

Three-phase voltage monitoring S3UM





The S3UM voltage monitoring relay is used to monitor over and under-voltage and the phase sequence in 3-phase supplies.

Features

- Monitoring supplies with and without neutral conductors
- Trip device for under and over-voltage
- Phase sequence evaluation
- Detects asymmetry
- Detects phase failure
- Reaction time can be set for up to 10 s
- Normally energised or normally de-energised mode

Approvals

	S3UM
	●*
	●

* for versions up to 240 V AC

Technical Details	S3UM
Electrical data	
Supply voltage	AC: 120, 230 V DC: 24 V
Tolerance	85 ... 110 %
Power consumption	AC: 2 VA DC: 1.5 W
Switching capability in accordance with EN 60947-4-1, 10/91	AC1: 240 V/0.1 ... 5 A/1200 VA DC1: 24 V/0.1 ... 5 A/120 W
EN 60947-5-1, 10/91	AC15: 230 V/2 A; DC13: 24 V/1.5 A
Output contacts	1 auxiliary contact (C/O)
Contact material	AgCdO, 3 µm gold plating for low-load range 1-50 V/1-100 mA
Contact fuse protection in accordance with EN 60947-5-1, 10/91	Max. 6 A quick or max. 4 A slow
Measuring circuit	
Measuring voltage	AC: 42, 230, 100/110, 400/440, 415/460, 440/480, 500/550 V, can be switched at any time
Tolerance	75 ... 125 %
Measurement range conversion (10 %) via terminals Y2, Y3	Open: higher value Closed: lower value (set ex-works)
Frequency range	40 ... 400 Hz
Adjustable measuring range limit	
Overvoltage	Measuring voltage + 20 %
Undervoltage	Measuring voltage - 25 %
Hysteresis	Approx. 2 %
Reaction time	0.5 ... 10 s
Environmental data	
Ambient temperature	-15 ... +55 °C
Mechanical data	
Max. cable cross section of ext. conductor	1 x 4 mm ² or 2 x 1.5 mm ² single-core or multi-core with crimp connector
Dimensions (H x W x D)	87 x 22.5 x 122 mm
Weight	170 g

Description

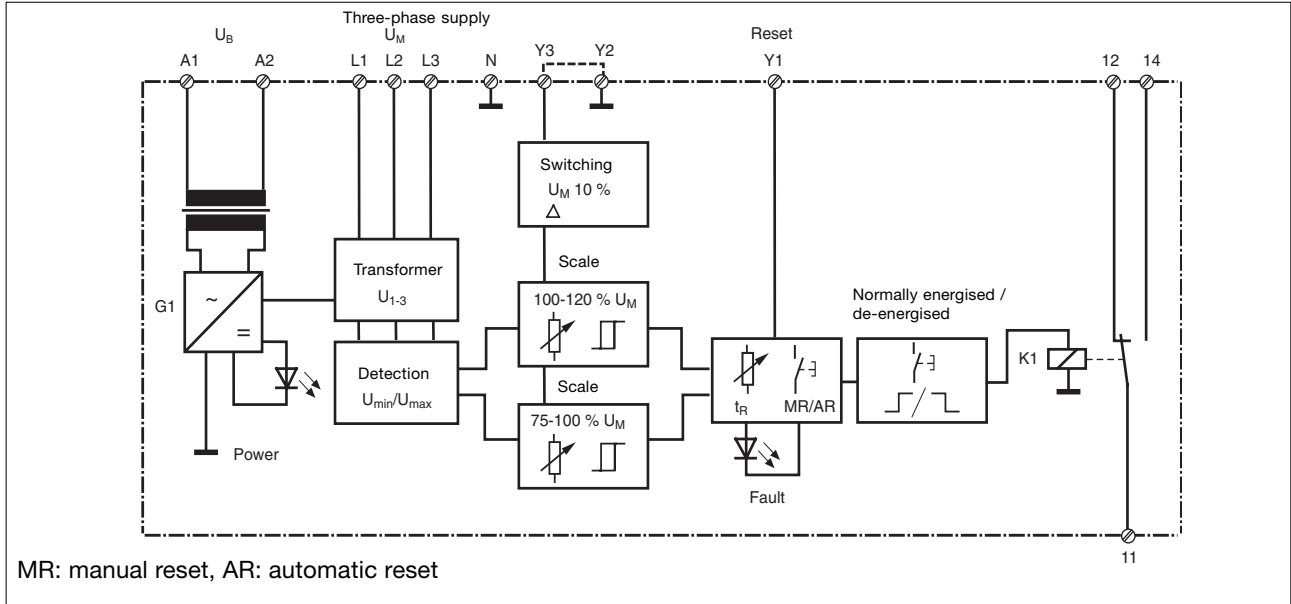
The voltage monitoring relay is enclosed in an S-95 slimline housing. There are different variations available for AC and DC operation. Features:

