ICE

PROTECTIONS

& CONTRÔLE

COMMANDE

Time-Lag Relays Static

CEF 50

Réf. :
CEF 50
CEF 50 MU
CEF 50 MU2
CEF 50 P

CEF 50 (pick-up) and CEF 50MU (drop-out) relays are electronic all-or-nothing time-lag relays.

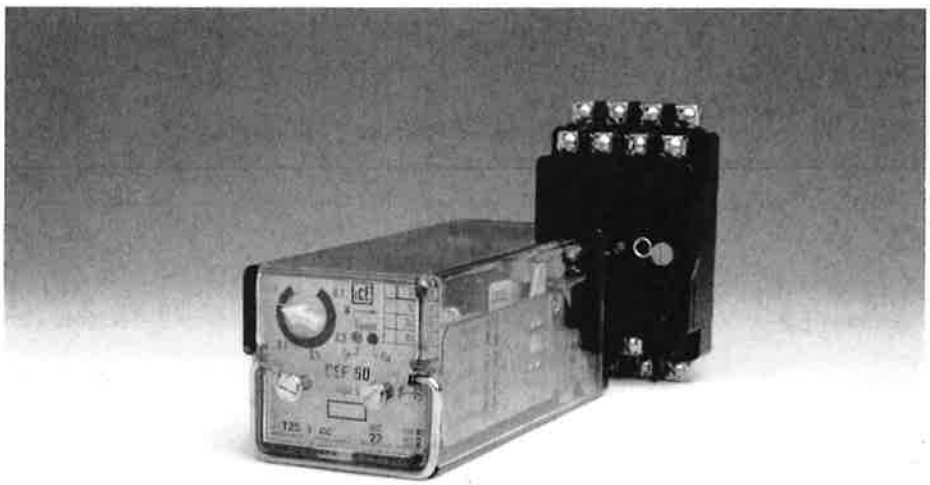
The CEF 50MU2 provides the option of having the control source independent of the auxiliary source, thereby enabling the sources to be of a different type and rating.

A further option provides an adjustable passing contact (CEF 50P) which can also be used as a pulse extender.

These relays are available for either DC or AC supply, in the range 24-220V, and are interchangeable with the CEF4 and CEF5 models.

CEF 50 relays have the following advantages :

- Compact size
- Reliability
- Wide setting range for each time-delay rating
- Time-delay virtually immune to voltage and temperature variations within the specified limits
- Immunity to HF disturbances
- Effective isolation between the supply circuit, contacts and earth.



CEF 50.

INDUSTRIELLE DE CONTRÔLE
ET D'ÉQUIPEMENT

50, avenue Daumesnil
F-75102 Paris France
Tél. : 33 (1) 44 73 76 00
Fax : 33 (1) 44 73 76 01
Télex : Icelec 670819 F

Time-Lag Re

Description

The CEF 50 relay is mounted in an D type "F" enclosure, with frontal dimensions of 45 x 45 (see enclosure F data sheet).

The casing is fitted with a removable dust-proof transparent cover and plugs onto the socket base with front or rear screw or clip terminals.

The front terminal sockets are suitable for panel mounting (maximum thickness 6 mm) or on a DIN profile.

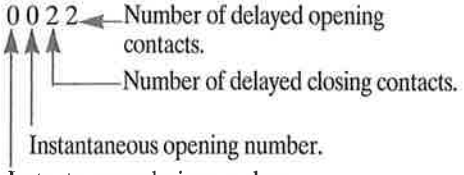
The rear terminal sockets can be mounted on our F 400 or F 800 rails designed respectively to accommodate 7 or 13 sockets.

A P 11901 bracket is supplied for 90° mounting.

The CEF 50 relay comprises :

- Two type AX relays with two changeover contacts;
- a printed circuit incorporating the timing and setting elements;
- a second printed circuit incorporating adapter elements for relays with AC supply and for CEF 50MU and MU2 relays.

The number and type of contacts vary depending on the model (see diagrams).

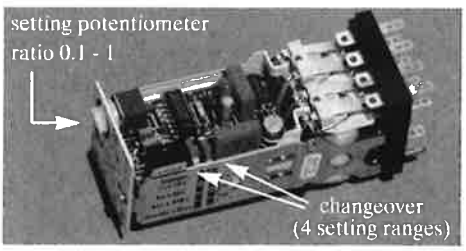


	Number and nature of contacts			
	0022	0044	2122	2222
CEF 50		X		X
50P		X		X
50MU			X	
50MU2	X			

Time-Delay

The time-delay is generated by an oscillator of which the pulse frequency is determined by an "RC" circuit. The resistance R of this circuit is a potentiometer accessible from the front of the relay, providing an adjustment ratio of 0.1 to 1.

