

TEST PROTOCOL OF SYMCOMP CALCULATOR

TEST 1 - PHASORS TO SYMMETRICAL COMPONENTS

Human: There is a three-phase system:

$V_A = 220 \angle 0^\circ$

$V_B = 220 \angle -120^\circ$

$V_C = 0$,

Calculate the symmetrical components, at the end write all results in compact way ?

Gemini IA:

Positive Sequence (V_1): $146.67 \angle 0^\circ$ V

Negative Sequence (V_2): $73.33 \angle 60^\circ$ V

Zero Sequence (V_0): $73.33 \angle -60^\circ$ V

The screenshot shows the SymComp Calculator app interface. At the top, the status bar displays the time 12:30, signal strength, and battery level at 58%. The app title "SymComp Calculator" is in red. Below it, the "Input Phasors" section has a home icon. The input fields are: A: 220 at 0°, B: 220 at -120°, and C: 0 at 0°. A "Run" button and an "ac" button are present. The results table shows the following data:

	MAG	ANG °
POS. SEQ. A	146.667	0.00
POS. SEQ. B	146.667	-120.00
POS. SEQ. C	146.667	120.00
NEG. SEQ. A	73.333	60.00
NEG. SEQ. B	73.333	180.00
NEG. SEQ. C	73.333	-60.00
ZER. SEQ. A	73.333	-60.00
ZER. SEQ. B	73.333	-60.00
ZER. SEQ. C	73.333	-60.00

At the bottom, there are three navigation icons: a list icon, a home icon, and a back icon.

Result : Success

TEST 2 - PHASORS TO SYMMETRICAL COMPONENTS

Human: There is a three-phase system:

IA=2110 angle(0)
IB=2140 angle(-122)
IC=2080 angle(118)

Calculate the symmetrical components, at the end write all results in compact way ?

Gemini IA:

Positive Sequence (I_1): $2109.71 \angle -1.33^\circ$ A

Negative Sequence (I_2): $41.87 \angle 88.59^\circ$ A

Zero Sequence (I_0): $7.24 \angle 91.39^\circ$ A

12:39 57%

SymComp Calculator

Input Phasors

A: 2110 0

B: 2140 -122

C: 2080 118

Run ac

	MAG	ANG °
POS. SEQ. A	2109.714	-1.33
POS. SEQ. B	2109.714	-121.33
POS. SEQ. C	2109.714	118.67
NEG. SEQ. A	41.869	88.59
NEG. SEQ. B	41.869	-151.41
NEG. SEQ. C	41.869	-31.41
ZER. SEQ. A	7.238	91.39
ZER. SEQ. B	7.238	91.39
ZER. SEQ. C	7.238	91.39

Result : Success

TEST 3 - SYMMETRICAL COMPONENTS TO PHASORS

Human : Here are the symmetrical components :

Positive Sequence (V_1): $146.67\angle 0^\circ$ V

Negative Sequence (V_2): $73.33\angle 60^\circ$ V

Zero Sequence (V_0): $73.33\angle -60^\circ$ V

Calculate the voltage phasors ?

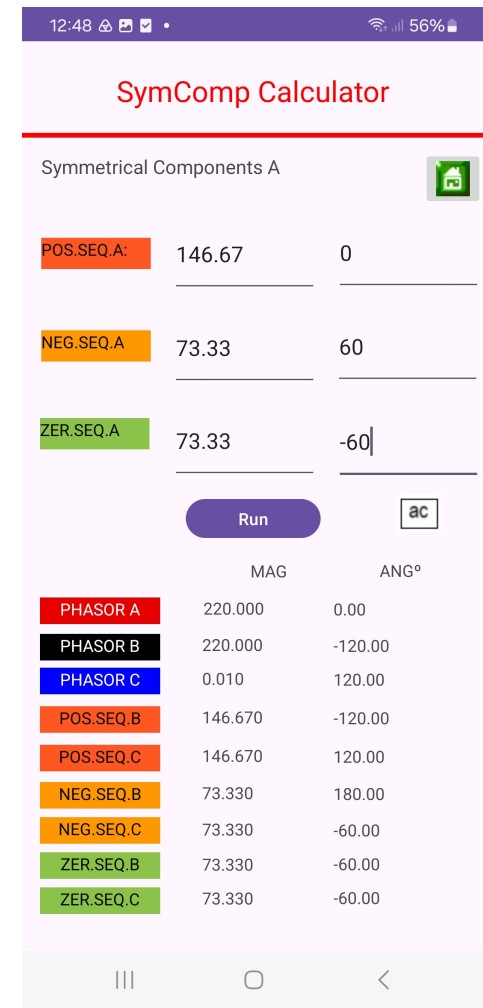
Gemini IA :

$V_A: 220\angle 0^\circ$ V

$V_B: 220\angle -120^\circ$ V

$V_C: 0\angle 0^\circ$ V (or simply 0 V)

Result : Success



TEST 4 - SYMMETRICAL COMPONENTS TO PHASORS

Human : Here are the symmetrical components :

Positive Sequence (I_1): $2109.71\angle - 1.33^\circ$ A

Negative Sequence (I_2): $41.87\angle 88.59^\circ$ A

Zero Sequence (I_0): $7.24\angle 91.39^\circ$ A

Give me the current phasors ?

Gemini IA:

I_A : $2110\angle 0^\circ$ A

I_B : $2140\angle - 122^\circ$ A

I_C : $2080\angle 118^\circ$ A

The screenshot shows the SymComp Calculator app interface. At the top, the title "SymComp Calculator" is displayed in red. Below it, the section "Symmetrical Components A" is shown with a green icon. The input fields for "POS.SEQ.A", "NEG.SEQ.A", and "ZER.SEQ.A" are filled with values 2109.71, 41.87, and 7.24 respectively, and their angles are -1.33, 88.59, and 91.39 degrees. A "Run" button and an "ac" button are visible. The output section displays the calculated phasors and sequence components for phases A, B, and C. The phasors are: PHASOR A (2109.996, 0.00), PHASOR B (2139.995, -122.00), and PHASOR C (2079.996, 118.00). The sequence components are: POS.SEQ.A (2109.710, -121.33), POS.SEQ.B (2109.710, 118.67), POS.SEQ.C (41.870, -151.41), NEG.SEQ.A (41.870, -31.41), NEG.SEQ.B (7.240, 91.39), and NEG.SEQ.C (7.240, 91.39).

	MAG	ANG°
PHASOR A	2109.996	0.00
PHASOR B	2139.995	-122.00
PHASOR C	2079.996	118.00
POS.SEQ.A	2109.710	-121.33
POS.SEQ.B	2109.710	118.67
POS.SEQ.C	41.870	-151.41
NEG.SEQ.A	41.870	-31.41
NEG.SEQ.B	7.240	91.39
NEG.SEQ.C	7.240	91.39

Result : Success

References:

- [1] Fortescue, C.L. Method of symmetrical co-ordinates applied to the solution of poly-phase networks (with discussion). Presented at the 34th Annual Convention of the AIEE (American Institute of Electrical Engineers), Atlantic City, NJ, USA, 28 June 1918; Volume 37, pp. 1027–1140.
- [2] Google. (2026). *Gemini* (Gemini 1.5 Pro version) [Large language model]. <https://gemini.google.com/>