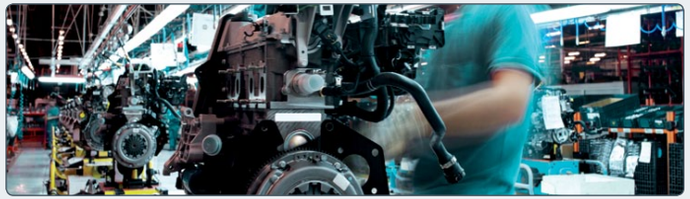
- Compensation based on real needs
- Control of the electrical parameters and consumption of the installation
- Easy preventive maintenance and maximum safety
- Minimum investment, **Maximum profits**
- **Plug & Play**

Application

Computer SMART III is the perfect power factor correction solution for:



Industry

Office Buildings

Renewable energies

Technical features

Power-Supply circuit	Power supply voltage	110...480 Vac
	Tolerance	±10%
	Consumption	6 VA
	Frequency	45...65 Hz
Measurement circuit	Measurement voltage	Maximum: 525 Vac p-p 300 Vac p-n
	Current measurement	1 or 3 transformers .../5 A or .../1 A
Leakage current	Measurement range	$I_{\Delta prim}$ = 10 mA...1 Aac
	Current transformer	**WGC**
Accuracy	Voltage and Current	1%
	cosφ	2% ±1 digit
Temperature measurement	Measurement range	0...80°C ±3°C
Alarm relay	Output contact	Switched
	U_{max} and I_{max} (operation)	250 Vac / 6 A
Output relay	No. of relays	6 or 12, depending on the model
	U_{max} and I_{max} (operation)	250 Vac / 6 A
Fan relay	Output contact	Not switched
	U_{max} and I_{max} (operation)	250 Vac / 6 A
Digital outputs	No. of outputs	2
	Type	NPN Transistor
	U_{max} and I_{max} (operation)	24 Vdc /50 mA
Digital inputs	No. of inputs	2
Alarms	No. of alarms	17, fully configurable
Communications	Port	RS-485
	Protocol	MODBUS
Operating conditions	Temperature	-20...+60°C
	Relative humidity	Max. 95%
	Maximum altitude	2 000 m
Control system	FCP (Program that minimises the number of operations)	
Safety	Insulation	Category III Class II
	Protection degree	IP 40 mounted IP 30 not mounted
Standards	**IEC 62053-23 (2003-01) , IEC 61326-1, EN 61010-1, UL 508**	

References

Type	Code	No. of relays
computer SMART III 6	**R13851**	6
computer SMART III 12	**R13862**	12

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Designed by: communication dept. - **CIRCUTOR**, SA.

Código: C2R183-01

Power Factor Correction and Harmonic Filtering

computer SMART III

Integral Power Factor relay: compensation, analysis, protection

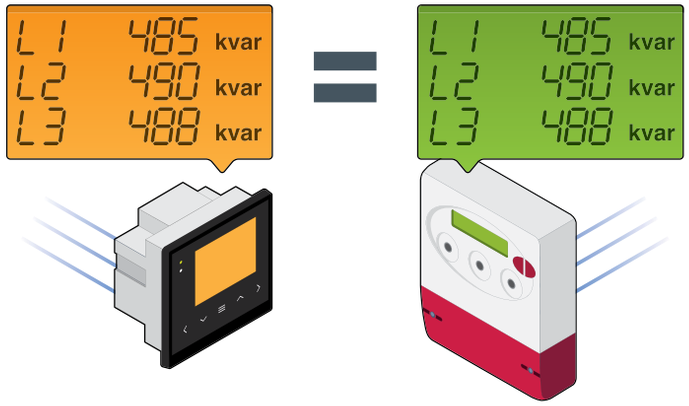
Advanced compensation

CIRCUTOR
Technology for Energy Efficiency

Advanced compensation

Measurement with three current transformers guarantees an analogue reading of the company's meter. The **computer SMART III** is the only Power Factor Relay in the market that offers the possibility of using 3 measuring transformers in addition to the traditional method of measuring with a single current transformer, as well as providing the functions of an integral power analyzer and controlling the residual leakage currents.

Measurement equivalent to the billing energy meter

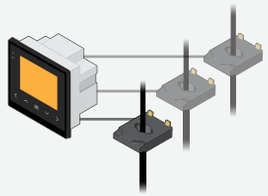


Easily and Flexibility

Connecting 1 or 3 transformers allows the following:

- **Plug & Play**
- Changing from 1 to 3 transformers in the following cases:
  - Changes in reactive energy penalties.
  - Changes in consumption habits.
  - Significant imbalances in the system.
- Replacement of the Power Factor Relay of any capacitor bank.

3 in 1

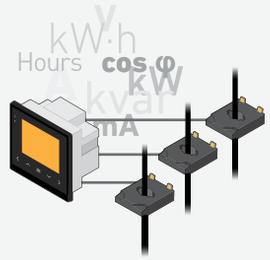


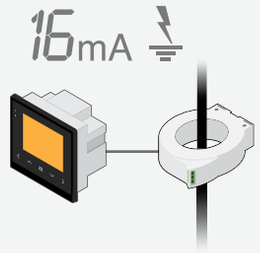
Compensation

- Smart compensation
- Measurement in 1 or 3 phases
- 4 objective cosφ
- Configurable alarms
- Built-in communications system

Analysis

Not only is **SMART III** an advanced Power Factor Relay, but it is also a powerful power analyzer that measures the consumption and electrical parameters of the installation.





Protection

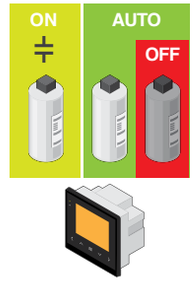
Computer SMART III uses **CIRCUTOR's** unique leakage measurement system, which facilitates the disconnection of the affected capacitor and guarantees the service continuity of the rest of the capacitor bank.

Communications

The Power Factor Relay can also be monitored remotely (via SCADA) thanks to its RS-485 Modbus communications port and two digital outputs, which also allow: Door locking, Visual or acoustic alarm, Alarm on any electrical parameter, etc.

4 objective cosφ

First Power Factor Relay in the market with a configuration of up to 4 objective cosφ with 2 digital inputs (for applications with differences in time periods or with a generating set).



Simplification of fixed compensation operations

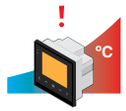
The ON/OFF/AUTO configuration of each one of the steps of the automatic capacitor bank can be used to select a step for the fixed compensation of the power transformer, not considering the value of this step when compensating all other loads. This means that a fixed set that is independent of the automatic capacitor bank does not have to be installed.

Alarms and Supervision

17 configurable alarms that improve preventive maintenance

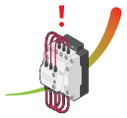
Harmonics Alarm

Indicates the risk of the presence of harmonics in the installation, programming the connection or disconnection of capacitors to eliminate resonance.



Temperature Alarm

The built-in relay and thermostats can configure the temperature alarms, avoiding the installation of external units.



Operations alarm

The alarm for the number of operations per step warns of the need to implement preventive actions.

Capacitor supervision

The [test] function checks capacitors for a quick analysis of their power. It prevents the use of external power analyzers, current sensing clamps, etc.