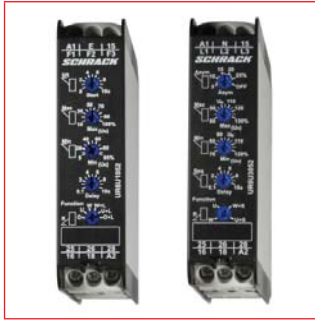


Measuring and Monitoring Relays Series UR6



UR6U



UR6I1052



UR6P3052



UR6R1052



UR6L1052

Schrack-Info

UR6U1052

- Multi-function monitoring relay
- Voltage monitoring for AC and DC in 1-phase networks
- Error memory
- 16.6 to 400 Hz
- 2 CO
- Zoom voltage 24 to 240 V AC/DC
- Component width 22.5 mm
- Industrial type design

UR6U3052

- Multi-function monitoring relay
- Voltage monitoring in 3-phase networks
- Phase sequence and phase failure monitoring
- Phase imbalance monitoring can be activated/deactivated
- Neutral conductor connection optional
- Loss of neutral wire detection
- 2 CO
- Zoom voltage 24 to 240 V AC/DC
- Component width 22.5 mm
- Industrial type design

UR6I1052

- Multi-function monitoring relay
- Current monitoring for AC and DC in 1-phase networks
- Error memory
- 16.6 to 400 Hz
- 2 CO
- Zoom voltage 24 to 240 V AC/DC
- Component width 22.5 mm
- Industrial type design

UR6P3052

- Voltage monitoring in 3-phase networks
- Phase sequence and phase failure monitoring
- Supply voltage = measured voltage
- Reverse voltage detection
- Neutral conductor connection optional
- 2 CO
- Component width 22.5 mm
- Industrial type design

UR6R1052

- Motor winding temperature monitoring
- 2 CO
- Supply voltage 230 V AC
- Connection of external Reset switch possible
- Component width 22.5 mm
- Industrial type design

UR6L1052

- Multi-function monitoring relay
- Filling level monitoring of conductive liquids
- Safe disconnection of measuring circuits
- 2 CO
- Component width 22.5 mm
- Industrial type design

Measuring and Monitoring Relays Series UR6

Technical Data (Part 1)

		UR6U1052	UR6U3052	UR6I1052
INDICATORS	Green LED ON	Indication of supply voltage	-	Indication of supply voltage
	Green LED flashes	Indication of start-up suppression time	-	Indication of start-up suppression time
	Yellow LED ON/OFF	Indication of relay output		
	Red LED ON/OFF	Indication of failure of the corresponding threshold		
	Red LED flashes	Indication of tripping delay of the corresponding threshold		
MECHANICAL DESIGN	Housing	Self-extinguishing plastic housing		
	Degree of protection housing	IP40		
	Mounting	(EN 60715)	DIN-rail TS 35	
	Terminal	(VBG 4, PZ1 required)	Shockproof terminal connection	
	Degree of protection terminal	IP20		
	Mounting position	Any		
	Tightening torque	Max. 1 Nm		
	Terminal capacity	1 x 0.5 to 2.5 mm ² with/without multicore cable end 1 x 4 mm ² without multicore cable end 2 x 0.5 to 1.5 mm ² with/without multicore cable end 2 x 2.5 mm ² flexible without multicore cable end		
	INPUT CIRCUIT	Terminals	A1 - A2 (galvanically separated)	
Supply voltage		24 - 240V AC / DC		
Tolerance		24 to 240 V DC	-20 % to +25 %	
		24 to 240 V AC	-15 % to +10 %	
Rated consumption		4.5 VA (1 W)		
Rated frequency		24 to 240 V AC	48 to 400 Hz	
		48 to 240 V AC	16 to 48 Hz	
Duration of operation		100 %		
Reset time		500 ms		
Wave form for AC		Sinus		
Residual ripple for DC		10 %		
Drop-out voltage		>15% of the supply voltage		
Overvoltage category		(IEC 60664-1)	III	
Rated surge voltage		4 kV		
OUTPUT CIRCUIT		Number of contacts and type	2 potential free CO contacts	
	Rated voltage	AC	250 V~	
	Switching capacity	Distance between the devices is < 5 mm	750 VA (3 A / 250 V~)	
		Distance between the devices is > 5 mm	1250 VA (5 A / 250 V~)	
	Fusing	5 A fast acting		
	Mechanical service life	20 x 10 ⁶ operations		
	Electrical service life	2 x 10 ⁵ operations at 1000VA resistive load		
	Switching frequency	(IEC 60947-5-1)	max. 60 / min at 100 VA resistive load max. 6 / min at 1000 VA resistive load	
	Overvoltage category	(IEC 60664-1)	III	
	Rated surge voltage	4 kV		

Measuring and Monitoring Relays Series UR6

Technical Data (Part 2)

		UR6U1052	UR6U3052	UR6I1052	
MEASURING CIRCUIT	Fusing (UL 508)	Max. 20 A			
	Measured variable	DC or AC Sinus (16.6 to 400 Hz)	AC Sinus (48 to 63 Hz)	DC or AC Sinus (16.6 to 400 Hz)	
	Input	30 V AC/DC Terminals E - F1 (+) 60 V AC/DC Terminals E - F2 (+) 300 V AC/DC Terminals E - F3 (+)	3 (N)~ Terminals (N) L1 - L2 - L3	2 mA AC/DC Terminals K - I1 (+) 1 A AC/DC Terminals K - I2 (+) 5 A AC/DC Terminals K - I3 (+)	
	Overload capacity	30 V AC/DC 100 V _{rms} 60 V AC/DC 150 V _{rms} 300 V AC/DC 440 V _{rms}	3 (N)~ 3 (N)~	20 mA AC/DC 250 mA 1 A AC/DC 3 A 5 A AC/DC 10 A	
	Input resistance	30 V AC/DC 47 Ω 60 V AC/DC 100 Ω 300 V AC/DC 470 Ω	3 (N)~ 1 MΩ	20 mA AC/DC 2.7 Ω 1 A AC/DC 47 mΩ 5 A AC/DC 10 mΩ	
	Switching threshold	Max. Min.	10 % to 100 % of U _N 5 % to 95 % of U _N	-20 % to +30 % of U _N -30 % to +20 % of U _N	10 % to 100 % of I _N 5 % to 95 % of I _N
	Asymmetry		-	5 % to 25 %	-
	Overvoltage category (IEC 60664-1)		III		
	Rated surge voltage		4 kV		
	ACCURACY	Base accuracy	≤ 3 % (of maximum scale value)		
Frequency response		-10 % to 5 % (16.6 to 400 Hz)	-	-10 % to 5 % (16.6 to 400 Hz)	
Adjustment accuracy		≤ 5 % (of maximum scale value)			
Repetition accuracy		≤ 2 %			
Voltage influence		-			
Temperature influence		≤ 0.05 % / °C			
AMBIENT CONDITIONS	Ambient temperature (IEC 60068-1) (UL 508)	-25 °C to +55 °C -25 °C to +40 °C			
	Storage temperature	-25 °C to +70 °C			
	Transport temperature	-25 °C to +70 °C			
	Relative humidity (IEC 721 - 3-3 class 3K3)	15 % to 85 %			
	Pollution degree (IEC 60664-1)	3			
	Vibration resistance (IEC 60068-2-6)	10 to 55 Hz 0.35 mm			
	Shock resistance (IEC 60068-2-27)	15 g 11 ms			

