



The CEF relay is a time-delay make-or-break relay with order emission (CEF4) or order suppression (CEF4MU), build with an printed-circuit board, with time delay settings from 0.1 second to 4 hours, in four timing ranges.

For each timing range, the CEF relay is adjustable by a factor of 80 via:

- a potentiometer: linear variation from 1 to 10,
- a switch: multiplication coefficient of 1 or 8.

It can be used with either a direct current or alternating current power supply.

The CEF relays offer the following advantages:

- compact size,
- precision and reliability,
- wide settings for each timing range, allowing a range from 0.1 seconds to 4 hours,
- time delay setting that is virtually insensitive to voltage and temperature variations within the defined limits,
- · ease of adjustment and readability,
- immunity to HF disturbances,
- effective isolation between the supply circuit, contacts and earth.





CEF4 - CEF4MU

DESCRIPTION

CEF relays, housed in 45 x 45 type D F enclosures (refer to the F enclosure brochure) are available in the following configurations:

- surface mounting, fixed with rear terminals for clip-on or solder connection,
- surface mounting, plug-in on F10 or F20 sockets

The relays consist of:

CEF4:

- 2 relays, A and B type AX with 2 changeover contacts,
- 1 printed-circuit board equipped with:
 - a hybrid circuit,
 - various components (filtering),
 - a calibration trimmer.

- a potentiometer (R) for adjusting the timing, accessible from the front of the relay,
- a capacitor (C), the timing element of the counting base,
- a switch (K) for selecting the multiplier

CEF4MU:

In addition to the components of the CEF4 :

• 1 printed circuit board containing the various components that ensure the time delay control in the event of a power failure.

For both types of relays, the alternating current supply is provided through a built-in rectifier (up to 127 V).

SPECIALIZED RELAYS

CEF4MU2 - A time-delay relay with command suppression, characterized by an auxiliary DC or AC power source that is completely independent of the command source (which must be DC or rectified two-way AC only).

CEF40 - A time-delay relay designed for command emission, housed in a shorter casing than the CEF4 relay. It is available only with fixed protruding

rear connectors and no cover, intended for installation in our assemblies. Power supply is exclusively DC.

NOTE :

When powered with DC, these relays are polarized. They are protected in case of polarity reversal, but they remain in their resting state.



CEF4 - CEF4MU



1. 1. Nominal timing (rating)	1	1 s 10 s 10 min			n	30 min			
• Adjustment range $K = I$ k = 8	0.8 t	0.8 to 8 s 8 to 80 s 8 to 80 min 24 to 240 min							
2. Conventional error (1)	±2%	±2%							
	• ±10	• ±10 ms fluctuation depending on voltage (output relay)							
2. 0:	• ±20	±20 ms fluctuation with AC power supply							
3. Display accuracy	±5% (ex	±5% (expect for 1's rating at the beginning of the range)							
4. Recovery time ⁽²⁾	40 to 60	40 to 60 ms							
5. DC operation	24	40	60 72 110		171	_			
Operating voltage range - volts	19 - 26	48	18 -	48 - 66 58 -		88 - 121	1 100 - 137		220 ⁽⁴⁾ 176 - 242
	17 20	50 55			50 00	00 12			170 242
6. AC operation									
Nominal voltage Nv - volts (3)	24	48	58			110	12	7	220 (4)
	20 - 27	41 - 53	49 -	19 - 64 85 - 1		93 - 12	108 -	108 - 140 187	
7. Nominal power consumption at Un in w or VA	pc	owered of						powered on	
CEE4 CEE4MU	16 (aft	U 16 (after time delay)			7.7				
8. Relay Class (NFC 45- 250)	I - (1 in	L - (1 in DC							
	I - C2 in	I - C2 in AC							
9. Current carrying capacity	Continuo	Continuous operation: 5 A							
10. Breaking capacity		DC DC AC							
	Resistive circui		it L/R		circuit = 40 ms		0	$\cos \varphi = 0.4$	
	24 V 4 A	125 V 22 0.5 A 0.	20 V 2 A	24 V 4 A	125 V 0.3 A	220 V 0.1 A	24 V 4 A	127 N 4 A	220 V 4 A
11. Contact operating time at Nv - DC operation		PULL-IN DRC			DROP-0	OP-OFF			
	n.o co make	n.o contact		n.c contact break time		n.o contact		n.c contact make	
Instantaneous contacts CEF4 CFF4MU	15	15 ms		7 ms		6 ms		18 ms	
Delay contacts CEF4	15 ms		7 ms			50 ms		60 ms	
CEF4MU	21	ms	1	- 3 ms		5 ms -		17	ms -
12. Operating temperature	-5 to +4	-5 to +40°C							
13. Maximum operating temperature	-10 to +	-10 to +55°C							
14. Climatic protection	Accordin	According to IEC 60068-1 publication (category 25 / 070 / 10)							
15. Industrial atmoshphere protection	Accordin	According to NFC-20-010 standard (IP 521 category)							
16. Dielectric test	2,000 V	2,000 V 50 Hz / 1 min across terminals and ground							
17. Weight	CEF4: 24	CEF4: 240 g - CEF4MU: 260 g							

⁽¹⁾ The conventional value is defined as the average of ten measurements for the same adjustment point. The conventional error is the percentage ratio of the extreme values obtained based on influence quantities, to the conventional value.

The influence quantities are:

- variations in supply voltage (reference value: Un),
- ambient temperature: -5 to +40°C (reference value: 20°C).

⁽²⁾ Time required for the timing system to return to its resting state after an operation and ensure a new timing cycle with the guaranteed indicated conventional error.

⁽³⁾ Contact us for other supply voltage options.

 $^{\scriptscriptstyle (4)}$ For CEF4MU or MU2, only available without instantaneous contact.

FUNCTIONAL DIAGRAMS

Schematic: front view - de-energised position



IMPORTANT NOTE: When powered by alternating current, the control contact must supply only the CEF4MU relay, excluding any other load.

Ο



Delayed closing upon command emission. Instant opening upon command suppression.

Time delay adjustment



The time delay is defined by the adjustment value of the potentiometer (0.1 to 1) multiplied by the switch coefficient (1 or 8) multiplied by the relay range (1 s - 10 s - 10 min. - 30 min).

Instant closing upon command emission. Delayed

opening upon command suppression.

Example: the time delay of the CEF4 relay shown here is set to: $0.3 \times 8 \times 10 \text{ s} = 24 \text{ s}$.

Information required when ordering

Type: CEF4 - CEF4MU- CEF4MU2.

Time delay: nominal value of the relay in seconds or minutes.

Power supply: in volts, direct or alternating current at 50 Hz (for CEF4MU2, specify both voltages). Mounting :

Relay fixed (C) or plug -in (BR).
Socket type F10 front rear

Socket	type F10	front rear terminals (AV) or tag terminals (AVC).
		rear screw terminals (AR) or single-tag terminals (ARC).
	type F20	Rear twin-tag terminals (ARC).

Accessories: bracket, plug-in guard...





The specifications and drawings given are subject to change and are not binding unless confirmed by our specialists.