JKW-12F 系列无功功率自动分相补偿控制器（混合补偿型）

JKW-12F Series Split Phase Reactive Power Compensating Controller(Mixed Compensation Type)

概述 General description

JKW(F) 系列无功功率自动补偿控制器继承了 JKW(F) 系列的所有优点， 同时将取样信号改为 3 相取样， 即同时取 3 相电压信号 、3 相电流信号。避免了在 3 相不平衡系统中出现的功率因数已补偿到位而无功电度表转速很快活反转等现象。

JKW(F) series automatic phase discriminated reactive power compe－nsatingcontroller has all the advantages of JKW(F) series,meanwhile this controller samplethe signals of voltage,and current frim three phases res–pectively,it will avoid thevar meter recording quickly or inversely rotating even if the power factor has beencompensated fully in three phase unbala–nced system.

功能特点 Function features

- 以 3 相基波无功功率和计算投切电容容量，可避免任何形式的投切震荡，并在有谐波的场合下能正确显示电网功率因数。
- 功率因数测量精度高，显示范围宽。
- 实时显示总功率因数（PF）与基波功率因数（DPF）。
- 实时分别显示 3 相电压，电流，有功功率，无功功率，视在功率。
- 有 12 中编码输出方式供用户选择。
- 最多有 6 种补偿方案供用户选择（共补和分补得路数分配）。
- 最多 16 路输出。
- 人机界面友好操作方便。
- 各种控制参数数字可调直观使用方便。
- 具有自动运行与手动运行两种方式。
- 具有过电压和欠电压保护功能。
- 具有掉电保护功能数据不丢失。
- 电流信号输入阻抗低≤ 0.01Ω。
- 目标功率因数调节范围宽滞后 0.70 到超前 0.70.

- On basis of 3 phases fundamental wave reactive power,calculate the rea–ctive power to be switched on,it can avoid switching shock of and forms, it can accu rately display the power factor of system with harmonic wave.
- High measurement accuracy,wide display scope
- Real time display general power factor and fundamental wave PF
- Real time respectively display 3 phases voltage, current,active power,reactive power,apparent power
- Total 12 kinds of coding output can be chosen
- 6 kinds of schedules can be chosen by user (distribution the circuit nos of cor porate compensation,or respective compensation)
- 16 circuits of output at maximum
- Human friendly interface,convenient operation
- Various control setting can be adjusted digitally,directly and easily.
- Automatic and manual operations,two modes provided...
- Over voltage and absent voltage protection provided.
- Data not lost even if power shut down.
- Current signal imput resistance ≤ 0.01Ω.
- Compensating power factor able to be adjusted:0.70 lag~0.7 forward.

技术参数 Main technical parameter

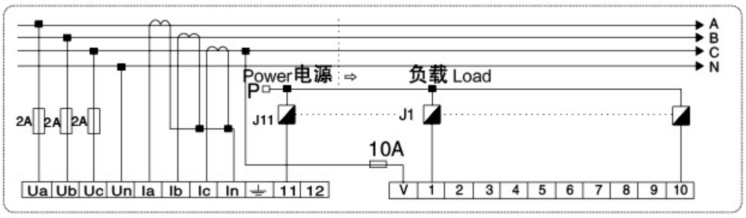
- 额定工作电压：AC220V × 3
- 额定工作电流：5A
- 额定工作频率：45–65Hz
- 显示功率因数：滞后 0.001– 超前 0.001
- 测量无功功率：0–9999Kvar
- 测量有功功率：0–9999Kvar
- 测量视在功率：0–9999KVA
- 欠压保护值：AC180V
- 输出触点容量：AC 220V 7A
- 灵敏度：20mA
- 显示方式：4 位红色数码管
- 整机消耗功率：10VA
- 外型尺寸 :144mm × 144mm 或 122mm × 122mm
- 开孔尺寸 :138mm × 138mm 或 113mm × 113mm
- 安装方式：嵌入式安装倒齿附件固定或导轨安装

- rated working voltage:AC220V × 3
- rated working current:5A
- rated working frequency：45~65Hz
- power factor displayed:lag 0.001–forward0.001
- measured reactive power:0–9999Kvar
- measrued active power:0–9999Kvar
- measrued qpparent power:0–9999KVA
- absent voltage protection:AC180V
- capacity of output contact:AC 220V 7A
- sensitivity:20mA
- display mode:4 digit red LED
- total consumption:10VA
- Outline size:144mm × 144mm 或 122mm × 122mm
- Opening hole size:138mm × 138mm 或 113mm × 113mm
- Mounting mose:plug–in mounting by inverse thread screw or railway mounting.