Measuring and Monitoring Relays Series UR6

Technical Data (Part 3)

		UR6P3052	UR6R1052	UR6L1052	
INDICATORS	Green LED ON	Indication of supply voltage			
	Yellow LED ON/OFF	Indication of relay output	-	Indication of relay output	
	Red LED ON/OFF	-	Indication of failure	-	
MECHANICAL DESIGN	Housing	Self-extinguishing plastic housing			
	Degree of protection housing	IP40			
	Mounting (EN 60715)	DIN-rail TS 35			
	Terminal (VBG 4, PZ1 required)	Shockproof terminal connection			
	Degree of protection terminal	IP20			
	Mounting position	Any			
	Tightening torque	Max. 1 Nm			
	Terminal capacity	1 x 0.5 to 2.5 mm ² with/without multicore cable end 1 x 4 mm ² without multicore cable end 2 x 0.5 to 1.5 mm ² with/without multicore cable end 2 x 2.5 mm ² flexible without multicore cable end			
INPUT CIRCUIT	Terminals	(N) L1 - L2 - L3 [= measuring voltage]	A1 - A2 (galvanically separated)	A1 - A2	
	Supply voltage	3 (N)~ 230 / 400 V AC	230 V AC		
	Tolerance	230 V AC 3 (N)~ 230 / 400 V AC	-	-15 % to +15 %	
	Rated consumption		9 VA	2 VA (1.5 W)	
	Rated frequency		50 / 60 Hz		
	Duration of operation		100 %		
	Reset time		500 ms		
	Wave form for AC		-		
	Residual ripple for DC		-		
	Drop-out voltage		> 20 % of the supply voltage	> 15 % of the supply voltage	> 30 % of the supply voltage
	Overvoltage category (IEC 60664-1)		III		
	Rated surge voltage		4 kV		
	OUTPUT CIRCUIT	Number of contacts and type	2 potential free CO contacts		
		Rated voltage	AC	250 V~	
Switching capacity		Distance between the devices is < 5 mm	750 VA (3 A / 250 V~)		
		Distance between the devices is > 5 mm	1250 VA (5 A / 250 V~)		
Fusing		5 A fast acting			
Mechanical service life		20 x 10 ⁶ operations			
Electrical service life		2 x 10 ⁵ operations at 1000 VA resistive load			
Switching frequency (IEC 60947-5-1)		Max. 60 / min at 100 VA resistive load			
		Max. 6 / min at 1000 VA resistive load			
Overvoltage category (IEC 60664-1)			III		
Rated surge voltage		4 kV			

Measuring and Monitoring Relays Series UR6

Technical Data (Part 4)

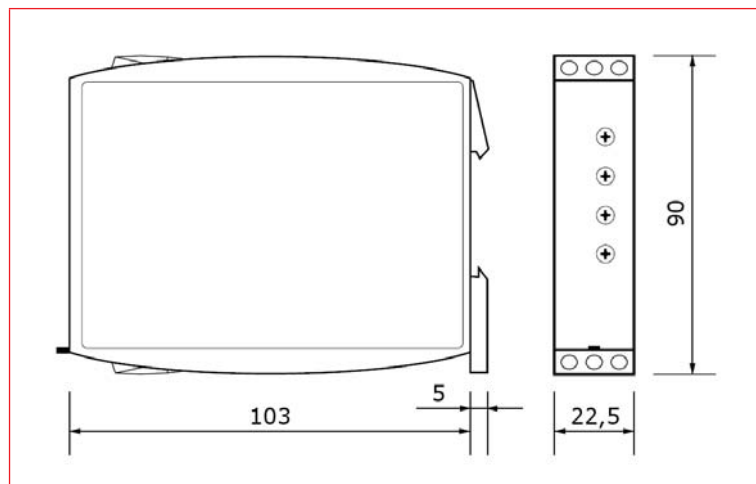
		UR6P3052	UR6R1052	UR6L1052
MEASURING CIRCUIT	Measured variable	AC Sinus (48 to 63 Hz)	-	-
	Input	3 (N)~ 230 / 400 V (N) L1 - L2 - L3	Terminals T1 - T2	Conductive probes E1 - E2 - E3
	Overload capacity	3 (N)~ 230 / 400 V 3(N)~ 264 / 457 V		
	Input resistance	3 (N)~ 230 / 400 V 15 kΩ		
	Asymmetry	Fixed, typ. 30 %		
	Initial resistance		< 1.5 kΩ	
	Response value (Relay in off-position)		> 3.6 kΩ	
	Release value (Relay in on-position)		< 1.8 kΩ	
	Disconnection (Short circuit thermistor)		No	
	Measuring voltage T1-T2 (DIN VDE 0660 part 302)		< 2.5 V DC at R < 4 kΩ	
	Sensitivity			0.25 to 100 kΩ (4 mS to 10 μS)
	Sensor voltage			12 V~
	Sensor current			Max. 7 mA
	Wiring distance (Capacity of cable 100 nF / km)			Max. 1000 m Set value < 50 % Max. 100 m Set value 100 %
	Overvoltage category (IEC 60664-1)		III	
	Rated surge voltage		4 kV	6 kV
CONTROL CONTACT R	Function		External reset key	
	Loadable		No	
	Line length R-T2		Max. 10 m (twisted pair)	
	Control pulse length		-	
	Reset		Potential free NO contact, terminals R - T2	
ACCURACY	Base accuracy		+10 % of maximum scale value	
	Frequency response		-	
	Adjustment accuracy		-	
	Repetition accuracy		< 1 %	
	Voltage influence		< 2.2 %	
	Temperature influence		≤ 0.1 % / °C	
AMBIENT TEMPERATURE	Ambient temperature (IEC 60068-1) (UL 508)		-25 °C to +55 °C -25 °C to +40 °C	
	Storage temperature		-25 °C to +70 °C	
	Transport temperature		-25 °C to +70 °C	
	Relative humidity (IEC 721-3-3 class 3K3)		15 % to 85 %	
	Pollution degree (IEC 60664-1)		3	
	Vibration resistance (IEC 60068-2-6)		10 to 55 Hz 0.35 mm	
	Shock resistance (IEC 60068-2-27)		15 g 11 ms	

