

Current and Voltage Controls

1-Phase AC Over Current (with CT)

Type EIL

CARLO GAVAZZI



- AC over current (open circuit) metering relay for standard and CG current transformers
- 3-position rotary switch for selection of measuring range
- Applicable current transformers:
CG CT: MI 5/MI 500 or
Standard CT: ...A/1 AMP, .../5 AMP
- Adjustable limit on relative scale
- Adjustable time function (0.1-10 s)
- Adjustable hysteresis
- Programmable latching at set level
- Output: 5 A SPDT
- For mounting on DIN-rail in accordance with DIN/EN 50 022
- 22.5 mm Euronorm housing
- LED-indication for relay and power supply ON
- Galvanically separated power supply

Product Description

EIL operates together with an externally connected single or 3-phase AC current transformer. Often used to prevent e.g. heating elements or mo-

tors from exceeding a certain set limit by keeping the output relay energized by means of the built-in programmable latch function.

Ordering Key

EIL C 230

Housing _____
Function _____
Type _____
Output _____
Power supply _____

Type Selection

Mounting	Output	Current Transformer	Supply: 24 VAC	Supply: 115 VAC	Supply: 230 VAC
For DIN-rail	SPDT	MI... or Standard CT.	EIL C 024	EIL C 115	EIL C 230

Input Specifications

Input		MI... transformer standard CT transformer	
Through terminals Y1 & Y2			
Through terminals Y1 & Y3			
Measuring ranges		Internal resist.	Max. input
Rotary	1: MI...	10 kΩ	6 V _p
Switch	2: 0.1 - 1A AC	0.05 Ω	6 A
Position	3: 0.5 - 5A AC	0.05 Ω	6 A
		peak 30 A for 10 s	
Latching		Interconnection of terminals Z1 & Z2 Latching at set level	

Output Specifications

Output	SPDT relay
Rated insulation voltage	250 VAC (contact/elect.,)
Contact ratings (AgCdO)	
Resistive loads	AC 1 5 A, 250 VAC
	DC 1 5 A, 24 VDC
Small inductive loads	AC 15 2 A, 250 VAC
	DC 13 3 A, 24 VDC
Mechanical life	≥ 40 x 10 ⁶ operations
Electrical life	≥ 10 ⁵ operations (at max. load)
Operating frequency	≤ 7200 operations/h
Dielectric strength	
Dielectric voltage	2 kVAC (rms)
Rated impulse withstand volt.	4 kV (1.2/50 μs)

Supply Specifications

Power supply	Overvoltage cat. III (IEC 60664) (IEC 60038)
Rated operational voltage	24 VAC $\pm 15\%$, 45 to 65 Hz
Through pins A1 & A2	024 115 VAC $\pm 15\%$, 45 to 65 Hz
	115 230 VAC $\pm 15\%$, 45 to 65 Hz
	230 ≤ 40 ms
Voltage interruption	≥ 2 kVAC (rms)
Dielectric voltage	≥ 2 kVAC (rms)
Rated impulse withstand voltage	4 kV (1.2/50 μ s)
Rated operational power	1.5 VA

General Specifications

Power ON delay	< 2 s
Power OFF delay	> 200 ms
Reaction time	$\tau < 200$ ms worst case reaction time may be up to $5 \times \tau$. Adjustable delay on operate built-in (0.1-10 s).
Accuracy	
Input	$\pm 10\%$ (AC @ 50 Hz)
ON delay	10 s, -1/+3 s on max. < 0.1 s on min.
Temperature drift	$\leq 0.2\%/^{\circ}\text{C}$ ($\leq 0.11\%/^{\circ}\text{F}$)
Indication for	
Power supply ON	LED, green
Output ON	LED, yellow
Environment	
Degree of protection	IP 20
Pollution degree	3
Operating temperature	-20° to $+50^{\circ}\text{C}$ (-4° to $+122^{\circ}\text{F}$)
Storage temperature	-50° to $+85^{\circ}\text{C}$ (-58° to $+185^{\circ}\text{F}$)
Weight	140 g
Screw terminals	
Tightening torque	Max. 0.5 Nm acc. to IEC 60947
Approvals	UL, CSA

Mode of Operation

EIL measures AC current through an external Carlo Gavazzi MI... current transformer or a standard 1 A/5 A current transformer. The scale is calibrated to rms value.

Example 1
(no connection between terminals Z1 & Z2)

The relay operates when the measured value exceeds the set level for more than the set delay-time.

The relay releases when the measured value drops min. 5% below the set level (see hysteresis) or when power supply is interrupted.

Example 2
(connection between terminals Z1 & Z2)

The relay operates and latches in operating position when the measured value exceeds the set level for more than the set delay-time.

Provided that the measured value has dropped min. 5% below the set point (see hysteresis), the relay will release when the interconnection be-

tween terminals Z1 & Z2 is interrupted, or power supply is interrupted.

If the measured value is above the set level when power supply is applied, the relay will operate immediately with no time delay.

The yellow LED is flashing until the time delay has expired, or until the measured value drops below the fixed hysteresis (5%) again.

Range/Level/Time Setting

Upper knob:
Setting of current range on rotary switch.

Centre knob:
Level setting on relative scale.

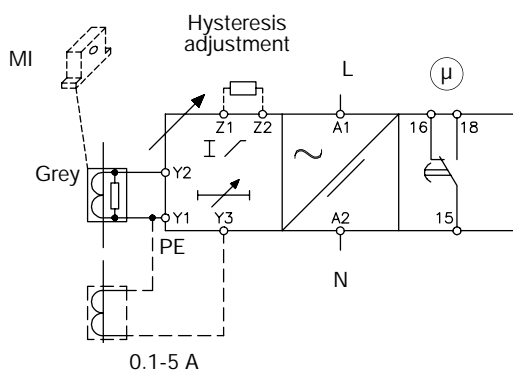
Lower knob:
Setting of ON delay on absolute scale (0.1-10 s).

Hysteresis
Normally 5%. The hysteresis can be extended by inserting a resistor between terminals Z1 & Z2.

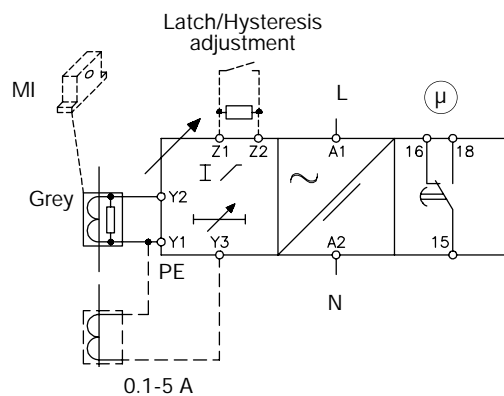
Approx.
10%: 39 k Ω
25%: 12 k Ω
50%: 4.7 k Ω
75%: 2.2 k Ω
Latch: 500 Ω

Wiring Diagrams

Example 1



Example 2



Operation Diagrams

