



## Original Languages

### 1S-series

### External DB Resistor (Model: R88A-DBR300□)

## INSTRUCTION SHEET

Thank you for purchasing this OMRON Product. Please read this Instruction Sheet and User's Manual (I586), and thoroughly familiarize yourself with the functions and characteristics of the product before use. Be sure you are using the most recent version of the User's Manual. Please retain this Instruction Sheet and the User's Manual for future reference, and be sure they are delivered to the final user.

### OMRON Corporation

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No. 2877803-6C

#### Safety Precautions

##### Definition of Precautionary Information

- The precautions indicated here provide important information for safety. Be sure to heed the information provided with the precautions.
- The following signal words are used to indicate and classify precautions in this Instruction Sheet.

**DANGER** Indicates an imminently hazardous situation which, if not avoided, is likely to result in serious injury or may result in death. Additionally there may be severe property damage.

**WARNING** Indicates a potentially hazardous situation which, if not avoided, will result in minor or moderate injury, or may result in serious injury or death. Additionally there may be significant property damage.

**CAUTION** Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or in property damage.

Failure to heed the precautions classified as "Caution" may also lead to serious results. Always heed these precautions.

##### Warning and Caution

##### Transporting and Unpacking

#### WARNING

Do not damage, pull, or put excessive stress or heavy objects on the cables.  
Doing so may cause electric shock, malfunction, or burning.

##### Installation and Wiring

#### WARNING

Mount the external dynamic brake resistor (DB Resistor) firmly before wiring.  
Not doing so may cause electric shock.

Do not remove the cables or peripheral equipment while the power is supplied.  
Doing so may cause electric shock.

Before carrying out wiring or inspection, turn OFF the power supply and confirm that the charge lamp of the Servo Drive is not lit.  
Not doing so may cause electric shock or burning.

Do not damage, pull, or put excessive stress or heavy objects on the cables.  
Doing so may cause electric shock, malfunction, or burning.

Use appropriate tools to wire terminals and connectors.  
Check that there is no short-circuit before use.  
Not doing so may cause electric shock.

Proper sizing of external dynamic brake resistor required.  
Risk of fire or damage to equipment, or collision may occur.

Install the the external dynamic brake resistor on non-flammable materials such as metals.  
Not doing so may cause a fire.

##### Usage

#### WARNING

Do not touch the external dynamic brake resistor while the power is supplied or for a while after the power is turned OFF because they get hot over 120°C.  
Doing so may cause fire or a burn injury.

#### WARNING

Use an appropriate external dynamic brake resistor. Install an external protective device such as temperature sensor to ensure safety when using the external dynamic brake resistor.  
Not doing so run the risk of burnout.

Do not place flammable materials near the external dynamic brake resistor.  
Doing so may cause a fire.

The external dynamic brake resistor gets hot while the power is supplied or for a while after the power is turned OFF. Install an external protect like a guard not to touch them easily to ensure safety.  
Not doing so may cause a burn injury.

##### Transporting and Unpacking

#### CAUTION

Do not step on the external dynamic brake resistor or place heavy articles on it.  
Injury may result.

Do not overload the product. Be sure to observe the specified amount when piling up products.  
Injury or failure may result.

#### Precautions for Safe Use

- Do not store or install the the external dynamic brake resistor in the following locations. Electric shock, fire, equipment damage, or malfunction may result.
  - Locations subject to direct sunlight
  - Locations subject to temperatures outside the range specified in the specifications
  - Locations subject to humidity outside the range specified in the specifications
  - Locations subject to condensation as the result of severe changes in temperature
  - Locations subject to corrosive or flammable gases
  - Locations subject to dust (especially iron dust) or salts
  - Locations subject to exposure to water, oil, or chemicals
  - Locations subject to shock or vibration
- Take appropriate and sufficient countermeasures to provide shielding when installing systems in the following locations. Failure may result.
  - Locations subject to static electricity or other forms of noise
  - Locations subject to strong electromagnetic fields
  - Locations subject to possible exposure to radioactivity
  - Locations close to power lines
- Wire the cables correctly and securely.  
Injury, or failure may result.