Measuring and Monitoring Relays Series UR6

Overview Modes

UR6U1052	AC/DC voltage monitoring in 1-phase mains with adjustable thresholds, timing for start-up suppression and tripping delay separately adjustable as well as the following functions (selectable by means of rotary switch):
	OVER Overvoltage monitoring
	OVER + LATCH Overvoltage monitoring with fault latch
	UNDER Undervoltage monitoring
	UNDER + LATCH Undervoltage monitoring with fault latch
	WIN Monitoring the window between "Min." with "Max."
WIN + LATCH Monitoring the window between "Min." with "Max." with fault latch	
UR6U3052	Voltage monitoring in 3-phase mains with adjustable thresholds, adjustable tripping delay, monitoring of phase sequence and phase failure, monitoring of asymmetry with adjustable threshold as well as the following functions (selectable by means of rotary switch):
	UNDER Undervoltage monitoring
	UNDER + SEQ Undervoltage monitoring and monitoring of phase sequence
	WIN Monitoring the window between "Min." and "Max."
WIN + SEQ Monitoring the window between "Min." and "Max." and monitoring of phase sequence	
UR6I1052	AC/DC current monitoring in 1-phase mains with adjustable thresholds, timing for start-up suppression and tripping delay separately adjustable as well as the following functions (selectable by means of rotary switch):
	OVER Overcurrent monitoring
	OVER + LATCH Overcurrent monitoring with fault latch
	UNDER Undercurrent monitoring
	UNDER + LATCH Undercurrent monitoring with fault latch
	WIN Monitoring the window between "Min." and "Max."
WIN + LATCH Monitoring the window between "Min." and "Max." with fault latch	
UR6P3052	Monitoring of phase sequence, phase failure and detection of return voltage (by means of evaluating the asymmetry)
UR6R1052	Temperature monitoring of the motor winding (max. 6 PTC) with fault latch for temperature probes in accordance with DIN 44081 and test function with integrated test/reset key
UR6L1052	Level monitoring of conductive liquid, timing for tripping delay and turnoff delay separately adjustable as well as the following functions (selectable by means of rotary switch):
	PUMP UP Pump up or minimum monitoring
	PUMP DOWN Pump down or maximum monitoring

Dimensions (mm)

