

# NRS1

EN

INSTRUCTION MANUAL  
**HEATED RAIN SENSOR**  
Electrical feeding 24V---



## USER INSTRUCTIONS

**CAUTION.** Carefully observe all the following installation instructions to ensure personal safety.

The device is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lacking experience and knowledge. Do not allow children to play with the fixed controls and keep any remote-control units out of their reach.

Have installation checks performed periodically by qualified personnel from a service centre authorised by the manufacturer. Do not use if repair or adjustment is required.

**CAUTION:** if the power cable is damaged, it must be replaced by qualified personnel from a service centre authorised by the manufacturer.

**CAUTION.** Disconnect the power supply during cleaning or maintenance operations. Do not use solvents or jets of water to wash the appliance; the appliance should not be submerged in water.

In the event of fault or malfunction, switch off the device at the main switch. All repairs and adjustments (e.g. setting the stroke) must only be performed by qualified personnel from a service centre authorised by the manufacturer.

Always request exclusive use of original spare parts. Failure to respect this condition could compromise safety and invalidate the benefits contained in the warranty for the appliance. In the event of any problems or queries, consult your agent or contact the manufacturer directly.

The A-weighted sound pressure level is less than 70dB(A).

Carefully preserve these instructions after installation.

# INSTALLER INSTRUCTIONS

nekos products have been manufactured in accordance with safety standards and conforms to the stipulations of current standards in force.

When correctly assembled, installed and used according to the present instructions, they will not generate any danger for persons, animals or items.

## Symbols used in the manual



**DANGER**

*This indication draw the attention about potential dangers for safety and health of peoples and animals.*

## Contents

1. Safety indications.....	4
1.1. General notes.....	4
1.2. Notes for functioning and use.....	4
2. Technical and constructional information.....	4
3. Technical data.....	5
4. Id plate and marking data.....	5
5. Technical information.....	5
6. Advices and instruction for mounting.....	5
7. Electrical connections.....	6
7.1. Replace P2 rain sensor on N series units.....	6
8. Dip-switches selection.....	7
9. Led signals.....	7
10. Environmental protection.....	7
11. Recall to main principles of warranty certificate.....	7
12. Declaration of conformity.....	8

## 1. SAFETY INDICATIONS

### 1.1. General notes



**WARNING:** BEFORE INSTALLING THIS APPLIANCE, ENSURE ALL SAFETY INDICATIONS HAVE BEEN READ CAREFULLY AND UNDERSTOOD IN ORDER TO PREVENT CONTACT WITH ELECTRICITY, INJURY OR ANY OTHER INCIDENT. THE MANUAL SHOULD BE CONSERVED FOR FURTHER CONSULTATION AT A LATER DATE.



**The manufacturer accepts no responsibility for damage to people, animals or things incurred by improper use.**



**Use for any applications other than those indicated must be authorised by the manufacturer after technical review of the assembly.**



Plastic bags, polystyrene, small metal parts such as nails, staples etc. should be placed out of the reach of children as they constitute a potential source of risk.



The appliance is not intended for use by people (including children) whose physical, sensory and mental abilities are reduced, or in case of lack of experience or knowledge; such persons must be supervised to ensure that they do not play with the appliance.



Do not use solvents or jets of water to wash the appliance. The appliance should not be submerged in water.

### 1.2. Notes for functioning and use

**NRS1** is a sensor to detect rain that through the connected cable transmits the signal to a device able to interpret it. **Use for any applications other than those indicated must be authorised by the manufacturer after technical review of the assembly.**

- This product is designed to be used with the manufacturer's original products. Use with any other products may result in damage or malfunctions.
- The initial start-up of the sensor should be carried out by a skilled and qualified person following the manufacturer's instructions.
- After removing packaging, check for any damage on the appliance.
- Before using the rain sensor, check that the power has the same nature, quality and tension as those indicated on the technical data label on the appliance.
- This machine is destined exclusively for the use for which it has been designed and the manufacturer accepts no responsibility for damage incurred by improper use.
- Repairs should only be performed by qualified personnel at assistance centres authorised by the manufacturer.
- The product must be disposed of in compliance with local environmental regulations and not as household waste.

