PELTEC
Timers & Controls

235

237, 239, 264

VOLTAGE MONITORING RELAYS IN 1P – AC/DC

- It is used to monitor the value of alternating or direct voltage in 1-phase circuits.
- Supply voltage from monitored voltage.
- Monitors voltage exceeding the upper voltage level (Umax) and falling below the lower voltage level (Umin) – according to the selected function.
- Smooth adjustment of both voltage levels – the lower level Umin is set in % of the upper level Umax.
- Adjustable time delay (to eliminate short-term voltage drops and spikes).
- Option to select functions with fault state memory (Latch).
- The fault state memory can be reseted by the control input (R).
- Measures true root mean square value of the voltage - TRUE RMS.
- Type HRN-32/2 has an independent output contact for each voltage level.
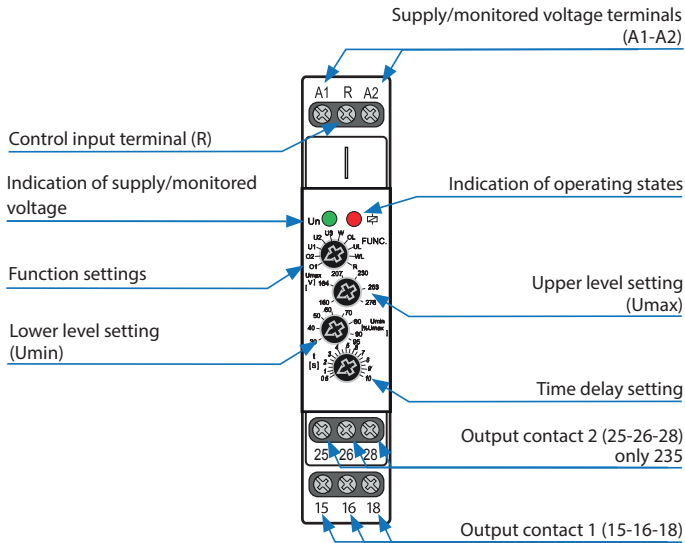- UL approval E352333

TECHNICAL PARAMETERS

SUPPLY & MEASURING

Previous Part Number:	235, 263	237, 267	233	234, 264
Current Part Numbers	235	237	239	264
Supply terminals:	A1-A2	A1-A2	A1-A2	A1-A2
Supply voltage:	AC/DC-48-276V (AC 50-60 Hz)	AC/DC-24-150V (AC 50-60 Hz)	AC/DC-48-276V (AC 50-60 Hz)	DC 6-30V
Consumption (max):	2.7 VA/ 0.65 W	2.5 VA/ 0.55 W	2.5 VA/ 0.55 W	0.35 W
Upper level setting (Umax):	AC/DC 160–276 V	AC/DC 80-150 V	AC/DC 160-276 V	DC 12-30V
Lower level setting (Umin):	30 – 95% Umax	30 – 95% Umax	30 – 95% Umax	50 – 95% Umax
Max. permanent voltage:	AC/DC 276 V	AC/DC 276 V	AC/DC 276 V	DC 36 V
Peak overload (1 s):	AC/DC 290 V	AC/DC 290 V	AC/DC 290 V	DC 48 V
Time delay (d):	300 ms			
Time delay (t):	adjustable, 0.5 – 10 s			

ACCURACY

Setting accuracy (mech.):	5 % – mechanical setting
Repeat accuracy:	< 1 %
Temperature dependance:	< 0.1 % / °C (°F)
Hysteresis (fault to OK):	5 % (functions O1, U1, W) Umax – Umin (functions O2, U2, U3)

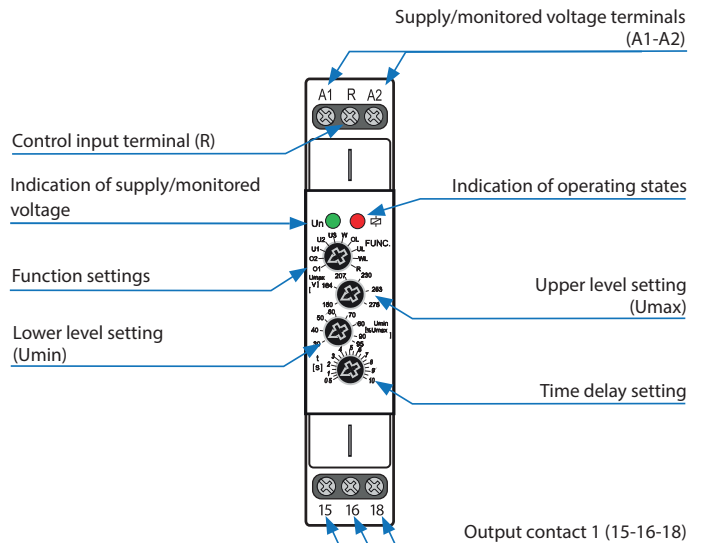### OUTPUT

Contact type:	1× changeover for each level	1× changeover 2× changeover	1× changeover 2× changeover	1× changeover 2× changeover
Contact material:	AgNi			
Current rating:	16 A/AC1			
Breaking capacity:	4000 VA/AC1, 384 W/DC1			
Switching voltage:	250 V AC/24 V DC			
Power dissipation (max.):	1.2 W			
Mechanical life:	10,000,000 ops.			
Electrical life (AC1):	100,000 ops.			

