HF92F MINIATURE INTERMEDIATE POWER RELAY

File No.:E134517

File No.:40016109

File No.:CQC09002037814 (DC type)

Features

- 30A switching capability
- Creepage distance: 8mm
- 4kV dielectric strength (between coil and contacts)
- UL insulation system: Class F
- Plastic sealed and dust protected types available
- PCB & QC layouts available
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (52.0 x 33.7 x 26.7) mm

CONTACT DATA

Contact arrangement	2A, 2C
Contact resistance	50mΩ max.(at 1A 24VDC)
Contact material	$AgSnO_2$, AgCdO
Contact rating (Res. load)	NO: 30A 250VAC; 30A 277VAC NC: 3A 250VAC; 3A 277VAC
Max. switching voltage	277VAC
Max. switching current	30A
Max. switching power	8310VA
Mechanical endurance	5×10^6OPS
Electrical endurance	1×10^5OPS

CHARACTERISTICS

Insulation resistance		1000MΩ (at 500VDC)
Dielectric strength	Between coil & contacts	4000VAC 1min
	Between open contacts	1500VAC 1min
	Between contact poles	2000VAC 1min
Surge voltage (between coil & contacts)		10kV (1.2/50μs)
Operate time (at nomi. volt.)		DC type: 25ms max.
Release time (at nomi. volt.)		DC type: 25ms max.
Temperature rise (at nomi. volt.)		AC type:90K max. DC type:70K max.
Shock resistance	Functional	98m/s²
	Destructive	980m/s²
Vibration resistance		10Hz to 55Hz 1.65mm DA
Humidity		5% to 85% RH
Ambient temperature		AC: -40˚C to 65˚C DC: -40˚C to 85˚C
Termination		PCB, QC
Unit weight		Approx. 86g
Construction		Plastic sealed, Dust protected

Notes: The data shown above are initial values.

COIL

Coil power	DC type: Approx. 1.7W; AC type: Approx. 4.0VA

COIL DATA at 23˚C

DC type

Coil Code	Nominal Voltage VDC	Pick-up Voltage VDC max.	Drop-out Voltage VDC min.	Max. Allowable Voltage VDC	Coil Resistance x (1±10%)Ω
005D	5	3.8	0.5	8.0	15.3
006D	6	4.5	0.6	9.6	22
012D	12	9	1.2	19.2	86
024D	24	18	2.4	38.4	350
048D	48	36	4.8	76.8	1390
110D	110	82.5	11	176	7255

AC type (at 50Hz)

Coil Code	Nominal Voltage VDC	Pick-up Voltage VDC max.	Drop-out Voltage VDC min.	Max. Allowable Voltage VDC	Coil Resistance x (1±10%)Ω
024A5	24	19.2	4.8	26.4	45
120A5	120	96	24	132	1125
208A5	208	166.4	41.6	229	3278
220A5	220	176	44	242	3800
240A5	240	192	48	264	4500
277A5	277	221.6	55.4	305	5960

AC type (at 60Hz)

Coil Code	Nominal Voltage VDC	Pick-up Voltage VDC max.	Drop-out Voltage VDC min.	Max. Allowable Voltage VDC	Coil Resistance x (1±10%)Ω
024A6	24	19.2	4.8	26.4	35.7
120A6	120	96	24	132	830
208A6	208	166.4	41.6	229	2600
220A6	220	176	44	242	2870
240A6	240	192	48	264	3800
277A6	277	221.6	55.4	305	4700

COIL DATA

at 23˚C

AC type (at 50Hz/60Hz)

Coil Code	Nominal Voltage VAC	Pick-up Voltage VAC max.		Drop-out Voltage VAC min.		Max. Allowable Voltage VAC	Coil Resistance Ω
		50Hz	60Hz	50Hz	60Hz		
120A	120	88	96	22	24	132	950 x (1±10%)
208A	208	160	166.4	40	41.6	229	2841 x (1±10%)
240A	240	176	192	44	48	264	3800 x (1±10%)
277A	277	200	221.6	50	55.4	305	5485 x (1±10%)

SAFETY APPROVAL RATINGS

UL/CUL	NO	30A 277VAC 1HP 120VAC 2.5HP 240VAC 110 LRA/25.3 FLA 240VAC (DC type)
	NC	3A 277VAC
VDE ($AgSnO_2$)	NO	30A 250VAC 20A 250VAC
	NC	3A 250VAC

Notes: 1) Only some typical ratings are listed above. If more details are required, please contact us.
2) Product with 'XXX A' coil code does not pass the VDE certification.

