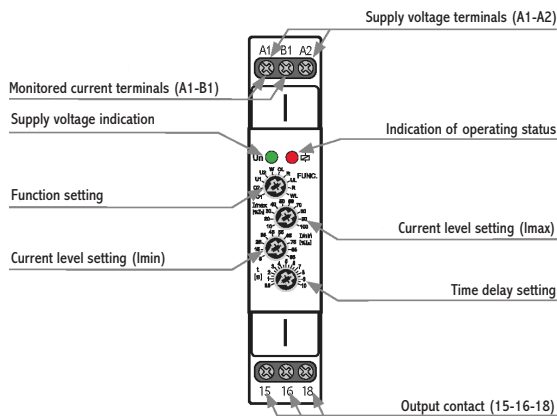




## Multifunction AC Current Monitoring Relay

- **Over Current, Under Current, and Window Monitoring**
- **Universal Supply Voltage**
- **Slim, Space-saving Design**
- **DIN Rail Mount**
- **Automatic and Manual Resets**
- It is used to monitor the value of alternating current, e.g.: motors, heating cables, lamps and other devices.
- Power supply and monitoring circuits are not galvanically isolated.
- Monitors current exceeding the upper current limit (Imax) and falling below the lower current limit (Imin) – according to the selected function.
- Smooth adjustment of both current limits.
- Adjustable time delay (to eliminate short-term current spikes).
- Option to select functions with fault state memory (Latch).
- Measures true root mean square value of the current - TRUE RMS.
- Possibility to extend the current range using an external current transformer.

### DESCRIPTION



### ORDERING INFORMATION

PART NO.	DESCRIPTION
CMU100USD2	2A DIN rail mounted Multifunction Current Monitoring Relay
CMU100USD5	5A DIN rail mounted Multifunction Current Monitoring Relay

### SPECIFICATIONS

#### SUPPLY

<b>SUPPLY TERMINALS</b>	A1 - A2
<b>VOLTAGE RANGE</b>	AC/DC 24-240V (AC 50-60 Hz)
<b>POWER INPUT (MAX)</b>	3.8VA/0.7W
<b>SUPPLY VOLTAGE TOLERANCE</b>	-15%; +10%

#### MEASURING CIRCUIT

<b>CURRENT RANGE</b>	CMU100USD2   In - 2A CMU100USD5   In - 5A (AC 50-60Hz)
<b>MAX CONTINUOUS CURRENT OVERLOAD</b>	CMU100USD2   4A CMU100USD5   10A
<b>PEAK OVERLOAD (1s)</b>	CMU100USD2   10A CMU100USD5   16A

<b>CURRENT SETTING (Imax)</b>	10 - 100% In
<b>CURRENT SETTING (Imin)</b>	5 - 95% In
<b>TIME DELAY (d)</b>	300ms
<b>TIME DELAY (t)</b>	Adjustable, 0.5-10s

#### ACCURACY

<b>SETTING ACCURACY (MECH)</b>	5%
<b>REPEATABLE ACCURACY</b>	<1%
<b>TEMPERATURE DEPENDENCY</b>	<0.1%/°C
<b>LIMIT VALUES TOLERANCE</b>	5%
<b>HYSTERESIS (FAULT TO OK)</b>	5% (function O1, U1, W) Imax - Imin (function O2, U2)

#### OUTPUT

<b>NUMBER OF CONTACTS</b>	1
<b>CONTACT FORM</b>	SPDT
<b>CURRENT RATING</b>	
<b>OUTPUT (55°C)</b>	13A/AC1 or 13A General Purpose at 250VAC
<b>OUTPUT (40°C)</b>	Pilot Duty B300
<b>OUTPUT (40°C, N/O ONLY)</b>	1HP at 240VAC, 1/2HP at 120VAC

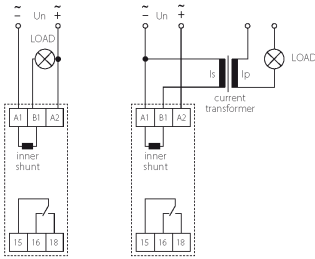
<b>BREAKING CAPACITY</b>	4000VA/AC1, 384W/DC1
<b>SWITCHING VOLTAGE</b>	250VAC / 24VDC
<b>POWER DISSIPATION (MAX)</b>	1.2W
<b>MECHANICAL LIFE</b>	10,000,000 ops.
<b>ELECTRICAL LIFE (AC1)</b>	100,000 ops.

#### OTHER INFORMATION

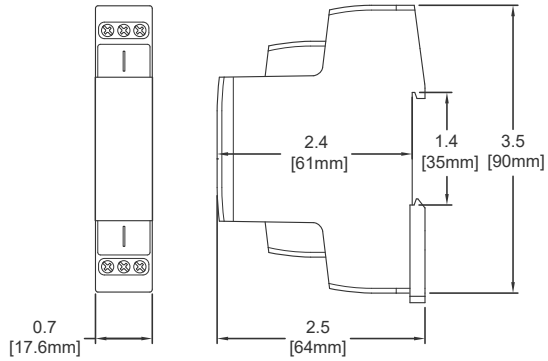
<b>OPERATING TEMPERATURE</b>	-20 to +55°C (-4°F to 131°F)
<b>STORAGE TEMPERATURE</b>	-30 to +70°C (-22°F to 158°F)
<b>OPERATING POSITION</b>	Any
<b>DIELECTRIC STRENGTH</b>	4kV AC (supply - output)
<b>MOUNTING</b>	DIN rail EN 60715
<b>PROTECTION DEGREE</b>	IP40 front panel / IP20 terminals
<b>OVERVOLTAGE CATEGORY</b>	III
<b>POLLUTION DEGREE</b>	2

