MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

GE

IS200SRLYH2AAA

SIMPLEX RELAY OUTPUT BOARD

Used with the applicable Mark VIe configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: GEH-6721G Mark VIe Control System Guide Volume II, SRLY section

Diagnostics

Diagnostic tests to components on the terminal boards are as follows:

- The voltage to each relay coil is monitored and checked against the command at the frame rate. If there is no agreement for two consecutive checks, an alarm is latched.
- The voltage across each solenoid power supply is monitored and if it goes below 16 V ac/dc, an alarm is created.
- If any one of the outputs goes unhealthy a composite diagnostic alarm, L3DIAG_xxxx occurs.
- When an ID chip is read by the I/O processor and a mismatch is encountered, a hardware incompatibility fault is created.
- Each terminal board connector has its own ID device that is interrogated by the I/O board. The connector ID is coded into a read-only chip containing the board serial number, board type, revision number, and the JR1/JS1/JT1 connector location.

Details of the individual diagnostics are available from the configuration application. The diagnostic signals can be individually latched, and then reset with the RESET_DIA signal if they go healthy.

Configuration

There are no jumpers or hardware settings on the board.

SRLY Simplex Relay Output

Functional Description

The Simplex Relay Output (SRLY) terminal board is a simplex S-type terminal board accepting a PDOA I/O pack and providing 12 form C relay output circuits through 48 customer terminals.

SRLY has the same physical size, customer terminal locations, and I/O pack mounting as other S-type terminal boards. There will be no components higher than an attached PDOA I/O pack, permitting double stacking of terminal boards.

SRLY has two groups:

- IS200SRLYH1 has fixed Euro-style box terminals and no ability to accept option boards.
- IS200SRLYH2 has pluggable Euro-style box terminals and two connectors that accept a variety of different option boards.

Each relay on SRLY uses an isolated contact pair as position feedback to PDOA.

There are three option boards available that plug on to SRLYH2A:

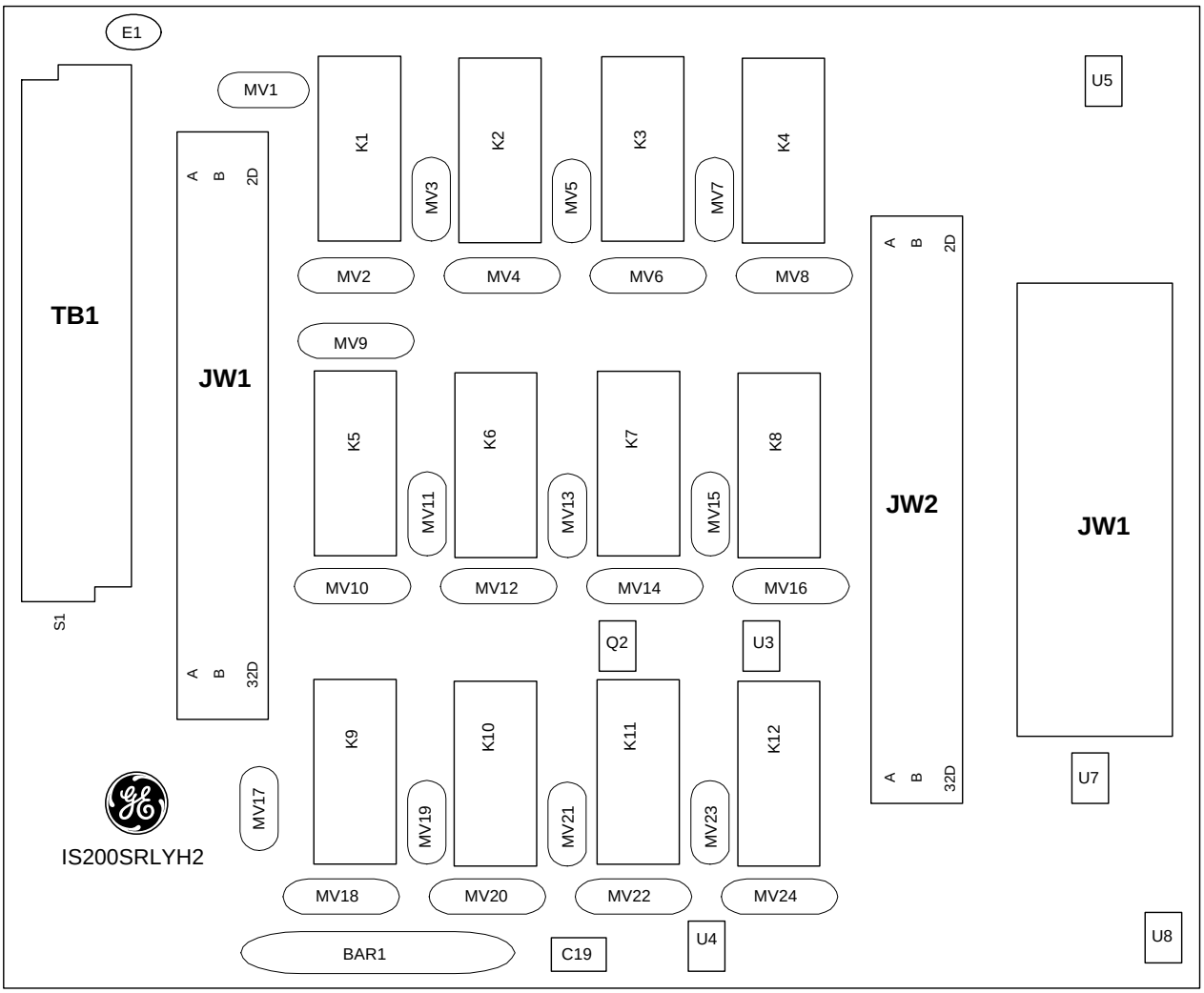
- IS200WROB turns SRLY into the functional equivalent of IS200TRLYH1B. This option provides fused and sensed power distribution to the first six relays and dedicated power to the last relay.
- IS200WROF puts a single fuse in series with each relay common connection. Fuse voltage feedback is included.
- IS200WROG distributes power from an input connector to each relay through a single fuse. Fuse voltage feedback is included.

