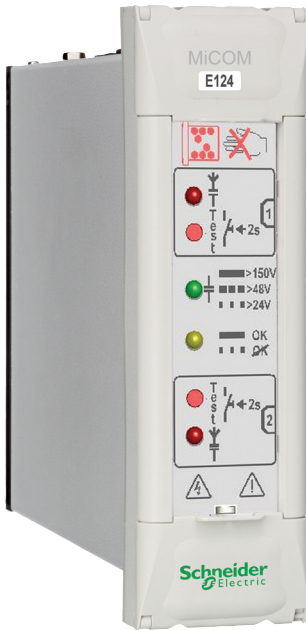


MiCOM E124

Capacitor Trip Unit



The capacitor trip unit MiCOM E124 is an auxiliary device typically used to provide energy to the trip coil of a circuit breaker in distribution systems.

The trip unit can be used in all cases where a battery or a charger would otherwise be necessary to trip the circuit breaker. Such is the case in substations where there is no auxiliary supply, and where protective relays draw their auxiliary power from current and voltage transformer circuits.

In other cases where auxiliary supply is not secured or reliable, MiCOM E124 can also be used to power up a protection relay or any equipment during a voltage dip or an interruption of supply to prevent the device from resetting/rebooting.

APPLICATION

- Provide energy to a trip coil (300V / 118J)
- Power equipments during voltage dips

KEY FEATURES

- Power supply back up to avoid voltage dips
- Extended autonomy (over 8 days without recharge)
- Connection in parallel possible to command powerfull trip coil which needs more than 59J
- Two independent capacitor banks, monitored by a microprocessor to guarantee two consecutive trips at maximum power (300V / 59J) without recharge
- Complete set of test LEDs and discharge buttons to indicate load status
- Self discharge when withdrawn from it case
- Quick charging duration (< 1min under 300V)



CUSTOMER BENEFITS

- No need to use batteries
- Maintenance free device
- Easy mounting/replacement thanks to its compact and withdrawable module
- Extended temperature range (-25°C, +55°C) makes it adequate for use in unheated/refrigerated substations
- Improve voltage loss withstand

GENERAL FEATURES

Technical features	MiCOM E124
Input voltage range	<ul style="list-style-type: none"> • 48 - 230 Vac • 48 - 250 Vdc
Frequency	50/60Hz
Output voltage	<ul style="list-style-type: none"> • Application 1: output voltage = 300Vdc / 118J • Application 2: output voltage = same as input voltage (but in DC)
Capacitance	Two capacitor banks of 1320 μ F each
Self-discharge time	After 100h, still has 150V for tripping use
Output power available	118J (2x59J)
Output impedance (per capacitor bank)	10 Ω
Charging time Warning : First charging duration = 24h	<ul style="list-style-type: none"> • <30s to reach 150V (when powered at 230V) • <1min to full charge (reach 300V), when powered at 230V
Power consumption to charge capacitors (under 100V)	<5 VA or 2.5W
Power consumption when capacitors are charged (under 100V)	<1.5 VA or 0.25 W
Operating temperature range	-25°C to +55°C
Temperature storage at	-25°C to +70°C
Self discharged duration (when withdrawn from the case)	< 1 ms
Testing capabilities	4 LEDs + 2 buttons for test/discharge
Weight	1,34 Kg
Mounting	Flush or rack mounting

