HFGD1   HF49FD RELAY MODULE

File No.: AN 50520705 0001

Features

- 4, 8, 12, 16, 20 and 32 channel HF49FD relay module
- DIN35 standard guide rail installation
- 5A 250VAC/30VDC switching capability with single pole contact
- Screw connection and IDC plug are available for easy installation
- Relays are equipped with sockets for quick replacement and maintenance
- 0.2-1.5mm ²/ 24-16AWG wide range wiring capacity

CHARACTERISTIC

INPUT	
Nominal voltage	12VDC,24VDC (Allow 85%~110% rated change range)
Power consumption Per Channel	＜260mW
Wiring polarity	Polar、Apolar
Terminal type	Terminal block(See Annex 1) IDC & Terminal block
Control channel Qty	4、8、12、16、20、32

OUTPUT	
Relay specification	HF49FD(See Annex 2)
Contact arrangement	1NO
Rated voltage	250VAC / 30VDC
Rated current	5A/Channel
Terminal type	Terminal block(See Annex 3)
Minimum load [1]	50mW
Maximum switching frequency	30 times/minute(@1A to 5A) 60 times/minute(@0.5A to 1A) 300 times/minute(@＜0.5A)

| OTHER PARAMETER		
Ambient temperature		-20℃~70℃
Storage temperature		-20℃~70℃
Vibaration resistance		10Hz to 60Hz,0.3mm DA 60Hz to 150Hz，19.6m/s²
Shock resistance		98m/s²
Operate time [2]		Approx. 5ms
Release time [2]		No polarity:Approx. 2.5ms polarity:Approx. 5ms
Standard compliance		IEC61010-1
Creepage distance	Between output channels	≥1mm
	Between input and output	≥3mm
Clearance distance	Between output channels	≥1mm
	Between input and output	≥3mm
Surge voltage (1.2/50μs)	Between output channels	2kV
	Between input and output	4kV

PRODUCT INSTALLATION A ND MAINTENANCE	
Installation	DIN35 guide rail installation(Compatible with 1.0mm and 1.2mm thickness)
Relay replacement	Replaceable

Note: 1) on the premise of meeting the minimum load, the load voltage is ≥ 5V and the load current is ≥ 1mA;
2) The time parameter is the evaluation value obtained by taking three samples as a group of tests.

SCHEMATIC DIAGRAM

Type NPN

Type PNP
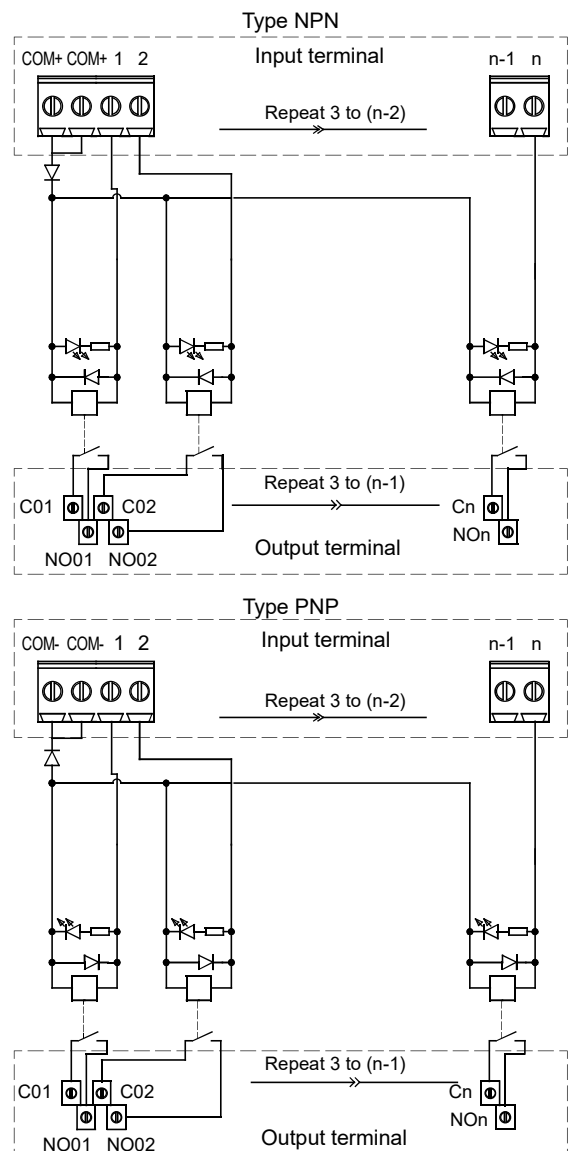
Wiring instructions
1.Input : COM+(NPN)/COM-(PNP) is Input common terminal, 1,2,3,...,n are the input control points of each channel；
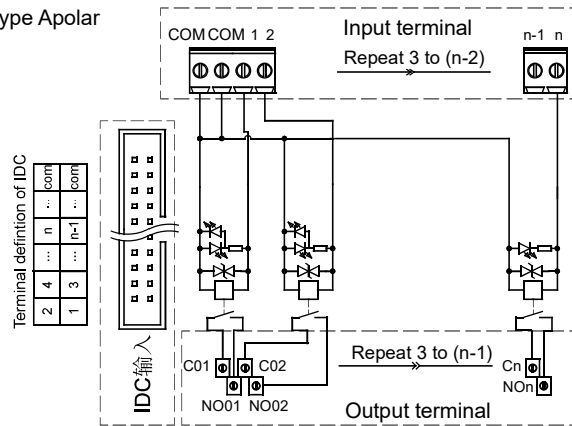2.Output : Cn is the common terminal of each output, and NOn is the normally open terminal of each output.

