HFGA4 SAFETY RELAY MODULE

c UL us LISTED
IND.CONT.EQ.
ES17149

SIL3
EN 61508

Features

- Application of safety coupling relays in SIS process industry
- S-1H: 1oo3 redundant design; manual diagnosis of output relay safe state on dangerous fault
- S-1H1D: 1oo2 redundant design; manual or safety controller DI diagnosis of output relay safe state on dangerous fault
- S-1-1H: 1oo2 redundant design; self-diagnosis and safe state hold on dangerous component failure
- Compliant with IEC 61511, EN 60947-5-1 and EN 61508 SIL 3
- Plug-in screw or spring terminals optional

CHARACTERISTICS

INPUT	
Nominal voltage	24VAC/VDC
Nominal voltage deviation range	-15% ~ 10%
Power consumption	⩽2.4W
Wiring polarity	Polar(pay attention to wiring polarity)
Terminal type	Terminal block(See Annex)

OUTPUT	
Max. Rated output power	96W(24VDC)
	1000VA(250VAC)
Operating time (@rated voltage)	⩽70ms
Release time (@rated voltage)	⩽50ms
Recovery Time	⩽0.5s
Minimum switching voltage	15VDC
Minimum switching power	0.4W
Contact load(Res. load)	4A (24V(DC 13))
	4A (250V(AC 15))
Terminal type	Terminal block(See Annex)

ENVIRONMENTAL AND SAFETY REGULATIONS		
Ambient temperature		-20℃~70℃
Storage temperature		-40℃~85℃
Mounting	Mode	DIN35mm
	Requirement	Installation location:IP54
Standard compliance		IEC 61511,EN 60947-5-1, EN 61508
Rated impulse withand voltage		6kV
Vibration resistance		2Hz ~ 25.7Hz 1.5mm DA
		25.7Hz ~ 150Hz 2g
Rated insulation voltage		250VAC
Pollution degree		2
Surge voltage category		III
Pollution degree		IP20

Safety instructions

- ●Please follow the safety regulations of electrical engineering, industrial safety and responsible units.
- ●Ignoring these safety regulations may result in death, serious personal injury or damage to equipment!
- ●Commissioning, installation, modification and update can only be done by professional electrical engineers!
- ●Operate in a closed control cabinet that meets IP54
- ●Turn off the power supply before working on the equipment!
- ●In emergency stop applications, a high-level control system must be used to avoid automatic restart of the equipment
- ●Dangerous voltages may be present on the components of electrical switchgear during operation!
- ●The maintenance of the equipment, especially the opening of the casing, must only be done by the manufacturer. When operating the relay module, on the contact side, the operator must follow the EMC standard EN 61000-6-4 for electrical and electronic equipment, and take appropriate measures if required
- ●A suitable and effective protection circuit needs to be provided for inductive loads (such as contactors, solenoid valves, motors, etc.); the protection circuit is connected in parallel with the load and not in parallel with the switch contacts.

ORDERING INFORMATION

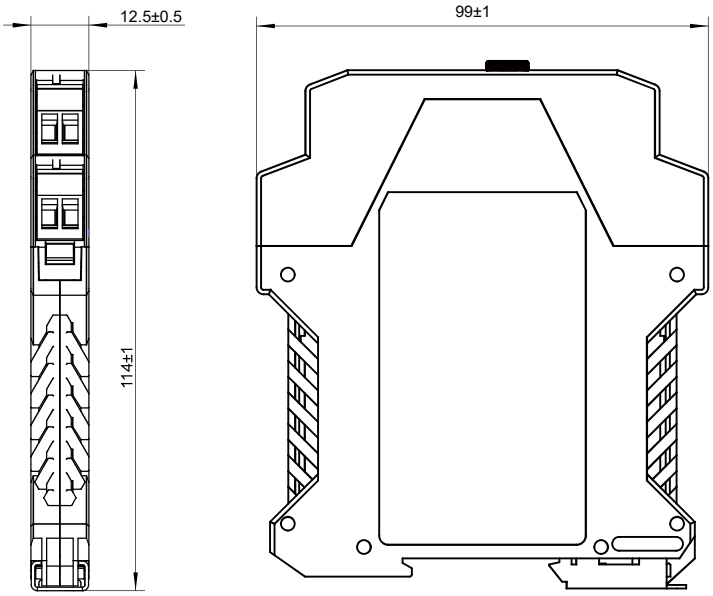
	HFGA4	S-	X-	XXXX-	XXX	(XXX)
Type						
Product features	**S:** Single-channel input					
Additional(1) **features**	**Nil:** Without internal self-diagnosis function[1)] **1:** With internal self-diagnosis function					
Contact arrangement	**1H:** 1 form A **1H1D:** 1 form A+1 form B					
Nominal voltage	**D24:** 24VAC/DC					
Special code[2)]	**Nil:** Standard	**XXX:** Customer special requirement				

