

Tele Radio T20/T60

Manual



ENGLISH

Product description	258
Preparations	259
Codes	260
Receiver	261
Programming the receiver	262
Transmitter T20	272
Transmitter T60	274
Receiver T60	279
Programming of Standard/Robust Receiver	281
Supplement for the 460 system	284
Troubleshooting chart	287
Servicing and maintenance	288

PRODUCT DESCRIPTION

IMPORTANT!

In order to get the best out of your system it is important you take the time to read through the manual before you start to install/program your equipment.

Transmitters and receivers that are to be used together must be co-coded prior to use.

SAFETY

⚠ Ensure that:

- Appropriate personnel receive a review of the system's functions before it is used.
- Only appropriate personnel have access to the transmitter.
- The transmitter is not left unsupervised.
- The operator always has a complete view of the equipment when it is radio controlled.

GENERAL INFORMATION

Frequency modulation

The system works at the frequency 433.92 MHz and uses frequency modulation, generally known as FM. The main benefit of using FM instead of the more common AM (amplitude modulation), is that FM is less sensitive to the electrical interference generated in computers, electric motors, etc.

Range

The normal range for the transmitter in an interference-free environment is about 50-100 m.

Objects positioned between the transmitter and receiver antenna, in particular large metal objects, can affect the range in a very unpredictable manner, depending on how the radio signals are distributed.

The influence of other radio transmitters on the same frequency in the vicinity also affects the range. Due to these circumstances it is difficult to give any general advice other than that free visibility between the transmitter and the receiver should produce the best range with an optimal signal.

PREPARATIONS

The receiver should be placed:

- As far as possible, protected from the wind and weather.
- With cable glands facing down.

Placement of the receiver's antenna:

- Place the antenna high above the ground.
- The antenna should not be in the vicinity of metal objects such as electrical cables and other antennas.

ASSEMBLY AND INSTALLATION

1. Select a suitable location for assembly of the receiver and antenna.
2. Connect the operating voltage to the receiver.
3. Co-programme the transmitter and receiver.
4. Connect the required functions to be controlled via the receiver.
 - Follow the instructions in the chapters "RECEIVER" and "PROGRAMMING THE RECEIVER".

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CODES

Transmitters and receivers that are to be used together must be co-coded prior to use.

Transmitter System T60:

The transmitter and receiver in system T60 can be programmed in two different ways.

Either with **an adjustable or fixed individual code.**

Each transmitter supplied has a fixed, individual code that cannot be altered.

All transmitters are also equipped with a code switch that comprises 10 three-position switches, which makes it possible to choose between 59,049 adjustable codes. For more detailed information please refer to the "programming the receiver" section.

Transmitter System T20:

Each transmitter supplied has a fixed, individual code that cannot be altered.

Compatible with system 460:

Systems T60 and T20/T60 are compatible with Tele Radio's system 460.

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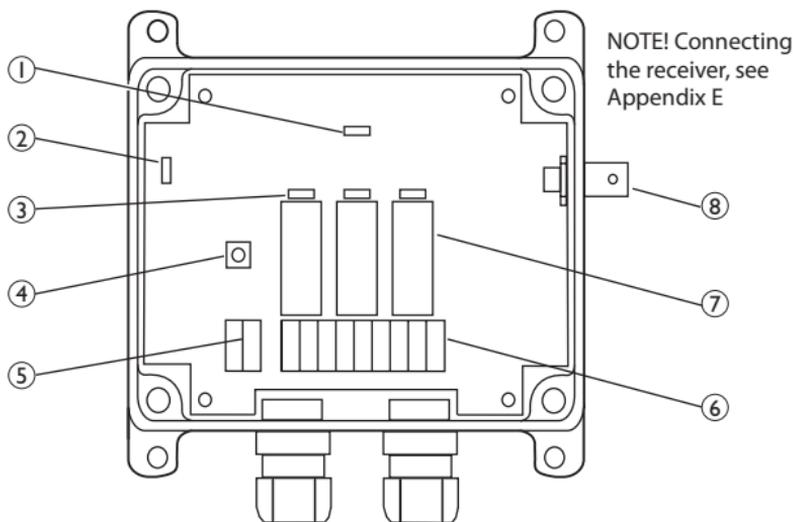
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RECEIVER

STANDARD RECEIVER T20RX-03ASL

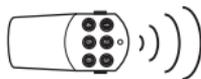
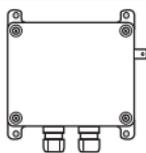
Operating voltage:	12-30 V AC/DC
Power consumption:	25-75 mA
Size:	132 x 133 x 45 mm
Protection:	IP 65
Climatic conditions:	-30°C till +70°C Humidity 10-90%
Transmitter compatibility:	T20, T60, 460



- | | |
|------------------------|--|
| 1. Green LED | LED lights up when the receiver receives a radio signal. |
| 2. Yellow LED | LED lights up when the receiver has the correct operating voltage. |
| 3. Red LED | LED lights up above the relay that is actuated and shows the programming status. |
| 4. Button | Button for self-instruction / erasing. |
| 5. Connection terminal | Connection terminal for voltage. |
| 6. Connection terminal | Connection terminal for relays. |
| 7. Relay | Three separate relays. Max load over relay is 8 A for resistive loads. |
| 8. BNC | BNC contact for the antenna. |

PROGRAMMING THE RECEIVER

T20RX-03ASL SELF-INSTRUCTING THE TRANSMITTER CODE



Storing codes

60 transmitters can be stored in the receiver.

The number in brackets below refers to the summary diagram in section "T20RX-03ASL"

1. Remove the receiver cover (four screws).
2. Press the receiver's button for self-instruction (4) once. The red LEDs (3) light up above the relays. The receiver is open for code registration for 6 seconds.

NOTE! The next stage must be carried out within 6 seconds.

3. Press button 1 on the transmitter to enter the transmitter's fixed code in the receiver's memory. (Button 1 controls relay 1, button 2 controls relay 2 and button 3 controls relay 3.)

Alternative button functions:

For a transmitter with four or six button functions, button four can instead be used to control relay 1, button 5 relay 2, etc.

In such instances, press button 4 in step 3 above.

4. To program a T60 adjustable code or 460-code; press the receiver's self-instruction (4) button twice. NOTE, you must set a unique code combination on your transmitter in order for this programming mode to work. In other cases the receiver learns the transmitter's unique code.

Confirming self-instruction of the transmitter's code

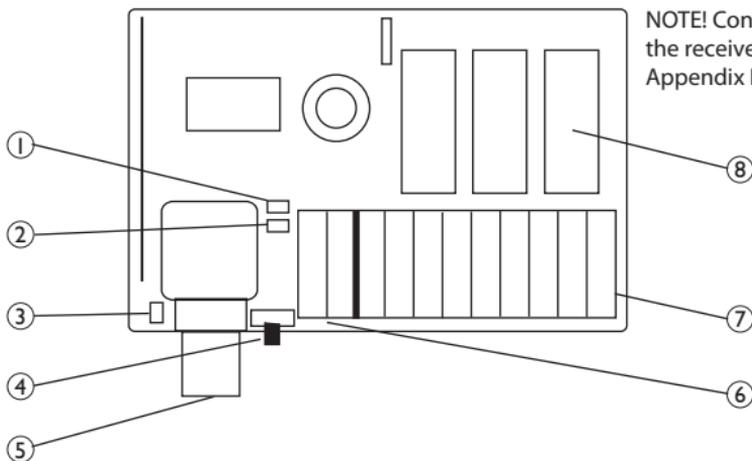
5. Check that the transmitter's code is stored by test-pressing the transmitter's function buttons. The green LED (1) lights up when the receiver receives the signal and the red LED above each relay lights when the relay is actuated.