HONGFA INDUSTRIAL ELECTRONIC MODULE
ISO9001, IATF16949, ISO14001, OHSAS18001, IECQ QC 080000 CERTIFIED   2022 Rev. 1.00

SCHEMATIC DIAGRAM

Type Apolar

Input terminal
COM COM 1 2
Repeat 3 to (n-2)
n-1 n

Terminal definition of IDC

IDC输入

C01 C02
NO01 NO02
Repeat 3 to (n-1)
Cn
NOn
Output terminal

Channels Qty compared with IDC:

Control Channel Qty	IDC
8	IDC10
12	IDC16
16	IDC20
20	IDC40
32	IDC40

Remarks: 4-channel specification does not have this specification

Wiring instructions

1.Input : COM is Input common terminal, 1,2,3,...,n are the input control points of each channel；

2.Output : Cn is the common terminal of each output, and NOn is the normally open terminal of each output;

3.The left picture is the schematic diagram of the model with IDC input interface (CA type); for the model without IDC input interface (C type), only IDC needs to be removed, and the rest of the schematic diagrams are the same as above.
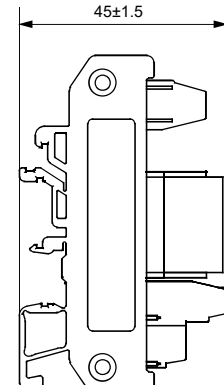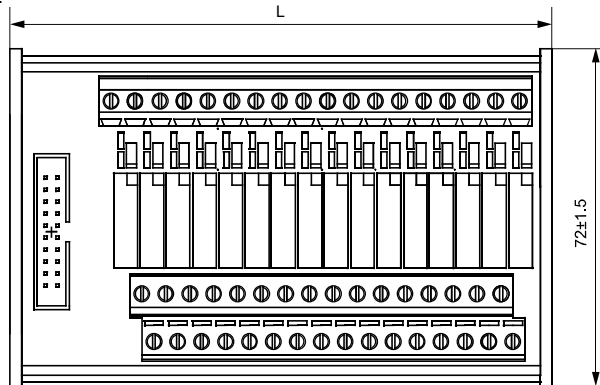
OUTLINE DIMENSIONS

Unit：mm

Type C:

L
72±1.5
45±1.5

Type CA:

