

ENGINEERING
TOMORROW



User Manual

Remote Control

R13 ATEX Z2 Receiver



Revision history

Table of revisions

Date	Changed	Rev
July 2024	Updated installation information	0201
January 2019	Rebranded to Danfoss Power Solutions	0101

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Safety instructions

FCC rules

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules.

Changes or modifications not expressly approved by the manufacturer can void the user's authority to operate the equipment.

To comply with FCC RF exposure compliance requirements, this device and its antenna must not be collocated with, or operating in conjunction with, any other antenna or transmitter, may not cause harmful interference, and must accept any interference received, including interference that may cause undesired operation.

The limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Warning

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

1. l'appareil ne doit pas produire de brouillage, et
 2. l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.
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R13 ATEX Z2 General Safety

The following safety instructions must be read carefully to install and use the product properly, and to keep it in perfect working condition, and to reduce the risk of miss use.

- **Danfoss recommends the use of ESD PPEs (electrostatic discharge personal protection equipment).**
- Strictly adhere to the installation instructions contained in this document.
- Make sure that professional and competent personnel carry out the installation.
- Ensure that all on site and prevailing safety regulations are fully respected.
- The Electrical Installation where it may be connected, The receiver may be connected through an automatic magneto thermic switch (with omnipolar cut capacitance: F+N) and differential with characteristics according to the Low Voltage Recommendations.
- Make sure that this document is permanently available to the operator and maintenance personnel.
- Keep the transmitter out of reach of non-authorized personnel.
- Remove the transmitter key when the set is not in use.
- Check each working day the STOP button and other safety features. When in doubt, press the STOP button.
- Whenever several sets have been installed, make sure the transmitter is the right one. Identify the machine controlled on the label for this purpose on the transmitter or by using the display (in case it does have one).
- Service the equipment periodically.
- Avoid High Pressure water Spraying to Receivers while cleaning the machine
- When carrying out repairs, use spare parts supplied by Danfoss only.

Safety instructions

Warning

Potential damage to the operator or the product. Do not use this product on machines in potentially explosive atmospheres unless the model is ATEX/RATEX certified to work in such conditions.

R13 ATEX Z2 Safety Warnings

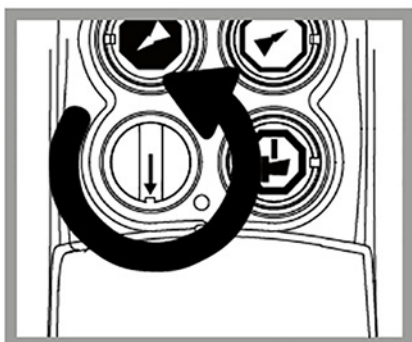
Potential damage to operator and product.

Follow the guidelines below to reduce risk of injury to the operator and the product.

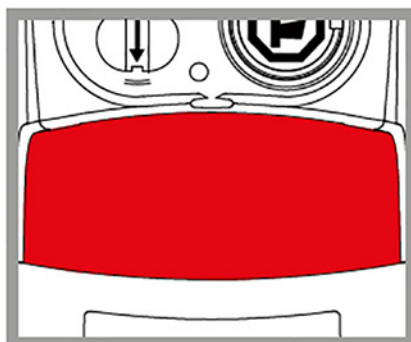
- Use the device with the manufacturer's battery and battery charger (if applicable).
- Only allow qualified personnel to operate the equipment.
- Always set the STOP button in the off position when not in use.
- Always press STOP before plugging in tether cable (if applicable).
- Remove the Tether connection on the transmitter First (if applicable).
- Do not operate product when visibility is limited.
- Make sure product is compatible with the machine.
- Avoid knocking or dropping the product.
- Do not use the product if a failure is detected.

Changes or modifications not approved by Danfoss can void the user's authority to operate this product.

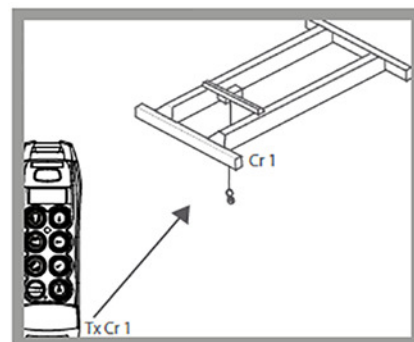
Quick reference precautions



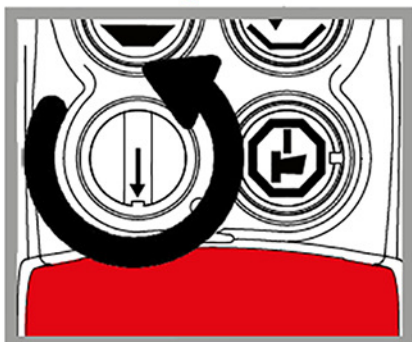
Remove the transmission key only when the set is not in use or to deny the access