<b>MAX CABLE SIZE (MM²)</b>	solid wire max. 1x 2.5 or 2 x 1.5 with sleeve max. 1 x 2.5 (AWG 14)
<b>DIMENSIONS</b>	90 x 17.6 x 64mm 3.5" x 0.7" x 2.5"
<b>WEIGHT</b>	60g (2.15oz)
<b>STANDARDS</b>	EN 60255-1, EN60255-26, EN60255-27

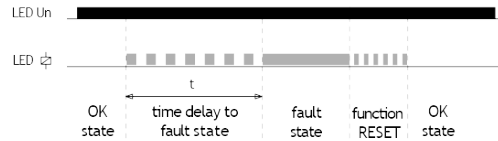
## TERMINAL CONNECTIONS



## DIMENSIONS

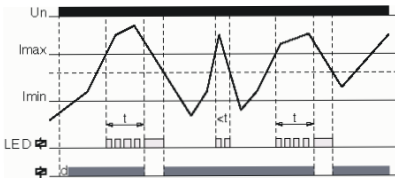


## INDICATION OF OPERATING STATES

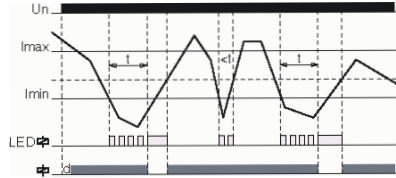


## FUNCTIONS

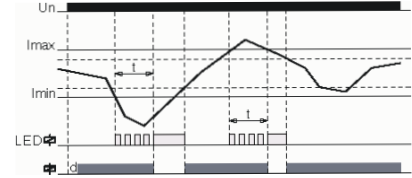
### 01. OVER (hysteresis 5%)



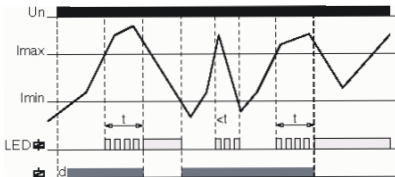
### U1. UNDER (hysteresis 5%)



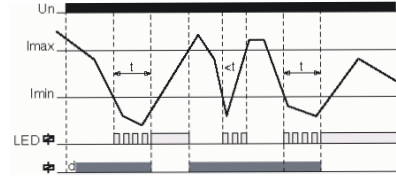
### W. WINDOW (hysteresis 5%)



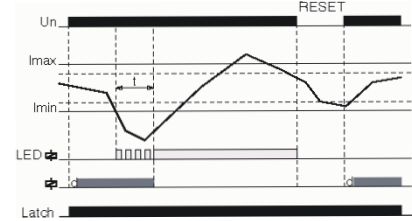
### 02. OVER (hysteresis to Imin)



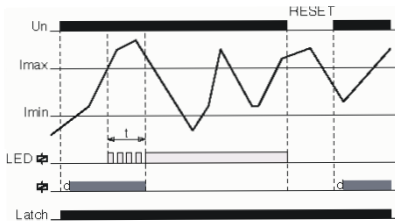
### U2. UNDER (hysteresis to Imin)



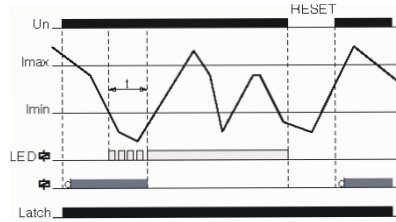
### WL. WINDOW + Latch



### OL. OVER + Latch



### UL. UNDER + Latch



### Graphs Legend:

t = time delay to fault state  
d = delay 0.3s after connecting power supply (Un)

### OVER:

- If the amount of the monitored current is lower than the set limit  $I_{max}$  the output contact is closed. If the  $I_{max}$  is exceeded, the output contact will open after the set delay (fault state).
- If the current falls below the fixed hysteresis (function O1) or the set lower limit (function O2), the output contact will close again.
- If the OL function (OVER + Latch) is selected, when the current  $I_{max}$  is exceeded, the output contact remains open even when the current returns from the fault state.

### Fault memory reset can be done in two ways:

- Short-term interruption of supply voltage.
- 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 memory fault (UL, OL, WL).

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

### UNDER:

- If the amount of the monitored current is higher than the set limit  $I_{min}$  the output contact is closed. When the current drops below the  $I_{min}$ , output contact opens after the set delay (fault state).
- If the current exceeds the fixed hysteresis (function U1) or the set upper limit (function U2), the output contact closes again.
- If the UL function (UNDER + Latch) is selected, when the current drops below  $I_{min}$ , 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 amount of the monitored current is lower than  $I_{max}$  and at the same time higher than  $I_{min}$ , the output contact is closed. If the  $I_{max}$  is exceeded or drops below the  $I_{min}$ , 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 stored in memory again even when returning from the fault state.

Fault memory reset can be done as in the previous cases.