

TITLE	SPECIFICATIONS FOR DJ-H RELAY [TENTATIVE]	PAGE 1/9
NAME	DJ-H RELAY	ADJH2

1. TYPE ; DJ-H RELAY

2. Part No. ; ADJH2

2- 1 ORDERING INFORMATION

DJ-H Relay

Contact arrangement
2 : 1a

Operating function

- 1 : 1 coil latching type
- 2 : 1 coil latching type
(Reverse polarity)
- 3 : 2 coil latching type
(Positive common)
- 4 : 2 coil latching type
(Positive common, Reverse polarity)
- 5 : 2 coil latching type
(Negative common)
- 6 : 2 coil latching type
(Negative common, Reverse polarity)

Auxiliary function

- 0 : Without a test button
- 1 : With a test button

Rated voltage

CODE No.	05	12	24
Rated voltage (DC, V)	5	12	24

ADJH

2

3. STYLE ; Flux-resistant, PC board type

4. DRAWING NO. ; ADJH2 Dimensions

REFERENCE ONLY

DEC. 07, 2015

Panasonic Corporation
Ise Factory

Panasonic Corporation	DESIGNED <i>R. Horiguchi</i>	DATE : Nov. 27. 2015
	CHECKED <i>H. Hito</i>	
	ENACTED <i>Y. Tanaka</i>	

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5. CHARACTERISTICS					
5 - 1 Coil data					
<1 coil latching type>					
	Part No.	ADJH2**05	ADJH2**12	ADJH2**24	
1. Rated voltage (V DC)		5	12	24	
2. Rated operating current (DC, mA, ±10%, at 20℃)		200	83.3	41.7	
3. Coil resistance (Ω, ±10%, at20℃)		25	144	576	
4. Set voltage (initial, at20℃)		Max. 75% of rated voltage (square, pulse drive)			
5. Reset voltage (initial, at20℃)		Max. 75% of rated voltage (square, pulse drive)			
6. Max. allowable voltage (at20℃) (ref 9-3)		130% of rated voltage			
7. Rated operating power (at20℃)		1000mW			
<2 coil latching type>					
	Part No.	ADJH2**05	ADJH2**12	ADJH2**24	
1. Rated voltage (V DC)		5	12	24	
2. Rated operating current (DC, mA, ±10%, at 20℃)		400	166.7	83.3	
3. Coil resistance (Ω, ±10%, at20℃)		12.5	72	288	
4. Set voltage (initial, at20℃)		Max. 75% of rated voltage (square, pulse drive)			
5. Reset voltage (initial, at20℃)		Max. 75% of rated voltage (square, pulse drive)			
6. Max. allowable voltage (at20℃) (ref 9-3)		130% of rated voltage			
7. Rated operating power (at20℃)		2000mW			
5- 2 Contact data					
1. Arrangement	; 1a				
2. Contact material	; AgSnO ₂ type				
3. Contact resistance (initial)	; Max. 20mΩ (by voltage drop 24V DC 1A)				
4. Max. switching power (resistive)	; 13850 VA (50A 277V AC)				
5. Max. switching voltage	; 480V AC (25A)				
6. Max. switching current	; 50A AC				
7. Contact rating (resistive)	; 50A 277V AC				
8. Min. switching load (ref 9-9)	; 100mA 5V DC (reference value)				
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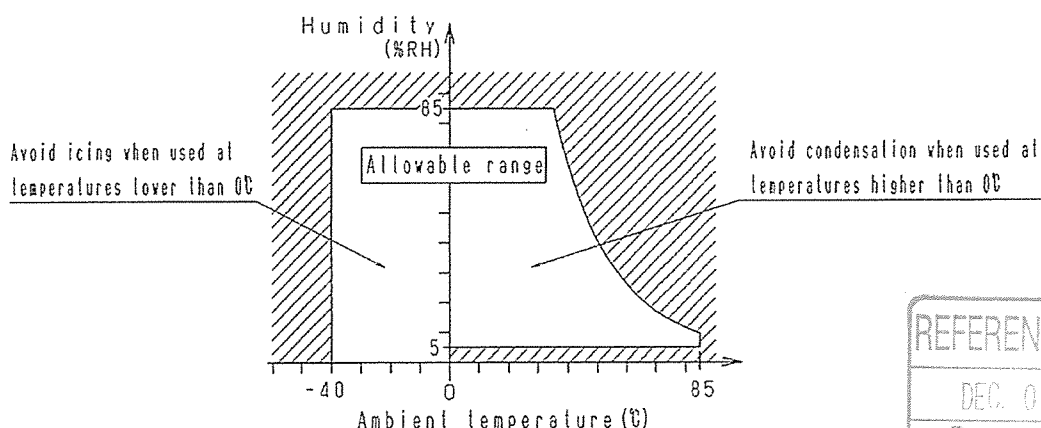
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NAME	DJ-H RELAY	ADJH2	
<div>5- 7 Vibration resistance</div> <div>1. Functional ; 10 to 55 Hz at double amplitude of 1.5mm (detection time : 10μs)</div> <div>2. Destructive ; 10 to 55 Hz at double amplitude of 2.0mm</div> <div>5- 8 Shock resistance</div> <div>1. Functional ; 100m/s² (half-sine shock pulse:11ms, detection time:10μs)</div> <div>2. Destructive ; 1,000m/s² (half-sine shock pulse:6ms)</div> <div>5- 9 Set time (initial) ; Max. 20ms (at 20℃) (at rated voltage, without bounce)</div> <div>5-10 Reset time (initial) ; Max. 20ms (at 20℃) (at rated voltage, without bounce)</div> <div>5-11 Unit weight ; Approx. 30g</div>			
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6. USAGE, STORAGE AND TRANSPORT CONDITIONS

