



Wall Transmitter *Ncall N46*

User Manual

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Wall transmitter Ncall N46 : User Manual

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Contents	3
Terminology.....	3
Models and Options	3
General Description	4
Performance Characteristics	4
Installation	6
Wall Mount.....	6
Connection Compartment	6
Power Supply	7
Reset.....	7
Transmitter Identification.....	7
Operation Check.....	7
Configuration and Wiring	8
Inputs and Outputs	9
General Configuration	9
Use	10
Call for Help.....	10
Call for Assistance	10
Call Acknowledgement (Presence Signal).....	11
Call for Help 2 (reserve)	11
Technical Alarm	11
Caregiver Arrival ^(o)	12
Caregiver Departure ^(o)	12
Daily Message and Battery Low Message.....	12
Error Message.....	12
Technical Data	13
General Data.....	13
Mode of Operation.....	14
Legend of Illustrations:	14
Staff Presence Processing Activated	15
Staff Presence Processing Disabled	17

Terminology

In this manual, the status of inputs and outputs is described with the terms **activated** or **released** :

- **Activated** means that the contact of an **NO** input or output is closed, or that the contact of an **NC** input or output is open. The **activated** state is always represented by the symbol .
- **Released** means that the contact of an **NO** input or output is open, or that the contact of an **NC** input or output is closed. The **released** state is always represented by the symbol .

Models and Options

(o) The availability of the functions or specifications marked with this abbreviation depends on the chosen model or options.

General Description

In the *Nursecall* system, the Wall Transmitter *NCall N46* allows the resident of a home or the patient of a clinic to easily alert the care personnel if needed. The patient simply has to push the large red button. The system is then able to control and to monitor the progress of the Care Personnel.

The transmission is mainly performed by radio. There is no need for a wired connection between the Transmitter and the Reception Unit, this makes the system installation easy and allows great mobility.

Depending on the model, two relay outputs^(o) are available which may be used to connect alarm and staff presence indicators such as, for instance, the signal lamps installed above the door.

Two signal lamps (LED) allow the progress to be monitored on the device.

In this User Manual you will find all the information you need for the installation and the use of the Wall Transmitter *NCall N46*.

Performance Characteristics

With its multi-functionality, the Wall Transmitter *NCall N46* fulfils the toughest requirement in all social and medical areas such as homes for elderly people, clinics or hospitals.

The following are the key performance characteristics of the Wall Transmitter *NCall N46*:

- Fast installation and mobility achieved by radio transmission of the calls (no wiring needed)
- Driving of the lamps used to display the calls and the staff presence status by way of two relay contact outputs^(o)
- Indication of the intervention state by LEDs
- Provision for a 12 to 24 VDC external power supply
- High working reliability secured by the transmission of a programmable daily message and automatic controls
- Wall mount or on any type of support
- A large red button with cam structure is used to trigger the Calls for Help
- A blue button allows the Care Personnel to summon assistance if needed
- A third acknowledgement button (green) is used by the Caregivers to signal their presence and the end of their intervention
- A phone jack Ø 3,5 mm allows to connect a remote Call for Help button on a long cable in order to make it easier to trigger the Call for Help
- Possibility to transmit arrival and departure of up to four different categories of Caregivers
- Secured connection of the phone jack prevents the cable from being pulled out accidentally
- Detection and transmission in case of the remote Call for Help button is pulled out
- A terminal block allows connection of up to three external triggering devices for additional calls or alarms.
- The configuration carried out by jumpers and solder-bridges allows to adapt the device to many uses
- The connection compartment is easily reached for configuration, wiring and maintenance (check and change of battery)
- Long term battery life with standard CR 2450 lithium battery

The three coloured buttons provide, in most cases, the most common form of operation.

The large red button with cam structure is used to trigger the Call for Help. The round blue button triggers the Call for Assistance.

These two alarms are repeated automatically about every 2 minutes until the green acknowledgement button has been pressed.

