



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

# HE-S RELAYS

**New**



**RoHS compliant**

Protective construction: Flux-resistant type

## FEATURES

**1. High-capacity and long life 35A 277V AC 5×10<sup>4</sup> (long life type)**

**2. Electrical life (resistive load)**

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

**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)

## TYPICAL APPLICATIONS

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

**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.



**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.