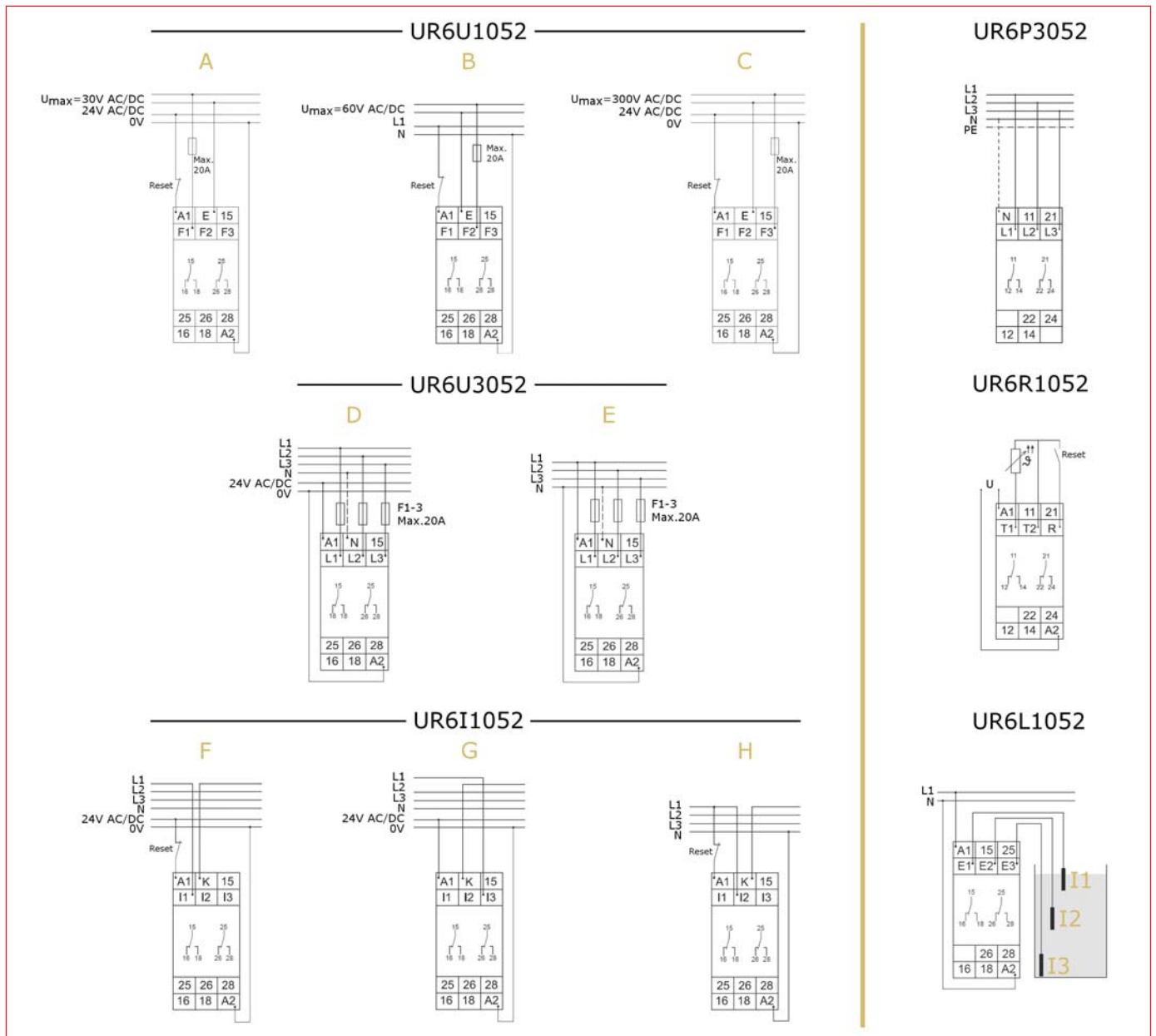


Time Ranges

Article number		Adjustment range	
UR6U1052	Start-up suppression time	0 s	10 s
	Tripping delay	0.1 s	10 s
UR6U3052	Start-up suppression time	-	-
	Tripping delay	0.1 s	10 s
UR6I1052	Start-up suppression time	0 s	10 s
	Tripping delay	0.1 s	10 s
UR6P3052	Start-up suppression time	Fixed, max. 500 ms	
	Tripping delay	Fixed, max. 350 ms	
UR6R1052	Start-up suppression time	-	
	Tripping delay	-	
UR6L1052	Tripping delay (DELAY ON)	0.5 s	10 s
	Turn-off delay (DELAY OFF)	0.5 s	10 s

Measuring and Monitoring Relays Series UR6

Circuit Diagrams Overview



Overview Circuit Diagrams

UR6U1052	
A	Supply voltage 24 V AC / DC Range 30 V and fault latch
B	Supply voltage 230 V AC / DC Range 60 V and fault latch
C	Supply voltage 24 V AC / DC Range 300 V and fault latch

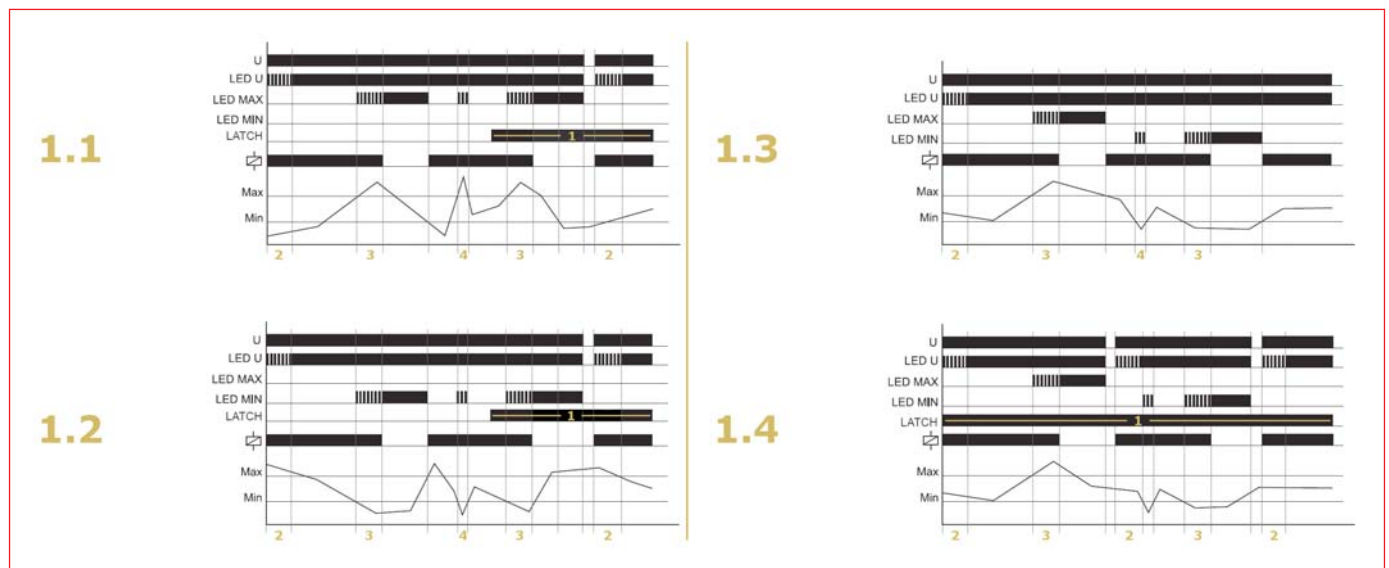
UR6I1052	
F	Supply voltage 24 V AC / DC Range 20 mA and fault latch
G	Supply voltage 24 V AC / DC Range 5 A without fault latch
H	Supply voltage 230 V AC Range 1 A and fault latch

