

Avalanche Training Center (ATC)

Beacon Training System RTX 457 LT/FCU with Probe Hit Feedback



Operating Manual ATC V2.1

Inhaltsverzeichnis

1. System Components	2
2. Quick Guide	3
3. User Interface Elements	4
4. Regular Training Program	5
5. The Expert Mode	6
6. The Sleep Mode	7
6.1 Sleep Mode of Beacon Transmitters	7
6.2 Sleep Mode of Control Unit	7
7. Make the ATC Ready for Use	
7.1 Purpose	8
7.2 Preparing for Use	8
8. Technical Data	9
8.1 Avalanche Beacon Transmitter RTX 457 LT	9
8.2 Control Unit FCU for permanent installation	9

1. System Components

The Avalanche Training Center (ATC) consists of:

1 Control Unit FCU for permanent installation



1 Antenna

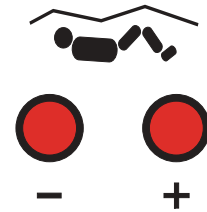


Up to 16 radio controlled avalanche beacon transmitters RTX 457 LT with probe hit feedback

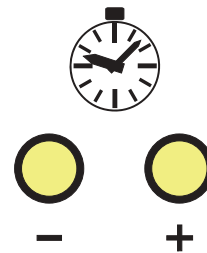


2. Quick Guide

1. Select the number of buried persons (5 max.)



2. Set the search time limit (20 minutes max.)



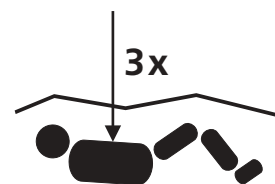
3. Press START

The system will now activate the selected number of transmitters and start the timer



4. Search by means of a beacon and a probe

Three consecutive probe hits, one second apart, will trigger a confirmation signal in your beacon (16 seconds of silence) and on the control unit (siren). The buried persons counter is decremented by one.

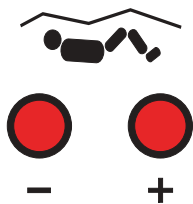
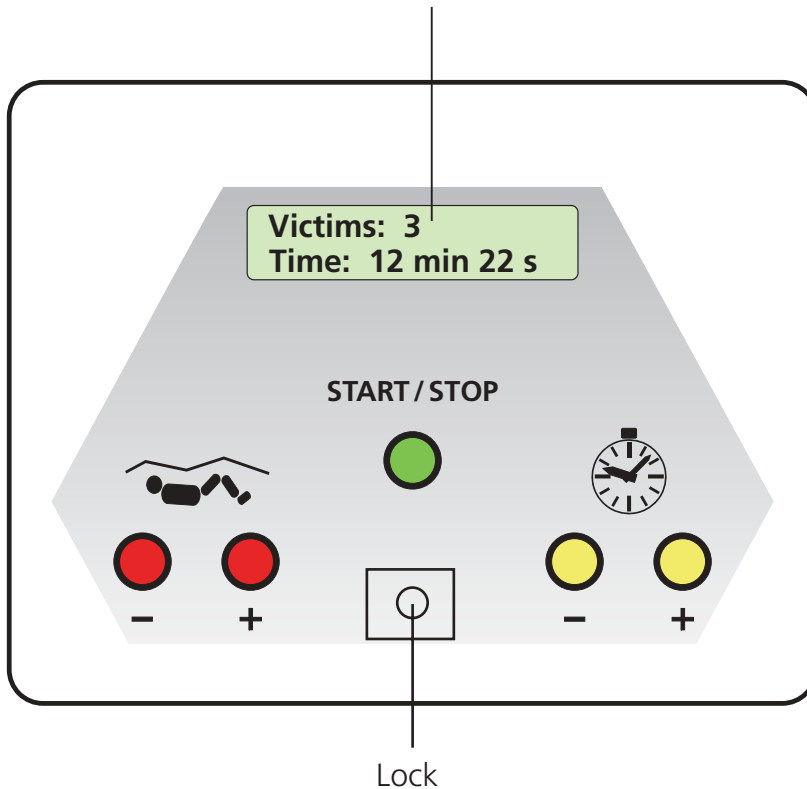


5. Search time elapsed

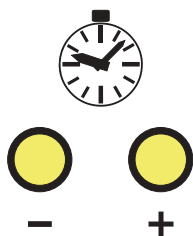
When the search time elapses or all active transmitters have been hit with a probe, the siren will be activated and all transmitters are switched off.

3. User Interface Elements

Two line display for the number of buried persons (VICTIMS) and for the search time (TIME)



Keys **-VICTIMS** and **+VICTIMS** to enter the number of buried persons (i.e. activated transmitters). The number selected is shown on the display (VICTIMS).



