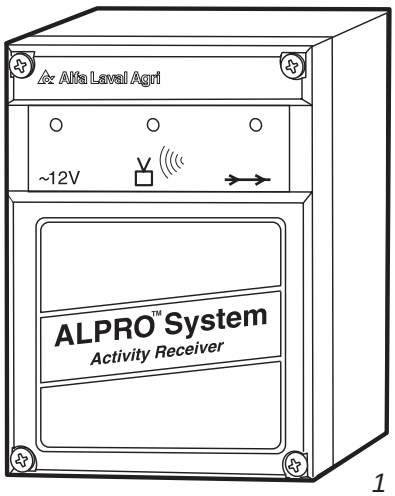
Activity Receiver

Product data



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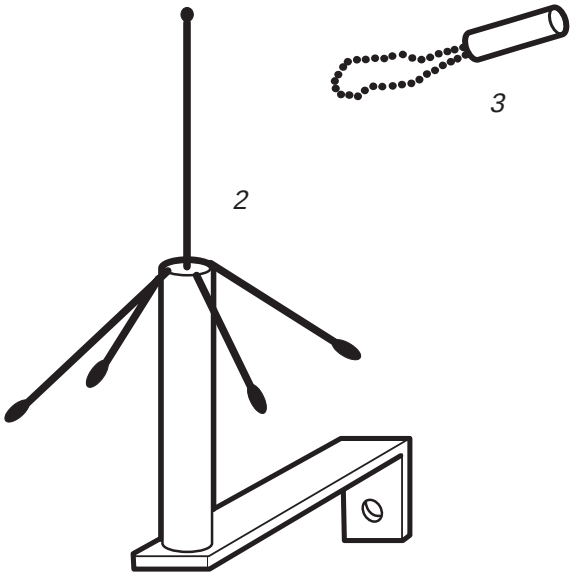

2

3

Article number

Activity Receiver, complete:
- Activity receiver (1)
- Antenna (2)
- Magnet (3)

906510-80 433 MHz
906511-80 418 MHz

906729-80 separate Antenna (2), complete

Description

General

The Activity Receiver is the link between the Activity Tags, fixed to the cow neckbands, and the ALPRO system processor, where data from the Activity Tags are processed.

In other words, the RF (Radio Frequency) part in the Activity Receiver receives the messages that the Activity Tags send via radio signals, checks the validity and, if the messages are correct, sends them further on to the ALPRO processor via the ALCOM us

Features

- The circuit board works with three different voltages. The digital part works with 5 V, the RF part with 10 V, except the receiver chip that works with 3 V. Supply voltage is 12 V AC.
- The circuit board has two processors:
  – A PIC-processor that processes what comes in from the RF part.
  – An 8051 processor, which has an overall function (communication with the ALPRO processor via the ALCOM bus).
- There are three terminals on the circuit board:
  – One for the ALCOM bus.
  – One for electrical power supply.
  – One for connection of the external antenna.
- There are three LED:s
  – One green for power on.

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– One yellow for indication of communication on the ALCOM bus.
– One red for indication of communication going on internally between the PIC and 8051 processors.