ORDERING INFORMATION

HF92F -012D -2C 2 2 F (XXX)

Type

Coil Code
XXX D:DC type(5,6,12,24,48,110VDC)
XXX A5:AC type 50Hz(24,120,208,220,240,277VAC)
XXX A6:AC type 60Hz(24,120,208,220,240,277VAC)
XXX A:AC type 50Hz/60Hz(120,208,240,277VAC)

Contact arrangement **2A:** 2 Form A **2C:** 2 Form C

Termination **1:** PCB **2, 3:** QC

Contact material **1:** $AgSnO_2$ **2:** AgCdO

Construction [1] **S:** Plastic sealed **F:** Dust protected

Customer special code

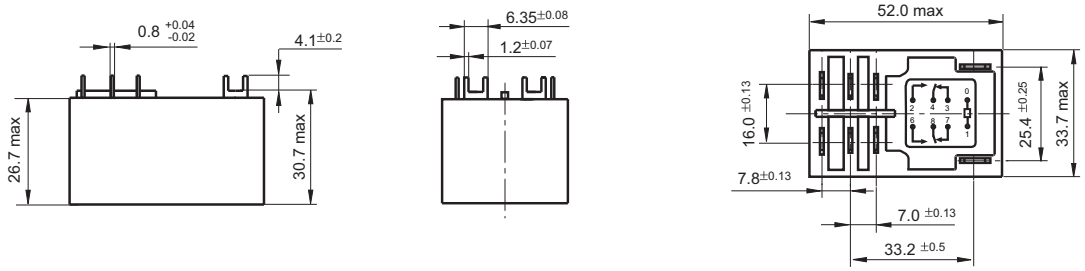
Notes: 1) We recommend dust protected types for a clean environment (free from contaminations like H_2S, SO_2, NO_2, dust, etc.).
We suggest to choose plastic sealed types and validate it in real application for an unclean environment (with contaminations like H_2S, SO_2, NO_2, dust, etc.).
If water cleaning is required after the relay is assembled on PCB, please contact us for suggestion about suitable parts.
2) To avoid using relays under strong magnetic field which will change the parameters of relays such as pick-up voltage and drop-out voltage.
3) Relays may be damaged because of falling or when shocking conditions exceed the requirement.
4) Regarding the wash tight relay, we should leave it cooling naturally until below 40˚C after welding, then clean it and deal with coating, remarkably the temperature of solvents should also be controlled below 40˚C.Please avoid cleaning the relay by ultrasonic, avoid using the solvents like gasoline, Freon, and so on, which would affect the configuration of relay or influence the environment.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

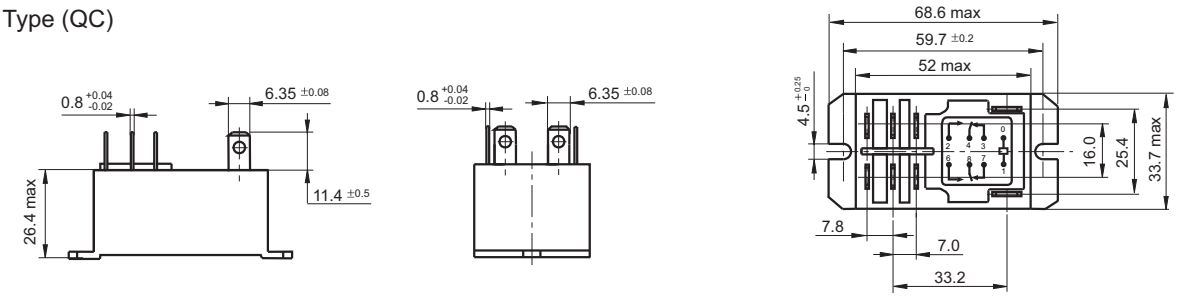
Unit: mm

Outline Dimensions

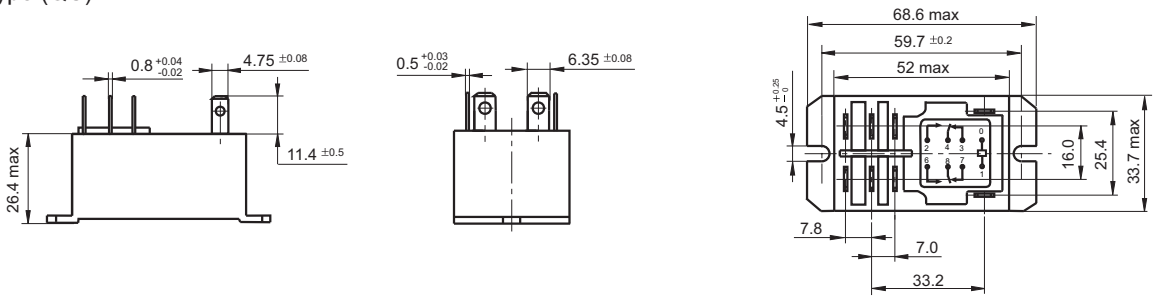
1 Type (PCB)



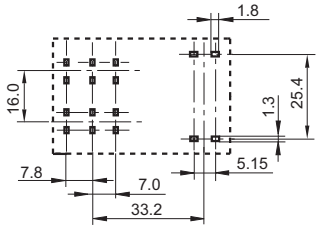
2 Type (QC)



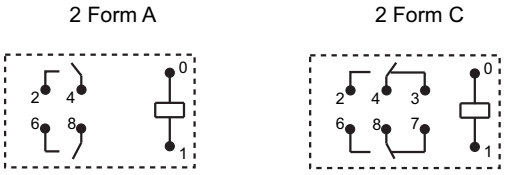
3 Type (QC)



PCB Layout (Bottom view)



Wiring Diagram (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.

CHARACTERISTIC CURVES

MAX. ALLOWABLE AMBIENT TEMPERATURE