UR6U3052	
D	Supply voltage 24 V AC / DC
E	Supply voltage 230 V AC

UR6L1052	
I1	Probe max.
I2	Probe min.
I3	Mass probe

Measuring and Monitoring Relays Series UR6

UR6U1052 Modes

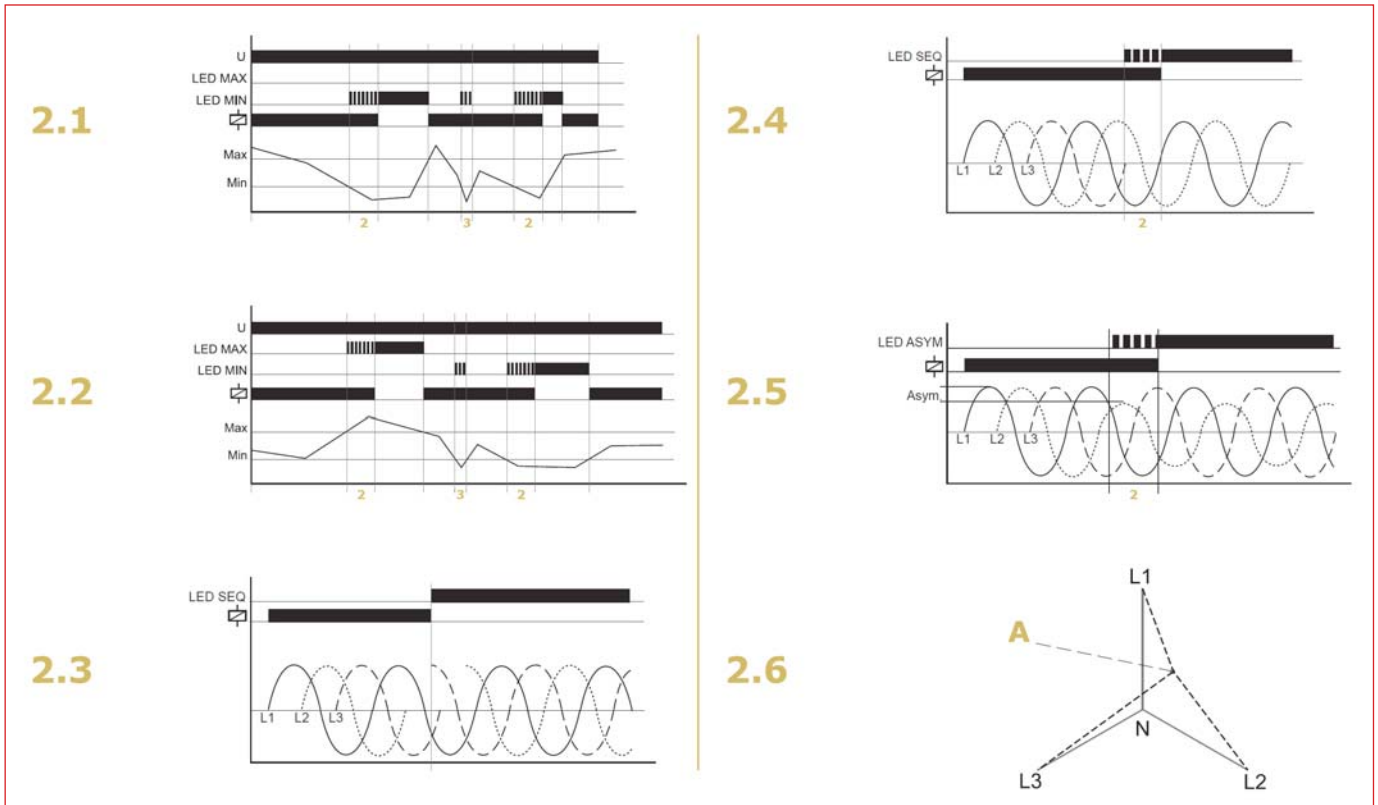


Detailed Description of UR6U1052 Modes

UR6U1052	<p>When the supply voltage U is applied, the output relays switch into on-position (yellow LED illuminated) and the set interval of the start-up suppression (START) begins (green LED U flashes). Changes of the measured voltage during this period do not affect the state of the output relay. After the interval has expired the green LED is illuminated steadily. For all the functions the LEDs "MIN" and "MAX" are flashing alternating, when the minimum value for the measured voltage was chosen to be greater than the maximum value.</p>	
	OVER, OVER + LATCH	<p style="text-align: center;">Overvoltage monitoring</p> <p>When the measured voltage exceeds the value adjusted at the MAX-regulator, the set interval of the tripping delay (DELAY) begins (red LED MAX flashes). After the interval has expired (red LED MAX illuminated), the output relays switch into off-position (yellow LED not illuminated). The output relays again switch into on-position (yellow LED illuminated), when the measured voltage falls below the value adjusted at the MIN-regulator (red LED MAX not illuminated). If the fault latch is activated (OVER+LATCH) and the measured voltage remains above the MAX-value longer than the set interval of the tripping delay, the output relays remain in the off-position even if the measured voltage falls below the value adjusted at the MIN-regulator. After resetting the failure (interrupting and reapplying the supply voltage), the output relays switch into on-position and a new measuring cycle begins with the set interval of the start-up suppression (START).</p>
	UNDER, UNDER + LATCH	<p style="text-align: center;">Undervoltage monitoring</p> <p>When the measured voltage falls below the value adjusted at the MIN-regulator, the set interval of the tripping delay (DELAY) begins (red LED MIN flashes). After the interval has expired (red LED MIN illuminated), the output relays switch into off-position (yellow LED not illuminated). The output relays again switch into on-position (yellow LED illuminated), when the measured voltage exceeds the value adjusted at the MAX-regulator. If the fault latch is activated (UNDER+LATCH) and the measured voltage remains below the MIN-value longer than the set interval of the tripping delay, the output relays remain in the off-position even if the measured voltage exceeds the value adjusted at the MAX-regulator. After resetting the failure (interrupting and re-applying the supply voltage), the output relays switch into on-position and a new measuring cycle begins with the set interval of the start-up suppression (START).</p>
	WIN, WIN+LATCH	<p style="text-align: center;">Window function</p> <p>The output relays switch into on-position (yellow LED illuminated) when the measured voltage exceeds the value adjusted at the MIN-regulator. When the measured voltage exceeds the value adjusted at the MAX-regulator, the set interval of the tripping delay (DELAY) begins (red LED MAX flashes). After the interval has expired (red LED MAX illuminated), the output relays switch into off-position (yellow LED not illuminated). The output relays again switch into on-position (yellow LED illuminated) when the measured voltage falls below the value adjusted at the MAX-regulator (red LED MAX not illuminated). When the measured voltage falls below the value adjusted at the MIN-regulator, the set interval of the tripping delay (DELAY) begins again (red LED MIN flashes). After the interval has expired (red LED MIN illuminated), the output relays switch into off-position (yellow LED not illuminated).</p>
	Diagram	<p>1 Latch activated (Y1-Y2 bridged) 2 Start 3 Delay 4 >Delay</p>

