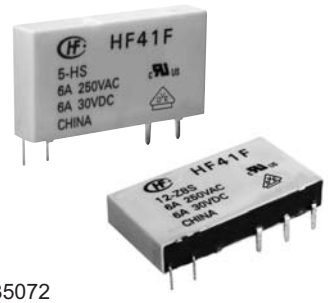
HF41F SUBMINIATURE POWER RELAY

c UL us
File No.: E133481

VDE
File No.: 40020043

CQC
File No.: CQC09002035072



Features

- Slim size (width 5mm)
- High breakdowm voltage 4kV (between coil and contacts)
- Surge voltage up to 6kV (between coil and contacts)
- Meeting VDE 0700, 0631 reinforce insulation
- High sensitive: Approx.170mW
- Sockets available
- 1 Form A and 1 Form C configurations
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (28.0 x 5.0 x 15.0) mm

CONTACT DATA

Contact arrangement	1A, 1C
Contact resistance	100mΩ max. (at 1A 6VDC) Gold plated: 30mΩ max.(at 1A 6VDC)
Contact material	$AgSnO_2$, AgNi
Contact rating (Res. load)	6A 250VAC/30VDC
Max. switching voltage	400VAC / 125VDC
Max. switching current	6A
Max. switching power	1500VA / 180W
Mechanical endurance	1 x 10^7OPS
Electrical endurance (UL Approval)	1A: 6 x 10^4OPS (at 85°C) 1C: (NO) 3 x 10^4OPS (at 85°C) (NC) 1 x 10^4OPS (at 85°C)

CHARACTERISTICS

Insulation resistance		1000MΩ (at 500VDC)
Dielectric strength	Between coil & contacts	4000VAC 1 min
	Between open contacts	1000VAC 1 min
Operate time (at nomi.volt.)		8ms max.
Release time (at nomi.volt.)		4ms max.
Shock resistance	Functional	49m/s²
	Destructive	980m/s²
Vibration resistance		10Hz to 55Hz 1mm DA
Humidity		5% to 85% RH
Ambient temperature		-40°C to 85°C
Termination		PCB
Unit weight		Approx. 5g
Construction		Plastic sealed, Flux proofed

Notes: 1) The data shown above are initial values.
2) Please find coil temperature curve in the characteristic curves below.
3) Please do not install a SPDT(1 Form C) type relay on either of the smallest sides or facing downward.
4) UL insulation system: Class A

COIL

Coil power	5VDC to 24VDC: Approx. 170mW 48VDC, 60VDC: Approx. 210mW

COIL DATA at 23°C

Nominal Voltage VDC	Pick-up Voltage VDC max.	Drop-out Voltage VDC min.	Max. Allowable Voltage VDC	Coil Resistance Ω
5	3.75	0.25	7.5	147 x (1±10%)
6	4.50	0.30	9.0	212 x (1±10%)
9	6.75	0.45	13.5	476 x (1±10%)
12	9.00	0.60	18	848 x (1±10%)
18	13.5	0.90	27	1906 x (1±15%)
24	18.0	1.20	36	3390 x (1±15%)
48	36.0	2.40	72	10600 x (1±15%)
60	45.0	3.00	90	16600 x (1±15%)

Notes: When require pick-up voltage=70% nominal voltage, special order allowed .

SAFETY APPROVAL RATINGS

UL/CUL	6A 30VDC Resistive: 6A 277VAC Pilot duty: R300 B300
VDE	6A 30VDC 6A 250VAC

Notes: Only some typical ratings are listed above. If more details are required, please contact us.

ORDERING INFORMATION

	HF41F /	12	-H	8	S	T	G	(XXX)
Type								
Coil voltage	5, 6, 9, 12, 18, 24, 48, 60VDC							
Contact arrangement	**H:** 1 Form A	**Z:** 1 Form C						
Version [1]	**8:** Flat pack version	**Nil:** Vertical version						
Construction [2]	**S:** Plastic sealed	**Nil:** Flux proofed						
Contact material	**T:** $AgSnO_2$	**Nil:** AgNi						
Contact plating	**G:** Gold plated	**Nil:** No gold plated						
Customer special code	e.g. (210) stands for pick-up voltage less than 70% of norminal voltage							

Notes: 1) We recommend flux proofed types for the flat pack version.
2) We recommend flux proofed 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.).
3) If water cleaning is required after the relay is assembled on PCB, please contact us for suggestion about suitable parts.

