

# Technical information/Planning document

## Rolling code radio system RS 868



### Fields of application:

- for emitting/receiving commands for gate facilities
- for controlling light switches
- access controlling

### Overview of most important functions:

- frequency 868 MHz
- self-learning technology, i.e. the transmitter code has to be memorized in the receiver
- safety through continuous alteration of the code (=Rolling Code).  
Due to this continuous alteration of the code, each code can be used only one time and so an abuse through scanning is debarred.
- up to 84 different channels are storable
- Possibility to delete single memorized transmitter channels as well as the complete receiver memory
- optional memory extension allows memorizing of up to 340 channels
- each transmitter is a single device
- in combination with rod antenna FK 868 transmission range up to 200 m
- different transmitters (1 – 4 channel, transmitter mini, wall-mounted transmitter,...)
- different receivers (1-, 2- or 4-channel, with or without housing, 24V or 230V etc.)



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AUTOMATIC GATE OPERATORS



## Warning notes

- **Installation, adjustment and maintenance may only be carried out by trained personnel!**
- **Carrying out works at the receiver is only admissible after the power supply has been turned off!**
- Only turn on the power supply again after another check!
- Never feed 230V power supply to low voltage input - This will destroy your unit, no guarantee.
- Please consider polarity for DC use !
- A proper operation is only given, when these installation instructions are strictly followed.
- Protect the transmitters against heat and wetness and don't expose them to direct solar radiation for a longer period of time.
- Used batteries may not be disposed of in the usual household waste, but have to be brought to a collecting point.

### Safety

- Store transmitters and batteries out of children's reach (risk of suffocation through small parts, risk of injury through unintended operation of the gate facility).
- If the battery is swallowed by a child, please call a doctor immediately.
- Don't use the transmitter in explosion hazardous areas and also in areas, where the usage of radio systems (e.g. mobile phones,...) is forbidden.
- The Tousek transmitters may only be used for devices and facilities, where no danger for persons or things arises from a malfunction of transmitter or receiver, or where this risk is covered by other safety devices.  
The remote controlling of devices and plants with an increased accident risk (e.g. crane facilities) is forbidden!
- For safe operation the local valid safety regulations for the plant have to be kept!
- The owner/user has to be informed that facilities with an increased accident risk may only be operated at direct intervisibility.

### Assembly

- Installation in dry rooms only!
- For a differing installation, an according protective housing (e.g. IP65) has to be foreseen.

## 1. General

Rolling Code-radio system RS 868

### General features

- The radio receivers are self-learning, i.e. the transmitter code has to be memorized in the receiver.
- Furthermore the transmitter code is altered each time a command is emitted (Rolling Code).
- Due to this continuous alteration of the code, each code can be used only one time and so an abuse through scanning is debarred.
- The system permits to store up to 84, or with an extensible memory module even up to 340 different channels.
- Moreover there exists the possibility to delete single memorized transmitter channels as well as the complete receiver memory.



### Technical data

Rolling Code-Funksystem RS 868

#### Technical specifications receiver

frequency of receiver :	868,3 MHz
sensitivity:	1 $\mu$ V
local oscillator emission	<57dBm
intermediate frequency:	10,7 kHz
impedance antenna input:	50 $\Omega$
operating temperature:	-20 bis +60°C
relay output:	potential free

#### Technical specifications transmitter

frequency:	868,3 MHz
tolerance zone:	+/-10 ppm
bandwidth	>25 KHz
radiated power:	-3÷1dBm
modulation:	FSK
power supply	3V (lithium coin cell CR2032)
average current consumption:	15 mA
operating temperature:	-10°C to +55°C

type	features	article code
<b>Radio transmitter RS 868-B</b>		
RS 868-TXR 2-B	2-channels, black/blue housing	13180050
RS 868-TXR 4-B	4-channels, black/blue housing	13180060
<b>Radio transmitter RS 868</b>		
RS 868-TXR 1	1-channel, dark grey button-field	13180010
RS 868-TXR 2	2-channels, dark grey button-field	13180020
RS 868-TXR 2-Mini	2-channels, dark grey button-field	13180040
RS 868-TXR 4	4-channels, dark grey button-field	13180030
<b>Radio code key pad RS 868</b>		
TORCODY RS868	black housing, compatible with radio receiver RS868	13170080
TORCODY RS868	white housing, compatible with radio receiver RS868	13170090
<b>Radio wall transmitter RS 868</b>		
radio wall transmitter RS 868-WT 2	2-channels	13170100
radio wall transmitter RS 868-WT 4	4-channels	13170110
<b>Accessories</b>		
holding clip	for transmitters BT 40 / RS 433 / RS 868	13150070
mounting device	for transmitters RS 433-B / RS 868-B	13150110
battery	for transmitters RS 868 and RS 969-B, 3V lithium, CR2032	13140040



transmitter  
RS 868-TXR4-B



mounting device



transmitter  
RS 868-TXR4



holding clip



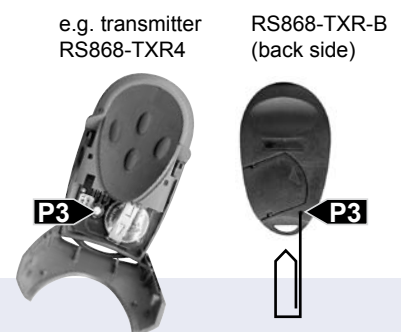
Mini-transmitter  
with mounting device



radio code key pad  
TORCODY



radio wall transmitter  
RS 868-WT  
2- or 4-channels



e.g. transmitter  
RS868-TXR4

RS868-TXR-B  
(back side)