Measuring and Monitoring Relays Series UR6

UR6U3052 Modes

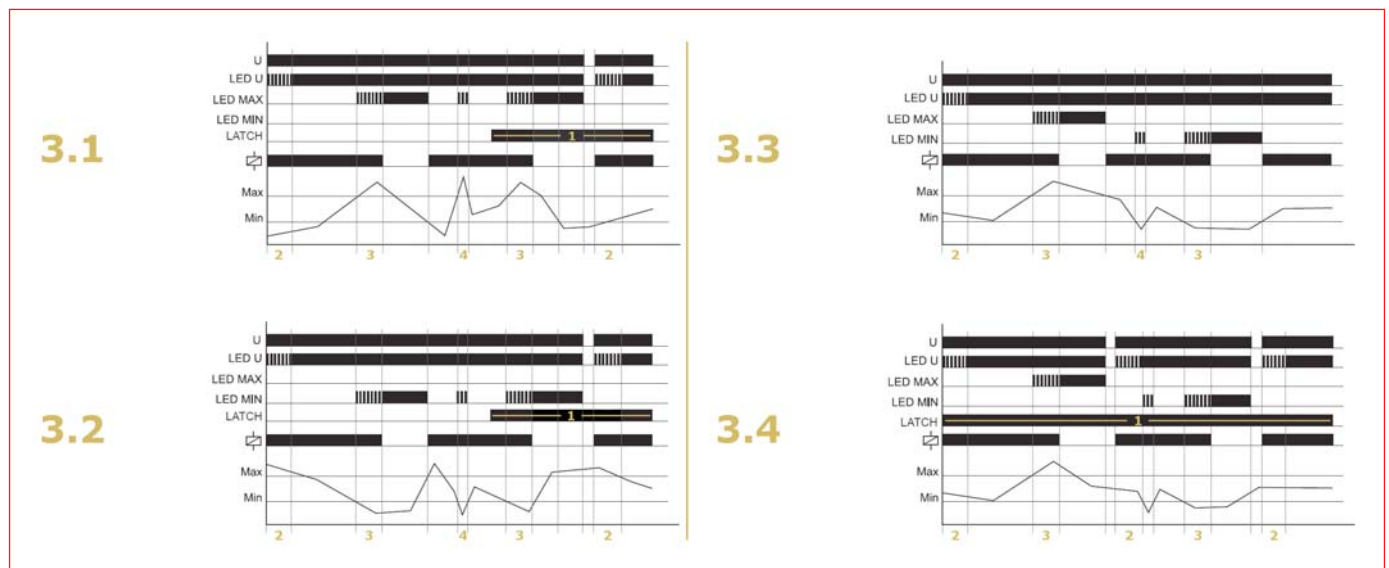


Detailed Description of UR6U3052 Modes

UR6U3052	For all the functions the LEDs MIN and MAX are flashing alternating, when the minimum value for the measured voltage was chosen to be greater than the maximum value. If a failure already exists when the device is activated, the output relays remain in off-position and the LED for the corresponding threshold is illuminated.	
	UNDER, UNDER + SEQ	<p>2.1 Undervoltage monitoring</p> <p>When the measured voltage (mean value of phase-to-phase voltages) falls below the value adjusted at the MIN-regulator, the set interval of the tripping delay (DELAY) begins (red LED MIN flashes). After the interval has expired (red LED MIN illuminated), the output relays switch into off-position (yellow LED not illuminated). The output relays again switch into on-position (yellow LED illuminated), when the measured voltage exceeds the value adjusted at the MAX-regulator.</p>
	WIN, WIN + SEQ	<p>2.2 Window function</p> <p>The output relays switch into on-position (yellow LED illuminated) when the measured voltage (mean value of phase-to-phase voltages) exceeds the value adjusted at the MIN-regulator. When the measured voltage exceeds the value adjusted at the MAX-regulator, the set interval of the tripping delay (DELAY) begins (red LED MAX flashes). After the interval has expired (red LED MAX illuminated), the output relays switch into off-position (yellow LED not illuminated). The output relays again switch into on-position (yellow LED illuminated) when the measured voltage falls below the value adjusted at the MAX-regulator (red LED MAX not illuminated). When the measured voltage falls below the value adjusted at the MIN-regulator, the set interval of the tripping delay (DELAY) begins again (red LED MIN flashes). After the interval has expired (red LED MIN illuminated), the output relays switch into off-position (yellow LED not illuminated).</p>
	SEQ	<p>2.3 Phase sequence monitoring</p> <p>Phase sequence monitoring is selectable for all functions. If a change in phase sequence is detected (red LED SEQ illuminated), the output relays switch into off-position immediately (yellow LED not illuminated).</p>
	SEQ	<p>2.4 Phase failure monitoring</p> <p>If one of the phase voltages fails, the set interval of the tripping delay (DELAY) begins (red LED SEQ flashes). After the interval has expired (red LED SEQ illuminated), the output relays switch into off-position (yellow LED not illuminated). Reverse voltages of a consumer (e.g. a motor which continues to run on two phases only) do not effect the disconnection but can be monitored by using a proper value for the asymmetry.</p>
		<p>2.5 Asymmetry monitoring</p> <p>If the asymmetry of the phase-to-phase voltages exceeds the value set at the ASYM-regulator, the set interval of the tripping delay (DELAY) begins (red LED ASYM flashes). After the interval has expired (red LED ASYM illuminated), the output relays switch into off-position (yellow LED not illuminated). If the neutral wire is connected to the device, the asymmetry of the phase voltages referred to the neutral wire (Y-voltage) is monitored also. In that case both values of the asymmetry are evaluated and if one of the values exceeds the value set at the ASYM-regulator, the set interval of the tripping delay (DELAY) begins (red LED ASYM flashes). After the interval has expired (red LED ASYM illuminated), the output relays switch into off-position (yellow LED not illuminated).</p>
		<p>2.6 Loss of neutral wire by means of evaluation of asymmetry</p> <p>A break of the neutral wire between power line and machinery is detected as soon as asymmetry between phase-to-phase voltage and neutral wire occurs. If the asymmetry exceeds the value set at the ASYM-regulator, the set interval of the tripping delay (DELAY) begins (red LED ASYM flashes). After the interval has expired (red LED ASYM illuminated), the output relays switch into off-position (yellow LED not illuminated). A break of the neutral wire between our device and the machinery can not be detected.</p>
Diagram	<p>A Shift of neutral point (asymmetry) caused by asymmetrical phase loads and missing neutral wire.</p> <p>2 Start</p> <p>3 Delay</p>	