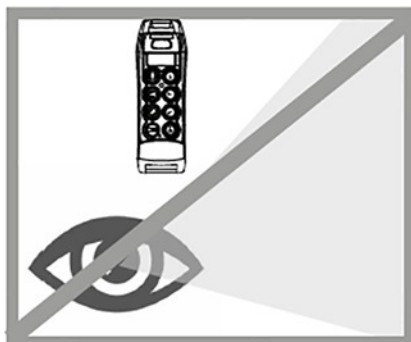
When in doubt, press the STOP button



Make sure the transmitter works with the machine to be handled



After use set the contact key and the STOP button



Do not use the set when visibility is limited

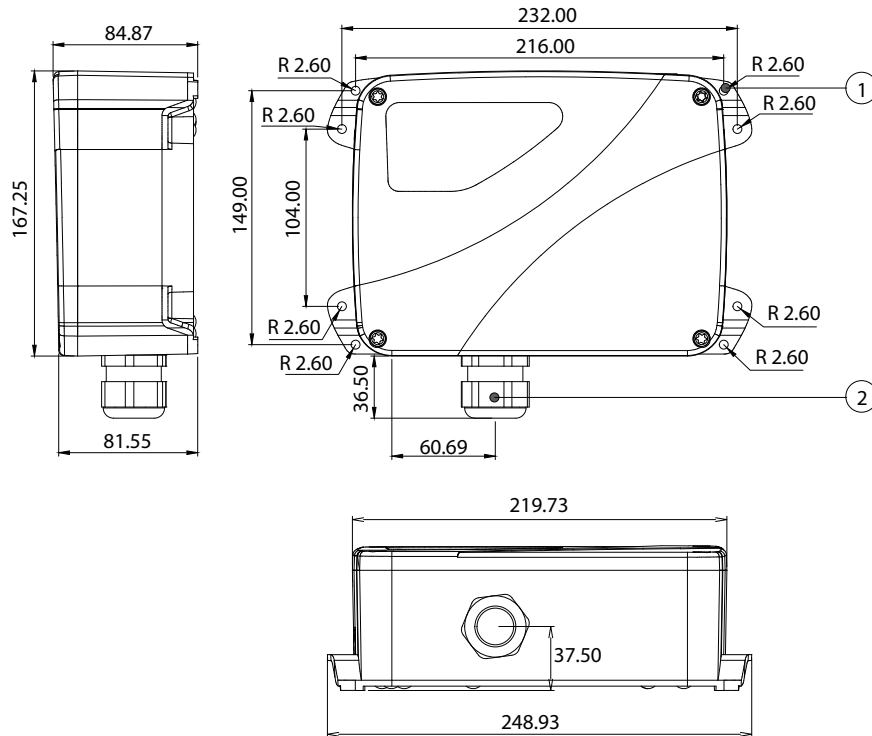


Avoid knocking or dropping the set

Technical description

R13 x dimensions

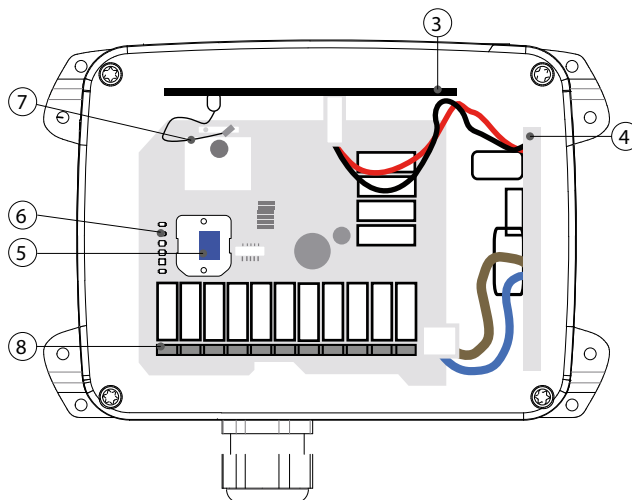
Dimensions in mm



1. Fixing slots (fixed assembly or anti-vibration)
2. M32 cable gland

Technical description

R13 ATEX Z2 hardware description



- 3. Multi-band antenna
- 4. Power supply
- 5. Internal EEPROM
- 6. Signaling LEDs
- 7. TR800-CE MCX radio
- 8. Wiring communication

R13 ATEX Z2 receiver only allows Altern Current (AC) power supply and a maximum of 13 relays.

Installation

R13 ATEX Z2 receiver installation

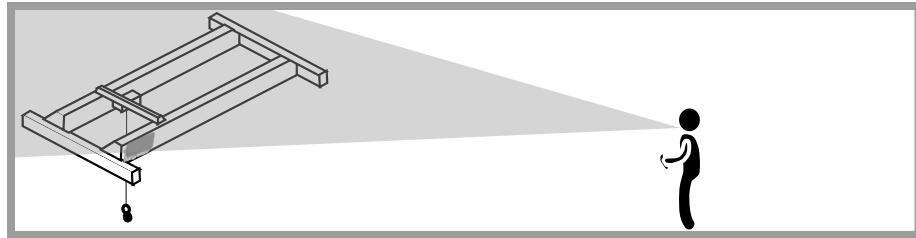
The below information describes hazards to be aware of during installation and steps to locate the receiver.