Notes: 1) Only the HFGA4/S-1-1H-D24 model is equipped with an internal self-diagnosis function.
2) Special requirements of customers will be expressed as special codes after being evaluated by hongfa;such as: 013 characteristic number is the spring type terminal model.

OUTLINE DEMENSIONS,WIRING ID DIAGRAM

Unit：mm

Outline Dimensions

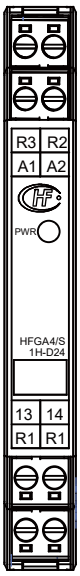


OUTLINE DEMENSIONS,WIRING ID DIAGRAM

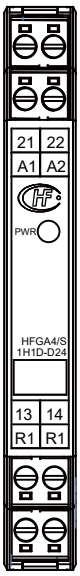
Unit：mm

Wiring ID diagram

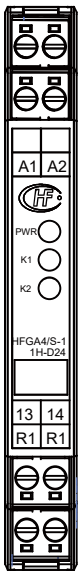
HFGA4/S-1H-D24



HFGA4/S-1H1D-D24



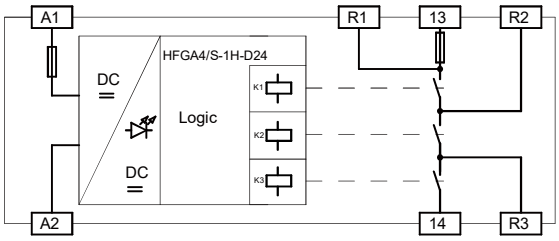
HFGA4/S-1-1H-D24



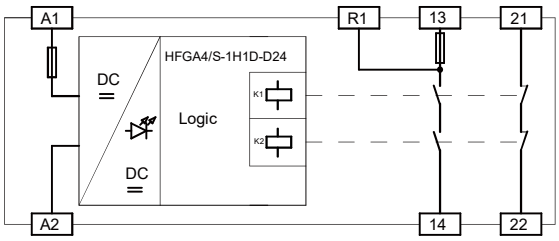
Remarks: The labels shown in the above figure are the same as those of the typical wiring diagram (see the actual identification for details)

