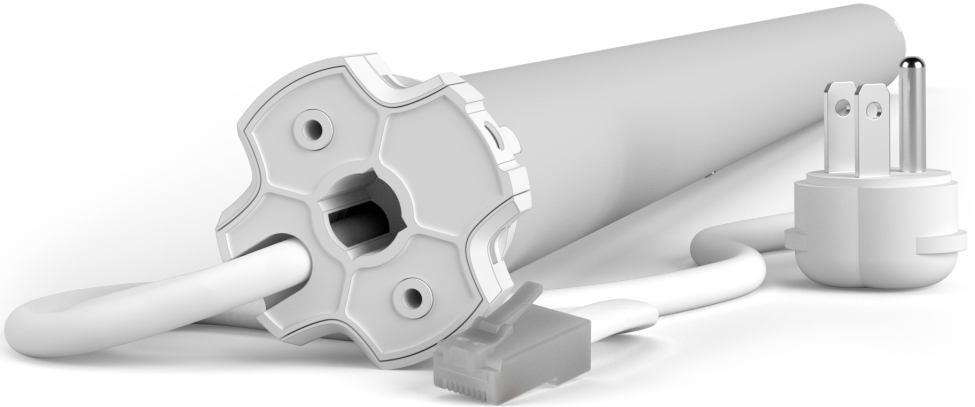


AUTOMATE®

MOTOR PROGRAMMING INSTRUCTIONS

120 AC MT01-1135-069002 - 35mm/6Nm/33RPM Motor



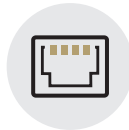
ELECTRONIC
LIMIT



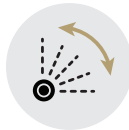
RS485
BI-DIRECTIONAL



FAVORITE
POSITION



RS-485
CONTROL



ROLLER AND
TILT MODE

AUTOMATE | MT01-1135-069002 Serial Protocol Motor communicates over **RS-485** serial network. These instructions outline the commands and operation of the motor through simple ASCII strings from a PC controller to the RS-485 Motors on the network.

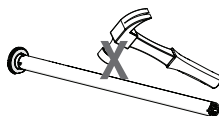
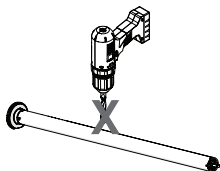
FEATURES:

- Electronic Limit
- RS-485 Serial 2 wire Communication
- Bi-Directional Communication
- 3 x Selectable rpm
- Favorite Position
- Roller & Tilt Modes
- Manual Control Button

SAFETY INSTRUCTIONS

WARNING: Important safety instructions to be read before installation.

Incorrect installation can lead to serious injury and will void manufacturer's liability and warranty.



WARNING: Important safety instructions to be read before installation and use.

Incorrect installation or use can lead to serious injury and will void manufacturer's liability and warranty.

It is important for the safety of persons to follow the enclosed instructions. Save these instructions for future reference.

- Do not expose to water, moisture, humid and damp environments or extreme temperatures.
- Persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge should not be allowed to use this product.
- Use or modification outside the scope of this instruction manual will void warranty.
- Installation and programming to be performed by a suitably qualified installer.
- Follow installation instructions.
- For use with motorized shading devices.
- Keep away from children.
- Frequently inspect for improper operation. Do not use if repair or adjustment is necessary.
- Keep clear when in operation.
- Replace battery with correctly specified type.

COMPLIANCE STATEMENT

This device complies with Part 15 of the FCC Rules / Industry Canada licence-exempt RSS standard(s). 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.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

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

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 or more of the following measures:

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

To satisfy FCC / IC RF exposure requirements, a separation distance of 20 cm or more should be maintained

between the antenna of this device and persons during device operation.

To ensure compliance, operations at closer than this distance is not recommended.

Les antennes installées doivent être situées de façon à ce que la population ne puisse y être exposée à une distance de moins de 20 cm. Installer les antennes de façon à ce que le personnel ne puisse approcher à 20 cm ou moins de la position centrale de l'antenne.

La FCC des états-unis stipule que cet appareil doit être en tout temps éloigné d'au moins 20 cm des personnes pendant son fonctionnement.



Do not dispose of in general waste.
Please recycle batteries and damaged
electrical products appropriately.

