



computer SMART III F6-12Vdc, Power factor regulator

Code: R13953.

> Alarm relay: Yes

> Communications: RS-485

> Measurement Range (V): 100...520

> I∆n (A): yes

> Power supply (Vac): 100...520 Vac

> Nr steps: 6

> Input current: .../5A | .../1A > Switching unit: EMB-2PH

#### Description

Measurement with three current transformers guarantees an analogue reading of the company meter. The Computer SMART III Fast reactive energy regulator is the only regulator on the market that offers the possibility of using 3 measurement transformers in addition to the conventional method of measuring with a single current transformer, as well as providing the functions of an integral power analyzer and controlling

Computer SMART III Fast is a regulator that ensures excellent preventive maintenance by means of programming its alarms and the options for testing the capacitor status, offering maximum supervision and safety of your compensation unit.

#### **Application**

Computer Smart III fast it's the ideal solution to compensate installations with a variation of quick load, between 40 ms and 4 seconds, and/or large unbalances between phases, such as welding units, cranes, lifts and lifting units, smelters, hospitals, automotive industry or any other sector or unit that requires an efficient compensation of the power factor.

The connection of 1 or 3 transformers makes computer SMART III Fast the perfect regulator in any installation, allowing the following:

- O Changing from 1 to 3 transformers in the following cases:
  - o Single-phase fast changing equipment
  - o Example: Single-phase welding
  - o Replacing the regulator of any capacitor bank
- $\circ$  Perfect for installations with up to 4 objective cos  $\varphi$ , since it can adapt to any compensation need (different time periods).







Code: R13953.