Erasing codes

1. Press and hold the button for self-instruction (4) for at least 6 seconds. The red LEDs (3) light up when the button is pressed and go off once the memory has been erased. All programmed transmitter codes are erased at the same time.

DIN RECEIVER T20/T60RX-03ADL

Operating voltage:	12-30 V AC/DC
Power consumption:	40-80 mA
Size:	85 x 62 x 30 mm
Protection:	IP 20
Climatic conditions:	-30°C till +70°C Humidity <95%
Transmitter compatibility:	T20, T60, 460



- | | |
|------------------------|--|
| 1. Yellow LED | LED lights up when the receiver has the correct operating voltage. |
| 2. Red LED | LED shows programming status. |
| 3. Green LED | LED lights up when the receiver receives a radio signal. |
| 4. Button | Button for self-instruction / erasing. |
| 5. BNC | BNC contact for the antenna. |
| 6. Connection terminal | Connection terminal for voltage. |
| 7. Connection terminal | Connection terminal for relays. |
| 8. Relay | Three separate relays. Max load over relay is 8 A for resistive loads. |

NOTE! In the event of simultaneous relay function, the following priority applies:

Relay 1+2:	Relay 2 has priority
Relay 2+3:	Relay 2 has priority
Relay 1+2+3:	Relay 2 has priority
Relay 1+3:	No function

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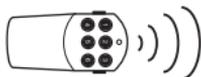
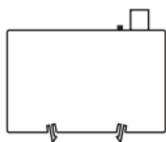
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Storing codes

60 transmitters can be stored in the receiver.

The number in brackets below refers to the summary diagram in section "T20/T60RX-03ADL"

1. Press the receiver's button for self-instruction (4) once. The red LED (2) lights up. The receiver is open for code registration for 6 seconds.
NOTE! The next stage must be carried out within 6 seconds.

2. Press button 1 on the transmitter to enter the transmitter's fixed code in the receiver's memory. (Button 1 controls relay 1, button 2 controls relay 2 and button 3 controls relay 3.)
 - The red LED flashes three times.

Alternative button functions:

For a transmitter with four or six button functions, button four can instead be used to control relay 1, button 5 relay 2, etc.

In such instances, press button 4 in step 2 above.

3. To program a T60 adjustable code or 460-code; press the receiver's self-instruction (4) button twice. NOTE, you must set a unique code combination on your transmitter in order for this programming mode to work. In other cases the receiver learns the transmitter's unique code.

Confirming self-instruction of the transmitter's code

4. Check that the transmitter's code is stored by test-pressing the transmitter's function buttons.

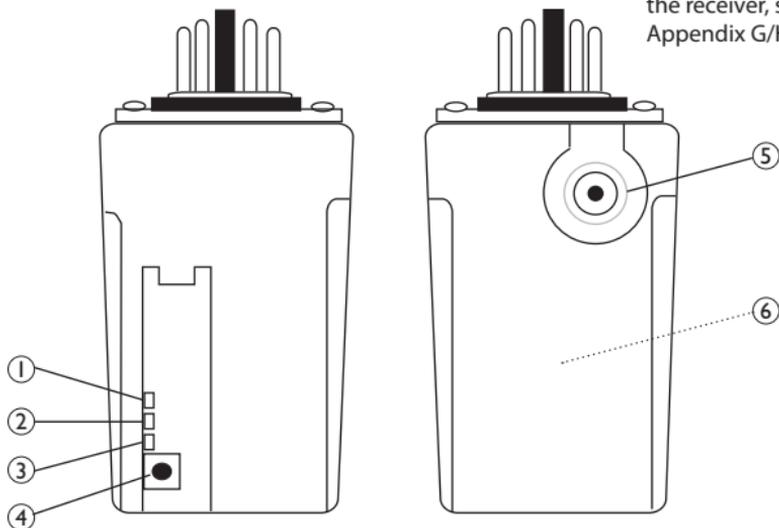
Erasing codes

1. Press and hold the button for self-instruction (4) for at least 6 seconds. The red LED (2) lights up when the button is pressed and goes off once the memory has been erased. All programmed transmitter codes are erased at the same time.

RECEIVER PLUG-IN T20/T60RX-01APL

Operating voltage:	12-30 V AC/DC
Power consumption:	40-80 mA
Size:	70 x 58 x 40 mm
Protection:	IP 20
Climatic conditions:	-30°C till +70°C Humidity <95%
Transmitter compatibility:	T20, T60, 460

NOTE! Connecting the receiver, see Appendix G/H



- | | |
|---------------|--|
| 1. Red LED | LED shows programming status. |
| 2. Yellow LED | LED lights up when the receiver has the correct operating voltage. |
| 3. Green LED | LED lights up when the receiver receives a radio signal. |
| 4. Button | Button for self-instruction / erasing. |
| 5. BNC | BNC contact for the antenna. |
| 6. Relay | Max load over relay is 8 A for resistive loads. |

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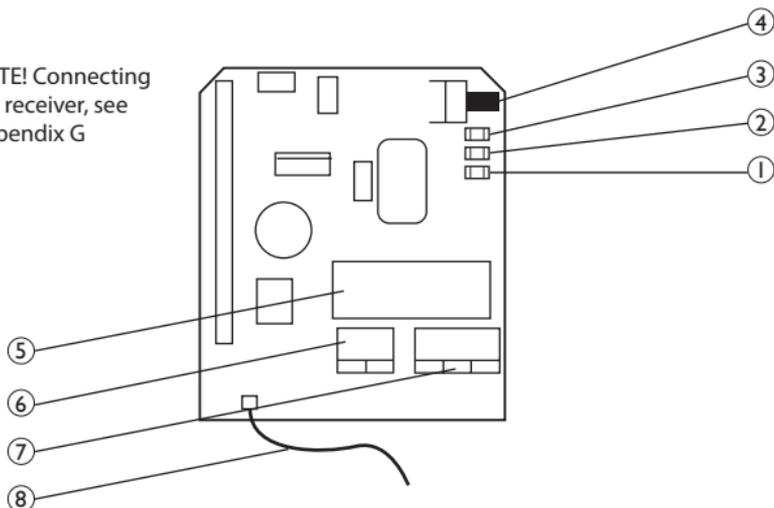
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RECEIVER T20/T60RX-01ARL

