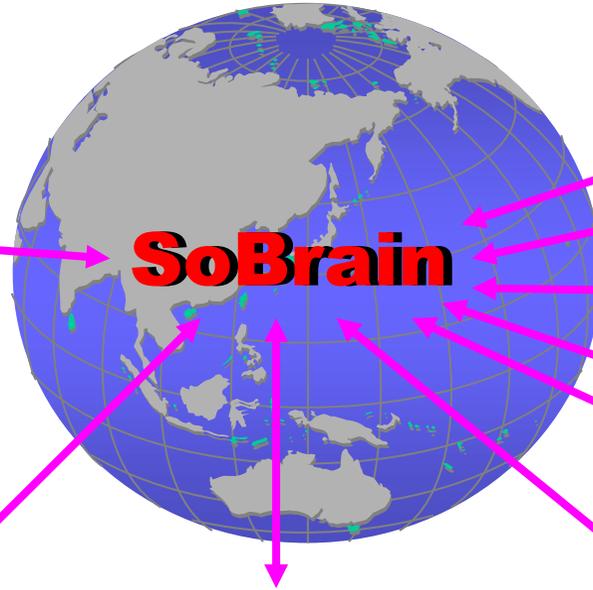
So Brain Co. Ltd.

So Brain Co. Ltd

- Address** : Dainisarugakucho Building 7F , 1-2-4 Kandasarugaku-cho, Chiyoda-ku, Tokyo
Tel. 03-3518-2010 Fax 03-3518-2020
- Foundation** : February 2005
- Business** : R & D of Leak Current Detection Technology based on Vector Theory
Igr Method (**True R** Technology)
Fabrication and Sales of **True R** Products and Electrical Appliances
Management of **True** Patent & License
- Products** : **True R** Detector H (“Handy”) : Small-sized potable Leak Current Detector
True R Detector T I(100V) & TII(100V-200V) (“Tool Checker”)
: Leak Current Checker for Electric Tools etc.
True R Detector C3F : Leak Current Checker for welding machine etc
(Three-phase Δ AC200V/220V)
- Licensed Products** : Clamp Meter & Logger (Sanwa Electric Instrument Co.)
Leak Monitoring System (Satori Electric Co. & Omron Social Solutions Service Co.)
- Patents** : International Patents acquired in 12 countries including Japan in the world regarding Leakage Current Detection Device, Method and Program for Detecting Leakage Current

True R Patent Area

International Patents acquired in 12 countries including Japan in the world
We are looking for True R licensed Partners.



Japan
(4159590) (4945727)
(4920357) (5329470)
(5748797) (6289846)

(Note)
Bracketed No.= Patent No.



Russian F (2358272)



Taiwan (I300482)



China (634842)

India (IN270981)

U.S. (US8,009,394B2)

EU (1855122)
(UK, FR, DE, IT)

Hong Kong (HK1116543)



Korea, R (10-0974047)
(10-1117870)
(10-1145024)

A Break-through technology to detect true leakage

In May 2009, our technology & thesis was scrutinized and introduced in the Journal of the Institute of Electrical Installation Engineers of Japan

The weakness and problems of traditional leak current detection technology :