#### **Specifications**

Size (mm) width x height x depth	AC power supply	
Frequency   50 60 Hz     Naminal voltage   100 520 V ~     Mechanical characteristics   144 x 144 x 71 (mm)     Envelope   Plastic V0 self-extinguishing   Panel     Fastening   Panel   Protection class   Protecti	Installation category	CAT III 300 V
Nominal voltage         100 520 V ~           State (mm) width x height x depth         144 x 144 x 71 (mm)           Envelope         Plastic VO self-extinguishing           Fastening         Panel           Weight (kg)         0,53           Environmental characteristics         PTO (Front), IP 31 (unmounted)           Relative humidity (without condensation)         5 95%           Storage temperature         -20 +70 °C           Working temperature         -10 +55 °C           Current measurement circuit         -15 may 1	Consumption	10 15 VA
Mechanical characteristics         144 x 144 x 71 (mm)           Size (mm) width x height x depth         144 x 144 x 71 (mm)           Envirope         Plastic VD self-extinguishing           Fastening         Panel           Weight (kg)         0,53           Environmental characteristics         Protection class           Protection class         IP 51 (Front), IP 31 (unmounted)           Relative humidity (without condensation)         5 95%           Storage temperature         -20 +70 °C           Working temperature         -10 +55 °C           Current measurement circuit         -75 A G /1A           Unrent measuring range         1 120 % in           Minimum current measuring range         1 120 % in           Minimum current measuring range         45 65 Hz           Installation category         CAT III 300 V           Sampling frequency         45 65 Hz           Input impedance         600 KD           Frequency measuring range         45 65 Hz           Voltage measuring range         20 65 Hz           Nominal voltage         20 65 Hz           Nominal voltage         20 65 Hz           Voltage measuring range         20 65 Hz           Nominal voltage <t< td=""><td>Frequency</td><td>50 60 Hz</td></t<>	Frequency	50 60 Hz
Size (mm) width x height x depth         144 x 144 x 71 (mm)           Envelope         Plastic V0 self-extinguishing           Fastening         Panel           Weight (kg)         0,53           Environmental characteristics         IP 51 (Front), IP 31 (unmounted)           Relative humidity (without condensation)         5 95%           Storage temperature         -20 +70 °C           Working temperature         -10 +55 °C           Eurent measurement circuit         1300 V           Installation category         CAT III 300 V           Nominal current (In)         50 mA           Minimum current measurement         50 mA           Voltage measurement circuit         CAT III 300 V           Installation category         CAT III 300 V           Sampling frequency         45 65 Hz           Input impedance         660 k2           Frequency measuring range         45 65 Hz           Voltage measuring range         45 65 Hz           Voltage measuring range         20.300 V Ph-N, 35 520 V Ph-Ph           Minimum measurement voltage (Vstart)         20 V P-N, 35 V P-F           Standards         IEC 61010, IEC 61326-1, Medidas conforme a : IEC 61557-12           User interface	Nominal voltage	100 520 V ~
Envelope Plastic VO self-extinguishing Panel  Pastening Panel  Weight (kg) 0.53  Environmental characteristics  Protection class IP 51 (Front), IP 31 (unmounted)  Relative humidity (without condensation) 5 95%  Storage temperature -2070 °C  Working temperature -2070 °C  Working temperature -10455 °C  Eurent measurement circuit  Installation category CAT III 300 V  Nominal current (In) 150 % In  Minimum current measurement circuit  Installation category SAD A  Voltage measurement circuit  Installation category CAT III 300 V  Sampling frequency 45 65 Hz  Input Impedance 660 K2  Frequency measuring range 45 65 Hz  Voltage measuring range 20 300 V Ph-N, 35 520 V Ph-Ph  Minimum unitary working of the protection	Mechanical characteristics	
Panel   Weight (kg)   0,53     Protection class   IP 51 (Front), IP 31 (unmounted)     Relative humidity (without condensation)   5 95%     Storage temperature   -20 470 °C     Working temperature   -10 455 °C     Working temper	Size (mm) width x height x depth	144 x 144 x 71 (mm)
Weight (kg) 0,53  Antironnental characteristics  Protection class Protection class Relative hunidity (without condensation) 5 95%  Storage temperature - 20 +70 °C  Autrent measurement circuit  Installation category CAT III 300 V  Nominal current (In) /5A 6 /1A  Phase current measuring range 1 120 % In  Minimum current measurement circuit  Installation category CAT III 300 V  Autrent measurement circuit  Installation category CAT III 300 V  Autrent measurement circuit  Installation category CAT III 300 V  Autrent measurement circuit  Installation category CAT III 300 V  Autrent measurement circuit  Installation category CAT III 300 V  Autrent measurement circuit  Installation category CAT III 300 V  Sampling frequency 45 65 Hz  Input Impedance 660 kQ  Frequency measuring range 45 65 Hz  Nominal voltage 20.300 V Ph-N, 35 520 V Ph-Ph  Minimum measurement voltage (Vstart) 20.000 V Ph-N, 35 V F-F  Standards  Electrical safety, Maximum height (m) 2000  Standards 1EC 61326-1, Medidas conforme a : IEC 61557-12  LED 4 LED	Envelope	Plastic V0 self-extinguishing