## 2. TECHNICAL AND CONSTRUCTIONAL INFORMATION

- **NRS1** sensors signal the rain event to an apparatus able to interpret and command the connected devices. The sensor is insensitive to the formation of dew or moisture after rainfall dries very quickly and being heated - below +5 °C - does not allow the formation of ice.
- The sensor is fed with a tension between 12V and 24V<sub>===</sub>.
- Electrical connection must comply with the rules in force on electrical systems.
- All connected devices must be manufactured according to the regulations in force and comply with regulations issued by the European Community.

### 3. TECHNICAL DATA

Model	NRS1
Power supply voltage ( $U_n$ )	12V - 24V <sub>---</sub>
Maximum absorbed power ( $I_n$ )	20 mA (120 mA with active heater)
Type of sensor	Capacitive
Heater intervention	< +5 °C
Type of contact	SPDT
Rating contact	0,5 A / 125V <sub>~</sub> – 1 A / 24V <sub>---</sub>
Functioning temperature	-20 - +65 °C
Feeding cable length	5 m
Feeding cable type / number of wires	PVC protected from UV / 5 wires
Protection index	IP65
Dimensions	45x93 h=19 mm
Weight	52 g (cable excluded)

Any data reported in this table is not binding and may be susceptible to variations without notice.

### 4. ID PLATE AND MARKING DATA

NRS1 rain sensors have CE marking and comply with the Standards listed in the Declaration of Conformity. The plate data is displayed on an adhesive label placed on the outside of the casing, which must remain intact and visible.

The main information it displays includes: manufacturer's address, product name - model number, technical characteristics, production date and serial number.

In the event of a complaint, please indicate the serial number (SN) displayed on the label. An explanation of the symbols used on the label to abbreviate the technical characteristics is given in the table in the chapter on "TECHNICAL DATA".

### 5. TECHNICAL INFORMATION

NRS1 rain sensor, to completely fulfil its task, has to be placed out in the open fully exposed to any precipitation, possibly over the roof or in a similar position, or where can be affected by rainfall.

Sensor can be connected to all stations or devices where signal processing is foreseen or where a free contact signal is necessary (free from tension).

Feeding cable is 5 m long, made weather resistant, fire retardant and UV resistant.

### 6. ADVICES AND INSTRUCTION FOR MOUNTING

**THESE INSTRUCTIONS ARE INTENDED FOR TECHNICAL AND SPECIALIZED PERSONNEL.  
THUS BASIC SAFETY AND WORKING TECHNIQUES ARE NOT DISCUSSED.**

To guarantee perfect function and facilitate installation, please note the following indications and warnings:



Check that the cable length is sufficient to link to the station or control apparatus. The eventual junction for extending the cable must be perfectly sealed with a cable of the same type and colours.

**Warning.** Check that the power supply is the same as those indicated on technical data applied to the device.

To keep efficient and have a perfect functioning we suggest to clean the sensitive part at least any 6 months or any time is dirty due to smog, leaves, impurity, etc.

Advices for sensor installation:

1. Choose the most suitable position where place the rain sensor. It has to be put outside in direct contact with weathering.
2. The sensor is placed slightly tilted (~ 20 °) to facilitate the flow of water, in a position that does not have shelters to the fall of rain. Place it under the trees is not recommended because it alters the natural weather event.
3. Support can be of 2 types depending from attack surface; in both cases is suggested to make the cable exit below:
  - o Surface flat / tilted – with high resistance adhesive and suitable for weather or fixed with a screw;
  - o Fix support such as rod or similar where to apply the metal bracket – provided – with a screw.
4. Complete cable system and electrical connection to the station or control and feeding apparatus following the schema on next page. Bind with one or more clamps the cable to make it integral with the supporting structure.
5. Make a functional test.

To test a rain sensor is sufficient to wet (pour or spray water) on sensitive part of it; the sensor transmits the signal of "wet sensor". LED indicators of various apparatus should light.

### 7. ELECTRICAL CONNECTIONS



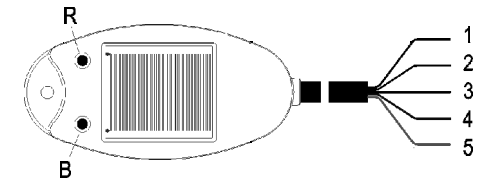
Electrical connections should be carried out in compliance with safety rules and keeping in mind the meaning of various symbols and colours of the wires of the feeding cable.

Sensor can work with any station unit or apparatus able to interpret its signal, therefore the connections of the power cord are called in the specific instructions of the central or equipment.

