

## USER PROGRAMS (1/2)

**PROGRAM 1:** Control for overvoltage, undervoltage, phases unbalance and phases cycle. It is supposed a three-phase voltage of 400V.

**RELAY 1:** Detection of the phase sequence.

DEFINITION WORKING MODE =  
STATE OF CONTACT = ON

ALARM STATE = OFF  
V |Li-Lj| MAXIMUM = NON OPERATIVE  
V |Li-Lj| MINIMUM = NON OPERATIVE  
V |Li-LN| MAXIMUM = NON OPERATIVE  
V |Li-LN| MINIMUM = NON OPERATIVE  
≠ MAX |Li-Lj| MAXIMUM = NON OPERATIVE  
≠ MAX |Li-LN| MAXIMUM = NON OPERATIVE  
FRECUENCIA MAXIMUM = NON OPERATIVE  
FRECUENCIA MINIMUM = NON OPERATIVE  
PHASE CYCLE = OPERATIVE  
DETECTION MODE = INSTANTANEOUS  
RELEASE MODE = INSTANTANEOUS

**RELAY 2:** Detection of the voltage

DEFINITION WORKING MODE =  
V |Li-Lj| DETEC / MAX = 460 Vac  
V |Li-Lj| RELEASE / MAX = 440 Vac  
V |Li-Lj| DETEC / MIN = 340 Vac  
V |Li-Lj| RELEASE / MIN = 360 Vac  
V |Li-LN| DETEC / MAX = 264 Vac  
V |Li-LN| RELEASE / MAX = 253 Vac  
V |Li-LN| DETEC / MIN = 195 Vac  
V |Li-LN| RELEASE / MIN = 207 Vac  
STATE OF CONTACT = ON  
*DETECTION TIMER* = 0.5 s  
*TIMER RELEASE* = 0.5 s

ALARM STATE = OFF  
V |Li-Lj| MAXIMUM = OPERATIVE  
V |Li-Lj| MINIMUM = OPERATIVE  
V |Li-LN| MAXIMUM = OPERATIVE  
V |Li-LN| MINIMUM = OPERATIVE  
≠ MAX |Li-Lj| MAXIMUM = NON OPERATIVE  
≠ MAX |Li-LN| MAXIMUM = NON OPERATIVE  
MAXIMUM FREQUENCY = NON OPERATIVE  
MINIMUM FREQUENCY = NON OPERATIVE  
PHASES CYCLE = NON OPERATIVE  
DETECTION MODE = DELAYED  
TIME RANGE DETECTION = SECONDS  
RELEASE MODE = DELAYED  
TIME RANGE RELEASE = SECONDS

**RELAY 3:** Detection of the unbalance

DEFINITION WORKING MODE =  
≠ |Li-Lj| MAX DETEC / MAX = 10.0 %  
≠ |Li-Lj| MAX RELEASE / MAX = 5.0 %  
STATE OF CONTACT = ON  
≠ |Li-LN| MAX DETEC / MAX = 10.0 %  
≠ |Li-LN| MAX RELEASE / MAX = 5.0 %  
*DETECTION TIMER* = 0.5 s  
*TIMER RELEASE* = 0.5 s

ALARM STATE = OFF  
V |Li-Lj| MAXIMUM = NON OPERATIVE  
V |Li-Lj| MINIMUM = NON OPERATIVE  
V |Li-LN| MAXIMUM = NON OPERATIVE  
V |Li-LN| MINIMUM = NON OPERATIVE  
≠ |Li-Lj| MAXIMUM = OPERATIVE  
≠ |Li-LN| MAXIMUM = OPERATIVE  
FRECUENCIA MAXIMUM = NON OPERATIVE  
FRECUENCIA MINIMUM = NON OPERATIVE  
PHASE CYCLE = NON OPERATIVE  
DETECTION MODE = DELAYED  
TIME RANGE DETECTION = SECONDS  
RELEASE MODE = DELAYED  
TIME RANGE RELEASE = SECONDS

NOTE: Options in *italics* are only available according to the ones selected in DEFINITION WORKING MODE.

## USER PROGRAMS (2/2)

**PROGRAM 2:** Control for overvoltage, undervoltage, phases unbalance, phases cycle and frequency. It is supposed a three-phase voltage of 400V.