L
72±1.5
45±1.5
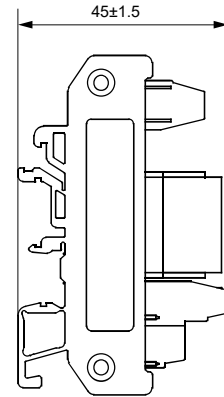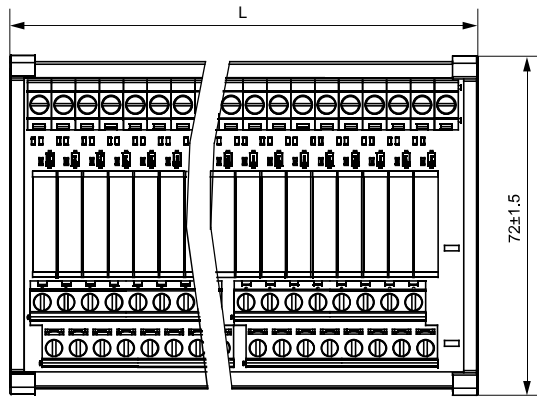
Comparision table of Control Qty and Length of Product：

Control Channel Qty	Length(L)	
	Type C	Type CA
4	41mm ±1.5mm	/
8	59mm ±1.5mm	68.3mm ±1.5mm
12	79mm ±1.5mm	90mm ±1.5mm
16	99mm ±1.5mm	113mm ±1.5mm
20	119mm ±1.5mm	136mm ±1.5mm
32	186mm ±1.5mm	204mm ±1.5mm

ORDERING INFORMATION

	HFGD1 /	C	1H	32	N	-R	D24	(XXX)

Type

I/O port type   C：Terminal(See appendix 1)
CA (1)：Terminal＆IDC plug

Output Channel Type   **1H:** 1 form A

Control channel Qty   4、8、12、16、20、32

Wiring polarity   **Nil :** Apolar   **N :** NPN   **P :** PNP

Installation   R: DIN-rail

Rated input voltage   **D24:** 24VDC   **D12:**12VDC

Special code   **Nil:**Standard   **XXX:** Custmoter special requitment

Notes: 1) 4-channel products do not have this specification
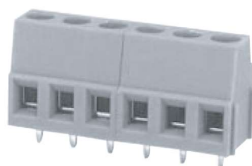2) Special requiements of customers will be expressed as special code after being evaluated by Hongfa.

Cross reference guide:

TYPE	Channel Qty	P/N
HFGD1/C1H4N-RD24	4	40255040007
HFGD1/C1H8N-RD24	8	40255040006
HFGD1/C1H12N-RD24	12	
HFGD1/C1H16N-RD24	16	40255040011
HFGD1/C1H20N-RD24	20	
HFGD1/C1H32N-RD24	32	40255040012
HFGD1/CA1H8N-RD24	8	40255040008
HFGD1/CA1H12N-RD24	12	
HFGD1/CA1H16N-RD24	16	40255040005
HFGD1/CA1H20N-RD24	20	
HFGD1/CA1H32N-RD24	32	40255040009

Remarks: This table is only for commonly used materials, if customer requirements are not in the above list, please select according to "ordering information".

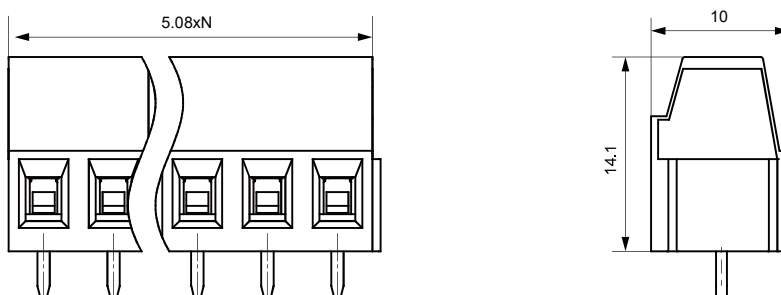Annex 1：Wiring terminal parameter table(HFLS1A-508/MAXX)

Features

● PCB terminal block，lifting screw connector with pressing frame

● Use screwdriver for disassembly and assembly,with the torque of 0.4N·m

TECHNICAL SPECIFICATION

Rated load	10A 300V(UL Standard)/17.5A 250V(IEC Standard)
Poles	2~24
Pitch	5.08mm
Conductor Cross Section	0.2~2.5mm²(Soild wire/0.25~1.5mm²(Strand wier)
Rated Dielectric Strenth	2200VAC/min
Rated Withstand Pulse Voltage	4kV
Ambient temperature	-40℃~105℃
striping Length	7mm
Tihgtening Torque	0.4N·m
Insulation Material Type/Insulation Material Group	PA/I

OUTLINE DIMENSIONS
Unit：mm

Remark:
1) Some outline demensions of the product have no dimensional tolerance noted:outline dimension≤1mm；tolerance should be ±0.2mm；outline dimension＞1mm and ＜5mm，tolerance should be ±0.4mm；
2) In the layout of PCB mounting holes,if no dimensional tolerance is noted,it shall be calculated as ±0.1mm.

