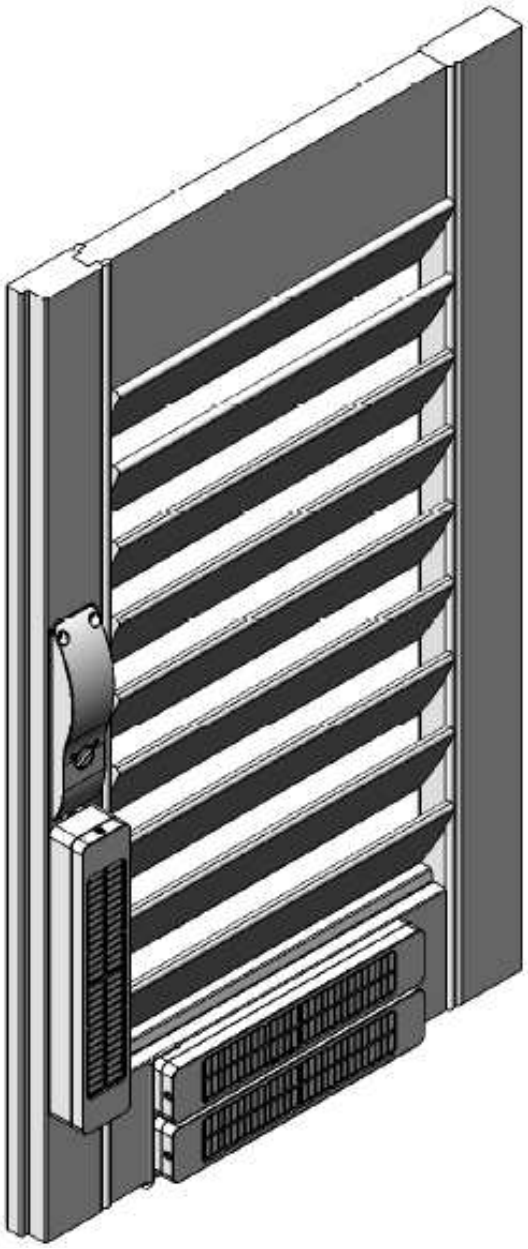
NORMAN®

PerfectTilt® *RF* Motorized Shutter

User Manual



Pictured: PerfectTilt® RF Solar with auxiliary solar panels and auxiliary battery pack

INTRODUCTION

The PerfectTilt® RF motorization system features a remote control that utilizes the latest in radio frequency technology. This user manual is designed to allow the beginner to become quickly oriented with the basic day-to-day functioning of the PerfectTilt® RF system. The second part will explain advanced programming features that can help you get the most out of your investment.

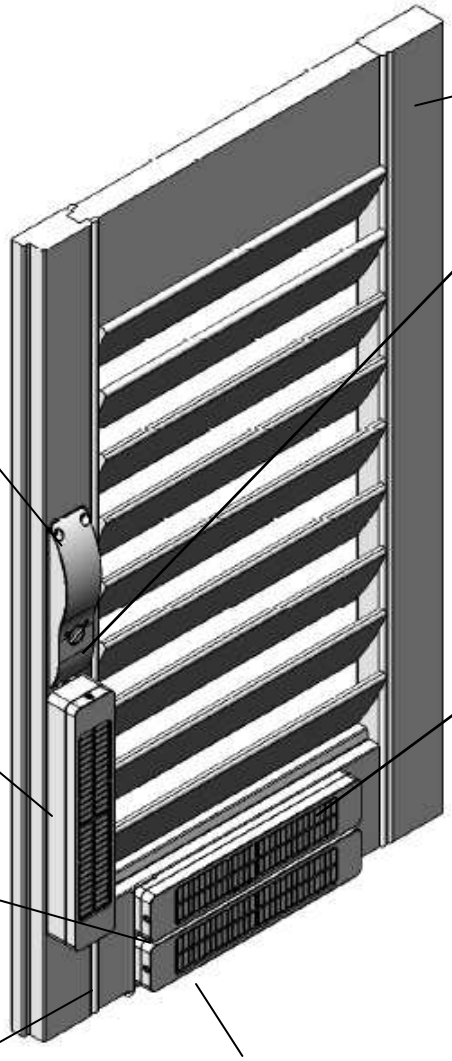
The unique features of the PerfectTilt® RF remote control include:

- Revolutionary radio frequency that transmits up to 65 feet indoors (with obstructions) or up to 130 feet outdoors (unobstructed).
- Completely programmable e-Timer using web interface syncs your shutters to your computer through USB hook up
- Control panels individually, as well as in groups, or all at once
- Control unlimited number of motors that are in range
- Remote control powers on automatically with vibration sensing technology
- Smart battery indicator tells you when your motor batteries need to be recharged

