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KANNAD



## INITIAL INSTALLATION MANUAL

### KANNAD 406 AF-COMPACT

ELT FOR GENERAL AVIATION

### KANNAD 406 AF-COMPACT ER

Option Extended Range

INSTALLATION INCLUDING:

REMOTE CONTROL PANEL, MOUNTING BRACKET AND CONNECTORS

406 MHz  
EMERGENCY  
LOCATOR  
TRANSMITTER

121.5 MHz HOMING FREQUENCY

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## **1. Introduction**

The instructions in this manual provide the information necessary for the initial installation of KANNAD 406 AF-COMPACT ELT system.

## **2. KANNAD 406 AF-Compact System Presentation**

### **A. System overview**

NOTE: for details of approved part number of KANNAD 406 AF-COMPACT system, [Refer to Section 10. Compatibility list for KANNAD 406 AF-COMPACT System, page 39.](#)

KANNAD 406 AF-COMPACT system is composed of:

1. a transmitter;
2. a mounting bracket;
3. a remote control panel (RCP)<sup>(1)</sup>;
4. a DIN-12 connector or programming dongle to connect the RCP;
5. an approved outside whip or rod antenna.

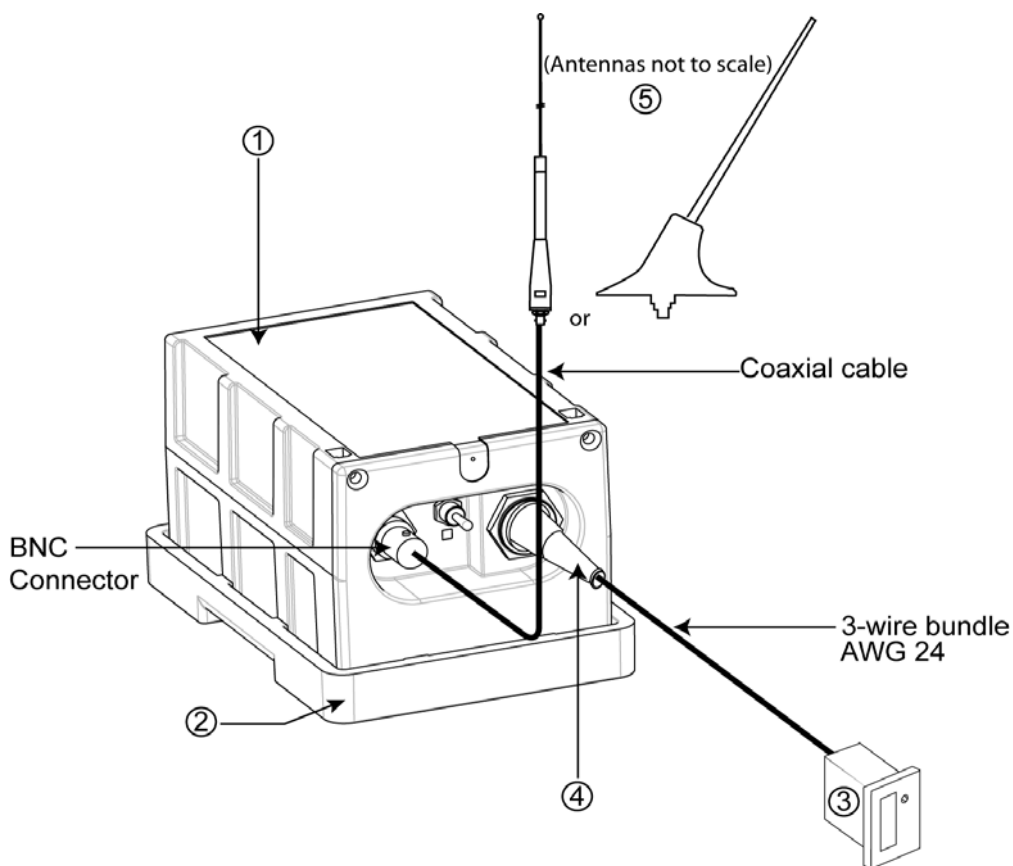
The transmitter and bracket are installed in the aircraft near the tail. The outside antenna is mounted on the fuselage near the tail. The remote control panel<sup>(1)</sup> is installed in the cockpit and connected to the ELT with a 2 or 3-wire bundle (not supplied) according to the type of Remote Control Panel.

Note: (1) **The RCP is optional only if the commands and controls of the ELT are reachable and visible from the pilot seated position.**

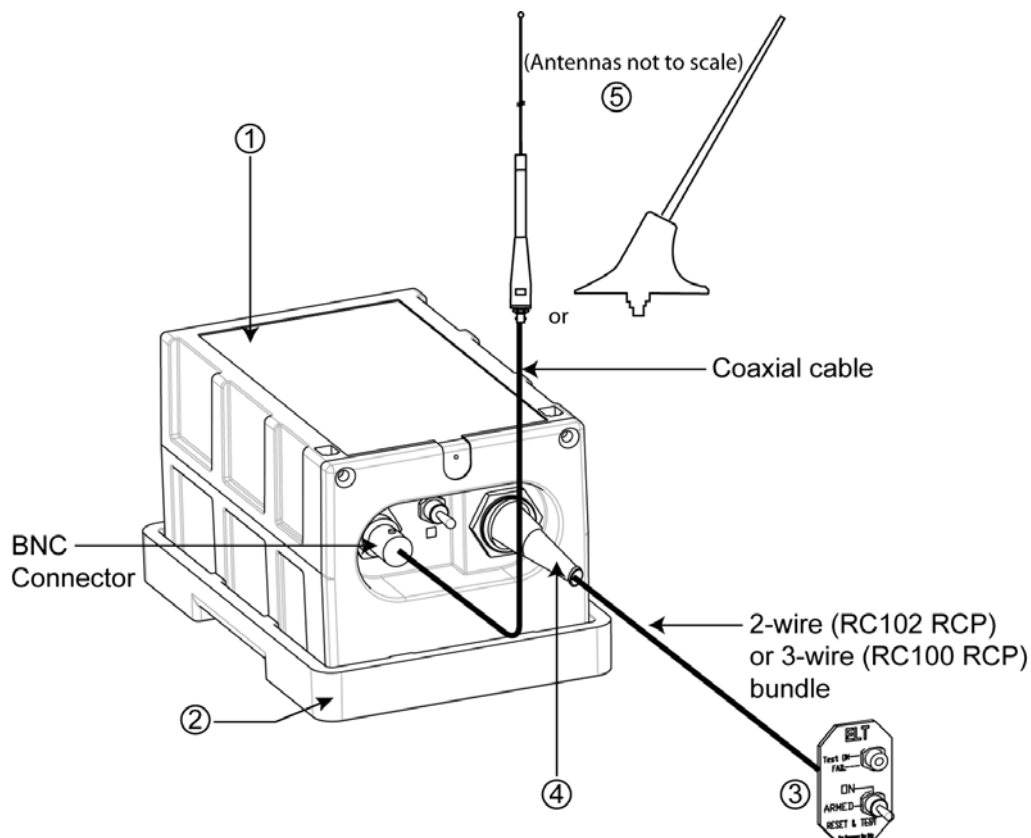
(RTCA DO-204A):

*"Equipment control and indicator installed for in-flight use **shall** be readily accessible from the cockpit crew position. The cockpit crew **shall** have an unobstructed view of visual indicator when in the normal seated position."*

*Figure 1: ELT system description with RC200 or RC200 NVG*



*Figure 2: ELT system description with RC100 or RC102*





**B. Transmitter and bracket**

The ELT must be installed into one of the approved mounting brackets. It may be installed on its standard mounting bracket or on an Universal Mounting Bracket to re-use existing drilling for retrofit.

[Refer to Section 10. Compatibility list for KANNAD 406 AF-COMPACT System, page 39](#) for Part Numbers of approved mounting brackets.

The bracket installed near the tail is designed to fix the ELT with a Velcro® strap. This enables quick removal of the ELT for maintenance or exchange.



*Figure 3: KANNAD 406 AF-COMPACT with Mounting Bracket*

**C. Remote Control Panels (RCP)**

[Refer to Section 10. Compatibility list for KANNAD 406 AF-COMPACT System, page 39](#) for Part Numbers of approved RCPs.

The RCP must be installed in the cockpit to monitor and control the ELT status.

**(1) RC200 / RC200-NVG**

The RC200 or RC200 NVG remote control panel is connected to the ELT via a 3-wire cable equipped with a DIN-12 connector or optional programming dongle on the ELT side and a D-SUB Female 9 pins connector on the other side.

Note: the 3-wire cable is not supplied.



*Figure 4: RC200 Remote Control Panel*

## *(2) RC100 KIT*

The RC100 remote control panel is connected to the ELT via a 3-wire cable equipped with a DIN-12 connector or optional programming dongle on the ELT side and directly connected to the RCP on the other side.

Note: the 3-wire cable is not supplied.



*Figure 5: RC100 Remote Control Panel*

## *(3) RC102 KIT*

The RC102 remote control panel is connected to the ELT via a 2-wire cable equipped with a DIN-12 connector or optional programming dongle on the ELT side and directly connected to the RCP on the other side. 2 types of front panels are supplied in the kit. The appropriate front panel should be chosen according to the place available on the aircraft's instrument panel.

Note: the 2-wire cable is not supplied.



*Figure 6: RC102 Remote Control Panel*



***D. Outside antennas***

The outside antenna can be either of whip or rod type according to aircraft speed.

Connection to the ELT will be carried out with a 50 Ohm coaxial cable (RG58 for example) ended with two male BNC connectors.

**IMPORTANT NOTICE: KANNAD recommends a cable with radio electric properties similar or better to those of a RG58 cable. The maximum permitted attenuation in the coaxial is 1 db at 400 MHz.**

Note: the 50 Ohm coaxial cable and the male BNC connectors are not supplied.

*Figure 7: Whip and rod antennas*



### **3. Registration**

#### **A. General**

The ELT must be registered prior to installation onboard.

When a 406 MHz ELT is installed in an aircraft, it is imperative that the aircraft owner register the ELT. Each 406 MHz ELT contains a unique identification code that is transmitted to the satellite. This helps the "Rescue Coordination Center" (RCC) determine whether an emergency has actually occurred. The unique identification permits accessing a data base.

The registration card available from the local registration authority must be completed and returned to this authority.

The "Programming Datasheet" (DIM00300) must be completed and returned to your distributor.

Any change of ownership shall also be declared and registered with the local registration authority and with the distributor.

#### **B. Registration in USA**

Mail or Fax your registration form to:

NOAA/SARSAT  
NSOF, E/SP3  
4231 Suitland Road  
Suitland, MD 20746

or Save Time! Register your beacon online at:

[www.beaconregistration.noaa.gov](http://www.beaconregistration.noaa.gov)

All online registrations will be entered into the National 406 MHz Beacon Registration Database on the same day of entry. Registration forms received via postal mail will be entered within 2 business days of receipt. For online registrations, a confirmation letter with your completed registration information form will be sent immediately via e-mail or fax (if provided). Confirmation letters sent via postal mail should arrive within two weeks. Once your registration confirmation is received, please review all information. Any changes or updates to your registration information can be done via the internet, fax, e-mail or postal mail. If you do not receive your registration confirmation from NOAA on the same day you submit it over the internet or within two weeks if you submit it by postal mail, please call NOAA toll-free at: 1-888-212-SAVE (7283) or 301-817-4515 for assistance.

After initial registration (or re-registration) you will receive a NOAA Proof of Registration Decal by postal mail. This decal is to be affixed to the beacon and should be placed in such a way that it is clearly visible. If for some reason you

do not receive the registration decal within two weeks, please call NOAA toll-free at: 1-888-212-SAVE (7283) or 301-817-4515.

Failure to register, re-register (as required every two years), or to notify NOAA of any changes to the status of your 406 MHz beacon could result in penalties and/or fines being issued under Federal Law. The owner or user of the beacon is required to notify NOAA of any changes to the registration information at any time. By submitting this registration the owner, operator, or legally authorized agent declares under penalty of law that all information in the registration information is true, accurate, and complete. Providing information that is knowingly false or inaccurate may be punishable under Federal Statutes. Solicitation of this information is authorized by Title 47 - Parts 80, 87, and 95 of the U.S. Code of Federal Regulations (CFR). Additional registration forms can be found on the NOAA-SARSAT website at:

[www.sarsat.noaa.gov](http://www.sarsat.noaa.gov) or at: [www.beaconregistration.noaa.gov](http://www.beaconregistration.noaa.gov)

### ***C. Registration in Canada***

Beacon information is held in the Canadian Beacon Registry maintained by the National Search and Rescue Secretariat for use in search and rescue operations. Online access to the Registry is available for all beacon owners to register new beacons or to update their beacon information. You can add or update your beacon information by accessing the registry directly, sending in a completed registration form or by talking to one of our beacon registry representatives.

You can access the registry:

- online: [www.canadianbeaconregistry.com](http://www.canadianbeaconregistry.com)
- by email: [CBR@Sarnet.dnd.ca](mailto:CBR@Sarnet.dnd.ca)
- by fax: 1-613-996-3746
- by telephone: 1-800-727-9414 or 1-613-996-1616

The registration information must be updated when the aircraft ownership changes as per the Canadian Airworthiness Notice AN B029 (refer to following link):

[http://www.nss.gc.ca/site/Emergency\\_Beacons/canadian\\_beacon\\_registry\\_e.asp](http://www.nss.gc.ca/site/Emergency_Beacons/canadian_beacon_registry_e.asp)

This information must be recorded on the ELT LOG SHEET (ref. DIM08013) supplied with the ELT, fields Programming Log.

Additional information and registration forms can be found on the Canadian NSS website at:

[http://www.nss.gc.ca/site/cospas-sarsat/INTRO\\_e.asp](http://www.nss.gc.ca/site/cospas-sarsat/INTRO_e.asp)

## **4. ELT Installation**

### **A. ELT and bracket installation recommendations**

The ELT shall not be installed within 60cm (2 ft) of a compass or flux gate.

The distance between ELT and antenna shall be determined so that, according to the coaxial cable chosen, the cable loss should be  $\leq 1$  dB at 400 MHz.

The ELT front panel should be easily accessible to connect the outside antenna and the remote control panel device and to check the ELT good operation (controls and lights).