- Relay output: 1 auxiliary contact (C/O)
- 2 measuring circuits
- Undervoltage value can be set from 75 % to 100 % of the mains voltage
- Overvoltage value can be set from 100 % to 120 % of mains voltage

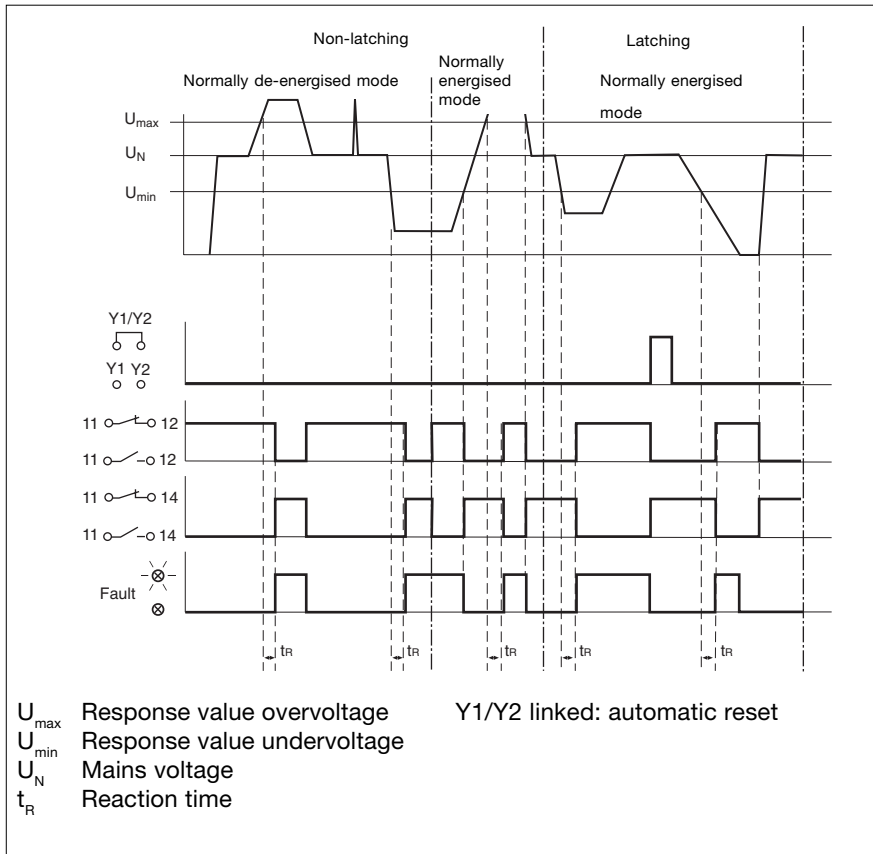
- Fault status can be either latched or non-latched
- LED for supply voltage
- LED for all faults: Phase sequence fault, under / overvoltage
- Phase failure detection also with voltage feedback from connected loads
- Switching range 10 % for L1-L3
- Separate supply voltage A1-A2