#### Precautions for Correct Use

- Be sure to observe the mounting direction of the external dynamic brake resistor.  
Failure may result.
- Tighten the mounting screws, terminal block screws for the external dynamic brake resistor to the specified torque.  
Failure may result.
- Use crimp terminals to wire screw type terminal blocks.  
Do not connect bare stranded wires directly to terminals blocks.  
Fire may result.
- Always use the power supply voltage specified in the User's Manual (I586).  
Burning may result.
- After an earthquake, be sure to conduct safety checks.  
Electric shock, injury, or fire may result.
- Do not use the cable when it is laying in oil or water.  
Electric shock, injury, or fire may result.
- Immediately stop the operation and cut off the power supply when strange smell, noise, smoking, abnormal heat generation, or vibration occurs.  
The Resistor or Servo Drive may be damaged or burn.
- When lifting the products during unpacking, moving or installation, do not drop the products.  
Injury or failure may result.

#### General Use of External DB Resistors

Item	Model	
	R88A-DBR300□	
Dielectric strength	2,000 VAC for 1 min (at 50/60 Hz)	
Insulation resistance	20 MΩ min. (at 500 VDC)	
Operating ambient temperature and humidity	0 to 55°C, 90% max. (with no condensation)	
Storage ambient temperature and humidity	-25 to 85°C, 95% max. (with no condensation)	
Operating and storage atmosphere	No corrosive gases	

#### External DB Resistor Specifications and Combinations With Servo Drivers

- Guidelines for frequency of use of dynamic brake are specified as indicated below.  
Frequency of use: Once per 3 minutes min.

Servo Drive	External DB Resistor		
	Model	Resistance value	
Model: R88A-1SN□-ECT		Model	One
55H, 75H	R88A-DBR30001R5	1.5 Ω	
150H	R88A-DBR30001R2	1.25 Ω	AWG 16 (Rated temperature: 200°C), Length: 500 mm
55F, 75F	R88A-DBR30004	4 Ω	
150F	R88A-DBR30005	5 Ω	

#### Installation

For the dimensional outline drawings and heat radiation condition, refer to the User's Manual (I586).

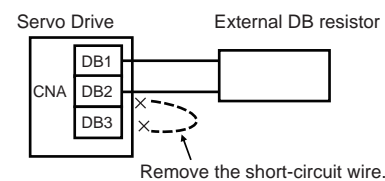
- Mounting Screw Size: M4

##### Mounting

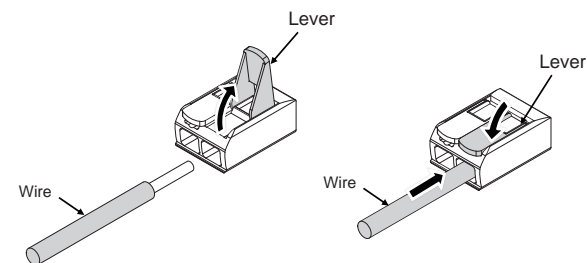
- Attach to a non-combustible material such as metal, and maintain a peripheral clearance of at least 50 mm.

##### Wiring Diagram

- Be sure to remove the short-circuit wire between B2 and B3 on the Servo Drive.



- Wiring Procedure (How to use the relay connector)



- Strip the wire you will use. Strip to a length of 11 mm ±1mm
- Push up the connector lever.
- Insert the wire until it contacts the far side.
- In that state, push down the lever.
- Gently pull on the wire to make sure it does not come out.

#### Reference Manuals

Manual name	Model	Cat. No.
AC Servomotors/Servo Drives 1S-series with Built-in EtherCAT® Communications User's Manual	R88M-1□□-1M□ R88D-1SN□-ECT	I586

## SUITABILITY OF USE

Omron Companies shall not be responsible for conformity with any standards, codes or regulations which apply to the combination of the Product in the Buyer's application or use of the Product. At Buyer's request, Omron will provide applicable third party certification documents identifying ratings and limitations of use which apply to the Product. This information by itself is not sufficient for a complete determination of the suitability of the Product in combination with the end product, machine, system, or other application or use. Buyer shall be solely responsible for determining appropriateness of the particular Product with respect to Buyer's application, product or system. Buyer shall take application responsibility in all cases.

NEVER USE THE PRODUCT FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY OR IN LARGE QUANTITIES WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCT(S) IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

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**Note:** Specifications subject to change without notice.