#### **(1) FAA Recommendations**

Installation must be made by qualified personnel in accordance with FAA regulations. Duplicating a previous installation may not be acceptable. Refer to:

**FAA - Advisory Circular 43.13-2A (Acceptable Methods, Techniques, and Practices - Aircraft Alterations), specifically, Chapters 1, 2, 11 and 13.**

#### **(2) TSO C126a Section 5 b. Application Data Requirements**

*"The conditions and tests for TSO approval of this article are minimum performance standards. Those installing this article, on or in a specific type or class of aircraft, must determine that the aircraft installation conditions are within the TSO standards. TSO articles must have separate approval for installation in an aircraft. The article may be installed only according to 14 CFR part 43 of the applicable airworthiness requirements".*

#### **(3) RTCA DO-182 Recommendations**

*"All ELT system components which must survive to a crash intact,...should be attached to the airframe in such a manner that the attachment system can support a 100g load... in the plus and minus directions of the three principal axes of the aircraft."*

#### **(4) RTCA DO-204a Requirements**

*"The ELT unit shall be mounted to primary aircraft load-carrying structures such as trusses, bulkheads, longerons, spars or floor beams (not aircraft skin) or a structure that meets the requirements of the following test. The mounts shall have a maximum static local deflection no greater than 2.5 mm when a force of 450 Newtons (100 lbf) is applied to the mount in the most flexible direction. Deflection measurements shall be made with reference to another part of the airframe not less than 0.3 m or more than 1.0 m from the mounting location. Typical approaches for adding shelf and rail platform mounting provisions to aircraft structure as shown in FAA Advisory circular 43.13-2(), Chapter 2."*

## B. Bracket installation procedure

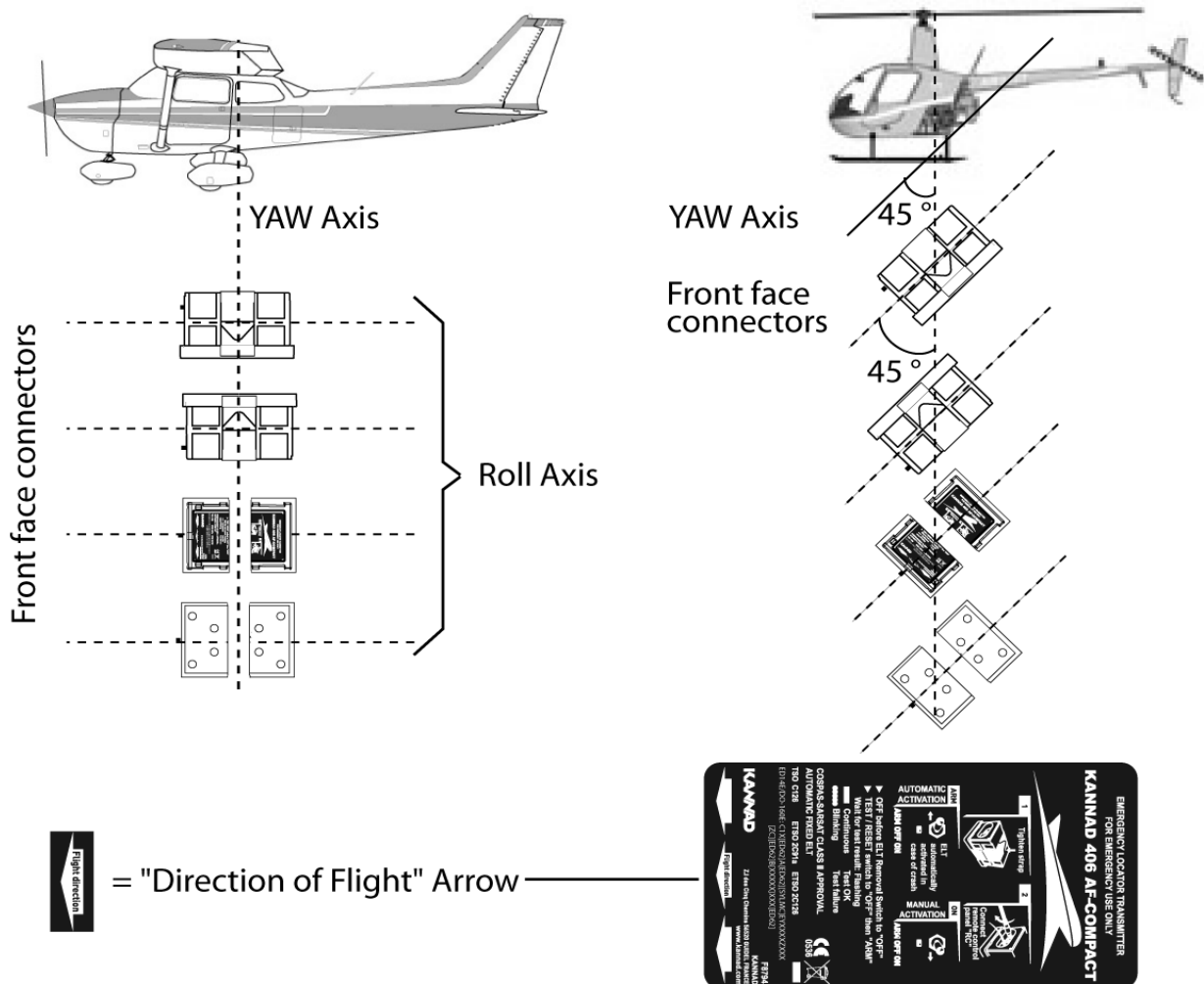
### (1) Determine location and direction

- Determine the location of the ELT onboard according to [paragraph A. ELT and bracket installation recommendations page 8](#).

**CAUTION: Do not install the ELT in a location directly exposed to the sun.**

- The G-Switch axis shall be directed to sense the primary crash pulse along the longitudinal axis of the aircraft. Reference to the G-Switch is given by the arrow "Flight direction" on the label affixed to the top of the ELT.

Figure 8: KANNAD 406 AF-COMPACT, axis of installation



### (a) Fixed wing aircraft

The G-Switch sensor axis shall be pointed to sense the primary crash pulse along the longitudinal axis of the aircraft (with maximum tolerance of 15°). Consequently, the KANNAD 406 AF-COMPACT shall be mounted:

- with the arrow of the "Flight direction" label pointed towards the front of



the aircraft;

- in any position along the roll axis.

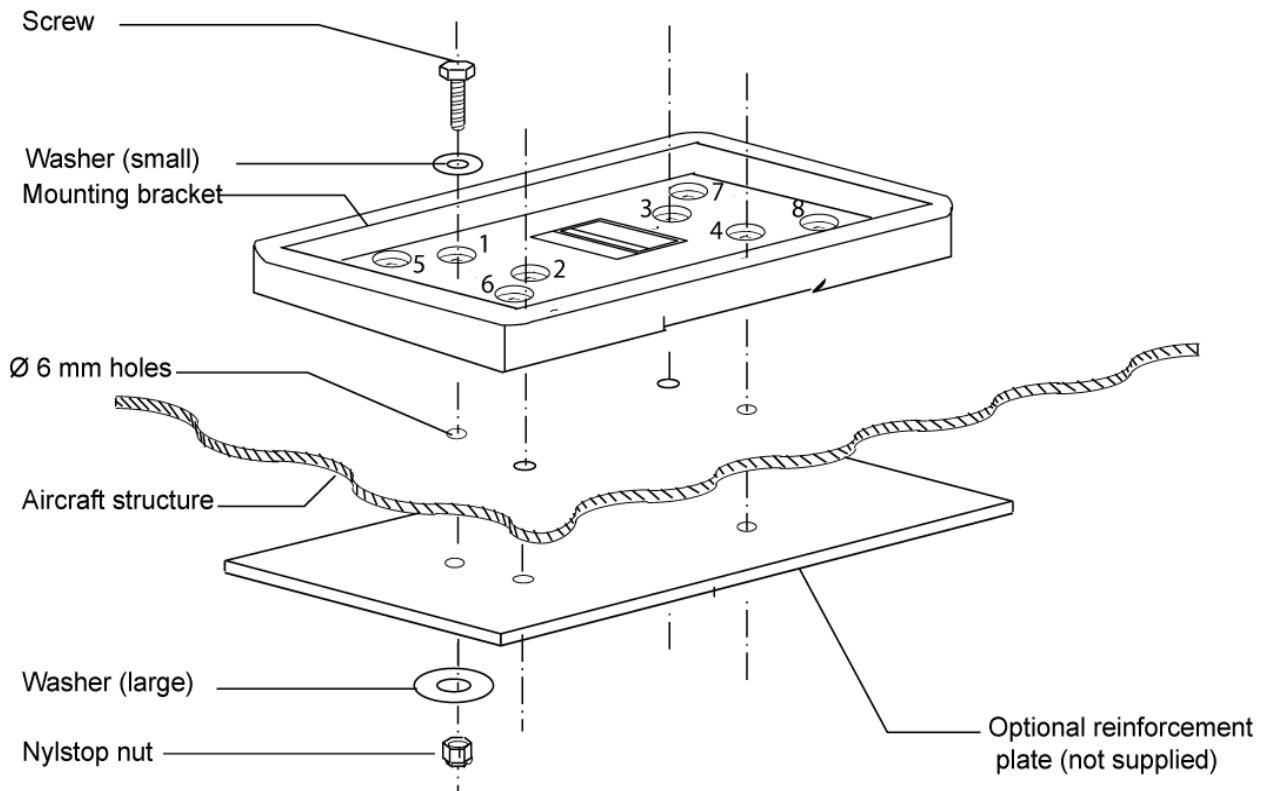
### **(b) Helicopters**

KANNAD 406 AF-COMPACT may be installed on helicopter. The ELT unit should be mounted:

- with "Flight direction" arrow towards the front of the helicopter;
- with the front face connectors pointing downwards at a 45° angle to the yaw axis;
- in any position along the 45° axis.

#### ***(2) Fix the mounting bracket***

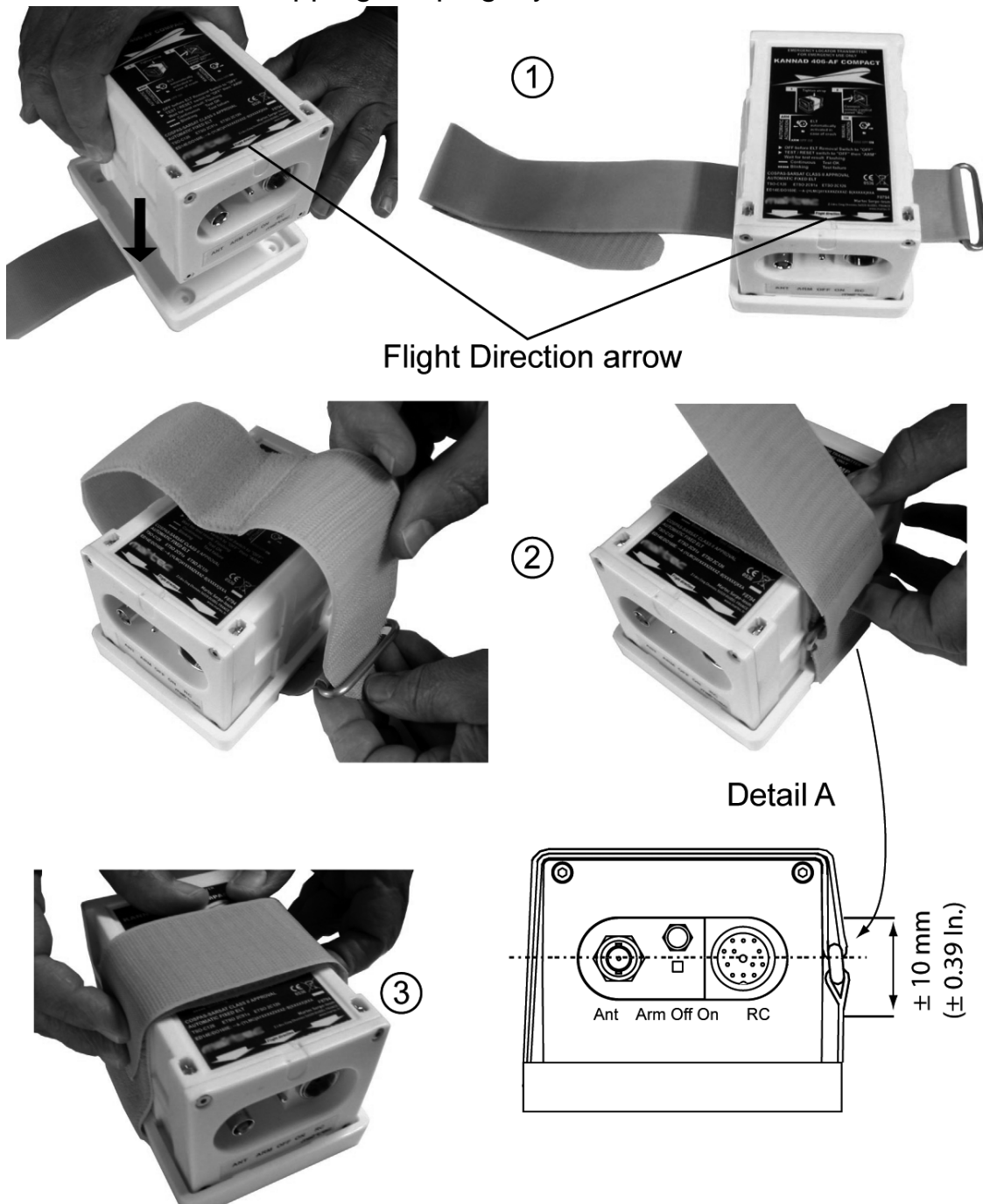
- Drill 4 holes Ø 6 mm in the aircraft structure according to "Drilling mask": [Refer to Compact Mounting bracket \(S1840502- 01\), drilling mask, page 28](#) [Inner holes (1, 2, 3, 4) should be preferred] or [Refer to Compact Universal Mounting bracket \(S1840502- 02\), drilling mask, page 29](#) according to mounting bracket used.
- If the aircraft structure is not solid enough to withstand a 500 kg traction on the bracket, a reinforcement plate (not supplied) should be installed as shown Figure 9: Bracket installation.
- Fix the bracket with the 4 screws, 8 washers and 4 nylstop nuts supplied.  
**IMPORTANT: tighten to a torque between 4 and 5 Newton x meter.**



***Figure 9: Bracket installation***

### C. ELT installation procedure

1. Mount the transmitter on the bracket "Flight direction" arrow pointed towards the front of the aircraft ([Figure 8: KANNAD 406 AF-COMPACT, axis of installation](#)).
2. Slide the self-stripping strap through the buckle. **Ensure the buckle is correctly positioned (indifferently on right or left side of ELT) regarding the horizontal center line of ELT as shown Detail A.**
3. Fasten the self-stripping strap tightly.



