HF176F SOLAR RELAY

File No:E133481

File No.: R50411032

Features

- 65A swithing capitable.
- Applicable to solar photovoltaic inverter
- 3mm contact gap
- Low coil hoilding voltage contributes to saving energy of equipment.
- UL insulation system: class F.

RoHS compliant

CONTACT DATA

Contact arrangement	1A
Contact resistance (Initial)	≤10mΩ max(6VDC 20A)
Contact material	$AgSnO_2$, AgNi
Contact rating (Res. load)	Making 20A, Carrying 65A, Breaking 20A, 277VAC 85°C
Max. switching voltage	400VAC
Max. switching current	65A
Max. switching power	18005VA
Mechanical endurance	1 x 10^6 OPS
Electrical endurance	3 x 10^4 OPS (Making 20A, Carrying 65A, Breaking 20A, Resistive load, at 85°C, 1s on 9s off)

CHARACTERISTICS

Insulation resistance		1000MΩ (at 500VDC)
Dielectric strength	Between coil & contacts	5000VAC 1min
	Between open contacts	2000VAC 1min
Surge voltage (between coil & contacts)		10kV(1.2 / 50μs)
Operate time (at nomi. volt.)		30ms max.
Release time (at nomi. volt.)		10ms max.
Temperature rise (at nomi. volt.)		70K max.(Contact load current 65A, 50% to 60% of rated voltage excitation, at 85°C)
Shock resistance	Functional	98m/s²
	Destructive	980m/s²
Vibration resistance		10Hz to 55Hz 1.5mm DA
Humidity		5% to 85% RH
Ambient temperature		-40°C to 85°C (Apply holding voltage to coil)
Termination		PCB
Unit weight		Approx.100g
Construction		Flux proofed

Notes: The data shown above are initial values.

COIL

Coil power	Approx.1.92W
Holding voltage	40% to 100%U_N(at 25°C) 50% to 60%U_N(at 85°C)

Notes: 1)The coil holding voltage is the voltage applied to coil 100ms after the rated voltage.
2)To avoid overheating and burning, the coil can not be consistently applied to with voltage larger than maximum holding voltage.

COIL DATA at 23°C

Nominal Voltage VDC 1)	Pick-up Voltage VDC max.1)	Drop-out Voltage VDC min.1)	Max. Voltage VDC 2)	Coil Resistance Ω
6	≤4.2	≥0.6	6.6	18.8 x (1±10%)
9	≤6.3	≥0.9	9.9	42.2 x (1±10%)
12	≤8.4	≥1.2	13.2	75 x (1±10%)
24	≤16.8	≥2.4	26.4	300 x (1±10%)

Notes: 1)The data shown above are initial values.
2)*Maximun voltage refers to the maximun voltage which relay coil could endure in a short period of time.

SAFETY APPROVAL RATINGS

UL/CUL	AgNi	Making 20A,Carrying 65A,Breaking 20A,400VAC Resistive at 85°C 48A 277VAC General use at 85°C 60A 277VAC General use at 85°C
	$AgSnO_2$	Making 20A,Carrying 65A,Breaking 20A,400VAC Resistive at 85°C 65A 277VAC Resistive at 85°C 65A 30VDC Resistive at 85°C 65A 60VDC Resistive at 85°C
TÜV	AgNi	Making 20A,Carrying 65A,Breaking 20A,400VAC Resistive at 85°C 48A 277VAC 85°C,cos ϕ =0.8 60A 277VAC 85°C,cos ϕ =0.8
	$AgSnO_2$	Making 20A,Carrying 65A,Breaking 20A,400VAC Resistive at 85°C 65A 277VAC 85°C,cos ϕ =0.8 65A 30VDC 85°C,L/R=0 65A 60VDC 85°C,L/R=0

Notes: 1) All values unspecified are at room temperature.
2) Only typical loads are listed above. Other load specifications can be available upon request.

ORDERING INFORMATION

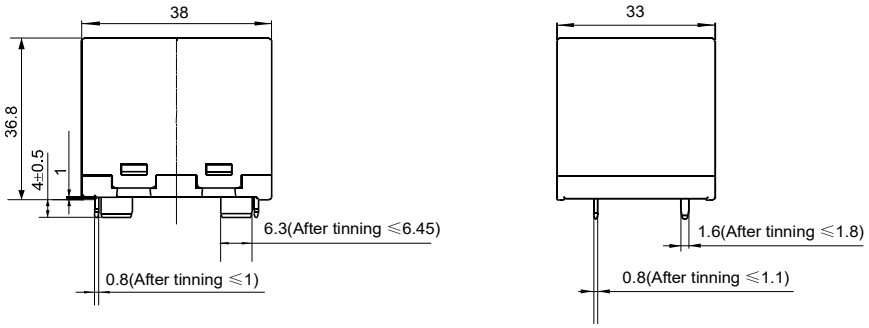
	HF176F/	12	-H	3	F	(XXX)
Type						
Coil voltage	6, 9, 12, 24VDC					
Contact arrangement	**H:**1 Form A					
Contact matcrial	**3:** AgNi	**T:** $AgSnO_2$				
Insulation standard	**F:** Class F					
Special code	**XXX:** Customer special requirement		**Nil:** Standard			

Notes: 1) Water cleaning or surface process is not suggested after the flux-proofed relays are assembled on PCB.
2) Flux-proofed relays can not be used in the environment with pollutants like H_2S, SO_2, NO_2, dust, etc.
3) The customer special requirement express as special code after evaluating by Hongfa.

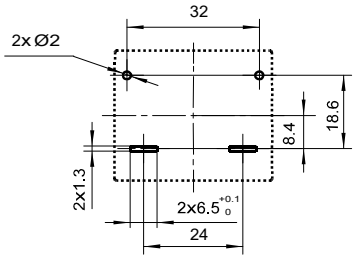
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

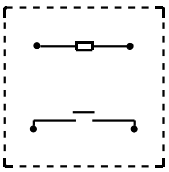
Outline Dimensions



PCB Layout (Bottom view)



Wiring Diagram
(Bottom view)



Notes: 1) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be ±0.2mm; outline dimension >1mm and ≤5mm, tolerance should be ±0.3mm; outline dimension >5mm, tolerance should be ±0.4mm.
2) The tolerance without indicating for PCB layout is always ±0.1mm.