A "counter" IC records the pulses and energizes a power transistor to conduct when the pre-set number of pulses is reached. This selection is made via a combination of two changeover contacts on the printed circuit, giving four setting ranges (see below).



Time-Delay Adjustment

Only the time-delay corresponding to the relay rating is calibrated and graduated. The other graduations are given for information only.

A delay set at position 1 (see position programming diagram at the bottom of this page) is multiplied by :

- 1 in position 1
- 4 in position 2
- 32 in position 3
- 256 in position 4

To set a time-delay longer than the rating, it is necessary to :

- identify the position which allows this value (1 to 4);
- divide the desired delay in seconds by the multiplication factor for the selected position;
- set the quotient obtained at position 1;
- then move to the chosen position.

Example :

To set a 5 mn time-lag on a relay rated at 20 s :

- 5mn (300 s) is a position 3 (64-640 s) which has a multiplication factor of 32;
- the quotient of 300 s by 32 is 9.375 s, rounded up to 9.4 s;
- set 9.4 s at position 1;
- move to position 3 to obtain 300 s.

Relay Status Indication

2 LEDs (yellow and red), front-mounted provide a visual indication of the relay's status :

- the yellow LED lights when the relay is excited (i. e. when order = 1 on the timing diagram on page 3);
- the red LED lights on activation of the time or passing contacts (i. e. when contact = 1 on the timing diagram on page 3).

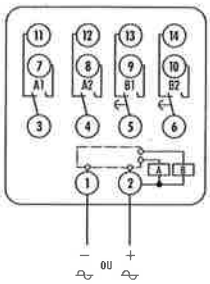
	Multiplication factor	RATING 0,12 s (25 s max)	RATING 20 s (85 mn max)	RATING 10 mn (42 h max)
position 1	1	setting *: 0.012 to 0.12 s	setting : 2 to 20 s	setting : 1 to 10 mn
position 2	4	setting : 0.04 to 0.4 s	setting : 8 to 80 s	setting : 4 to 40 mn
position 3	32	setting : 0.32 to 3.2 s	setting : 64 to 640 s	setting : 32 to 320 mn
position 4	256	setting : 2.56 to 25.6 s	setting : 512 to 5120 s	setting : 256 to 2560 mn

* minimum indication : Response time 40ms.

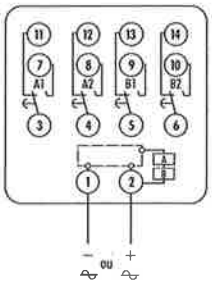
Diagrams : Relays Shown Front View - Deenergized Position