*Figure 10: Installing the transmitter on the bracket*

## **5. Antenna Installation**

Use only whip or rod approved antennas.

### **A. Antenna Installation Recommendations**

#### *(1) FAA Recommendations*

Installation must be made by qualified personnel in accordance with FAA regulations. Duplicating a previous installation may not be acceptable. Methods for installing antenna are outlined in AC43.13-12, refer to:

**FAA - Advisory Circular 43.13-2A (Acceptable Methods, Techniques, and Practices - Aircraft Alterations), specifically, Chapters 1, 3, 11 and 13.**

#### *(2) RTCA DO-204 Requirements for ELT location*

*"ELT antennas should be located away from other antennas to avoid disruption of antenna radiation patterns."*

*"Idealistically, for the 121.5 MHz ELT antenna, 2.5 meter separation is sufficient separation from VHF communications and navigation receiving antennas to minimize unwanted interferences."*

*"ELT antennas should be vertically polarized when the aircraft is in the normal flight attitude."*

*"ELT antenna mounting surface should be able to withstand a static load equal to 100 times the antenna weight applied at the antenna mounting base in all directions."*

*"The antenna should be mounted as close to the respective ELT as applicable. The proximity of the ELT antenna to any vertically-polarized communications antenna shall be such as to minimize radio frequency interference and radiation pattern distortion of either antenna. Coaxial cable connecting the ELT antenna installation should not cross the aircraft production breaks and should have vibrations proof RF connectors on each end. The coaxial connecting the ELT transmitter to the external Antenna should be secured to the aircraft structure and when the coaxial cable is installed and the connectors are mated, each end should be have some slack."*

### **B. Antenna installation procedure**

The antenna must be mounted on the top of the aircraft to assure maximum visibility of satellites. The upper aft portion of the fuselage should be preferred. It should be mounted away from projections such as a propeller, tail surfaces, or the shadow of large antennas. It is the responsibility of the installation agency to determine the appropriate and adequate antenna installation.

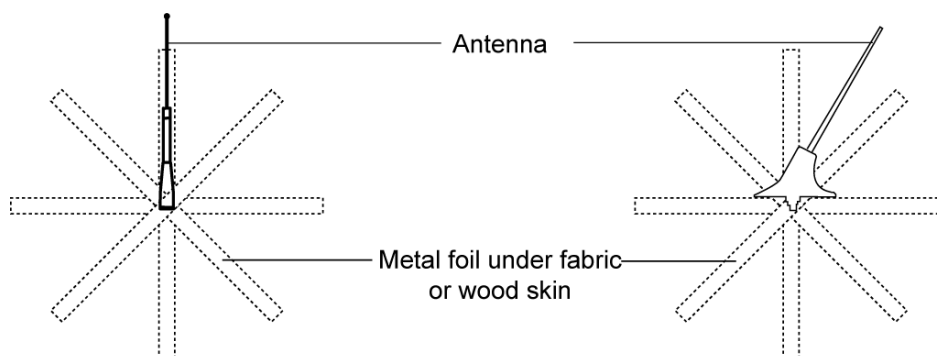
**Note:** For internal installation in the aircraft, the fitter must check that EIRP attenuation due to installation is not higher than 1.4 dB. In the case of certified installation approved by the national authorities, a requirement for validation of the installation must be done by the fitter.

Locate a position on the fuselage according to [Section \(2\) RTCA DO-204 Requirements for ELT location, page 12](#):

A double plate may be necessary for the antenna to meet rigidity specifications in [Section \(2\) RTCA DO-204 Requirements for ELT location, page 12](#).

A 9 Kilogram force (20 pound force) applied in all direction should not cause an appreciable distortion in the aircraft skin.

Each of the approved antennas requires a ground plane. On fabric-covered aircraft or aircraft with other types on nonmetallic skins, a ground plane must be added. This can be accomplished by providing a number of metal foil strips in a radial position from the antenna base and secured under the fabric or wood skin of the aircraft. The length of each foil radial should be at least equal to the antenna length and width at least 1 inch due to the diameter of the antenna. The ground plane must be connected to the shield of the antenna connector.



*Figure 11: Antenna ground plane for non metallic aircraft*

According to the antenna to be installed, use the appropriate outline drawings and drilling masks to determine the hole pattern and drill size refer to the relevant antennae outline dimensions [page 35](#), [page 36](#), [page 37](#), [page 38](#).

Fabricate a 50 Ohms coaxial cable long enough to reach between the ELT installation location and the antenna location.

**IMPORTANT:** The length of the coaxial cable should not exceed 2.7 meters (9 ft) for a standard RG58 or equivalent coaxial cable. If the cable length exceeds 2.7 meters, a low loss cable of attenuation less than 1 dB@400 MHz must be used ([See Important notice, Outside antennas, page 5](#)).

Fit both ends of coaxial cable with a waterproof Male BNC connector (not supplied), reference RADIALL R141007 or equivalent.

Connect one Male BNC connector to the antenna Female BNC socket.

## **6. RCP installation**

### **A. RCP Installation Recommendations**

The RCP shall be installed in the cockpit. The RCP shall be readily accessible from the pilot's normal seated position.

### **B. RCP Installation Procedure**

#### **(1)RC100**

RC100 RCP is supplied as a kit ([Refer to Figure 12: RC100 mounting diagram](#)).

Connection of RC100 requires a 3-wire bundle. A pin-to-pin wiring has to be provided by the installer with AWG24 wires. Shielded wires are recommended.

The wires are soldered to the switch pins, a resistor and LED legs. This operation can be carried out before installation.

On the beacon side, the wires are soldered to a 12-pin plug that can be either a standard "DIN12 connector" (P/N S1820514-03) or a connector with an integrated serial memory module called "Programming Dongle" (P/N S1820514-01).

#### **Mount and install RCP**

[Refer to Figure 12: RC100 mounting diagram](#)

NOTE: Legs of LED, pins of switch and resistor must be protected by heat shrinkable sleeves.

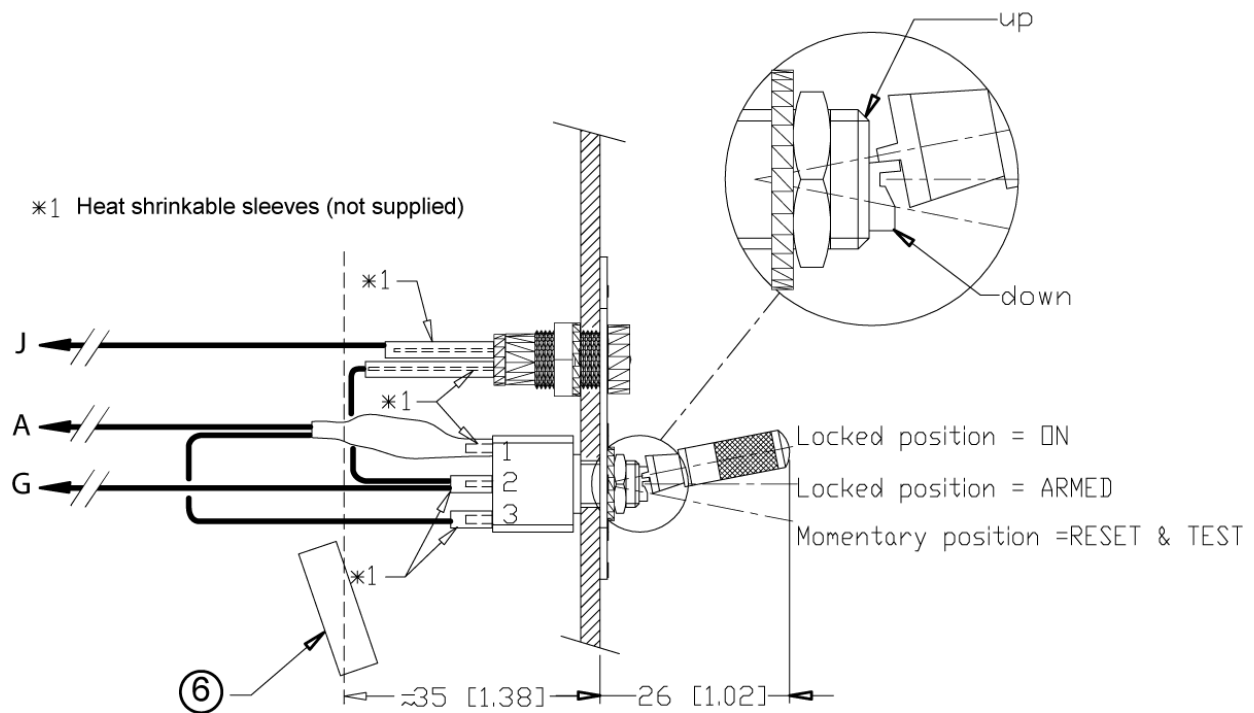
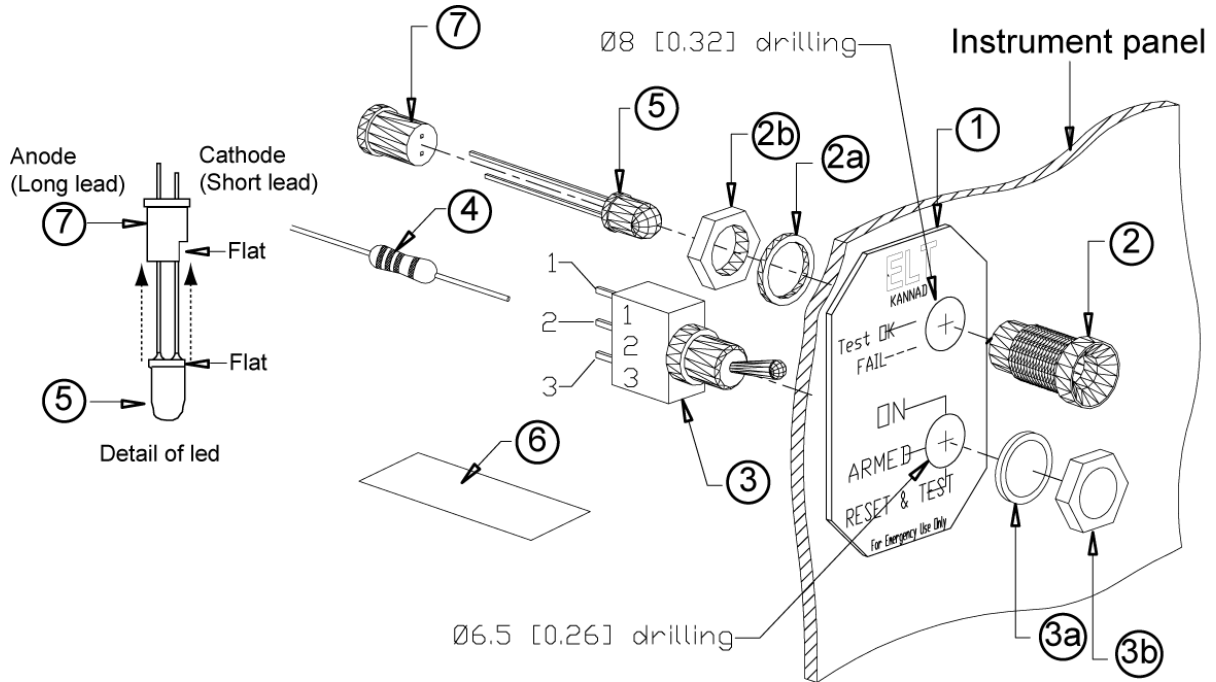
- Place the front plate (1) on the instrument panel;
- Trace the centers of the two holes according to drilling mask supplied;
- Drill a hole Ø 8 mm for the LED mounting (2) (top of the panel);
- Drill a hole Ø6.5 mm for the switch (3) (bottom of the panel);
- Tear off protection from self-adhesive film;
- Stick the front plate (1) on the instrument panel;
- Install the LED mounting (2), with washer (2a) and nut (2b). Tighten nut;
- Solder the resistor (4) to pin 1 of Switch (3);
- Connect the anode (long leg) of LED (5) to pin 2 of switch (3);
- Make a strap between pin 3 of switch (3) and resistor (4);
- Connect wires to pin 2 of switch (3), the resistor (4) and the cathode (short leg) of LED (5);
- Stuck the "identification label" (6) on the cable bundle near the switch;
- Insert the LED into the LED stand (7) taking care the flat part of the LED



be in front of the flat part of the LED stand;

- Insert LED (5) fitted with LED stand (7) inside the LED mounting (2);
- Install the switch (3) with washer (3a) and nut (3b), locked position upwards. Tighten nut.

*Figure 12: RC100 mounting diagram*

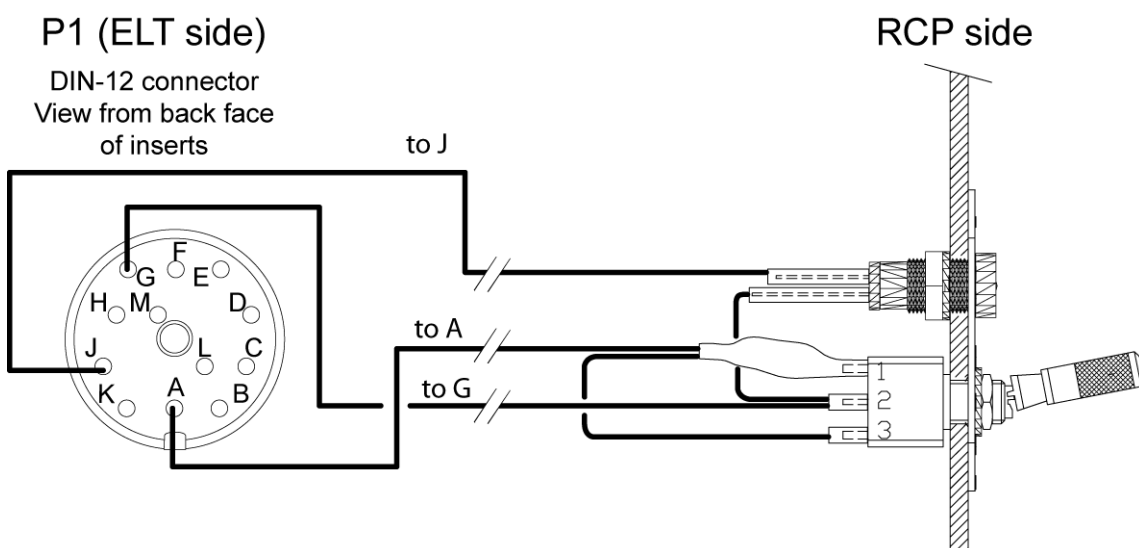


### **Connect RCP to ELT**

Refer to Figure 13: Wiring of 3-wire bundle between RC100 and ELT.