Following is the conditions of ambient temperature, humidity and air pressure in case of operation, transport and storage.

- (1) Ambient temperature : -40 to 85°C
(Allowable temperature is from -40 to 70°C at our standard packing condition)
- (2) Humidity : 5 to 85 %RH
In addition the humidity range depends on temperature.
The allowable ranges are as shown in the below figure ;
- (3) Air pressure : 86 to 106kPa
• Allowable range of ambient temperature and humidity for operation, transport and storage.



• Water condensation

Water condensation occurs when the ambient temperature drops suddenly from a high temperature and humidity, or, the relay is suddenly transferred from a low ambient temperature to a high temperature and humidity. Condensation causes the failures like insulation deterioration, wire disconnection and rust etc.

Panasonic Corporation does not guarantee the failures caused by condensation.

The heat conduction by the equipment may accelerate the cooling of relay itself, and the condensation may occur.

Please confirm no condensation in the worst condition of the actual usage.

(Special attention should be paid when high temperature heating parts are close to the relay. Also please consider the condensation may occur inside of the relay.)

• Icing

Please check the icing when an ambient temperature is lower than 0°C.

Water drop adheres to the relay by the condensation or the abnormal high humidity and is frozen to the ice when the ambient temperature becomes lower than 0°C.

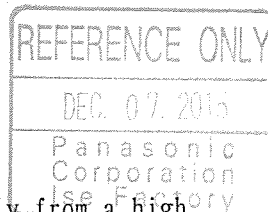
The icing causes the sticking of movable portion, the operation delay and the contact conduction failure etc.

Panasonic Corporation does not guarantee the failures caused by the icing.

The heat conduction by the equipment may accelerate the cooling of relay itself and the icing may occur. Please confirm no icing in the worst condition of the actual usage.

• Low-temperature, low-humidity atmosphere

If the relay is exposed to a low-temperature, low-humidity atmosphere for a long time, its plastic parts may become brittle and fragile.



