



**General Information:**

The Ratio® switch actuators/receivers are controlled via radio signals of the Ratio® transmitters. Every transmitter can control an unlimited number of actuators/receivers. The Ratio® transmitters have a fixed address and must be learned in for Ratio® switch actuators / receivers.

**Product description:**

The Ratio® hand transmitter 4-channel R101 is a universally applicable **battery free** and **maintenance free** radio switch with four independent single keys. Due to its extremely ergonomic design it lies perfectly in the user's hand, but it may also be mounted on walls or even on glass.

The Ratio® hand transmitter allows wireless and battery free remote control of Ratio® actuators. A radio telegram will be send only if a rocker is pushed; this telegram can be received and evaluated by all Ratio® actuators / receivers.

Position and function of the display and operating elements	Technical data
<p>The following commands can be sent with by Ratio® hand transmitter:</p> <ul style="list-style-type: none"> <li>• Switching on / off</li> <li>• Dimming brighter / darker</li> <li>• Moving up / down</li> <li>• Adjusting slats</li> <li>• Short push</li> <li>• Long push</li> </ul>	<p>Energy generation: By means of electro-dynamic energy generator (principle of induction), battery free and maintenance free.</p> <p>Operating elements: 4 single buttons</p> <p>Number of channels: 4 with 4 states each</p>

Installation instructions
<p>The Ratio® hand transmitter may be used only indoors and in dry rooms.</p> <p>The Ratio® hand transmitter should not be mounted on surfaces made of metal and not in the vicinity of metal areas. Likewise, high-frequency sources of interference should be avoided. If assembly in the vicinity of such a source is required, nevertheless, we recommend using the radio repeater UPR230/01.</p> <p>The position and the ranges depend on the materials used in a building. See the data sheet Range Planning under <a href="http://www.omnio.ch">www.omnio.ch</a>.</p> <p>Warning:</p> <ul style="list-style-type: none"> <li>• The applicable safety and accident prevention regulations have to be observed.</li> <li>• Do not open the device. A defective device has to be returned to the trader or the Omnio AG agency in charge.</li> </ul>

Assembly / Disassembly
<p>The Ratio® radio hand transmitter can be mounted directly on flat surfaces using adhesive agents or screws. The recess in the case just below the buttons identifies the orientation at the bottom.</p> <p>The radio hand transmitter can be fixed with glue or screws so that it can be attached easily on glass or on walls. On structured surfaces one first has to create a plane surface to rule out the case will be deformed during mounting. Unevenness may cause malfunctions. This has to be taken into account especially for installations on rough surfaces. You also have to make sure that no dust particles get inside the radio transmitter.</p> <p>Glue: The Ratio® hand transmitter can be glued onto a flat, smooth surface such as glass, painted walls, tiles, furniture, etc. using the enclosed double-sided mounting foil.</p> <p>Disassembly: Carefully detach the radio hand transmitter from the adhesive mat by a rotating motion. Then clean the surfaces from adhesive mat residues using suitable cleaning agents.</p>

Range between transmitter and receiver
<p>The signal strength of the radio signals decreases with rising distance between transmitter and receiver. If there is any visual contact, the range is approx. 30m in corridors and 100m in halls. In buildings the range of the radio signal is dependent on the construction materials used:</p>

Material	Typical range	Material	Typical range
Brickwork	20m, through max. 3 walls	Plaster boards / wood	30m, through max. 5 walls
Reinforced concrete	10m, through max. 1 wall / ceiling	Heat-insulating windows	5m, through max. 1 window

Limitation of the range of the radio signals due to:  
 Assembly of the transmitters / receivers in the direct vicinity of materials with metal components or metal objects. A distance of at least 10cm should be observed.  
 Assembly of the receivers on the floor (floor outlet) or close to the floor  
 Humidity in materials  
 Devices that also emit high-frequency signals, e.g. computers, audio and video systems or electronic ballast for illuminants. A minimum

distance of 50cm should be observed.							
<b>Legal requirements / old devices</b>							
The transmitters may not be used in connection with devices that are employed, directly or indirectly, for health- or life-saving purposes or if their operation may cause hazards to human beings, animals or property. Do not leave packaging material lying around carelessly. Plastic foils/bags, etc. may be hazardous toys for children. These operating instructions are part of the device and part of our warranty terms. They have to be handed over to the customer. The technical specifications of the device may be changed without prior notice.							
Do not throw old devices into the domestic garbage can. The device contains electrical components that have to be disposed off as electronic waste. The case is made of reusable plastic material.							
<b>Telegram structure</b>							
Byte	Symbol	Significance	Value	Byte	Symbol	Meaning	Value
0	SYNC1	Synchronisation	5Ah	1	SYNC2	Synchronisation	A5h
2	HEADER		xxh	3	ORG	Transmitter type	05h
4	DATA3	Pair of keys A Key Off Pair of keys A Key On Pair of keys B Key Off Pair of keys B Key On Pair of keys A&B Key Off Pair of keys A&B Key On	30h 10h 70h 50h 37h 15h	5	DATA2	Always 0	00h
6	DATA1	Always 0	00h	7	DATA0	Always 0	00h
8	ID3	ID number part 1	xxh	9	ID2	ID number part 2	xxh
10	ID1	ID number part 3	xxh	11	ID0	ID number part 4	xxh
12	STATUS	Statusbyte	xxh	13	CHK	Checksumme	xxh
Designation		Additional designation		Type		Article number	
Hand transmitter 4-channel with 4 single buttons		Color pure white		<b>R101-rw</b>		<b>1281153</b>	
		Color black		<b>R101-sw</b>		<b>1281150</b>	
		Color aluminum varnished		<b>R101-sb</b>		<b>1281200</b>	
		Other colors				<b>On request</b>	