Installation

SRLY and a plastic insulator mounts on a sheet metal carrier and is then mounted to a cabinet by screws. If an option board is used, it plugs onto SRLYH2A and is held in place by the force of the connectors. The following table identifies the function of each terminal point as it relates to the presence of an option board.

Output Terminal	Relay	SRLY	SRLY + WROB	SRLY/WROF with Fuses	SRLY/WROF without Fuses	SRLY + WROG
1	1	NC	NC	NC	NC	NC
2		COM	COM	COM (unfused)	COM	POWER
3		NO	NO	NO	NO	NO
4			SOL	COM (fused)	VSENSE	RETURN
5	2	NC	NC	NC	NC	NC
6		COM	COM	COM (unfused)	COM	POWER
7		NO	NO	NO	NO	NO
8			SOL	COM (fused)	VSENSE	RETURN
9	3	NC	NC	NC	NC	NC
10		COM	COM	COM (unfused)	COM	POWER
11		NO	NO	NO	NO	NO
12			SOL	COM (fused)	VSENSE	RETURN
13	4	NC	NC	NC	NC	NC
14		COM	COM	COM (unfused)	COM	POWER
15		NO	NO	NO	NO	NO
16			SOL	COM (fused)	VSENSE	RETURN
17	5	NC	NC	NC	NC	NC
18		COM	COM	COM (unfused)	COM	POWER
19		NO	NO	NO	NO	NO
20			SOL	COM (fused)	VSENSE	RETURN
21	6	NC	NC	NC	NC	NC
22		COM	COM	COM (unfused)	COM	POWER
23		NO	NO	NO	NO	NO
24			SOL	COM (fused)	VSENSE	RETURN
25	7	NC	NC	NC	NC	NC
26		COM	COM	COM (unfused)	COM	POWER
27		NO	NO	NO	NO	NO
28				COM (fused)	VSENSE	RETURN
29	8	NC	NC	NC	NC	NC
30		COM	COM	COM (unfused)	COM	POWER
31		NO	NO	NO	NO	NO
32				COM (fused)	VSENSE	RETURN
33	9	NC	NC	NC	NC	NC
34		COM	COM	COM (unfused)	COM	POWER
35		NO	NO	NO	NO	NO
36				COM (fused)	VSENSE	RETURN
37	10	NC	NC	NC	NC	NC
38		COM	COM	COM (unfused)	COM	POWER
39		NO	NO	NO	NO	NO

