



CONFIGURATION SUMMARY

SEARII APPLICATION 9V908-A01A PREPARED FOR PROVIDENCE AND WORCESTER RAILROAD

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VERSION A.1

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DOCUMENT HISTORY

Version	Release Date	Sections Changed	Details of Change
A	6-01-06		Initial release of 9V908-A01A
A.1	June 2014	All	Rebrand for Siemens

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1.0 INTRODUCTION

This document supports installation and maintenance of SEAR II units configured with the 9V908-A01A user program stored in flash memory. This document:

- Explains LED indications
- Lists input configurations unique to 9V908-A01A
- Describes alarms and messages generated by 9V908-A01A

For further information on SEAR II, including configuration of executive software, refer to the SAFETRAN EVENT ANALYZER RECORDER (SEAR II) – Installation & Operation manual (Siemens document no. SIG-00-02-07).

2.0 DIGITAL INPUT CONFIGURATION

The SEAR II provides 18 digital inputs or channels. The table below indicates the SEAR II digital input assignments.

SEAR II Digital Input Assignments

Chan	Name	Wire Tag	Normal	Energized	De-energized
XX	XR	XR *	UP	UP	DOWN
XX	ISL1	ISL1 *	CLEAR	CLEAR	OCCUPIED
XX	ISL2	ISL2 *	CLEAR	CLEAR	OCCUPIED
XX	TK1	TK1	CLEAR	CLEAR	OCCUPIED
XX	TK3	TK3	CLEAR	CLEAR	OCCUPIED
XX	ESTK1	ESTK1	DOWN	UP	DOWN
XX	WSTK1	WSTK1	DOWN	UP	DOWN
XX	NSTK1	NSTK1	DOWN	UP	DOWN
XX	SSTK1	SSTK1	DOWN	UP	DOWN
XX	XPK	XPK *	UP	UP	DOWN
XX	1GPK	1GPK	UP	UP	DOWN
XX	1GDK	1GDK	UP	UP	DOWN
XX					
XX					
XX					
XX					
XX					
XX	AC POR	POR *	UP	UP	DOWN

NOTES:

1. Wire Tag names marked with an asterisk (*) in the table above must be fixed. They are used in alarm message calculation in application logic.
2. Digital input **Name** can be configured by the user on site from a predefined selection or by manually entering a different name. Selection from the predefined list will lock the assigned **Energized/De-energized** designation.
3. The table above is only a list. Names can be assigned to any digital input.

3.0 BATTERY INPUT CONFIGURATION

The following table shows the 9V908-A01A default names, battery designators and voltage resolutions for the possible battery inputs to the SEAR II.

Name	Designator	Resolution
XB12	XB12	1 VDC
B12	B12	1 VDC
B14	B14	1 VDC
B16	B16	1 VDC
B24	B24	1 VDC

4.0 INDICATOR LED CONFIGURATION

This table and the following material on LED conventions define operation of the 16 front-panel red Indicator LEDs for 9V908-A01A.

LED#	Usage	Description	Checked
1		Digital Input 1	Always
2		Digital Input 2	Always
3		Digital Input 3	Always
4		Digital Input 4	Always
5		Digital Input 5	Always
6		Digital Input 6	Always
7		Digital Input 7	Always
8		Digital Input 8	Always
9		Digital Input 9	Always
10		Digital Input 10	Always
11		Digital Input 11	Always
12		Digital Input 12	Always
13		Digital Input 13	Always
14		Digital Input 14	Always
15		Digital Input 15	Always
16		Digital Input 16	Always

Standard LED Conventions:

1. LEDs are ON (RED) steady when input is energized.
2. LEDs are OFF when input is de-energized.
3. The CLEAR ALARM key will clear out alarm indication LEDs.

5.0 ALARM LED CONFIGURATION

The table below and the Conventions information that follows define the operation of the eight tri-color Alarm LEDs as they operate under 9V908-A01A.

SEAR II Alarm LED Configuration

LED #	Usage	Description	Checked
T1	Alarm	Warn Time Alarm	Train move
T2	Alarm	Crossing Active Alarm	Always
T3			
T4			
T5			
T6			
T7			
T8	Alarm	POR OFF Alarm	Always

Alarm LED Conventions:

1. Alarm LEDs to be Flashing Red when Alarm Active.
2. Alarm LEDs to be Steady Red if Alarm occurs and then clears.
3. The CLEAR ALARM key will clear out alarm indication LEDs.

6.0 GENERAL INFORMATION

- LED Indicators will follow the state of the corresponding Digital Inputs, 1 through 16.
- Digital Inputs 17 and 18 will not be displayed on LEDs, but are available as extra inputs for use in the event log.
- Tag Names for Inputs can be named as desired; however, those marked with an asterisk in the Digital Input Assignments Table above are used for alarm and message calculations and must be used as is to monitor alarm conditions or display event log messages.
- If no alarm monitoring is desired, the SEAR II can be used as a straight event recorder (i.e., changing the name XR to XR1 will disable the alarm calculation).