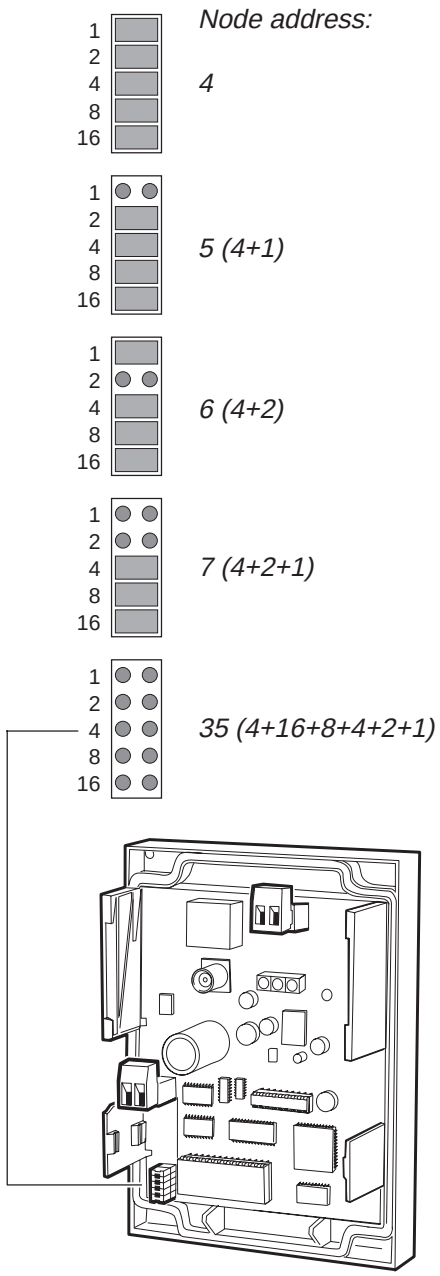
- The circuit board has five jumpers for setting the address on the ALCOM bus.
- A reset circuit functions as a watchdog and performs a reset at power on.

Technical data

Current:	10–18 VAC
Power:	2 VA
Environmental specification	
Temperature:	0–70 °C
Humidity:	10–100 %RH
Dimensions:	150 x 110 x 70 mm
Weight:	420 g

Activity Receiver

Installation



Set the node address

Prior to connection of electrical power and of ALCOM bus, the node address shall be set.

The Activity Receiver node address on the ALCOM bus is set by means of jumpers.

The jumper terminal has 5 jumper positions. If all jumpers have been installed, the node address is **4**. Removing a jumper means adding its value to 4.

The value of the jumpers are from above: 1, 2, 4, 8, and 16.

This means, that with the top jumper removed, the node address is **5** (4+1). With the second jumper from top removed, the address is **6** (4+2). With the first and second jumper from top removed the address is **7** (4+2+1). If all jumpers have been removed, the address is **35** (4+16+8+4+2+1). *See figure!*

Connections

After the address has been set, connect the electrical power, the bus, and the antenna (if external antenna is used).

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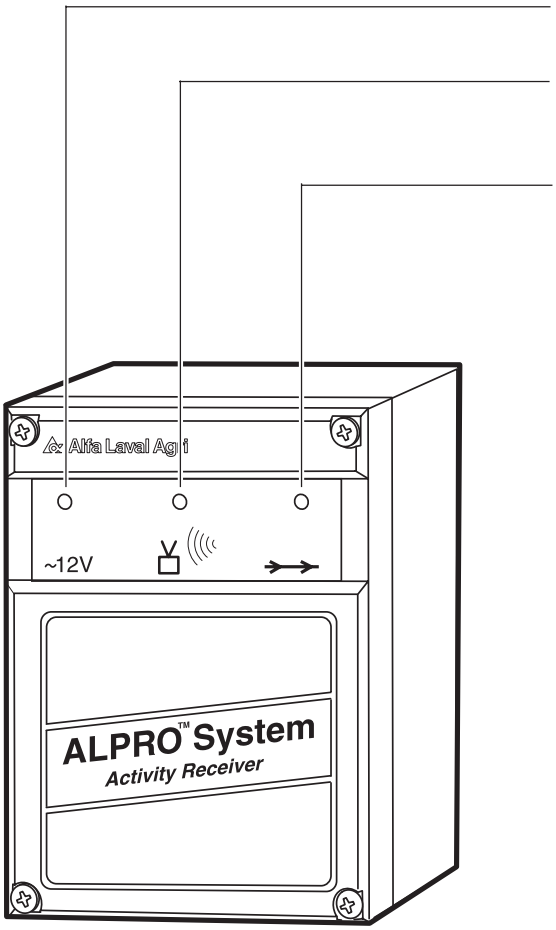
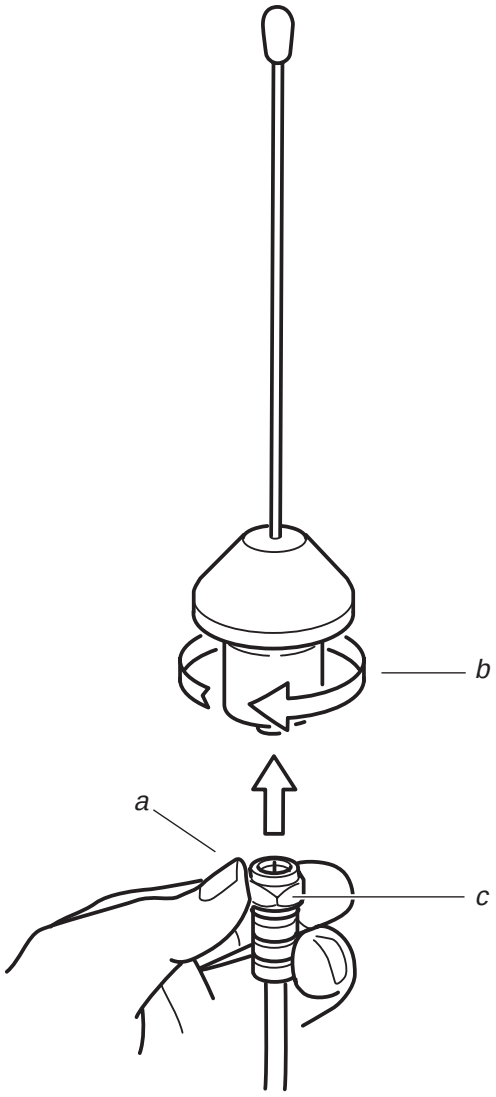


