OPERATING MANUAL

SESAM 800 MOBILE

TAIL LIFT

M4 TL, M6 TL, RXM TL

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1 Introduction

This manual only covers the installation of the Sesam radio remote system. The Sesam system is not a complete tail lift control system; it provides only the set of outputs that are driven according to the actions performed by the operator of the transmitter. The way the set of outputs is used for controlling the lift depends on the specific installation and is outside the scope of the Sesam.

The approvals for the Sesam radio remote control system are only valid for the system itself.

The complete remote control system, where the controlled object is one part, has to be tested and approved according to the standards/norms that are applicable and specific to the controlled object, it is not the responsibility of Åkerströms Björbo AB. No liability for the controlled object or the controlled objects actions will be accepted by Åkerströms Björbo.

2 Scope

The following guide must be used when installing Åkerströms Sesam tail lift remote control system to ensure secure, safe operation. The installation must be carried out by a certified electrician.

= This symbol highlights extremely important information

3 Service

Contact your Åkerströms Björbo AB dealer for service or support. Warranty work must be performed by Åkerströms or authorized service center.

4 Maintenance

For cleaning use a dry cleaning cloth, if necessary use a wet cleaning cloth and a soap solution. Never use an alcohol-based product for cleaning; it can seriously damage the plastic. Do not use pressure washer on the product!

5 Technical Specifications

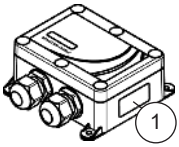
Table 1. Technical Specifications, Sesam 800 TL

System Specifications:	
Operating frequency band:	869 MHz , 12 channels
Channel separation:	25 kHz
Power output:	≤ 5 mW
Functional sensitivity:	Better than -103 dBm BER 10^{-4}
Transmission principle:	GMSK, TDMA
Operating Temperature:	-25°C - +55°C
Storage Temperature:	-40°C - +85°C
Receiver specifications:	**SESAM 800RXM TL**
IP- class:	IP67
Power Supply:	12/24 V DC 25 mA at 12 V DC (SELV), Must be fused with 2A fuse (SAE J1284)
Max switching capacity of outputs:	1A/24 V DC
Total load on all outputs:	Max 2A/24 V DC (not exceeding 1A on any single output)
Dimensions:	120 x120 x 50 mm
Weight:	350g
Screw size (enclosure):	TX20

Transmitter Specifications	M6 and M4 TL
IP- class:	IP67
Dimensions:	100 x 60 x 25 mm
Weight:	130g
Battery type:	2*AA/LR06 Alkaline
Screw size (enclosure):	PH2

6 Short Description of the System

6.1 Receiver

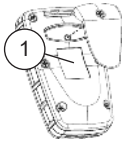


Main features:

- 6 solid outputs.
- Waterproof (IP67).

6.2 Transmitters

There are two different transmitters that can be used for tail lifting applications:



Medium M4 a medium size 4- button transmitter capable of controlling UP, DOWN, and TILT

Medium M6 a medium size 6- button transmitter capable of controlling UP, DOWN, TILT and SLIDE IN/OUT.

1 Type label position

7 Description of the Receiver

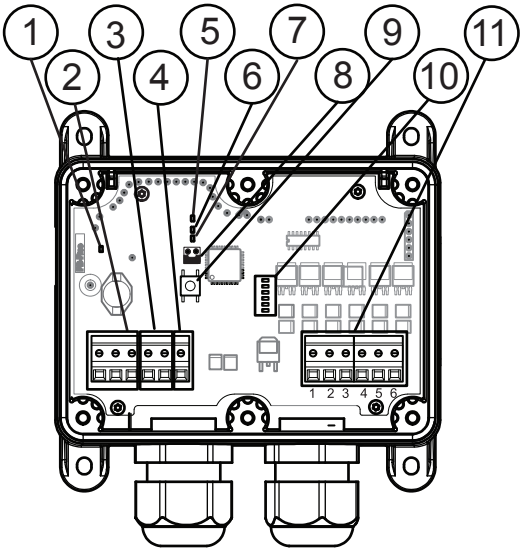


Figure 1. Sesam 800 RXM TL model indicators, connections and jumper.

1. *Power LED*
2. *Ground*
3. *Positive (+) 12/24 V DC connector*
4. *Output power input*
5. *LED 5*
6. *LED 6*
7. *LED 7*
8. *Jumper J1*
9. *Learn/Erase button*
10. *LED indicators for outputs*
11. *Output connectors 1..6*

Jumper J1 should not be changed from its' delivery setting.

7.1 Indications on the Receiver

The Sesam 800 RXM TL model has LED indicators that indicate different parameters (see Figure 1 for positions of the LEDs).

The indications on the LEDs are as follows:

Power LED (①)
Indicates whether the receiver is powered on or not.

LED 5 Squelch (⑤)
Indicates a detected signal on the operating frequency band.

LED 6 Status (⑥)
Indicates that information from a transmitter associated with the receiver has been received.

