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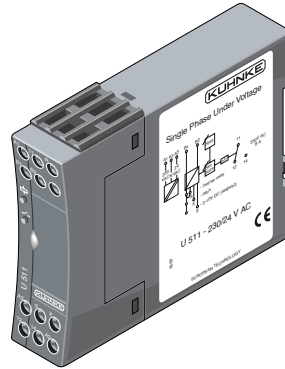
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Single-phase Voltage Monitoring Relay U 510 / U 511

- Standard housing, 22.5 mm wide
- Selectable memory function
- Analogue output for switching point adjustment
- Test voltage 3750 VAC



Order Code

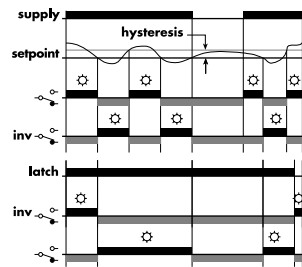
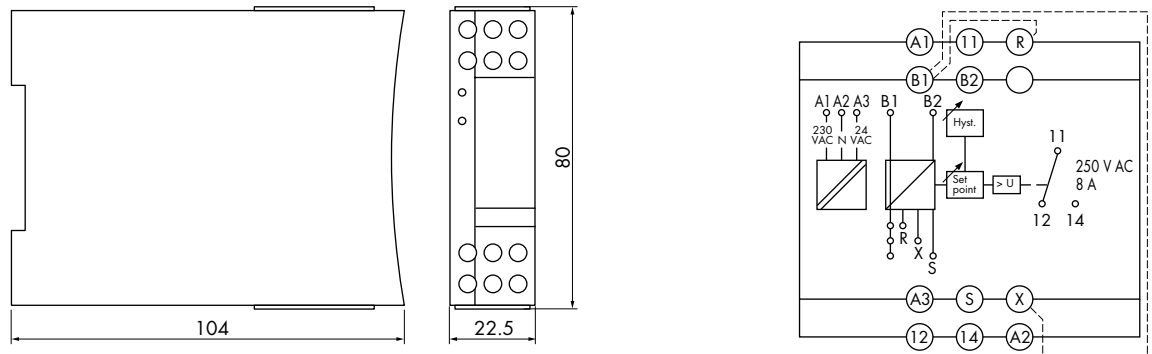
Order code	U	510.	1	-	230 / 24 VAC
Single-phase voltage					
U	U				
Monitored variable					
510 Undervoltage		510.			
511 Overvoltage		511.			
Contact arrangement					
1 C/O			1		
Supply voltage					
24 VDC					24 VDC
115/24 VAC					115 / 24 VAC
230/24 VAC					230 / 24 VAC

General Data

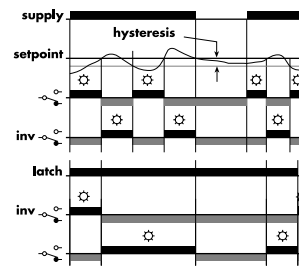
	U 510 / U 511
Display	Green LED "Supply On" Red LED error, relay dropped-out
Insulation group VDE 0110b/2.79	C250
Test voltage	3750 VAC
Terminals	Twin tension relief terminals with head screws metric M3
Terminal torque in accordance with DIN EN 60999	0.5 Nm
Terminal capacity	
solid conductor	2 x 2.5 mm ²
flexible conductor with ferrule	2 x 1.5 mm ²
Operating temperature	-20 °C to +55 °C
Storage temperature	-40 °C to +80 °C
Protection in accordance with DIN 40050	IP 20
Mounting	Rail in accordance with EN50022-35 x 7.5/15
Weight	approx. 180 g



Dimensions, Connection Diagram(s), Functional Diagrams



U 510



U 511

Bridge	Function
B1 - R	Relay inversion
B1 - X	Latch
B1 - S	Setting analogous to 2 - 10 V

Contact Data

	U 510 / U 511
Contact arrangement	1 C/O
Type of contact	Single contact
Contact material	AgNi, gold-plated
Nominal contact current	8 A
Nominal contact voltage	250 VAC / 24 VDC
Max. switching capacity	2000 VA / 100 W

