

Saab TransponderTech

Installation guide for J4 Junction Box for R4 AIS Transponder System



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iii VALIDITY OF THIS DOCUMENT

This installation guide is valid for the J4 Junction Box.

CONTENTS

1	INTRODUCTION	1
	1.1 About this installation guide	1
	1.2 Unpacking the equipment	1
2	GENERAL INFORMATION	2
	2.1 Physical Size (mm)	2
	2.2 Cabling	2
	2.3 Power Supply	2
	2.4 Clearance area (mm)	3
	2.5 J4 AIS Alarm Relay	3
3	MOUNTING THE BOX	4
	3.1 Wiring Input/Output connections	4
	3.1.1 RX Termination Resistance	5
4	TECHNICAL SPECIFICATIONS	6

1 INTRODUCTION

1.1 About this installation guide

This installation guide provides information to facilitate installation of the Saab TransponderTech J4 Junction Box for the R4 AIS Transponder System.

As the J4 Junction Box is intended for use with the R4 AIS Transponder System, this installation guide contains information that is relevant for this type of installation. It is important to note that more details of the R4 AIS Transponder System installation are found in the R4 AIS Transponder System Installation Manual (included in the R4 AIS Transponder System Delivery Package).

1.2 Unpacking the equipment

When unpacking the equipment, please check that the following is included in the delivered package, see also Figure 1. If any of the parts are missing, please contact the Saab TransponderTech dealer.

Standard J4 package:

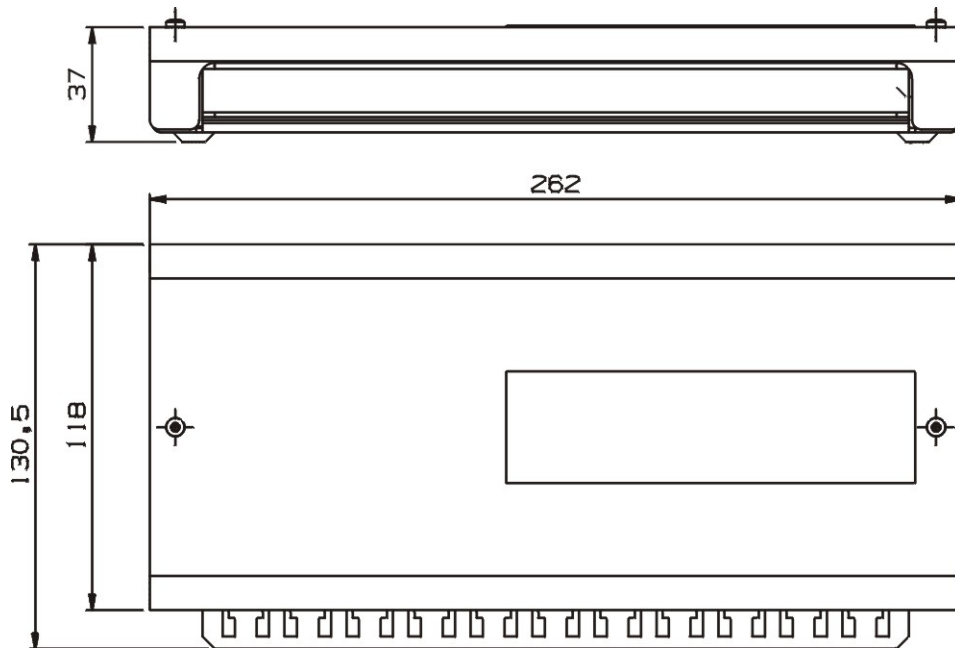
Name	Qty.
J4 Unit	1
Mounting Screws (In plastic bag located inside the box)	4



Figure 1: J4 Junction Box

2 GENERAL INFORMATION

2.1 Physical Size (mm)



2.2 Cabling

This guide details how to mount the standard cables that are included in the standard delivery package for the R4 AIS Transponder System.

- R4 Transponder Power Cable
- R4 Transponder Data Cable
- R4 Display Power Cable
- R4 Display Data Cable

2.3 Power Supply

The R4 AIS Transponder System (transponder + display) is designed to operate on 24 volts DC. The nominal power used by the display and transponder is 25W.

The J4 Junction Box shall be connected to an emergency power source. If connected to an emergency battery, a re-calculation must be made for the battery capacity. For power consumption of the R4 AIS Transponder System, see the R4 AIS Transponder System Installation Manual.

The R4 Display shall be externally fused (slow blow fuse) with a 2 Amperes fuse.

