

Electromagnetic Controller

Type-FSCE-2402

OPERATION MANUAL

Instruction manual

We thank you so much that for purchasing electromagnet controller FSCE-2402 for this time.

We are pleased to inform all listed information such as the necessary function, performance, and usage in this instruction manual in order that you use our product in good condition.

We would that you will read this instruction manual attentively by all means before using with enough understanding.

Please keep this instruction manual carefully to refer at anytime.

In addition, we would ask your favor that this instruction manual shall be delivered to the final user by obligation.

Please be treating electromagnet controller FSCE-2402 by an expert having electric knowledge.



Product specifications

Power source	Rated input voltage	DC 24V
	Permission voltage range	DC 22.8V ~ 25.2V
	Input powers supply efficiency	More than 95%
Output	Max power of output voltage	About (power supply input voltage x0.98) V ※at time of max current output
	Max power of output current	2A
Operative specifications	Control method	PWM control method
	Outside input signal	Photo coupler insulation type Minus common model Two points (DC24V 10mA max.)
	Outside output signal	Photo coupler insulation type Plus common model Two points (open collector DC24V 20mA max.)
Control specifications	Attraction voltage	0 ~ 100% Adjustment of volume
	Separation voltage	0 ~ 100% Adjustment of volume
	Separation time	16 Digit rotary switch
	Indication	LED indicator three points Power supply / In operation / Error
Structure	External dimensions	W71mm × H90mm × D58mm
	Installation	DIN [IEC] Exclusive use for rail
	Approximated	Mass 0.13kg

About the guarantee

Free term of a guarantee and free guarantee range

When trouble by the responsibility of our side occurs to a product during a free term of a guarantee, we will repair a product gratis. But if it will be necessary a business trip for repair in domestic country and the foreign territory, we will charge the actual expenses.

In addition, for the local readjustment, trial run in case of the exchange of the product by breakdown should be out of our duty.

Free term of a guarantee

The free term of a guarantee of the products should be 12 months after the delivery time.

Free guarantee range

- The guarantee range is limited to an electromagnet controller body portion.
- But we apply this guarantee only in limited condition of use, as of regular utilization according to our instructions, such as usage conditions, environment are listed in an instruction manual, and indication on a main body of product label.
- It should be charged for repair in the following cases even if it is during a free term of a guarantee.
 - Trouble by the inappropriate storage or handling, carelessness, fault by the customer.
 - Trouble by what it dismantled or modified a product without our consent by the customer.
- Trouble caused by natural disasters such as a fire, an outside factor by inevitability such as the abnormal voltage and an earthquake, thunder, the storm and flood damage.
- Trouble by the reason that was not able to foresee at the scientific standard notion at the time of our shipment
- Trouble when the customer used our product other than a function (use) as the electromagnet control uses.
- In addition, the trouble that admitted that in the case of our responsibility outside or the customer had admitted that was out of our responsibility.

Caution in the security

Meaning of the warning indication

	In case, when the dangerous situation is possible, and possibility to receive the death or a serious wound is assumed when it takes the wrong warning handling.
	In case, when the dangerous situation is possible, and possibility to receive a moderate obstacle and slight wound or the possibility that only the material damage occurs is assumed when it takes the wrong handling.

For your information, it may be tied to a serious result depending on the situation with the matter, which it is listed in "Caution".

Warning	
• An electric shock, ignition, the trouble of the apparatus might happen. Please do not dismantled or modified a product and do not touch the inside of the product.	
• An injury might happen by an electric shock. Please do not touch a terminal during on electricity tension. In addition, after wiring, please confirm whether wiring is corrected by all means.	
• An electric shock, ignition, the trouble of the apparatus might happen. Please prevent a piece of metal, conducting wire going into the product.	

Caution

1. Generality

- Please do not use it for the following use.
 - System, machine, the device that danger can extend to human life and the property.
 - System, machine, device for the purpose of movement and the conveyance of the person.
 - Important storage parts such as machineries.
 - And other use followed by above a) and c), mentioned which needs the use that the high safety.
- Please do not use out of the use range of the product.

