

TERA Radon Program

TAR2 Wireless Actuator
Technical Specifications & Operation Manual



v.2 – 2016

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Instruction also available on www.tesla.cz

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Users should be familiar with operation basis of used product. If you experience any problems with your product, please contact us at:

TESLA
Rubeska 215/1
190 00 Prague 9 - Vysocany
www.tesla.cz

1 Introduction

This document describes technical specifications and user operation of the TAR2 Wireless Actuator.

Product was developed and manufactured in the Czech Republic. All rights reserved TESLA. Offer or delivery of products or services related to the product does not include transfer of ownership rights.

Before using the product, please read this manual carefully and understand all operating and safety precautions. Compliance with operational and safety precaution can prevent from damage to equipment or injuries to personnel. Operating and safety instructions in the document are marked as follows:

Attention! This formatted text indicates the operating and safety instructions.

The product may only be used in the specified manner and for its intended purpose. The product may be provided to third persons along with this documentation only.

2 Description and Utilization

TAR2 actuator is wireless switching unit of a system (wireless relay) which allows direct switching low power input load or switching control signals of high power relay which can then switch even very high power inputs. The actuator is equipped with memory relay which minimizes consumption because the relay only consumes current during switching pulse at the duration of 10 msec. This allows supplying the unit from a replaceable lithium battery with an estimated life longer than 2 years of operation.

Attention! For setting and controlling of the Actuator it is essential to have wireless Central Unit in system, see <http://www.tesla.cz/>. The Central Unit is not included with package of TAR2 and it is sold and delivered extra.

Setting and configuration of TAR2 Wireless Actuator and whole system is also managed by connected computer to Cenral Unit and TERAvie application on PC.

TERAvie application, drivers and user manual with detail configuration description is free downloaded on website: <http://www.tesla.cz/>.

TAR2 Wireless Actuator can be used in this system:

TERA System for Regulating Radon Concentrations (Figure 1)

Regulating system diagram description - Radon measuring probes located in a building transmit their current radon concentration values to central unit wirelessly. The central unit analyzes this information and on the basis of measured (set) concentration level value it sends wireless command to actuator which is hardwired with power relay. Power relay switches on a fan which decreases radon concentration within an area. After decreasing of radon concentration, the actuator receives a command to switch off the fan. This cycle repeats depending on an increasing or decreasing volume activity of radon a building.

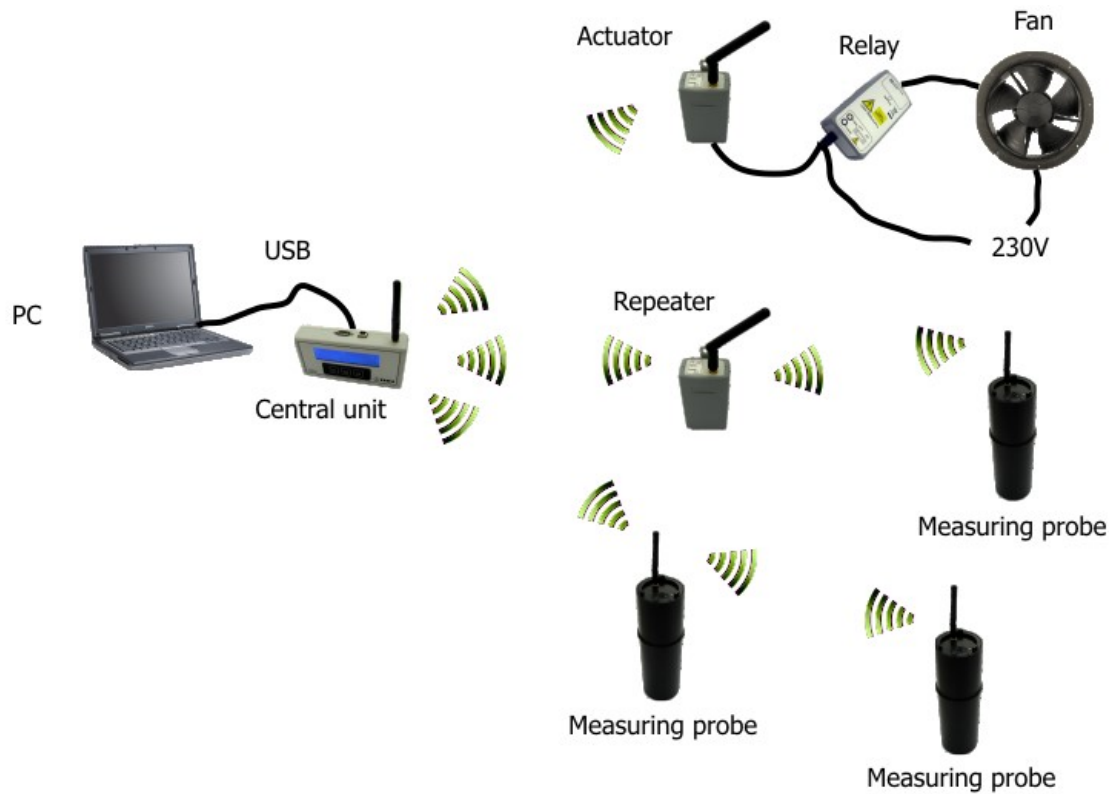


Figure 1 - TAR2 Wireless Actuator in TERA System for Regulating Radon Concentrations

Actuator is possible to be easily located near an air-conditioning actuating unit such as a fan located for example, in a cellar. In case of setting in regulation system the Actuator must be placed in radio range of the Central Unit. Distance (radio range) between TAR2 and central unit is up to 600 m in open space. In buildings it depends on number of walls, building material, etc. Strength of radio signals (RSSI) is monitored by Central Unit.

