

# COMPACT POWER RELAY

## 1 POLE x 2 - 12A (28VDC)

### (For 24V battery automotive applications)

## FBR572, 582 Series

#### ■ FEATURES

- Two independent relays mounted in a single package
  - High current contact capacity  
(carrying current: 40 A/2 minutes, 30 A/1 hour)
  - Suitable for controlling 24 V motors in trucks and other large vehicles
  - High heat resistance and extended operating voltage
  - Two types of contact gap  
(FBR572: 0.8 mm, FBR582: 1.4 mm)
  - RoHS compliant
- Please see page 8 for more information



#### ■ PARTNUMBER INFORMATION

[Example]     FBR572     N     D24     -     W1     -     \*\*  
                   (a)        (b)        (c)        (d)        (e)

|     |                    |                                                                                          |
|-----|--------------------|------------------------------------------------------------------------------------------|
| (a) | Relay type         | FBR572 : FBR572 Series (contact gap 0.8mm)<br>FBR582 : FBR582 Series (contact gap 1.4mm) |
| (b) | Enclosure          | N : Plastic sealed type                                                                  |
| (c) | Coil rated voltage | D24 : 24 VDC<br>Coil rating table at page 2                                              |
| (d) | Contact material   | W1 : Silver-tin oxide indium<br>Y : Silver-tin oxide                                     |
| (e) | Special type       | To be assigned custom specification                                                      |

Actual marking does not carry the type name: "FBR"  
 E.g.: Ordering code: FBR572ND24-W1 Actual marking: 572ND24-W1

# FBR572, 582 SERIES

## ■ SPECIFICATION

| Item         | FBR572                             |                                                                                                                            | FBR582                                                       |
|--------------|------------------------------------|----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|
| Contact Data | Configuration                      | 1 form C x 2 (SPDT x 2)                                                                                                    |                                                              |
|              | Material                           | Silver-tin oxide indium (-W1 type)<br>Silver-tin oxide (-Y type)                                                           |                                                              |
|              | Voltage drop                       | Maximum 100 mV at 2A, 12VDC                                                                                                |                                                              |
|              | Contact rating                     | 28VDC, 12A (locked motor load)<br>28VDC, Inrush 15A, break 2.5A (motor free load)                                          |                                                              |
|              | Max. carrying current              | 40A/2 minutes, 30A/1 hour<br>(25 °C, 100% rated coil voltage)                                                              |                                                              |
|              | Max. inrush current (reference)    | 60A                                                                                                                        |                                                              |
|              | Max. switching voltage (reference) | 28VDC                                                                                                                      | 32VDC                                                        |
|              | Max. switching current (reference) | 12A                                                                                                                        | 14A                                                          |
|              | Min. switching load (reference) *  | 6 VDC, 1A                                                                                                                  |                                                              |
| Life         | Mechanical                         | Min. 10 x 10 <sup>6</sup> operations                                                                                       | Min. 1 x 10 <sup>6</sup> operations                          |
|              | Electrical                         | Min. 100 x 10 <sup>3</sup> operations<br>(locked motor load)<br>Min. 500 x 10 <sup>3</sup> operations<br>(motor free load) | Min. 100 x 10 <sup>3</sup> operations<br>(locked motor load) |
| Coil Data    | Operating temperature range        | -40 °C to +85 °C (no frost)                                                                                                |                                                              |
|              | Storage temperature range          | -40 °C to +100 °C (no frost)                                                                                               |                                                              |
| Timing Data  | Operate (at nominal voltage)       | Max. 10 ms                                                                                                                 |                                                              |
|              | Release (at nominal voltage)       | Max. 5 ms                                                                                                                  |                                                              |
| Other        | Vibration resistance               |                                                                                                                            | 10 to 55Hz double amplitude 1.5mm                            |
|              | Shock                              | Misoperation                                                                                                               | 100m/s <sup>2</sup>                                          |
|              |                                    | Endurance                                                                                                                  | 1,000m/s <sup>2</sup>                                        |
|              | Weight                             |                                                                                                                            | Approximately 18 g                                           |

\* Minimum switching loads mentioned above are reference values. Please perform the confirmation test with actual load before production since reference values may vary according to switching frequencies, environmental conditions and expected reliability levels.