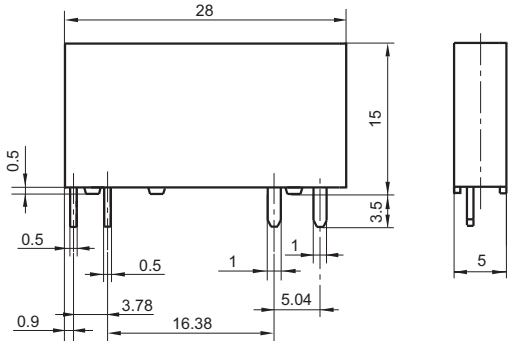
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

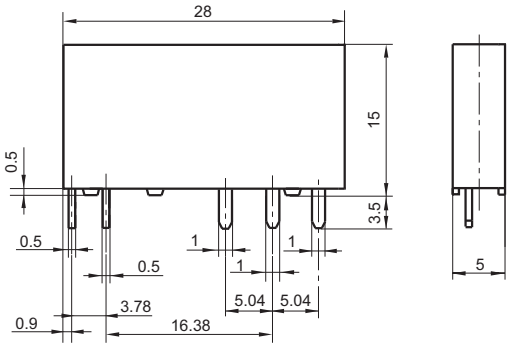
Outline Dimensions

1 Form A

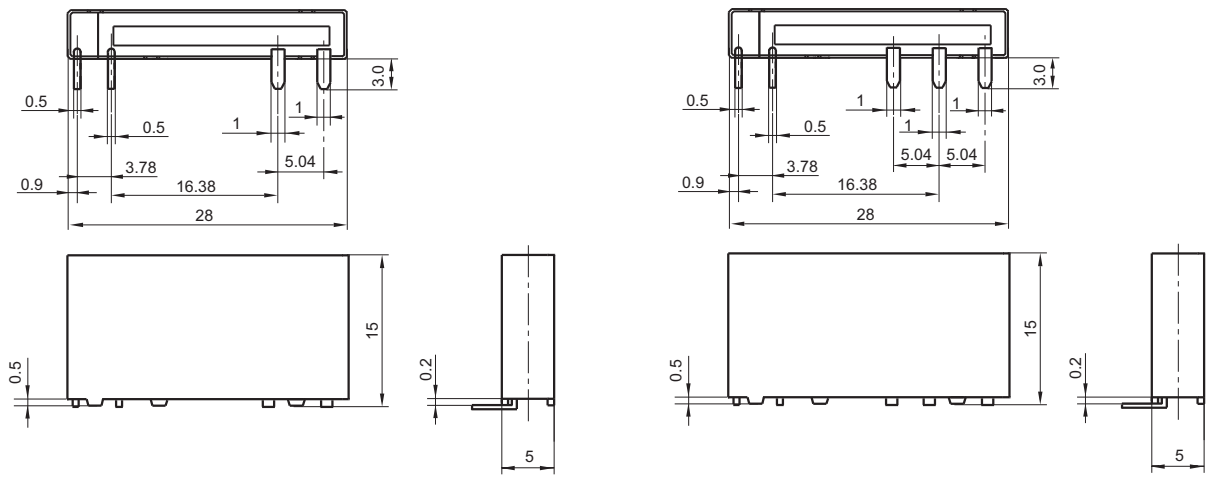
Vertical version



1 Form C



Flat pack version



OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

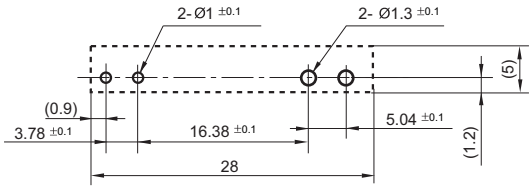
Unit: mm

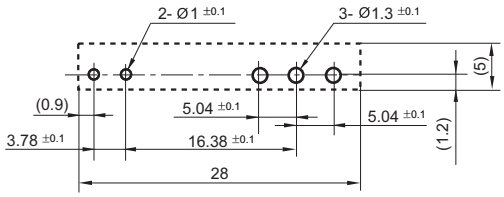
PCB Layout (Bottom view)

1 Form A

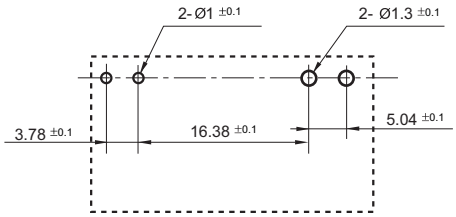
1 Form C

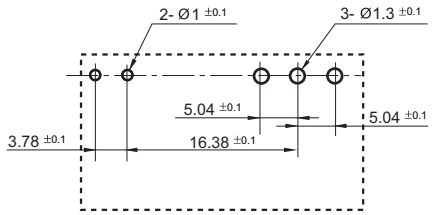
Vertical version





Flat pack version





Wiring Diagram (Bottom view)