Front panel LEDs

The LEDs on the front panel indicates what happens:

- Green LED is constantly lit when electrical power is on.
- Yellow LED is lit when the Activity Receiver sends or receives a message on the ALCOM bus.
- Red LED is lit when there is internal communication in the Activity Receiver, i.e. when a message has been received from the antenna.

If the Activity Receiver has received a message and found it correct (after a validity check), the red LED will first flash once and then the yellow LED will flash once.



Antenna

When connecting the cable to the antenna base, there are a couple of important notes that must be followed:

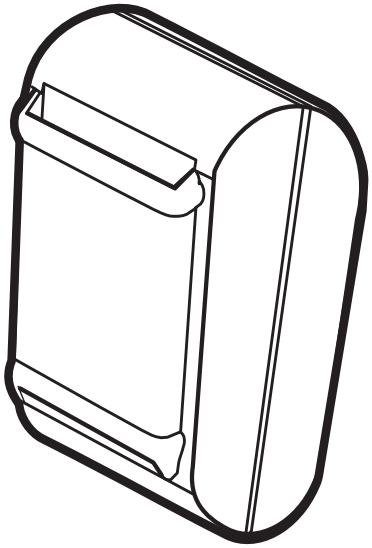
- Hold the cable by a grip on the nut (a).
- Screw the antenna base (b) clockwise on to the nut (c).

Do not hold the cable at any other point than on the nut!

Do not turn the cable!

Activity Tag

Product data



Article number

906500-80 Activity Tag, 433 MHz
906501-80 Activity Tag, 418 MHz

Each article No. contains 50 tags.

Description

General

The **Activity Tag** is a part of the Activity Meter System, an electronic, heat-detection system for cows and heifers in heat.

The tag is battery driven. The battery has a lifetime of approximately 10 years.

A small magnet is used to set the tag in ON or OFF mode via a switch inside the tag.

Each tag has a unique identity.

The tag must be placed on the cow's neckband at least five days before a heat cycle begins.

We recommend that the tag then stays permanently mounted on the cow.