## ■ COIL RATING

| Series | Coil Code | Rated Coil Voltage (VDC) | Coil Resistance +/- 10% (Ohm) | Must Operate Voltage (VDC) * | Thermal resistance (°C / W) |
|--------|-----------|--------------------------|-------------------------------|------------------------------|-----------------------------|
| FBR572 | D24       | 24                       | 384                           | 14.4 (at 20 °C)              | 67                          |
| FBR582 |           |                          | 170                           | 18 (at 85 °C)                | 56                          |

Note: All values in the table are valid for 20°C and zero contact current, unless otherwise stated.

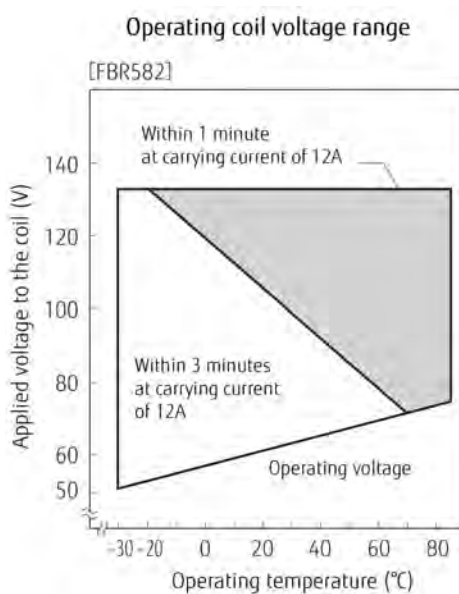
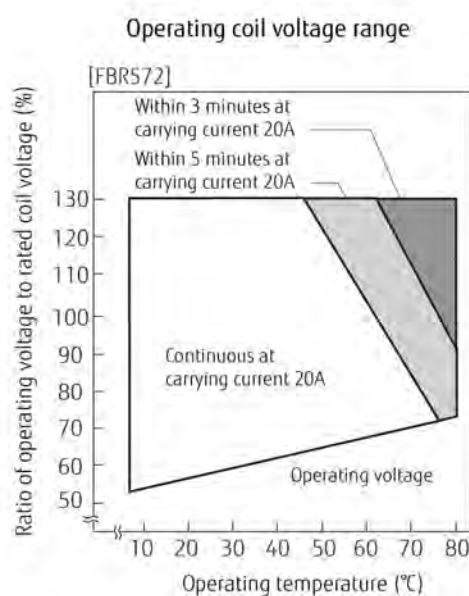
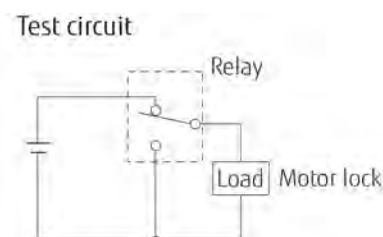
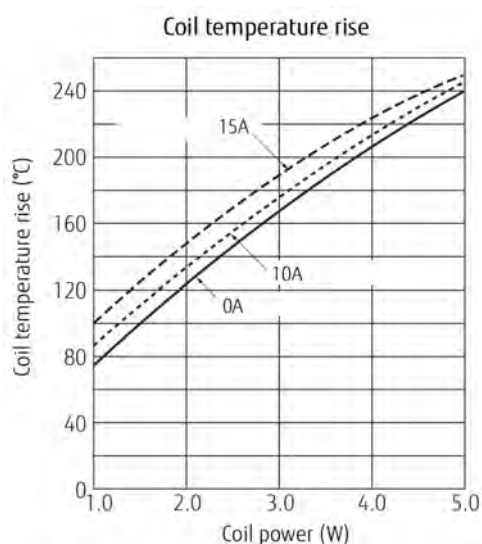
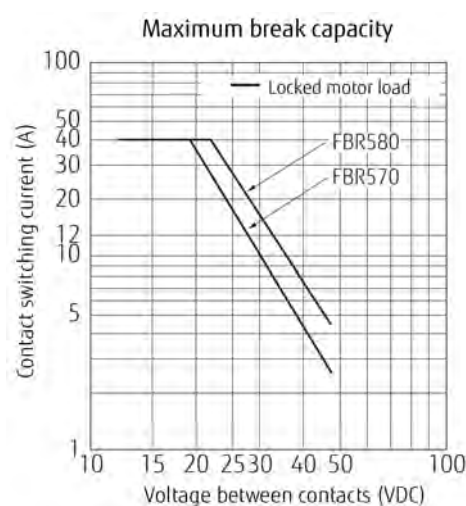
\* Specified operate values are valid for pulse wave voltage.