USER GUIDELINES

- Keep the remote control in a safe place out of small children's reach. If opened, the remote control contains small parts that, if swallowed, may cause a choking hazard.
- Do not drop the remote control. Mistreatment of the remote control could damage the circuit board.
- Do not use any spray solvents or alcohol to clean the remote control. Simply use a slightly moistened soft cloth to wipe clean.
- Store the remote control in a dry area. Rain, water, or other moisture may damage the circuit board.
- Keep the remote control away from direct sunlight, heaters and other heat sources. High temperatures could damage the circuits and batteries, and deform the remote control housing.
- Keep away from extreme cold, which may create moisture and cause damage when the remote control is moved to a warmer area.
- Dispose or recycle batteries according to local laws.
- Do not try to disassemble the remote control. There are no serviceable parts inside.
- When the batteries on the remote control or motor are weak, the control range will get shorter or fail. Please replace batteries at this time. (see sections on battery replacement)
- If batteries fail, louvers can be moved by hand to the desired position while in Manual setting.
- When you press a button to select an angle position, all louvers may not move at the same time due to the louvers' starting position. However, all louvers will end at approximately the same position.

PARTS AND NAMES



This side faces the window

Motor
Includes controller and battery pack

Manual Switch
Use a coin to release the clutch to switch to Manual mode

Auxiliary Battery Pack
Extra rechargeable batteries may be installed into this optional add-on that sits on top of the regular battery pack

Auxiliary Solar Panels
Found on PerfectTilt® RF Solar only, extra solar panels are available as an optional add-on

Solar Panel
Preferred to be mounted on the lower frame of the shutter where sunlight is most available

Remote Control
Model: NC85

Wires and Power Cables Are Unexposed
Wires and power cables are stowed inside the panel hidden from view for a seamless solution

Solar Panels
Available only in PerfectTilt® RF Solar, the solar panels are parallel linked for enhanced capacity

QUICK START

To get the most out of your PerfectTilt® RF system, we recommend that you read through the User Manual, which will guide you through the process of grouping your shutters, allowing you to adjust groups of shutters independently from one another, and not all at once. If you'd like to start quickly and only have the ability to adjust your shutters all at once, this QUICK START will guide you through the process.

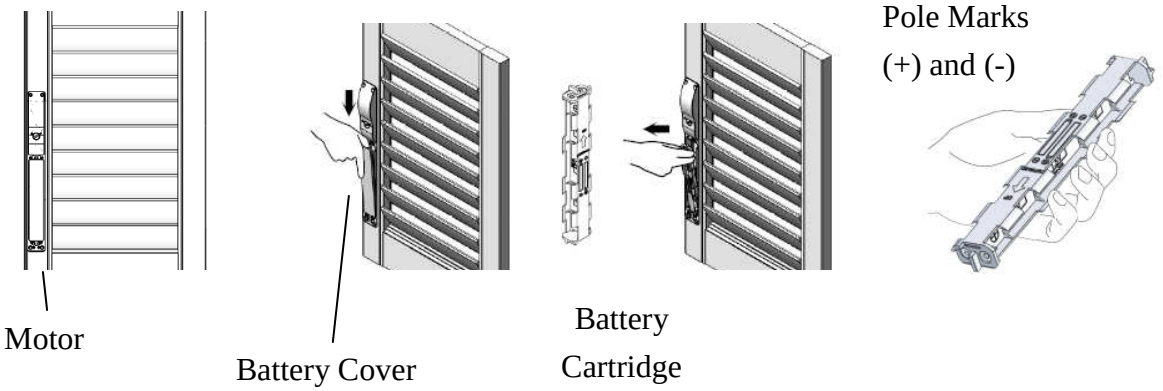
1) **Install remote control batteries:** Turn over the remote control and open the back cover by finding the indentation at the bottom edge of the remote control and then separate the back cover from the remote control. Insert batteries (AAA alkaline batteries 1.5V * 2) matching the (+) and (-) marks and reinstall the back cover. If the battery has been properly installed, the NORMAN® logo will light.
2) **Install motor batteries into *all panels*:** Do not press any buttons on the remote control until all batteries have been installed. To install, first open the battery cover. Remove the battery cartridge. Insert batteries (AA alkaline batteries *6) matching the (+) and (-) marks inside the battery cartridge. Put back the cartridge and the battery cover.
3) **Configure all panels:** With all batteries installed into the remote control and all motor, press *any* one of the eight "Angle" keys. It does not matter which one you push. Now, press the "1" number key.
4) **Ready for use or reset:** All panels in your PerfectTilt® RF system are now configured to tilt simultaneously. To use, press an "Angle" key then press "1". Or press an "Angle" key and then press the "All" key. If this is not the case, press a different "Angle" key and then either "1" or "All". If you'd like to reset and restart, take out the batteries from motor from all panels and repeat steps 2, 3 and 4 in QUICK START.

