HF116F-G SOLAR RELAY

File No.:E134517

File No.:R 50154722

File No.: CQC18002206328

Features

- 55A switching capability
- Applicable to inverter used for photovoltaic power generation systems
- 4kV dielectric strength(between coil and contacts)
- 3mm contact gap (compliant to European Photovoltaic Standard VDE0126, compliant to IEC 62109-2-2011)
- 1A and 2A configuration available
- UL insulation system: Class F

CONTACT DATA

Contact arrangement	1A, 2A
Contact resistance[1)]	10mΩ max(at 10A 13.5VDC)
Contact material	$AgSnO_2$, AgNi
Contact rating (Res. load)	50A 277VAC
Max. switching voltage	277VAC
Max. switching current	55A
Max. switching power	15235VA
Mechanical endurance	1 x 10^6OPS
Electrical endurance	3 x 10^4OPS (50A 277VAC, at room temp, 1s on 9s off)

Notes: 1) The data shown above are initial values.

CHARACTERISTICS

Insulation resistance		1000MΩ (at 500VDC)
Dielectric strength	Between open contacts	2000VAC 1min
	Between coil & contacts	4000VAC 1min
	Between contact sets	2000VAC 1min
Surge Voltage		6kV (1.2/50μs)
Operate time (at nomi. volt.)		30ms max
Release time (at nomi. volt.)		30ms max
Shock resistance	Functional	98m/s²
	Destructive	980m/s²
Vibration resistance*	Functional	10Hz to 55Hz 1.5mm DA
	Destructive	10Hz to 55Hz 1.5mm DA
Humidity		5% to 85% RH
Ambient temperature		-40˚C to 85˚C
Termination[2)]		PCB
Unit weight		Approx. 120g
Construction		G1: Dust protected; G2, G3: Flux proofed

Notes: 1) The data shown above are initial values.
2) It does not allow using quick-connect terminations.
3)*Index is not in relay width direction.

COIL

Coil power	Approx. 3.2W
Holding voltage	60% to 120%U_N(at 23˚C) 70% to 95%U_N(at 85˚C)

Notes: 1)The coil holding voltage is the voltage applied to coil 200ms 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	Pick-up Voltage VDC max[1)]	Drop-out Voltage VDC min[1)]	Max. Voltage VDC[2)]	Coil Resistance Ω
3	2.25	0.3	3.3	2.8 x (1±10%)
6	4.50	0.6	6.6	11.3 x (1±10%)
9	6.75	0.9	9.9	25 x (1±10%)
12	9.00	1.2	13.2	45 x (1±10%)
24	18.0	2.4	26.4	180 x (1±10%)
48	36.0	4.8	52.8	720 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	$AgSnO_2$	277VAC 50A 277VAC 55A
TÜV	$AgSnO_2$	250VAC 50A
	AgNi	250VAC 55A

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

	HF116F-G1/	12	-1H	T	F	(XXX)
Type	**G1:** Type 1 **G2:** Type 2 **G3:** Type 3					
Coil voltage	3, 6, 9, 12, 24, 48VDC					
Contact arrangement	**1H:**1 Form A **2H:** 2 Form A[3]					
Contact material	**T:** $AgSnO_2$ **Nil:** AgNi					
Insulation standard	**F:** Class F					
Special code[4]	**XXX:** Customer special requirement **Nil:** Standard					

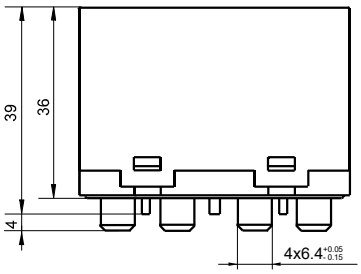
Notes: 1) Water cleaning or surface process is not suggested after the dust-protected relays are assembled on PCB.
2) Dust-protected relays can not be used in the environment with pollutants like H_2S, SO_2, NO_2, dust, etc.
3) The standard product with 2H contact configuration is only applicable to circuits a and g specified in Table 16 of IEC 61810-1:2015. For applications in other circuits, please contact our company.
4) The customer special requirement express as special code after evaluating by Hongfa.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

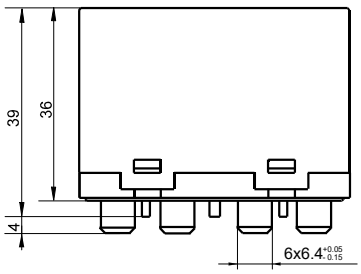
Unit: mm

Outline Dimensions

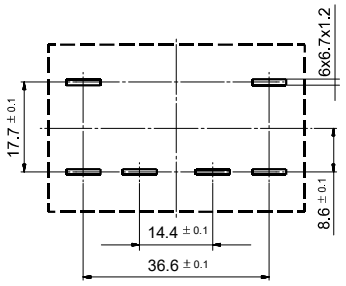
HF116F-G1/□□-1H□□

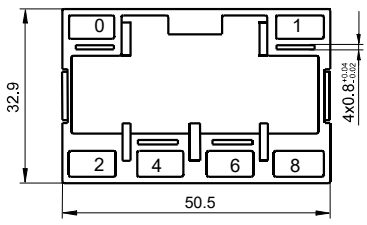


HF116F-G1/□□ -2H□□

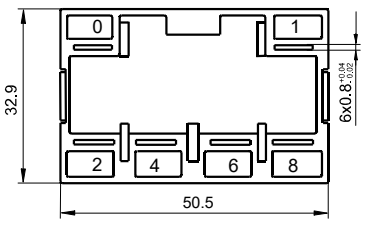


PCB Layout
(Bottom view)