The signal lamp on the top of the red button goes on every time a radio-transmission takes place and is used to indicate the alarm status on the transmitter. A second signal lamp indicates the presence status.

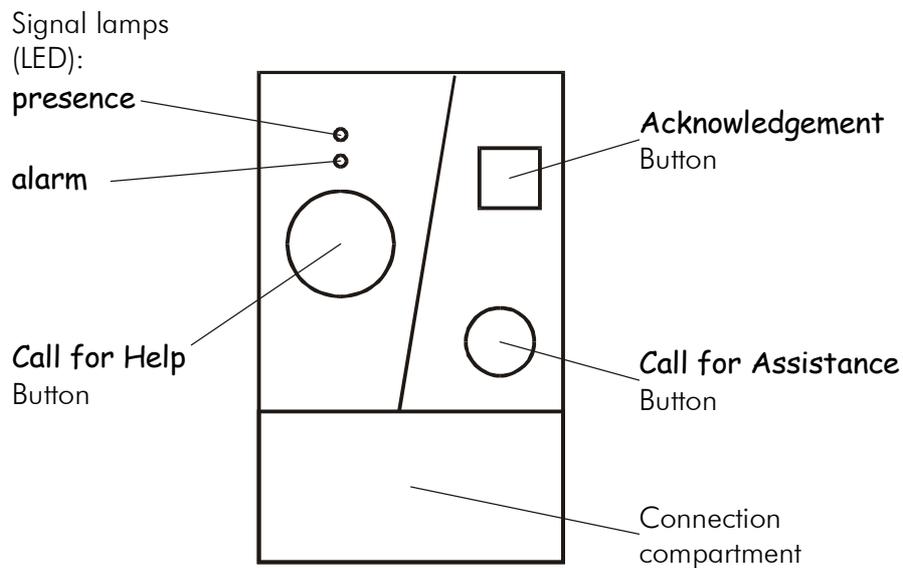


Figure 1

Wall Mount

The Wall Transmitter *NCall N46* can be fixed with two to five screws on a wall. Two holes at 60 mm interval are provided for direct mounting on connection boxes.

The three upper holes are used for positioning the device and cannot be reached from the Connection Compartment.

Two of the lower holes can be reached from outside and thus used for fixing the device.

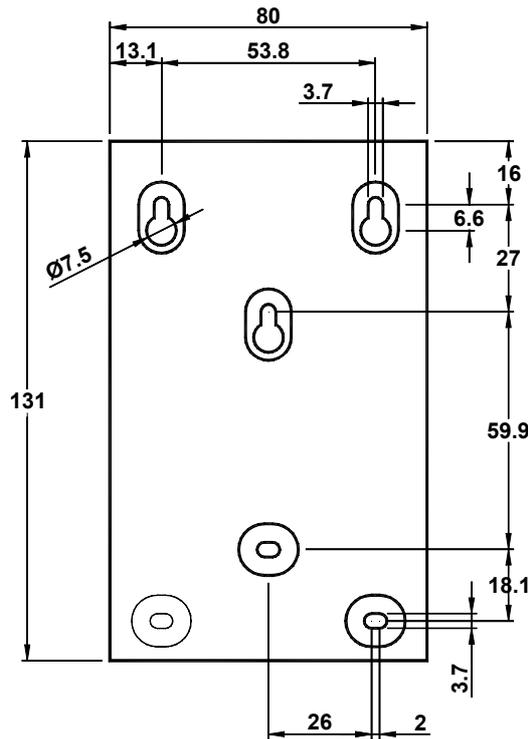


Figure 2

Connection Compartment

Most of the wiring, configuration and maintenance functions such as :

- Connection of the external power supply
- Connection of the wired inputs and outputs
- Choice of the triggering edge of external **Call for help** trigger, **Technical Call** and **Call for Help 2** inputs (normally open or normally closed) at jumpers **J1**, **J2** and **J3**
- Installation or replacement of battery
- Checking of the battery voltage

can be carried out in the connection compartment. It is reached by taking off the lower part of the housing (see Figure 1). This can be done even if the device is fixed on the wall.