**RELAY 1:** Detection of the phase sequence.

DEFINITION MODE WORKING = ☐  
STATE OF CONTACT = ON

ALARM STATE = OFF  
V |Li-Lj| MAXIMUM = NON OPERATIVE  
V |Li-Lj| MINIMUM = NON OPERATIVE  
V |Li-LN| MAXIMUM = NON OPERATIVE  
V |Li-LN| MINIMUM = NON OPERATIVE  
≠ MAX |Li-Lj| MAXIMUM = NON OPERATIVE  
≠ MAX |Li-LN| MAXIMUM = NON OPERATIVE  
FREQUENCY MAXIMUM = NON OPERATIVE  
FREQUENCY MINIMUM = NON OPERATIVE  
PHASES CYCLE = OPERATIVE  
DETECTION MODE = INSTANTANEOUS  
RELEASE MODE = INSTANTANEOUS

**RELAY 2:** Detection of the voltage and the unbalance.

DEFINITION WORKING MODE = ☐  
V |Li-Lj| DETEC / MAX = 460 Vac  
V |Li-Lj| RELEASE / MAX = 440 Vac  
V |Li-Lj| DETEC / MIN = 340 Vac  
V |Li-Lj| RELEASE / MIN = 360 Vca  
V |Li-LN| DETEC / MAX = 264 Vac  
V |Li-LN| RELEASE / MAX = 253 Vac  
V |Li-LN| DETEC / MIN = 195 Vac  
V |Li-LN| RELEASE / MIN = 207Vac  
≠ |Li-Lj| MAX DETEC / MAX = 10.0 %  
≠ |Li-Lj| MAX RELEASE / MAX = 5.0 %  
STATE OF CONTACT = 10.0 %  
≠ |Li-LN| MAX DETEC / MAX = 5.0 %  
≠ |Li-LN| MAX RELEASE / MAX = ON  
TIMER DETECTION = 0.50 s  
TIMER RELEASE = 0.50 s

ALARM STATE = OFF  
V |Li-Lj| MAXIMUM = OPERATIVE  
V |Li-Lj| MINIMUM = OPERATIVE  
V |Li-LN| MAXIMUM = OPERATIVE  
V |Li-LN| MINIMUM = OPERATIVE  
≠ MAX |Li-Lj| MAXIMUM = NON OPERATIVE  
≠ MAX |Li-LN| MAXIMUM = NON OPERATIVE  
FREQUENCY MAXIMUM = NON OPERATIVE  
FREQUENCY MINIMUM = NON OPERATIVE  
PHASES CYCLE = NON OPERATIVE  
DETECTION MODE = DELAYED  
TIME RANGE DETECTION = SECONDS  
RELEASE MODE = DELAYED  
TIME RANGE RELEASE = SECONDS

**RELAY 3:** Detection of the frequency.

DEFINITION WORKING MODE = ☐  
FREQUENCY DETEC / MAX = 52.0 Hz  
FREQUENCY RELEASE / MAX = 51.0 Hz  
FREQUENCY DETEC / MIN = 48.0 Hz  
FREQUENCY RELEASE / MIN = 49.0 Hz  
STATE OF CONTACT = ON  
TIMER DETECTION = 0.50 s  
TIMER RELEASE = 0.50 s

ALARM STATE = OFF  
V |Li-Lj| MAXIMUM = NON OPERATIVE  
V |Li-Lj| MINIMUM = NON OPERATIVE  
V |Li-LN| MAXIMUM = NON OPERATIVE  
V |Li-LN| MINIMUM = NON OPERATIVE  
≠ |Li-Lj| MAXIMUM = NON OPERATIVE  
≠ |Li-LN| MAXIMUM = NON OPERATIVE  
FRECUENCIA MAXIMUM = OPERATIVE  
FRECUENCIA MINIMUM = OPERATIVE  
PHASES CYCLE = NON OPERATIVE  
DETECTION MODE = DELAYED  
TIME RANGE DETECTION = SECONDS  
RELEASE MODE = DELAYED  
TIME RANGE RELEASE = SECONDS

NOTE: Options in italics are only available according to the ones selected in DEFINITION WORKING MODE.