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1. INTRODUCTION

The 3-phase network monitor SSU33L is an economical and simply operated monitoring relay for the 230/400 V 3-phase network. It is available in two versions: type SSU33L/AC230V for a network with neutral conductor and type SSU33L/AC400V for a network without neutral conductor. The unit monitors the conductor voltages, the frequency, the symmetry and the direction of rotation. The monitoring criteria are internally linked and their sensitivity is set by the operator using the dial. A second dial is used for setting the alarm delay. If the mains voltage is within the tolerances, the green LED lights up and the output relay is activated. In case of a fault, the red LED lights up, the output relay drops out after the set time delay and the green LED goes out.

A changeover contact is available as an output.

The two types are available in an 11-pin pluggable housing.

 Availability and specifications subject to change without notice

2. ORDER DESIGNATION

Pluggable (11-pin):

ComatReleco 3-phase monitor **SSU33L/AC230V**

ComatReleco 3-phase monitor **SSU33L/AC400V**

Accessories:

- Transparent front cover: FS-24 (standard delivery)
- Relay socket with screw terminals, 11-pin: CS-11
- Retaining clip: HF-24
- Front frame mounting accessory FZ-23

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	Kp			13.10.93	2308	6	von: 6	
				14.1.02		7	M:	
An				15.2.06	2763	10		
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3. FUNCTION

The three phases of the 230/400 V alternating current network are monitored according to the following criteria:

- Direction of rotation
- Undervoltage
- Overvoltage
- Phase failure
- Phase angle
- Frequency
- Asymmetric phase position/voltage position

The limits for undervoltage and overvoltage are fixed (see Technical Data) and relate to the voltage of phase L1-N or L1-L2. The other criteria (except for direction of rotation) can be set together on the control dial. They relate to all three conductors L1, L2 and L3. No distinction is made between the individual criteria. Procedure: If a fault is detected, it is immediately indicated visually.

- The red LED lights up

The alarm delay time (t_{del}) also starts. If the fault has not been eliminated when this time elapses, the alarm is triggered:

- The relay drops out
- The green LED goes out

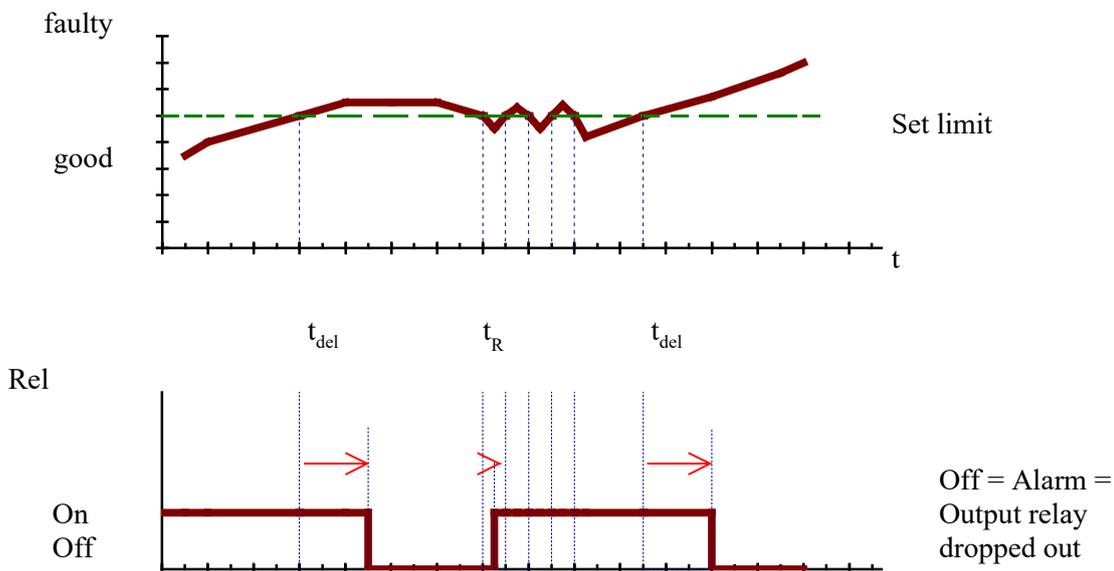
If the measured values then drift back into the ideal range (mains voltage = ok), the visual fault display disappears.

- The red LED goes out

and after about 150 ms the normal state is restored.

