REACTIVE POWER REGULATORS







REACTIVE POWER REGULATORS

S.A. DE CONSTRUCCIONES INDUSTRIALES

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REACTIVE POWER REGULATOR REG 144

Automatic power factor regulator, which is only necessary to connect to a current and the three phase voltages, with display indicating measurements and integrated keyboard.



- **DIN 144 x 144 INSTRUMENT**
- **LCD DYSPLAY**
- **COS φ DISPLAY**
- **AUTOMATIC SELF ADJUSTMENT FOR C/K VALUE**
- **AUTOMATIC STEP SETTING FOR CONNECTED CAPACITORS**
- **RS485/RS232 COMMUNICATION (optional)**

DISPLAY

ELECTRICAL PARAMETER	SYMBOL	L1	L2	L3	TOTAL
Voltage	V	•	•	•	
Current (ref. to secondary)	A				•
Active power (P)	kW				•
Reactive power (Q)	kvar				•
Apparent power (S)	kVA				•
Power factor (Cos φ)	PF				•
Frequency	Hz				•
Connected steps					•
Operating program					•
Correct transformer connection					•
Transformer phase					•
Errors					•

MODEL

- **REG-144**
  - 6 Output relays
  - 9 Output relays
  - 12 Output relays
  - 14 Output relays

- Output relays 6, 9, 12 or 14
- Serial port RS485-RS232 (Optional)

CONTACT OUTPUTS

- Type: RS485/RS232.
- Connections: 2 wire.
- Protocol: MODBUS RTU
- Baud rate: Programmable.
  300 – 19200 Bauds.
  Standard 9600 Bauds.
- Max lengh of system per line (without amplifier) 1250 m.

SETTING

Mode 1: Automatic

Automatically checks the connected capacitor steps, (Automatic self adjustment for C/k value).
Prevents mistakes through poor current transformers or phase connection.

Mode 2: Manual

LCD DISPLAY

- LCD display with built in keypad.
- Digit height: 14 mm.
- Selectable pages with up (↑) and down (↓) keys.

Regulator

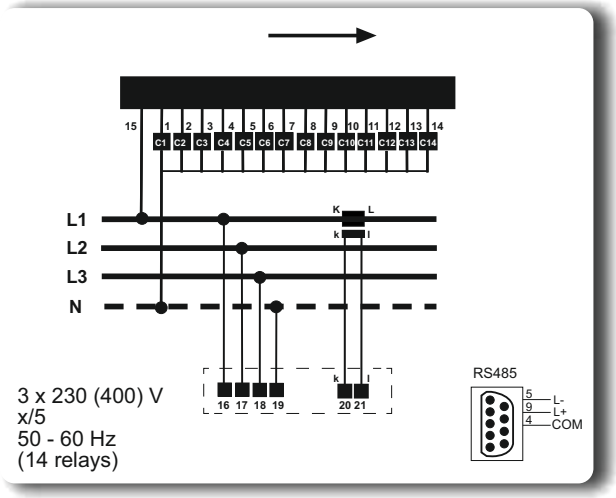
TECHNICAL SPECIFICATIONS

INPUT	
3-phase, 4 wire, balanced	
Rated voltage	230 or 400 V ± 50 %
Consumo propio	5 VA
Operating range	10-120 % Un
Rated current (In)	../5 or .../1 A
Burden	0,2 VA
Operated range	4 -120 % In
Frequency	45-65 Hz
Overload	2 In (continuosly) 5 In (10 s.)

CONTACT OPUTPUTS	
Number of outputs	6,9,12 or 14 (According to model)
Type	Relay N.O 250 V, 3 A
Mechanical life	$20x10^6$
Electrical life	$100x10^3$
Maximum voltage	250 V A.C./125 V D.C.
Connection delay	4 s
Security time	10 s
Insulation	2 kV

AUXILIARY VOLTAGE	
Aux. V	Self supplied

CONNECTION DIAGRAM



GENERAL

GENERAL FEATURES	
Case material	ABS,UL94 V0
Dimensions	DIN 144 x 144 mm
Terminals	Pluggable
Max. wire section	2,5 mm²
Weight	1,75 kg
Protection	IP20 Terminals
Optional protection	IP54 Front
Electrical safety	(EN 61010) Class 2 Category III

ACCESSORIES

- x/5 A or x/1 A transformers.
- 5+5+5/5 A summation current transformers.
- RS232 / RS485 converters.

ACCURACY

Parameter	Operating range	Accuracy
Voltage	10-120%	0,5%(read.+scale end)
Current	4-120%	0,5%(read.+scale end)
Active power	10-150%	0,5%(read.+scale end)
Reactive power	10-150%	1%(read.+scale end)
Apparent power	10-150%	1%(read.+scale end)
Power factor	0-1-0	1%(read.+scale end)
Frequency	45-65 Hz	0,1%(Rated freq.)

AUTOMATIC REACTIVE POWER REGULATOR REG 96

Automatic power factor regulator, which is only necessary to connect to a current and the three phase voltages, with display indicating measurements and integrated keyboard.



- **DIN 96x96 INSTRUMENT**
- **LCD DYSPLAY**
- **COS φ DYSPLAY**
- **AUTOMATIC SELF ADJUSTMENT FOR C/K VALUE**
- **AUTOMATIC STEP SETTING FOR CONNECTED CAPACITORS**

DISPLAY

ELECTRICAL PARAMETER	SYMBOL	L1	L2	L3	TOTAL
Voltage	V	•	•	•	
Current (ref. to secondary)	A				•
Active power (P)	kW				•
Reactive power (Q)	kvar				•
Apparent power (S)	kVA				•
Power factor (Cos φ)	PF				•
Frequency	Hz				•
Connected steps					•
Operating program					•
Correct transformer connection					•

MODEL

- **REG-96** - 3 Output relays
  - 6 Output relays

- Output relays 3 or 6

SETTING

Mode 1: Automatic

Automatically checks the connected capacitor steps, (Automatic self adjustment for C/k value).
Prevents mistakes through poor current transformers or phase connection.