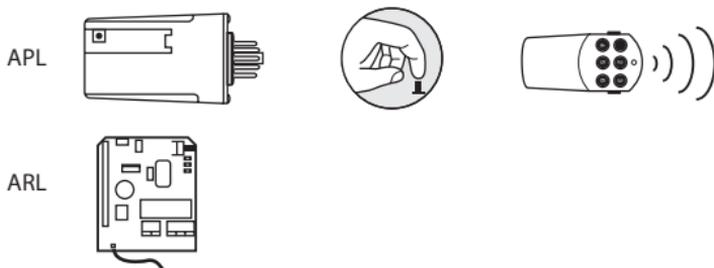
Operating voltage:	12-30 V AC/DC
Power consumption:	40-80 mA
Dimensions ARL:	54 x 63 x XX mm
Climatic conditions:	-30°C till +70°C
	Humidity <95%
Transmitter compatibility:	T20, T60, 460

NOTE! Connecting the receiver, see Appendix G



- | | |
|------------------------|--|
| 1. Red LED | LED shows programming status. |
| 2. Yellow LED | LED lights up when the receiver has the correct operating voltage. |
| 3. Green LED | LED lights up when the receiver receives a radio signal. |
| 4. Button | Button for self-instruction / erasing. |
| 5. Relay | Max load over relay is 8 A for resistive loads. |
| 6. Connection terminal | Connection terminal for voltage. |
| 7. Connection terminal | Connection terminal for relay. |
| 8. Antenna | Wire antenna. |

T20/T60RX-01APL, AND T20/T60RX-01ARL SELF-INSTRUCTION OF TRANSMITTER'S CODE



Storing codes

60 transmitters can be stored in the receiver.

The number in brackets below refers to the summary diagram for each receiver.

1. Press the receiver's button for self-instruction (4) once. The red LED (1) lights up. The receiver is open for code registration for 6 seconds.
NOTE! The next stage must be carried out within 6 seconds.
2. Press the transmitter button to be used to control the relay.
- The red LED flashes three times.
3. To program a T60 adjustable code or 460-code; press the receiver's self-instruction (4) button twice. NOTE, you must set a unique code combination on your transmitter in order for this programming mode to work. In other cases the receiver learns the transmitter's unique code.

Confirming self-instruction of the transmitter's code

4. Check that the transmitter code is stored by test-pressing the function button stored in the receiver.

Erasing codes

1. Press and hold the button for self-instruction (4) for at least 6 seconds. The red LED (1) lights up when the button is pressed and goes off once the memory has been erased. All programmed transmitter codes are erased at the same time.

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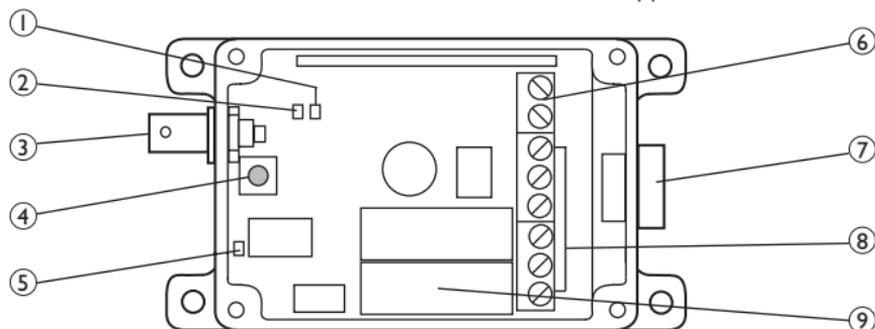
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RECEIVER T20RX-02AKL

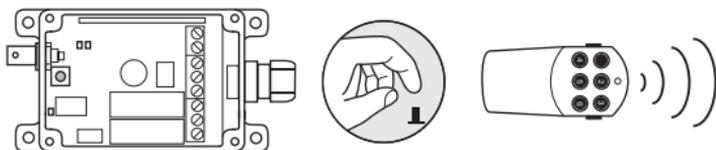
Operating voltage:	12-30 V AC/DC
Power consumption:	30-80 mA
Size:	54 x 96 x 37 mm
Protection:	IP 54
Climatic conditions:	-30°C till +70°C Humidity 10-90%
Transmitter compatibility:	T20

NOTE! Connecting the receiver, see Appendix I



- | | |
|------------------------------|--|
| 1. Yellow LED | LED lights up when the receiver has the correct supply voltage. |
| 2. Green LED | LED lights up when the receiver receives a radio signal. |
| 3. BNC | BNC contact for the antenna. |
| 4. Push-button | Programming relay function and transmitter. |
| 5. Red LED | LED indicates during programming. |
| 6. AC/DC connection terminal | Connection terminal for voltage. |
| 7. Bushing | Cable coupling. |
| 8. Relay connection terminal | Connection terminal for relays, |
| 9. Relay | Two separate relays. Max last över relä är 8 A vid resistiv loads. |

T20RX-02AKL SELF-INSTRUCTION OF TRANSMITTER'S CODE



The receiver can be programmed to accept up to 15 different transmitters for relay 1 and 15 for relay 2, where each transmitter has a unique ID code.

RELAY FUNCTION IN THE RECEIVER

Choice of relay function

Three different functions for the two relays in the receiver can be selected when instructing a transmitter.

- A The transmitter's button 1 activates relay 1 and button 2 activates relay 2.
- B Any button on the transmitter activates relay 1.
- C Any button on the transmitter activates relay 2.

See the table on the next page for a detailed description.

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Function description

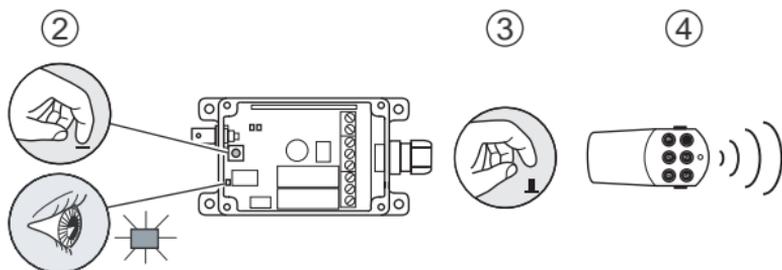
Select function in the table.

	Function	Red LED	The receiver's button is pressed and held*	Instruct the transmitter with button no.
A	The transmitter's button 1 activates relay 1 and button 2 activates relay 2	Continuous glow	0.3 to 2 sec.	Button 1 or button 2
B	Any button on the transmitter activates relay 1	Flashes slowly	2 to 4 sec.	Select the button you are going to use
C	Any button on the transmitter activates relay 2	Flashes quickly	4 to 6 sec.	Select the button you are going to use
D	Stopping instruction	Continuous glow	6 to 8 sec.	–

* During the time the receiver's button is held down, the red LED changes to indicate the current function mode of the programming step.

Storing a transmitter's ID code

1. Remove the receiver cover (four screws).



2. Press and hold the receiver's self-instruction button. Note that the red LED changes.
3. Release the button when the red LED lights/flashes for the desired function (according to the description in the table above).
4. Press the transmitter's button that is to be used. The red LED flashes 3 times. The transmitter's ID code is now stored in the receiver.
5. Check that the transmitter's code is stored by pressing the transmitter's function buttons and registering whether the selected relay is actuated. The green LED lights when the receiver receives the signal. When one or more transmitters are stored, the red LED flashes continuously with double flashes.

Stopping instruction

Stop instruction of the transmitter by pressing and holding the receiver's button for 6 to 8 seconds (function D in the table).