# FBR572, 582 SERIES

## ■ PRINCIPAL APPLICATIONS

| Application         | Normal load current                     | Life x 10 <sup>3</sup> | Recommended model (Example) |
|---------------------|-----------------------------------------|------------------------|-----------------------------|
| Power window        | 10A to 12A (switching at motor locking) | 100                    | FBR582ND24-W1               |
| Automatic door lock | 5A/2 door (switching at motor locking)  | 100                    | FBR572ND24-W1               |

## ■ CHARACTERISTIC DATA



# FBR572, 582 SERIES

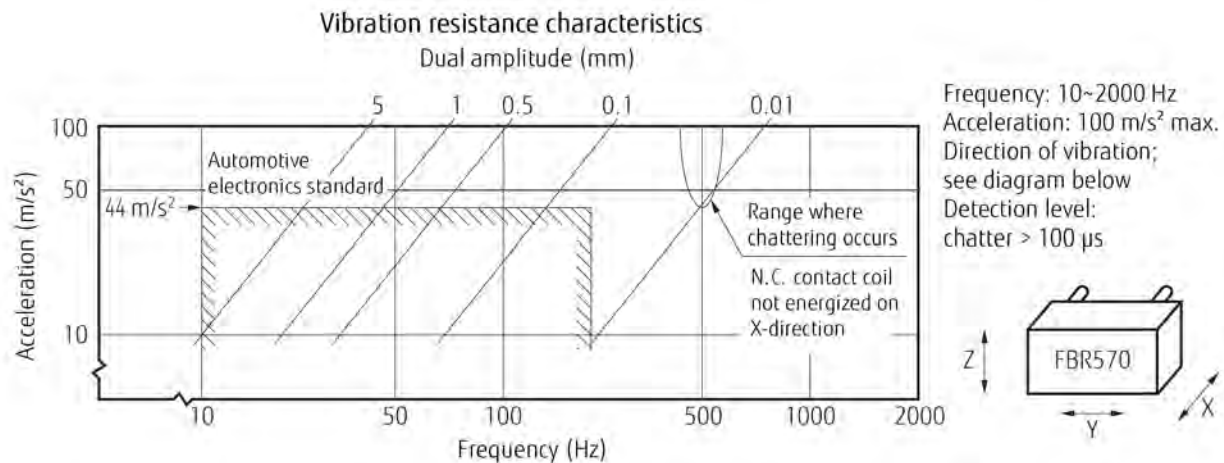
Life test (example)