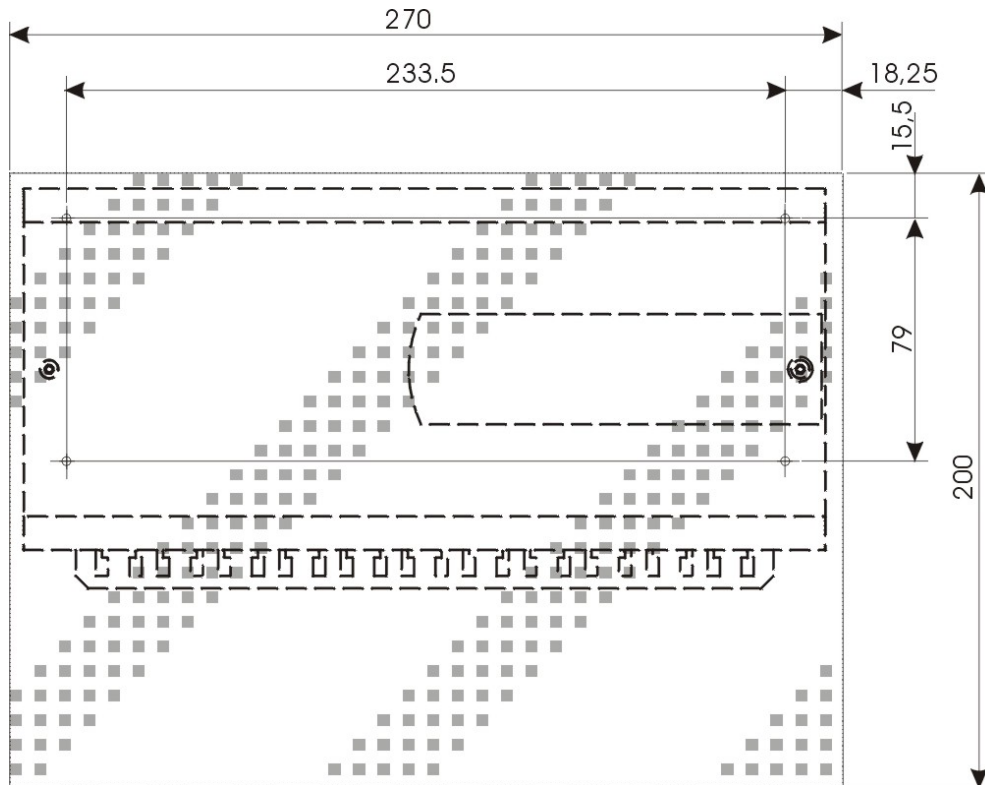
The R4 Transponder shall be externally fused (slow blow fuse) with a 4 Amperes fuse.

To avoid power and voltage drops in the feed line it is important that sufficient size of cable is used.

Note: The 6,3A fuse that is included in the J4 Junction Box, is a complement to the external fuses used.

2.4 Clearance area (mm)

Leave a clearance around the J4 Junction Box to facilitate service and installation. See recommended clearance area below.



2.5 J4 AIS Alarm Relay

The J4 AIS Alarm Relay (RE1) is included in the box, see Figure 2. It is required that the alarm output (relay) is connected to an audible alarm device or the ship's alarm system, if available.

Alternatively, the ship's BIIT alarm system may use the alarm messages output on the AIS Presentation Interface (PI) provided the alarm system is AIS compatible.

3 MOUNTING THE BOX

1. Open the lid of the J4 Junction Box
2. Fix the box on an appropriate surface/place with the 4 supplied screws. Use the four holes that are located in each corner of the bottom plate.
3. Connect the cables to the terminal blocks, for connection details see Appendix A and other applicable sections of this document.
4. Clamp the cables to the clamp area located on the front of the box. (Clamps are not included).
5. Fix the lid to the box casing
6. If needed, also clamp the cable outside the box.

3.1 Wiring Input/Output connections

A detailed installation-wiring diagram for the R4 AIS-System is available in Appendix A. The diagram includes cable connections for the R4 Display, the R4 Transponder, power supply, J4 alarm relay and RS422 ports. For a detailed description of the cable connections for the R4 Display and R4 Transponder, see the R4 AIS Transponder System Installation Manual. In Figure 2 an overview of the J4 circuit board is shown. A description of the included parts can be found in Table 1.