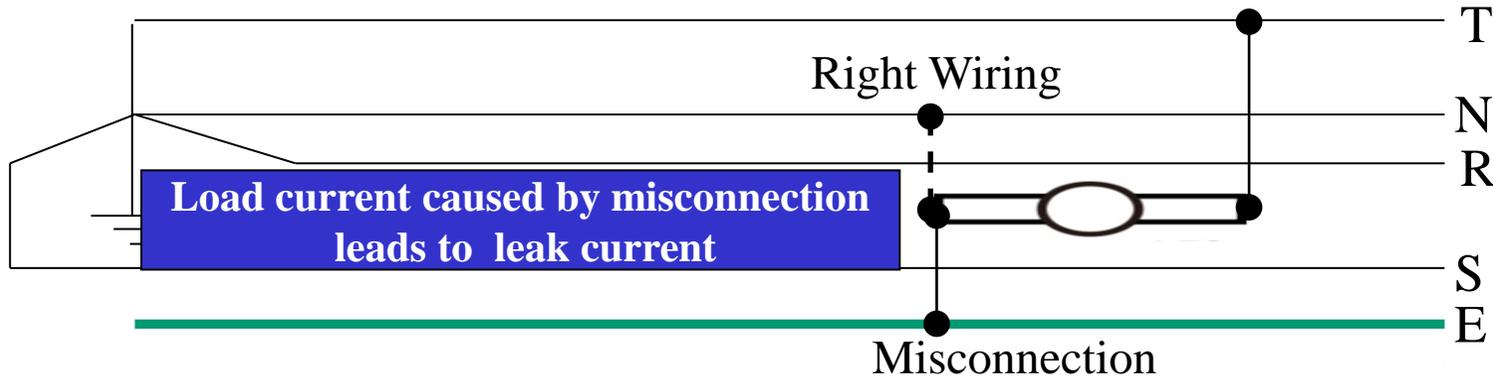
1. It may detect and operate without any actual leakage
 2. It may not detect leakage when it occurs
 3. It can not find accurately and timely points of leakage
 4. Detection speed is slow
- ★ Our **True R** (Vector Theory Igr Method) is a solution for the above events.
 - ★ **True R** is a break-through technology to detect true leak current without any influence caused by noise, harmonic, surge current and capacitance factors.
- “Accurate measurement and Speedy detection”, which is important advantages of our method, will allow us to develop and apply the technology to a circuit breaker in the future.
- TrueR is an epoch-making technology which is indispensable for leak current control in Smart Communities and Smart Grids in future.**

The best and compatible technology for Energy-saving Environment

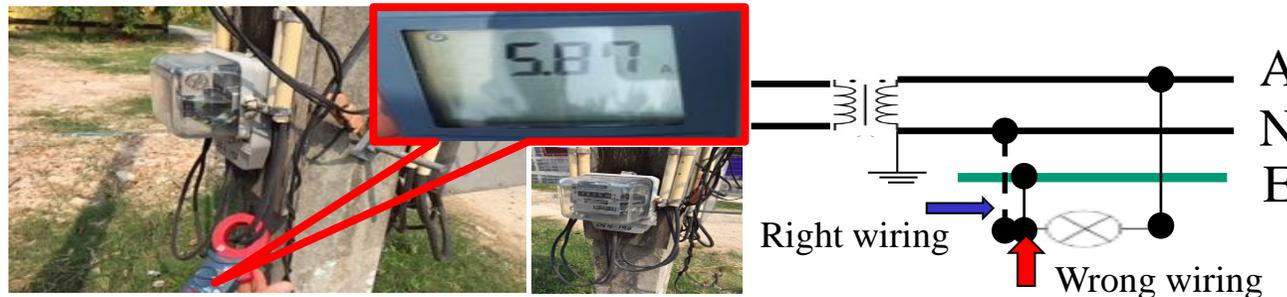
- 1. In highly advanced digital oriented society (Smart Community), inverters and various energy saving technologies are employed in many intelligent buildings & factories or echo-system etc., and there leak control by Io method technology will no longer function effectively due to noise, harmonic and increase of capacitance factor etc.. A new leak current control technology is strongly required today. The following capabilities become highly indispensable :**
 - **Highly accurate leak detection**
 - **Enhanced speed to determine true leak current**
 - **Ability to measure and detect leak while load is operating**
- 2. Only solution for the above subjects is True R technology (Vector Theory Igr Method) and also Japan National Safety Regulation for Private-use Electric Structures points out that there is a risk in relying on the conventional Io method and adoption of Igr Method is preferable.**

Misconnection can be detected by True R technology.

