



# RN748A

## Motor Driver, DC/Position Proportional Converter

The RN748A is a signal converter that receives a 4–20mA input signal from a controller and outputs a relay contact signal to drive a control motor with a built-in 135Ω feedback potentiometer for position proportioning operation. By setting the center of rotation angle and the proportional band, a split operation can be performed.



### Specifications

|                                    |                              |                                                                           |                                                                                                  |
|------------------------------------|------------------------------|---------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Input                              | Input (IN)                   | Input type                                                                | 4–20mA <sub>dc</sub>                                                                             |
|                                    |                              | Sampling cycle                                                            | 100ms                                                                                            |
|                                    |                              | Indication accuracy                                                       | ±0.1% FS ±1 digit                                                                                |
|                                    |                              | Input impedance                                                           | 100Ω max.                                                                                        |
|                                    | Digital input                | Input type                                                                | Dry contact or open collector                                                                    |
|                                    |                              | Allowable ON contact resistance                                           | 250Ω max.                                                                                        |
|                                    |                              | Allowable OFF contact resistance                                          | 100kΩ min.                                                                                       |
|                                    |                              | Allowable ON residual voltage                                             | 1.0V max.                                                                                        |
|                                    |                              | Terminal current (ON)                                                     | Approx. 7.5mA (in case of short circuit).<br>Approx. 5.0mA (in case of contact resistance 250Ω). |
|                                    |                              | Minimum hold time                                                         | 200ms or more                                                                                    |
| Motor feedback potentiometer input | Allowable resistance         | 100 to 2500Ω                                                              |                                                                                                  |
|                                    | Detection of line break      | Displays "AL07."                                                          |                                                                                                  |
| Output                             | Motor drive relay output     | Contact rating                                                            | 250Vac, 8A (resistive load)                                                                      |
|                                    |                              | Life                                                                      | 120,000 operations min.                                                                          |
|                                    |                              | Min. switching specifications                                             | 24V <sub>dc</sub> , 40mA                                                                         |
|                                    | Event relay outputs (1 to 3) | Contact rating                                                            | 250Vac/30V <sub>dc</sub> , 2A (resistive load)                                                   |
|                                    |                              | Life                                                                      | 100,000 operations min.                                                                          |
|                                    |                              | Min. switching specifications                                             | 5V <sub>dc</sub> , 40mA (reference value)                                                        |
| Setting                            | Center of rotation angle     | 0.0 to 100.0%                                                             |                                                                                                  |
|                                    | Proportional band            | 0.1 to 999.9%                                                             |                                                                                                  |
|                                    | Dead zone                    | 0.5 to 25.0%                                                              |                                                                                                  |
|                                    | Event for motor opening      | High limit event: -199.9 to +999.9%<br>Low limit event: -199.9 to +999.9% |                                                                                                  |
| General                            | Operating conditions         | Ambient temperature                                                       | 0 to 50°C (gang-mounted: 0 to 40°C)                                                              |
|                                    |                              | Ambient humidity                                                          | 10 to 90% RH (no condensation allowed)                                                           |
|                                    |                              | Power                                                                     | 100 to 240Vac 50/60Hz                                                                            |
|                                    | Power consumption            | 12VA max.                                                                 |                                                                                                  |
|                                    | Mass                         | Approx. 250g (with the dedicated mounting bracket)                        |                                                                                                  |
|                                    | Standards compliance         | EN61010-1, EN61326-1                                                      |                                                                                                  |

### Selection Guide

Example: RN748A0000

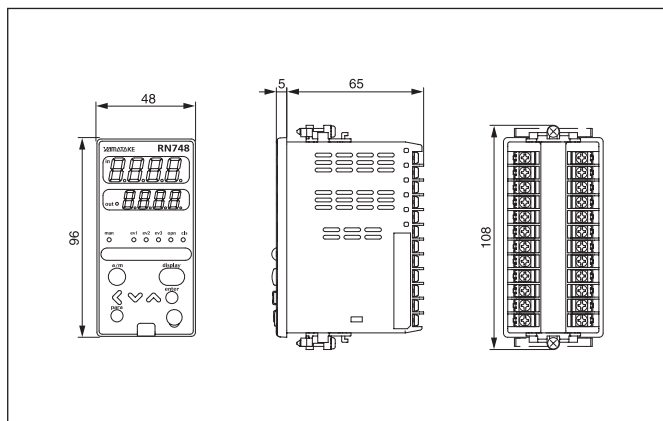
| Segment | Model No. selection | Description                        |
|---------|---------------------|------------------------------------|
| I       | Basic No.           | RN748A00                           |
| II      | Options             | 00 None                            |
|         |                     | D0 With inspection data            |
|         |                     | Y0 With traceability certification |

### Accessories (sold separately)

| Model No.    | Description                  |
|--------------|------------------------------|
| 81409654-001 | Mounting bracket (accessory) |
| 81446915-001 | Hard cover                   |
| 81446912-001 | Terminal cover               |

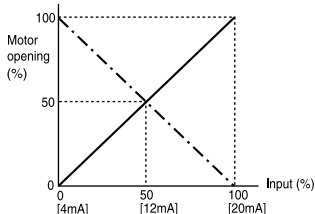
### Dimensions

(Unit: mm)

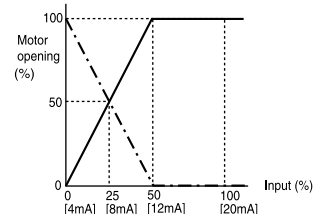


### • Setting example for the center of rotation and proportional band

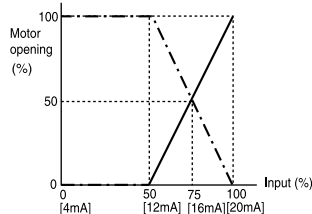
1. Center of rotation angle: 50% (12mA)  
Proportional band: 100% (16mA)



2. Center of rotation angle: 25% (8mA)  
Proportional band: 50% (8mA)



3. Center of rotation angle: 75% (16mA)  
Proportional band: 50% (8mA)



Definition:  
 — : Direct action  
 (Motor opening direction on input increase)  
 - - - : Reverse action  
 (Motor closing direction on input increase)