Output Terminal	Relay	SRLY	SRLY + WROB	SRLY/WROF with Fuses	SRLY/WROF without Fuses	SRLY + WROG
40				COM (fused)	VSENSE	RETURN
41	11	NC	NC	NC	NC	NC
42		COM	COM	COM (unfused)	COM	POWER
43		NO	NO	NO	NO	NO
44				COM (fused)	VSENSE	RETURN
45	12	NC	NC	NC	NC	NC
46		COM	COM	COM (unfused)	COM	POWER
47		NO	NO	NO	NO	NO
48			SOL	COM (fused)	VSENSE	RETURN

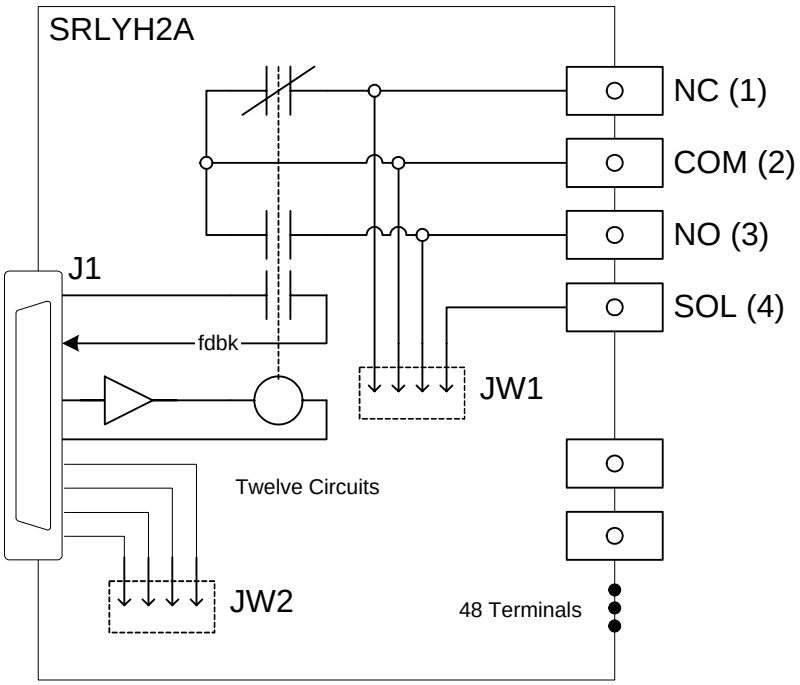


SRLY Terminal Board Layout

Operation

Board Groups

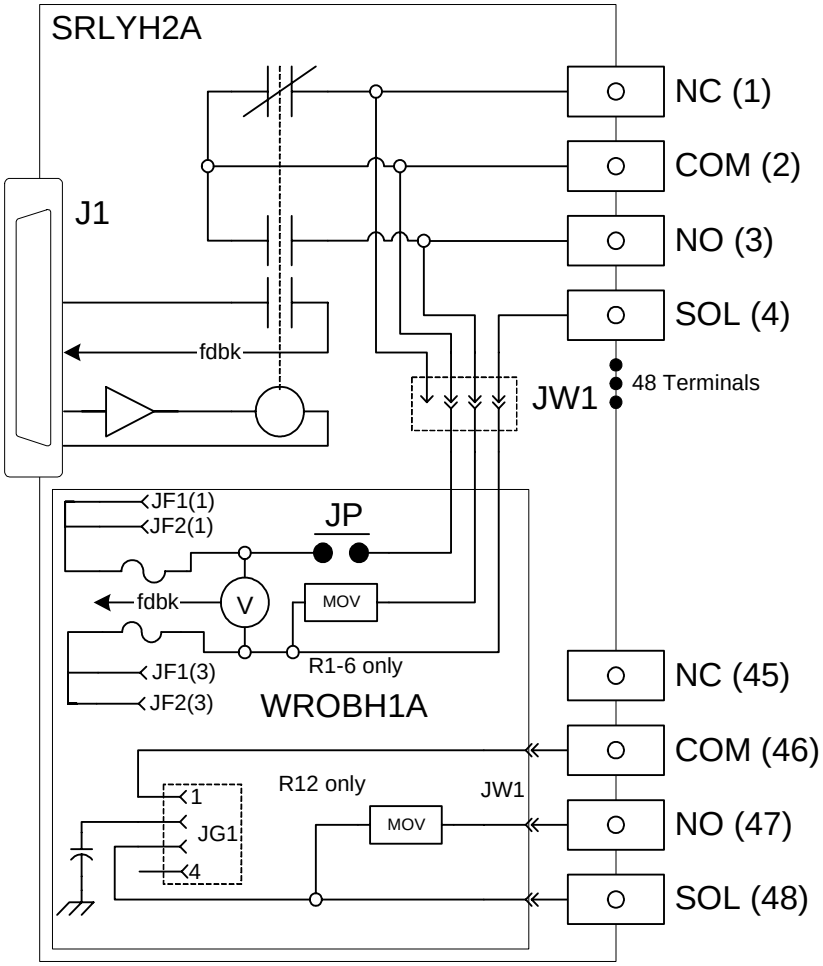
SRLY is available in two groups. SRLYH1 comes with fixed box terminals and omits option board connectors JW1 and JW2. SRLYH2 uses pluggable type terminals and has connectors JW1 and JW2 supporting option board connection. Electrically SRLYH2 has the following circuit for each of the 12 relays:



Without an option board, the SOL terminal associated with each relay has no connection. SRLY is designed to support a current rating of 5 A and voltage clearance greater than is needed for 250 V ac on all customer screw and JW1 circuits. The relay rating is the limiting item for each application.

SRLY + WROB

Option board IS200WROBH1A adds capability to SRLYH2 to yield a combination that has the same functionality as an IS200TRLYH1B terminal board when used simplex. Included are fused sensed power distribution to the first six relays and dedicated power to the last relay. Electrically IS200SRLYH2 plus IS200WROBH1 has the following circuit. IS200WROBH1 has default fuse values of 3.15 A. Connector JW2 and its connections to J1 are omitted for clarity.



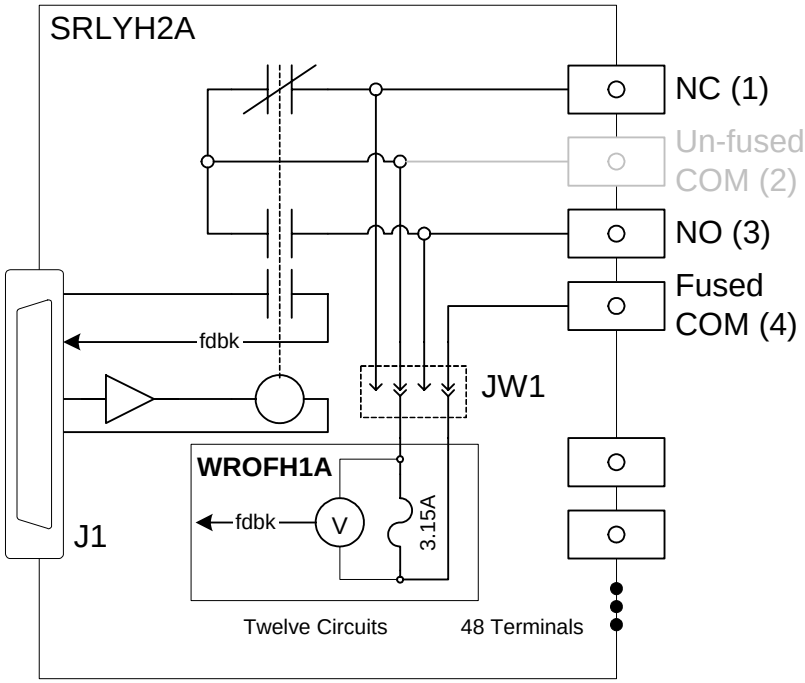
Both sides of the power distribution on relays 1-6 are fused allowing the board to be used in systems where dc power is floating with respect to earth. Fuse voltage feedback is compatible with 24 V, 48 V, and 125 V dc applications as well as 120 V and 240 V ac applications.

The following table lists the relationship between fuses, jumpers, relays, and terminals.

Relay	+Fuse	-Fuse	Jumper	Terminals
1	FU7	FU1	JP1	1-4
2	FU8	FU2	JP2	5-8
3	FU9	FU3	JP3	9-12
4	FU10	FU4	JP4	13-16
5	FU11	FU5	JP5	17-20
6	FU12	FU6	JP6	21-24

SRLY + WROF

Option board IS200WROFH1A adds an optional fuse in series with the COM connection for each relay by using the SOL terminal in place of COM. Isolated voltage sensing that is not polarity sensitive is provided for each fuse. Fuse voltage feedback is compatible with 24 V, 48 V, and 125 V dc applications as well as 120 V and 240 V ac applications. IS200WROFH1 has default fuse values of 3.15 A. Electrically IS200SRLYH2 plus IS200WROFH1 has the following circuit. Connector JW2 and its connections to J1 are omitted for clarity.