<Misconnection in lighting equipment> In case of connecting lighting circuit of single phase as load, any of R, T, S should be connected to N phase, which becomes Zero phase. It is easy to wire wrongly with mistaking E for N as potential difference N and E is zero.



<Misconnection founded in foreign countries> It is not recognized that zero phase must be kept by connecting load to N as potential difference between N and E is zero in foreign cases



True R Product Line-up

So Brain

So Brain

- Small-sized Portable Igr Leak Measuring System



Licensed merchandise

sanwa

Clamp Meter IOR500

Logger IOR700/700V

Feature

Capable of easily identifying true leakage situation
Measurement by I_0 is difficult in the field with high capacitance

Performance

- Display Igr value (true leak current) Display conventional I_0 value
- Capable of diagnosing I_0 action

- Igr Leak Monitoring System

OMRON

Igr adapter

Insulation monitoring system



Satori Electric Co., Ltd.

Insulation monitoring system

Most suitable for monitoring plants and intelligent buildings

- Capable of all time monitoring
- Capable of considering construction and manufacturing period by controlling increase and decrease

- Leak Checker for Electric Tools etc.



Utilized by power station, etc.

- Insulation diagnosis easier and quicker than megger
- Capable of diagnosing tools and power supply drum all together

- Demand monitoring (Addition of Igr function)
- Igr leakage breaker (three-phase)

Under research and development including making IC as chip



- New need for demand monitoring
- Replace present I_0 Leakage breaker

- Capable of integration by circuit configuration using only IC
- Definite speed of 0.03 seconds realized

True R Ω

And More

Igr breaker developed & practicalized (single phase)



佐島電機株式会社 SHODEN True Ro

地絡電流抑制制御システム

Ground Fault Current Suppression Control System

事故対策 定額検出 高精度漏電検出 Leakage CHと地絡電流抑制装置

動作シーケンス

- ① 地絡事故発生
- ② 地絡電流検出
- ③ 地絡電流抑制・検出
- ④ 警報
- ⑤ 復帰

保安管理の現状と問題点

- 休日・夜間時の地絡事故 確認に入らず、地絡事故の対応ができない
- 16,000〜20,000件/月の保安員が出勤 (※)
- ※ 首都圏各地における1ヶ月の発報・出動件数
- 漏電検出装置の設置作業
- ノイズ・高調波・対地電圧上昇・VVVF制御等の影響

特徴と効果

- トランスのB種接地点と地絡事故点のlor、locを同時に測定
- トランスのB種接地点と地絡事故点のlorで地絡電流を抑制制御
- 30Hz〜80Hzの領域で高精度な動作
- 高調波、ノイズの除去
- 漏電容量検出、蓄サージはGDTで安全に電圧抑制
- 地絡電流抑制装置は平成24年度技術標準適合性評価委員会にて技術適合性認定済

関東電気保安協会 新機 株式会社 関電工 新機

※ 16,000〜20,000件/月の保安員が出勤は、上記の範囲内での発生件数を示しています。また、16,000〜20,000件/月の保安員が出勤は、首都圏各地における1ヶ月の発報・出動件数を示しています。

In case of alarming in leak monitoring device while any people can't enter the field at night and holiday, leak current value can be adjusted to keep the safety value without causing any ground fault current by the Control System at left until leak survey can be made.

The Control System at left needs the leak monitoring device with accuracy above a certain level, which enable to show higher performance of the left system only by introducing True R technology.



Ministry of Economy, Trade & Industry minister Prize awrded in JECA FAIR2017

We accept leak survey!!

Leak measurement and diagnosis using So Brain's worldly patented technology True R method leak detection technology

Concerning leaks, many unclear phenomena, such as intermittent leaks and malfunction by noise are reported. Insulation resistance measurement has limitations, and surveys other than True R method require much man power and time. Leak survey in the True R system can significantly reduce the survey time, capable of identifying leak point and cause. Those who have difficulty in the leak survey should contact So Brain.