The connection cables can be channelled towards the outside through the hole next to the terminal blocks or downwards by breaking off part of the rear housing.

Power Supply

The Wall Transmitter *NCall N46* can be powered by a lithium battery or/and an external 12-24 VDC power supply. If the device is powered with an external power supply, the battery is not necessary, but it can be used as a backup power supply in case of power loss.

If the device is powered by the battery only, the battery life is about 2 years. However it is advisable to change the battery once a year.

If the device is powered by an external power supply and the battery is used as backup power supply, it is advisable to check it at regular intervals (for instance once a year) and to change it if necessary.

Reset

All parameters are reset when powering up the device (battery or external power supply). This operation causes the synchronization of the daily message.

In order to perform a reset, make sure to **remove both the battery and the external power supply**, do a short-circuit on the two pins marked **Reset** on the next figure before powering the device up again.

Important Note:

All connections as well as the configuration need to be carried out before powering the device (insertion of the battery and/or application of the external power supply).

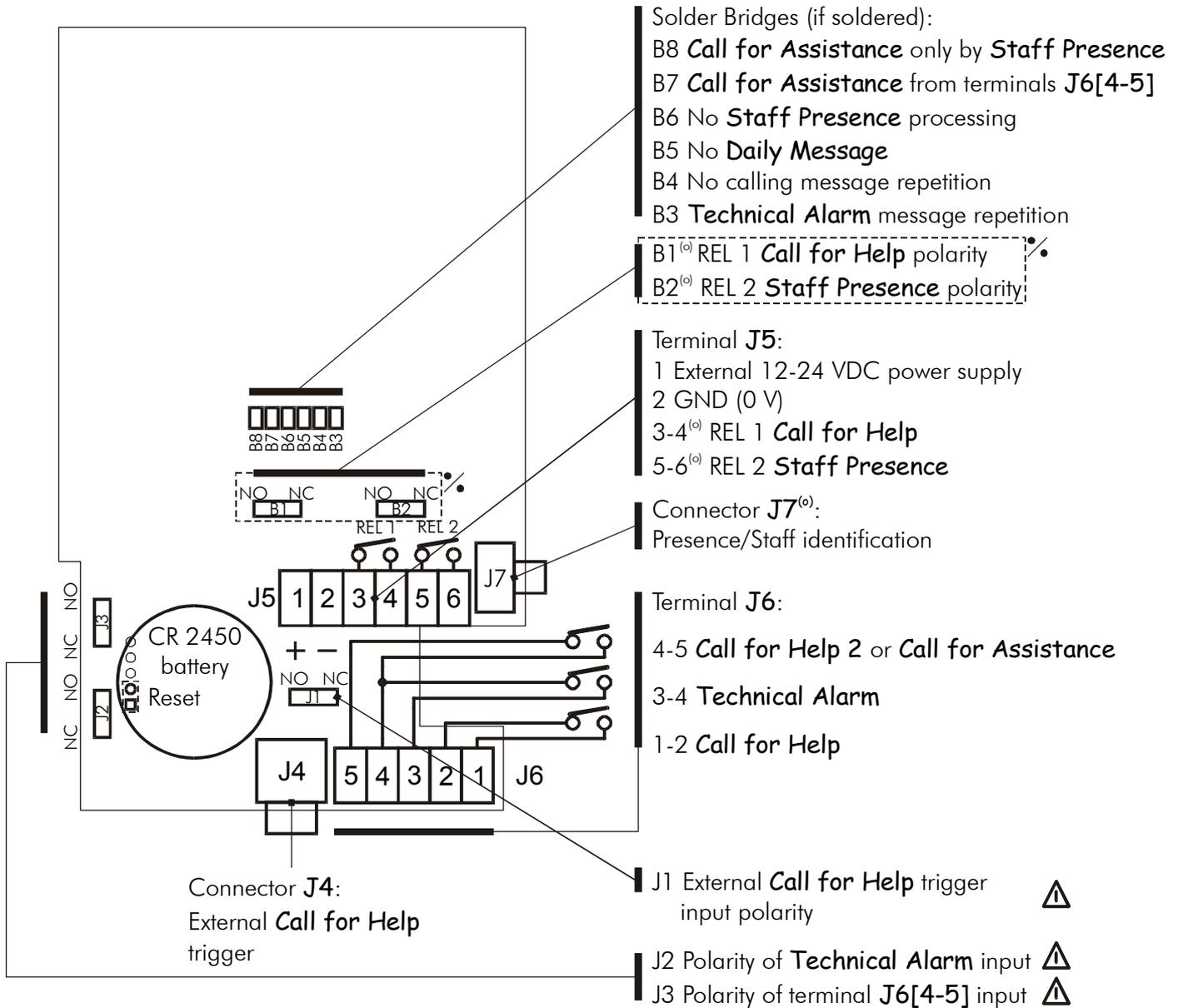
Transmitter Identification

All Wall Transmitters *NCall N46* are provided with their own radio identification code that is assigned when manufactured. During the installation, it is necessary to set the relation between the identification code of the Transmitter and the place where it is installed (floor/room/bed or single number). This relation is programmed on the Master Nursecall Unit (refer to the Nursecall User Manual).

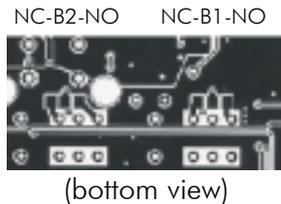
Operation Check

Once the transmitter has been installed and set-up properly, it is recommended to check all functionalities of the device. The radio transmission can be checked by sending an acknowledgement call (press green button).

Configuration and Wiring



* Solder bridges B1 and B2 are located on the bottom side of the PCB:



⚠ Important Note:

Setting-up one or more inputs to "NC" position results to higher power consumption. This configuration should be used with external power supply or will reduce the battery life.

Inputs and Outputs

External trigger	J4	Jack 3.5 mm	J1	NO*	Contact closing causes a Call for Help
				NC 	Contact opening causes a Call for Help
Power supply	J5	1		+	12 to 24 V DC
		2		-	GND 0V

Wired Outputs^(o):

Call for Help Re- lay ^(o)	J5	3-4	B1	NO*	A Call for Help causes the closing of the relay contact
				NC	A Call for Help causes the opening of the relay contact
Staff Presence Relay ^(o)	J5	5-6	B2	NO*	Staff Presence signalling causes the closing of the relay
				NC	Staff Presence signalling causes the opening of the relay

Wired Inputs:

Call for Help	J6	1-2			The contact closing causes a Call for Help
Technical Alarm	J6	3-4	J2	NO*	The contact closing causes a Technical Alarm
				NC 	The contact opening causes a Technical Alarm
Call for Help 2 or Call for Assistance	J6	4-5	J3	NO*	The contact closing causes a Call for Help 2 or a Call for Assistance
				NC 	The contact opening causes a Call for Help 2 or a Call for Assistance

*Delivery state

General Configuration

Bridge	State	Function
B3	Open*	Technical Alarms are not repeated
	Soldered	Technical Alarms are repeated until alarm acknowledgement (max 20 min.)
B4	Open*	Calls (except technical alarms) are repeated until call acknowledgement (max 20 minutes)
	Soldered	Calls (except technical alarms) are not repeated
B5	Open*	A daily message is sent every 24 hours
	Soldered	Daily messages are suppressed
B6	Open**	Staff Presence Processing is activated
	Soldered**	Staff Presence Processing is disabled
B7	Open*	Activation of J6 [4-5] terminal input causes a Call for Help 2
	Soldered	Activation of J6 [4-5] terminal input causes a Call for Assistance
B8	Open *	The Assistance Call does not depend on the presence of the Care Personnel
	Soldered	The Assistance Call is possible only if the Care Personnel has signalled his/her presence

* Delivery state

** N46 Wall transmitters that feature the output relays are delivered with the Staff Presence Processing activated (B6 open), models that do not feature the output relays are delivered with the Staff Presence Processing disabled (B6 soldered).

