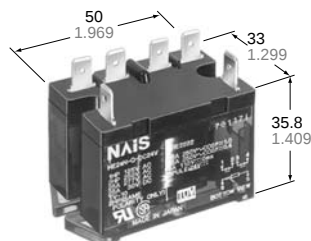


Panasonic
ideas for life

TV-15, 30 AMP (1 Form A) Power Relay

HE RELAYS



mm inch

FEATURES

- High contact capacity with superior inrush current characteristics;

	1 Form A	2 Form A
Rating	30 A 277 V AC	25 A 277 V AC
TV rating	TV-15	TV-10

- Excellent high heat-resistance;
- High dielectric strength: 10,000 V surge Conforming to VDE0806 (Insulation gap: 8 mm .315 inch) VDE, TÜV also approved

SPECIFICATIONS

Contacts

Type	DC coil type	AC coil type
Arrangement	1a 2a	1a 2a
Contact material	Silver alloy	
Initial contact resistance, max. (By voltage drop 6 V DC 1A)	100 mΩ	
Rating (resistive)	Nominal switching capacity	30 A 277 V AC, 25 A 277 V AC
	Max. switching power	8,310 VA, 6,925 VA
	Max. switching voltage	277 V AC, 30 V DC
	Max. switching current	30 A, 25 A
	Min. switching capacity ^{#1}	100 mA, 5 V DC
Expected life (min. operations)	Mechanical (at 180 cpm)	10 ⁷ , 5×10 ⁶
	Electrical (at 20 cpm)	10 ⁵ (1a: 30 A 277 V AC, 2a: 25 A 277 V AC), 2×10 ⁵ (1a: 30 A 250 V AC, 2a: 20 A 250 V AC)

Coil (at 20°C 68°F)

	DC coil type	AC coil type
Nominal operating power	1.92 W	See Coil data (next page)

#1 This value can change due to the switching frequency, environmental conditions, and desired reliability level, therefore it is recommended to check this with the actual load.

Remarks

- * Specifications will vary with foreign standards certification ratings.
- *¹ Measurement at same location as "initial breakdown voltage" section
- *² Detection current: 10 mA
- *³ Wave is standard shock voltage of ±1.2×50μs according to JEC-212-1981
- *⁴ Excluding contact bounce time
- *⁵ Half-wave pulse of sine wave: 11ms; detection time: 10μs
- *⁶ Half-wave pulse of sine wave: 6ms
- *⁷ Detection time: 10μs
- *⁸ Refer to 6. Conditions for operation, transport and storage mentioned in AMBIENT ENVIRONMENT (see catalog).

Characteristics

	DC coil type	AC coil type
Maximum operating speed	20 cpm	
Initial insulation resistance* ¹	Min. 1,000 MΩ at 500 V DC	
Initial breakdown voltage* ²	Between open contacts	2,000 Vrms for 1 min.
	Between contacts and coil	5,000 Vrms for 1 min.
	Between contact sets (2a)	4,000 Vrms for 1 min.
Surge voltage between coil and contact* ³	Min. 10,000 V	
Operate time* ⁴ (at nominal voltage)	Max. 30 ms	
Release time* ⁴ (at nominal voltage)	Max. 10 ms	Max. 30 ms
Temperature rise, max. (resistive load)(at 55°C)	60°C	65°C
Shock resistance	Functional* ⁵	98 m/s ² {10 G}
	Destructive* ⁶	980 m/s ² {100 G}
Vibration resistance	Functional* ⁷	10 to 55 Hz at double amplitude of 1 mm
	Destructive	10 to 55 Hz at double amplitude of 1.5 mm
Conditions for operation, transport and storage* ⁸ (Not freezing and condensing at low temperature)	Ambient temp.	−50°C to +55°C −58°F to +131°F
	Humidity	5 to 85% R.H.
	Air pressure	86 to 106 kPa
Unit weight	Approx. 90 g 3.17 oz (Plug-in type)	

TYPICAL APPLICATIONS

- Home appliances
 - Air conditioners
 - Microwave ovens
 - TV sets
 - Heaters
 - Stereo
- Office equipment
 - Copiers
 - Vending machines

ORDERING INFORMATION

HE	1a	N	S	DC12	V
Contact arrangement	Pick-up voltage	Terminals		Coil voltage	
1a: 1 Form A 2a: 2 Form A	N: 70% of nominal voltage	Nil: Plug-in terminal type S: Screw terminal type SW: Screw terminal type (wide pitch) Q: NEMA terminal type P: PC board terminal type*		DC: 6, 12, 24, 48, 110 V AC: 12, 24, 48, 120, 240 V	

Standard packing: Carton: 20 pcs.; Case: 100 pcs.

