

3. PRELIMINARY TESTS

They must be carried out in any single case as a function of the C.T. transformer ratio, the power of the first bank and the degree of power factor improvement desired.

Trimmer C/K: the indicative arrow of the trimmer must set, behaving with a screwdriver, in correspondence of the division of the scale relative to the value of the C/ K. The value to be set can be calculated by dividing the power of the first bank expressed in kvar (C) and the C.T. transformer ratio (K).

Example: first bank=12,5kvar and C.T.=600/5=120 C/K=12,5:120=0,10



C/K		1 st bank power expressed in kvar (C)									
T.A.	K	2,5	5	6	10	12,5	20	25	40	50	
30/5	6	0,41	0,83	1,00	-	-	-	-	-	-	
50/5	10	0,25	0,50	0,60	1,00	-	-	-	-	-	
60/5	12	0,21	0,42	0,50	0,83	1,00	-	-	-	-	
80/5	16	0,16	0,31	0,38	0,63	0,78	-	-	-	-	
100/5	20	0,13	0,25	0,30	0,50	0,63	1,00	-	-	-	
150/5	30	0,08	0,17	0,20	0,33	0,42	0,67	0,83	-	-	
200/5	40	0,06	0,13	0,15	0,25	0,31	0,50	0,63	1,00	-	
250/5	50	0,05	0,10	0,12	0,20	0,25	0,40	0,50	0,80	1,00	
300/5	60	-	0,08	0,10	0,17	0,21	0,33	0,42	0,67	0,83	
400/5	80	-	0,06	0,08	0,13	0,16	0,25	0,31	0,50	0,63	
500/5	100	-	0,05	0,06	0,10	0,13	0,20	0,25	0,40	0,50	
600/5	120	-	-	0,05	0,08	0,10	0,17	0,20	0,33	0,42	
800/5	160	-	-	-	0,06	0,08	0,13	0,16	0,25	0,31	
1000/5	200	-	-	-	0,05	0,06	0,10	0,13	0,20	0,25	
1200/5	240	-	-	-	-	0,05	0,08	0,10	0,17	0,21	
1500/5	300	-	-	-	-	-	0,06	0,08	0,13	0,17	
2000/5	400	-	-	-	-	-	0,05	0,06	0,10	0,13	

- If two or more C.T. 's are used with an additional transformer, the value of the primary current is the sum of each C.T. Example: n.3 C.T. 's 500/5 = n.1 C.T. 1500/5.
 - If the regulator is used in 230Vac three-phase supply, the C/K value have to be multiplied by 1,8.

Trimmer %: in normal conditions the trimmer have to be set at 25%, whereas with lower values the medium value of power factor must be increased (the P.F. increases).

The regulator can start working after connection and calibration as explained above.

AUTOMATIC operation

Set the regulator "MAN/AUT" selector on AUT. When inductive loads are connected (motors, transformers, discharges lamps,...) the yellow LED  is lit, and the regulator switches on, with regular steps, the necessary banks. If there is an excess of capacitive load, the yellow LED  is lit, and the excess banks are disconnected. To connect (disconnect) capacitor banks, it will be necessary that the inductive (capacitive) LED remain lit at least for 15-30 secs. When the load is corrected (P.F. medium 0,95) inductive and capacitive LEDs will be off.

MANUAL operation

Set the regulator "MAN/AUT" selector on MAN. Using the switch +C/-C it's possible respectly connect or disconnect the capacitors banks. The switch must be pushed for 15" or 30" (first bank) in order to make it work. When it is released, the existing situation is memorized and stored. When the banks are connected, the relevant LED's are on. If the power supply is interrupted, the regulator disconnects all the capacitor banks. When the power supply is restored, the regulator begins its normal functioning again, it needs however insert the capacitors banks by the switch again.

4. ALARMS (only QR4 and QR6)

An internal troubleshooting system checks the efficiency of the whole regulator. The series QR is also equipped with an internal check system of the maximum temperature through the red led MAX. TEMP. placed on the board. When the led is off, the regulator works properly. If a temperature higher than 50°C is reached inside the regulator, the led is on, and a circuit sets all connected banks to zero. The regulator resets automatically when the overheating stops. Both the intervention for high temperature and a failure in the regulator are signalled by contact of a relay; for the series QR it leads to the terminal ALARM and is NC (normally closed). This contact has a power of 5Amps at 250Vac (resistive load).