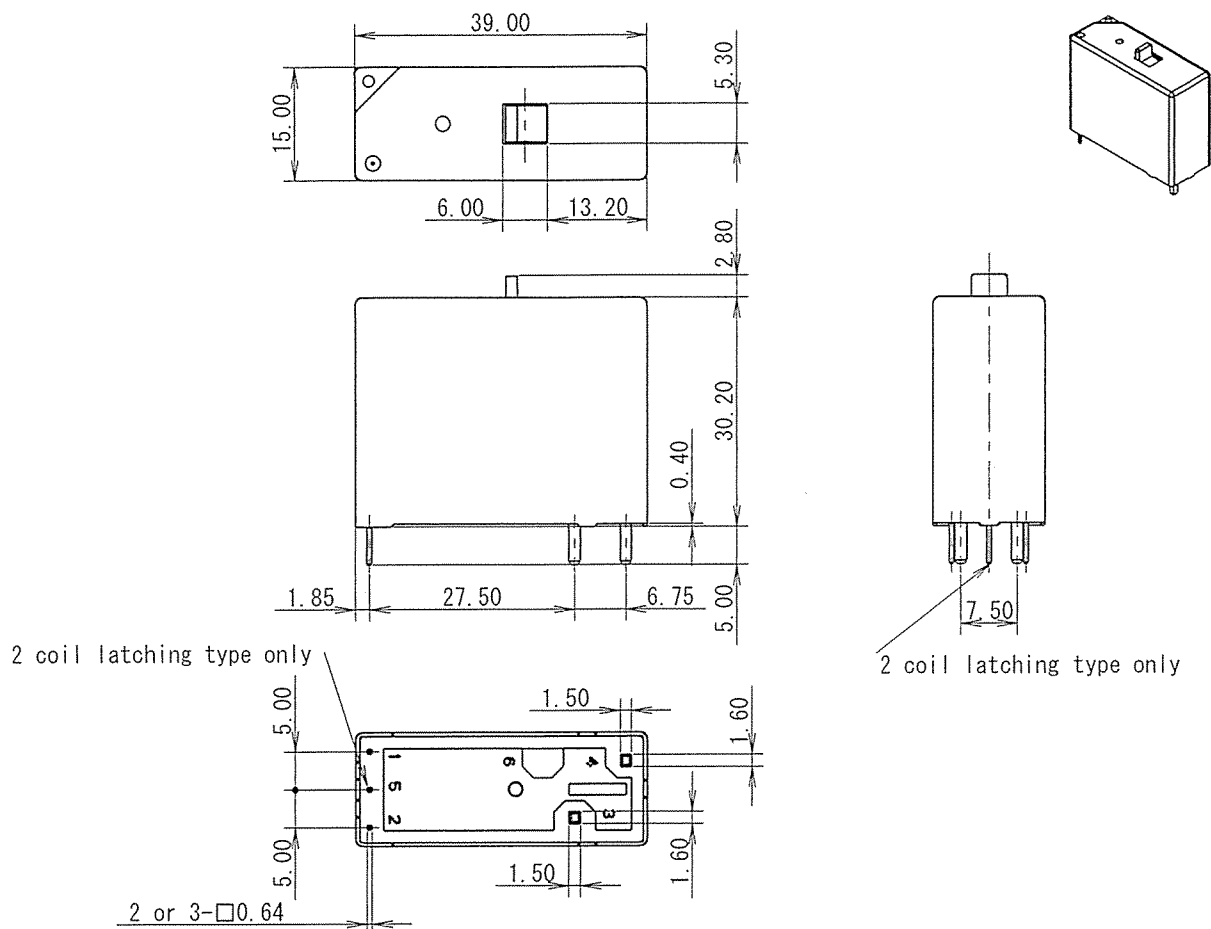
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<p>7. SOLDERING AND CLEANING</p> <p>7- 1 In case of flow and manual soldering, following conditions should be observed.</p> <p>1. Flow soldering Preheating ; Max. 120°C, within 120s, Measurement area ; Solder surface on the terminal portion Soldering ; 260±5°C, within 6s, Measurement area ; Solder surface</p> <p>2. Manual soldering Soldering ; Max. 350°C, within 3s Please check the effect with the actual board, because the effect is changed by the PCB type.</p> <p>Other cautions</p> <p>1. When soldering condition is out of recommendation, the relay performance may be adversely affected. If soldering conditions are out of recommendation, please contact us before operation.</p> <p>2. Please check the effect at the actual soldering because heat stress to relay is changed by PCB, manufacturing process condition and process condition.</p> <p>3. Solder creepage, wettability, or soldering strength will be affected by the mounting condition or soldering material. Please check the actual production condition in detail.</p> <p>4. Do not clean the relay by immersion, because the relay is not fully sealed. Do not penetrate the flux or cleaning solvent into the relay.</p> <p>5. Do not coat the relay since the coating material may penetrate into the relay and cause contact failure.</p> <p>8. APPROVED STANDARDS (To be approved)</p> <p>8- 1 This relay will be approved by UL/C-UL standard.</p> <p>UL/C-UL rating ; 50A 277V AC R 40A 347V AC R 30A 480V AC R 5540W Tungsten, 277V AC 20A Electronic ballast, 277V AC 20A Standard ballast, 277V AC 15A Standard ballast, 347V AC</p> <p>8- 2 This relay will be approved by VDE standard.</p> <p>VDE rating ; 50A 250V AC (cos φ=1.0) 25A 250V AC (cos φ=1.0) 20A 250V AC Capacitive load 200μF (IEC/EN 60669-1)</p>			
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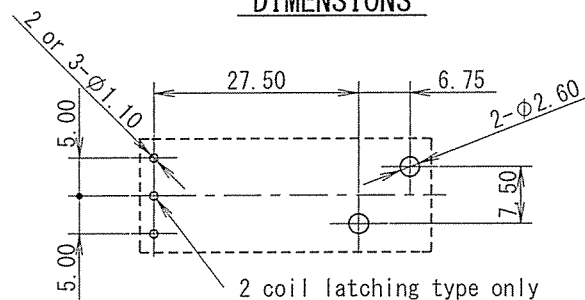
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<p>9. CAUTIONS FOR USE</p> <p>Please use our products in the conditions described in our specification sheets. Panasonic Corporation does not guarantee any failure caused by the usage in the conditions beyond the specifications.</p> <p>9- 1 Please visit our Automation Controls Products web site and refer to the caution for use and the explanations of technical terms.</p> <p>9- 2 Please check the internal connection diagram in the catalog or specification, and connect the terminals correctly. If any wrong connection is made, it may cause circuit damage by unexpected malfunction, abnormal heat, fire, and so on.</p> <p>9- 3 When the voltage is applied to the relay coil exceeding $\pm 5\%$ range of the rated voltage, relay operation cannot be assured.</p> <p>Additionally the ambient temperature and condition of the application should be considered under the worst condition of the actual usage because they may change the relay set and reset voltage.</p> <p>※It is not allowed to apply the continuous maximum voltage to the coil. In order to obtain the specified performance, please apply the rated voltage.</p> <p>9- 4 The coil voltage ripple factor should be max. 5%. When ripple current increases, the relay performance may be adversely affected, for example, the operation sound may increase. The change of ambient temperature and condition affect the relay performance, please evaluate in the worst condition of the actual usage.</p> <p>9- 5 Lifetime is specified under the standard test conditions in JIS C 5442 (1996). (Temperature: 15 to 35°C, Humidity 25 to 75%RH) Lifetime is dependent on the coil driving circuit, load type, operation frequency, on/off phase and ambient conditions. Check lifetime under the actual condition. The following load conditions may reduce lifetime:</p> <ul style="list-style-type: none"> • If the on/off phase is synchronized with the AC load, contact lockup or welding may occur due to the material transfer of contact. • When switching loads that cause contact spark discharge at high frequencies, the resulting spark energy may synthesize HNO_3 which causes contact corrosion. To prevent this, take one or more of the following actions : <ul style="list-style-type: none"> 1. Use a spark suppressor across the contacts. 2. Reduce the operation frequency. 3. Reduce the ambient humidity. • When "Dry-switching" without current conduction is used, please contact us. <p>Note: Dry-switching Dry-switching can reduce the consumption of contact material without current conduction. On the other hand, as the contact cleaning effect disappears, conduction failure may occur. This dry-switching condition is not recommended in applying our relay.</p> <p>9- 6 If the relay is dropped, it should not be used again.</p>		
Panasonic Corporation		<div style="border: 1px solid black; padding: 5px; text-align: center;"> <p>DEC. 07. 2015</p> <p>Panasonic Corporation Ise Factory</p> </div> <p>DATE : Nov. 27. 2015</p>