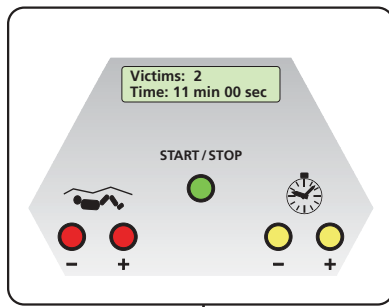
Keys **-TIME** and **+TIME** for search timeout entry. The time can be adjusted from 1 minute to 20 minutes in steps of one minute. The time is shown on the display.

START/STOP



START/STOP key to start and to terminate a training exercise.

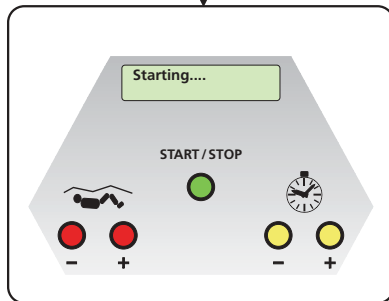
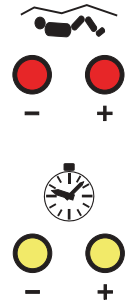
4. Regular Training Program



Preparation

Selection of the number of the buried persons
e.g. 2

Selection of the search timeout
e.g. 11 minutes.

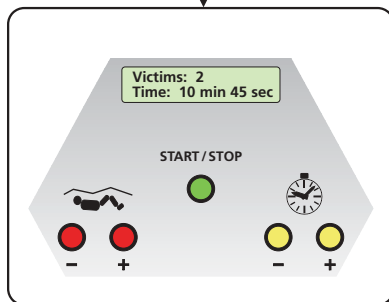


Start

Press the START key

The system will now do a random selection of the entered number of transmitters (buried persons).

The selected transmitters are activated and the time countdown starts.



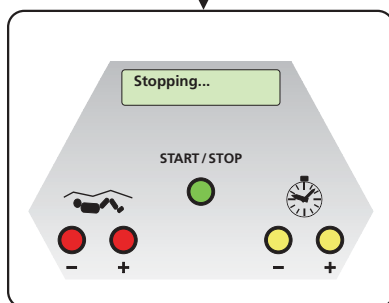
During the Exercise

The top line of the control unit display indicates the number of transmitters that remain to be located. The bottom line shows the remaining search time.

Probe Hit:

Note that every time an activated transmitter (buried person) is hit by probing, the control unit issues an acoustic signal and decrements the number of remaining transmitters by one.

The exercise may be terminated at any time by pressing the **START/STOP** key. This turns all buried transmitters off.



End of Exercise

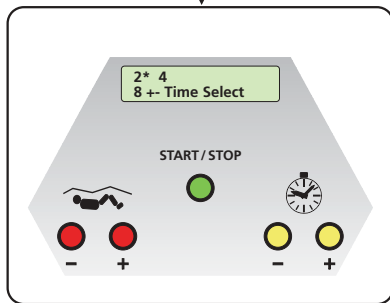
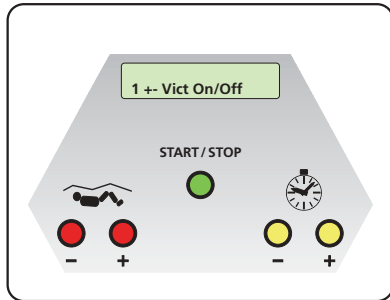
When all activated transmitters (buried persons) have been hit by probing, or when the timeout has elapsed, the control unit issues an acoustic signal and turns all buried transmitters off.

5. The Expert Mode

Selecting the Operating Mode

To select the **expert mode**, press the **START/STOP** key for at least 5 seconds. As a prerequisite, the number of buried persons (victims) must be set to 0. While in the expert mode, you can activate and deactivate individual transmitters

To return to the **regular training mode**, press the **START/STOP** key for at least 5 seconds again.



Activating and Deactivating Individual Transmitters

To select a transmitter, use the **-TIME** and **+TIME** keys. Now use the **+VICTIMS** and **-VICTIMS** keys to turn the selected transmitter on or off. The numbers (IDs) of the activated transmitters are shown on the first line of the display.



Probe Hit Indication:

If an active transmitter is probed properly, there is an acoustic signal. An asterisk (*) is shown next to the ID of the transmitter..

6. The Sleep-Mode

The avalanche training center is usually operated without maintenance, i.e. without replacing the batteries, for a full winter season (November to April). For this purpose, the system is put into a sleep mode when not in use, e.g. during the nights. In the sleep mode, the current consumption of the beacon transmitters and of the control unit is reduced to a bare minimum.