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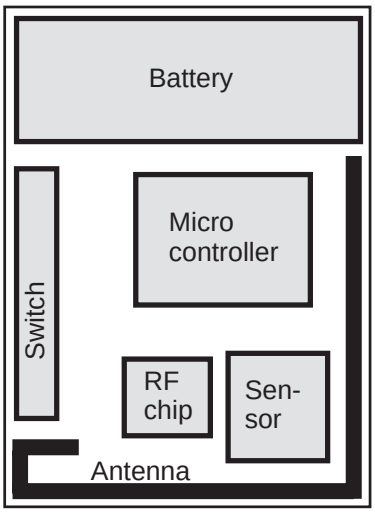


Technical data

Internal electronics

The Activity Tag contains following parts:

- Battery (with approximately 10 years life-time)
- Electro-magnetic sensor (senses the cow's movements in all directions)
- Micro controller
- Radio frequency transmitter (RF chip)
- Reed relay (for setting ON/OFF)
- Antenna

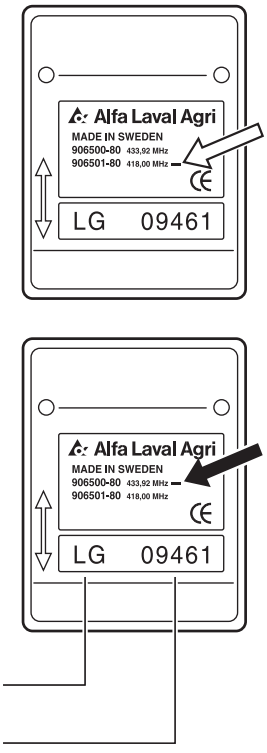
Electrical characteristics

Storage temperature -30°C – +85°C

Operating ratings:

– Temperature range 0 °C – +70 °C

– Operating voltage 2.7–3.3 V DC



Radio

Radio frequency transmitter works on 3 volt and sends with:

433.92 MHz in Europe
418.00 MHz in USA and UK.

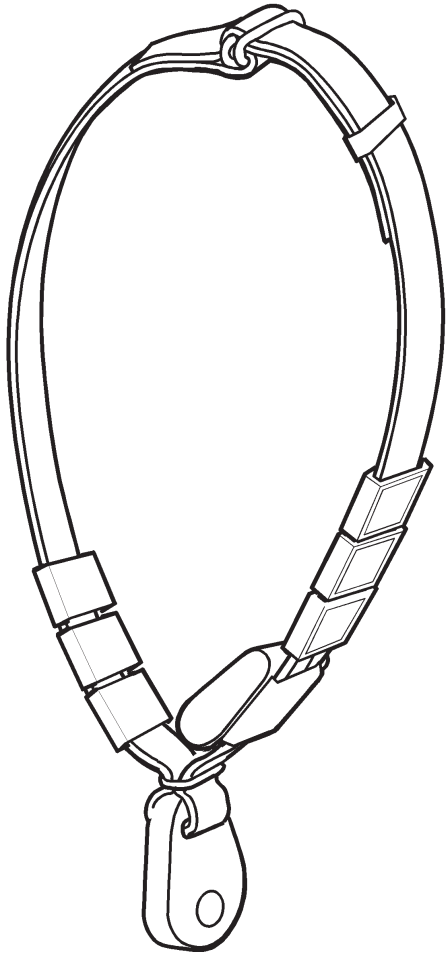
Valid frequency is marked on the tag according to adjoining figure.

The message is sent one time each hour.

Warning! *The battery contains* ***lithium****. Do not dispose of these items without complying with current environmental laws.*

Activity Tag

Installation



The Activity Tag shall be mounted on the “inside” of the neckband as the figure to the left shows. *Note that the thickest part of the tag shall point downward.*

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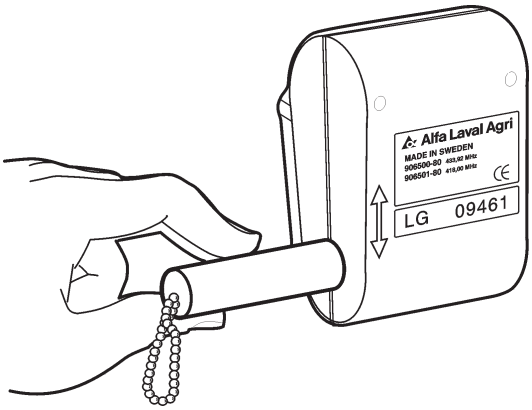
Activity Tag

Operation



*From year and month code **LG** and on*

The Activity Tag can be in one of two different modes, ON or OFF.