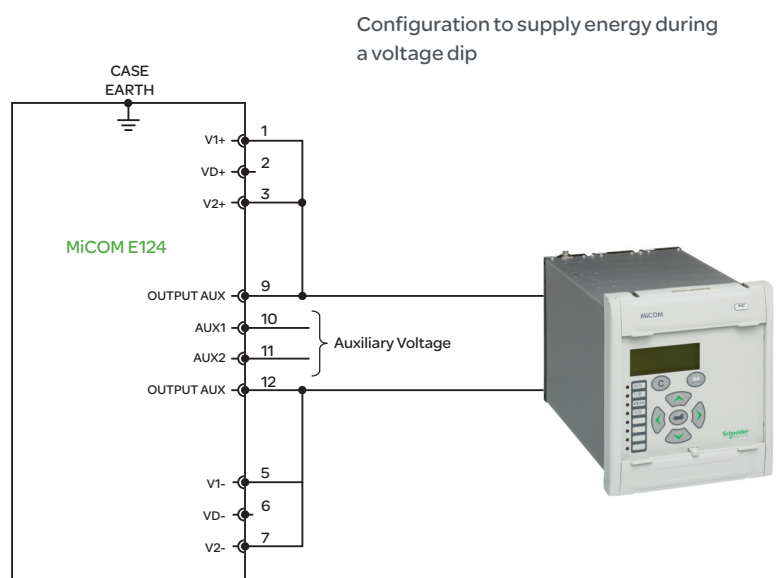
FUNCTIONS

Power Supply of a DC External Device

MiCOM E124 can be used to supply power to an external device from an auxiliary AC/DC supply (in case of voltage dips) or from a voltage transformer (VT) connected on the busbar. In normal operation, the relay uses a voltage provided by an AC/DC auxiliary supply or is self powered via a current transformer (CT) or voltage transformer (VT).

If there is a short term loss of the auxiliary supply voltage or a supply voltage dip, the two banks of internal capacitor banks will provide stable voltage to the relays. This duration depends on the power consumption of the relays and on the auxiliary voltage level.

Connection to power an external relay



Provide Energy to a Trip Coil

MiCOM E124 contains two capacitor banks which operate independently of each other. Having two independent banks of capacitors allows multiple applications:

- Energize two different trip coils with only one E124
- Allow two consecutive trips of a trip coil
- Energize a powerful trip coil

Provide Energy to 2 Independents Trip Coils

MiCOM E124 can be used to provide energy to two independents trip coils (for two protection relays).

Each capacitor bank will be dedicated to one trip coil (300V / 59J).

Allow Two Consecutive Trips on the Same Trip Coil

The switch from one capacitor bank to the other is monitored by a microprocessor. This feature enables two consecutive trips at maximum power (300V / 59J) without having to recharge (Multiple trips of lower voltage and lower energy).

The trip contact of the protective relay is serially connected to the external trip coil. At the end of a first trip, an internal bi-stable relay automatically switches from the first bank of capacitors to the other. It is thus possible to get two successive trips without recharging of the capacitor banks (without power supply).

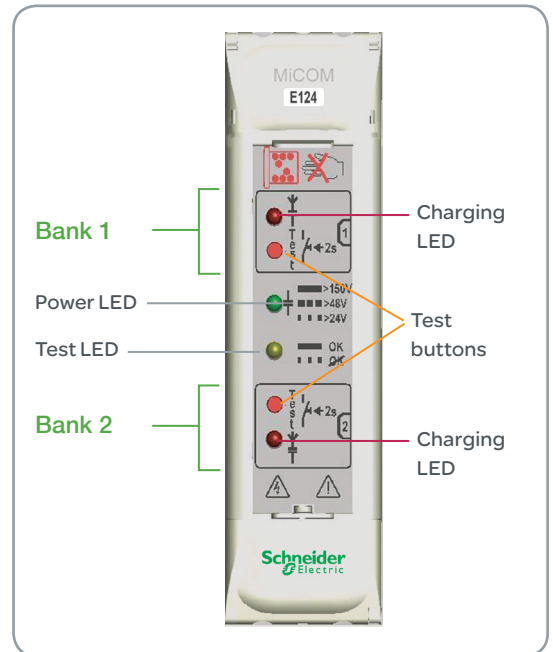
Provide Energy to a Unique Powerful Trip Coil

MiCOM E124 can be used to provide energy to a unique powerful trip coil by connecting the two banks of capacitor in parallel. As the capacitor storage is doubled, a heavier duty circuit breaker can be tripped (118J / 300V).

USER INTERFACE (HMI)

MiCOM E124 front panel has a basic Human Machine Interface (HMI) to help the user, based on LEDs and test button switches. LEDs are used to identify the current status of the product.

The state of the capacitor banks can be verified by using the test buttons. When the test button is held pressed for 2 seconds, a yellow LED will indicate if the capacitors are healthy or not. Pressing test button 30 seconds will discharged the capacitor bank.



HARDWARE & CASE

MiCOM E124 has a 4U draw out metal case. It can be flush-mounted in switchboard or panel or rackmounted.

For safety reason, the capacitor banks are automatically self discharged when the module is withdrawn from its case. The unique voltage range from 48-250Vac/dc has been developed to offer more flexibility to the user.

WIRING

External connections are made via a 12 way terminal block. Recommended wire size 1 mm² to 2.5 mm².



Extended autonomy
(over 8 days without recharge)

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