Deleting all stored transmitters

Delete all the stored transmitters' ID codes by pressing and holding the receiver's button for more than 8 seconds (function E in the table).

TRANSMITTER T20

HANDHELD TRANSMITTER T20TX-0XNKL

Protection:	IP 65
Climatic conditions:	-20°C till +55°C
Humidity:	10-90%

Radio transmission

Transmission continues during the time each function button is held down and is interrupted once the button is released. The red LED flashes while the button is pressed.



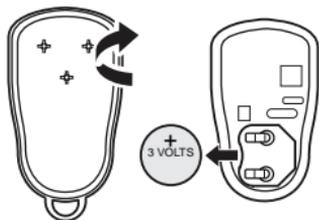
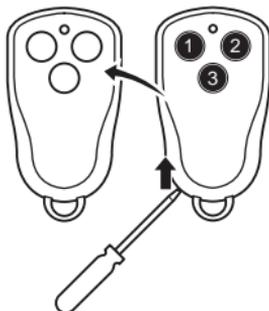
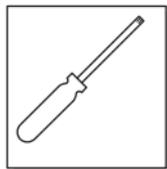
T20TX-01NKL
1 button function



T20TX-03NKL
3 button functions

71x38x12 mm

Battery replacement



3V, type CR2032.

HANDHELD TRANSMITTER T20TX-0XSHL

Protection: IP 40
Climatic conditions: -20°C till +55°C
Humidity 10-90%

Radio transmission

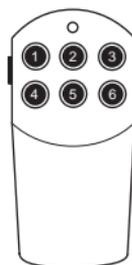
Transmission continues during the time each function button is held down and is interrupted once the button is released. The red LED flashes while the button is pressed.



T20TX-01SHL
1 button function



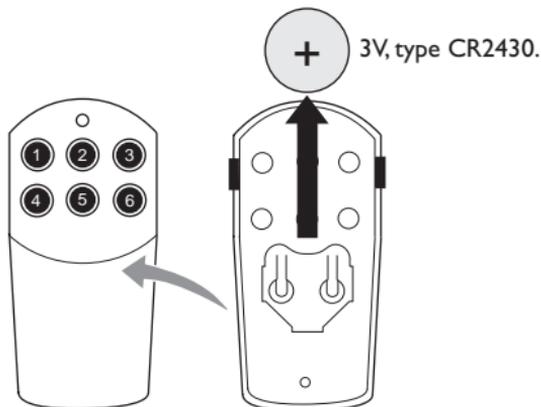
T20TX-03SHL
3 button functions



T20TX-06SHL
6 button functions

Size: 84x40x16 mm

Battery replacement



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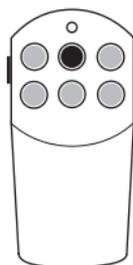
TRANSMITTER T60

HANDHELD TRANSMITTER T60TX-0XSHL

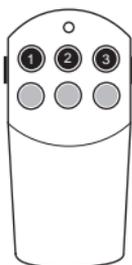
Protection: IP 40
Climatic conditions: -20°C till +55°C
Humidity 10-90%

Radio transmission

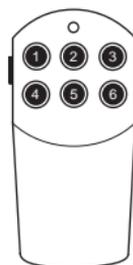
Transmission continues during the time each function button is held down and is interrupted once the button is released. The red LED flashes while the button is pressed.



T20TX-01SHL
1 button function

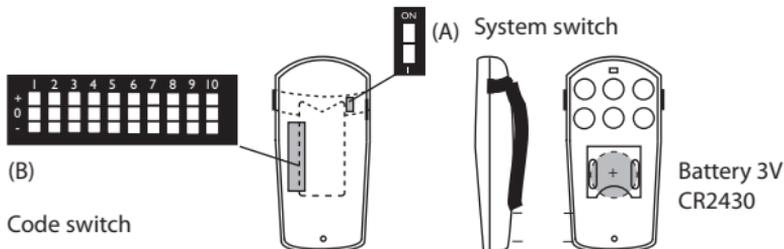


T20TX-03SHL
3 button functions



T20TX-06SHL
6 button functions

Size: 84x40x16 mm



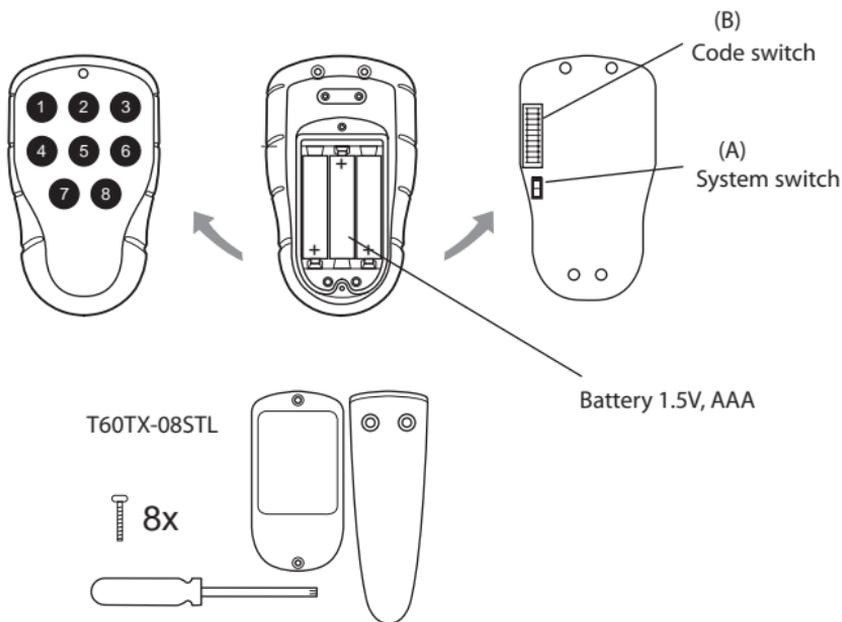
Battery 3V
CR2430

T60TX-0XSTL

Protection: IP 65
Climatic conditions: -20°C till +55°C
Humidity 10-90%

Radio transmission

Transmission continues during the time each function button is held down and is interrupted once the button is released. The red LED flashes while the button is pressed.