- Solder the DIN12 connector or Programming Dongle on the other side of the bundle (pins A, G, J):
  - Connect the wire from cathode (short leg) of LED to pin J of DIN12 connector;
  - Connect the wire from resistor to pin A of DIN12 connector;
  - Connect the wire from pin 2 of switch to pin G of DIN12 connector.
  - Connect the anode (long leg) of LED to pin 2 of switch.

*Figure 13: Wiring of 3-wire bundle between RC100 and ELT*



## (2) RC102

**CAUTION:** RC102 RCP may only be installed with KANNAD 406 AF COMPACT P/N S1840501-01 at amendment M or higher or on KANNAD 406 AF COMPACT ER P/N S1840501-04. A **WARNING** label is supplied with the kit and must be stuck on the 2-wire bundle on the ELT side.

RC102 RCP is supplied as a kit ([Refer to Figure 14: RC102 mounting diagram](#)). 2 types of front plates may be installed. Choose the appropriate front plate according to the aircraft's instrument panel. The kit includes also 2 LEDs. The white LED is a NVG LED (Night Vision Goggles) only used for military aircraft, the red LED is a standard LED.

**CAUTION:** use NVG LED only for military aircraft equipped for night vision goggles. Never install this LED in RCP for standard aircraft.

Connection of RC102 requires a 2-wire bundle. A pin-to-pin wiring has to be provided by the installer with AWG24 wires. Shielded wires are recommended.

The wires are soldered to a PCB installed on the switch. This operation can

be carried out before installation.

On the beacon side, the wires are soldered to a 12-pin plug that can be either a standard "DIN12 connector" (P/N S1820514-03) or a connector with an integrated serial memory module called "Programming Dongle" (P/N S1820514-01).

### **Mount and install RCP**

[Refer to Figure 14: RC102 mounting diagram](#)

NOTE: Legs of LED must be protected by heat shrinkable sleeves.

#### Front plate (1a)

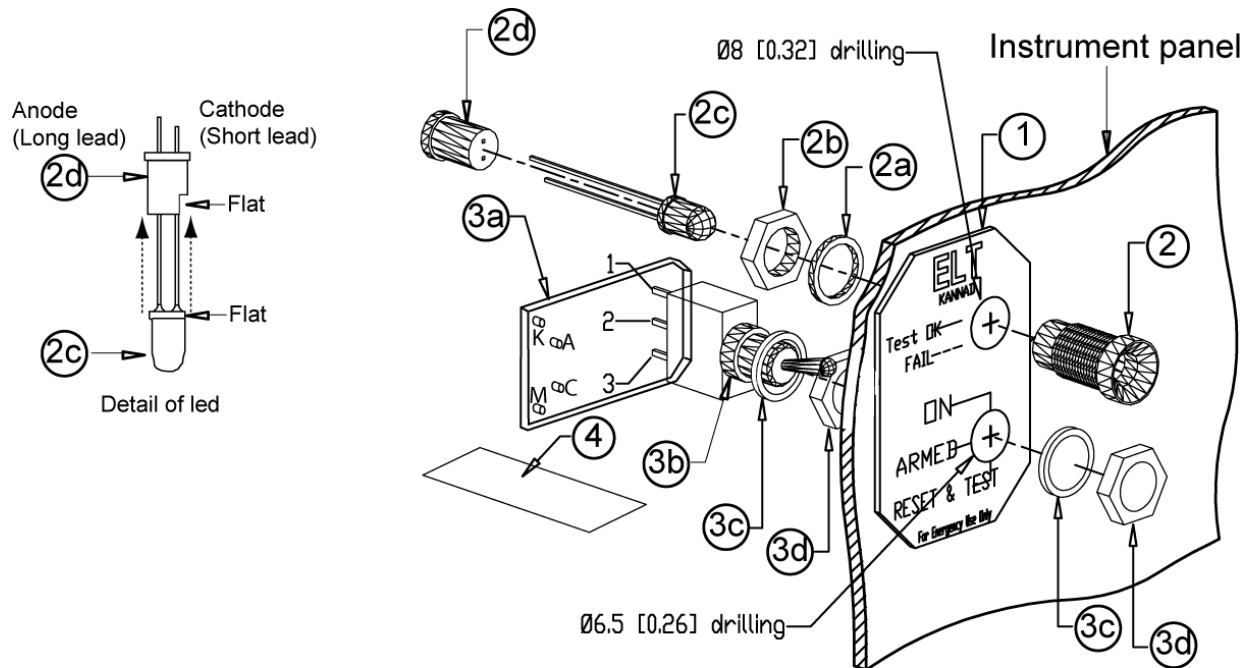
- Place the front plate (1a) on the instrument panel and use it as drilling mask or;
- Trace the centers of the two holes according to drilling mask supplied;
- Drill a hole Ø 8 mm for the LED mounting (2) (top of the panel);
- Drill a hole Ø6.5 mm for the switch (3b) (bottom of the panel);  
Note: the switch (3b) is already soldered to a PCB (3a)
- Tear off protection of front plate (1a) from self-adhesive film;
- Stick the front plate (1a) onto the instrument panel;
- Install the LED mounting (2), with washer (2a) and nut (2b). Tighten nut;
- Connect the anode (long leg) of LED (2c) to A of PCB (3a);
- Connect the cathode (short leg) of LED (2c) to C of PCB (3a);
- Connect wires to K and M of PCB (3a);
- Insert the LED into the LED stand (2d) taking care the flat part of the LED be in front of the flat part of the LED stand;
- Insert LED (2c) fitted with LED stand (2d) inside the LED mounting (2);
- Install the switch and PCB assembly (3b+3a) with washers (3c) and nuts (3d), locked position upwards. Tighten nut;
- Stuck the "identification label" (4) on the cable bundle near the PCB.

#### Front plate (1b)

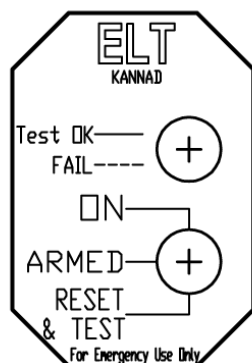
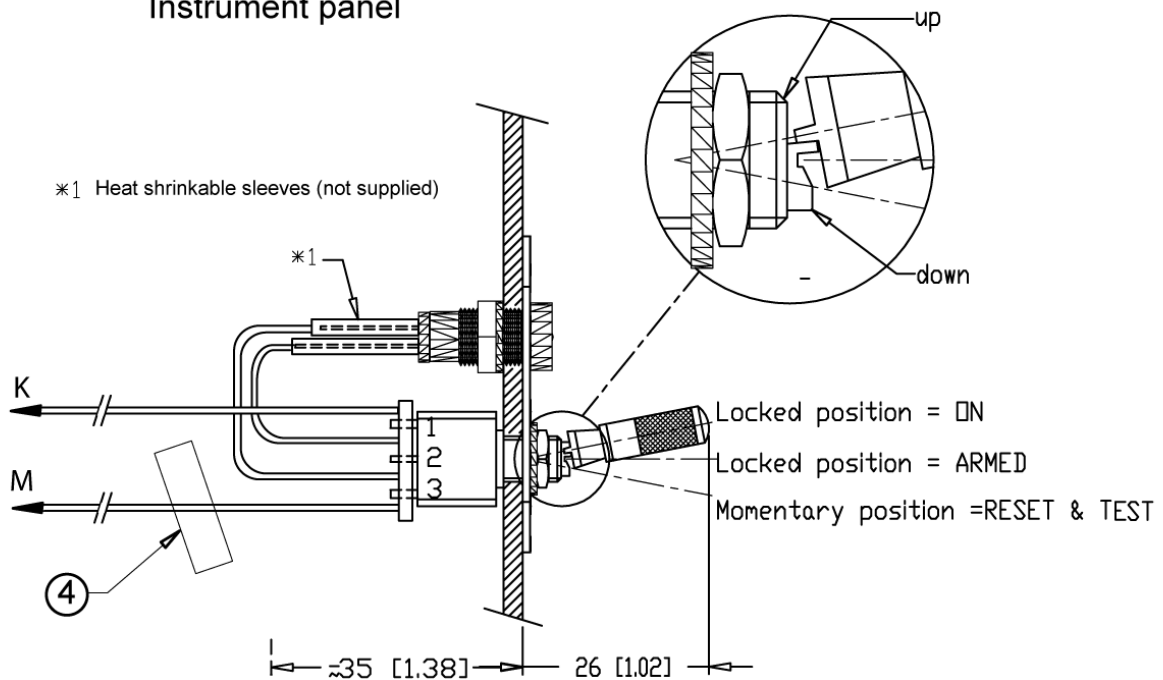
- Place the front panel (1b) on to the instrument panel and use it as drilling mask or;
- Trace the centers of the two holes according to drilling mask supplied;
- Drill a hole Ø 8 mm for the LED mounting (2) (left of the panel);
- Drill a hole Ø6.5 mm for the switch (3b) (right of the panel);  
Note: the switch (3b) is already soldered to a PCB (3a).

- Drill 4 holes of Ø 3 mm for the screws used to fix the RCP;
- Screw the front plate (1b) onto the instrument panel;
- Install the LED mounting (2), with washer (2a) and nut (2b). Tighten nut;
- Connect the anode (long leg) of LED (2c) to A of PCB (3a);
- Connect the cathode (short leg) of LED (2c) to C of PCB (3a);
- Connect wires to K and M of PCB (3a);
- Insert the LED into the LED stand (2d) taking care the flat part of the LED be in front of the flat part of the LED stand;
- Insert LED (2c) fitted with LED stand (2d) inside the LED mounting (2);
- Install the switch and PCB assembly (3b+3a) with washers (3c) and nuts (3d), locked position upwards. Tighten nut;
- Stuck the "identification label" (4) on the cable bundle near the PCB.

*Figure 14: RC102 mounting diagram*

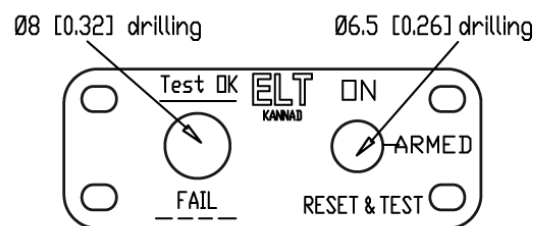


Instrument panel



Front plate

(1a)



Front plate (1b)

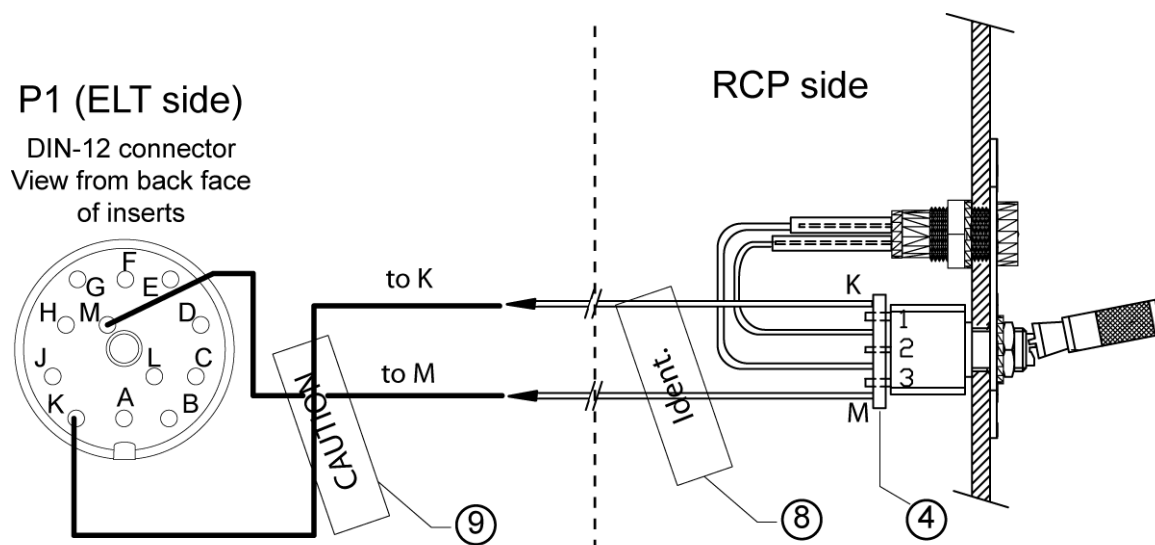


### **Connect RCP to ELT**

Refer to Figure 15: Wiring of 2-wire bundle between RC102 and ELT

- Solder the DIN12 connector or Programming Dongle on the other side of the bundle (pins K and M):
  - Connect the wire from M of PCB (4) to pin M of DIN12 connector;
  - Connect the wire from K of PCB (4) to pin K of DIN12 connector.
- Stuck the "CAUTION label" (9) on the cable bundle close to the DIN12 connector.

*Figure 15: Wiring of 2-wire bundle between RC102 and ELT*



### **(3) RC200**

The RC200 is designed to be installed:

- either on the instrument panel with 4 screws (rivets bush recommended, not supplied );
- or below the instrument panel with a special mounting tray (supplied).

### **Installation on the instrument panel**

- Determine RC200 location on the instrument panel:
- Make a cutout on the instrument panel according to the Drilling mask ([Refer to RC200 Outline Dimensions and Drilling Mask, page 33](#)).
- Mark the 4 holes needed for the RC200 using the drilling mask or the RC200 as a guide.
- Drill the 4 marked holes, diameter depending on rivets bush used.
- Install the RC200 by fitting it into the cutout.
- Secure the RC200 (4 rivets bush recommended).