- All RS868 transmitters with exception of the radio code key pad TORCODY are provided with the **memorizing button P3** for activating memorizing process by transmitter.  
(also see „Memorizing and deleting of transmitters“ or according transmitter manual)

type	connection voltage	number of channels	max. contact load	protection class	GTZ 55, GTZ 100	ST25, ST30, ST35	ST12/4, ST50, ST60, PULL	TT60, TT120	ST 0, ST 3	with terminals in housing IP23	with terminals in housing IP54	with 11-pole plug-in socket extensible with memory module	article code
<b>Radio receivers RS 868 pluggable</b>													
Rolling Code RS 868-STN 1-channel	12V DC	1	-	IP00	•	•						•	13280060
Rolling Code RS 868-STN 2-channels	12V DC	2	-	IP00	•							•	13280090
Rolling Code RS 868-STN 2-channels	12V DC	2	-	IP00		•						•	13280130
Rolling Code RS 868-ST/GTZ	24V DC	1	-	IP00	•							•	13280110
Rolling Code RS 868-ST	12V DC	1	-	IP00				•				•	13280070
Rolling Code RS 868-TT6	12V DC	1	-	IP00		•						•	13280120
<b>Radio receivers RS 868 in housing</b>													
Rolling Code RS 868-K	12 or 24V AC/DC	1	24V/10mA	IP23				•				•	13280010
Rolling Code RS 868-K2	12 or 24V AC/DC	2	24V/10mA	IP23				•				•	13280020
Rolling Code RS 868-SO24	24V AC/DC	1	230V/60W	IP20						•		•	13280030
Rolling Code RS 868-SO230	230V AC	1	230V/60W	IP20						•		•	13280040
Rolling Code RS 868-230V1	230V AC	1	48V/28W	IP54					•			•	13280080
Rolling Code RS 868-230V4	230V AC	4	48V/28W	IP54					•			•	13280050

**Transceiver**

signal amplifier RS 868	for increased range, combined receiver transmitter, 230V, IP20	13930050
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**Accessories**

memory module	for 341 transmitters (for increasing the receiver capacity)	13270110
programming device PROG RS433/868	for deleting a transmitter code from the receiver memory without transmitter	13170040
additional receiver channel	for radio receiver RS 433-230V1 and RS 868-230V1	13270250
antenna FK 868	868 MHz, incl. 3m coaxial cable	13250140

Note: The programming device can only be used on the two 11-pole connector socket receivers and the three receivers in housing IP54.



- The system permits to store up to 84, or with an extensible memory module even up to 340 different channels.
- The RS868 receivers, described in this manual, have two buttons for memorizing and deleting transmitters: **P1-MEM (for memorizing) and P2-DEL (for deleting)**.

**Antenna connection:**

- Installation and connection of the antenna have to be carried out correctly to ensure a good range of the facility. Connect the delivered, 8,5 cm long piece of wire with the antenna-pole input of the device.
- Don't change the length of this wire piece! (Decrease of transmission range)
- For improving the reception, an antenna FK868 is optionally available.

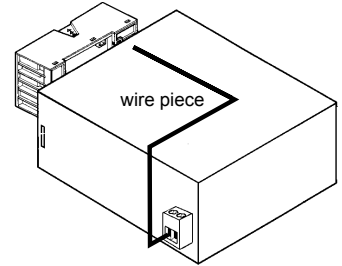
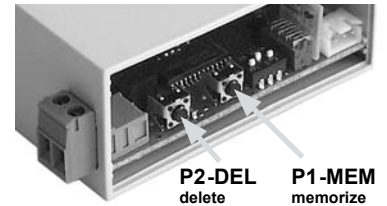


antenna FK 433

**A**

RS868-SO230 (1-channel)

RS868-SO24 (1-channel)



see „antenna connection“

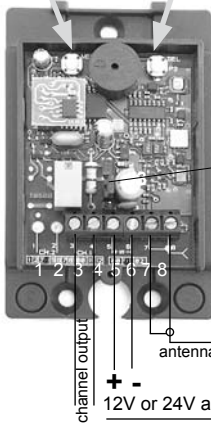
**B**

RS868-K (1-channel)

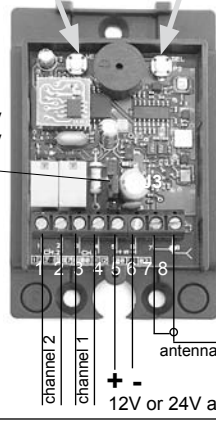
RS868-K2 (2-channel)