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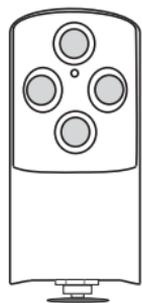
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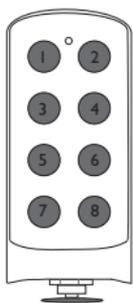
T60TX-0XYZL

Protection: IP 54
 Climatic conditions: -20°C till +55°C
 Humidity 10-90%

* X = Number of buttons
 Y = Transmitter type (S=9V, C=Chargeable, E=Chargeable + Stop)
 Z = Enclosure type

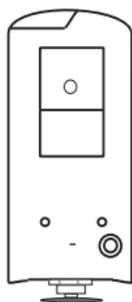


T60TX-04EDL

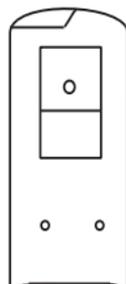


T60TX-08ERL

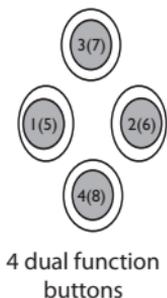
Size: 160x70x35 mm



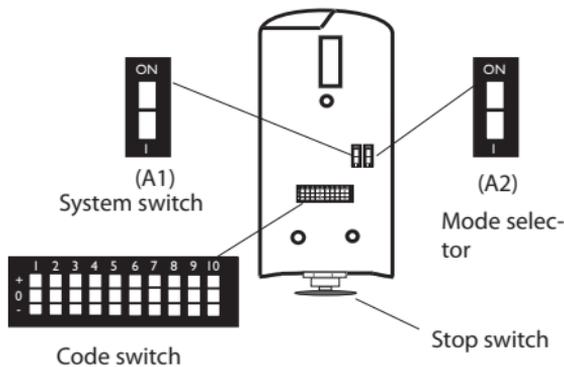
Rear side
 Rechargeable battery
 and stop switch



Rear side 9V



4 dual function
 buttons



(A1)
 System switch

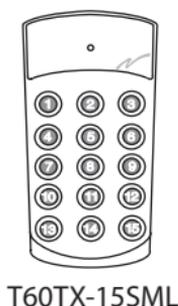
(A2)
 Mode selector

Code switch

Stop switch

T60TX-15SML/T60TX-15DML

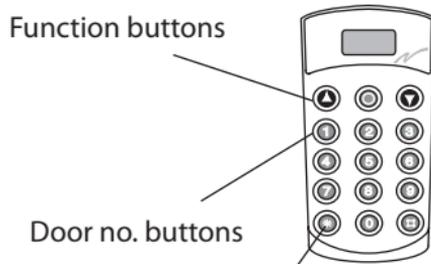
Protection: IP 54
Climatic conditions: -20°C till +55°C
Humidity 10-90%



T60TX-15SML



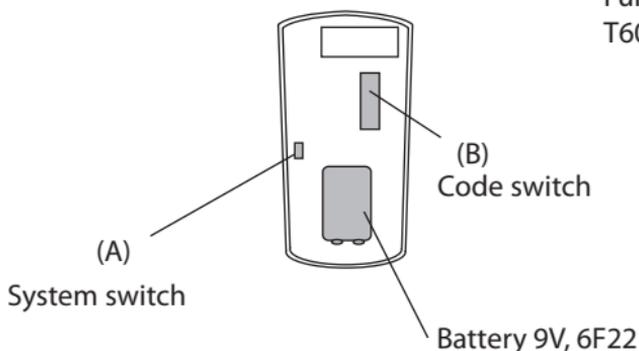
T60TX-15DML



Function buttons

Door no. buttons

Function shortcut
T60TX-15DML



(A)
System switch

(B)
Code switch

Battery 9V, 6F22

***NOTE!** When resetting the system switch, the transmitter must be switched off.

Shortcut for one function (T60TX-15DML):

The * and # buttons are used to program a shortcut (1 selection per button) for a particular function. To program a shortcut set the door you wish to save, press * or # for more than 3 seconds. (The display flashes.) The door has now been saved as a shortcut. To access the shortcut, press the relevant button once.

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System switch (A1):

With (A1) in the ON position, the transmitter communicates with system T60, and in position I (OFF) it communicates with system 460. When resetting, the transmitter must be switched off.

Mode selector (A2):

(only T60TX-0xERL & T60TX-04EDL)

With (A2) in the ON position, continuous transmission is activated and in position I (OFF) normal transmission is activated. When resetting, the transmitter must be switched off. The stop switch must be pulled out and buttons 1 and 2 pressed and held for at least 0.5 s with continuous transmission. In order to interrupt continuous transmission, the stop switch must be pressed in.

With (A2) in the OFF position the stop switch acts as a power switch.

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RECEIVER T60

T60RX-0XYSL

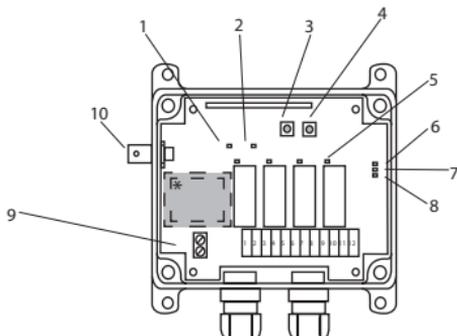
Operating voltage: 12-28 V AC/DC, 48 / 115 / 230 V AC

Size: 132 x 133 x 45 mm

Protection: IP 65

Transmitter compatibility: T20, T60, 460

NOTE! Connecting the receiver, see Appendix D



1. Yellow LED. Lights up when the receiver has the correct supply voltage.
2. Green LED. Lights up when the receiver receives a radio signal.
3. Function button.
4. Select button.
5. Red LED. Each relay is fitted with an LED that lights up when the relay is actuated.
6. Red LED.
 - 6.1. Lights up. - Learning of code possible.
 - 6.2. Flashes. - Adjustable code learnt (1-10).
 - 6.3. Flashes twice. - One or more fixed, individual codes have been learnt.
7. Yellow LED. Flashes when one of the relays activates the changeover function.
8. Green LED. Flashes when one of the relays is interlocked.
9. Connection terminal for voltage.
10. BNC contact for the antenna.

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T60RX-0XYSL

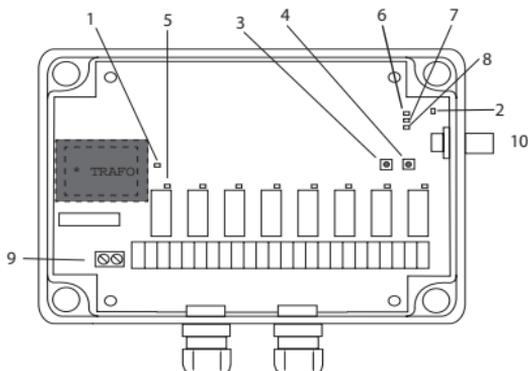
Operating voltage: 12-28V AC/DC, 48 / I I 5 / 230V AC

Size: 175 x 125 x 45 mm

Protection: IP 65

Transmitter compatibility: T20, T60, 460

NOTE! Connecting the receiver, see Appendix D



1. Yellow LED. Lights up when the receiver has the correct supply voltage.
2. Green LED. Lights up when the receiver receives a radio signal.
3. Function button.
4. Select button.
5. Red LED. Each relay is fitted with an LED that lights up when the relay is actuated.
6. Red LED.
 - 6.1. Lights up. - Learning of code possible.
 - 6.2. Flashes. - Adjustable code learnt (1-10).
 - 6.3. Flashes twice. - One or more fixed, individual codes have been learnt.
7. Yellow LED. Flashes when one of the relays activates the changeover function.
8. Green LED. Flashes when one of the relays is interlocked.
9. Connection terminal for voltage.
10. BNC contact for the antenna.

PROGRAMMING OF STANDARD/ROBUST RECEIVER

The receiver's function and select buttons are used to program the receivers. The function button is used to scroll through the different program options. The select button is used to confirm the selection of the program option.

In the first position it is possible to move between the following options by pressing the function button.