- The relay operates
- The green LED lights up

FUNCTION DIAGRAM



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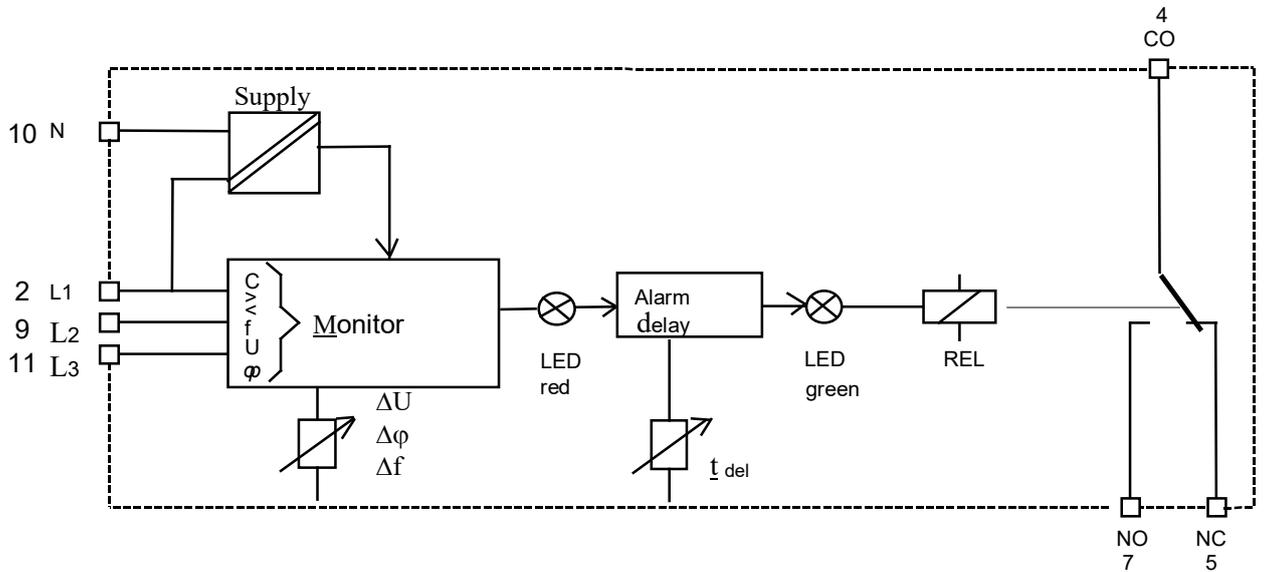
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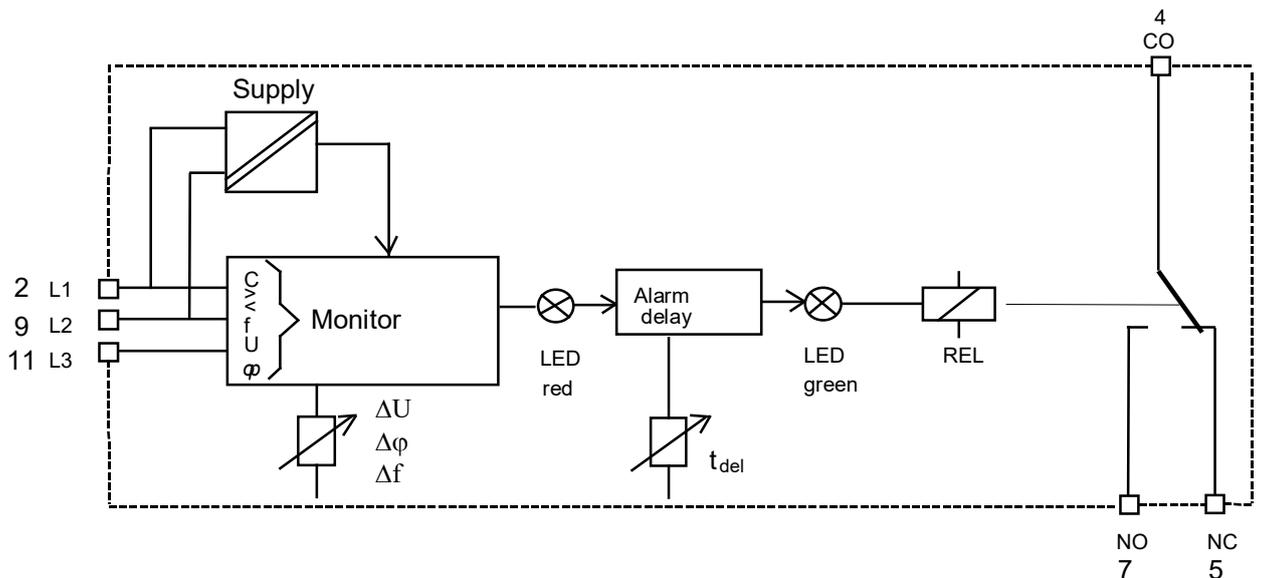
4. CIRCUIT