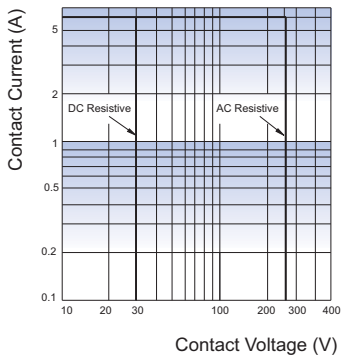
1 Form A

1 Form C

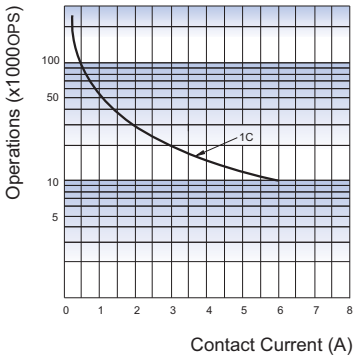
Remark: 1) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be ±0.2mm; outline dimension >1mm and ≤5mm, tolerance should be ±0.3mm; outline dimension >5mm, tolerance should be ±0.4mm.
2) The tolerance without indicating for PCB layouts is always ±0.1mm.

CHARACTERISTIC CURVES

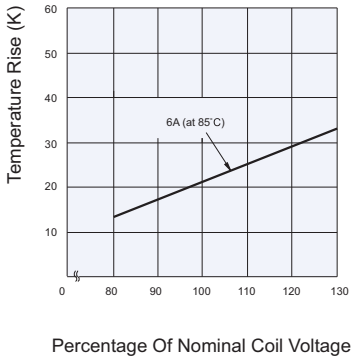
MAXIMUM SWITCHING POWER



ENDURANCE CURVE



COIL TEMPERATURE RISE



Relay Sockets

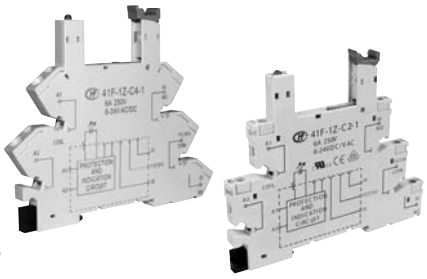
CE

c UL us

File No.: E253370

VDE

File No.: 40020043



Features

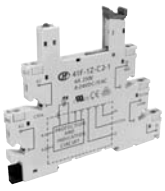
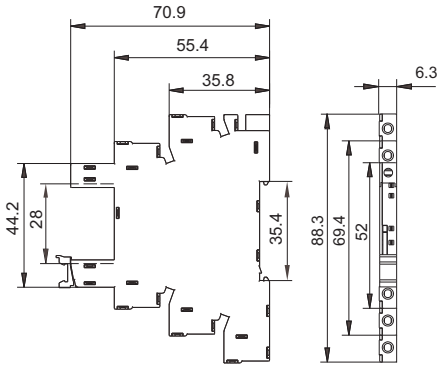
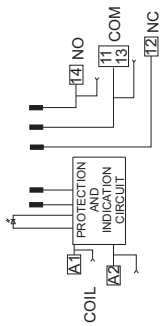
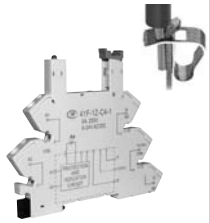
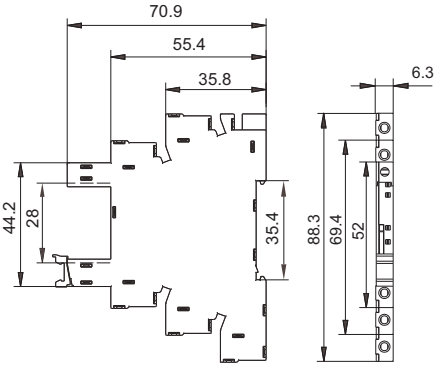
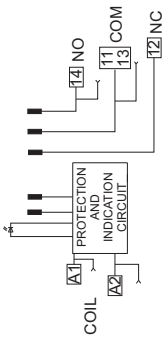
- The dielectric strength can reach 5000VAC and the insulation resistance is 1000MΩ
- With finger protection device
- Ensure secure rention and easy ejection of relays
- Built-in protection circuit can indicate the power status, protect the circuit and expand the range of relay input voltage
- Components available: marker, jumper and separator
- Environmental friendly product (RoHS compliant)