Use

Every time the Wall Transmitter *NCall N46* is used by pressing a button or activating a wired input, the device sends a radio signal and the lamps indicate its actual state. Two relays allow the transmission of status to a remote display such as the signal lamps placed on top of the door.

Each radio message is sent with a different code which allows the receiver (*Nursecall* system) to recognize the action performed. The Wall Transmitter *NCall N46* transmits the described next criteria.

It is advisable to keep the button pressed until the lamp placed above the red button lights up.

Call for Help

The **Call for Help** can be triggered in three different ways:

- By pushing the **Call for Help** button (red)
- By pushing the external switch connected to the **J4** connector
- By pushing the external button connected to terminals **1** and **2** of the terminal block **J6**.

The **Call for Help** is repeated about every 2 minutes until a call acknowledgement takes place, up to a maximum of 20 minutes. This repeat function can be disabled by setting the solder bridge **B4**.

A **Call for Help** is signalled by red flashes on the signal lamp and by the activation of the relay^(o) **Call for Help**.

Note:

In some cases, the action **Call for Help** generates a **Call for Assistance**¹ action.

Call for Assistance

The **Call for Assistance** is triggered by pushing the **Call for Assistance** button (blue).

The **Call for Assistance** is repeated about every 2 minutes until a call acknowledgement takes place, up to a maximum of 20 minutes. This repeat function can be disabled by setting the solder bridge **B4**.

A **Call for Assistance** is signalled by red double flashes on the signal lamp and by the alternate action/release of the relay^(o) **Call for Help**.

Note:

In some cases, the action **Call for Assistance** generates a **Call for Help**¹ action.

¹ See chapter **Mode of Operation** (page 14)

Call Acknowledgement (Presence Signal)

The call acknowledgement is triggered by pushing the **Acknowledgement** button (green).

The call acknowledgement stops immediately all repetitions of the calls.

A call acknowledgement triggers the **Staff Presence** signal:

- by green flashes on the signal lamp and by activating the **Staff Presence** relay^(o) when the Caregiver pushes the **Acknowledgement** button when entering the room.
- by switching off the lamp and releasing the **Staff Presence** relay^(o) when the Caregiver pushes the **Acknowledgement** button and leaves the room.

Note:

In some circumstances the device may react differently to the acknowledgement of a call².

Call for Help 2 (reserve)

The **Call for Help 2** is triggered by pushing the external button connected to terminals **4** and **5** of terminal block **J6**.

The call can be triggered by closing (NO) or opening (NC) the contact³.

The **Call for Help 2** is repeated about every 2 minutes until a call acknowledgement takes place, up to a maximum of 20 minutes. This repeat function can be disabled by setting the solder bridge **B4**.

The **Call for Help 2** is signalled in the same way as the **Call for Help** on the signal lamp and the relays^(o).

Technical Alarm

The **Technical Alarm** is triggered by activating the contact connected to terminals **3** and **4** of terminal block **J6**.

The alarm can be triggered by closing (NO) or opening (NC) the contact³.

Normally, the **Technical Alarm** is not repeated, but it is possible to activate the repetition of the technical alarms by setting the solder bridge **B3**. In this case, the **Technical Alarm** is repeated about every 2 minutes until a call acknowledgement takes place, up to a maximum of 20 minutes.

The **Technical Alarm** is signalled in the same way as the **Call for Help** on the signal lamp and the relays^(o).