LED 7 Learn (⑦)
Indicates if the transmitter is in Learn Mode.

Outputs LEDs (⑩)
Indicates the state of outputs 1..6. Output LED 1 is the bottom one, output LED 6 is the top- one. An activated output is indicated by a LED in ON state.

Output LED	1	2	3	4	5
Function	Lift /Tilt UP	TILT	Lift/Tilt DOWN	Slide IN	Slide OUT

Table 2. Output LED functions

8 Installation of the Receiver

The permanent installation of the receiver must include fuses that protect the equipment and wiring from over current and short-circuit. The power supply to the receiver must be fused with 2A as close to the battery as possible. The cable must be of outer diameter 6-12 mm and each the power conductor at least 0.75mm^2. Max cable length 5 meters.

8.1 Mounting Steps

Step 1

Select a location that is within the environmental limitations of the receiver and where it is difficult for unauthorized persons to obtain access to the receiver. Mount the receiver with the cable glands facing downwards. Avoid mounting the receiver near battery, fuel line, fuel tank or exhaust manifold.

If possible mount the receiver inside the lifts own control cabinet. Note that this is only possible if the cabinet is made out of plastic or materials that not have a negative effect on radio emissions. If the cabinet is unsuitable for mounting, select a well protected position on the vehicles frame.

Step 2

Drill 4 holes (for measures see Figure 8)

Mount the receiver.

Step 3

Connect wiring for output signals and power supply. Use cable ties to secure the wires and ensure that the wiring will not be affected by abrasion, heat and/or exhausts.

Connect 12/24 V DC (+) to position 3 and ground (-) to position 2 (see ③ and ② in Figure 1).

Connect the equipment to be controlled to output terminals 1-6 (see ⑪ in Figure 1) and equipment ground to position 2 (see ② in Figure 1. If the outputs are to be powered by the same 12/24 V DC supply as the receiver place a jumper between the Output Power Input and Positive (+) 12/24 V DC using a 0.75 mm^2 cable (see Figure 2).

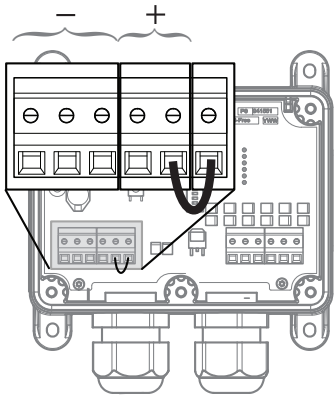


Figure 2. Configuring internal supply of output power

Step 4

Connect wiring for output signals and power supply. Use tie wraps to secure the wire and ensure that the wiring will not be affected by hot parts and/or exhausts. The power supply (+) to the receiver must be fused with a system adapted fuse as close to the battery as possible.

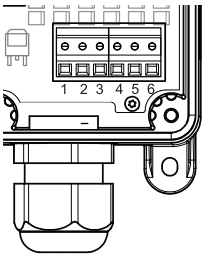


Figure 3. Numbering of outputs

Output	1		3	4	2	5	6
Function	Lift /Tilt UP	ON/OFF	Lift/Tilt DOWN	Lift IN	Lift TILT	Lift OUT	-
Button	1	2	3	4	5	6	-

Table 3. Functional diagram for installation of cable

Step 5

System Check

1. Ensure that wiring to all components is correct and all loose wires are cable tied and secure.
2. Activate the transmitter (see section 11.1.1). If necessary pair transmitter (see chapter 10).
3. By pressing the buttons on the transmitter, verify that all functions work correctly as described in Table 3.

Button 5 must be combined with Button 1 or 3 in order to activate the function.

9 Description of the Transmitters

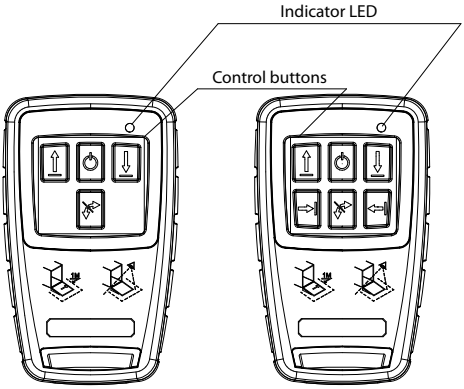


Figure 4. The Sesam 800 M4/M6 TL transmitters indicators and buttons

9.1 Indications on the Transmitter

Normal operation

Quick flashing RED LED =	sending message but no feedback available from the receiver.
Continuous GREEN LED =	Output activated in the receiver (feedback information from receiver).

Battery warning

Continuous RED after activating a command = Low battery.

3 long RED LED flashes =	Battery depleted, transmitter can not send commands.

10 Pairing Receiver and Transmitter

If any part of the system has been replaced, the receiver and transmitter need to be paired together:

1. Open the lid on the receiver (6 screws).
2. Push the “Learn/Erase” button until LED 7 (see ⑦ in Figure 1) is ON.
3. The Learn Mode will be active for 10 seconds (as long as LED 7 is ON).
4. Press button 1 (⇧) on the transmitter. LED 7 flashes 3 times if the Learn is successful.
5. Mount the lid and tighten the screws with 2.5 Nm.
6. Mount the caps over the screws.