REMOTE CONTROL BATTERY INSTALLATION

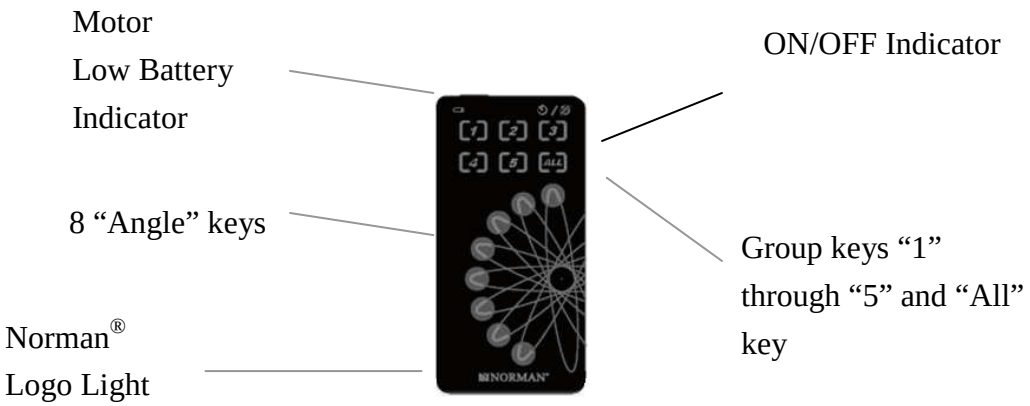
The PerfectTilt® RF remote control requires 2 AAA batteries. To install the batteries, turn over the remote control and open the back cover by finding the indentation at the bottom edge of the remote control and then separate the back cover from the remote control. Insert batteries (AAA alkaline batteries 1.5V * 2) matching the (+) and (-) marks and reinstall the back cover. If the battery has been properly installed, the NORMAN® logo will light.

MOTOR BATTERY INSTALLATION

The order in which batteries are installed in the motors affects how your shutters are programmed. Please see "Basic Programming Tutorial" for details. To install batteries to the motor, first open the battery cover. Remove the battery cartridge. Insert batteries (AA alkaline batteries *6) matching the (+) and (-) marks inside the battery cartridge. Put back the cartridge and reinstall the battery cover.



REMOTE CONTROL BUTTONS AND INDICATORS



BASIC PROGRAMMING TUTORIAL

Why program?

The programming function allows you to group shutter motors together in 1 of 5 groups. Each of the number keys towards the top of the remote control numbered “1” through “5” corresponds to a single group. Each group can consist of an unlimited numbers of shutters that are in range. The “All” key controls all groups at once. Grouping motors together allows you to move all the motors in that group in sync, for instance all the shutters in your living room but not those in your kitchen, or all the shutters on the west wall of your room but not the south.

Using Angle Keys

Beneath the 2 rows of number keys and “All” key as described above, are the 8 “Angle” keys that are arranged in a semi-circle arch. Each of the “Angle” keys corresponds to a desired tilting position, spanning the entire arc of the louver’s movement. For instance, the top button in the semi-circle closes the shutter in an upward position. The middle button in the arch (the 5th one down from the top button of the arch) would tilt the shutter at the maximum horizontal position to provide maximum openness, and the bottom most button would close the shutter in a downward position.

How to Group Shutters (Step 1)

Your PerfectTilt® RF system has not been pre-programmed. To begin programming, only install the batteries into the motors you’d like to be in the first group. At this point, do not install the batteries for other motors that

are to be assigned to other groups, since any motor that has been powered on and can receive a signal from the remote control, and has not been already programmed, will be programmed in this step.

With batteries installed in all group 1 motors only, press *any* one of the eight "Angle" keys. It does not matter which one you push. Now, press the "Number" key you'd like to assign for this group. For instance, if you'd like to assign button "1" to all the motors powered on right now, press "1" now.

How to Group Shutters (Step 2)

After you have pressed "1", this concludes the first step. In the second step, install all the batteries to motors designated in the second group. Do not take out the batteries from the motors that have already been assigned to group 1. With batteries installed in all group 1 and group 2 motors only, press *any* one of the eight "Angle" keys. It does not matter which one you push. Now, press the "Number" key you'd like to program. For instance, if you'd like to assign button "2" to the second group of motors you have just installed batteries for, press "2". This concludes step two. Programming motors in group 2 will not affect the programming in the first group. You can repeat the process for up to 5 groups.