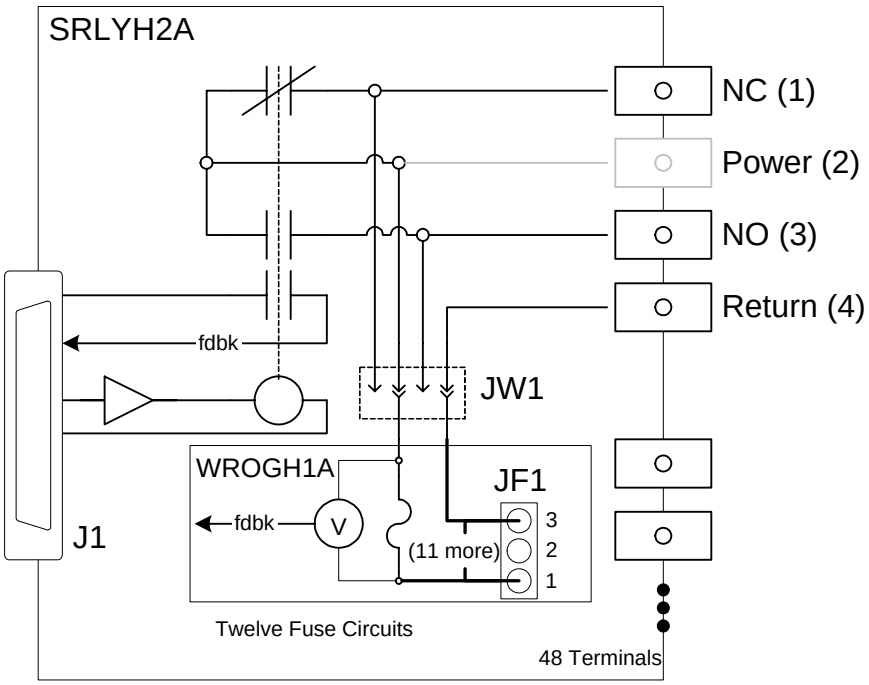


The normal application for this board is when it is desired that each relay have a fuse in series and power applied from an external source. The board has a second potential application. If the fuse is removed from a circuit, the isolated voltage detector remains. The fourth terminal (called Fused COM above) may now be wired to either the NC or NO terminal to provide isolated contact voltage feedback. PDOA I/O pack firmware has a configuration option to turn off fuse blown alarm generation for a given relay if it is being used in this fashion. The terminal table identifies this application as making the fourth screw Vsense.

Fuses FU1 through FU12 are associated with relay circuits 1 through 12 respectively.

SRLY + WROG

Option board IS200WROGH1A adds fused power distribution for all twelve relays. Isolated voltage sensing that is not polarity sensitive is provided for each fuse. Fuse voltage feedback is compatible with 24 V, 48 V, and 125 V dc applications, as well as 120 V and 240 V ac applications. IS200WROGH1 has default fuse values of 3.15 A. Electrically IS200SRLYH2 plus IS200WROGH1 has the following circuit. Connector JW2 and its connections to J1 are omitted for clarity.



Fuses FU1 through FU12 are associated with relay circuits 1 through 12 respectively.

Specification

Item	Specification	
Number of relay channels on one SRLY board	12:	
Rated voltage on relays	a:	Nominal 24 V dc, 48 V dc, or 125 V dc
	b:	Nominal 120 V ac or 240 V ac
Max load current	a:	0.4 A for 125 V dc operation
	b:	1.2 A for 48 V dc operation
	c:	3.15 A for 24 V dc operation
	d:	3.15 A for 120/240 V ac, 50/60 Hz operation
Max response time on	25 ms typical	
Max response time off	25 ms typical	
Contact material	Silver cad-oxide	
Contact life	Electrical operations:	100,000
	Mechanical operations:	10,000,000
Fault detection	Relay position feedback using contact pair separate from load contacts.	
WROBH1 Option Board		
Powered Output Circuits	6 fused, associated with relays 1-6, fed from parallel connectors JF1 and JF2. Both sides of the power source are fused for each output.	
	1 unfused, associated with relay 12, fed from connector JG1	