To delete a transmitter from the receiver:

1. Push the Learn/Erase button until LED 7 is ON.
2. Continue by pressing the Learn/Erase button once more until LED 7 is OFF.

11 Operation

11.1 Activate and Deactivate Transmitter

11.1.1 Activate the Transmitter

The transmitter is delivered with the batteries not installed (see chapter 12 for installation).
Activate the transmitter by pushing the start button (button 2,) for 3 seconds. The indicator will flash GREEN rapidly during startup and then slowly blink GREEN when contact with the receiver is enabled. The unit can then operate the tail lift

11.1.2 Deactivating the Transmitter

To prevent accidental activation shall the transmitter be turned off when not used. Turn off the transmitter by pushing button 2 ( ) for three seconds, the indicator flashes a couple of quick RED to finish with a long RED. The transmitter is now turned off.
If you forget to turn off the transmitter it will shut itself off after a time, idle-time (non-use).

11.2 Controlling the Device

The lift is controlled via the buttons on the transmitter.
The relationship between buttons and outputs are:

- Button 1 ( ) Lift up.
- Button 2 ( ) Transmitter lock/unlock (2/3 sec.)
- Button 5+1 (+) Tilt up
- Button 3 ( ) Lift down
- Button 5+3 (+) Tilt down
- Button 4 ( ) Slide IN, only on the M6 transmitter.
- Button 6 ( ) Slide OUT, only on the M6 transmitter.

12 Replacing Batteries in the Transmitter

If the status indicator on the transmitter indicates low battery, replace the batteries promptly. Before changing the batteries note that changing of batteries must take place in a clean environment free from static electricity.

The batteries are changed as follows:

1. Open the battery cover by unscrewing the 6 screws on the backside of the transmitter cover with screwdriver PH2.
2. Carefully remove the cover by lifting up the front of the cover.
3. Remove the used batteries
4. Insert new batteries. Make sure the batteries are inserted in the correct polarity.
5. Close the cover by first inserting the backside of the cover in the transmitter, and then pushing the front down.
6. Tighten the 6 screws with torque 1.0 Nm.

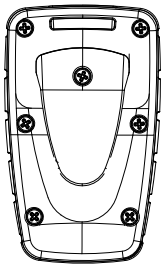


Figure 5. Battery cover and the screws holding the cover

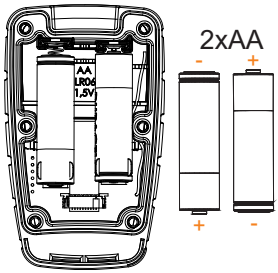


Figure 6. Batteries inserted in the transmitter.

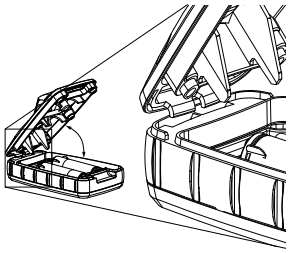


Figure 7. Backside of the cover inserted in its position

13 Receiver Drill Measures

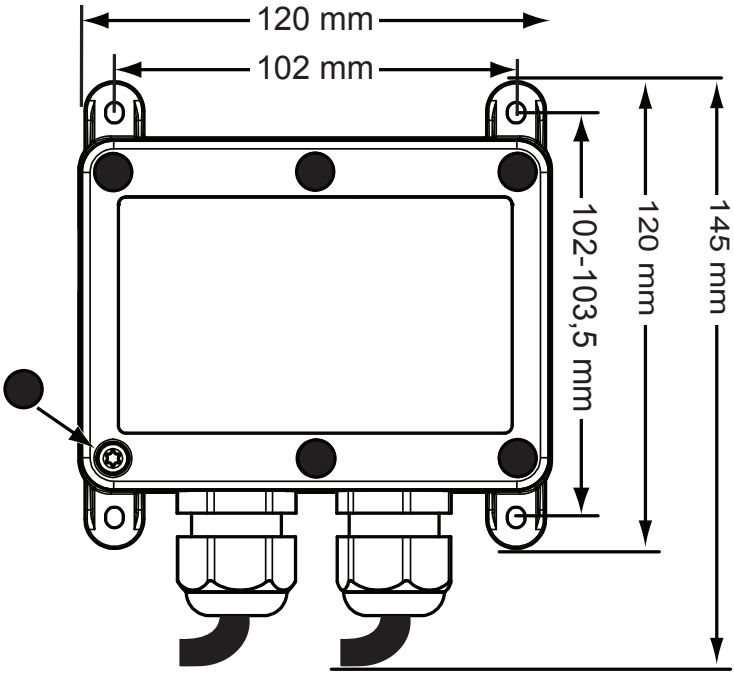


Figure 8. Receiver Drill Measures

The receiver shall be attached with 4 mm screws that are suitable for the surrounding environment

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