



- Monitoring relays - GAMMA series
- Monitoring of phase sequence and phase failure
- Detection of reverse voltage
- Connection of neutral wire optional
- Supply voltage = measuring voltage
- 2 change-over contacts
- Width 22.5mm
- Industrial design



Technical data

1. Functions

Monitoring of phase sequence, phase failure and detection of return voltage (by means of evaluating the asymmetry)

2. Time ranges

Start-up suppression time:	Adjustment range fixed, max. 500ms
Tripping delay:	fixed, max. 350ms

3. Indicators

Green LED ON:	indication of supply voltage
Yellow LED ON/OFF:	indication of relay output

4. Mechanical design

Self-extinguishing plastic housing, IP rating IP40
 Mounted on DIN-Rail TS 35 according to EN 60715
 Mounting position: any
 Shockproof terminal connection according to VBG 4 (PZ1 required), IP rating IP20
 Tightening torque: max. 1Nm
 Terminal capacity:
 1 x 0.5 to 2.5mm² with/without multicore cable end
 1 x 4mm² without multicore cable end
 2 x 0.5 to 1.5mm² with/without multicore cable end
 2 x 2.5mm² flexible without multicore cable end

5. Input circuit

Supply voltage:	
3(N)~ 115/66V	terminals (N)-L1-L2-L3 (G2PF115VS02) (= measuring voltage)
3(N)~ 230/132V	terminals (N)-L1-L2-L3 (G2PF230VS02) (= measuring voltage)
3(N)~ 400/230V	terminals (N)-L1-L2-L3 (G2PF400VS02) (= measuring voltage)
Tolerance:	
3(N)~ 115/66V	3(N)~ 99 to 132V (G2PF115VS02)
3(N)~ 230/132V	3(N)~ 198 to 264V (G2PF230VS02)
3(N)~ 400/230V	3(N)~ 342 to 457V (G2PF400VS02)
Rated frequency:	48 to 63Hz
Rated consumption:	
3(N)~ 115/66V	3VA (G2PF115VS02)
3(N)~ 230/132V	6VA (G2PF230VS02)
3(N)~ 400/230V	9VA (G2PF400VS02)

Duration of operation:	100%
Reset time:	<100ms
Residual ripple for d.c.:	-
Drop-out voltage:	>20% of the supply voltage
Overvoltage category:	III (in accordance with IEC 60664-1)
Rated surge voltage:	4kV

6. Output circuit

2 potential free change-over contacts
 Rated voltage: 250V a.c.
 Switching capacity: 750VA (3A / 250V a.c.)
 If the distance between the devices is less than 5mm.

Switching capacity:	1250VA (5A / 250V a.c.)
If the distance between the devices is greater than 5mm.	
Fusing:	5A fast acting
Mechanical life:	20 x 10 ⁵ operations
Electrical life:	2 x 10 ⁵ operations at 1000VA resistive load
Switching frequency:	max. 60/min at 100VA resistive load
	max. 6/min at 1000VA resistive load (in accordance with IEC 60947-5-1)
Overvoltage category:	III (in accordance with IEC 60664-1)
Rated surge voltage:	4kV

7. Measuring circuit

Measured variable:	a.c. Sinus, 48 to 63Hz
Input:	
3(N)~ 115/66V	terminals (N)-L1-L2-L3 (G2PF115VS02) (= supply voltage)
3(N)~ 230/132V	terminals (N)-L1-L2-L3 (G2PF230VS02) (= supply voltage)
3(N)~ 400/230V	terminals (N)-L1-L2-L3 (G2PF400VS02) (= supply voltage)
Overload capacity:	
3(N)~ 115/66V	3(N)~ 132/76V (G2PF115VS02)
3(N)~ 230/132V	3(N)~ 264/152V (G2PF230VS02)
3(N)~ 400/230V	3(N)~ 457/264V (G2PF400VS02)
Input resistance:	
3(N)~ 115/66V	5kΩ (G2PF115VS02)
3(N)~ 230/132V	10kΩ (G2PF230VS02)
3(N)~ 400/230V	15kΩ (G2PF400VS02)
Asymmetry:	fixed, typ. 30%
Overvoltage category:	III (in accordance with IEC 60664-1)
Rated surge voltage:	4kV

8. Accuracy

Base accuracy:	-
Frequency response:	-
Adjustment accuracy:	-
Repetition accuracy:	-
Voltage influence:	-
Temperature influence:	-

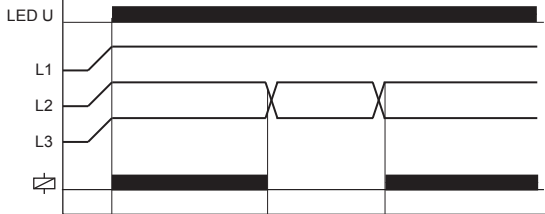
9. Ambient conditions

Ambient temperature:	-25 to +55°C (in accordance with IEC 60068-1)
	-25 to +40°C (in accordance with UL 508)
Storage temperature:	-25 to +70°C
Transport temperature:	-25 to +70°C
Relative humidity:	15% to 85% (in accordance with IEC 60721-3-3 class 3K3)
	3 (in accordance with IEC 60664-1)
Pollution degree:	3 (in accordance with IEC 60664-1)
Vibration resistance:	10 to 55Hz 0.35mm (in accordance with IEC 60068-2-6)
Shock resistance:	15g 11ms (in accordance with IEC 60068-2-27)

Functions

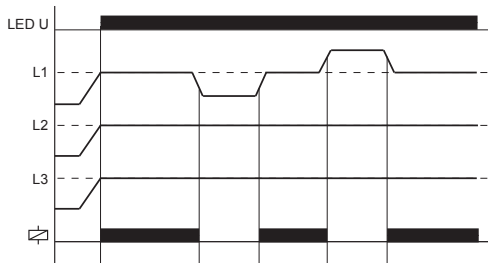
Phase sequence monitoring

When all the phases are connected in the correct sequence and the measured asymmetry is less than the fixed value, the output relays switch into on-position (yellow LED illuminated). When the phase sequence changes, the output relays switch into off-position (yellow LED not illuminated).



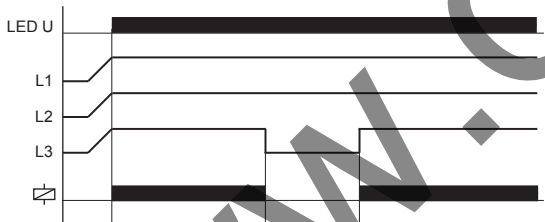
Detection of reverse voltage (by means of evaluation of asymmetry)

The output relays switch into off-position (yellow LED not illuminated) when the asymmetry between the phase voltages exceeds the fixed value of the asymmetry. An asymmetry caused by the reverse voltage of a consumer (e.g. a motor which continues to run on two phases only) does not effect the disconnection.

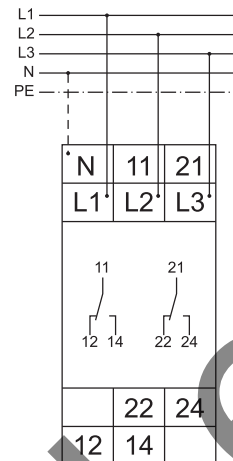


Phase failure monitoring

When one of the three phases fails, the output relays switch into off-position (yellow LED not illuminated).



Connections



Dimensions