RED Diode (no. 6) - Learning the transmitter's code

YELLOW Diode (no. 7) - Setting the changeover/instantaneous function

GREEN Diode (no. 8) - Setting the interlock function

When one of the above program options has been selected by using the select button, the function button is used to move to the relay/relays to be programmed. The red diodes above the relays indicate which relay/relays are selected. Refer to respective programming sequences.

Important!

Note that the transmitter and receiver can be programmed together in two different ways. Either with an adjustable code or a fixed individual code.

It is very important that a unique code is programmed using the transmitter's dipswitches when you choose to program with an adjustable code. Not changing the switch can result in disturbances from other transmitters with the same code.

SELF-INSTRUCTION OF THE TRANSMITTER'S CODE

Fixed individual code

1. Select the program option "Self-instruction of code" (RED diode) using the function button.
2. Confirm using the select button. The red diodes above the relays light.
3. It is possible by using the function button to scroll to the relay/relays to be coded.
 - When an individual relay is selected it will be controlled by the transmitter button used during instruction.
 - When all relays are selected the system will function as normal. I.e. that is say, the transmitter's first button will control relay 1, button 2 will control relay 2, etc.
4. Confirm that the adjustable code and fixed individual code are to be

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programmed as follows:

- Press down the select button and release it after 0.3 - 4 seconds.
 - Press down the select button within 1 second and keep it held down for at least 1 second.
5. Program the transmitter's code by holding down the transmitter button until the red diode no. 6 flashes three times.

RED diode (no. 6) double flashes to indicate that the transmitter's adjustable and fixed individual code have been saved.

Adjustable code:

Ensure that the required adjustable code is set on the transmitter's code switch.

1. Select the program option "Self-instruction of code" (RED diode) using the function button.
2. Confirm using the select button. The red diodes above the relays light.
3. It is possible to scroll to the relay/relays to be coded using the function button.
 - When an individual relay is selected it will be controlled by the transmitter button used during instruction.
 - When all relays are selected the system will function as normal. I.e. that is say, the transmitter's first button will control relay 1, button 2 will control relay 2, etc.
4. Confirm that the adjustable code is to be programmed by pressing the select button once.
5. Program the transmitter's code by holding down the appropriate transmitter button until the red diode no. 6 flashes three times.

The red diode (no. 6) flashes as an indication that the transmitter's adjustable code has been saved.

Erasing codes

1. Select the program option "Self-instruction of code" (RED diode).
2. Confirm using the select button. The red diodes above the relays light.
3. Use the function button to scroll to the relay/relays to be erased.
4. Hold down the select button until the diode/diodes above the relays go out (at least 6 seconds).

PROGRAMMING THE CHANGEOVER / INSTANTANEOUS FUNCTION

The receiver's relays have an instantaneous function as standard.

1. Select the program option "changeover/instantaneous function" (YELLOW diode) using the function button.
2. Confirm using the select button. Red diode above relay 1 lights.
3. Select using the select button whether the relay should have a changeover function or not. The YELLOW diode lights when the changeover function is activated.
4. Move to the other relays by using the function button and select whether they should have a changeover or instantaneous function using the select button. Programming is complete when all the relays have been processed.

The YELLOW diode (7) starts to flash when one or more relays have a changeover function.

PROGRAMMING THE INTERLOCK FUNCTION

It is possible to select the following interlocking options:

- Interlocking between relays 1 and 2
- Interlocking between relays 3 and 4
- Interlocking: between relays 5 and 6 (Robust receiver)
- Interlocking: between relays 7 and 8 (Robust receiver)

1. Select the programming option "interlocking function" (GREEN diode) using the function button.
2. Confirm using the select button. The red diodes above relays 1 and 2 light.
3. Use the select button to select whether interlocking should be active or not. The GREEN diode lights when interlocking is active.
4. Move to the other relay-pairs using the function button and select using the select button whether interlocking should be active or not. Programming is complete when all the relay pairs have been processed.

The GREEN diode (no. 8) starts to flash when the interlocking function has been activated.

It is possible to effect interlocking between functions other than those above by programming the code for individual transmitter buttons on individual relays (see self-instruction of code). Example: When the transmitter buttons 1 respective 3 are programmed to relay 1 respective relay 2 you can practically bring about interlocking between function 1 and 3.

SUPPLEMENT FOR THE 460 SYSTEM

T60TX-15DML*

Type 401RVL9 and 403RVL9 transmitter with knob 1-10:

1. Check that the transmitter's system switch (A) is in position I (OFF).
2. Check that the code switch (B) 9 is in the 0 (zero) position.
3. Set code switch 10 to either the minus or plus position depending on whether you are using A or B coding on the old transmitter (robust transmitter).
4. Set the code on the transmitter's 4 first switches (code switches 1-4) which are identical to the receiver's (code switches 5-8 are not used).
5. Check that the relay is actuated when one of the transmitter's buttons is pressed in. The digits on the transmitter display correspond to the knob. Press down one figure followed by a transmitter button and verify that the corresponding relay is actuated. See code table I-10, Appendix A.

* Transmitter T60TX-15DML in system T60 is compatible with transmitter Type 401RVL9 and 403RVL9 in system 460.

(A)



(B)



Type 401RVL9 and 403RVL9 with knob 0-15:

1. Check that the transmitter's system switch (A) is in position I (OFF).
2. Check that the code switch (B) 9 is in the - (minus) position.
3. Set code switch 10 to either the minus or plus position depending on whether you are using A or B coding on the old transmitter (robust transmitter).
4. Set a code on the transmitter's 4 first switches (code switches 1-4) which are identical to the receiver's (code switches 5-8 are not used).
5. Check that the relay is actuated when one of the transmitter's buttons is pressed in.

See code table 0-15, Appendix B.

Type 460-93 transmitter:

1. Check that the transmitter's system switch (A) is in position I (OFF).
2. Check that the code switch (B) 9 is in the + (plus) position.
3. Set codes on the transmitter's 3 first switches (code switches 1-3) which are identical to the receiver's (code switches 4-8 are not used).
4. Check that the relay is actuated when one of the transmitter's buttons is pressed in.

See code table 460-93, Appendix C.

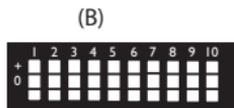
NOTE! When you select the door on the T60TX-15DML transmitter, a combination of the first digit and the last two digits is entered when it works together with a 460-93 transmitter.

Example: If you want to operate door A2 as set out in table A, then enter the combination 102, to operate door D3 as set out in table D, enter the combination 403, etc.

T60TX-15SML AND T60TX-0XSHL/-SOL/-STL

Type 401L-406L transmitter:

1. Check that the transmitter's system switch (A) is in position I (OFF).
2. Set codes on the transmitter's code switch (B) 1-8 identical to the existing receiver (9-10 not used).
3. Check that the relay is actuated when the same function button is pressed again.



Type 408RFLI9, 408RFLIC, 408RFLIE, 404RFLI9 transmitter:

Programming systems 460 and T60 for normal or continuous transmission.

1. Check that the transmitter's system switch (A1) is in position I (OFF) for system 460 or in position ON for system T60.
2. Check that the transmitter's mode selector (A2) is in position I (OFF) for normal or in position ON for continuous transmission.
3. Program the codes on the transmitter's code switches (B), 1-8 are identical with the receiver for system 460. For System T60, program the code on the transmitter code switches 1-10.
4. Check that the relay is actuated when the same function button is pressed again



TROUBLESHOOTING CHART

If the equipment does not work as it should, please check the points set out below.

