# **Installer Instructions**



# **RS 500 AC**

# For up to 500kg Spring Balanced Industrial Roller Shutter Doors



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# Be Safe!

# WARNING!! These are the general safety obligations for the installers and users of Nice Group SA (Pty) Ltd automation equipment. These instructions must be issued to the responsible end user during the handover and instruction meeting.

- 1. Only suitably qualified persons, may install, repair or service the product. Unless expressly indicated in the user instructions, no user serviceable components can be found inside any Nice Group SA (Pty) Ltd automation product.
- 2. It is important for personal safety to study and follow all the instructions carefully. Incorrect installation or misuse may cause serious personal harm.
- 3. Keep the instructions in a safe place for future reference.
- 4. This product was designed and manufactured, strictly for the use indicated in the accompanying documentation. Any other use not expressly indicated in the documentation, may damage the product and/or be a source of danger. Nice Group SA (Pty) Ltd cannot accept responsibility for improper use or incorrect installation of this product.
- 5. Nice Group SA (Pty) Ltd cannot accept responsibility if the principles of good workmanship are disregarded by the installer.
- 6. Nice Group SA (Pty) Ltd cannot accept responsibility regarding safety and correct operation of the automation, if other manufacturers' equipment is added to this product.
- 7. Do not make any modifications or alterations to this product. Do not substitute any component of this product with any other component not expressly designed into this product.
- 8. Anything other than expressly provided for in the accompanying instructions is not permitted.

### Prior to installation:

- 1. All unnecessary ropes, chains and fasteners must be removed and all unnecessary latches or locks must be disabled from locking.
- 2. The gate or door must be balanced correctly where it, neither opens nor closes from any position under its own load. When operated by hand the gate or door should be free of hindrance and easily moved (In the case of a garage door if the balancing springs need to be adjusted the adjustment should only be carried out by a qualified and experienced person).
- 3. The construction of the gate or door must be sound and automatable. It is the responsibility of the installer to ensure that the mechanical components of the gate or door system are sufficient to withstand the necessary forces in cases of overload.
- 4. It is the responsibility of the installer to ensure the gate or door is sufficiently trapped within its range of travel by means of mechanical ends of travel stoppers.
- 5. Ensure all fixed mounting points, such as the wall above the door in a garage door system or the posts in a swing gate system, are sound and strong enough to allow proper fixing of the operator.
- 6. It is the responsibility of the installer to ensure the installed position selected for this product, falls within the limitations of the products ingress protection rating.
- 7. Ensure the area of installation is not subject to explosive hazards. There should be no volatile gasses or fumes as these can present a serious safety hazard.
- 8. All Nice Group SA (Pty) Ltd garage door operators are supplied with a sealed 15A safety plug on lead for use in an electrical code of practice approved plug point. Do not extend, modify or replace the plug lead unless duly qualified as an electrician. Before installing the unit, ensure the mains supply is switched off.
- 9. Nice Group SA (Pty) Ltd gate operators are supplied with a terminal connection for the electrical supply beneath the screwed down cover of the operator. In the case of a model requiring 220Vac supply at the operator, an all pole negatively biased switch, with a contact opening of greater than 3mm must be installed within 1.5m of the operator. This switch must be clear of all workings of the system and must be in a position secure from public access. This switch and its connections must be inspected and passed by a certified electrician prior to using it.
- 10. It is the responsibility of the installer to ascertain that the designated persons (including children) intended to use the system, do not suffer reduced physical sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning the use of the system by a person responsible for their safety.
- 11. The drive may not be installed on a door incorporating a wicket door, unless the drive is disabled by the release of the wicket door. (Wicket door :- A pedestrian door within the main gate or door)

### **During installation:**

- 1. Ensure the working area is clear of obstructions and obstacles.
- 2. Install the safety warning sticker within clear view of where the gate or door will be operated from. Typically this would be adjacent to any fixed trigger switches or on the gate or door itself.
- 3. The emergency manual release must be installed where it is no higher than 1.8m from the floor level. This would apply to the cord in a garage installation or the lockable lever in a gate installation.
- 4. Any additional fixed door control switches such as wall consoles or keypads, if installed, must be at a height of at least 1.5m, within clear sight of the gate or door and away from any moving components of the system.