Auxiliary Circuit

Supply voltage	A1 (+) - A2 (-) A3 - A2 (N) A1 - A2 (N) A1 - A2 (N)	24 VDC 24 VAC (45 - 65 Hz) 115 VAC (45 - 65 Hz) 230 VAC (45 - 65 Hz)
Overload rating		1.15 x U _N continuous
Rated power		DC 2 W AC 3 VA

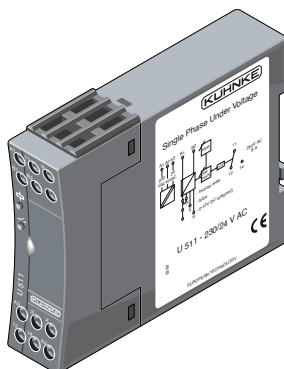
Monitoring Circuit

	U 510	U 511
Monitored voltage	(B1 - B2) to B2 at DC+	1 - 500 VAC / DC in 5 ranges, selectable via "Range" 1 - 5 V / 4 - 20 V / 10 - 50 V / 40 - 200 V / 100 - 500 V
Input impedance		500 kΩ
U max		700 VAC
Drop-out	adjustable in chosen range - dropping voltage	adjustable in chosen range - rising voltage
Pull-in	0.5 - 20 % of chosen range limit, adjustable above drop-out value	0.5 - 20 % of chosen range limit, adjustable below drop-out value
Temperature dependence		≤ 0.05 %/K
Setting of switching point B1: + on S		2 - 10 V analogous to switching point (drop-out value)
Latch of bridge B1 - x		If the relay drops out after error, reenergizing is only possible after opening the bridge or interrupting the supply voltage.



Three-phase Voltage Monitoring Relay UD 517 / UD 532

- Standard housing, 22.5 mm wide
- Selectable memory function
- Test voltage 3750 VAC



Order Code

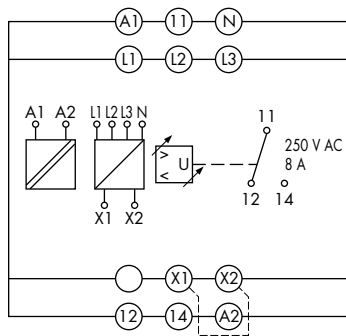
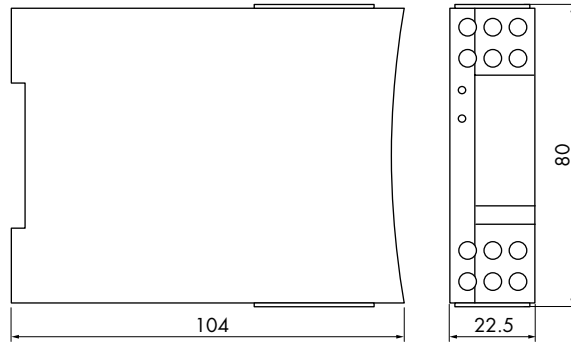
Order code	UD	517.	1	-	230 / 400	45 - 65 Hz
Three-phase voltage						
UD	UD					
Monitored variable						
517 Three-phase- undervoltage - overvoltage		517.				
532 Three-phase- undervoltage - asymmetric angle - sequence		532.				
Contact arrangement						
1 C/O			1			
Supply voltage (Voltage: Phase - N / Phase - Phase Supply voltage.measuring voltage)						
230 / 400 VAC (UD532 only)					230 / 400	
230 VAC					230.400	
400 VAC					400.400	
Frequency						
47 - 53 Hz (UD532 only)						47 - 53 Hz
45 - 65 Hz (UD517 only)						45 - 65 Hz

General Data

	UD 517	UD 532
Display	Upper red LED overvoltage Lower red LED undervoltage	Green LED "Supply On" Red LED error, relay dropped-out
Insulation group VDE 0110b/2.79	C250	
Test voltage	3750 VAC	
Terminals	Twin tension relief terminals with head screws metric M3	
Terminal torque in accordance with DIN EN 60999	0.5 Nm	
Terminal capacity		
solid conductor	2 x 2.5 mm ²	
flexible conductor with ferrule	2 x 1.5 mm ²	
Operating temperature	-20 °C to +55 °C	
Storage temperature	-40 °C to +80 °C	
Protection in accordance with DIN 40050	IP 20	
Mounting	Rail in accordance with EN50022-35 x 7.5/15	
Weight	approx. 180 g	