² See chapter **Mode of Operation** (page 14)

³ See chapter **Configuration and Wiring** (page 8)

Caregiver Arrival^(o)

The **Caregiver Arrival** message is triggered when the Caregiver inserts the coded key in the connector on the side of the housing (**J7**), when entering the room.

Up to four categories of Caregivers may be identified by using different keys.

The **Caregiver Arrival** message is not repeated.

Insertion of the coded key is signalled by green flashes on the signal lamp and by activating the **Staff Presence** relay^(o)

Note:

In some circumstances the device may react differently when the coded key is inserted⁴.

Caregiver Departure^(o)

The **Caregiver Departure** message is triggered when the Caregiver removes the coded key from the housing, when leaving the room.

The **Caregiver Departure** message is not repeated.

Removing the coded key is signalled by switching off the green flashes on the signal lamp and by releasing the **Staff Presence** relay^(o)

Note:

In some circumstances the device may react differently when the coded key is removed⁴.

Daily Message and Battery Low Message

The radio transmission can be checked by way of the **Daily Message** which is automatically sent about every 24 hours. When the battery voltage is too low, the Daily Message is replaced by a **Battery Low** Message.

The transmission of the Daily Message can be disabled by setting the solder bridge **B5** (this does not influence the transmission of the **Battery Low** message).

Error Message

The **Error Message** is sent every 2 minutes if the device has detected a general dysfunction, or if one of the following triggering devices remains in its activated position for up to 4 minutes:

- Call for Help
- Acknowledgement button
- Call for Assistance
- Call for Help 2

Note:

The device connected to the **Technical Alarm** input is allowed to remain in the activated position; without transmission of the Error Message.

⁴ See chapter **Mode of Operation** (page 14)

General Data

HOUSING

Plastic case ASA	
for wall mount (L x H x P)	133 x 82 x 26 mm
Weight	about 200 g

BATTERY POWER SUPPLY:

Lithium battery	Type CR 2450 (3 V)
Current consumption in stand-by mode	max 10 μ A
Peak current consumption at alarm transmission	max 30 mA
Battery autonomy	2 years

EXTERNAL POWER SUPPLY

	+12-24 VDC
Current consumption in stand-by mode	max 10 mA
Peak current consumption at alarm transmission	max 40 mA

RADIO TRANSMISSION PART

Transmission frequency	434,01 MHz
Channel	1
Modulation	FSK (F1D)
Duration of transmission	<1 s
Stability (-10°C ... +70°C)	\pm 10 ppm

OUTPUT RELAY^(o)

Max. switching power	125 VA / 60 W
Max. switching voltage	48 V DC
Max. switching current	2 A

CODED KEYS

Key with code 07	R = 3.3 k Ω
Key with code 08	R = 4.7 k Ω
Key with code 09	R = 10 k Ω
Key with code 10	R = 22 k Ω

Technical data is subject to changes.

Mode of Operation

During operation, the Wall transmitter *NCall N46* can be set to one of six following states:

State	Description
Stand-by	No call is being processed.
Alarm without Staff Presence	The patient has triggered a Call for Help but the Care Personnel has not yet responded.
Alarm with Staff Presence	The Care Personnel has responded after a Call for Help.
Assistance without Staff Presence	A Call for Assistance has been triggered without the presence of the Care Personnel.
Assistance with Staff Presence	A Call for Assistance has been triggered in the presence of the Care Personnel.
Staff Presence without alarm	The Care Personnel has responded without the previous call from the patient.

Each state is indicated by the signal lamp and by a special position of the output relays^(o).

It is possible to configure⁵ the Wall Transmitter *NCall N46* in order that:

- the Call for Assistance can be triggered only if the Care Personnel is present.
- the device does not manage the Staff Presence. This mode makes sense only if the output relays^(o) are not provided or not used.

The transition to a specific condition depends on the device configuration, of its actual condition and of the action completed; as shown on the following charts.

Note:

When the Wall Transmitter *NCall N46* is powered by an external power supply, the signal lamps follow the state of the corresponding relay outputs.