- 5. It is highly recommended that a set of safety infra-red beams be used in conjunction with this product. The safety beams must be installed in such a way that the product is prevented from running when anything is in the path of the door or gate.
- 6. Over and above the recommendation to use safety infra-red beams with this product it is mandatory to install and use a safety beam set when using the automatic closing feature. It is recommended that a warning light be fitted to any automation system.
- 7. The gate or door warning labels must be installed in a prominent place and/or adjacent to any fixed controls that trigger the system. These must be in clear line of sight of the gate or door opening.
- 8. The emergency manual release instruction label must be installed on or adjacent to the emergency manual release mechanism.

#### After installation - It is the responsibility of the installer to ensure the users:

- 1. Is proficient in the use of the manual emergency release mechanism.
- 2. Is issued with the documentation accompanying this product.
- 3. Understands that the gate or door may not be operated out of clear sight.
- 4. Ensures that children are kept clear of the gate or door area at all times, and that children do not play with the remote transmitters or any fixed trigger switches linked to the system.
- 5. Is instructed not to attempt to repair or adjust the automation system and to be aware of the danger of continuing to use the automation system in an unsafe condition before a service provider attends to it.
- 6. Is proficient in testing the unit's safety obstruction sensing system.
- 7. Is aware of what to check for with regards to wear and tear that may need to be attended to from time to time by the service provider.
- 8. Is aware that a fatigued battery may not be disposed of in the general refuse and must be handed in at a battery merchant for safe disposal. Before removing the battery from the system the household mains must be disconnected. In the case of the motor unit being removed and scrapped, the battery must be removed first.

### **Technical specifications.**

Technical Data	RS 500 AC Basic	RS 500 AC MCU Kit
Maximum door mass.	500kg	500kg
Maximum door travel.	6m	6m
Maximum door drum diameter.	440mm	440mm
Output torque @ primary sprocket.	74Nm	74Nm
Output torque @ 47T secondary sprocket.	340Nm	340Nm
Maximum no load speed @ primary sprocket.	32rpm	32rpm
Maximum no load speed @ 47T secondary sprocket.	6.2rpm	6.2rpm
Primary power supply.	AC 220 – 240v @ 50Hz	AC 220 – 240v @ 50Hz
Peak power consumption.	250W	250W
Electrical class.	Class 1	Class 1 🕀
Motor voltage.	AC 230V	AC 230V
Motor protection.	Thermal cutout	Thermal cutout
Maximum continuous operating time.	+/- 6min until thermal cutout. +/- 2 hour cooldown after cutout.	+/- 6min until thermal cutout. +/- 2 hour cooldown after cutout.
Maximum duty cycle.	20%	20%
Maximum operations. (3m opening height)	130/24hr	130/24hr
Auxiliary supply output.	N/A	12Vdc @ 230mA
Safety beam input.	N/A	Yes.
Receiver format.	N/A	ET BLU MIX © backward compatible with ET BLUE (Rolling code)
Receiver frequency.	N/A	433.92MHz
Receiver channels.	N/A	2 Channel (RX2-RC Micro)
Receiver memory capacity.	N/A	31 Users
All users can be allowed control of all channels.	N/A	Yes
Ingress protection.	IP20	IP20
Operating temperature range.	0 to 45° C (32F to 113F)	0 to 45° C (32F to 113F)
Physical dimensions.	See next page.	See next page.

# Component identification and descriptions.



Diagram number	Description	Diagram number	Description
1	9 Tooth primary sprocket	7	Emergency release lever.
2	Limit switch assembly	8	Secondary sprocket
3	Electric motor and gearbox	9	Drive chain
4	Clutch assembly fastening screws (x4)	10	Secondary sprocket hub
5	Hand operation chain	11	Side plate mounting bracket
6	220v 15A power lead with moulded M type plug-top	12	Operator mounting bracket

# Component dimensions.







## Where to position the equipment

#### Liquid ingress:

The Nice iDoor RS products are not designed for external use. They are not water tight as there are sensitive electronic and electrical circuits that require uninhibited airflow to remain cool and dry.

When deciding on an installation position, be aware of water ingress points around and near the desired mounting position of the equipment. If there is any possibility of water ingress, either via vapour or directly, the equipment should not be installed. Failure to adhere to this will result in an electrocution and or fire risk.