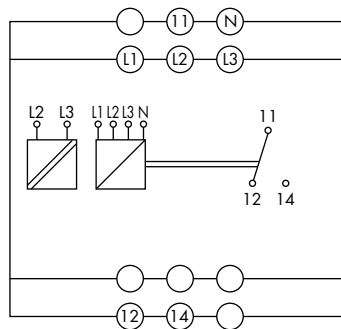


Dimensions, Connection Diagram(s), Functional Diagrams

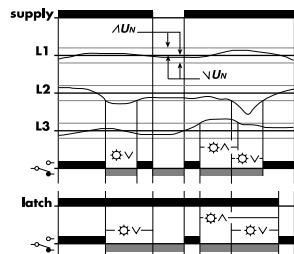


Bridge X1 - X2 = Latch

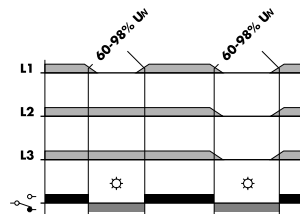
UD517



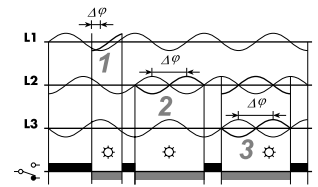
UD532



UD517



UD532



Contact Data

UD 517 / UD 532	
Contact arrangement	1 C/O
Type of contact	Single contact
Contact material	AgNi gold-plated
Nominal contact current	8 A
Nominal contact voltage	250 VAC
Max. switching capacity	2000 VA



Auxiliary Circuit

UD 517	UD 532
to A1 / A2 230 or 400 V 45 to 65 Hz or by bridge to monitoring input	internally connected to monitored voltage L2 / L3

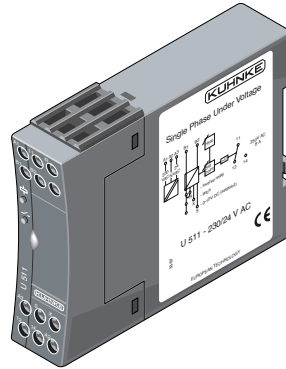
Monitoring Circuit

	UD 517	UD 532
Nominal line voltages	230 / 400 V (N required)	
Nominal line frequency	45 - 65 Hz	47 - 53 Hz
Overload rating	1.2x U_N continuous	
Rated power	3 VA $\cos \varphi \approx 0.7$	
Drop-out	U_{ab} of 1.01 - 1.20 x U_N and 0.80 - 0.99 x U_N adjustable	Nominal voltage selectable between 340 and 460 V. A_s permanently set to 20° Undervoltage adjustable between 0.6 to 0.98 x U_N
Adjustment error	$\leq 3 \%$	
Pull-in	Hysteresis fixed setting at 2 % approx.	fixed setting at 1 % approx.
Memory function	One error	none
Temperature dependence	$\leq 0.05 \%/K$	



Single-phase Current Monitoring Relay I 540 / I 541

- Standard housing, 22.5 mm wide
- Selectable memory function
- Analogue output for setting the switching point
- Test voltage 3750 VAC