Annex 2：Relay parameter table(HF49FD)

File No.: E133481

File No.: 40033644

File No.: R50149334

File No.: CQC17002175722

Features

- 5A switching capability
- 3kV dielectric strength (between coil and contact)
- Ultra-thin and ultra-small (only 5mm wide and 12.5mm high)
- Meet IEC61131-2 reinforced insulation requirement
- Creepage/clearance distance: Min. 3.5mm
- Sockets are available
- UL insulation system: Class F available

RoHS compliant

CONTACT DATA

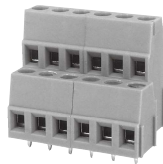|	
Contact arrangement	1H
Contact Resistance	≤100mΩ(1A 6VDC)
Congtact material	AgSnO₂,AgNi
Contact rating	5A 250VAC/30VDC
Max.switching voltage	250VAC/30VDC
Max.switching current	5A
Max.switcching power	1250VA/150W
Mechanical endurance	2×10⁷OPS
Electrical endurance	1×10⁵OPS(NO:3A 250VAC,Res.load,85℃,1s on 9s off)
	5×10⁴OPS(NO:5A 250VAC,Res.load,25℃,1s on 9s off)

CHARACTERISTIC

Coil power	Approx.180mW or 120mW
Insulation	1000MΩ(500VDC)
Dielectric strength	between coil＆contact：3kVAC 1min
	between open contacts：1kVAC 1min
Surge voltage	6kV(1.2 x 50μs)

Disclamer：
(1)This product specification is only for customer's reference,and it is subject to change without prior notice.
(2) For Hongfa ,it is impossible to evaluate all the performance parameter requirements of the product in each specific application,so the customer should select the matching product according to the specific use conditons.If in doubt,please contact Hongfa for more technical support,but the responsibility of product selection will be borne by the customer.

Annex 3：Wiring terminal parameter table(HFLS1A-508/MABXX)
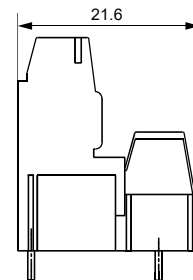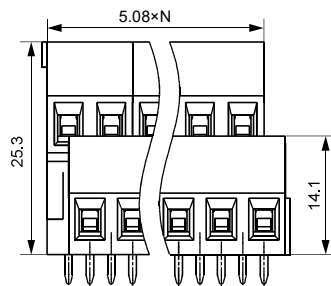
Features

● PCB terminal block，lifting screw connector with pressing frame

● Use screwdriver for disassembly and assembly,with the torque of 0.4N·m

TECHNICAL SPECIFICATION

Rated load	10A 300V(UL Standard)/17.5A 250V(IEC Standard)
Poles	2~24
Pitch	5.08mm
Conductor Cross Section	0.2~2.5mm²(solid wire)/0.25~1.5mm²(strand wire)
Rated Dielectric Strenth	2200VAC/min
Rated Withstand Pulse Voltage	4kV
Ambient temperature	-40℃~105℃
striping Length	7mm
Tihgtening Torque	0.4N·m
Insulation Material Type/Insulation Material Group	PA/I

OUTLINE DIMENSIONS   Unit：mm

Remark:
1) Some outline demensions of the product have no dimensional tolerance noted:outline dimension≤1mm；tolerance should be ±0.2mm；outline dimension＞1mm and ＜5mm，tolerance should be ±0.4mm；
2) In the layout of PCB mounting holes,if no dimensional tolerance is noted,it shall be calculated as ±0.1mm.

Disclaimer:

The specification is for reference only. See to "Terminology and Guidelines" for more information. Specifications 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.