INCORRECT FUNCTION	POSSIBLE CAUSES	ACTION
The receiver's red LED is not lit.	The receiver is connected incorrectly.	Check the receiver connection.
	Incorrect operating voltage to the receiver.	Check the supply voltage.
The receiver's green LED comes on when you are transmitting, but the relays are not activated.	The transmitter code is not stored in the receiver	Enter the transmitter code in the receiver
The receiver's green LED does not come on when you send.	The transmitter battery is dead.	Replace the battery.
	The transmitter is defective.	Contact your dealer.
The receiver's green LED comes on when you are not transmitting.	Somebody in the vicinity is transmitting on the same frequency.	Contact your dealer.
The transmitter's LED does not flash when you are transmitting.	The transmitter battery is dead.	Replace the battery.
	The transmitter is defective.	Contact your dealer.
The range is too short.	The transmitter battery is weak.	Replace the battery.
	The antenna cables are damaged or incorrectly installed.	Check the antenna connection.

NOTE! Please contact your dealer if you have followed these instructions but have not managed to get the wireless remote control system

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SERVICING AND MAINTENANCE

SERVICING

If your system requires servicing or support, or if you need to return an item or make a complaint, please contact your dealer.

When contacting a dealer regarding a servicing or support matter, please have the following information to hand: System, model and a description of the problem.

If you subsequently need to return an item or make a complaint, it would make matters easier if you could please include information regarding invoice number and delivery date.

NOTE! The warranty does not apply to faults that have arisen due to modifications to products, incorrect installation or abnormal use.

RECYCLING, SCRAPPING

T20 and T60 systems and any accessories and spare parts no longer in use should be scrapped and recycled according to local environmental regulations.

CE 0682 

CE Declaration of conformity for Tele Radio AB radio-controlled systems can be downloaded from <http://www.tele-radio.com>.

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APPENDIX A

CODING TABLES 1-10

Setting the code on the receiver for operations on the 460 system.
Type 401RVL9 and 403RVL9 transmitter with knob I-10.

Table I-10 Minus code (A)

	T5	T6	T7	T8
0(10)	0	0	0	0
1	0	0	0	-
2	0	0	-	0
3	0	0	-	-
4	0	-	0	0
5	0	-	0	-
6	0	-	-	0
7	0	-	-	-
8	-	0	0	0
9	-	0	0	-

Table I-10 Plus code (B)

	T5	T6	T7	T8
0(10)	0	0	0	0
1	0	0	0	+
2	0	0	+	0
3	0	0	+	+
4	0	+	0	0
5	0	+	0	+
6	0	+	+	0
7	0	+	+	+
8	+	0	0	0
9	+	0	0	+

APPENDIX B

CODING TABLES 0-15

Setting the code on the receiver for operations on the 460 system
(robust transmitter with control knob).

Minus code/Mincode (A)

	T5	T6	T7	T8
0	0	0	0	0
1	0	0	0	-
2	0	0	-	0
3	0	0	-	-
4	0	-	0	0
5	0	-	0	-
6	0	-	-	0
7	0	-	-	-
8	-	0	0	0
9	-	0	0	-
10	-	0	-	0
11	-	0	-	-
12	-	-	0	0
13	-	-	0	-
14	-	-	-	0
15	-	-	-	-

Plus code (B)

	T5	T6	T7	T8
0	0	0	0	0
1	0	0	0	+
2	0	0	+	0
3	0	0	+	+
4	0	+	0	0
5	0	+	0	+
6	0	+	+	0
7	0	+	+	+
8	+	0	0	0
9	+	0	0	+
10	+	0	+	0
11	+	0	+	+
12	+	+	0	0
13	+	+	0	+
14	+	+	+	0
15	+	+	+	+

APPENDIX C

CODING TABLES 460-93

Setting the code on the receiver for operations on the 460 system (460-93 transmitter).

Switches 1-3 should have the same setting on both the transmitter and receiver. Note that the positions A0=D0, B0=E0, C0=F0.

A

460	T60	4	5	6	7	8
A1	101	-	0	0	0	-
A2	102	-	0	0	-	0
A3	103	-	0	0	-	-
A4	104	-	0	-	0	0
A5	105	-	0	-	0	-
A6	106	-	0	-	-	0
A7	107	-	0	-	-	-
A8	108	-	-	0	0	0
A9	109	-	-	0	0	-
A10	110	-	-	0	-	0
A11	111	-	-	0	-	-
A12	112	-	-	-	0	0
A13	113	-	-	-	0	-
A14	114	-	-	-	-	0
A15	115	-	-	-	-	-
A0	100	-	0	0	0	0

Code tablescontinued on next page >>>

APPENDIX C

CODING TABLES 460-93

B

460	T60	4	5	6	7	8
B1	201	0	0	0	0	-
B2	202	0	0	0	-	0
B3	203	0	0	0	-	-
B4	204	0	0	-	0	0
B5	205	0	0	-	0	-
B6	206	0	0	-	-	0
B7	207	0	0	-	-	-
B8	208	0	-	0	0	0
B9	209	0	-	0	0	-
B10	210	0	-	0	-	0
B11	211	0	-	0	-	-
B12	212	0	-	-	0	0
B13	213	0	-	-	0	-
B14	214	0	-	-	-	0
B15	215	0	-	-	-	-
B0	200	0	0	0	0	0

Code tablescontinued on next page >>>

APPENDIX C

CODING TABLES 460-93

C

460	T60	4	5	6	7	8
C1	301	+	0	0	0	-
C2	302	+	0	0	-	0
C3	303	+	0	0	-	-
C4	304	+	0	-	0	0
C5	305	+	0	-	0	-
C6	306	+	0	-	-	0
C7	307	+	0	-	-	-
C8	308	+	-	0	0	0
C9	309	+	-	0	0	-
C10	310	+	-	0	-	0
C11	311	+	-	0	-	-
C12	312	+	-	-	0	0
C13	313	+	-	-	0	-
C14	314	+	-	-	-	0
C15	315	+	-	-	-	-
C0	300	+	0	0	0	0

Code tablescontinued on next page >>>

APPENDIX C

CODING TABLES 460-93

D

460	T60	4	5	6	7	8
D1	401	-	0	0	0	+
D2	402	-	0	0	+	0
D3	403	-	0	0	+	+
D4	404	-	0	+	0	0
D5	405	-	0	+	0	+
D6	406	-	0	+	+	0
D7	407	-	0	+	+	+
D8	408	-	+	0	0	0
D9	409	-	+	0	0	+
D10	410	-	+	0	+	0
D11	411	-	+	0	+	+
D12	412	-	+	+	0	0
D13	413	-	+	+	0	+
D14	414	-	+	+	+	0
D15	415	-	+	+	+	+
D0	400	-	0	0	0	0

