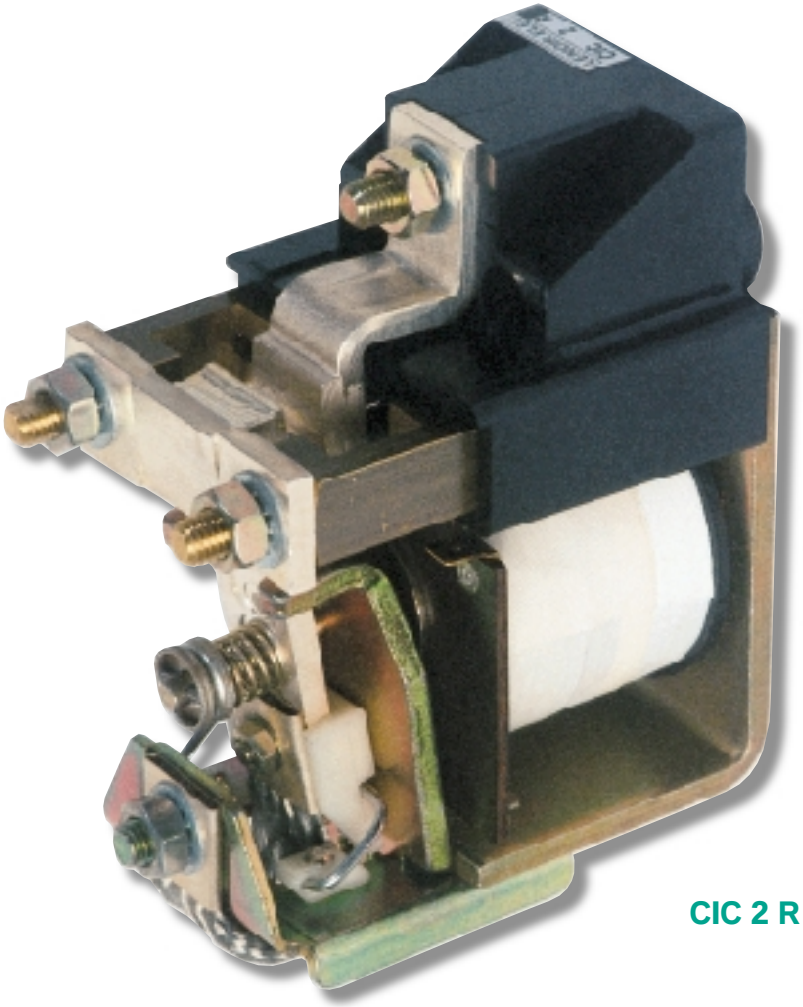
CIC 1 - 2 DC contactors

Contactors for electrical trolleys CIC :

CIC 1D,
CIC 1R,
CIC 1DS,
CIC 1RS,
CIC 2D,
CIC 2R,
CIC 2DS,
CIC 2RS.



CIC 2 R

CIC DC contactors:

- Connecting points that allow a full connection (poles and coil) on the front, making easier the installation of the equipments on the trolley.
- An easy access to all the parts subject to replacement, all located on the front.

They are also equipped with:

- A moving element on blades eliminating premature wear and jamming which allows use of the contactors in cold chamber, without risk of icing the coil core.
- A moving contact control device providing intentional sliding of “NO” and “NC” contacts which increases the reliability of the contactor when the current passes (self-cleaning) and reduces rebounds (reduced risk of welding on closing).

2 versions of CIC contactors are available:

- contactor version = 1 NO contact,
- reverser version = 1 NO contact + 1 NC contact.

- It is possible to add one reverser auxiliary contact without any point in common.
- The contactor closes at 50 % of the nominal voltage which enables the trolleys to join the recharging point even after a long time of operation.
- Arc-blowout with permanent magnet device for use under nominal voltages superior to 48 V.

In that case, it is compulsory to have the fixed NO contact connected to the pole + of the battery.

Equipement for electrical trolleys

75. CIC 1-2 DC contactors

Possible addition of a block of adjustable auxiliary contacts 1 NO + 1 NC, on request.

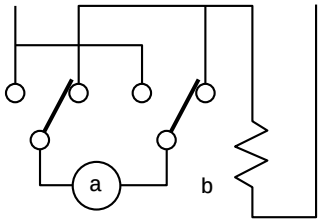
Use

Device intended to control DC loads, voltage ⩽ 110 V under ambient temperature conditions of 50° C max.
It is specially recommended for:

- Equipping electrical vehicles and trolleys:
  - traction motor (strat-up by short circuiting resistors, electrical speed controller),
  - hydraulic pump motor (direct start-up or by electronic speed controller).
- Distribution by accumulator battery:
  - coupling, battery charge,
  - emergency lighting,
  - passenger car lighting, railways.
- Equipping electrical welding sets (DC side switch-off).

Description

- model element on blades elimininating premature wear and jamming allowing use in cold chamber.
- moving contact control device providing intentional sliding of contacts (self-cleaning) and reducing rebound (risk of welding on closing reduced).
- Ag Cdo contacts.
- polarised device: + to be connected to upper fixed contact.
- connection via front.
- 4 versions:
  - D: 1 main pole without magnetic arc-blowout,
  - DS: 1 main pole with magnetic arc-blowout,
  - R: 1 reverser pole without magnetic arc-blowout,
  - RS: 1 rupturing pole with magnetic arc-blowout.
- 3 power supply possibilities:
  - intermittent service (trolley),
  - permanent service without power-saving,
  - permanent service with power-saving.
- rupturing, set of 2 CIC version R or RS (rupturing pole)
  - installed on support plate,
  - upper closing and opening contacts of poles interconnected



a : induced.
b : inductance.

Technical features

				CIC 1	CIC 2
Operating current (in open air DC_1)					
permanent servie			A	180	240
trolley service(1)			A	250	310
connecting section			mm²	35	70
Operating voltage(2)			V	⩽ 110	⩽ 110
Pole thermal time constant			mn	18	18
Operating category: DC_1 to DC_5 class 3				●	●
Pole current switch-off and switch-on rating					
NO contact					
	version D-R	closing	A	900	2000
	V ⩽ 48	opening	A	900	1200
	version DS-RS	closing	A	900	2000
	V ⩽ 96	opening	A	900	1200
NC contact					
	version R	closing	A	400	550
	V ⩽ 48	opening	A	400	500
	version RS	closing	A	400	550
	V ⩽ 96	opening	A	200	500
Voltage drop at pole			mV	37	44
under a current of			A	150	200
Maximum operating rate under load			operations/hour	300	300
Mechanical endurance			millions of operations	3	3
Control circuit: standard rated voltage			V	12-24-36-48-72-80-96-100-200	
permanent service without power-saving(3)					
	consumption at rated voltage		W	25	32
	closing/opening time		ms	55/15	75/16
permanent service with power-saving(4)					
	consumption at rated voltage: inrush/hold		W	44/20	53/22
	closing/opening time		ms	40/13	50/14
intermittent service: duty factor 50 %(5)					
	consumption at rated voltage		W	44	53
	closing/opening time		ms	40/16	50/17

(1) duty factor 50 %, 5 min. open, 5 min. closed.
(2) magnetic arc-blowout by permanent magnet mandatory for opening under load with V > 48.
(3) allowable voltage 85 to 110 % rated voltage, opening voltage 20 % rated voltage.
(4) device with auxiliary contact and power-saving resistor allowable voltage 65 to 110 %, opening voltage 22 % rated voltage.
(5) max. cycle 150/150 s, allowable voltage 65 to 110 % rated voltage, opening voltage 15 % rated voltage.