Mode 2: Manual

DISPLAY LCD

- LCD display with built in keypad
- Selectable pages with up (↑) and down (↓) keys.

TECHNICAL SPECIFICATIONS

INPUT	
3-Phase 4 wire, balanced	
Rated voltage (Un)	230 or 400 V ± 50 %
Burden	5 VA
Operating range	10-120 % Un
Rated current (In)	../5 or .../1 A
Burden	0,2 VA
Operating range	4 -120 % In
Frequency	45-65 Hz
Overload	2 In (continuously) 5 In (10 s.)

Regulator

TECHNICAL SPECIFICATIONS

CONTACT OPUTPUTS	
Number of outputs	3 or 6 (according to model)
Type	Relay N.O 250 V, 3 A
Mechanical life	$20x10^6$
Electrical life	$100x10^3$
Maximum voltage	250 V A.C./125 V D.C.
Connection delay	4 s
Security time	10 s
Insulation	2 kV

AUXILIARY VOLTAGE	
Aux. V	63,5/110 V or 230/400 V A.C.± 20 %

ACCURACY

Parameter	Operating range	Accuracy
Voltage	10-120%	0,5%(read.+scale end)
Current	4-120%	0,5%(read.+scale end)
Active power	10-150%	0,5%(read.+scale end)
Reactive power	10-150%	1%(read.+scale end)
Apparent power	10-150%	1%(read.+scale end)
Power factor	0-1-0	1%(read.+scale end)
Frequency	45-65Hz	0,1% (rated freq.)

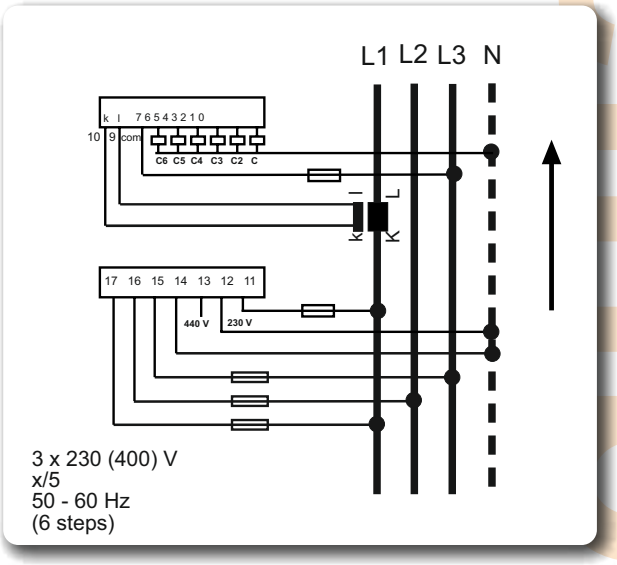
GENERAL

GENERAL FEATURES	
Case material	Metal+ABS,UL94 V0
Dimensions	DIN 96x96 mm (74 depth)
Terminals	Pluggable
Max. wire section	2,5 mm²
Weight	1,75 kg
Protection	IP20 Terminals
Optional protection	IP54 Front IP65 Front
Electrical safety	(EN 61010) Class 2 Category III

ACCESSORIES

- x/5 A or x/1 A transformers.
- 5+5+5/5 A summation current transformers.

CONNECTION DIAGRAMS



REACTIVE POWER REGULATOR REG 144 DA

Reactive power regulator measure cos φ and regulate the capacitor connection and disconnection to correct it.

- **144 x 144 INSTRUMENT**
- **LCD DYSPLAY**
- **COS φ DYSPLAY**
- **PROGRAMMABLE**



DISPLAY

ELECTRICAL PARAMETER	SYMBOL	TOTAL
Cos φ value (inductive)	PF	•
Cos φ value (capacitive)	PF	•
Nº of connected and disconnected steps	Hz	•
Current value		•
Voltage value		•
THD value		•

MODEL

- **REG-144DA**
  - 6 Output relays
  - 12 Output relays

LCD DISPLAY

- LCD Display
- 1 line x 3 digits x 7 segments

ACCESSORIES

- x/5 A transformers.
- 5+5+5/5 A summation current transformers.

GENERAL

GENERAL FEATURES	
Case material	Metal+ABS,UL94 V0
Dimensions	DIN 144x144 mm (50 depth)
Terminals	Pluggable
Max. wire section	2,5 mm²
Weight	0,540 kg
Protection	IP20 Terminals IP21 Front
Electrical safety	(EN 61010) Class 2 Category III

Regulator

TECHNICAL SPECIFICATIONS

INPUT	
3-phase, 4 wire, balanced	
Rated voltage (Un)	110, 230, 400 or 480 V
Operating range	-10 / +15 % Un
Rated current (In)	../5 A
Operating range	2 -120 % In
Frequency	45-65 Hz
Burden	8 VA (6 steps); 9,8 VA (12 steps)

CONTACT OPUTPUTS	
Number of outputs	6 or 12 (according to model)
Type	Relay N.O 250 V, 10 A
Insulation	2 kV

AUXILIARY VOLTAGE	
Aux. V	Self supplied

ACCURACY

Parameter	Operating range	Accuracy
Voltage	-10/+15%	1%
Current	4-120%	1%
Power factor	0-1-0	2% ± 1digit
Frequency	45-65Hz	0,1%(Rated freq.)

CONNECTION DIAGRAM