Wiring Diagram

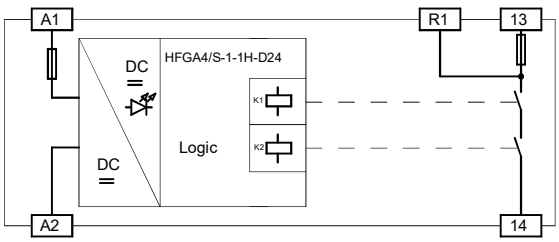
HFGA4/S-1H-D24



HFGA4/S-1H1D-D24

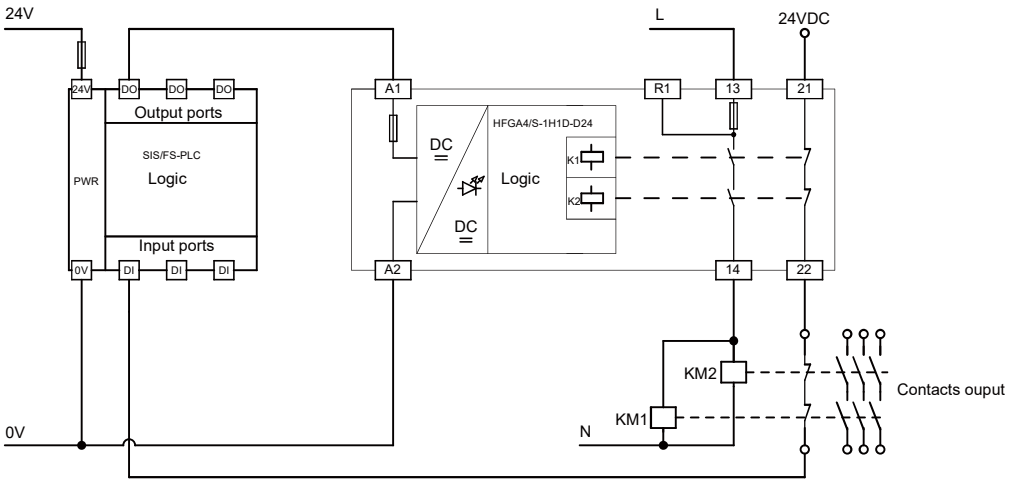


HFGA4/S-1-1H-D24



WIRING DIAGRAM,LOGICAL TIME SERIES DIAGRAM

Wiring diagram connected to an emergency stop button with two normally closed contacts (HFGA4/S-1H1D-D24 is used as an example)



Annex 1: Terminal Parameter Table

Plug-in screw terminal block plugs (regular)	
	
Rated current	15A
Rated voltage	300V
Conductor Cross Section	28-12 AWG (0.2-2.5mm²)
striping Length	7mm
Pitch	5.0mm（4P）
Ambient temperature	-40～105℃
Rated Withstand Pulse Voltage	4kV
Surge voltage category	III
Pollution degree	2

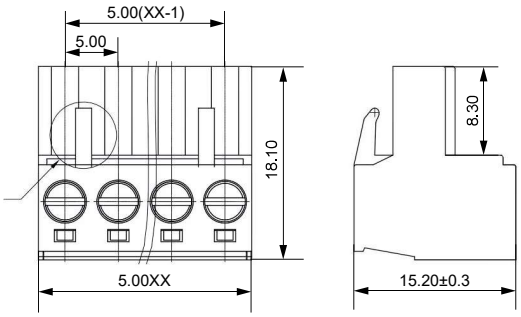
Plug-in spring-connected terminal plug (013)	
	
Rated current	15A
Rated voltage	300V
Conductor Cross Section	28-12 AWG (0.2-2.5mm²)
striping Length	7mm
Pitch	5.0mm（4P）
Ambient temperature	-40～105℃
Rated Withstand Pulse Voltage	4kV
Surge voltage category	III
Pollution degree	2

Plug-in spring connection terminal socket	
	
Rated current	15A
Rated voltage	300V
Conductor Cross Section	/
striping Length	/
Pitch	5.0mm（4P）
Ambient temperature	-40～105℃
Rated Withstand Pulse Voltage	4kV
Surge voltage category	III
Pollution degree	2

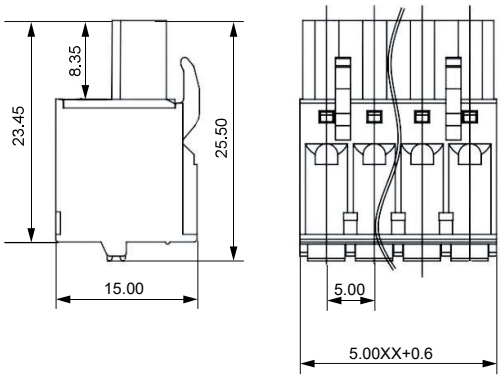
OUTLINE DIMENSIONS

Unit：mm

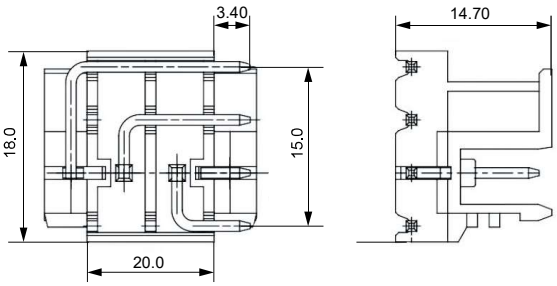
Plug-in screw terminal block plugs (regular)



Plug-in spring-connected terminal plug (013)



Plug-in spring connection terminal socket



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.