RESET GROUPS AT ANY TIME

If you want to reset any of the motors at any point, just take out the battery and then re-install it.

USING YOUR REMOTE CONTROL

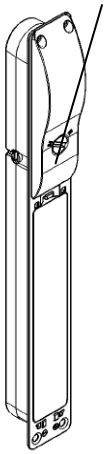
With all groups programmed, you can easily tilt any group of shutters. To begin, first press the "Angle" key that corresponds to the angle you wish to tilt. Then press the number key that corresponds to the group number you'd wish to tilt; this will tilt all shutters in the group to the desired position. To tilt all shutters at once, press the desired "Angle" key and then press "All". However, if you press the "Angle" key that corresponds to the present position of the louvers, and then either a number key or "All" key, the louvers will not tilt.

MANUAL TILTING MODE

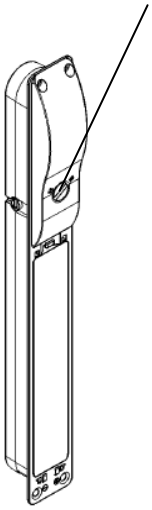
Your PerfectTilt® RF system includes a Manual option that allows you to adjust your shutters by hand without a remote control, giving you more control flexibility, as well as the ability to adjust your shutters by hand in the event of low or dead battery.

To begin, locate the “M” (Manual) and “R” (Remote Control) switches on the motor as pictured.

Turn to “M” for manual setting



Turn to “R” for remote control setting



To switch to Manual mode, use a coin to release the clutch and turn the dial to “M”**. DO NOT force the rotation of the louvers. If the dial has been turned to “M” properly, no excessive force is necessary. Forcing the louvers to rotate without releasing the clutch and turning the dial to “M” will cause serious damage to the system.** To revert back to “R” (Remote Control) mode, install fresh batteries if required into the driver, turn the dial back to “R” and then reprogram if required.

LOW BATTERY INDICATOR

If the motor batteries are low, the Low Battery Indicator will signal a series of short half-second flashes after you push a button on the remote control.

SLEEP MODE

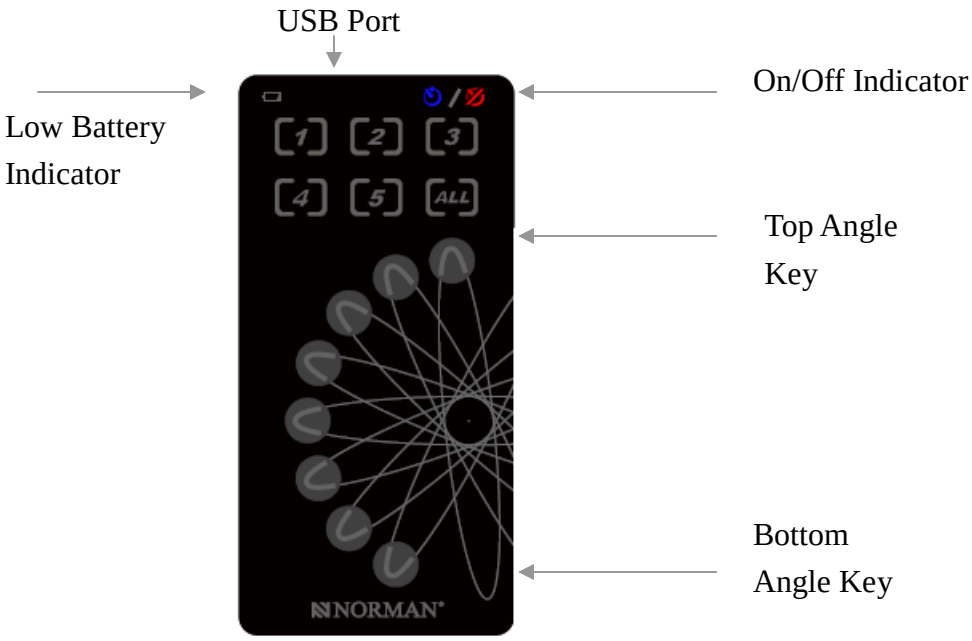
The remote control will go into sleep mode after 15 seconds of non-use. To awaken the device, just pick it up and the vibrations of your motions will wake up your PerfectTilt® RF remote control, and the Norman® logo screen bar will light.

RESET AT ANY TIME

You may reset the programming on the motors at any time. Simply take out the batteries of the motors you wish to reset and then reinstall the batteries. This would ready the motors to be reprogrammed.

