

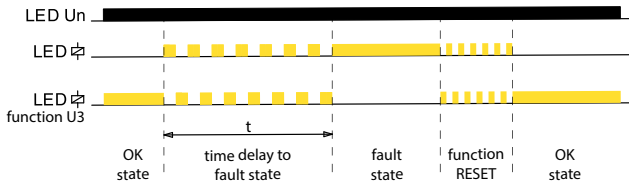


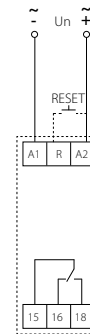
**Voltage monitoring relay HRN-31, HRN-32, HRN-36**

Type	$I_n$ [A]	Voltage range	Code No.		
HRN-31	16	AC/DC 48 – 276 V	002471450	82	1/10
HRN-36	16	DC 6 – 30 V	002471451	95	1/10
HRN-32/2	16	AC/DC 48 – 276 V	002471452	103	1/10

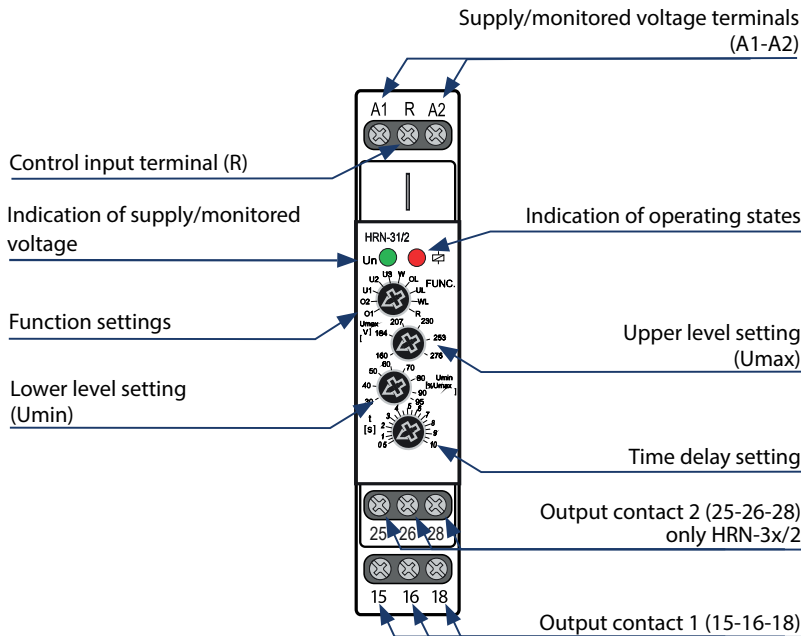
**Functions**



**Connection**

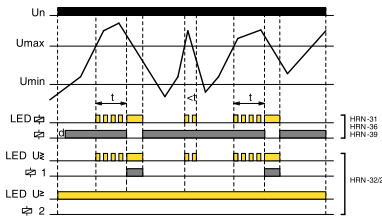


**Description**

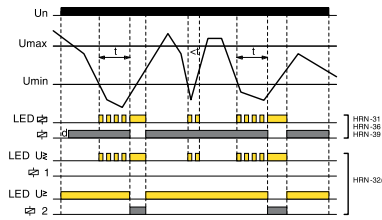


Function description

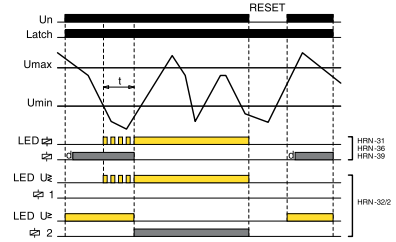
**O1 OVER (hysteresis 5%)**



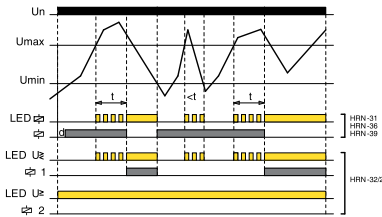
**U1 UNDER (hysteresis 5%)**



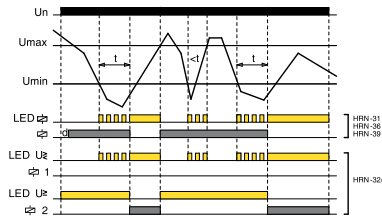
**UL UNDER + Latch**



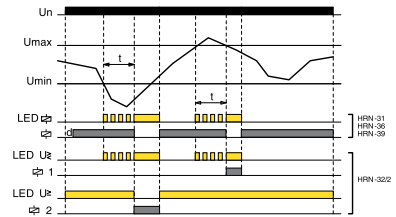
**O2 OVER (hysteresis to Umin)**



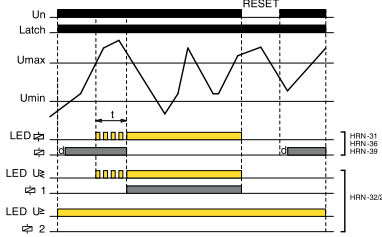
**U2 UNDER (hysteresis to Umax)**



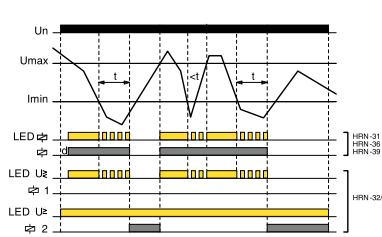
**W WINDOW (hysteresis 5%)**



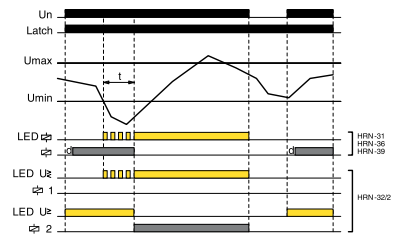
**OL OVER + Latch**



**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.

**Fault memory reset can be done in two 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.

**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.

**WINDOW:**

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.