2. Installation

- Please do not use it at the place where there are ignition things, explosive substances, inflammables the dangerous materials.
- When you attach to fix a product, please perform solid fixation by all means.
- Please do not use at the place where a drop of water, a grease spot hang to a product.
- Please do not use at a place getting the direct rays of the sun.
- For the wiring of the product, please do not to make any false wiring while confirming it in our "Instruction manual".
- Please use it on the following environmental conditions.
 - Ambient temperature -10 degrees Celsius. 40 degrees Celsius
 - Humidity 10%~90%RH without dew condensation
 - Please use in atmosphere without corrosive gas, firedamp, oil mist, earthly dust and steamy vapor.
 - Without any vibration.

3. Operation

- Our product is not equipped with a blackout protector. When a primary side power supply is intercepted by blackouts or micro-cut, the output voltage to an electromagnet will be intercepted. When it risks of blackout or micro-cut, you may assure to set a blackout protector (uninterrupted power supply) together by all means. It may be hurt by the fall of the attracted work piece. In addition, at the time of the abnormal detection, the output to an electromagnet will be intercepted. Injury by the fall of the attracted work piece. The damage of the machine is assumed, please install the fall arrester by all means.
- In confirming that an attraction signal is not input before switching on of electric power, and, please switch it on. Because it may possibly start the attraction effect movement when it switches it on so that it may be hurt by electromagnet in attraction mode, which is connected.
- Abnormal heating, emission of smoke when a bad smell occurs from the product, please switch it off promptly. If you use continuously, there might be damage and the fire of the product.
- When the protection function (error) of the product acts, please use it after completely removing a cause.
- When indication lump (PWR) of the product does not turn on even if it switches on, please switch it off promptly.

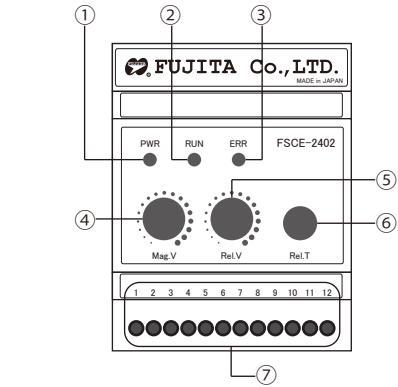
4. Maintenance, check

- When you perform maintenance, please check in switch off by all means.

5. Disposal

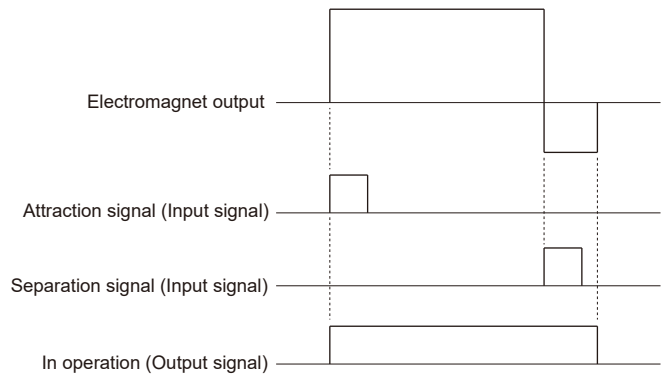
- When it shall be discarded, please treat it as industrial waste.
- Please do not cast the product into flames. It may be a poisonous gas, which will be generated.

Name of all parts

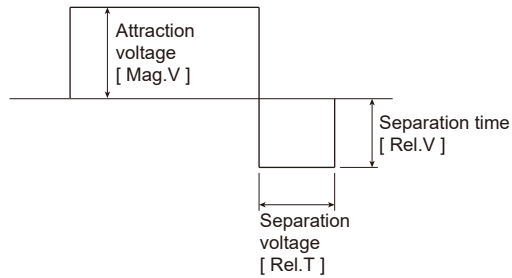


Number	Symbol	Name
①	PWR	Power supply LED indication
②	RUN	LED indication during the driving
③	ERR	Error LED indication
④	Mag.V	Volume for attraction voltage adjustment
⑤	Rel.V	Volume for separation voltage adjustment
⑥	Rel.T	Rotary switch for separation time setting
⑦	1 ~ 12	Terminal block

Output time chart



About setting



[Attraction voltage]

Mag.V Setting by the volume of attraction voltage adjustment. The setting range is 0~100 %.

