

More Products from Beluk:

Static-Contactor: BEL-TS 50H2

For dynamic power-factor compensation

- for threephase capacitors
- switching without transients
- typical switching time: 1 period
- for choked and unchoked capacitors
- for mains voltage up to 480V



Power-Factor-Control-Relay BLR-CX



Hand over by our sales - partner:

1956 - 2006

50 Jahre Erfahrung und Qualität
50 years of experience and quality

BELUK

**POWER
QUALITY**

Capacitor- Protecting-Relay **KSR**



TO SUPERVISE CAPACITORBANKS

DETECTS OVERLOAD, OVER- UND UNDERVOLTAGE

**OUT-OF-BALANCE DETECTION
AT DOUBLESTAR- AND H-CIRCUITS**

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Function

High voltage capacitors taken into operation must be supervised all the time. Most of these capacitors are manufactured by using insulating oil for the dielectricum, which could catch fire in any case of fail. In general high voltage capacitors will be assembled in so called "Double-Star-Technology". This means, that two capacitors, e.g. 500 kvar, in star connection are connected in parallel to achieve 1.000 kvar in total. The star points are connected together between each other. This conductor is provided with an own current transformer in order to observe any balance current between the two capacitors. Due to tolerances there will flow a very small balance current. However, this balance current may increase roughly in case of any failure of one capacitor, for instance caused by any flash over inside the winded folies. Further fails may be caused by overvoltages and harmonics with great intensity in the grid and could overheat the capacitor. The Capacitor Protection Relay KSR is as designed as to supervise the balance current via the current transformer (c.t.), fitted on the conductor between the star points. If once the balance current increases a predetermined threshold level, due to any fail in the capacitors, the KSR disconnects the capacitor in order to protect it and triggers alarm. The KSR contents 3 channels for voltage - and 4 channels for current paths. This enables to observe all 3 line voltages with reference to over- or under-voltage and harmonics. The current paths are provided for supervising the 3 line currents and the balance current. If the 3 line current-paths are not in use, it is possible to observe further 3 capacitor banks. It is possible to parameterise up to 32 threshold levels inside the KSR. All of them may be provided with an additional delay time referring either to switch on or off a preselected alarm-relay. Criteria for trigger any relay may be decrease or increase of voltage tolerances in the grid, for instance. All alarm or control relays may be parameterised e.g. with inverting or self holding mode.

Supervised measurements

Voltage (RMS)

Overvoltage damages capacitors
Undervoltage causes switching off the capacitors

Voltage (THD)

Harmonics overload capacitors

Current (RMS)

Overload of capacitors
Measurement in outline wires

Current (fundamental wave)

Unsymmetrical protection
Measurement in doublestar

Current (thermal, demand)

Overload of capacitors
Measurement in outline wires

Current (THD)

Standard features:

Capacitor-Protecting-Relay in plastic case

Backside is made of metal

Terminals screw-type, plugable

Graphical LCD with backlight

Keyboard with 4 keys
(function is shown in the display)

Easy to use due to by full text menus

Optional features:

Interface RS485 Modbus -MB

Other supply voltages on request

Technical Data

Supply voltage:	207 - 253V, 45-65 Hz, 8VA, max. fuse gL 6A differing voltages on request
Measuring voltage:	55/95V - 318/550V, 45-65Hz, VT-ratio 1 - 4000
Measuring current:	0-5A, minimum sensitivity 50 mA, burden 15 mOhm CT is required, CT-ratio 1-10000 Overload: 20% continuous
Relay outputs:	4 N/O, voltfree, max. fuse gL 6A 2 C/O, voltfree, max. fuse gL 6A Break: 250V AC / 5A, 30VDC / 5A (ohmic) 110V DC / 0,4A (ohmic), 110V DC / 0,3A (inductive)
Fan control:	Sensor in KSR Individual configuration of output-relays possible
Interface:	Standard: none; optional: diverse interfaces on request
Ambient temperature:	Operation: 0°C ... +70°C; storage: -20°C ... +85°C
Humidity:	0% - 95%, without moisture condensation
Overvoltage category:	II, pollution degree 3 (DIN VDE 0110, Teil 1 / IEC 60664-1)
Specifications:	DIN VDE 0110 Teil 1 (IEC 60664-1:1992) VDE 0411 Teil1 (DIN EN 61010-1 / IEC 61010-1:2001) VDE 0843 Teil 20 (DIN EN 61326 / IEC 61326:1997 +A1:1998 +A2:2000)
Conformity:	CE
Terminals:	Plug-terminals, screw-type, max. 2,5qmm
Housing:	Instrument casing
Protection class:	Front: IP50, rear: IP20
Dimensions:	144 x 144 x 59 mm h x w x d, cut out 138 ^{+0,5} x 138 ^{+0,5} mm
Weight:	Ca. 650 gr

