

Manual

V410-201-008 Personnel-Transponder | 2.16 | Fall detection



Figure 1 Personnel-Transponder front view

General Description

The personnel transponder can be used by all staff in a care facility, clinic, hospital etc. It serves as a name tag for clipping onto clothing and has two buttons on the back, the acknowledgment button (button 1) and the emergency button (button 2). In addition, the transponder has a fall and dead man alarm, which can be activated and deactivated by pressing both buttons. After starting the personnel transponder, these two alarms are initially deactivated. The keystroke and other actions are confirmed with the two LEDs on the back and a short vibration of the transponder.

Trigger and Acknowledge Actions

Action	Use	Radio-Behavior	Hardware-Behavior
press emergency-button	sending emergency call	sent emergency call	short vibration
press acknowledgment-button	acknowledgement of an alarm of an Emergency-Transponder	sent acknowledgement	LED lights up green for 2 seconds, 2 short vibrations
fall was detected	pre-alarm on the transponder	no sending	short vibration, 1x per sec.
no movement for x minutes registered	pre-alarm on the transponder	no sending	short vibration 1x per sec.
pressing acknowledgement button during pre-alarm	acknowledge pre-alarm	no sending	LED lights up green, 2 short vibrations
no pressing of acknowledgement button during pre-alarm	sending emergency call	sent emergency call	LED lights up red for 2 seconds
pressing acknowledgement button for 3 sec.	Acknowledge own emergency call	acknowledge own emergency call	LED lights up green for 2 sec., 2 short vibrations
pressing both buttons for 3 sec.	deactivate fall and dead man detection	-	LED lights up green for 2 sec., 3 short vibrations
pressing both buttons for 3 sec.	activate fall and dead man detection	-	LED lights up red for 2 sec., 1x long vibration



Figure 2 Personnel-Transponder rear view

The Personnel-Transponder in network-system

The transponder is activated in an active LF field and sends its ID to the HF module:

- Data transmission in active LF fields -> LF ID bigger than 120 (default when flashing)
- Remember LF field ID in passive LF fields -> LF ID less than 120 (default when flashing)
- Send mode active / passive LF field changeable (when flashing and via Martin-Check USB-Config)
- In the event of an emergency call outside the LF field, the last LF ID is transmitted
- When an emergency call is acknowledged outside the LF field, the last LF ID is transmitted
- Readout of version and battery capacity possible with Martin-Check
- Personnel transponder ID can be changed / set in programming mode using the LF module
- Battery low message is transmitted for every sending if the battery capacity falls below 30%
- LED lights up green for 6 seconds as confirmation of acknowledgment
- LED flashes green every 1.2 seconds in the active LF field
- LED flashes red every 1.2 seconds in the active LF field when low bat

Location update function for emergency calls

If the personnel transponder changes the detection field when the emergency call is triggered, the emergency call is automatically being acknowledged and triggered again with the current LF-ID. The emergency call is acknowledged and triggered again in the LF detection field as long until it has been acknowledged with the emergency call acknowledgment function (press and hold the acknowledgment button for three seconds).

Fall Detection

Two sensors are used for fall detection: an acceleration sensor for motion detection and an air pressure sensor for detecting the change in altitude. If a movement takes place within two seconds and the height of the personal transponder drops by at least 50 cm, this is considered as a fall.

In some cases, a rapid downward movement can be recognized as a fall. If a person e.g. is quickly running down the stairs, a false alarm can be triggered. In order to avoid a false alarm, the "pre-alarm" was provided.

Case study: A fall is recognized. First a pre-alarm is triggered: short vibration 1 x per second. If the pre-alarm is not acknowledged within 20 seconds, an emergency call is sent.

Dead man Detection

If no movement is registered during a preset time (standard duration: 10 minutes), a pre-alarm is triggered first: short vibration 1 x per second. If the pre-alarm is not acknowledged within 20 seconds, an emergency call is sent.

Setting of the Personnel-Transponder

The tag ID of the personal transponder can be set with the Martin Check or when flashing.

The following settings for flashing can be made in the sensor module the following settings can be adjusted:

- Dead man alarm duration can be set from one minute to 255 minutes (4 hours 15 minutes). The standard duration is preset to 10 minutes.
- Movement threshold can be set from 16mg to 2g with step 16mg. Movement threshold is preset to 480mg.
- The change in height from which the pre-alarm takes place can be set from 10cm to 100cm with steps of 10cm. The change in height from which the pre-alarm takes place is preset to 50cm.

Battery life

The battery life depends on how often the transponder is in the LF field. If the transponder is permanently in an LF field, the battery life is max. 2 months.

The battery life also depends on whether the fall and dead man detection is activated or deactivated. If the alarm is active, the battery life outside the LF field is max. 6 months. If the alarm is only active for 12 hours a day, the battery life increases accordingly up to 12 months.

The transponder has two batteries: CR2023 and CR2450. Both batteries must be replaced when the low-bat message is sent.

Martin Elektrotechnik GmbH hereby declares that article V410-201-008 corresponds to the guidelines 2014/53 / EU, 2014/35 / EU, 2014/30 / EU. The full text of the EU declaration of conformity is available on the following website: <https://martin-elektrotechnik.freshdesk.com/support/solutions>

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