Block diagram:

SSU33L/AC230V



SSU33L/AC400V



5. TECHNICAL DATA

5.1. General data

5.1.1. Mechanical data

Housing:

S2 plugg in 11-pin
W38, H72, D92

Protection type:

Housing IP40

Shock resistance:

TW80 (20 g min)

SSU33L/AC230V

SSU33L/AC400V

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SSU33L/AC230V
SSU33L/AC400V

Vibration resistance:		IEC 571 (with clip HF 24)
Housing material:		Noryl SE1
Weight:		about 300 g
Fixing:		plugged
Connections:		11-pin plug according to IEC67-I-18a
Pin assignments:	1 --	1 --
	2 L1	2 L1
	3 --	3 --
	4 Changeover contact	4 Changeover contact
	5 Normally closed contact	5 Normally closed contact
	6 --	6 --
	7 Normally open contact	7 Normally open contact
	8 --	8 --
	9 L2	9 L2
	10 N	10 --
	11 L3	11 L3

5.1.2. Environmental conditions

Ambient temperature, storage	-40°C to +85°C
Ambient temperature, operation	-25°C to +60°C
Relative humidity	10% to 95% noncondensing
Transient voltage protection	IEC 255 Appendix E Class III

5.1.3. Working life

Expected working life	>> 75,000 h
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5.2. Electrical data
5.2.1. Supply

	SSU33L/AC230V	SSU33L/AC400V
U _{Rated} :	230V/50Hz (L1/N)	400V/50Hz (L1/L2)
U _{Operation} :	160V ... 275V	280V ... 470V
Power consumption:	<3VA	<3VA

The supply is simultaneously the measured input.

In the version SSU33L/AC400V, the supply is derived from the measured inputs L1/L2.

5.2.2. Inputs L1, L2, L3

	SSU33L/AC230V	SSU33L/AC400V
Normal input voltage	3 x 400V/50Hz	3 x 400V/50Hz
Input current	1.5 mA	1.5 mA
Permissible input voltage L1, L2, L3	U _{max} : 500 V AC	U _{max} : 500 V AC
Input measuring range	0 + 500V	0 + 500V

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6. OPERATION

Two dials are available for the operator (Δ and t_{del}).

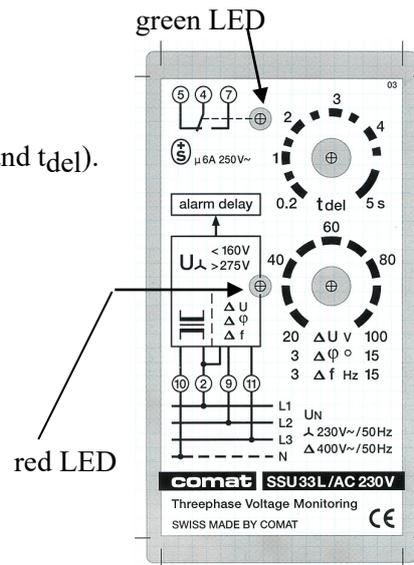
Δ : Sensitivity (U, f, Δ)

t_{del} : Alarm delay time

The red LED indicates a faulty input signal.

The green LED shows the relay state.

It is switched off in the case of an alarm.



7. STANDARDS, APPROVALS

Vibration resistance

IEC 571; 68-2-6-FC

Shock resistance

TW80 (20 g)

Immunity to interference

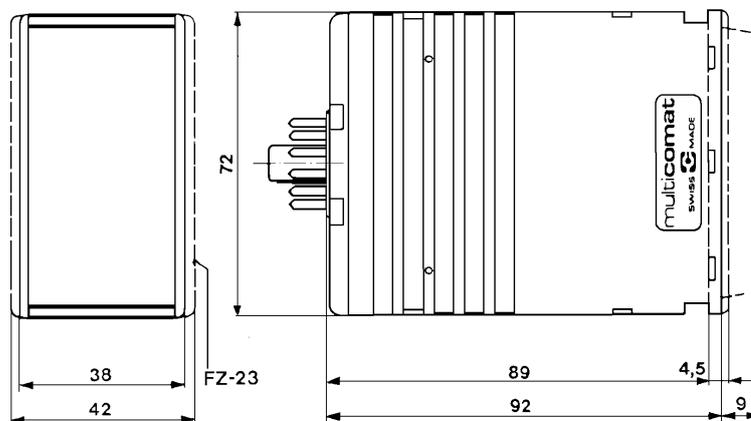
IEC 255.4 Appendix Class III, IEC 801-4

Marking

CE

8. HOUSING, DIMENSIONS

S2 pluggable



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