CHARACTERISTICS

Type	Nominal Voltage	Nominal Current	Ambient Temperature	Lnput Voltage	Relay's Applicable Rated Voltage	Polarity of Input Voltage	Screw Torque	Wire Strip Length
41F-1Z-C2-1	250VAC	6A	-40 ˚C to 70˚C	(12 to 24)V AC/DC	(12 to 24)VDC	No requirement	0.5N·m	7mm
41F-1Z-C2-2	250VAC	6A	-40 ˚C to 70˚C	(48 to 60)V AC/DC	(48 to 60)VDC	No requirement	0.5N·m	7mm
41F-1Z-C2-3	250VAC	6A	-40 ˚C to 55˚C	(110 to 125)V AC/DC	60VDC	No requirement	0.5N·m	7mm
41F-1Z-C2-4	250VAC	6A	-40 ˚C to 55˚C	(220 to 240)V AC/DC	60VDC	No requirement	0.5N·m	7mm
41F-1Z-C2-5	250VAC	6A	-40 ˚C to 70˚C	(6 to 24)VDC	(6 to 24)VDC	Requirement	0.5N·m	7mm
41F-1Z-C4-1	250VAC	6A	-40 ˚C to 70˚C	(12 to 24)V AC/DC	(12 to 24)VDC	No requirement	-	7mm
41F-1Z-C4-2	250VAC	6A	-40 ˚C to 70˚C	(48 to 60)V AC/DC	(48 to 60)VDC	No requirement	-	7mm
41F-1Z-C4-3	250VAC	6A	-40 ˚C to 55˚C	(110 to 125)V AC/DC	60VDC	No requirement	-	7mm
41F-1Z-C4-4	250VAC	6A	-40 ˚C to 55˚C	(220 to 240)V AC/DC	60VDC	No requirement	-	7mm
41F-1Z-C4-5	250VAC	6A	-40 ˚C to 70˚C	(6 to 24)VDC	(6 to 24)VDC	Requirement	-	7mm

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

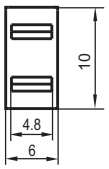
Socket	Outline Dimensions	Wiring Diagram	Components Available
41F-1Z-C2-1/2/3/4/5  Screw terminal, DIN rail mounting, With finger protection device Certified by VDE and UL/CUL			marker 41F-M 41F-M1 jumper 41F-J1(blue) 41F-J1R(red) 41F-J1B(black) separator 41F-S
41F-1Z-C4-1/2/3/4/5  Spring-loaded terminal, DIN rail mounting, With finger protection device	 (Top View)		marker 41F-M 41F-M1 jumper 41F-J1(blue) 41F-J1R(red) 41F-J1B(black) separator 41F-S

DIMENSION OF RELATED COMPONENT (AVAILABLE)

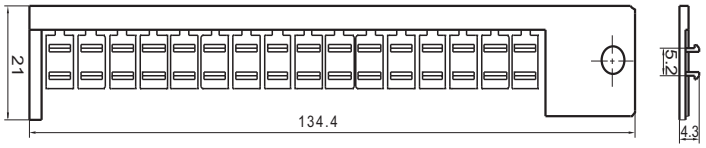
Unit: mm

Marker

41F-M

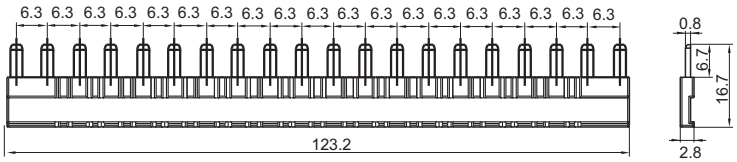


41F-M1



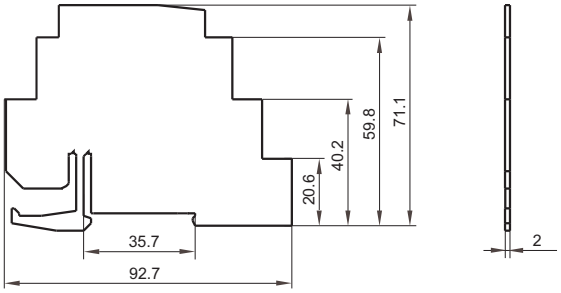
Jumper

41F-J1(blue)、41F-J1R(red)、41F-J1B(black)



Separator

41F-S



Things to be noticed when selecting sockets:

1. Please choose suitable relay socket according to the actual mounting environment, relay contact poles and terminal layout. If there is any query on selection, please contact Hongfa for the technical service.
2. As for related components, they should be selected separately. Please do give clear indication of the types of relay sockets and related components you choose while placing order.
3. The above is only an example of typical socket and related component type which is suitable to HF41F relay. If you have any special requirements, please contact us.

Disclaimer

This datasheet is for the customers' reference. All the specifications are subject to change without notice.
We could not evaluate all the performance and all the parameters for every possible application. Thus the user should be in a right position to choose the suitable product for their own application. If there is any query, please contact Hongfa for the technical service. However, it is the user's responsibility to determine which product should be used only.