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Internal wiring diagram



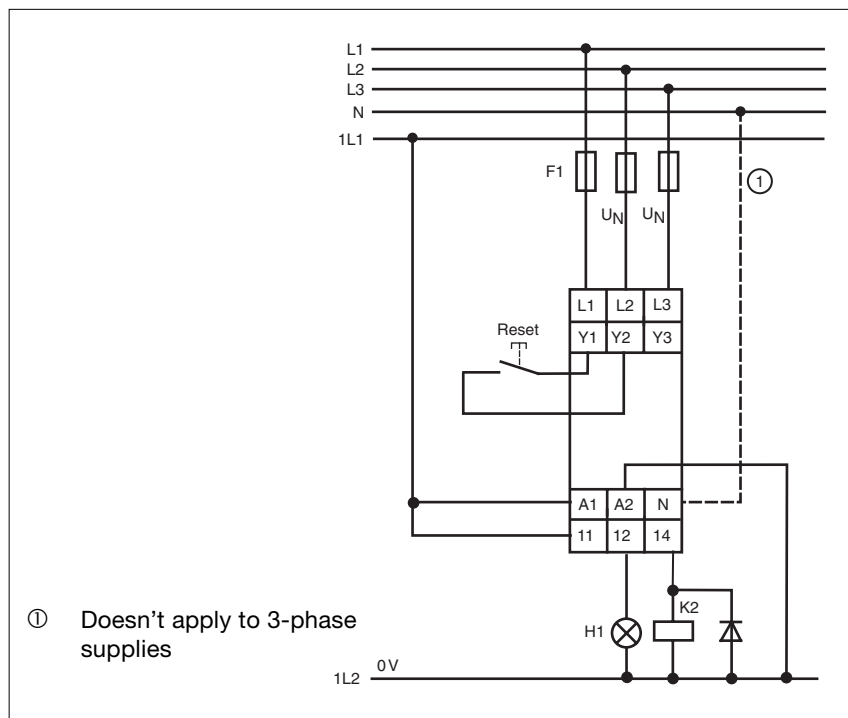
Timing diagram



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Application example

Protection device using normally energised mode to protect against over and undervoltage



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General Details

Unless stated otherwise in the technical details for the specific unit.

Electrical data

AC frequency range	50 ... 60 Hz
DC residual ripple	160 %
Contact material	AgCdO
Continuous duty	100 %

Environmental data

EMC	EN 50081-1, 01/92; EN 50082-2, 03/95
Vibration in accordance with EN 60068-2-6, 04/95	Frequency: 10 ... 55 Hz, Amplitude: 0.35 mm
Climatic suitability	IEC 60068-2-3, 1969
Airgap creepage	DIN VDE 0110-1 (04/97), 4 kV/3
Ambient temperature	-10 ... +55 °C
Storage temperature	-40 ... +85 °C

Mechanical data

Torque setting for connection terminals	0.6 Nm (screws)
Mounting position	Any
Housing material	Thermoplastic Noryl SE 100
Protection types	Mounting: IP 54 Housing: IP 40 Terminals: IP 20

Order references

Type	U_B	U_M	Order no.
S3UM	24 V DC	42 V AC	837 240
S3UM	24 V DC	100/110 V AC	837 250
S3UM	24 V DC	230 V AC	837 260
S3UM	24 V DC	400/440 V AC	837 270
S3UM	24 V DC	415/460 V AC	837 280
S3UM	24 V DC	440/480 V AC	837 285
S3UM	24 V DC	500/550 V AC	837 290
S3UM	120 V AC	440/480 V AC	837 395
S3UM	230 V AC	42 V AC	837 340
S3UM	230 V AC	100/110 V AC	837 350
S3UM	230 V AC	230 V AC	837 360
S3UM	230 V AC	400/440 V AC	837 370
S3UM	230 V AC	415/460 V AC	837 380
S3UM	230 V AC	500/550 V AC	837 390

Additional versions available on request

Order references key

U_B Supply voltage
 U_M Measuring voltage