Order Code

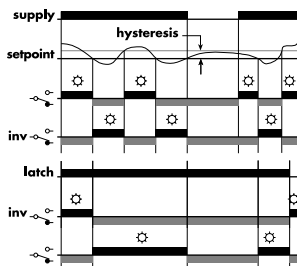
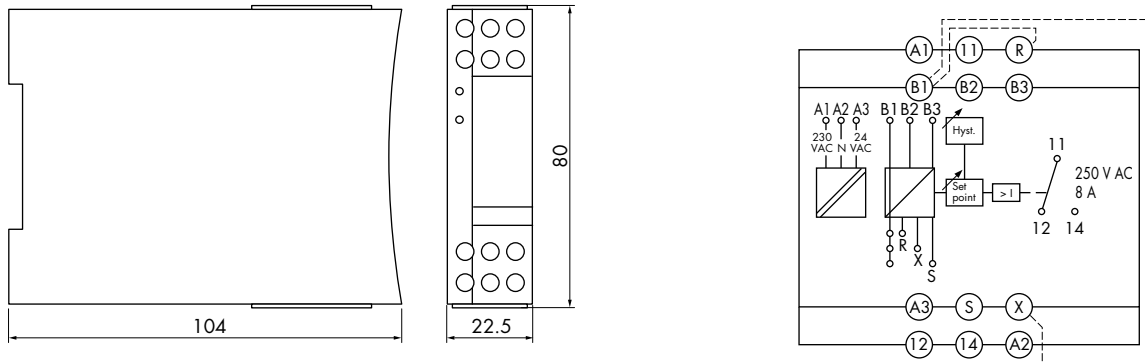
Order code	I	540.	1	-	230 / 24 VAC
Single-phase current					
I	I				
Monitored variable					
540 Undercurrent		540.			
541 Overcurrent		541.			
Contact arrangement					
1 C/O			1		
Supply voltage					
24 VDC					24 VDC
115 / 24 VAC					115 / 24 VAC
230 / 24 VAC					230 / 24 VAC

General Data

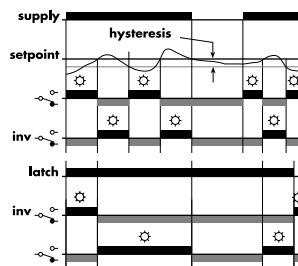
	I 540 / I 541
Display	Green LED "Supply On" Red LED error, relay dropped-out
Insulation group VDE 0110b/2.79	C250
Test voltage	3750 VAC
Terminals	Twin tension relief terminals with head screws metric M3
Terminal torque in accordance with DIN EN 60999	0.5 Nm
Terminal capacity	
solid conductor	2 x 2.5 mm ²
flexible conductor with ferrule	2 x 1.5 mm ²
Operating temperature	-20 °C to +55 °C
Storage temperature	-40 °C to +80 °C
Protection in accordance with DIN 40050	IP 20
Mounting	Rail in accordance with EN50022-35 x 7.5/15
Weight	approx. 180 g



Dimensions, Connection Diagram(s), Functional Diagrams



I 540



I 541

Bridge	Function
B1 - R	Relay inversion
B1 - X	Latch
B1 - S	Setting analogous to 2 - 10 V

Contact Data

	I 540 / I 541
Contact arrangement	1 C/O
Type of contact	Single contact
Contact material	AgNi, gold-plated
Nominal contact current	8 A
Nominal contact voltage	250 VAC / 24 VDC
Max. switching capacity	2000 VA / 100 W

Auxiliary Circuit

Supply voltage	A1 (+) - A2 (-) A3 - A2 (N) A1 - A2 (N) A1 - A2 (N)	24 VDC 24 VAC (45 - 65 Hz) 115 VAC (45 - 65 Hz) 230 VAC (45 - 65 Hz)
Overload rating		1.15 x U _N continuous
Rated power		DC 2 W AC 3 VA

Monitoring Circuit

	I 540	I 541
Monitored current (B1 - B2 - B3) (B1 - B2) (B1 - B3)		4 mA - 2 A DC/AC in 5 ranges, selectable via "Range" 4 - 20 mA, 10 - 50 mA, 40 - 200 mA 0.1 - 0.5 A, 0.4 - 2 A
Input impedance		50 Ω (B1 - B2), 0.1 Ω (B1 - B3)
I max		0.34 A (B1 - B2), 5 A (B1 - B3)
Drop-out	adjustable in chosen range - dropping current	adjustable in chosen range - rising current
Pull-in	0.5 - 20 % of chosen range limit, adjustable above drop-out value	0.5 - 20 % of chosen range limit, adjustable below drop-out value
Temperature dependence		≤ 0.05 %/K
Setting of switching point B1: 0+ on S		2 - 10 V analogous to switching point (drop-out value)
Latch of bridge B1 - x		If the relay drops out after error, reenergizing is only possible after opening the bridge or interrupting the supply voltage.