CEF 50

2222

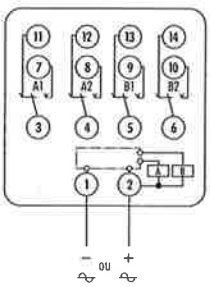


0044

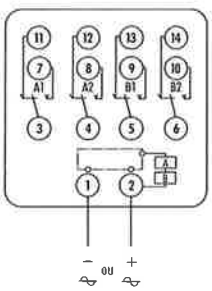


CEF 50P

2222

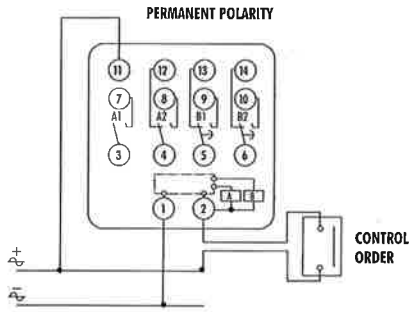


0044



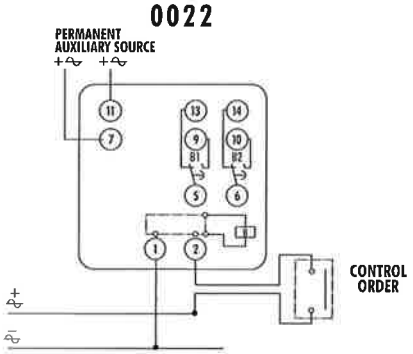
CEF 50MU*

2122

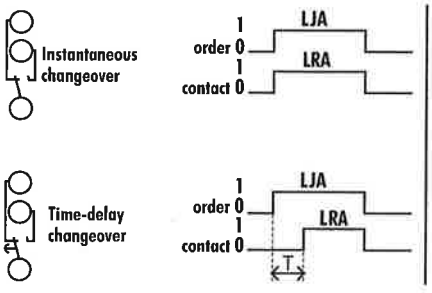


CEF 50MU2*

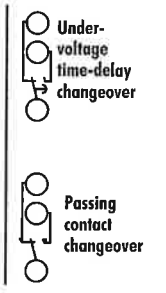
0022



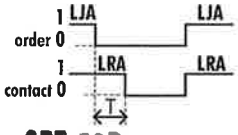
CEF 50



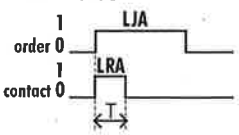
Legend



CEF 50MU/MU2



CEF 50P

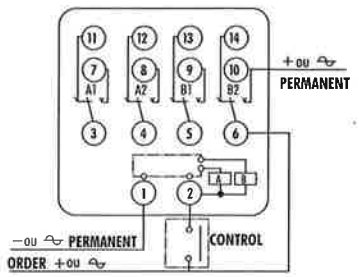


LJA = Yellow LED lit

LRA = Red LED lit

Use of CEF 50P as a pulse extender

0044



Technical Data

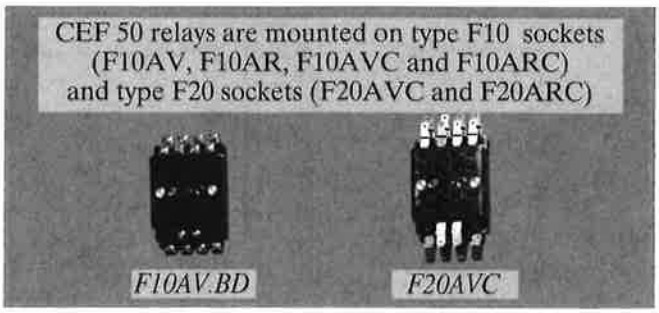
Supply	• Direct current (DC)							
	Un (1) (V)	24	48	60	72	110	125	220 (2)
	Operating range (V)	19-26	38-53	48-66	58-80	88-121	100-137	176-242
	• Alternating current (AC) 50Hz or 60Hz							
	Un (1) (V)	24	48	58	100	110	127	220 (2)
	Operating range (V)	20-27	41-53	49-64	85-110	93-121	108-140	187-242
	• Nominal consumption at Un in VA	De-energized		During Time-Delay		End of Time-Delay		
	0044	0		0.35		2.6		
	2222	0		1.5		2.6		
Output Contacts	• Limit current	• Continuous service 5 A						
		DC Resistive Circuit			DC L/R circuit= 40 ms			AC cos φ = 0,4		
	Breaking capacity	24 V 4 A	125 V 0.5A	220 V 0.2 A	24 V 4 A	125 V 0.3 A	220 V 0.1 A	24 V 4 A	127 V 4 A	220 V 4 A
Response Time	• Response time (DC)	PULL-IN				DROP-OFF			
		Make n.c. contact		Break n.c. contact		Break n.c. contact		Make n.c. contact	
	Instantaneous contacts	20 ms		10 ms		10 ms		20 ms	
	Delay contacts					10 ms		20 ms	
	• Recovery time (3)	• 30 ms							
Accuracy	• Indication accuracy (graduated point)	• ± 5 %							
	• Conventional error (4)	• ± 2 % (from 100 ms)							
Environment	• Operating temperature	• – 5 to + 40 °C							
	• Limit operating temperature	• – 10 to + 55 °C							
	• Dielectric test	• 2000 V 50 Hz 1 mn across terminals and earth							
	• Surge test	• 5 kV 1.2/50 μs common and differential mode							
	• Climatic protection	• IEC-68-1 (Category 25/070/10)							
	• Industrial environment protection	• NFC-20-010 (Category IP 521)							
	• Relay class	• NFC-45-250 I-C1 (DC version) NFC-45-250 I-C2 (AC version)							
Installation	• Operation position	• Any							
	• Weight (without socket)	• ± 250 g							

(1) Please enquire for details of other supply voltages.

(2) 220 V DC or 220 V 50 Hz for CEF 50 and CEF 50MU2 only.

(3) Time required for the timer system to revert to its rest condition following an operation, ensuring that the next time delay is implemented within the specified conventional error.

(4) The conventional value is defined by taking the average of ten measurements for one setting point. Conventional error is the quotient in % of the extreme values obtained in relation to the influencing parameters by the conventional value.
The influencing parameters are : • supply voltage variations (reference value : Un),
• ambient temperature : – 5 to + 40 °C (reference value : 20 °C).



Document Ref. : F1211440