7.0 ALARMS

7.1 WARN TIME ALARM

This alarm is calculated from the time the XR input drops to the time that the first island input drops. If the time is less than or equal to 20 seconds, an alarm is generated. An alarm condition will cause either of two messages in the event log:

WARNING TIME ALARM,ISL1: xx sec, or
WARNING TIME ALARM,ISL2: xx sec

Alarm LED T1 will light as follows:

Flashing Red – when the last train to pass had a short warning time.
Steady Red – when the last train had a normal warning time but a train previous had a short warning time.

Pressing the **Clear Alarm** key will return T1 to Green and it will remain so until the next alarm occurrence.

7.2 CROSSING ACTIVE ALARM

This alarm will be generated if the XR input is Down continuously for 15 minutes. If the XR input goes Up, the timer will be reset to 0 minutes. An alarm message will be recorded in the log as follows:

(XNG)CROSSING ACTIVE FOR: 15 minutes

Alarm LED T2 will light as follows:

Flashing Red – when the crossing is active (XR input Down), and has been active more than 15 minutes.

Steady Red – when the crossing had previously been active for more than 15 minutes, but presently is not active.

Pressing the **Clear Alarm** key will return T2 to Green and it will remain so until the next alarm occurrence.

7.3 AC POWER ALARM

This alarm will be generated if the POR input is Down for 60 minutes. The AC power alarm timer will begin when the POR first drops. The POR must be Up continuously for 5 minutes before the AC power alarm timer is reset to 0. The alarm message generated in the event log is:

(XNG)AC POWER OFF FOR: 60 minutes

After the AC power is restored for 5 minutes, the following event log message will be recorded:

(XNG)AC POWER BACK ON

Alarm LED T8 will light as follows:

Steady Green – when the AC power is on (POR Up), and no power outages have occurred.

Flashing Yellow – when the AC power is off (POR Down), for less than 60 minutes.

Steady Yellow – when the AC power was off for less than 60 minutes but has since been restored.

Flashing Red – when the AC Power is off (POR Down), and has been off for 60 minutes or more.

Steady Red – when the AC power was off for more than 60 minutes but has since been restored.

Pressing the **Clear Alarm** key will return T2 to Green and it will remain so until the next alarm occurrence.

8.0 OTHER MESSAGES

8.1 IGNORED WARN TIME MESSAGE

Occurs when an island input drops (becomes occupied) 3 seconds or less from the time the crossing was activated (XR Down). Either of two messages will be recorded depending on the first island to drop. They are:

WARNING TIME IGNORED,ISL1: x sec, or

WARNING TIME IGNORED,ISL2: x sec

8.2 NORMAL WARN TIME MESSAGE

Each train move will have the warn time logged. This is the time elapsed from when the XR drops to when the first island is dropped (occupied). If the time is greater than 20 seconds, either of the following messages will result depending on the island that drops first:

WARNING TIME NORMAL,ISL1: 29 sec, or

WARNING TIME NORMAL,ISL2: 29 sec

8.3 GATES START TIME MESSAGE

Each crossing activation will record the time elapsed from the drop of the XR input to the drop of the Gate Control input (XPK). The message is:

GATES START TIME: xx sec

8.4 GATE DOWN TIME MESSAGE

Each crossing activation will record the time elapsed from the drop of the XR input to the drop of the Gate Down input (GDK). The message is:

GATES DOWN IN : xx sec

8.5 ILOD MESSAGES

When the crossing is active, the iLODs will record the current draw and Flash Rate for each circuit monitored. The iLODs can also report to the application logic if 1, 2 or more bulbs are determined to be not lit. The event log messages are as follows:

(XNG)BULB OUT

(XNG)TWO BULBS OUT

(XNG)MULTIPLE BULBS OUT

After a bulb out condition is detected and then corrected, the following message will be recorded in the log:

(XNG)BULBS NORMAL

If the iLODs detect a flash rate of < 35 FPM for more than 7 seconds, the following message will be recorded in the log:

(XNG)FLASH RATE TOO SLOW

If the iLODs detect a flash rate of > 65 FPM for more than 7 seconds, the following message will be recorded in the log:

(XNG)FLASH RATE TOO FAST

If the iLODs detect a flash rate of < 55 FPM or > 65 FPM for more than 7 seconds, the following message will be recorded in the log:

(XNG)FLASH RATE NOT NORMAL

After a flash rate alarm is corrected, the following message will be recorded in the log:

(XNG)FLASH RATE NORMAL

NOTES

NOTES

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