Capable of diagnosing which is the problem, noise or insulation deterioration!

Leak measuring system and leak measurement and recording system

When the cause was found to be insulation deterioration due to loading after doubting leak, an injection type leak monitoring system may sometimes malfunction. In addition, the present state is that determination is impossible because the characteristics of general leak detection technology and the scope of leak identification are not well known. We can propose solutions by performing environmental diagnosis in True R system and analyzing which is the problem, noise or insulation deterioration. Furthermore, if the problem is found to be noise, it is very difficult to determine the possibility of a recurrence. However, we can propose specific corrective method by drawing a graph of recorded leak generation and comparing noise with insulation deterioration value.



Contact: So Brain Co., Ltd.
Dainisarugakuchou Bldg. 7F 1-2-4, Kandasarugaku-cho,
Chiyoda-ku, Tokyo 101-0064 Japan
TEL: +81-3-3518-2010 / FAX: +81-3-3518-2020

So Brain



Smart community/smart grid will appear in the future!

Nuclear, thermal, hydraulic, solar heat, solar light, wind, biomass, etc.

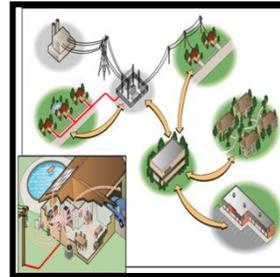
Energy storage, battery

Intelligent plant and building

Energy saving equipment such as home appliance, LED, electric vehicle and solar panel

Smart grid

Integrated network of power, information and communication with high efficiency, high quality and high reliability



True R is breakthrough leak detecting and monitoring technology indispensable for smart community with smart grid

True R capable of detecting leaks in 1mA level for single- and three-phases

→ In electric security, from insulation resistance control based on megger value to true leak current control

True R eliminates the influence of increase of capacitance generated by inverter, energy saving measure, etc., and noise to detect true leak current

→ After reviewing the conventional leak control criteria, capable of setting personal injury limit at 6mA or less

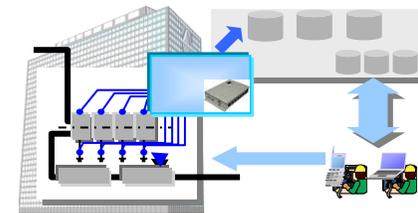
Definite detection speed of leak current at 0.03 sec realized

→ True R leak breaker developed and practicalized

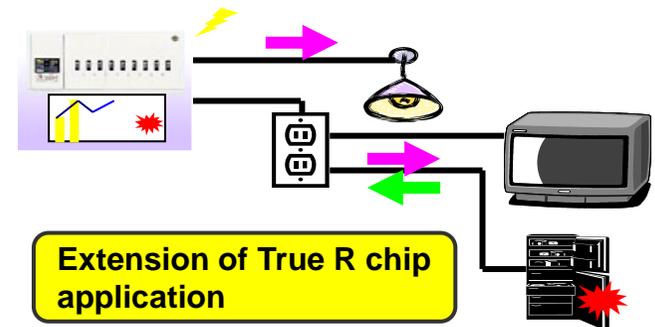
Remarkable improvement of electric security using true leak current control value < Prevention of leak accident and measurement of true electric energy >

Leak detection, leak monitoring, insulation diagnosis, leak accident Prevention, and true electric energy measurement

True R leak measuring system, relay and breaker



True R leak monitoring system



Extension of True R chip application

Leak from all electric systems visualized and remote monitoring enabled

If you have any questions about our company , True R technology and products, please contact our office shown below:

Contact : So Brain Co., Ltd.

Dainisarugakucho Bldg. 7F

1-2-4, Kandasarugaku-cho, Chiyoda-ku,

Tokyo 101-0064 Japan

Tel +81-3-3518-2010

Fax +81-3-3518-2020