Protection class Protection class Relative humidity (without condensation) Subrage temperature Protection class Brain (Control of the Control	Fastening	Panel
Protection class IP 51 (Front), IP 31 (unmounted)  Relative humidity (without condensation) 5 95%  Storage temperature -20 +70 °C  Working temperature -10 +55 °C  Current measurement circuit  Installation category CAT III 300 V  Nominal current (In) /5A 6 /1A  Phase current measuring range 1 120 % In  Minimum current measurement  Voltage measurement circuit  Installation category CAT III 300 V  Nominal current measurement CIrcuit  Installation category CAT III 300 V  Sampling frequency CAT III 300 V  Sampling frequency 45 65 Hz  Input impedance 660 kΩ  Frequency measuring range 45 65 Hz  Voltage measuring range 45 65 Hz  Voltage measuring range 20 300 V Ph-P, 35 520 V Ph-Ph  Nominal voltage 230 V Ph-N, 400 V Ph-Ph  Minimum measurement voltage (Vstart) 20 V F-N, 35 V F-F  Standards  Electrical safety, Maximum height (m) 2000  Standards 1EC 61326-1, Medidas conforme a : IEC 61557-12  LED 4 LED	Weight (kg)	0,53
Relative humidity (without condensation)  Storage temperature  -20 +70 °C  Working temperature  -10 +55 °C  Current measurement circuit  Installation category  Nominal current (in)  Installation category  Nominal current measurement  Installation category  Nominal current measurement  Installation category  Nominal current measurement  Installation category  CAT III 300 V  August Managemeasurement  Installation category  CAT III 300 V  Sampling frequency  As 65 Hz  Input impedance  Frequency measuring range  45 65 Hz  Voltage measuring range  45 65 Hz  Voltage measuring range  20 300 V Ph-N, 35 520 V Ph-Ph  Minimum measurement voltage (Vstart)  Standards  Electrical safety, Maximum height (m)  Standards  LED  4 LED	Environmental characteristics	
Storage temperature -20 +70 °C Working temperature -10 +55 °C  Scurrent measurement circuit  Installation category CAT III 300 V Nominal current (In) /5 A 6 /1A Phase current measurement Minimum current measurement  Installation category 1 120 % In Minimum current measurement  Installation category CAT III 300 V  Sampling frequency CAT III 300 V  Sampling frequency 45 65 Hz Input impedance 660 kΩ Frequency measuring range 45 65 Hz Voltage measuring range 45 65 Hz Voltage measuring range 20 300 V Ph-N, 35 520 V Ph-Ph Nominal voltage 200 V Ph-N, 400 V Ph-Ph Minimum measurement voltage (Vstart) 200 V Ph-N, 35 V F-F  Standards  Electrical safety, Maximum height (m) 2000 Standards Electrical safety, Maximum height (m) 2000 Standards Electrical safety, Maximum height (m) 2000  Standards Electrical safety, Maximum height (m) 2000  LED 4 LED	Protection class	IP 51 (Front), IP 31 (unmounted)
Vorking temperature -10 +55 °C  Furrent measurement circuit  Installation category CAT III 300 V  Nominal current (In) /5A 6 /1A  Phase current measuring range 1 120 % In  Minimum current measurement 50 mA  Voltage measurement circuit  Installation category CAT III 300 V  Sampling frequency CAT III 300 V  Sampling frequency 45 65 Hz Input impedance 660 kΩ  Frequency measuring range 45 65 Hz  Voltage measuring range 20 300 V Ph-N , 35 520 V Ph-Ph  Nominal voltage Mainimum measurement voltage (Vstart) 20 V F-N , 35 V F-F  Standards  Electrical safety, Maximum height (m) 2000  Standards IEC 61010, IEC 61326-1, Medidas conforme a : IEC 61557-12  User interface  LED 4 LED	Relative humidity (without condensation)	5 95%
Installation category CAT III 300 V  Nominal current (In)/5A 6/1A  Phase current measurement (Ircuit 50 mA  Voltage measurement circuit  Installation category CAT III 300 V  Sampling frequency CAT III 300 V  Sampling frequency 45 65 Hz Input impedance 660 kΩ  Frequency measuring range 45 65 Hz  Voltage measuring range 20 300 V Ph-N , 35 520 V Ph-Ph  Nominal voltage measuring range 20 300 V Ph-N , 400 V Ph-Ph  Minimum measurement voltage (Vstart) 20 V F-N , 35 V F-F  Standards  Electrical safety, Maximum height (m) 2000  Standards IEC 61010, IEC 61326-1, Medidas conforme a : IEC 61557-12  User interface  LED 4 LED	Storage temperature	-20 +70 °C
Installation category  Nominal current (In)  Phase current measuring range  Minimum current measurement  Notage measurement circuit  Installation category  CAT III 300 V  AT III 300 V  CAT III 300 V  CAT III 300 V  Sampling frequency  45 65 Hz  Input impedance  Frequency measuring range  45 65 Hz  Voltage measuring range  45 65 Hz  Voltage measuring range  20 300 V Ph- N , 35 520 V Ph- Ph  Nominal voltage  Minimum measurement voltage (Vstart)  20 V F- N , 35 V F- F  Standards  Electrical safety, Maximum height (m)  2000  Standards  LEC 61010, IEC 61326-1, Medidas conforme a : IEC 61557-12  User interface  LED  4 LED	Working temperature	-10 +55 °C