Legend of Illustrations:

A 	The contact of the Call for Help relay ^(o) is activated
A 	The contact of the Call for Help relay ^(o) is released
A 	The contact of the Call for Help relay ^(o) opens and closes alternately
P 	The contact of the Staff Presence relay ^(o) is activated
P 	The contact of the Staff Presence relay ^(o) is released
	The signal lamps are off
 colour	A signal lamp lights up in the indicated colour
 colour	A signal lamp "flashes" in the indicated colour
 colour	A signal lamp generates "double-flashes" in the indicated colour
	Transmission of a radio message

⁵ See chapter **Configuration and Wiring** (page 8)

Staff Presence Processing Activated

State before action	Stand-by A P 	Alarm without Staff Presence A P red	Alarm with Staff Presence A P green	Assistance with Staff Presence A P green	Assistance without Staff Presence A P red	Staff Presence without alarm A P green
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State after a Call for Help	Alarm without Staff Presence A P red ↗ Call for Help	Alarm without Staff Presence A P red ↗ Call for Help	Assistance with Staff Presence A P green ↗ Call for Assistance	Assistance with Staff Presence A P green ↗ Call for Assistance	Assistance without Staff Presence A P red ↗ Call for Assistance	Alarm with Staff Presence A P green ↗ Call for Help
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State after a call acknowledgement	Staff Presence without alarm A P green ↗ Acknowledgement	Alarm with Staff Presence A P green ↗ Acknowledgement	Stand-by* A P ↗ Acknowledgement	Alarm with Staff Presence A P green ↗ Acknowledgement	Alarm with Staff Presence A P green ↗ Acknowledgement	Stand-by* A P ↗ Acknowledgement
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State after a Call for Assistance	Assistance without Staff Presence ** A P red ↗ Call for Assistance**	Assistance without Staff Presence ** A P red ↗ Call for Assistance**	Assistance with Staff Presence A P green ↗ Call for Assistance	Assistance with Staff Presence A P green ↗ Call for Assistance	Assistance without Staff Presence A P red ↗ Call for Assistance	Assistance with Staff Presence A P green ↗ Call for Assistance
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Technical Data

State before action	Stand-by A P 	Alarm without Staff Presence A P 	Alarm with Staff Presence A P 	Assistance with Staff Presence A P 	Assistance without Staff Presence A P 	Staff Presence without alarm A P
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State after coded key insertion ^(o)	Staff Presence without alarm A P 	Alarm with Staff Presence A P 	Alarm with Staff Presence A P 	Assistance with Staff Presence A P 	Alarm with Staff Presence A P 	Staff Presence without alarm A P
Radio Message	Staff arrival with code	Staff arrival with code	Staff arrival with code	Staff arrival with code	Staff arrival with code	Staff arrival with code

State after coded key removal ^(o)	Stand-by A P 	Not possible	Stand-by*** A P 	Assistance without Staff Presence A P 	Not possible	Stand-by A P
Radio Message	Staff departure with code		Staff departure with code	Staff departure with code		Staff departure with code

* There is no state change when the coded key is inserted.

If the function **Assistance only in case of Staff Presence is activated and the *NCall N46* is not in **Staff presence** state, the Call for Assistance causes a state **Alarm without Staff Presence** and a **Call for Help** radio message.

*** If the call has not been acknowledged, removing the key will turn the *NCall N46* in **Alarm without Staff Presence** state.

Calls for Help 2 and Technical Alarms:

Actions **Calls for Help 2** and **Technical Alarms** are indicated in the same way as a **Call for Help**, but the criterion transmitted by the radio message corresponds to the triggered action.

