Compact size 2 Form A and 2 Form A 1 Form B 35A power relays for energy management and industrial equipment

HE-S RELAYS

RoHS compliant

Protective construction: Flux-resistant type

TYPICAL APPLICATIONS

- **Photovoltaic power generation systems (Solar inverter)**
- **Uninterruptible Power Supplies (UPS)**
- **Inverter**
- **Office air conditioner**
- **Industrial equipment**

FEATURES

1. High-capacity and long life 35A 277V AC 5×10^4 (long life type)

2. Electrical life (resistive load)

Form A contact	Standard type	Long life type
35A 277V AC	3×10^4	5×10^4
30A 220V AC	—	1×10^5
20A 277V AC	1×10^5	2×10^5

3. Compact size and low operating power

W: 30 × L: 36 × H: 40 mm W: 1.181 × L: 1.417 × H: 1.575 inch
Operating power: 1,880 mW (holding power: 170 mW)

4. Reduced coil holding voltage contributes to saving energy of equipment

The coil holding voltage can be reduced up to 30%V of the nominal coil voltage. This equals to operating power of approximately 170 mW, which contributes equipment energy savings.

* Coil holding voltage is the coil voltage after 100 ms from the applied nominal coil voltage.

5. Contact gap: 3.2 mm .126 inch (VDE0126 compliant)

Compliant with European photovoltaic standard VDE0126
Compliant with EN61810-1 2.5 kV surge breakdown voltage (between contacts)

6. Insulation distance (initial)

- Between Form A contact and coil: Min. 11.0 mm .433 inch (Clearance/Creepage)
- Between Form B contact and coil: Min. 3.2 mm .126 inch (Clearance/Creepage)
- Between Form A contact sets: Min. 8.2 mm .323 inch (Clearance/Creepage)
- Between Form A contact and Form B contact: Min. 12.8 mm .504 inch (Clearance/Creepage)

7. Contact gap (initial)

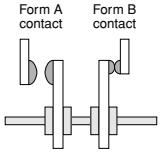
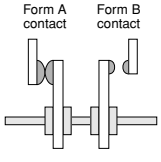
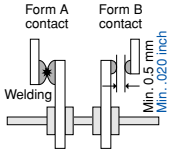
- Form A contact: Min. 3.2 mm .126 inch/each contact
- Form B contact: Min. 0.7 mm .028 inch
  Min. 0.5 mm .020 inch (When Form A contact welded)

8. Mirror contact mechanisms (Compliant with EN60947-4-1 mirror contact)

Detection of main contact welding makes it possible to construct a safety circuit.

- Designed so that Form A contact and Form B contact will not close at the same time.
- When Form A contact welded, Form B contact gap of at least 0.5 mm .020 inch is maintained.

* Form B contact, when used to monitor the condition of Form A contact, can be used exclusively as an auxiliary contact.

Condi-tions	Normal operation		When Form A contact welded
	Non-excitation	Excitation	Non-excitation
Mirror contact mecha-nisms			

© Panasonic Corporation 2016

ORDERING INFORMATION

AHES [ ] [ ] 9 [ ]

Contact arrangement / Operating function
3: 2 Form A Single side stable type
4: 2 Form A 1 Form B Single side stable type

Contact specifications
1: Standard type
2: Long life type

Terminals form
9: PC board terminal type

Nominal coil voltage (DC)

Part No.	0	1	2	3	5
Nominal coil voltage (V)	6	12	24	48	9

Note: Certified by UL/C-UL and VDE

TYPES

Contact arrangement	Nominal coil voltage	Part No.	
		Standard type	Long life type
2 Form A	6V DC	AHES3190	AHES3290
	9V DC	AHES3195	AHES3295
	12V DC	AHES3191	AHES3291
	24V DC	AHES3192	AHES3292
	48V DC	AHES3193	AHES3293
2 Form A 1 Form B	6V DC	AHES4190	AHES4290
	9V DC	AHES4195	AHES4295
	12V DC	AHES4191	AHES4291
	24V DC	AHES4192	AHES4292
	48V DC	AHES4193	AHES4293

Standard packing: Carton: 25 pcs.; Case: 100 pcs.

RATING

1. Coil data

Nominal coil voltage	Pick-up voltage (at 20°C 68°F) (Initial)	Drop-out voltage (at 20°C 68°F) (Initial)	Nominal operating current [±10%] (at 20°C 68°F)	Coil resistance [±10%] (at 20°C 68°F)	Nominal operating power (at 20°C 68°F)	Max. applied voltage (at 55°C 131°F)
6V DC	75%V or less of nominal voltage	5%V or more of nominal voltage	313mA	19.1Ω	ON: 1,880mW Holding: 170mW*1	110%V of nominal coil voltage 150%V of nominal coil voltage*2
9V DC			209mA	43.1Ω		
12V DC			157mA	76.6Ω		
24V DC			78mA	306.4Ω		
48V DC			39mA	1,225.5Ω		

Notes: *1. With 30%V coil holding voltage
*2. With no more than 24 hours per time with non-consecutive voltage application time.

© Panasonic Corporation 2016