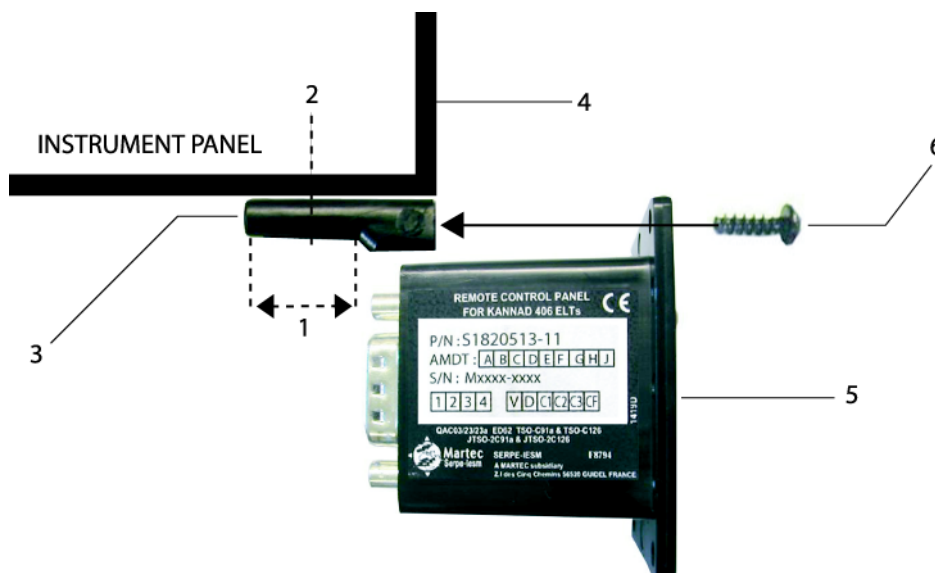
Note: Rivets bush are not supplied.

### **Installation below the instrument panel**

Refer to Figure 16: Installation of RC200 with mounting tray.

Determine RC200 location below the instrument panel (be sure the location meets the requirements established in RTCA-DO-204).

- According to the "area to be drilled" (1) of the mounting tray (3), determine the location of the screws or rivets (2) used to secure the mounting tray (3) to the instrument panel (4).
- Drill 2 holes on the mounting tray and on the instrument panel, diameter depending on screws or rivets used.
- Secure the mounting tray (3) to the instrument panel (4).
- Secure the RC200 (5) to the mounting tray (3) with the 2 screws (6) supplied (torque 0.8 Nm).



*Figure 16: Installation of RC200 with mounting tray*

### **Connection**

Refer to Figure 17: Wiring of 3-wire bundle between RC200 and ELT.

Fabricate a 3-wire bundle (AWG 24, shielded preferred) long enough to reach between the ELT installation location and the cockpit RCP location. Slide heat-shrinkable sleeves on both sides of each wire.

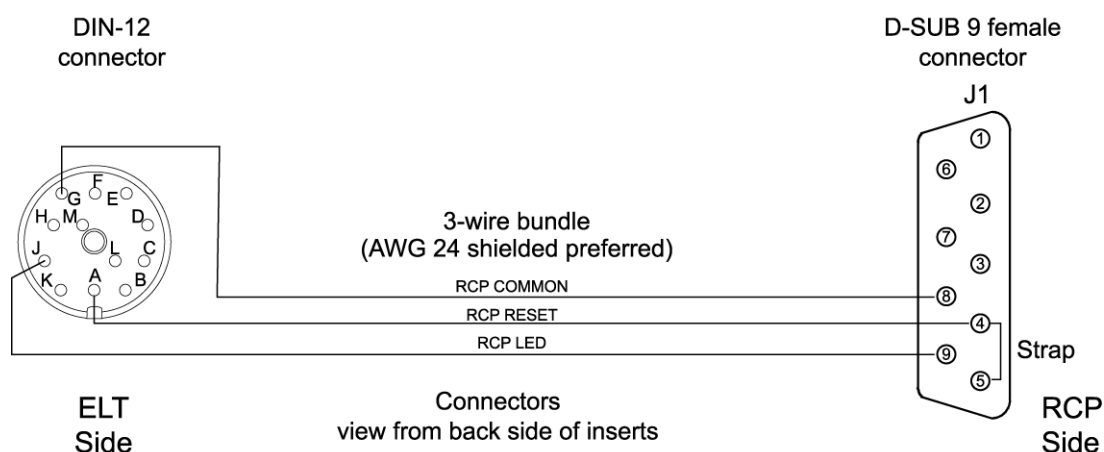
On the ELT side:

- Solder the wires to the DIN12 connector supplied with the pack:
  - solder the wires to pins G (RCP COMMON), A (RCP RESET) and J (RCP LED) of the connector.
  - Put heat-shrinkable sleeves to protect the pins

On the RCP side:

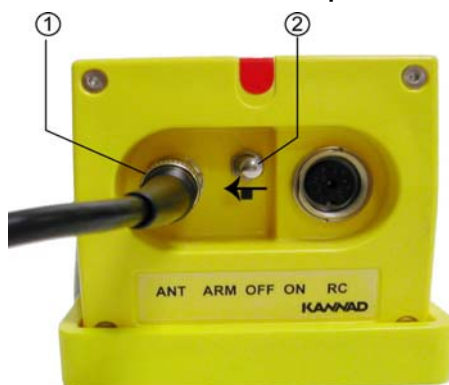
- Strap pins 4 and 5 of the female 9-pin D-SUB connector supplied with the pack.
- Solder the wires to the female 9-pin D-SUB connector as follows:
  - Pin 8 (RCP COMMON) has to be connected to Pin G (RCP COMMON) of the ELT;
  - Pin 4 (RCP RESET) has to be connected to Pin A (RCP RESET) of the ELT;
  - Pin 9 (RCP LED) has to be connected to Pin J (RCP LED) of the ELT.
  - Put heat-shrinkable sleeves to protect the pins.
- Connect the female 9-pin D-SUB connector to the male 9-pin D-SUB socket of the RC200.

*Figure 17: Wiring of 3-wire bundle between RC200 and ELT*



## 7. ELT Connection

1. Connect the cable of the outside antenna to the BNC connector of the front panel.
2. Connect the DIN12 connector of the Remote Control Panel cable to the DIN 12 socket of the front panel.
3. Set the 3-position switch of the front panel to ARM.



*Figure 18: Installation, controls and connectors*

- Perform the first power up procedure (see below).

## 8. First power up procedure

***Do not perform these tests without the antenna connected.***

*Caution: never switch to ARM or ON if neither antenna cable nor 50 ohm load is connected to the ELT (1. BNC connector), **risk of ELT damage.***

### A. ELT operational tests

NOTE: ELT operational tests only provide the aircraft operator with an indication that the ELT is transmitting; however, a positive result cannot be interpreted as meaning that the ELT meets all operational parameters.

- Check that the antenna is correctly connected
- **Do not perform self-test without antenna connected.**
- Tune aircraft radio to 121.5 MHz and ensure you can hear it.
- Switch from position "OFF" to position "ARM" or press RESET & TEST on the Remote Control Panel (ensure that the ELT switch is in position "ARM").
- Listen for the buzzer - it operates during the whole Self-test procedure. Close to the end of self-test a short (3-4 sweeps) 121.5 transmission is made - confirm this on the aircraft radio.
- After a few seconds, the test result is displayed with the red visual indicator and the buzzer will sound:
  - One long flash indicates that the system is operational and that no

error conditions were found.

- A series of short flashes indicates the test has failed.

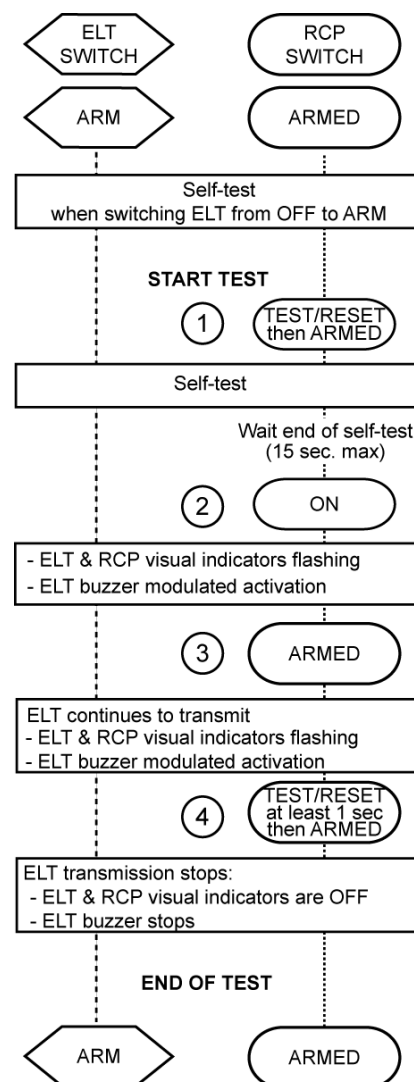
**Remark: The number of flashes gives an indication of the faulty parameter detected during the self-test.**

3+1	LOW BATTERY VOLTAGE
3+2	LOW RF POWER
3+3	FAULTY VCO LOCKING (FAULTY FREQUENCY)
3+4	NO IDENTIFICATION PROGRAMMED

***If self-test fails, contact the distributor as soon as possible.  
 Unless a waiver is granted, flight should be cancelled.***

### **B. RCP operational tests**

Check correct operation of RCP LED annunciator by switching ELT and RCP as described in the sequential procedure [Figure 19: RCP LED operation](#) (with ELT switch in the "ARM" position).



*Figure 19: RCP LED operation*



**C. 406 and 121.5 MHz transmission test**

NOTE: Transmissions tests only provide the aircraft operator with an indication that the ELT is transmitting; however, a positive result cannot be interpreted as meaning that the ELT meets all operational parameters.

**(1) 406 MHz**

This test must be carried out with a COSPAS-SARSAT decoder.

- Perform self-test (Press RESET and TEST on the RCP or switch ELT from OFF to ARM).
- Check with the COSPAS-SARSAT decoder that, except for the 5th and the 6th digits, the decoded message is identical to the programmed message.

*NOTE: The message transmitted during self-test sequence always begins with FF FE D0 whereas a programmed message begins with FF FE 2F.*

*Example of message programmed in ELT:*

*FF FE 2F 53 C3 24 97 38 0B A6 0F D0 F5 20*

*Example of same message decoded by Cospas-Sarsat Decoder:*

*FF FE D0 53 C3 24 97 38 0B A6 0F D0 F5 20*

**(2) 121.5 MHz**

***This check shall only be conducted during the first five minutes of any UTC, (co-ordinated universal time) hour, and restricted in duration to not more than five seconds. Be sure to notify any nearby control tower of your intentions.***

This test must be carried out with a VHF receiver (Aircraft VHF receiver may be used).

- Tune VHF receiver to 121.5 MHz;
- Start transmission:
  - either on ELT: ON position;
  - or on the RCP: ON position (the ELT shall be in ARM position);
- Only 2 "sweep tones" are heard after 5 seconds, then the 121.5 MHz stops.
- Stop transmission:
  - either on ELT: OFF or ARM position;
  - or on the Remote Control Panel: press TEST and RESET (the ELT shall be in ARM position).
  - continue to listen to 121.5 MHz for a few seconds to ensure that the ELT does not continue to transmit after the test is terminated.

**IMPORTANT: If the ELT operates for approximately 50 seconds, a 406 MHz signal is transmitted and is considered valid by the satellite system.**

**At the end of the first power up procedure, switch the ELT to ARM.**

The ELT is now in stand by mode and ready to be activated:

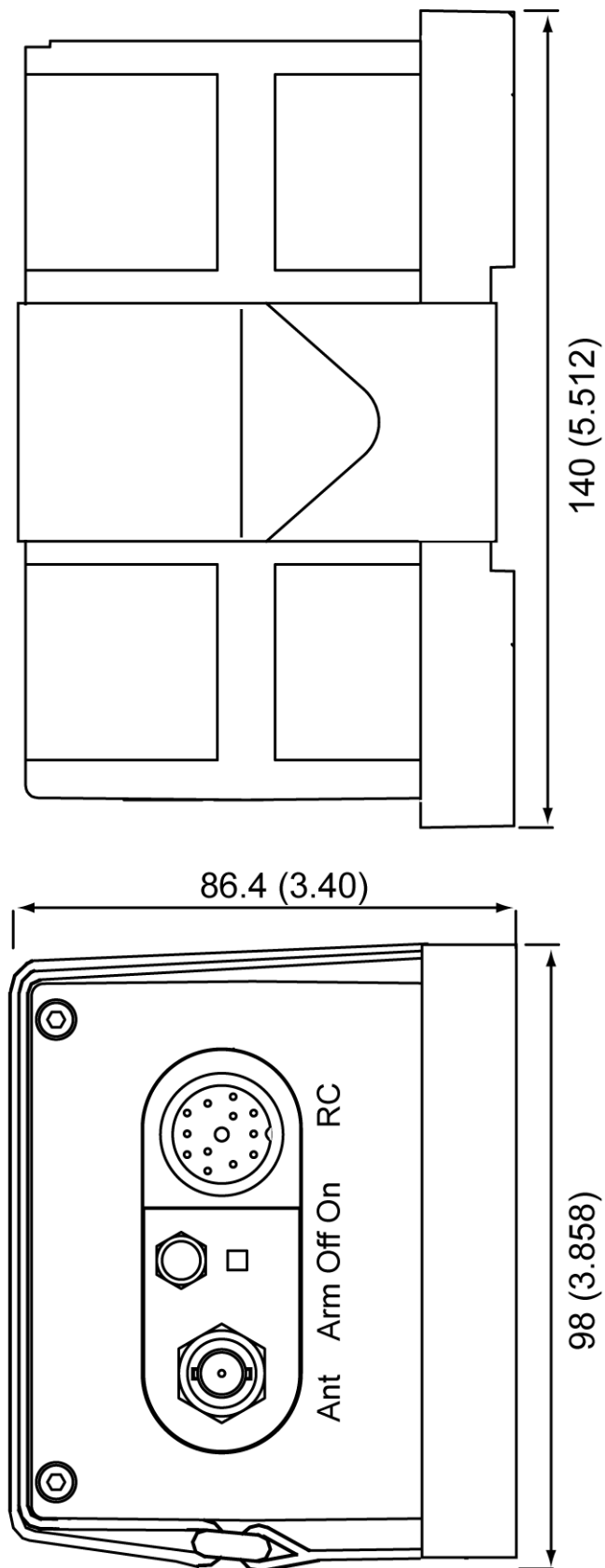
- either automatically by G-Switch sensor if a crash occurs;
- or manually by Remote Control Panel.