Measuring and Monitoring Relays Series UR6

UR6I1052 Modes

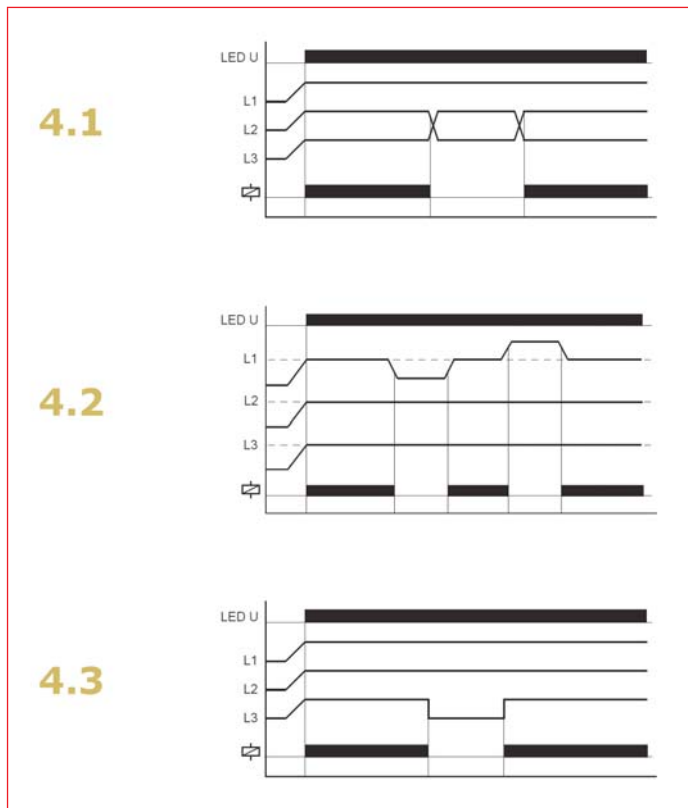


Detailed Description of UR6I1052 Modes

UR6I1052	<p>When the supply voltage U is applied, the output relays switch into on-position (yellow LED illuminated) and the set interval of the startup suppression (START) begins (green LED U flashes). Changes of the measured current during this period do not affect the state of the output relay. After the interval has expired the green LED is illuminated steadily. For all the functions the LEDs "MIN" and "MAX" are flashing alternating, when the minimum value for the measured current was chosen to be greater than the maximum value.</p>	
	OVER, OVER + LATCH	<p style="text-align: center;">Overcurrent monitoring</p> <p>When the measured current exceeds the value adjusted at the MAX-regulator, the set interval of the tripping delay (DELAY) begins (red LED MAX flashes). After the interval has expired (red LED MAX illuminated), the output relays switch into off-position (yellow LED not illuminated). The output relays again switch into on-position (yellow LED illuminated), when the measured current falls below the value adjusted at the MIN-regulator (red LED MAX not illuminated). If the fault latch is activated (OVER+LATCH) and the measured current remains above the MAX-value longer than the set interval of the tripping delay, the output relays remain in the off-position even if the measured current falls below the value adjusted at the MIN-regulator. After resetting the failure (interrupting and reapplying the supply voltage), the output relays switch into on-position and a new measuring cycle begins with the set interval of the start-up suppression (START).</p>
	UNDER, UNDER + LATCH	<p style="text-align: center;">Undercurrent monitoring</p> <p>When the measured current falls below the value adjusted at the MIN-regulator, the set interval of the tripping delay (DELAY) begins (red LED MIN flashes). After the interval has expired (red LED MIN illuminated), the output relays switch into off-position (yellow LED not illuminated). The output relays again switch into on-position (yellow LED illuminated), when the measured current exceeds the value adjusted at the MAX-regulator. If the fault latch is activated (UNDER+LATCH) and the measured current remains below the MIN-value longer than the set interval of the tripping delay, the output relays remain in the off-position even if the measured current exceeds the value adjusted at the MAX-regulator. After resetting the failure (interrupting and reapplying the supply voltage), the output relays switch into on-position and a new measuring cycle begins with the set interval of the start-up suppression (START).</p>
	WIN, WIN + LATCH	<p style="text-align: center;">Window function</p> <p>The output relays switch into on-position (yellow LED illuminated) when the measured current exceeds the value adjusted at the MIN-regulator. When the measured current exceeds the value adjusted at the MAX-regulator, the set interval of the tripping delay (DELAY) begins (red LED MAX flashes). After the interval has expired (red LED MAX illuminated), the output relays switch into off-position (yellow LED not illuminated). The output relays again switch into on-position (yellow LED illuminated) when the measured current falls below the value adjusted at the MAX-regulator (red LED MAX not illuminated). When the measured current falls below the value adjusted at the MIN-regulator, the set interval of the tripping delay (DELAY) begins again (red LED MIN flashes). After the interval has expired (red LED MIN illuminated), the output relays switch into off-position (yellow LED not illuminated).</p>
	Diagram	<p>1 Latch activated 2 Start 3 Delay 4 >Delay</p>

Measuring and Monitoring Relays Series UR6

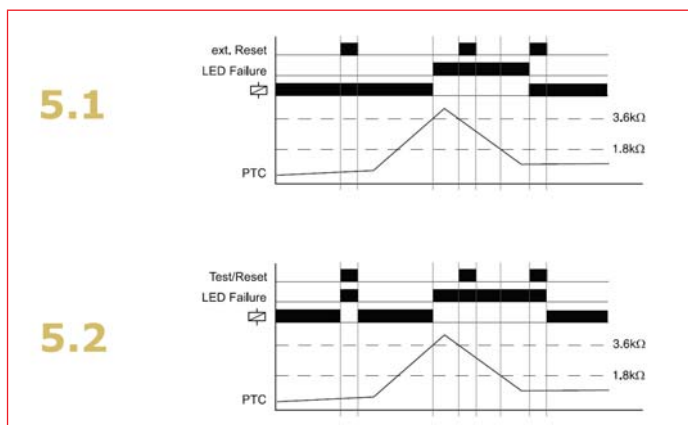
UR6P3052 Modes



Detailed Description of UR6P3052 Modes

UR6P3052	<p>Phase sequence monitoring</p> <p>4.1 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).</p>
	<p>Phase failure monitoring</p> <p>4.2 When one of the three phases fails, the output relays switch into off-position (yellow LED not illuminated).</p>
	<p>Detection of reverse voltage (by means of evaluation of asymmetry)</p> <p>4.3 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.</p>