6.1 Sleep Mode of Beacon Transmitters (Victims)

While in normal operating mode, the beacon transmitters react immediately to commands coming in over the radio link. But this requires permanent operation of the receiver which increases current consumption.

In order to save current, the beacon transmitters are put into the sleep mode after 8 hours of no activity or upon a command from the control unit. To wake up all beacon transmitters again takes about 35 seconds. During this wakeup, the control unit displays a **'Please wait wake up in xx sec'** message, where xx is the number of seconds remaining before normal operation is assumed.

6.2 Sleep Mode of Control Unit

After 30 minutes of no activity, the control unit as well as the beacon transmitters are put into sleep mode. The display is turned off. Hitting any key will bring the control unit back to normal operation within a few seconds. Also, the beacon transmitters will be woken up.

7. Make the ATC Ready fo Use

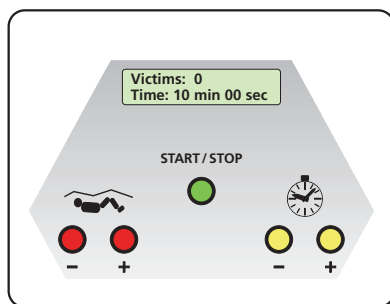
7.1 Purpose

- Controlled wake-up (WAKE UP) of all beacon transmitters within radio range of the control unit

Hint: In normal mode, this is done automatically when the control unit is activated.

- Automatic search (AUTOS EARCH) of all beacon transmitters that are ready and within radio range of the control unit. In normal operation (training use and expert use), only the beacon transmitters that have been identified by AUTOSEARCH are used.

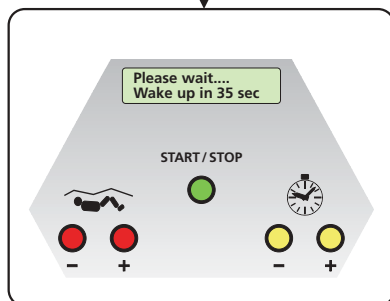
7.2 Preparing for Use



Starting Point

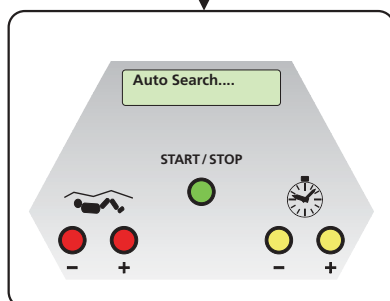
Control unit in training mode:
Victims = 0, Time = 10 min

All RTX 457 LT beacon transmitters are within radio range of the control unit.



WAKE UP (waking up the system)

Press both the **+TIME** and the **-TIME** keys simultaneously for at least 5 seconds. All beacon transmitters are woken up. This takes about 35 seconds.



AUTO SEARCH (automatic search for transmitters)

Press both the **+VICTIM** and **-VICTIM** keys simultaneously for at least 5 seconds. The control unit searches for all beacon transmitters that are ready to accept commands. The transmitters found are indicated and registered. This takes a few minutes at most.



The system is now ready for use. All beacon transmitters that have been found by the AUTO SEARCH procedure will be used for the exercises.

8. Technical Data

8.1 Avalanche Beacon Transmitter RTX 457 LT

Beacon frequency	457 kHz +- 30 Hz
Transmit field strength	approx. 2 mA/m at a 1 m distance
Compatible with	ETS 300718
Radio control frequency	433.92 MHz (ISM band)
Power supply	4 type IEC LR20 alkaline (size D)
Battery life time	approx. 6 months (= 1 full winter season)
Case	plastic
Protection	IP 67 (waterproof)
Dimensions	approx. 400 mm x 600 mm x 200 mm, target surface for probing: 400 x 600 mm
Temperature range	-25..... +50 deg C (operating)

8.2 Control Unit FCU for Permanent Installation

Radio control frequency	433.92 MHz (ISM band)
Range	approx. 100 m
Power supply	6 type IEC LR20 alkaline (size D)
Battery lifetime	approx. 4...6 months
Case	metal case
Schutzart	IP 65 (splash water proof)
Dimensions	approx. 300 x 200 x 85 mm
Temperature range	-25.... +50 deg C (operating)



Girsberger Elektronik AG

Mettlenstrasse 33b
CH-8193 Eglisau/Switzerland
Phone: +41 44 867 00 49
Fax: +41 44 867 31 12
E-Mail: info@girsberger-elektronik.ch
Internet: www.girsberger-elektronik.ch