P1-MEM memorize P2-DEL delete

P1-MEM memorize P2-DEL delete



J3 closed : 12V  
J3 open (standard) : 24V

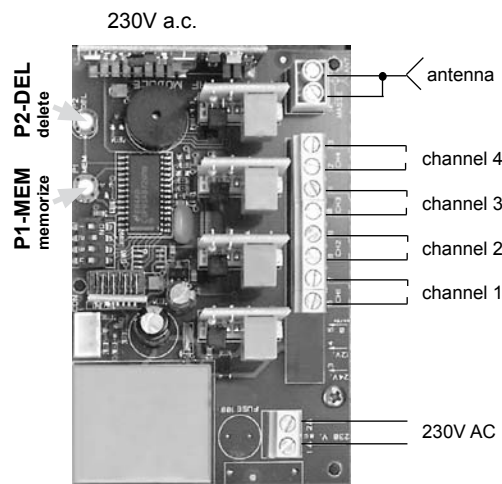


wire piece

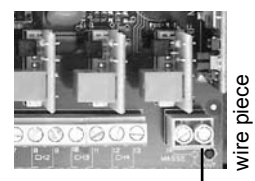
see „antenna connection“

**C**

RS868-230V1 (1-channel)  
RS868-230V4 (4-channel)



e.g.  
RS868-230V4



wire piece

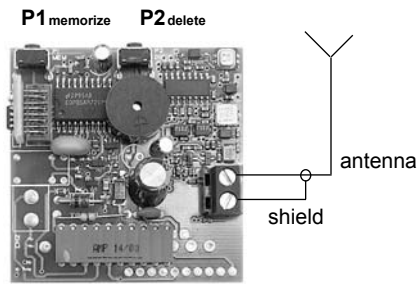
see „antenna connection“

Note: At the 1channel version only the 1st channel is hard-faced.

## Radio receiver printed circuit boards

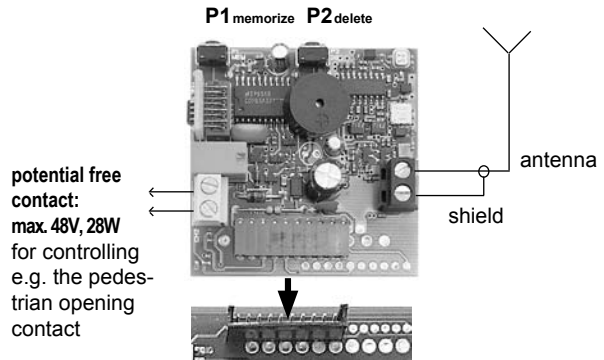
( for plug-in connection with the according control units)

### RS868-STN1 (1-channel)



für controls  
ST25, ST30, ST35, ST12/4, ST50, ST60 and PULL

### RS868-STN2 (2-channels) with potential free contact

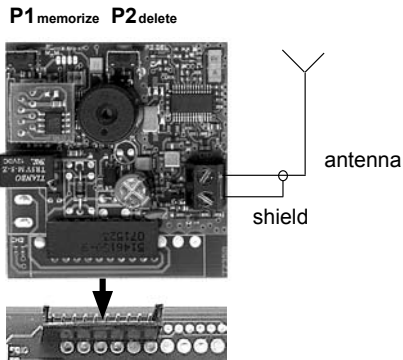


only for controls ST25, ST30 and ST35

### RS868-STN2 (2-channels)

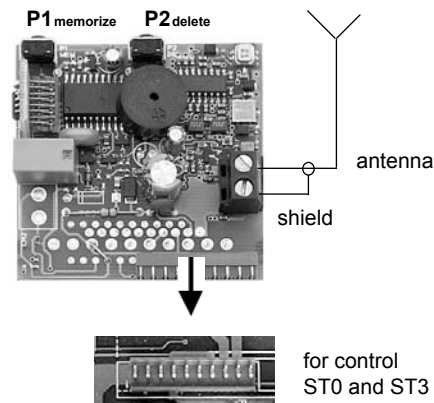
both channels are  
assigned to the  
connector strip

without  
potential free  
contact



only for controls ST12/4, ST50, ST60 and PULL

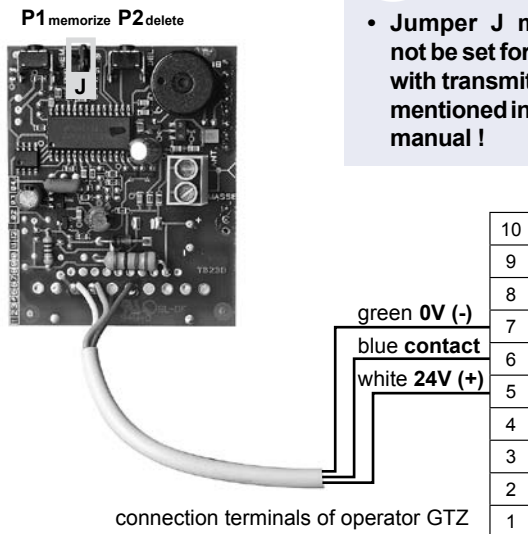
### RS868-ST (1-channel)



### RS868-ST/GTZ (1-channel)



- Jumper J must not be set for use with transmitters mentioned in this manual !



### RS868-TT6 (1-channel)