ADVANCED FEATURES (CALIBRATION)

BUTTONS AND INDICATORS (CALIBRATION MODE)



Your PerfectTilt® RF system may require calibration to ensure optimal louver alignment after prolonged use. The calibration feature should only be attempted by a technician.

To start calibration, take out the battery from the motors that you'd like to calibrate. This will wipe out the motors' programming memory, and will require reprogramming after the calibration process. You may calibrate as many motors as you'd like at the same time as long as they're all in range.

With the batteries taken out from the motors you wish to calibrate, reinstall the batteries. Now press the number key “1” and the “All” keys simultaneously for about 3 seconds. After you have held down the buttons for about 3 seconds, the On/Off Indicator will light towards the top of the remote control. Once the light is lit, you are in synchronization mode.

When you are in synchronization mode, press the Number key “2”, “3” or “4” that corresponds to the louver size of your shutters.

- Press “2” for 2.5” louvers
- Press “3” for 3.5” louvers
- Press “4” for 4.5” louvers

After pressing one of the Number buttons “1” through “4”, the louvers will automatically start calibration by moving up and down. Do not touch the shutters or press any buttons on the remote control while the shutters are moving up and down.

Once the louvers have stopped moving, check the angle at which the louvers are positioned. If the louvers are positioned optimally, they should in a perfectly horizontal position (maximum openness).

If the louvers are tilted slightly upward after they have stopped moving, press the bottom most “Angle” key once to adjust the louvers downward to the perfectly horizontal position. If the louvers are tilted slightly downward, press the top most “Angle” key to adjust the louvers upward to the perfectly horizontal position. After you have pressed either the bottom or top “Angle” key once, check to see if the louvers are in the perfectly horizontal position. If not, repeat as necessary.

If you had pressed the top “Angle” key to move the louver one increment up, you should notice that the Low Battery Indicator will light. However, if you had pressed the bottom “Angle” key, the Low Battery Indicator will not light.

During the recalibration process, the Low Battery Indicator is used to remind the user that as part of the calibration finalization process, the bottom “Angle” key must also be pressed once after the optimal horizontal angle position has been achieved. Thus, if you had to press the top “Angle” key to compensate the louvers to tilt upwards, you would need to press the bottom “Angle” key once to complete the finalization process. However, if you were compensating downwards and pressing the bottom “Angle” key, you do not have to press the “down” key again since you have already pushed it.

If you have done everything correctly so far, the On/Off Indicator should be on, and the Low Battery Indicator should be off. To close synchronization mode, press the number “1” and “All” key simultaneously for 3 seconds and The On/Off Indicator will turn off. Your shutters will now automatically move to a 70 degree position. After your shutters have stopped moving, your shutters are now synchronized, ending the synchronization process and you may begin the programming phase.

USB PORT

The included USB cord is for the e-timer function, and is used to connect the remote control to a USB-enabled computer.

FCC Caution

1. The device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) This device must accept any interference received, including interference that may cause undesired operation.

2. This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

3. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user authority to operate the equipment.

FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation.

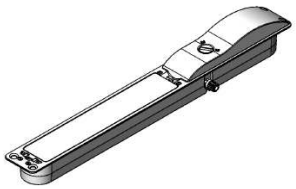
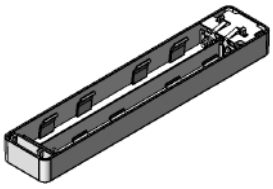
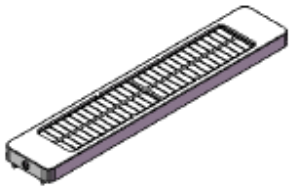
If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and motors.
- Connect the equipment into an outlet on a circuit different from that to which the motor is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CE Warning:

The 20cm safe distance from antenna to the user shall be maintained.

FCC ID:Q3V-NC85 CE 0984 FC CE 

Items	
Remote Control Model : NC85 Power : 3V DC (AAA alkaline batteries 1.5V x2)	 Dimensions : 4.8” x 2.44” x 0.63”
Motor Model : NS98 Colors Available: White; Brown; Caramel	 Dimensions : 13.01” x 1.47” x 1.57”
Auxiliary Battery Pack Colors Available: White; Brown; Caramel	 Dimensions: 7.67” x 1.45” x 0.85”
Solar Panel Colors Available: White; Brown; Caramel	 Panel : 5.9” x 1.1”x 0.07”，9V Dimensions: 7.67” x 1.46” x 0.53”
Mounting Base (for Solar Panel) Colors Available: White; Brown; Caramel With Power cable Colors: Brown; White