*Note : switching to ON directly on the ELT front panel will also activate the ELT.*

## 9. Schematics and diagrams

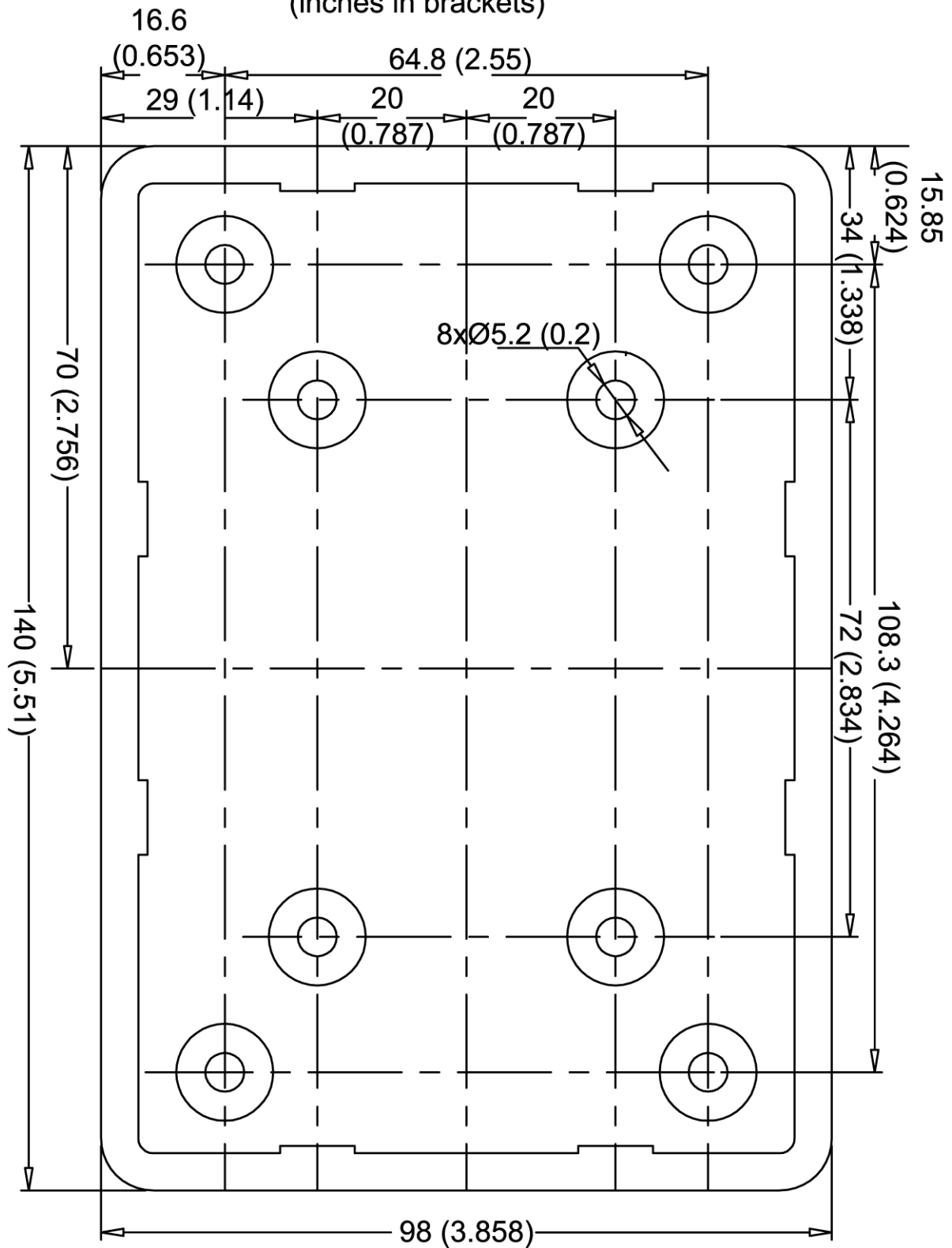
### A. ELT Outline Dimensions

Note: all dimensions are in millimeters  
(inches in brackets)



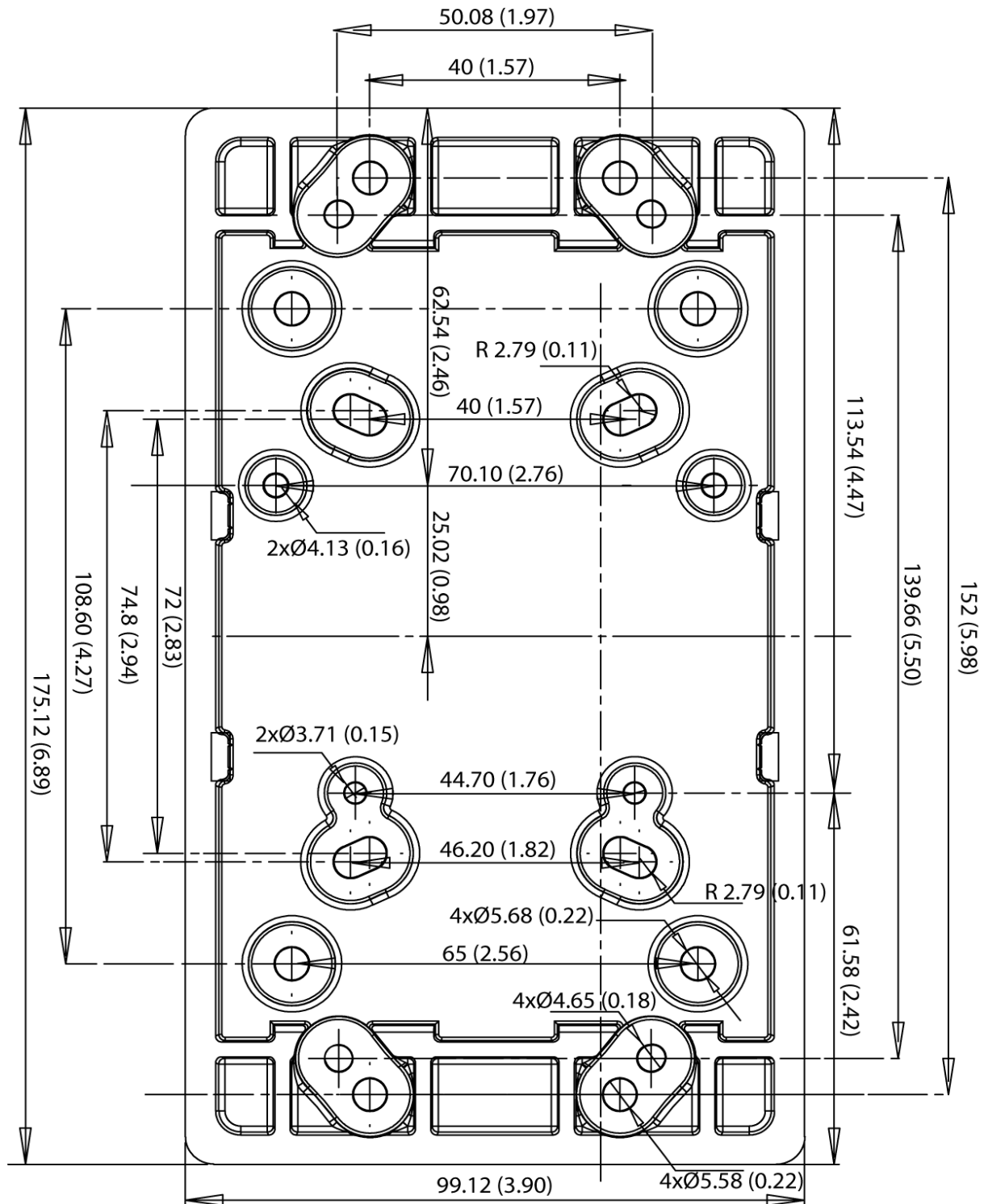
### **B. Compact Mounting bracket (S1840502- 01), drilling mask**

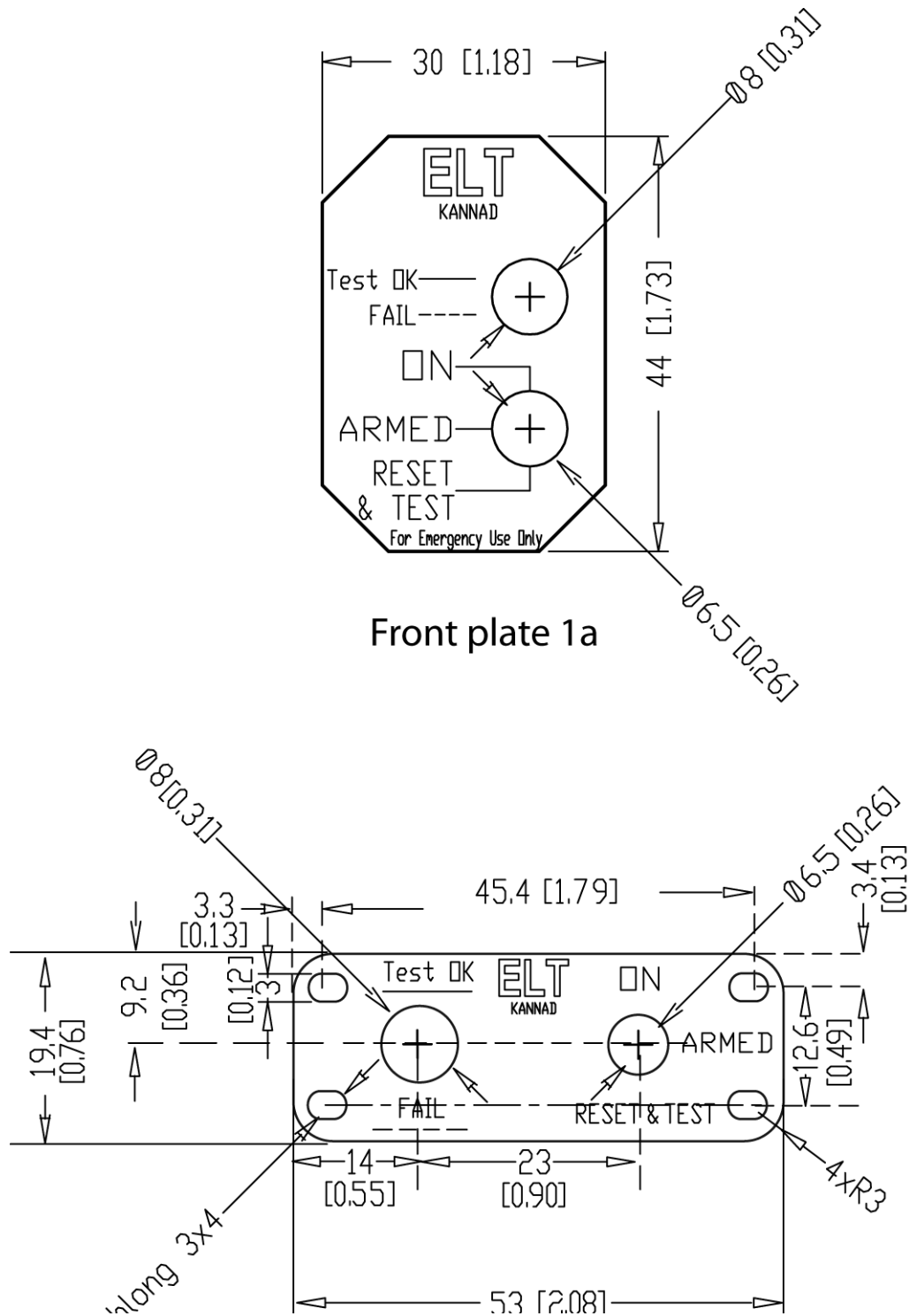
Note: all dimensions are in millimeters  
(inches in brackets)



### ***C. Compact Universal Mounting bracket (S1840502- 02), drilling mask***

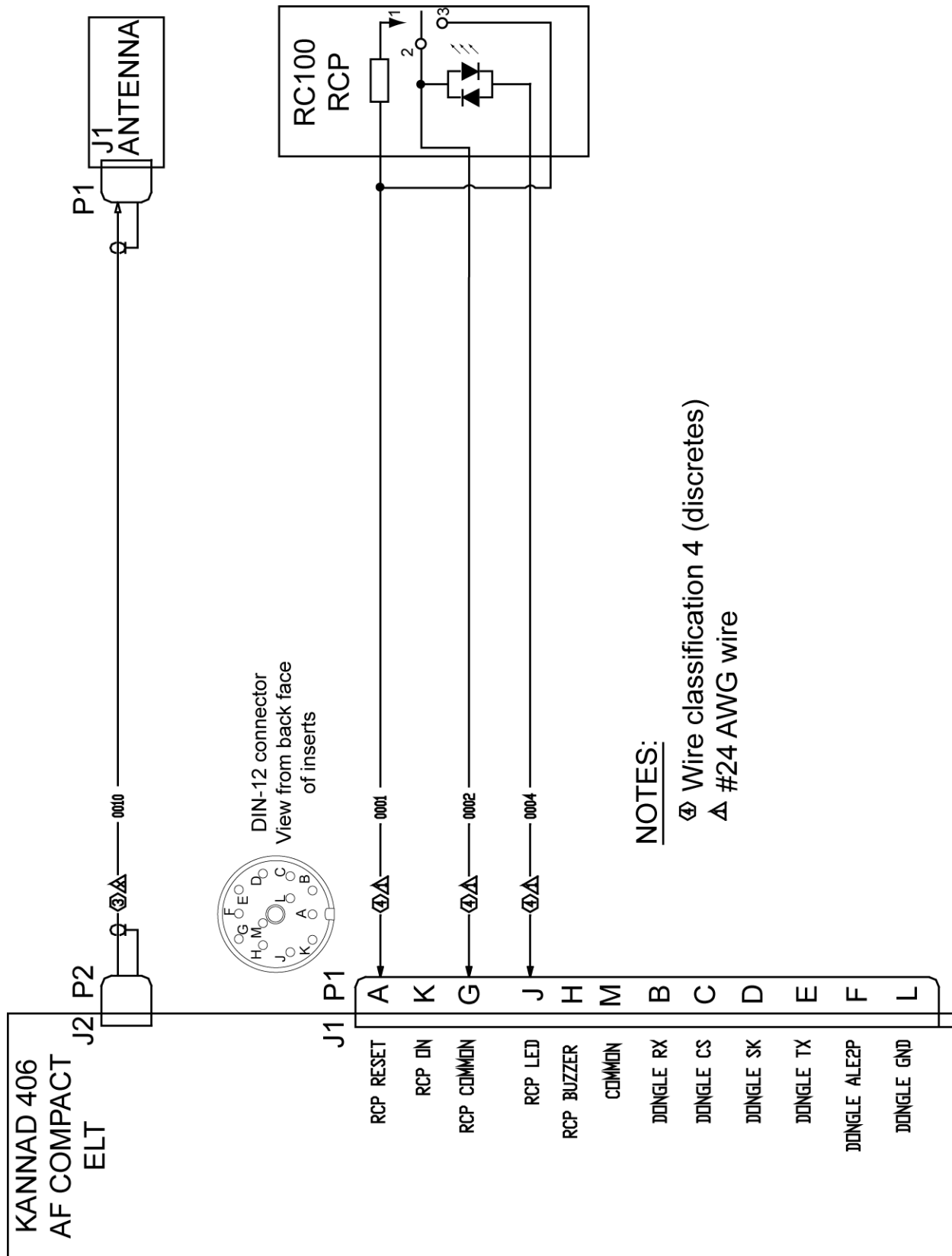
Note: all dimensions are in millimeters  
 (inches in brackets)