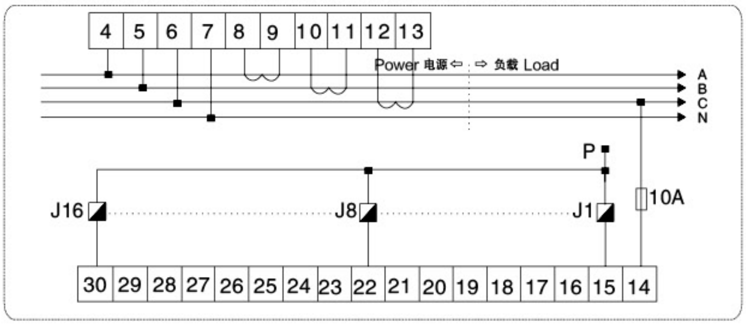
补偿方案 (以 JKW-12F 为例)Compensation schedules(JKW-12F as example)

补偿方案 Compensation schedule	使用情况 Application	投切方法 switching mode
12–0(全共补) all corporate compensation	三相功率基本平衡 three phases powers basically balance	以三相总无功功率为依据 according to the total reactive power of three phases
9–1(共补九路，分不一路) corporate compensation:9 circuits, respective compensation 1 circuit	三相功率相差不大 three phases powers have no big difference	以单项无功功率最小的一组为依据投入共补电容器；不够或不平衡在投入分不电容器 On basis of the single phase with lowest reactive power switch on the corporate compensated capacitor(s), if not enough or unbalance , then switch on the respective compensated capacitor(s)
6–2(共补六路，分补一路) corporate compensation:6 circuits, respective compensation 2 circuits		
3–3(共补三路，分不三路) corporate compensation:3 circuits, respective compensation 3 circuits		
0–4(全分补，每相四路) all respective compensation,each phase has 4 circuits	三相功率严重失衡 three phases powers unbalance severely	以单相无功功率为依据 according to the total reactive power of single phase

接线图 Wiring diagram



JKW(R)-12S-J型开孔尺寸为113mm　113mm接线图
当交流接触器额定工作电压为380V时P点接B；为220V是接N
JKW-12F-J Open L Wiring Diagram with 113mm Size
When rated working voltage of AC contactor is 380V, P is connected to B; 220 V is connected to N.



JKW(F)-16-J 型开孔尺寸为138mm　138mm接线图
当交流接触器额定工作电压为380V时P点接B；为220V时接N
JKW-16F-J Wiring Diagram with Hole Size 138mm 138mm
When rated working voltage of AC contactor is 380V, P is connected to B, and 220 V is connected to N.

JKW(F)-18 回路（独立机）
JKW(F)-18 Loop (Independent Machine)

JKWF-Y-24 回路
JKWF-Y-24 Loop

补偿方案、输出路数与输出端子的关系
Cooperation of compensation schedule,output circuits and output terminal

JKW-12F 型控制器共 12 路输出分别编号 1、2、3、...12；JKW-16F 型控制器共 16 路输出分别编号 1、2、3...16。JKW(F) 在不同补偿方案和不同输出回路下将按 A 相分补第一回路、第二回路 ...；B 相分补第一回路、第二回路 ...；C 相分补第一回路、第二回路 ...；共补第一回路、第二回路 ... 的顺序分配输出控制端子；若用户设定的路数总数小于硬件所能支持的最大回路时，空余的端子在最后面（参考下表以 JKW-12F 为例 ,A:A 相 ;B:B 相 ;C:C 相 ;G: 共补).

Output circuits No.of JKW-12F controller is marked as 1 ,2 , 3...12, JKW-16F has totall 16 circuits,marked as 1,2, 3,...16.Under different compens – ation sche dule and different output circuit for JKW(F) controller,push the buttons of respective compensated circuit No.1,No.2...of A phase,B phase, Cphase and corporate pomp ensated circuit No1,No2...and etc, If the circuit number to be set by user is less than the maxi circuits exsting in the controller,the vacant terminals left in the end. (JKW-12F as sample referring to the following sheet:A : A phase,B:B phase,C:C phase,G: corporate compensation).