Nominal current (In)75A 6/1A  Phase current measuring range 1 120 % In  Minimum current measurement 50 mA  Notitage measurement circuit  Installation category CAT IIII 300 V  Sampling frequency 45 65 Hz Input impedance 660 k\(\Omega\$ Frequency measuring range 45 65 Hz  Voltage measuring range 20300 V Ph-N , 35520 V Ph-Ph  Nominal voltage 230 V Ph-N, 400 V Ph-Ph  Minimum measurement voltage (Vstart) 20 V F-N , 35 V F-F  Standards  Electrical safety, Maximum height (m) 2000  Standards IEC 61010, IEC 61326-1, Medidas conforme a : IEC 61557-12  User interface  LED 4 LED	Current measurement circuit	
Phase current measuring range 1 120 % In Minimum current measurement 50 mA  Voltage measurement circuit  Installation category CAT III 300 V Sampling frequency 45 65 Hz Input impedance 660 kΩ  Frequency measuring range 45 65 Hz  Voltage measuring range 20300 V Ph-N , 35520 V Ph-Ph  Nominal voltage 230 V Ph-N , 400 V Ph-Ph  Minimum measurement voltage (Vstart) 20 V F-N , 35 V F-F  Standards  Electrical safety, Maximum height (m) 2000 Standards IEC 61010, IEC 61326-1, Medidas conforme a : IEC 61557-12  User interface  LED 4 LED	Installation category	CAT III 300 V
Minimum current measurement  Notage measurement circuit  Installation category  Sampling frequency  Frequency  Frequency measuring range  45 65 Hz  Voltage measuring range  45 65 Hz  Voltage measuring range  20300 V Ph-N, 35520 V Ph-Ph  Nominal voltage  Minimum measurement voltage (Vstart)  Standards  Electrical safety, Maximum height (m)  Standards  LEC 61010, IEC 61326-1, Medidas conforme a : IEC 61557-12  LED  4 LED	Nominal current (In)	/5A ó/1A
Installation category  CAT III 300 V  Sampling frequency  45 65 Hz  Input impedance  Frequency measuring range  45 65 Hz  Voltage measuring range  20300 V Ph-N, 35520 V Ph-Ph  Nominal voltage  Minimum measurement voltage (Vstart)  Electrical safety, Maximum height (m)  Standards  Electrical safety, Maximum height (m)  Stendards  LED  4 LED	Phase current measuring range	1 120 % In
Installation category  Sampling frequency  45 65 Hz  Input impedance  660 kΩ  Frequency measuring range  45 65 Hz  Voltage measuring range  20300 V Ph-N , 35520 V Ph-Ph  Nominal voltage  Minimum measurement voltage (Vstart)  20 V F-N, 35 V F-F  Standards  Electrical safety, Maximum height (m)  Standards  LED  4 LED	Minimum current measurement	50 mA
Sampling frequency Input impedance 660 kΩ Frequency measuring range 45 65 Hz  Voltage measuring range 20300 V Ph-N , 35520 V Ph-Ph  Nominal voltage Minimum measurement voltage (Vstart) 20 V F-N , 35 V F-F  Standards  Electrical safety, Maximum height (m) 2000 Standards  LED 4 LED 4 LED	/oltage measurement circuit	
Input impedance Frequency measuring range 45 65 Hz  Voltage measuring range 20300 V Ph-N , 35520 V Ph-Ph  Nominal voltage Animum measurement voltage (Vstart)  Electrical safety, Maximum height (m) Standards  Electrical safety, Maximum height (m)  Standards  LED  4 LED	Installation category	CAT III 300 V
Frequency measuring range  Voltage measuring range  20300 V Ph-N , 35520 V Ph-Ph  Nominal voltage  230 V Ph-N, 400 V Ph-Ph  Minimum measurement voltage (Vstart)  20 V F-N, 35 V F-F  Standards  Electrical safety, Maximum height (m)  2000  Standards  IEC 61010, IEC 61326-1, Medidas conforme a : IEC 61557-12  Jeer interface  LED  4 LED	Sampling frequency	45 65 Hz
Voltage measuring range  20300 V Ph-N , 35520 V Ph-Ph  Nominal voltage  230 V Ph-N , 400 V Ph-Ph  Minimum measurement voltage (Vstart)  20 V F-N , 35 V F-F  Standards  Electrical safety, Maximum height (m)  2000  Standards  IEC 61010, IEC 61326-1, Medidas conforme a : IEC 61557-12  User interface  LED  4 LED	Input impedance	660 kΩ
Nominal voltage  230 V Ph-N, 400 V Ph-Ph  Minimum measurement voltage (Vstart)  20 V F-N, 35 V F-F  Standards  Electrical safety, Maximum height (m)  2000  Standards  IEC 61010, IEC 61326-1, Medidas conforme a : IEC 61557-12  Jeer interface  LED  4 LED	Frequency measuring range	45 65 Hz
Minimum measurement voltage (Vstart)  20 V F-N, 35 V F-F  Standards  Electrical safety, Maximum height (m)  2000  Standards  IEC 61010, IEC 61326-1, Medidas conforme a : IEC 61557-12  User interface  LED  4 LED	Voltage measuring range	20300 V Ph-N , 35520 V Ph-Ph
Electrical safety, Maximum height (m)  Standards  IEC 61010, IEC 61326-1, Medidas conforme a : IEC 61557-12  Jer interface  LED  4 LED	Nominal voltage	230 V Ph-N, 400 V Ph-Ph
Electrical safety, Maximum height (m)  Standards  Jec 61010, IEC 61326-1, Medidas conforme a : IEC 61557-12  Jer interface  LED  4 LED	Minimum measurement voltage (Vstart)	20 V F-N, 35 V F-F
Standards IEC 61010, IEC 61326-1, Medidas conforme a : IEC 61557-12  Jser interface 4 LED 4 LED	Standards	
Jser interface  LED 4 LED	Electrical safety, Maximum height (m)	2000
LED 4 LED	Standards	IEC 61010, IEC 61326-1, Medidas conforme a : IEC 61557-12
	User interface	
Keyboard Capacitive, 5 keys	LED	4 LED
	Keyboard	Capacitive, 5 keys







