



POWER FACTOR CONTROL RELAY



INTRODUCTION

NIFA ELECTRONICS Began outlining sound company framework, built on professional lines way back in 1991. NIFA ELECTRONICS has grown by leaps and bounds in exponential manner to become one of the major player in the field of POWER CONDITIONING, POWER MANAGEMENT & Allied Technical Services..

BRIEF ABOUT BELUK PF RELAY

Reactive power compensation panels are used to reduce load in the Electrical grid and to save costs. This is the reason, that there are Special requirements for the control units of these compensation panels, the reactive power regulator.

The most important task for the reactive power regulator is to control the reliable termination of reactive power. This is reducing the costs for electrical energy. Cables, transformers, switch components and power distribution are unloaded by reduce reactive power.

Another task of the reactive power regulator is monitoring the compensation panel and giving alarms.

All of these requirements are solved by Beluk reactive power regulators with their patented regulation principle. By continuous measuring of the capacitor power, the steps are always used with their exact capacitor ratings. The regulation program is only defined by the choice of the capacitor sizes. There are no limitations and no settings for step sequence are necessary at BLR-CX. If BLR-CX cannot recognize anymore the function of a step e.g. caused by damaged capacitors, contactors or blown fuses, then it shows alarm. The integrated alarm relay with sign-of-life contact can forward this also to a control room.

BELUK PF RELAY- BECAUSE EXCELLENT CAPACITORS ARE NOT ENOUGH

BLR-CX is calculating by the measuring of current and voltage the power conditions in electrical network . Generally, it's not important, in which phases voltage and current are connected, because the connection is corrected by BLR-CX after starting the automatical phase correction. The min. sensing current is 15mA, which ensures a reliable and exact regulation. For the current measuring 1Amp CTs can be used as well as 5Amp CTs for this, there is no manual changing of any settings necessary. The wide range SMPS allows to realize voltage measuring in a range between 90V and 550V.

By using the temperature sensor, BLR-CX can measure the internal temperature of the compensation panel and can switch by using one of the exit relays a fan. The switch-off of the capacitor steps due to over temperature can be triggered by N/O contacts of external thermostats, which are connected in parallel to the temperature sensor.

DISPLAY

BLR-CX is equipped with LCD with backlight. It shows information about the panel and about the mains parameters.

REPORTED MAINS CONDITIONS

Voltage, Current, kW, kvar, kva, kvar to target, THD U, 3rd to 15th harmonic of voltage, cos phi, power factor, frequency, temperature

REPORTED INFORMATION ON THE EQUIPMENT

Power-on hours of panel, operating cycles per step, max, percentage rating per step rating per step compared with the nominal rating.

Cos phi and status of the exits are shown permanently.

MONITORING

The monitoring features of BLR-CX guarantee a reliable operation and a long life of the compensation panel:

- Low voltage switch-off against chattering of contactors
- Over voltage switch-off for protecting the capacitors
- Over temperature switch-off
- Monitoring of THDU
- Recognition of defective capacitors
- Alarming, when target o regulation cannot b reached
- Signaling of the need for maintenance
- Fan control

Failures and announcements of the panel are shown in LCD

Failures can also be forwarded by the volt free alarm-contact (sign-of-life signal)

For switching the fan, one of the step-exits has to be used.

ADVANCED PRODUCTS

- For real time compensation
- For individual compensation in all 3 phases
- Thyristor switches

TECHNICAL SPECIFICATION

Type of device	: Power Factor Control Relay (Automatic Reactive Power management)
Control variable	: Electrical displacement reactive power
Principle of Regulation	: Stepped regulation with the following modes : Best-Fit : starting with the biggest exits; LIFO: last in-first out; Comb filter: Best-Fit, with more connected power of odd exits; Progressive: all required exits are switched in quasi one operation
Special Feature	: Automatic detection and correction of the phase of the phase of current voltage connection; Automatic detection of the used exits; Over-and under voltage monitoring; Monitoring of THD U; Over temperature switch-off
Measuring Display	: V, A, kVA, kW, kvar, THD U, 3 rd to 15 th harmonic of voltage
Information Display	: Switch cycles per step, capacitor rating, status of the exits, Operating hours of the panel, max. temperature, average PF
Measuring & Auxiliary Voltage	: 90-550 V AC, 1 Ph, 45-65HZ, 5VA, max. fuse 6A, VT ratio from 1 to 350.0
Current Measuring	: 10mA-6 A, 1 Ph, burden 20mOhm, CT ratio from 1 to 4000
Control Exits	: Upto 14 relay, N/O, volt free with common point, max. fuse 6A,
Capacity	: 250V AC/5A
Temperature measuring	: By NTC
Sign-of-Life contact	: Relay, volt free, N/O, max. fuse 4A, breaking capacity: 250V AC /5A
Fan Control	: By using a control exit
Interface	: TTL, rear side
Ambient Temperature	: Operation: -20 C-70 C, storage:-20 C80C
Humidity	: 0% -95%, without moisture condensation
Overvoltage class	: II, pollution degree 3 (DIN VDE 0110, Teil 1/ IEC60664-1)
Standards	: DIN VDE 0110 Teil 1 (IEC 60664-1:1992) VDE 0411 Teil 1 (DIN EN 61010-1 /IEC 61010-1:2001) VDE 0843 Teil 20 (DIN EN 61326 /IEC 61326: 1997 +A1:1998+A2:2000)
Conformity and Listing	: CE, UL, Cul
Terminals	: Plugable terminal blocks, screw type, max. 4qmm
Casing	: Front: IP50, (IP54 by using a gasket), Rear: IP20
Weight	: Approx. 0.6kg
Dimensions	: 144x144x58mm hxxwxd, cutout 138 (+0.5) x 138(+0.5)mm

PRODUCT RANGE

- Online UPS
- HT & LT Industrial AVR
- Servo Stabiliser
- Ultra Isolation Transformer
- Automatic Power Factor Control Panel
- Maximum Demand Control Panel
- Special Control Panels

SERVICES

- Power Quality Management
- Energy Audit Study

CUSTOMER SUPPORT

Centrally located in Ahmedabad, the customer support division remains consistent in progressively adding to its well-deserved reputation, spurred by a scientific spirit, entire team of engineers & technicians involved in the maintenance operations, meticulously work to keep customer demands satisfied. Our commitment to the customer goes beyond executing the best possible equipment. To help assure the perfect match of product & application, we offer and extensive direct support at all levels.

**We reserve the rights to change product specification without prior notice.*



NIFA Electronics Pvt. Ltd.

64, Shankheshwar Indl Park; 20\2, Ph-1, GIDC, Vatva; Nr.Railway Bridge, Ahmedabad-382 445, Gujarat, India

Tel : +91-79-29707399; 29707499; +91949297988 (Fax on demand)

Email : sales@nifaelectronics.com Website : www.nifaelectronics.com