Staff Presence Processing Disabled

State before action	Stand-by A  P  	Alarm without Staff Presence A  P   red			Assistance without Staff Presence A  P   red	
State after a Call for Help	Alarm without Staff Presence A  P   red ⚡ Call for Help	Alarm without Staff Presence A  P   red ⚡ Call for Help			Assistance without Staff Presence A  P   red ⚡ Call for assistance	
State after a call acknowledgement	Stand-by A  P   ⚡ Acknowledgement	Stand-by A  P   ⚡ Acknowledgement			Stand-by A  P   ⚡ Acknowledgement	
State after a Call for Assistance	Assistance without Staff Presence * A  P   red ⚡ Call for Assistance*	Assistance without Staff Presence * A  P   red ⚡ Call for Assistance*			Assistance without Staff Presence A  P   red ⚡ Call for Assistance	

Technical Data

State before action	Stand-by A P 	Alarm without Staff Presence A P red			Assistance without Staff Presence A P red	
State after coded key insertion ^(o)	Stand-by A P Radio Message ⚡ Staff arrival with code	Alarm without Staff Presence A P red Radio Message ⚡ Staff arrival with code			Assistance without Staff Presence A P red Radio Message ⚡ Staff arrival with code	
State after coded key removal ^(o)	Stand-by A P Radio Message ⚡ Staff departure with code	Alarm without Staff Presence A P red Radio Message ⚡ Staff departure with code			Assistance without Staff Presence A P red Radio Message ⚡ Staff departure with code	

* If the function **Assistance only in case of Staff Presence** is activated, the Call for Assistance causes a state **Alarm without Staff Presence** and a **Call for Help** radio message. This configuration cancels the processing of the **Calls for Assistance**.

Calls for Help 2 and Technical Alarms:

Actions **Calls for Help 2** and **Technical Calls** are indicated in the same way as **Call for Help**, but the criterion transmitted by the radio message corresponds to the triggered action.

EC Declaration of Conformity

English :

We declare that this product complies with the requirements of the EC Radio & Telecommunications Terminal Equipment R&TTE Directive 1999/5/EC, specifically with requirements detailed below. All modifications made without our agreement will invalidate this declaration.

Type of product :

Wall-transmitter

Product or component reference :

Deutsch :

Hiermit erklären wir, dass das nachfolgend bezeichnete Erzeugnis aufgrund seiner Konzipierung und Bauart den einschlägigen grundlegenden Anforderungen der EU R&TTE Richtlinie 1999/5/EU, insbesondere nachfolgend genannten Richtlinien, entspricht. Bei einer nicht mit uns abgestimmten Änderung des Erzeugnisses verliert diese Erklärung ihre Gültigkeit.

Bezeichnung des Erzeugnisses :

Mehrkriterien-Funkmelder

Gerätetyp/Bezeichnung der Einzelkomponenten :

Ncall N46

Relevant EC Standards:

Einschlägige EU-Richtlinien:

Français :

Nous déclarons que ce produit est, dans sa conception et construction, conforme aux exigences de la directive R&TTE 1999/5/UE de l'Union Européenne, spécifiquement selon les directives et normes détaillées ci-dessous. Toute modification apportée au produit sans notre approbation annule cette déclaration.

Type de produit :

Emetteur multicritères

Dénomination de l'appareil ou des composants :

LDV 73/23/EEC

EMC 89/336/EEC

Directives normatives EC :

Applied Harmonised Standards:

Angewandte harmonisierte Normen:

Normes harmonisées appliquées :

EN 60950 A1-A4

EN 50130-4

EN 55022 class 2

ETS 300220-1

Notified Body:

Benannte Stelle:

Organisme notifié:

Under the manufacturer responsibility:

Diese Erklärung wird verantwortlich für den Hersteller:

Sous la responsabilité du producteur:

TELECTRONIC SA, rue du Nord 176, CH-2300 La Chaux-de-Fonds

This conformity statement is declared by:

Abgegeben durch:

La conformité est déclarée par:

D. Schwendener
Product Manager

P. A. Nicati
Managing Director

Place:

La Chaux-de-Fonds.....

Place:

La Chaux-de-Fonds.....

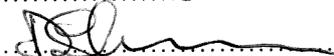
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