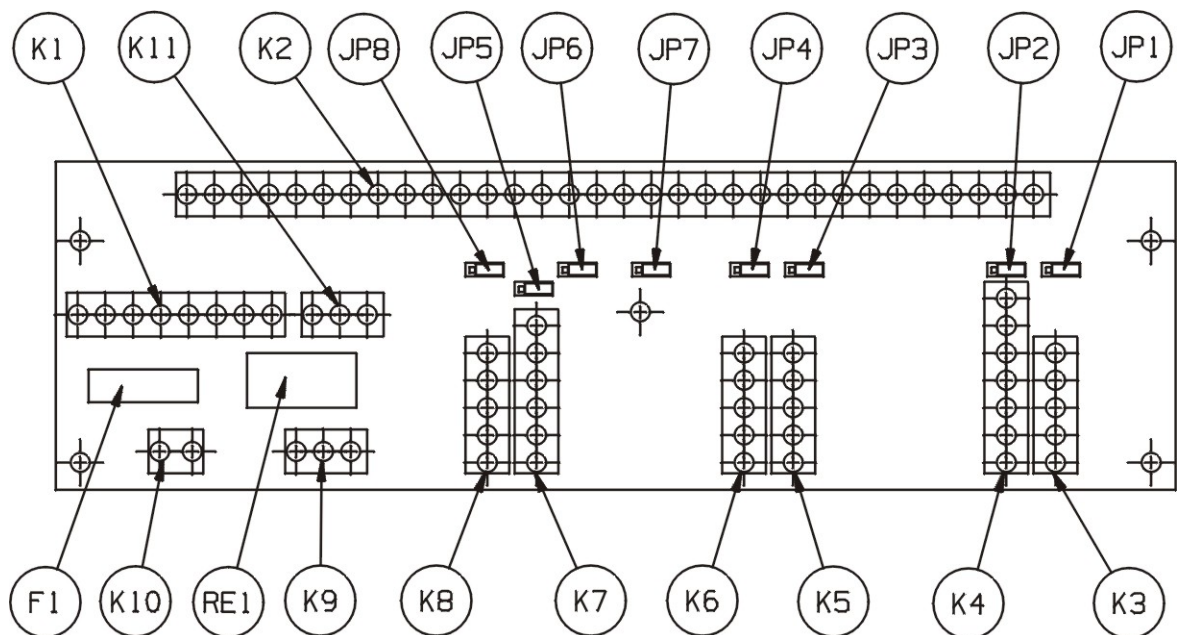


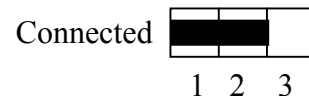
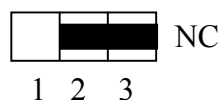
Figure 2: Circuit Board Layout

Table 1: J4 Description of circuit board

Item	Description
K1	Terminal block for R4 Transponder Power Cable
K2	Terminal block for R4 Transponder Data Cable
K3	Terminal block for Pilot Port
K4	Terminal block for ECDIS
K5	Terminal block for Long Range
K6	Terminal block for R4 Display
K7	Terminal block for Sensor 1, 2 and 3
K8	Terminal block for Aux Port
K9	Terminal block for AIS Alarm Relay
K10	Terminal block for External 24VDC Input Power
K11	Terminal block for R4 Display Power Cable
JP1	Jumper for RX Termination Resistance (240Ω) for Pilot Port (default = NC, pos 2-3)
JP2	Jumper for RX Termination Resistance (240Ω) for ECDIS (default = NC, pos 2-3)
JP3	Jumper for RX Termination Resistance (240Ω) for Long Range (default = NC, pos 2-3)
JP4	Jumper for RX Termination Resistance (240Ω) for R4 Display (default = NC, pos 2-3)
JP5	Jumper for RX Termination Resistance (240Ω) for Sensor 3 (default = NC, pos 2-3)
JP6	Jumper for RX Termination Resistance (240Ω) for Sensor 2 (default = NC, pos 2-3)
JP7	Jumper for RX Termination Resistance (240Ω) for Sensor 1 (default = NC, pos 2-3)
JP8	Jumper for RX Termination Resistance (240Ω) for Aux Port (default = NC, pos 2-3)
JP9	Not used
RE1	J4 Alarm Relay
F1	6,3 A slow blow fuse

3.1.1 RX Termination Resistance

Some installations may require that a termination resistance is connected to the incoming RX cable(s). All incoming RX to the J4 Junction Box has a jumper (J1-8) that makes it possible to Connected/Not Connect (NC) the termination resistance (240 Ω). The default setting is NC, jumper set to 2-3, see below. If the terminator resistance must be used the appropriate jumper should be set to position 1-2, i.e. the termination resistance is Connected.



4 TECHNICAL SPECIFICATIONS

PHYSICAL

Dimensions:	Height:	37 millimeters
	Width:	262 millimeters
	Depth:	130 millimeters
Weight:	0.95 kilograms	

ENVIRONMENTAL

Temperature:	-15°C to +55°C (Operational)
	-55°C to +85°C (Storage)
Vibrations:	IEC 60945 ed. 4.
EMC:	IEC 60945 ed. 4

J4 AIS ALARM RELAY

Max switching current:	3 A
Max switching voltage:	250 VDC or 230 VAC
Max switching power:	60W (DC) or 120 VA (AC) resistive load