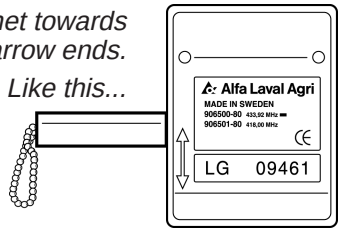
ON mode
When the Activity Tag is in ON mode, it works normally, i.e. it measures activity and sends the data through the RF link once per hour.

To put the Activity Tag in ON mode, the magnet has to be close to the internal switch for a time not exceeding 1.5 seconds. This is the same as a quick stroke with the magnet near the arrow on the body, i.e. striking the magnet like a match.

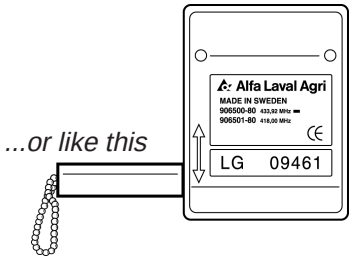
*The position of the switch is shown by an arrow on the tag body. **Note!** Do not hold the magnet in the middle of the arrow because the reed relay has a dead spot there. Hold the magnet towards the ends of the arrow.*

__Note!__ Hold the magnet towards one of the arrow ends.

Like this...



...or like this



To confirm that it has gone to ON mode, the Activity Tag sends a special message through RF and the red LED on the Activity Receiver blinks as soon as the magnet is removed. Shortly thereafter the yellow LED blinks.

OFF mode
When the Activity Tag is in OFF mode, it is not working, i.e. it does not measure any activity and there will be no RF transmissions.

To put the Activity Tag in OFF mode, the magnet has to be held close to the internal reed relay for 2 seconds and then away from the reed relay for 2 seconds. This routine has to be done 3 times after each other.

***Note!** If you fail to exactly follow the routine, an ON signal is sent instead, and you have to start from the beginning again.*

To confirm that it has gone to OFF mode, the Activity Tag sends a special message through RF and the red LED on the Activity Receiver flashes when the magnet is removed. Shortly thereafter the yellow LED flashes.

3CDMATIN.CHP\9805

*Year and month code **LF** and earlier*

The Activity Tag can be in one of two different modes, ON or OFF.

ON mode
When the Activity Tag is in ON mode, it works normally, i.e. it measures activity and sends the data through the RF link once per hour.
To put the Activity Tag in ON mode, the magnet has to be close to the internal switch for a time between 0.2 and 3.5 seconds. This is the same as a quick stroke with the magnet near the arrow on the body, i.e. striking the magnet like a match.

*The position of the switch is shown by an arrow on the tag body. **Note!** Do not hold the magnet in the middle of the arrow because the reed relay has a dead spot there. Hold the magnet towards the ends of the arrow.*

To confirm that it has gone to ON mode, the Activity Tag sends a special message through RF and the red LED on the Activity Receiver blinks as soon as the magnet is removed. Shortly thereafter the yellow LED blinks.

OFF mode
When the Activity Tag is in OFF mode, it is not working, i.e. it does not measure any activity and there will be no RF transmissions.

To put the Activity Tag in OFF mode, the magnet has to be held close to the internal reed relay for a time longer than 3.5 seconds but absolutely not longer than 9 seconds. To confirm that it has gone to OFF mode, the Activity Tag sends a special message through RF and the red LED on the Activity Receiver flashes when the magnet is removed. Shortly thereafter the yellow LED flashes.

***Note!** If the magnet is held in position at the arrow for at least 9.5 seconds the Tag will go into “production mode”. It will then be locked for 15 minutes and then go to OFF mode. During the 15 minutes the magnet has no effect on the Tag, and thereafter it is possible to start the Tag again.*