Risk of shock

Completely shut down the machine when installing the receiver.

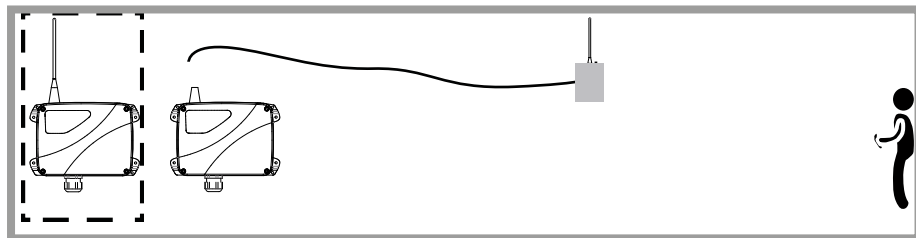
Check the power supply and shut off the main switch to disconnect the interface cable between the receiver and the machine's electrical box.

1. Find an easily accessible and clear location with a direct vision between the receiver's antenna and the transmitter's working area.

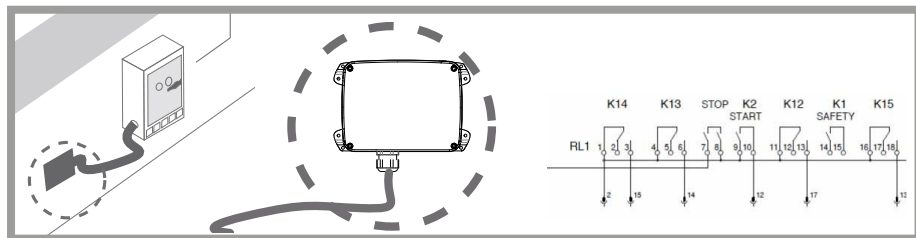


2. Optional: If it is difficult to achieve direct vision between the receiver's antenna and the transmitter's working area, it is recommended to use an extended antenna in a clear location (only for models that allow an antenna).

In areas of high vibration, the use of Shock Absorbers is advised.



3. Proceed to connect the power supply. Use the connection block diagram provided with the system, where the correspondence between the transmitter maneuvers and the receiver's outputs are detailed.



4. Check if the electrical installation and verify if there's an option to connect the neutral or the ground cable. In that case, don't forget to connect the ground cable.

The use of fireproof or flame retardant cables are recommended for the connection.

Troubleshooting

400-900MHz Receiver LED troubleshooting

The troubleshooting LEDs are located on the receiver board. Use the following table to identify faults and corrective action.

In order to reach the signaling, the receiver must be accessible, connected, and the screws located on the receiver lid must be unscrewed using the proper screw driver whenever the LEDs are not externally visible.

The LEDs on the receiver board are POWER, HARDOK, SIGNAL, DATA, ID, ORDER and RELAY.

Please do check the following website for further information:

<https://troubleshooting.dps-rct.com/en/customer-service-center>

LED	Characteristic	Description	Action
POWER	Green; pulsing	Receiver is starting up	Wait until start-up process is finished
HARDOK	Green; continuous	Receiver hardware OK	Operate
	Red; pulsing	EEPROM error; data corruption; CAN bus error (if CANERR activates)	Reprogram EEPROM
	Red; other	Electronic board hardware breakdown	Replace device
SIGNAL	LED off	No radio signal detected	-
	LED on + transmitter switched off	Radio channel occupied	Change transmitter's frequency channel
	LED on + DATA switched off	Radio channel occupied by non Danfoss system	Change transmitter's frequency channel
DATA	LED off + SINGAL LED on	Radio error	Replace radio
	Green; pulse	Receiving good frames	OK
ID	LED off + DATA LED on	No valid ID; Danfoss system nearby	If channel not occupied, check chosen ID in the transmitter or reset the receiver
	LED on + SIGNAL LED on + DATA LED on	Valid frames received from the transmitter; correct link	OK
RELAY	Green	STOP relay activated	-
ORDER	Green	LED ON Whenever any output is ON	-
CANERR	Red slow pulses	CAN Error, physical Layer	Verify Connections
	Red double pulses	One expansion has Stopped working	Verify Expansion boards
	Red 4 pulses	A Transmitted CAN frame has been lost	N/A
	Red 5 pulses	A Received CAN Frame has been lost	N/A
	Red continuous	CAN Bus OFF	Verify CAN connections and Status.
CANRUN	Blinking Green	Pre operational Status	The Controller must set the CAN Receiver to operational Status
	Solid Green	Operational Status	OK

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