OTHER INFORMATION

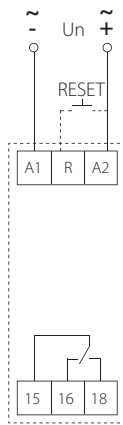| Operating temperature:	–20 .. +55 °C (–4 .. 131 °F)
Storage temperature:	–30 .. +70 °C (–22 .. 158 °F)
Dielectric strength:	AC 4 kV (supply – output)
Operating position:	any
Mounting:	DIN rail EN 60715
Protection degree:	IP40 front panel / IP20 terminals
Overvoltage category:	III.
Pollution degree:	2
Cross-wire section:	Solid (mm2): max. 1× 2.5, 2× 1.5 Stranded w/ ferrule (mm2): max. 1× 2.5 (AWG 14)
Dimensions:	90 × 17.6 × 64mm (3.5” × 0.7” × 2.5”)
Weight:	77g (2.72oz)	60g (2.11 oz)	60g (2.11 oz)	60g (2.11 oz)
Standards:	EN 60255-1, EN 60255-26, EN 60255-27

PELTEC Timers & Controls

Supply/monitored voltage terminals (A1-A2)

Control input terminal (R)

Indication of supply/monitored voltage

Indication of operating states

Function settings

Upper level setting (Umax)

Lower level setting (Umin)

Time delay setting

Output contact 2 (25-26-28) only 235

Output contact 1 (15-16-18)

Supply/monitored voltage terminals (A1-A2)

Control input terminal (R)

Indication of supply/monitored voltage

Indication of operating states

Function settings

Upper level setting (Umax)

Lower level setting (Umin)

Time delay setting

Output contact 1 (15-16-18)

CONNECTION ● ● ●

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OPERATING STATES ● ● ●

OK state	time delay to fault state	fault state	function RESET	OK state

Fault memory reset can be done in three ways:

• Short-term interruption of supply voltage
• Using the control input (R)
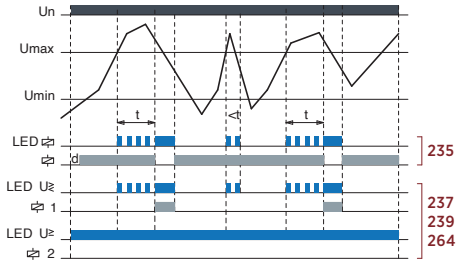• By setting the function switch to position R (RESET) or any function without memory fault.

The RESET state lasts for 3 s after switching the function switch from the R position to a function with a memory fault (UL, OL, WL).

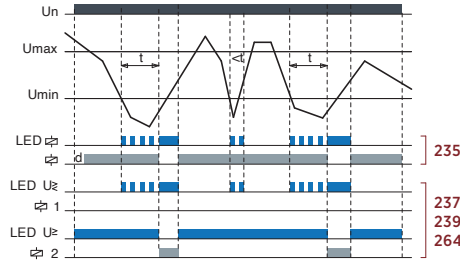When moving to any other function from the R position, this delay does not apply.

Type of load	cos φ ≥ 0.95 AC1	M AC2	M AC3	AC5a uncompensated	AC5a compensated	HAL.230V AC5b	AC6a	AC7b	AC12
mat. contacts AgNi, contact 16A	250V / 16A	250V / 5A	250V /3A	230V / 3A (690VA)	X	800W	X	250V / 3A	250V / 10A

Type of load	AC13	AC14	AC15	DC1	DC3	DC5	DC12	DC13	DC14
mat. contacts AgNi, contact 16A	250V / 6A	250V / 6A	250V / 6A	24V / 16A	24V / 6A	24V / 4A	24V / 16A	24V / 2A	24V / 2A