#### **Physical protection:**

Always install the equipment where it will be clear of moving objects. This is especially true of the cabling that can be damaged if snagged.



3. Roughly position and bolt operator bracket (#2) onto side plate bracket (#1) using the bolt holes provided.



4. Check alignment and position of the 2 x brackets. If satisfied, weld them together.



5. Raise the operator up to the operator mounting bracket (#2), align the fastening points with the 2 x fixed studs found on the bracket (#2). Finger-tighten the supplied machine nut (#7) onto the topmost mounting stud "B". This will keep the operator in position safely, while you finish fastening the other 2 x mounting points.



6. Install the supplied machine bolt, Nylock nut and washer (#8) at point "C".





8. Replace the previously installed machine nut on mounting stud "B" with the third Nylock nut (#9). Lightly tightened.



9. Select correct size hub (#3). Remove the M8 bolts and assemble the hub onto the secondary sprocket (#5) using the same M8 bolts. (Tighten firmly)

The secondary sprocket can be orientated either way to suit the best alignement with the primary sprocket.









12. Install the chain (#10) around the secondary (#5) and primary sprocket. Do it in such a way that the two ends of the chain are easily accessible, for the master link set (#11) installation. If necessary, the chain can be shortened using a chain breaker.



13. Install the master link set (#11). Take care to note that the master link retaining clip "F" is correctly installed in the grooves "G" of the master link pins with the master link side plate "H" beneath it.



14. Partially loosen the nylock nuts on all 3 x operator mounting points "B, C, D" so that it is easy to slide the operator towards or away from the drum shaft. Use this to bring the chain to the correct tension around the sprockets. The chain tension adjustment bolts "I" make this convenient. The recommend amount of play in the chain should be +/- 25mm.



15. With the secondary sprocket and hub assembly idling freely on the drum shaft, use the hand operated chain "K" to raise and lower the door +/- 1m. This will allow the secondary sprocket and chain, to self-align.



16. When satisfied that the chain alignment is true around the sprockets, lock the hub onto the drum shaft by tightening the grub screws "J"







3. Raise the daisywheel locking plate "L".

With the locking plate clear, adjust the closed limit daisywheel until it actuates the closed limit switch lever "M".

(The closed limit switch will be the one the daisywheels are nearest to after cranking the shutter closed)





5. Raise the limit daisywheel locking plate "L".

With the locking plate clear, adjust the open limit daisywheel until it actuates the open limit switch lever "N".

(The open limit switch will be the one the daisywheels are nearest to after cranking the shutter open)



## **Electrical installation.**

Before opening any cover, ensure the 220v AC has been switched off.

As a gate, door or shutter operator vibrates when in use, it is strongly recommended that only multiple strand flexible cables be used.

It is recommended that all cabling be installed in ducting that will keep it safeguarded against accidental snagging.

Before closing any housing with electrical cables in it, always remember to double check that all connections are securely made, that there are no stray strands flaring out that can short circuit against other adjacent connections or bared wires and that no cables will be pulled loose when the cover is replaced on the unit.

Terminating the AC voltages:

A 220v AC 15A M-Type switched outlet is needed within 1m of the operator. This outlet must not be installed within the mechanical workings of the system. This outlet must be certified, by way of a C.O.C. (certificate of compliance), by a registered electrician.

# Nice RS 500 AC Basic Kit. In the case of the Nice RS 500 AC basic kit that only makes use of the Up/Stop/Down wall console, Simply plug the wall console plug into the mating plug on the operator loom. **Operator Control loom** Wall Console loom Up button Stop button Down button

## Nice RS 500 AC Basic kit usage instructions.

To open the shutter, hold the UP button. (**A**) The shutter will stop running if the button is released



Down button

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## Nice RS 500 AC MCU Kit.

In the case of the Nice RS 500 AC MCU kit that makes use of the AC1-U control card, plug the MCU loom plug into the mating plug on the operator loom. The wall console loom can be plugged into the mating plug on the MCU.