Code: R13953.

Display type	LCD Custom COG
Digital inputs	
Input/output insulation	Optoisolated
Quantity	2
Туре	Potential-free contact
Leakage current measurement (ID)	
Secondary nominal current	0,003 A
Minimum current measurement (Istart)	10 mA
Measurement range	0,01 1,5 A
Other digital transistor outputs	
Quantity	6
Туре	Voltage output (dc)
Maximum current	20 mA
Maximum voltage	12 ± 1 Vcc
Digital relay outputs	
Quantity	2 (ventilador, alarma)
Maximum current	1A
Maximum open contact voltage	1 kV
Electrical life	$30 \times 10^3$ ciclos
Mechanical life	5 x 10 <sup>6</sup> Cycles
Maximum switching capacity	2500 VA
Digital transistor outputs	
Quantity	2
Туре	NPN
Maximum current	50 mA
Maximum voltage	24 Vcc
Measurement accuracy	
Phase current measurement	0.5% ± 1 digit
Reactive energy measurement (kvarh)	Class 1
Reactive power measurement (kvar)	1% ± 2 digit
Active energy measurement (kWh)	Class 1
Active power measurement (kW)	0.5% ± 2 digits
Phase voltage measurement	0.5% ± 1 digit
Serial communication	
Protocol	Modbus RTU







Code: R13953.

Technology / Type RS-485

#### computer SMART III-Fast

Power factor controllers for static switching

CODE	TYPE	Switching unit	Nr steps	Input current
R13953.	computer SMART III F6-12Vdc	EMB-2PH	6	/5A  /1A
R13964.	computer SMART III F12-12Vdc	EMB-2PH	12	/5A  /1A
R13951.	computer SMART III Fast 6	EMF / EMB	6	/5A  /1A
R13962.	computer SMART III Fast 12	EMF / EMB	12	/5A  /1A







Code: R13953.

### **Dimensions**

### Connections







Page 5 of 5