Code tablescontinued on next page >>>

APPENDIX C

CODING TABLES 460-93

E

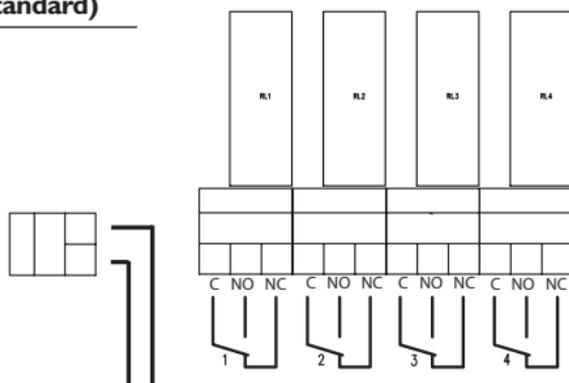
460	T60	4	5	6	7	8
E1	501	0	0	0	0	+
E2	502	0	0	0	+	0
E3	503	0	0	0	+	+
E4	504	0	0	+	0	0
E5	505	0	0	+	0	+
E6	506	0	0	+	+	0
E7	507	0	0	+	+	+
E8	508	0	+	0	0	0
E9	509	0	+	0	0	+
E10	510	0	+	0	+	0
E11	511	0	+	0	+	+
E12	512	0	+	+	0	0
E13	513	0	+	+	0	+
E14	514	0	+	+	+	0
E15	515	0	+	+	+	+
E0	500	0	0	0	0	0

APPENDIX D

VOLTAGE CONNECTIONS

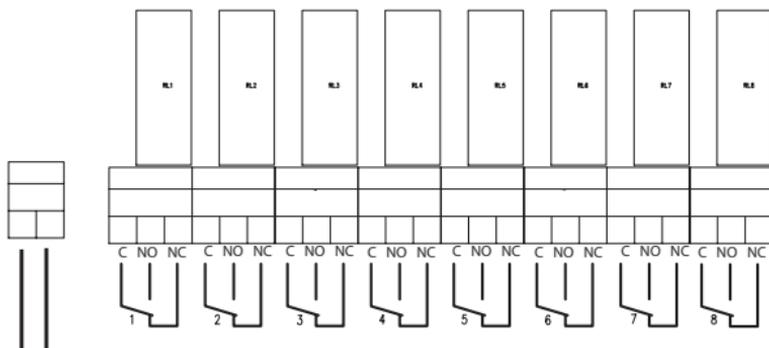
T60RX-0xASL	12-30V AC / DC
T60RX-0xBSL	230V AC
T60RX-0xCSL	48V AC
T60RX-0xDSL	115V AC

T60RX-04ySL (Standard)



Supply voltage

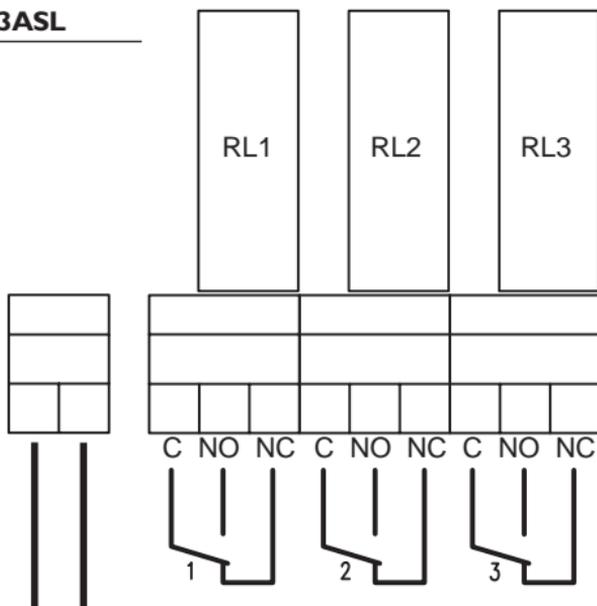
T60RX-08ySL (Robust)



Supply voltage

APPENDIX E

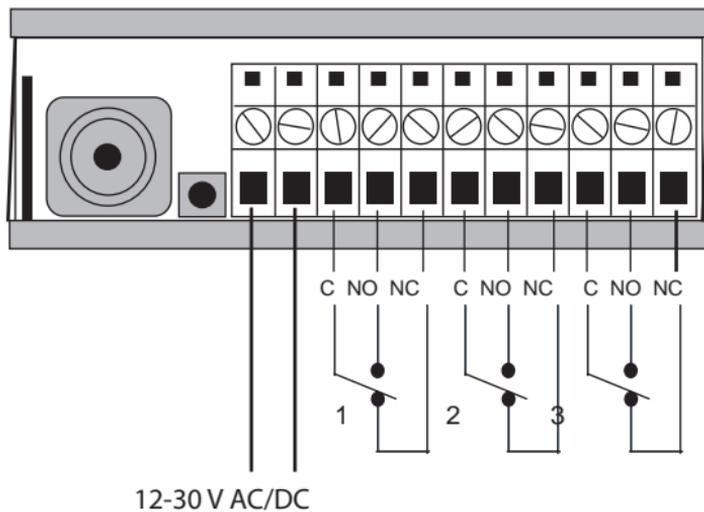
T20RX-03ASL



12-30 V AC/DC

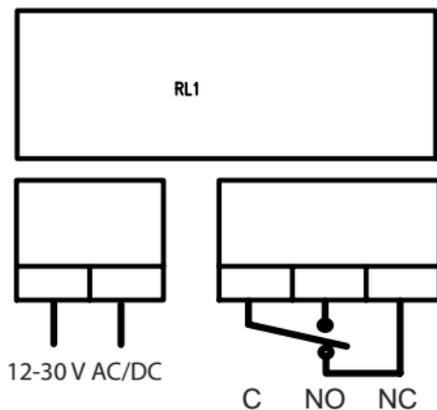
APPENDIX F

T20/T60RX-03ADL



APPENDIX G

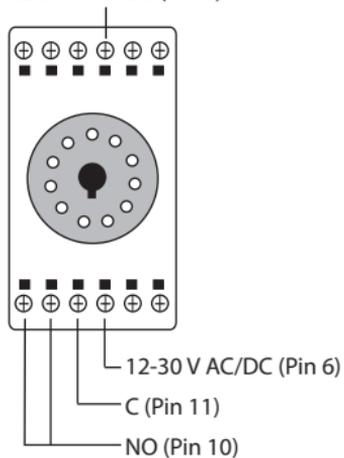
T20/T60RX-01ARL



APPENDIX H

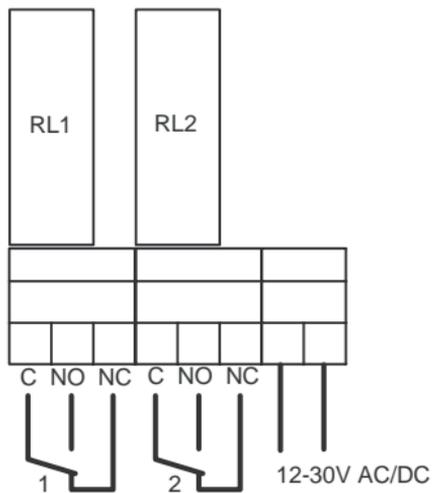
T20/T60RX-01APL Socket

12-30 V AC/DC (Pin 5)



APPENDIX I

T20RX-02AKL



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