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<p>9- 7 When a source of silicone gas (silicone rubber, silicone oil, silicone coating materials and silicone filling materials etc.) is used around the relay, the silicone gas (low molecular weight siloxane etc.) may be produced. The produced silicone gas may penetrate the plastic case and enter the inside of the relay. When the relay is kept and used in this condition, silicone compound may adhere to the relay contacts. The silicon compound may be changed to the insulator which may cause the contact failure. Do not use any source of silicone gas around the relay.</p> <p>9- 8 Do not use the relay in areas where flammable or explosive gases from gasoline and thinner, etc., may be present.</p> <p>9- 9 Minimum switching load is a guide to the lower current limit of switching under the micro-load. This parameter is changed by the condition, such as switching times, environment condition, and expected reliability. Therefore, Panasonic Corporation cannot assure the reliability. When the relay is used lower than minimum switching load, reliability is attrition. Please use the relay over minimum switching load.</p> <p>9-10 Please check the insulation distance between each terminal and ground.</p> <p>9-11 Please evaluate the relay under the actual worst condition to enhance the reliability for the actual usage.</p> <p>9-12 Please absolutely avoid the ultrasonic and high frequency vibration to the relay that adversely affects its performance.</p> <p>9-13 Regarding the set/reset pulse time of the latching type relay, it is recommended to apply rated voltage for minimum 50ms pulse across the coil to secure the sure operation considering the ambient temperature and condition change through service life.</p> <p>9-14 The relays are shipped from the factory in the reset state. A shock to the relay during shipping or installation may change it to the set state. Therefore, it is recommended to use the relay in a circuit which initializes the relay to the required state (set or reset) whenever the power is turned on.</p> <p>9-15 Malfunction and contact failure may result if small insects get inside the relay.</p>			
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TITLE	SPECIFICATIONS FOR DJ-H RELAY [TENTATIVE]	PAGE 9/9
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<p>10. WARRANTY</p> <p>Panasonic Corporation will do our utmost to keep our product to be free from defects. However;</p> <ol style="list-style-type: none"> 1) To avoid uses of the product not in accordance with its specifications, Panasonic Corporation asks the purchaser to present the purchaser's specification, the final destination, application of the final product and the method of installation of the product. 2) Please adopt the dual circuit (protection or redundant circuit) and conduct safety test when the relay is used under the following condition. <ul style="list-style-type: none"> - When the significant damage to life and property are expected. - When the relay is used in instruments required high safety. 3) Panasonic Corporation will either repair or replace any product or part after mutual consultation if it is proven to be defective against only the items written in this specification within one year from the date of products acceptance at the site of delivery unless another contract defined each other. <p>The following are excluded from the warranty conditions:</p> <ol style="list-style-type: none"> 1. Any consequential damage or loss of profit is resulted from malfunctions or defects of the product. 2. The products are affected by the situation out of the specification at handling, the storage and the transport, etc. after the delivery. 3. An unforeseen situation arises which was unable to be predicted technically at the time of shipment. 4. A natural or man-made disaster which is beyond Panasonic Corporation's control occurs such as earthquake, flood, fire or social strife. 		
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DIMENSIONS