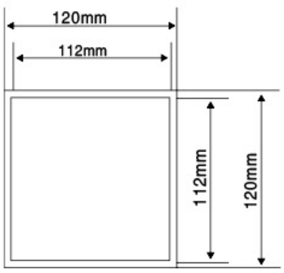
举例 1 Example 1

参数设定值 value setting	补偿方案：6-2；共补路数：6；分补路数：2 Compensation schedule:6-2,corporate compensation:6 circuits, respective compensation:2 circuits											
输出端子编号 Output terminal series Number	1	2	3	4	5	6	7	8	9	10	11	12
控制相位 Control phase	A1	A2	B1	B2	C1	C2	G1	G2	G3	G4	G5	G6

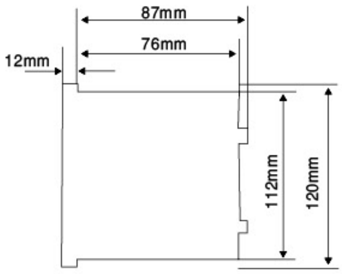
举例 2 Example 2

参数设定值 value setting	补偿方案：6-2；共补路数：6；分补路数：2 Compensation schedule:6-2,corporate compensation:6 circuits, respective compensation:2 circuits											
输出端子编号 Output terminal series Number	1	2	3	4	5	6	7	8	9	10	11	12
控制相位 Control phase	A1	B1	C1	G1	G2	G3	G4	G5	空	空	空	空

外形尺寸 Overall dimension

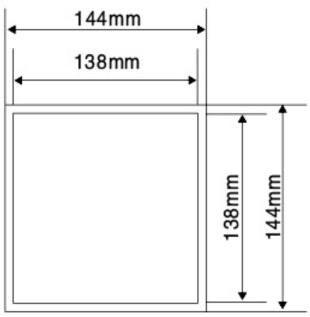


JKW(F)正视图 Front view

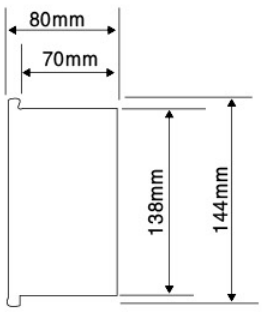


JKW(F)侧视图 Side view

JKW(F)-12S 开孔尺寸 openning dimensions
113×113mm



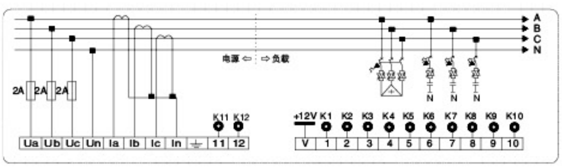
JKW(F)正视图 Front view

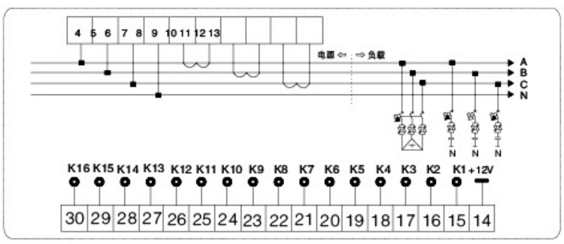


JKW(F)侧视图 Side view

JKW(F)-16开孔尺寸 openning dimensions
139×139mm

注：JKW(F)-18 和 JKWF-Y-24 的开孔尺寸与 JKW-16F 相同。
Note: The opening sizes of JKW (F) -18 and JKWF-Y-24 are the same as those of JKW-16F.





JKW(F)-12S-D型开孔尺寸为113mm　113mm接线图
有源直流电压信号输出输出容量-12V、20mA/路
JKW(F)-12S-D Wiring Diagram with 113mm Opening Size
Output Capacity of Active DC Voltage Signal - 12V, 20mA/Circuit

JKW(F)-16-D型开孔尺寸为138mm　138mm接线图
有源直流电压信号输出输出容量-12V、20mA/路
JKW(F)-16-D Wiring Diagram with 138mm Opening Size
Output Capacity of Active DC Voltage Signal - 12V, 20mA/Circuit