(1) Motor lock

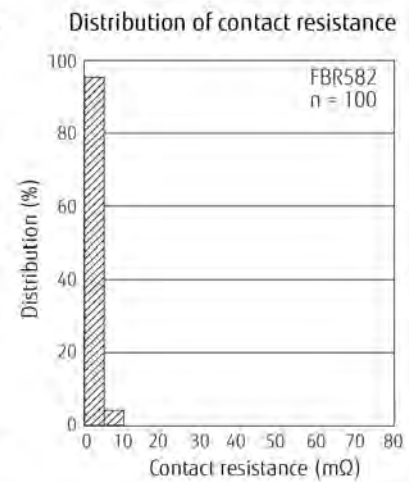
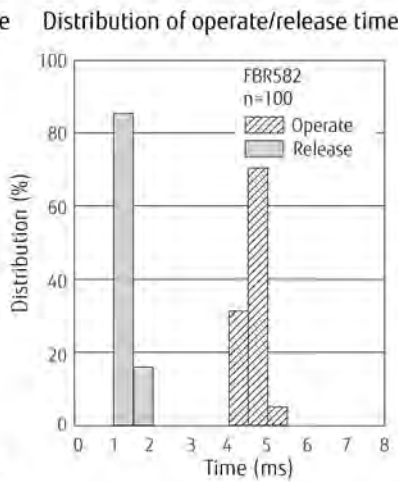
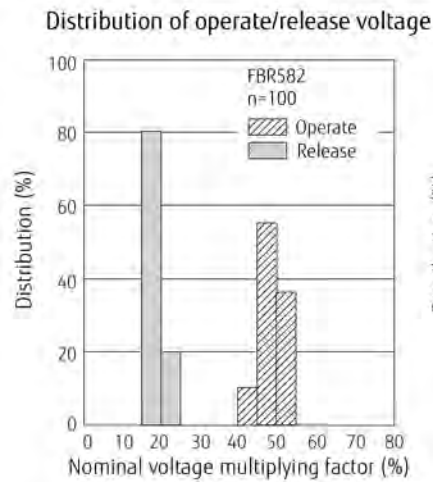
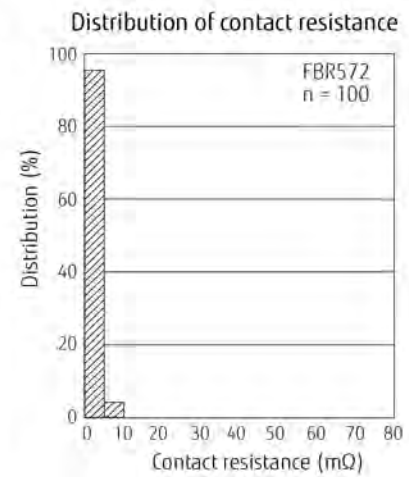
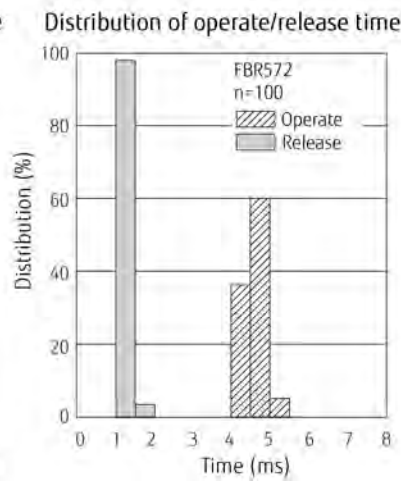
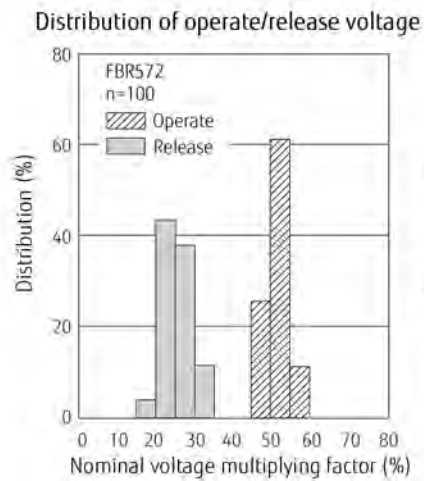
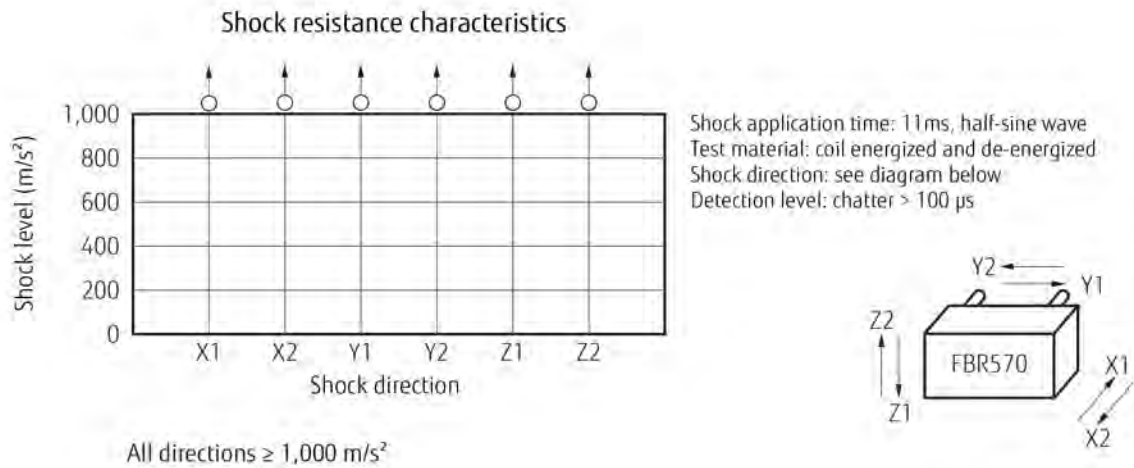
| Test item                                                                                              | Test circuit | Current wave form |
|--------------------------------------------------------------------------------------------------------|--------------|-------------------|
| 12A, 28VDC<br>Motor lock<br>100,000 operations minimum<br>Contact material:<br>Silver tin oxide indium |              |                   |