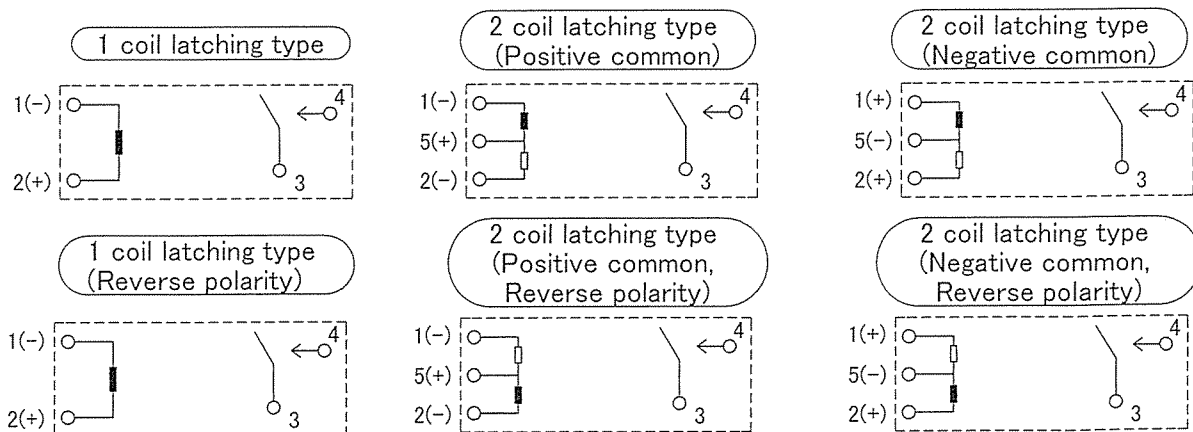


RECOMMENDED PC BOARD PATTERN (BOTTOM VIEW)

REFERENCE ONLY

DEC. 07, 2015

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SCHEMATIC (BOTTOM VIEW) (Reset Condition)

Sym	Item or Code No	Material & Size	qt.	Process	Remark
Catalog No	ADJH2-1..	Drawing Name	DIMENSIONS [TENTATIVE]		
Name	DJ-H RELAY	Drawing No	ADJH2-1..		
Remark		Scale	1:1	Unit: mm	Date Nov.27.2015
Drawn	<i>Y. Matsubara</i>	Checked	<i>T. Wata</i>	Panasonic Corporation	
Designed	<i>R. Horiguchi</i>	Enacted	<i>Y. Furukawa</i>		