[Separation voltage]

Rel.V Setting by the volume of separation voltage adjustment. The setting range is 0~100 %.

[Separation time]

Rel.T Setting by a rotary switch for setting of separation time. This is the chart of the list shown below for the setting time of each scale.

Graduation	0	1	2	3	4	5	6	7
Setting (sec)	0.00	0.05	0.10	0.15	0.20	0.25	0.30	0.35
Graduation	8	9	A	B	C	D	E	F
Setting (sec)	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75

※Caution※

Even if setting is changed during attraction and separation movements, it will not reflected. Please make change of setting when LED (RUN) turns off the light while driving.

Name and explanation of the terminal block

Terminal number	Name	Explanation
1	Power supply terminal DC24V +	Please connect DC24V + side.
2	Power supply terminal DC24V -	Please connect DC24V - side.
3	Unused	This is unused. Please do not be connected.
4	Electromagnet output terminal +	Please connect electromagnet.
5	Electromagnet output terminal -	Please connect electromagnet.
6	Unused	This is unused. Please do not be connected.
7	Attraction signal Input signal	When these signals will be input, it starts the attraction function movement.
8	Separation signal Input signal	When these signals will be input, it starts the separation function movement.
9	Input signal common (GND)	It is input signal common. [G24(GND)]
10	In function movement Output signal	It works its output from starting movement of attraction output signal to the end of separation movement.
11	Error Output signal	This signal will be output at the time of abnormality.
12	+24V	This is +24V output terminal. [P24(+24V)]

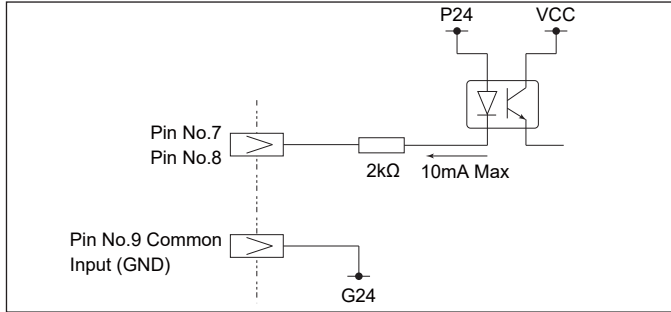
About abnormality

The abnormal detection is in case only overcurrent protection. When detecting the abnormality, error LED turns on, and the output to an electromagnet is intercepted. In that case, it occurs possibly to fall arrester and the attracted work piece may drop, so that please install absolutely a device for the drop protection when the injury by the fall as of the damage of the machine are assumed. In addition, when you use again after abnormal observation, please use our product after completely removing an abnormal cause.

The abnormal reset is only for power supply reset of the electromagnet controller. Please cut the power supply of the electromagnet controller once, and, please spend a power supply again.

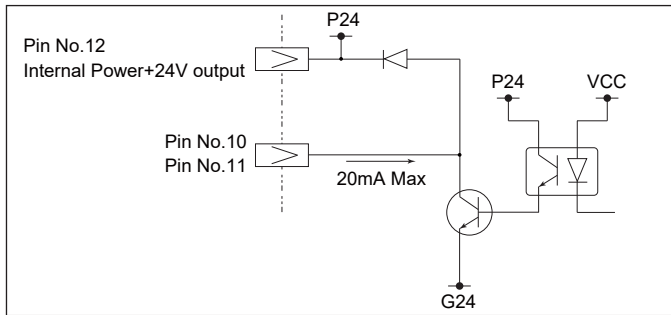
Input signal specification

[Internal circuit]



Output signal specification

[Internal circuit]



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Thank you for your understanding that the contents mentioned in this operation manual may change without pre-advise.