The table below shows the caption of any wires and the wiring diagram.

#### Caption of each wire - NRS1:

- 1 - RED (+) connected to +12/24V;
- 2 - BLACK (-) connected to -12/24V;
- 3 - BLUE (N.O. contact);
- 4 - PURPLE (N.C. contact);
- 5 - GREEN (Common).



#### 7.1. Replace P2 rain sensor on N series units

In the case of use NRS1 rain sensor to replace the old P2 on N series stations, during connection phase operate as follows:

- RED wire connected at the place of WHITE wire;
- BLACK and GREEN wires connected together at the place of YELLOW wire;
- BLUE wire connected at the place of BLUE wire;
- PURPLE wire has to be insulated and not connected.

## 8. DIP-SWITCHES SELECTION

In the sensor base, covered by a black cap, there is the access to dip-switches to program the sensor which give the possibility of modifying status and sensitiveness. Dip-switches meaning is the following:

DIP 1	DIP2	SENSITIVENESS
OFF	OFF	Maximum sensitiveness
ON	OFF	Medium-high sensitiveness
OFF	ON	Medium-low sensitiveness
ON	ON	Minimum sensitiveness

The sensor leaves the factory with the maximum sensitiveness set.

## 9. LED SIGNALS

Rain sensor has 2 signalling LED that indicate the functioning status.

- **B - BLUE** led flashing indicates that the sensor is fed.
- **R - RED** led lit fix indicates "wet sensor"; it has active command.

## 10. ENVIRONMENTAL PROTECTION

All materials used in the manufacture of this appliance are recyclable.

We recommend that the device itself, and any accessories, packaging, etc. be sent to a centre for ecological recycling as established from laws in force on recycling. The device is mainly made from the following materials: aluminium, zinc, iron, plastic of various type, cuprum.

Dispose materials in conformity with local regulations about removal.

## 11. CERTIFICATE OF GUARANTEE

The manufacturer will guarantee good function of the appliance. The manufacturer shall undertake to replace defective parts due to poor quality materials or manufacturing defects in accordance with article 1490 of the Civil Code.

The guarantee covers products and individual parts for **2 years** from the date of purchase. The latter is valid as long as the purchaser possesses proof of purchase and completion of all agreed conditions of payment. Guarantee of good function of appliances agreed by the manufacturer implies that the latter undertakes to repair or replace free of charge and in the shortest period possible any parts that break while under warranty.

The purchaser is not entitled to any reimbursement for eventual direct or indirect damage or other expenses incurred. Attempt to repair by personnel unauthorised by the manufacture shall render the warranty null and invalid. The warranty does not cover fragile parts or parts subject to natural wear and tear or corrosion, overload, however temporary etc.

The manufacturer will accept no responsibility for eventual damage incurred by erroneous assembly, manoeuvre or insertion, excessive stress or inexpert use. Repairs performed under guarantee are always "ex factory of the manufacturer". Respective transport expenses (out/back) are the responsibility of the purchaser.

## 12. DECLARATION OF CONFORMITY

The undersigned,  
Company name: **NEKOS S.r.l**  
Postal address: **Via Capitoni, 7/5**  
Postcode and city: **36064 Colceresa VI**  
Telephone number: **+39 0424 411011**  
E-mail address: **info@nekos.it**

declare that the document is issued under our sole responsibility and belongs to the following product:

Apparatus model / Product: **Heated rain sensor NRS1**  
Trademark: **NEKOS**  
Model/Type: **NRS1**  
Batch: *see data label*  
Serial number: *see data label*

The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:

- **2014/30/EU ElectroMagnetic Compatibility Directive (EMCD)**
- **2014/35/EU Low Voltage Directive (LVD)**
- **2011/65/EU Restriction of the use of certain hazardous substances Directive (RoHS Directive)**
- **2015/863/EU Delegated Directive amending Annex II of Directive 2011/65/EU of the European Parliament and of the Council regarding the list of substances with usage restrictions**

The following harmonised standards and/or technical specifications have been applied:

**EMC:**  
**EN 61000-6-3:2007 + A1:2011 + AC:2012**  
**EN IEC 61000-6-2:2019**

**LVD**  
**EN 60335-1:2012 + AC:2014 + A11:2014**

**RoHS**  
**EN 50581:2012**

Place: **Colceresa**  
Date: **04/03/2020**

Signature: **Giuliano Galluzzo (A.D. – President)**



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