PELCO COMPONENT TECHNOLOGIES

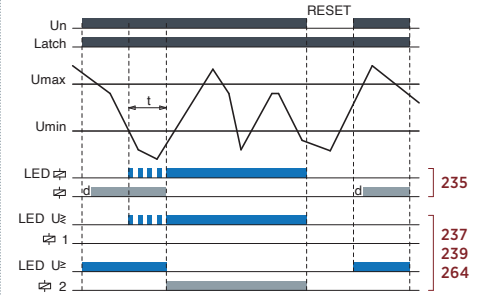# PELTEC Timers & Controls

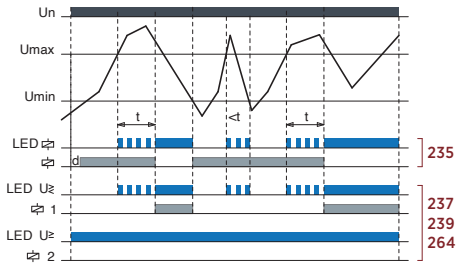## FUNCTION

01 OVER (hysteresis 5%)
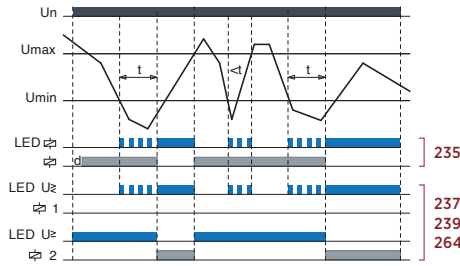

U1 UNDER (hysteresis 5%)
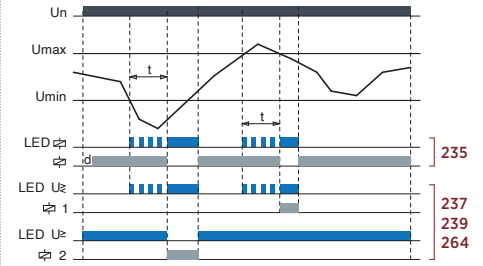

UL UNDER + Latch
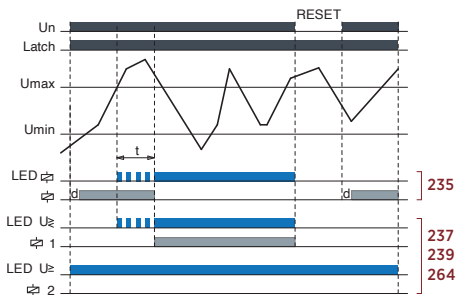

02 OVER (hysteresis to Umin)

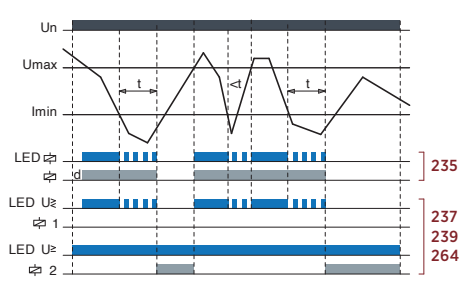### U2 UNDER (hysteresis to Umax)

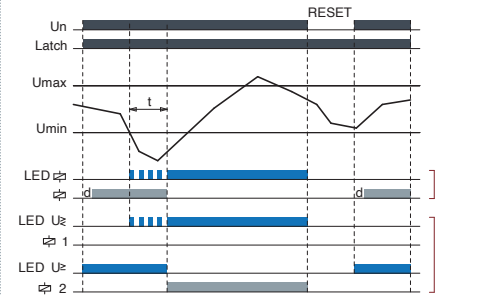### W WINDOW (hysteresis 5%)

OL OVER + Latch

U3 UNDER (hysteresis to Umax)

WL WINDOW + Latch

OVER

If the value of the monitored voltage is lower than the set upper level "Umax", the output contact is closed. If the "Umax" is exceeded, the output contact will opens after the set delay (fault state).

If the voltage falls below the fixed hysteresis (O1 function) or the set lower level "Umin" (O2 function), the output contact will closes again.

If the OL function (OVER + Latch) is selected, when the upper voltage level "Umax" is exceeded, the output contact remains open even when the voltage returns from the fault state.

UNDER

If the value of the monitored voltage is higher than the set lower level "Umin", the output contact is closed. When the voltage drops below the "Umin", output contact opens after the set delay (fault state).

If the voltage exceeds the fixed hysteresis (function U1) or the set upper level "Umax" (function U2, U3), the output contact closes again.

If the UL function (UNDER + Latch) is selected, when the voltage drops below the lower level "Umin", the output contact remains open even when returning from the fault state. Fault memory reset can be done as in the previous case.

OVER

If the value of the monitored voltage is lower than upper level "Umax" and at the same time higher than lower level "Umin", the output contact in closed. If the "Umax" is exceeded or drops below the "Umin", output contact opens after the set delay (fault state).

To return from the fault state, a fixed hysteresis is applied.

If the WL function (WINDOW + Latch) is selected, the fault state is again stored in memory and output contact stays open, even when returning from the fault state. Fault memory reset can be done as in the previous cases.

PELCO COMPONENT TECHNOLOGIES