* PC board terminal are available only for 1 Form A type of DC coil voltage. UL/CSA, TÜV approved type is standard.

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TYPES

	Terminal shape	Contact arrangement	
		1 Form A	2 Form A
DC type	Plug-in terminal	HE1aN-DC6V	HE2aN-DC6V
		HE1aN-DC12V	HE2aN-DC12V
		HE1aN-DC24V	HE2aN-DC24V
		HE1aN-DC48V	HE2aN-DC48V
		HE1aN-DC110V	HE2aN-DC110V
	Screw terminal	HE1aN-S-DC6V	HE2aN-S-DC6V
		HE1aN-S-DC12V	HE2aN-S-DC12V
		HE1aN-S-DC24V	HE2aN-S-DC24V
		HE1aN-S-DC48V	HE2aN-S-DC48V
		HE1aN-S-DC110V	HE2aN-S-DC110V
	Screw terminal (wide pitch)	HE1aN-SW-DC6V	HE2aN-SW-DC6V
		HE1aN-SW-DC12V	HE2aN-SW-DC12V
		HE1aN-SW-DC24V	HE2aN-SW-DC24V
		HE1aN-SW-DC48V	HE2aN-SW-DC48V
		HE1aN-SW-DC110V	HE2aN-SW-DC110V
	NEMA terminal	HE1aN-Q-DC6V	HE2aN-Q-DC6V
		HE1aN-Q-DC12V	HE2aN-Q-DC12V
		HE1aN-Q-DC24V	HE2aN-Q-DC24V
		HE1aN-Q-DC48V	HE2aN-Q-DC48V
		HE1aN-Q-DC110V	HE2aN-Q-DC110V
	PC board terminal	HE1aN-P-DC6V	—
		HE1aN-P-DC12V	—
		HE1aN-P-DC24V	—
		HE1aN-P-DC48V	—
		HE1aN-P-DC110V	—
AC type	Plug-in terminal	HE1aN-AC12V	HE2aN-AC12V
		HE1aN-AC24V	HE2aN-AC24V
		HE1aN-AC48V	HE2aN-AC48V
		HE1aN-AC120V	HE2aN-AC120V
		HE1aN-AC240V	HE2aN-AC240V
	Screw terminal	HE1aN-S-AC12V	HE2aN-S-AC12V
		HE1aN-S-AC24V	HE2aN-S-AC24V
		HE1aN-S-AC48V	HE2aN-S-AC48V
		HE1aN-S-AC120V	HE2aN-S-AC120V
		HE1aN-S-AC240V	HE2aN-S-AC240V
	Screw terminal (wide pitch)	HE1aN-SW-AC12V	HE2aN-SW-AC12V
		HE1aN-SW-AC24V	HE2aN-SW-AC24V
		HE1aN-SW-AC48V	HE2aN-SW-AC48V
		HE1aN-SW-AC120V	HE2aN-SW-AC120V
		HE1aN-SW-AC240V	HE2aN-SW-AC240V
	NEMA terminal	HE1aN-Q-AC12V	HE2aN-Q-AC12V
		HE1aN-Q-AC24V	HE2aN-Q-AC24V
		HE1aN-Q-AC48V	HE2aN-Q-AC48V
		HE1aN-Q-AC120V	HE2aN-Q-AC120V
		HE1aN-Q-AC240V	HE2aN-Q-AC240V

COIL DATA at 20°C 68°F

	Nominal voltage	Pick-up voltage, V DC (max.)	Drop-out voltage, V DC (min.)	Nominal coil current, mA (±10%)	Coil resistance, Ω (±10%)	Nominal operating power, W	Max. allowable voltage (at 50°C 122°F), V DC
DC coil type	6 V DC	4.2	0.6	320.9	18.8	1.92	6.6
	12 V DC	8.4	1.2	160	75	1.92	13.2
	24 V DC	16.8	2.4	80	300	1.92	26.4
	48 V DC	33.6	4.8	40	1200	1.92	52.8
	110 V DC	77.0	11.0	17.5	6300	1.92	121.0
	Nominal voltage	Pick-up voltage, V AC (max.)	Drop-out voltage, V AC (min.)	Nominal coil current, mA (±10%)	Coil resistance, Ω (±10%)	Nominal operating power, VA	Max. allowable voltage (at 50°C 122°F), V AC
AC coil type	12 V AC	8.4	1.8	138*	75	1.7	13.2
	24 V AC	16.8	3.6	74*	300	1.8	26.4
	48 V AC	33.6	7.2	39*	1200	1.9	52.8
	120 V AC	70.0	18.0	22.1*	5200	2.7	132.0
	240 V AC	140.0	36.0	10.8*	20800	2.6	264.0

*Value at 60 Hz