(2) Motor free

| Test item                                                                                                                  | Test circuit | Current wave form |
|----------------------------------------------------------------------------------------------------------------------------|--------------|-------------------|
| Inrush 15A, Idle 2.5A<br>28VDC<br>Motor free<br>500,000 operations minimum<br>Contact material:<br>Silver tin oxide indium |              |                   |



# FBR572, 582 SERIES

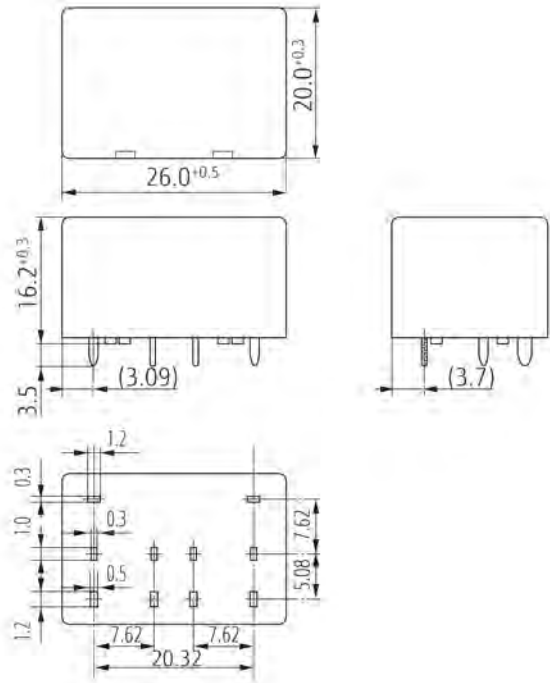


# FBR572, 582 SERIES

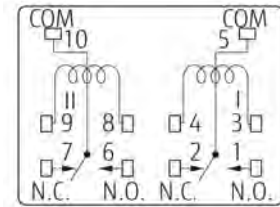
## ■ DIMENSIONS

FBR572

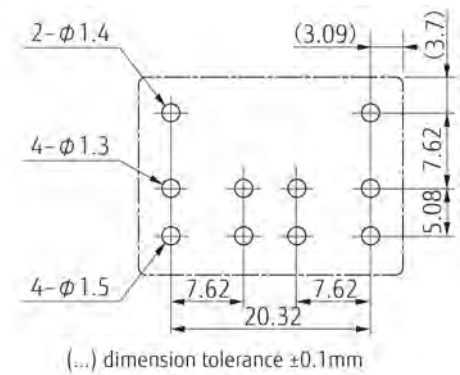
### ● Dimensions



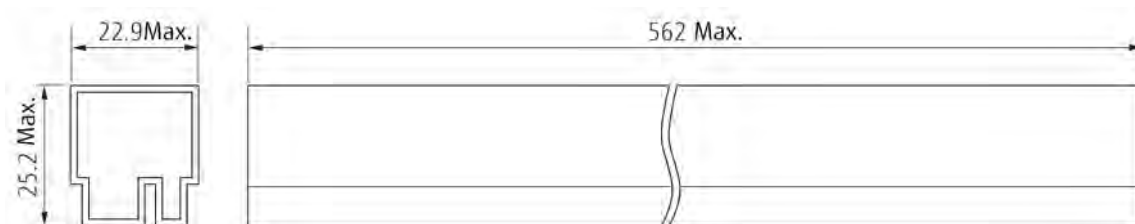
### ● Schematics (BOTTOM VIEW)