(Bottom view)



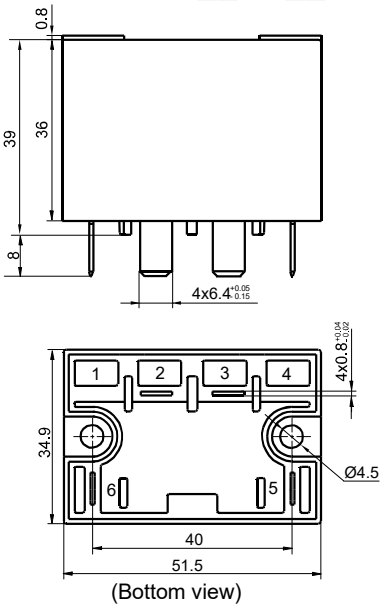
(Bottom view)

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

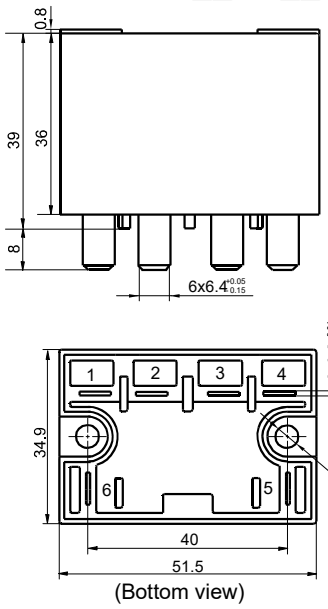
Unit: mm

Outline Dimensions

HF116F-G2/□□ -1H□□

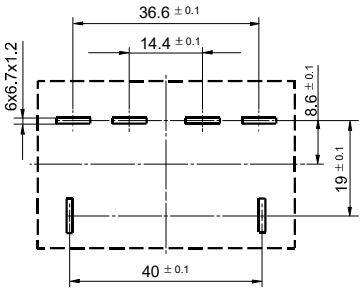


HF116F-G2/□□ -2H□□



PCB Layout

(Bottom view)

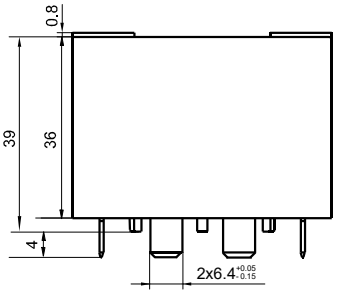


(Bottom view)

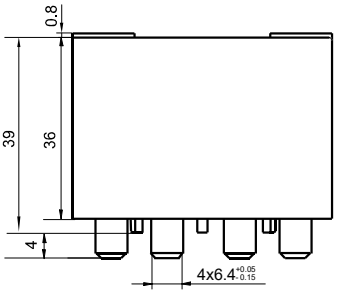
(Bottom view)

Outline Dimensions

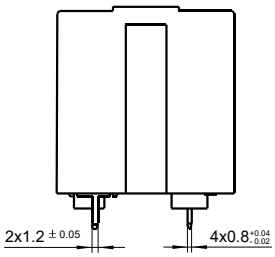
HF116F-G3/□□ -1H□□

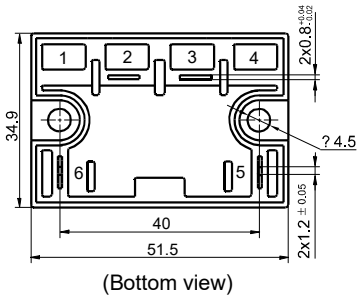


HF116F-G3/□□ -2H□□



HF116F-G3





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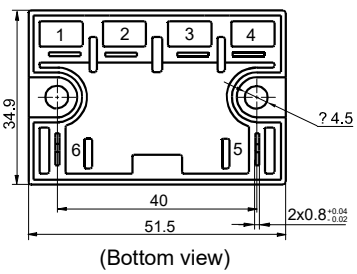
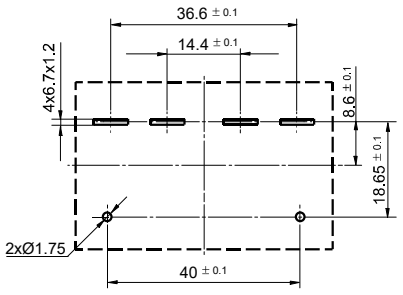


(Bottom view)

PCB Layout (Bottom view)



Remark: 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.

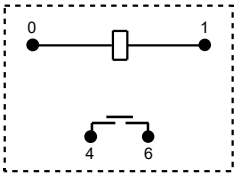
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

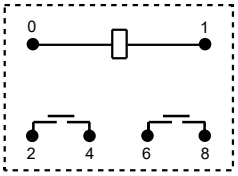
Wiring Diagram
(Bottom View)

G1 Type

1 Form A

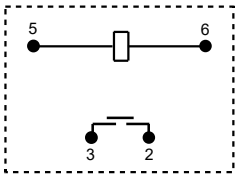


2 Form A



G2, G3 Type

1 Form A



2 Form A