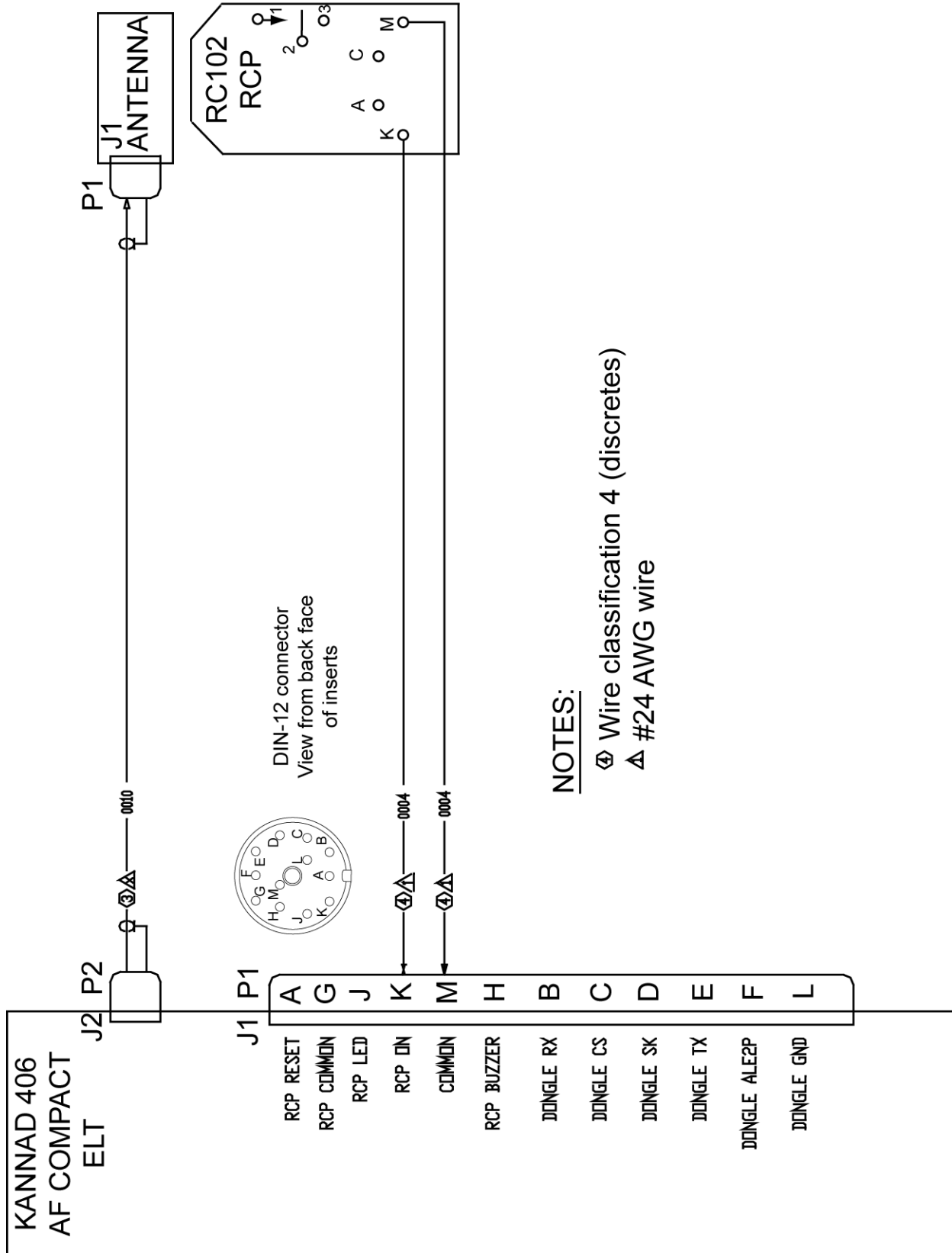
**D. RC100 / RC102 Outline dimensions and drilling masks**




### E. RC100 Wiring



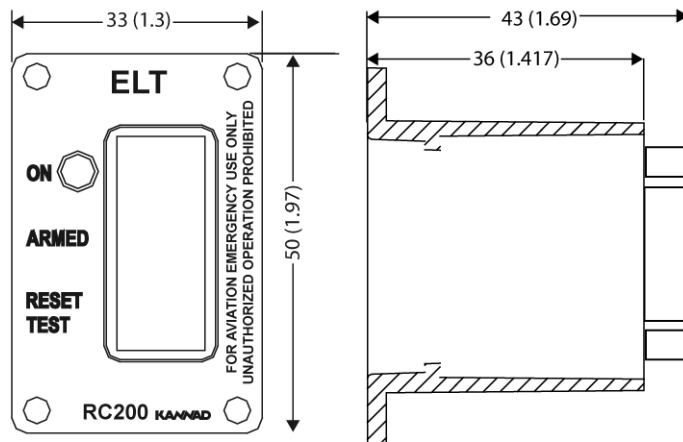
## F. RC102 Wiring



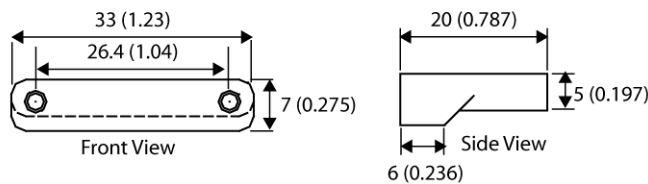
### G. RC200 Outline Dimensions and Drilling Mask

Note: all dimensions are in millimeters  
 (inches in brackets)

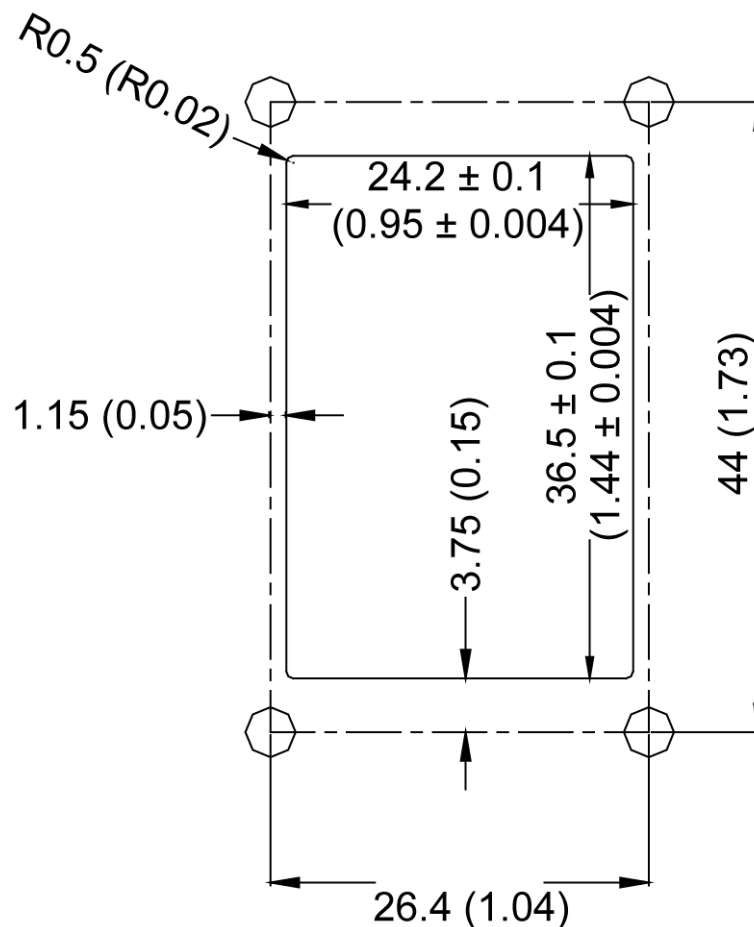
Tolerance:  $\pm 0.2 \text{ mm}$  (0.008)