Attention! If radio signal strength between individual elements is insufficient, TAR2 radon probe must be inserted or repeater must be used to extend the signal, see <http://www.tesla.cz/>.

3 Scope of Delivery

- TAR2 Wireless Actuator
- Li-Ion battery
- Antenna
- Operation Manual

4 Product Specification

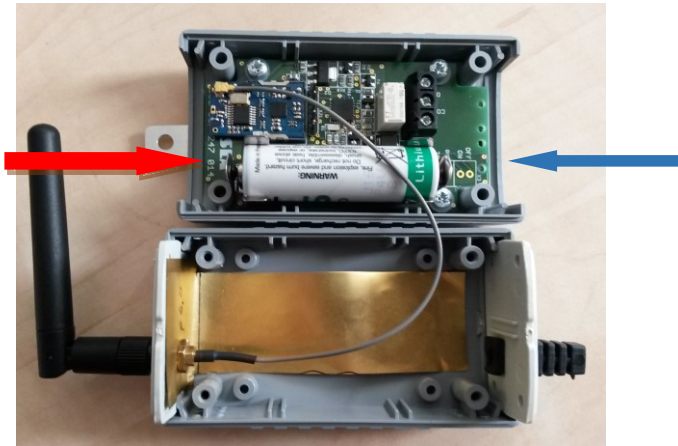
Product	TAR2 Wireless Actuator
Type symbol	042 127 158 000
Radio interface	868MHz
Maximum switching power (actuator)	30 W DC (1A/30V)
Power supply	Li-Ion battery 3.6 V, 2.6Ah
Battery life	> 2 years

TAR2 has distance (radio range) up to 600 m in open space. In buildings dependent on number of walls, building material, etc.
 Battery: SAFT LS 14500 3.6V, 2.600Ah (or equivalent)

5 Operating Instruction

Switching on:

Remove screws and housing and insert battery (see figure below, red arrow indicates positive pole, blue arrow indicates negative pole). **Inserted battery switches actuator on.** Reinstall housing and screw in the screws. Reverse the procedure to switch the device off or to replace the battery. When installing antenna, hold antenna by knurled end.



Configuration:

Setting and configuration of the Actuator and whole measuring system is realized by Central Unit connected to PC and TERAview application. Central Unit is not included with package of TAR2 and it is sold and delivered extra; see <http://www.tesla.cz/>.

TERAview application, drivers and user manual with detail configuration description is free downloaded on website: <http://www.tesla.cz/>.

For successful actuator configuration in measuring system it is essential to know actuator radio channel number (communication wireless channel) and P2P address (identification in wireless net). Both parameters are printed out on actuator serial number plate. Actuator radio channel number is possible to change by TERAview application and it must be identical to central unit radio channel number. P2P address is permanent and it can occur in one big wireless net only once. Central Unit P2P address can be identical to P2P address of other elements in network.

6 Basic Maintenance

Battery replacement:

Current battery charge status of Actuator can be monitored wirelessly by Central Unit (see 'Operating instruction/Configuration'). In case of low battery capacity Central Unit displays warning message. To replace discharged battery follow 'Operating Instructions / Switching on' paragraphs. Replace it with appropriate type of battery (see 'Product Specification'). Batteries can be ordered from TESLA manufacturer or distributor (see 'Accessories').

7 Safety

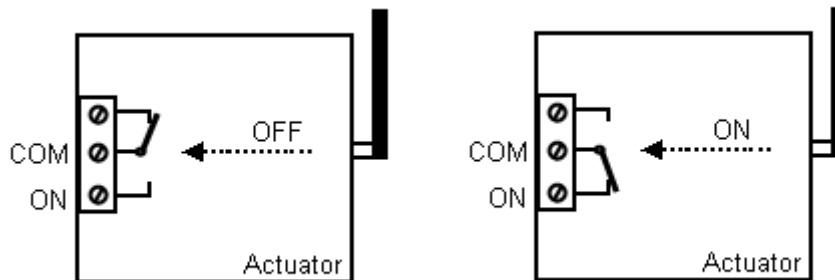
Installation, connection and operation may only be carried out by a specialist with relevant qualification who is perfectly familiarized with this manual and device function.

Always ensure that there is no power in a connected device before proceeding with installation.

8 Electrical Connection

Output relay can switch power load up to 30W (1A/30V) or it is possible to connect directly TPS2 power relay 1500 VA (6A/250V) from TERA program; see <http://www.tesla.cz/>.

Attention! Switching relay of actuator is not designed for switching mains 230V / 50Hz!



9 Repairs

Any repairs and non basic maintenance must be performed exclusively by TESLA manufacturer.

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Rubeska 215/1
190 00 Prague 9 - Vysocany
www.tesla.cz

10 Warranty

This product is covered by warranty of 24 months from purchase date.

In case of warranty claim, please contact our Service Department.

Warranty covers any defects in materials or workmanship and excludes any damage resulting from or caused by transport or handling or by any misuse.

Warranty ceases if product has been used improperly or its seal is broken.

In case of warranty claim, warranty period is prolonged by number of days the product was undergoing warranty repairs.

After the end of its life, the product must be handled as e-waste.

11 EC Declaration of Conformity

EC Declaration of Conformity will be delivered by TESLA producer on request. If interested, please use contacts on the web www.tesla.cz.

12 Accessories

TAR2 Wireless Actuator accessories is available at producer www.tesla.cz or at distributor.

Spare antenna



Spare battery



13 Revision History

Revision	Date	Comments
Rev.1:	22. 7. 2015	Initial release
Rev.2:	30. 4. 2016	Extended release