UR6R1052 Modes



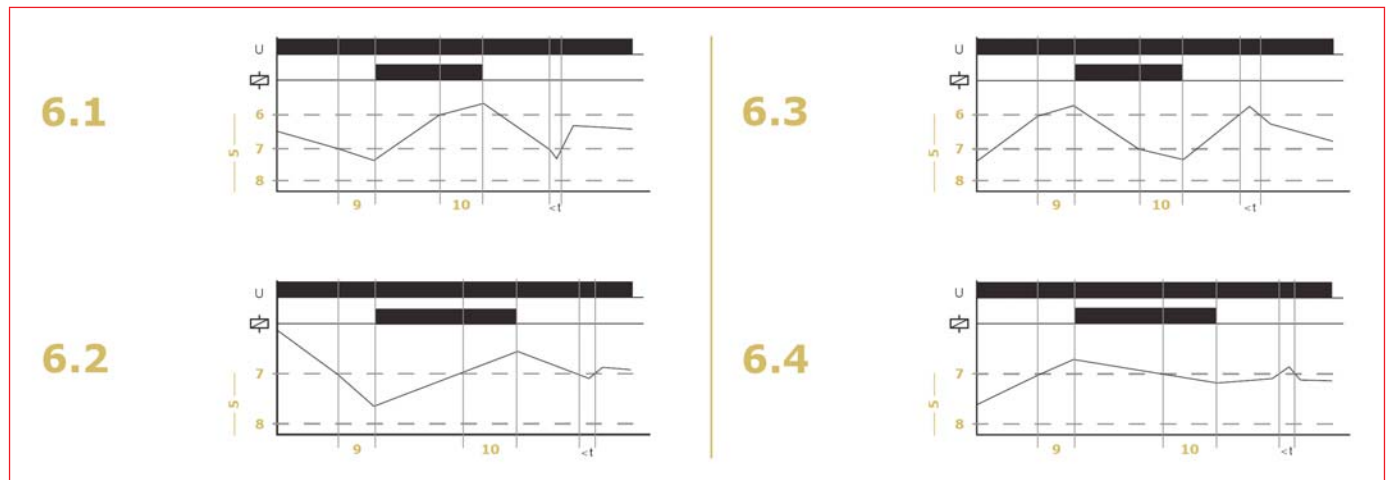
Detailed Description of UR6R1052 Modes

UR6R1052	<p>5.1 If the supply voltage U is applied (green LED illuminated) and the cumulative resistance of the PTC-circuit* is less than 3.6kΩ (standard temperature of the motor), the output relays switch into on-position. Pressing the test/reset key under this conditions forces the output relays to switch into off-position. They remain in this state as long as the test/reset key is pressed and thus the switching function can be checked in case of fault. The test function is not effective using an external reset key. When the cumulative resistance of the PTC-circuit exceeds 3.6kΩ (at least one of the PTCs has reached the cut-off temperature), the output relays switch into off-position (red LED illuminated). The output relays again switch into on-position (red LED not illuminated), if the cumulative resistance drops below 1.8kΩ by cooling down of the PTC and either a reset key (internal or external) was pressed or the supply voltage was disconnected and reapplied.</p>
	<p>5.2</p>

*PTC = Positive Temperature Coefficient







Measuring and Monitoring Relays Series UR6

UR6L1052 Modes



Detailed Description of UR6L1052 Modes

UR6L1052	PUMP UP	6.1	<p>Pump up</p> <p>Connection of the probe rods E1, E2 and E3. Alternatively the electrically conducting container can be connected in lieu of the test probe E3. When the air-fluid level falls below the minimum probe E2 the set interval of tripping delay (Delay ON) begins. After the expiration of the interval, the output relays R switches into on-position (yellow LED illuminated). When the air-fluid level again rises above the maximum probe E1, the set interval of turn-off delay (Delay OFF) begins. After the expiration of the interval the output relays R switches into off-position (yellow LED not illuminated).</p>
	PUMP UP	6.2	<p>Minimum monitoring (Pump up)</p> <p>Connection the probe rods E2 and E3 (bridge E1-E3). Alternatively the electrically conducting container can be connected in lieu of the test probe E3. When the air-fluid level falls below the probe E2 the set interval of tripping delay (Delay ON) begins. After the expiration of the interval, the output relays R switches into on-position (yellow LED illuminated). When the air-fluid level again rises above the probe E2, the set interval of turn-off delay (Delay OFF) begins. After the expiration of the interval the output relays R switches into off-position (yellow LED not illuminated).</p>
	PUMP DOWN	6.3	<p>Pump down</p> <p>Connection of the probe rods E1, E2 and E3. Alternatively the electrically conducting container can be connected in lieu of the test probe E3. When the maximum probe E1 gets moistened the set interval of tripping delay (Delay ON) begins. After the expiration of the interval the output relays R switches into on-position (yellow LED illuminated). When the air-fluid level falls below the minimum probe E2, the set interval of turn-off delay (Delay OFF) begins. After the expiration of the interval, the output relays R switches into off-position (yellow LED not illuminated).</p>
	PUMP DOWN	6.4	<p>Maximum monitoring (Pump down)</p> <p>Connection of probe rods E2 and E3 (bridge E1-E3). Alternatively the electrically conducting container can be connected in lieu of the test probe E3. When the probe E2 gets moistened the set interval of tripping delay (Delay ON) begins. After the expiration of the interval the output relays R switches into on-position (yellow LED illuminated). When the air-fluid level sinks below the probe E2, the set interval of turn-off delay (Delay OFF) begins. After the expiration of the interval the output relays R switches into off-position (yellow LED not illuminated).</p>
	Diagram	5 6 7 8 9 10	Level Probe E1 Probe E2 Probe E3 Delay ON Delay OFF

DESCRIPTION	AVAILABLE	ORDER NO.
Voltage Monitoring Relays		
Voltage monitoring relay, 1 phase, AC/DC, 2 CO		UR6U1052
Voltage monitoring relay, 3 phase, AC/DC, 2 CO		UR6U3052
Current Monitoring Relays		
Current monitoring relay, 1 phase, input 24-240V-AC/DC, 1CO		UR6I1052
Phase Monitoring Relays		
Phase monitoring relay, 3 phase, 2 CO		UR6P3052
Thermistor Monitoring Relays		
Thermistor monitoring relay, 1 phase, 230V-AC, 2 CO		UR6R1052
Level Monitoring Relays		
Level monitoring relay, 1 phase, input 230V-AC/5A, 2 CO		UR6L1052