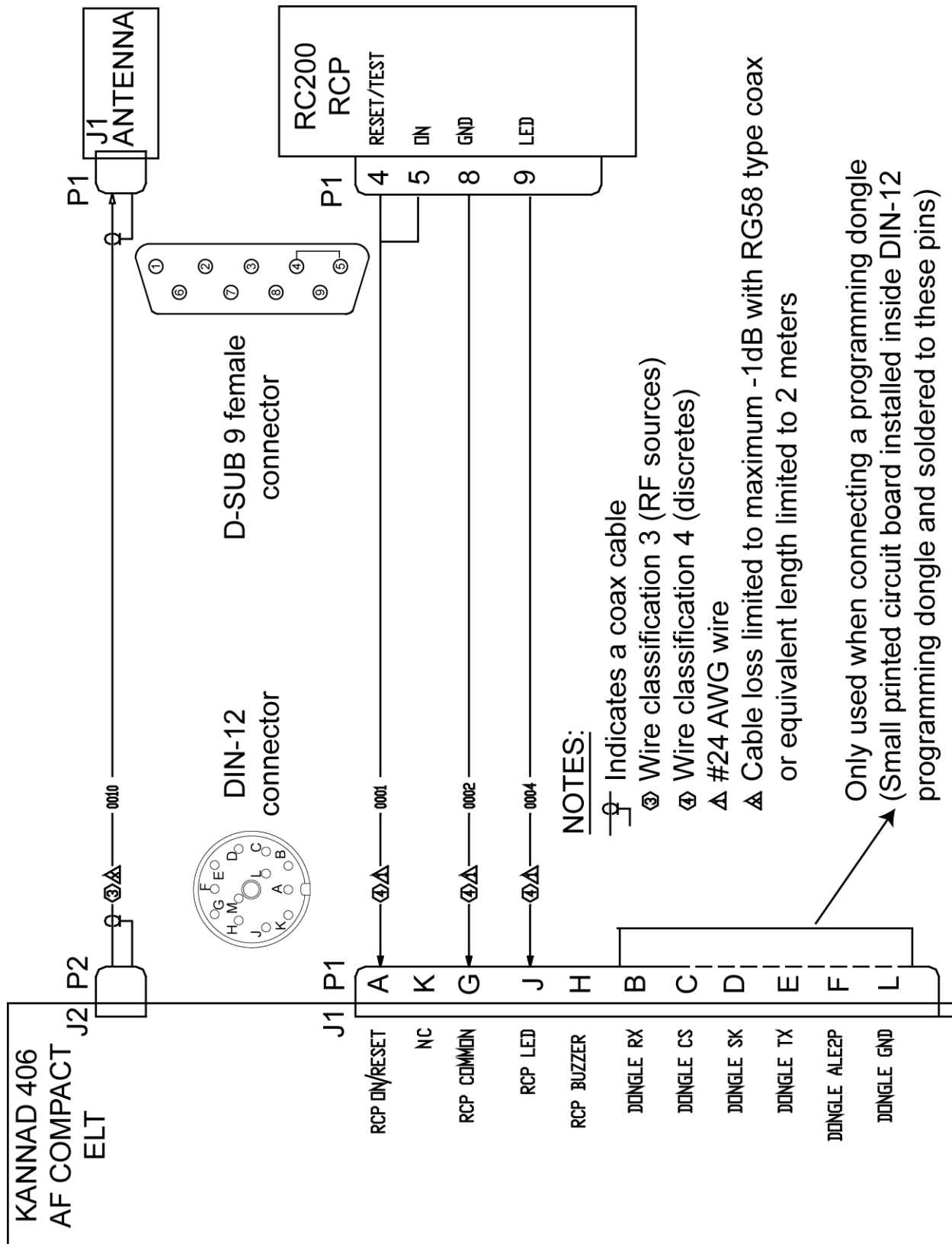
**CONTROL PANEL**



**MOUNTING TRAY**



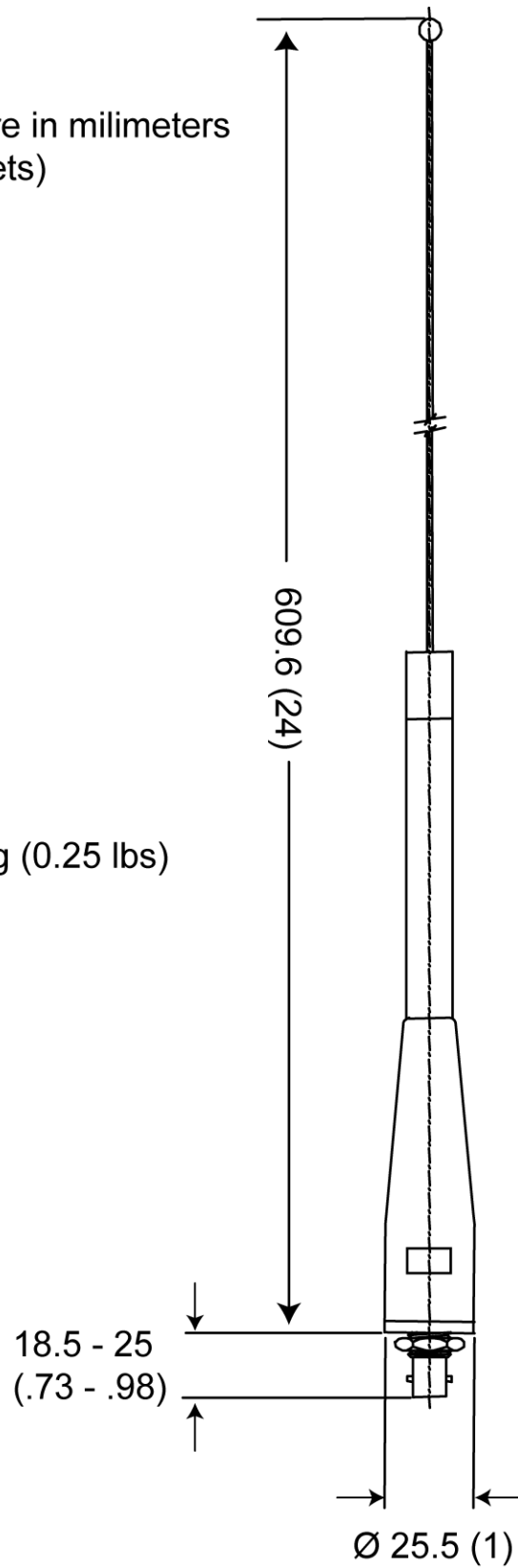
## H. RC200 Wiring



# *I. ANT200 Outline dimensions and weight*

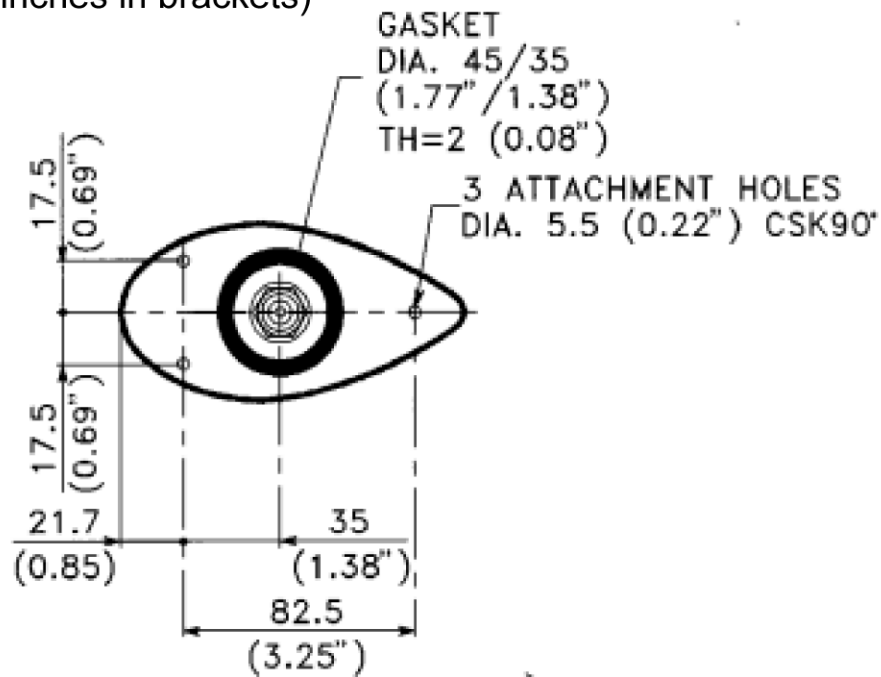
Note: all dimensions are in millimeters  
(inches in brackets)

Weight: 113 g (0.25 lbs)

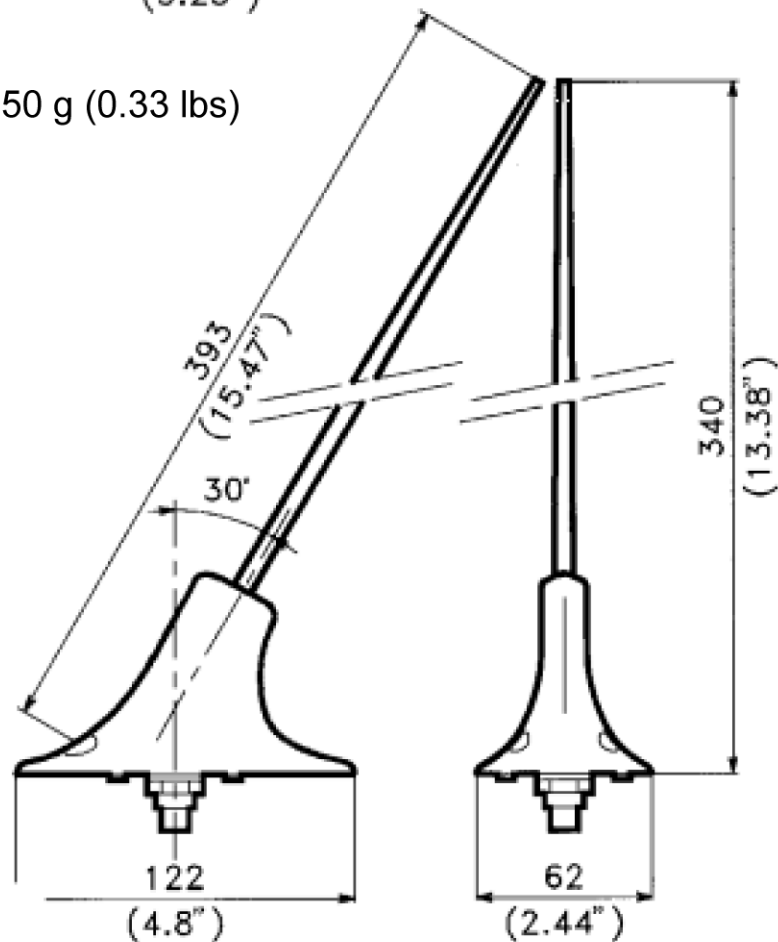


### J. ANT300 Outline dimensions, drilling mask and weight

Note: all dimensions are in millimeters  
(inches in brackets)



Weight: 150 g (0.33 lbs)

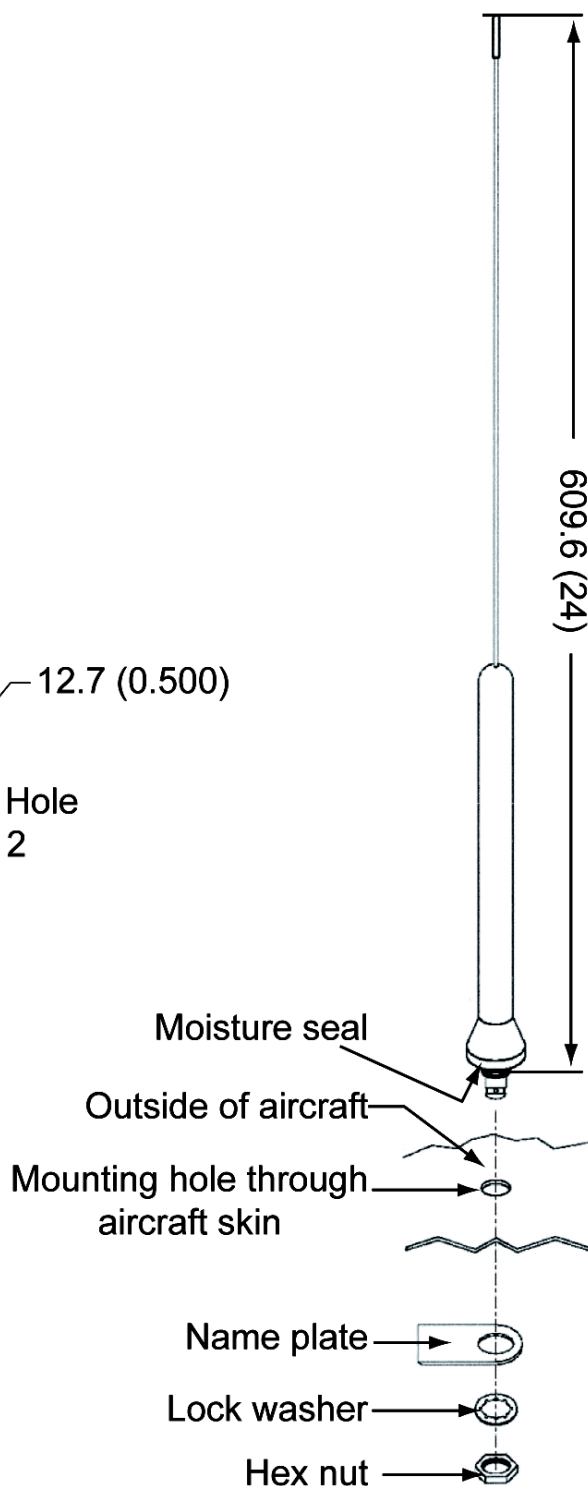
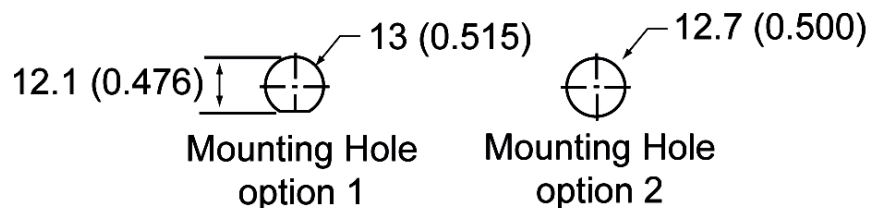




### K. AV200 Outline dimensions, drilling mask and weight

Note: all dimensions are in millimeters  
(inches in brackets)

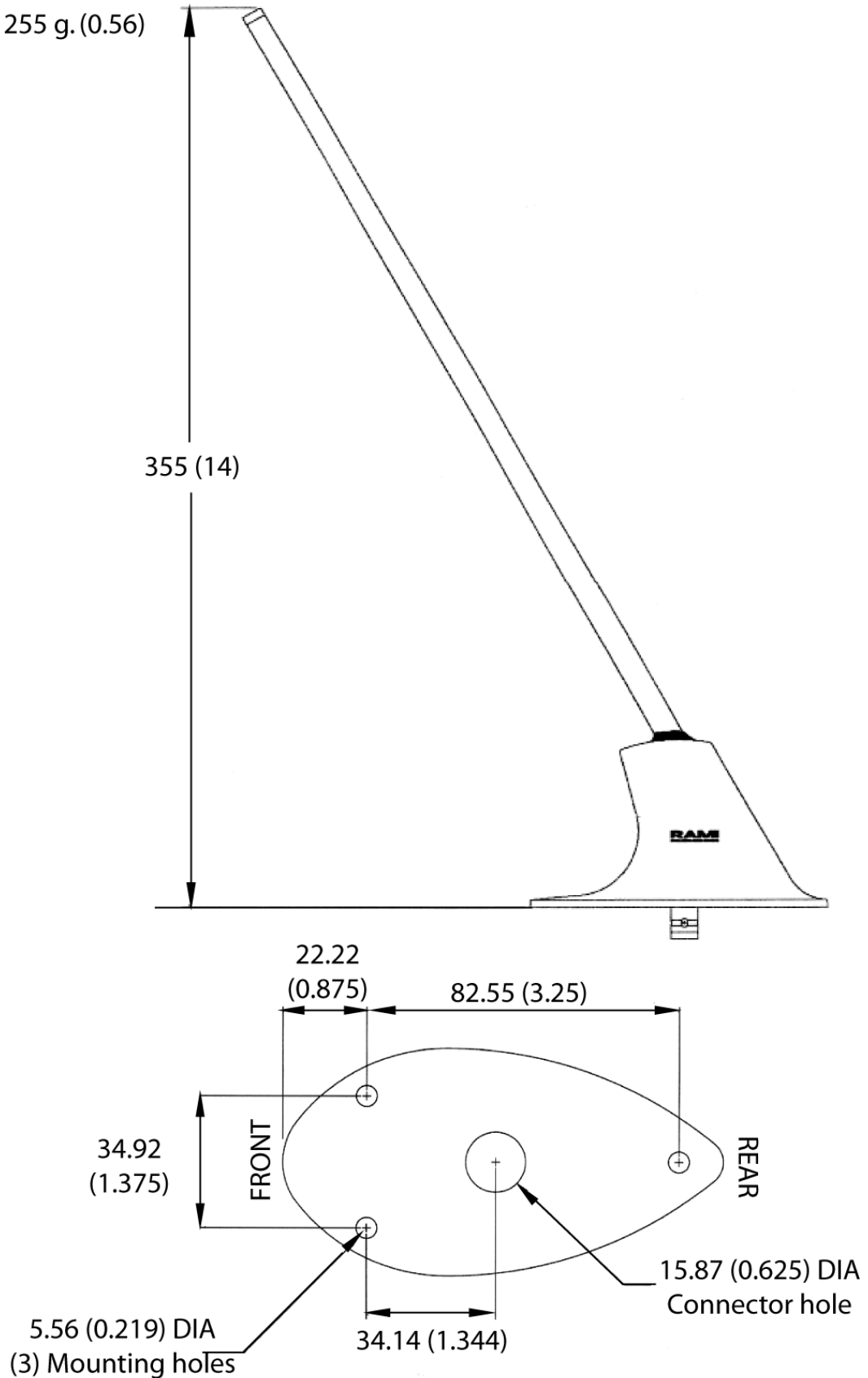
Weight: 85 g (0.19 lbs)



### ***L. AV300 Outline dimensions, drilling mask and weight***

Note: all dimensions are in millimeters (inches in brackets)

Weight: 255 g. (0.56)



**10. Compatibility list for KANNAD 406 AF-COMPACT System****A. Mounting brackets**

<b>KANNAD Designation</b>	<b>KANNAD Part Number</b>
COMPACT MOUNTING BRACKET KIT	S1840502-01
COMPACT UNIVERSAL MOUNTING BRACKET KIT	S1840502-02

**B. Remote control panels (RCP)**

<b>KANNAD Designation</b>	<b>KANNAD Part Number</b>
RC100 KIT	S1820513-03
RC200	S1820513-11
RC200-NVG	S1820513-14
RC102 KIT	S1820513-21

**C. DIN-12 connector or programming dongles**

<b>KANNAD Designation</b>	<b>KANNAD Part Number</b>
DIN-12 connector	S1820514-03
Programming dongle	S1820514-01
Programming dongle Assy	S1820514-06

**D. Outside antennas**

<b>KANNAD Designation</b>	<b>Manufacturer</b>	<b>KANNAD Part Number</b>
ANT200	DAYTON GRANGER ELT 10-773-x	0145621
ANT300	CHELTON 1327-82	0124220
WHIP ANT AV200	RAMI AV-200	0146150
ROD ANT AV300	RAMI AV-300	0146151
ANT100 <sup>(See note)</sup>	PROCOM	0124206

**NOTE: ANT100 is a non ETSO/TSO antenna. It may be used as auxiliary antenna if the ELT is used as portable equipment and if such a use is approved by local authorities.**

Manufactured by



Z.I. des Cinq Chemins BP23

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