Control Card Technical Specifications:		
Power Supply voltage.	220V AC	
Motor Voltage	220V AC	
Motor Power (Max)	900W	
Auxiliary Output Voltage	12v DC	
Auxiliary Output Current	230mA	

LED Indications:		
On	Shutter Open	
Off	Shutter Closed	
Flashing Slowly	Shutter Moving	
Flashing Fast	Shutter stopped Partional Open	

Dipswitch Designation In Normal Operating State:		
	Off	On
Dipswitch 1	Auto-close off.	Auto-close On.
Dipswitch 2	(O/S/C) Open/Stop/Close. (Step Step mode)	Open only + Auto-close mode.

# NB! If either auto-close or Open only + Auto-close is used, Safety beams must be installed!

Programming:		
Prior to programm	ing. Both dipswitches must be OFF.	
Enter programming	Place the jumper across both pins PRG	
Set auto-close time	<ol> <li>Switch dipswitch 1 on.</li> <li>Press and release PROG BUT.</li> <li>Count the beeps. Each beep = 1 second.</li> <li>At required time, press and release PROG BUT.</li> <li>Switch dipswitch 1 off.</li> </ol>	
Set run time	<ol> <li>Begin with shutter &gt; 500mm open.</li> <li>Switch dipswitch 2 on.</li> <li>Press and release PROG BUT.         <ul> <li>Shutter will begin closing.</li> <li>When shutter reaches the closed limit, it will stop and begin opening again.</li> <li>On reaching the open limit, the shutter will stop and begin closing again.</li> <li>On reaching the closed limit, the shutter will stop and the buzzer will beep twice.</li> </ul> </li> <li>Switch dipswitch 2 off.</li> </ol>	

# Setting up the RX2 MICRO-RC

(Click here to watch the video demonstration: https://youtu.be/2IXTNt2CBBA)

Power supply:	11 – 15mA @ 5 – 30v DC.
Channels:	2 x FET outputs.
Current limiting on output:	400mA. Both combined.
Memory capacity:	31 users.
Frequency:	433.92MHz.
ICASA:	T/A-2017/2118

RX LED Flashes	Definition
x 1	Program TX button into CH1
x 2	Program TX button into CH2
х З	Toggle CH1 between pulse or latch
x 4	Toggle CH2 between pulse or latch

#### Navigation of menu:

The menu cannot be accessed if either output is latched on! LED flashes rapidly if an output is latched on while trying to access the programming.

Press and release the PRG Button to advance through the menu options. The menu will loop back to option 1 on the fifth PRG Button press.

To exit programming, wait 30sec or power cycle the receiver.



Press and release PRG.

X3 for Ch1 or X4 for Ch2

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Press and hold PRG.

Release PRG when LED

flashes. 1 = lpulse. 2 = latch







#### WARRANTY:

- 1. All goods manufactured by Nice Group SA (Pty) Ltd carry a 12 month factory warranty from date of invoice.
- 2. All goods are warranted to be free of faulty components and manufacturing defects.
- 3. Faulty goods will be repaired or replaced at the sole discretion of Nice Group SA (Pty) Ltd free of charge. Within the warranty period.
- 4. 5. This warranty is subject to the goods being returned to the premises of Nice Group SA (Pty) Ltd.
- The carriage of goods is for the customer's account.
- 6. This warranty is only valid if the correct installation and application of goods, as laid out in the applicable documentation accompanying said goods, is adhered to.
- 7. All warranty claims must be accompanied by the original invoice.
- 8. All claims made by the end user must be directed to their respective service provider/installer.

The following conditions will disgualify this product from the warranty as laid out above. These conditions are non-negotiable.

- 1. Any unauthorized non-manufacturer modifications to the product or components thereof.
- 2. Any modification to the installation methods described in the installation instructions.
- 3. Any application or use of the product other than the intended use and application described in the product documentation.

The following items are not included in the warranty or they carry a special warranty condition of their own.

- 1. The battery (Limited 6 month warranty)
- 2. The motor brushes.
- 3. Damage resultant of wind and other climatic influences such as lightning strikes.
- 4. Damage due to high voltage surges on the household mains or short circuiting of the gates to the electric fencing.
- 5. Damage due to infestation i.e. Ants nesting...
- Water damage. It is the responsibility of the installer to ensure the product is installed in a location that is protected from water 6. ingress. The ingress protection rating is specified in the accompanying documentation. Housings that require that cable entries are made by the installer do not carry an ex-factory ingress protection rating as it is the responsibility of the installer to seal the cable entry points after installation of the cabling.