### ● PC board mounting hole layout (BOTTOM VIEW)



### ● Tube carrier



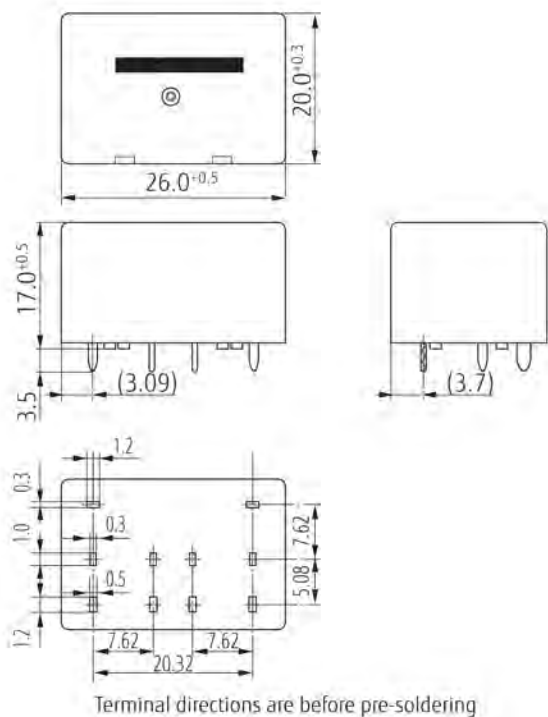
Unit: mm

# FBR572, 582 SERIES

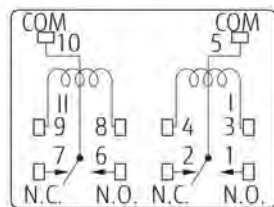
## ■ DIMENSIONS

FBR582

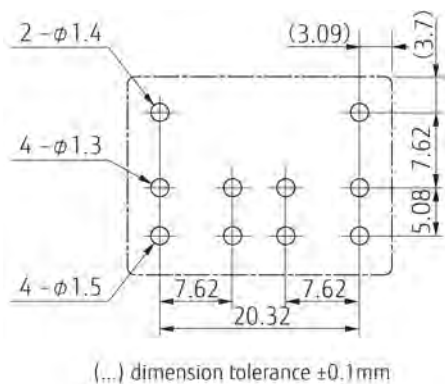
- Dimensions



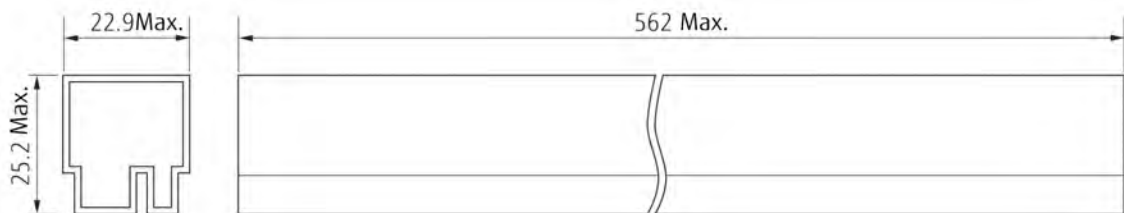
- Schematics  
(BOTTOM VIEW)



- PC board mounting  
hole layout  
(BOTTOM VIEW)



- Tube carrier



Unit: mm

## RoHS Compliance and Lead Free Information

### 1. General Information

- All relays produced by Fujitsu Components are compliant with RoHS directive 2011/65/EU including amendments.
- Cadmium as used in electrical contacts is exempted from the RoHS directives.  
As per Annex III of directive 2011/65/EU.
- All relays are lead-free. Please refer to Lead-Free Status Info for older date codes at:  
<http://www.fujitsu.com/downloads/MICRO/fcai/relays/lead-free-letter.pdf>
- Lead free solder plating on relay terminals is Sn-3.0Ag-0.5Cu, unless otherwise specified.  
This material has been verified to be compatible with PbSn assembly process.

### 2. Recommended Lead Free Solder Condition

- Recommended solder Sn-3.0Ag-0.5Cu.

**Flow Solder condition:**

Pre-heating: maximum 120°C  
Soldering: dip within 5 sec. at  
260°C solder bath

**Solder by Soldering Iron:**

Soldering Iron  
Temperature: maximum 360°C  
Duration: maximum 3 sec.

**We highly recommend that you confirm your actual solder conditions**

### 3. Moisture Sensitivity

- Moisture Sensitivity Level standard is not applicable to electromechanical relays, unless otherwise indicated.

### 4. Tin Whiskers

- Dipped SnAgCu solder is known as presenting a low risk to tin whisker development. No considerable length whisker was found by our in house test.

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