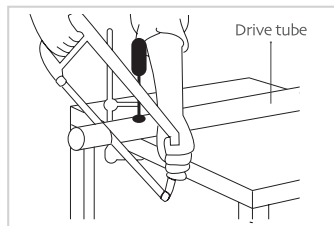


CONTENTS

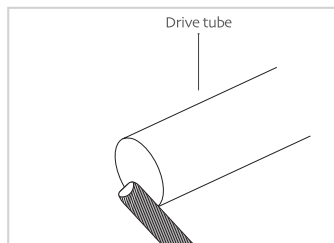
1	ASSEMBLY	4
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1 ASSEMBLY

Step 1. Cut roller tube to required length.

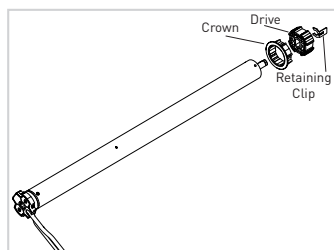


Step 2. Ensure roller tube is clean and free from burrs.



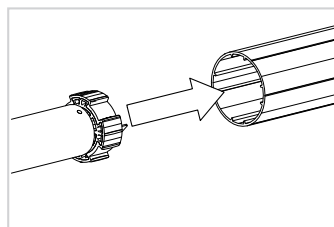
Step 3. Fit required crown, drive and bracket adapters.

Tube must be close fitting with chosen crown and drive adapters. Refer to Rollease Acmeda System Assembly Manual for recommended crown, drive, and bracket adapter kits.



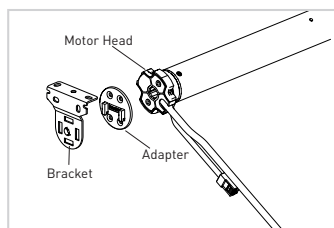
Step 4. Slide Motor into tube.

Insert by aligning keyway in crown and drive wheel to the tube.



Step 5. Mount motorized tube onto brackets.

Refer to Rollease Acmeda System Assembly Manual for recommended crown, drive, and bracket adapter kits.



2

MOTOR SPECIFICATIONS AND WIRING

2.1

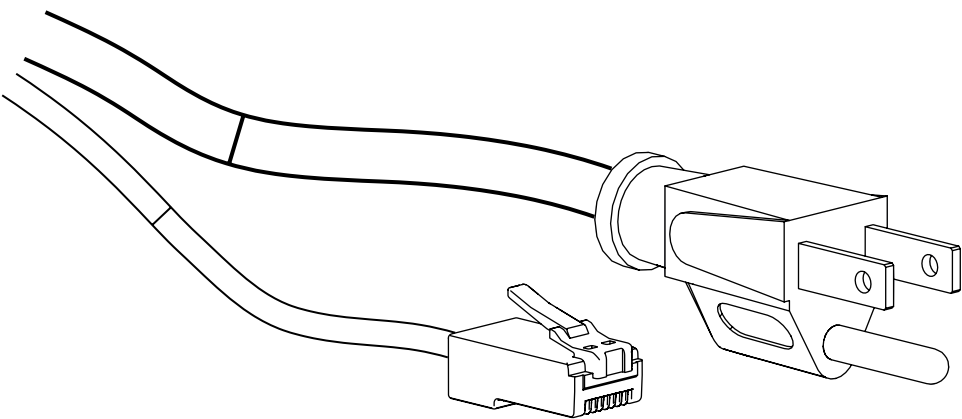
Motor Specifications

Voltage Input Range	120V
Rotation speed	33 RPM
Torque	6Nm
Maximum Run Time	4 Min
Operating Temperature Range	-10C - 50C -14F - 122F

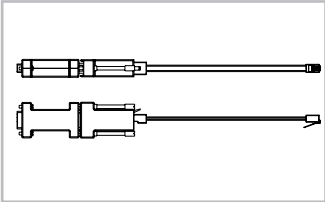
2.2

Power and RS-485 Communication

This motor is powered via a 120V Power cord. Communication with this motor is via an RS-485 network.



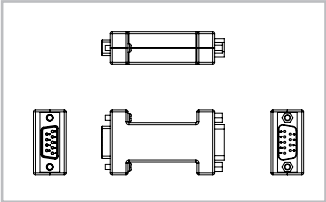
RS485 Serial Kit



p/n MT02-0406-0001

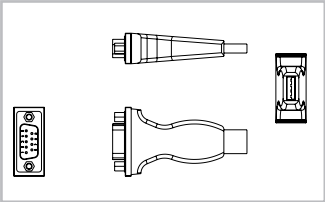
(Includes cable, DB9 and RS232/485 adapters)

RS485 to RS232



p/n MT02-0406-0001

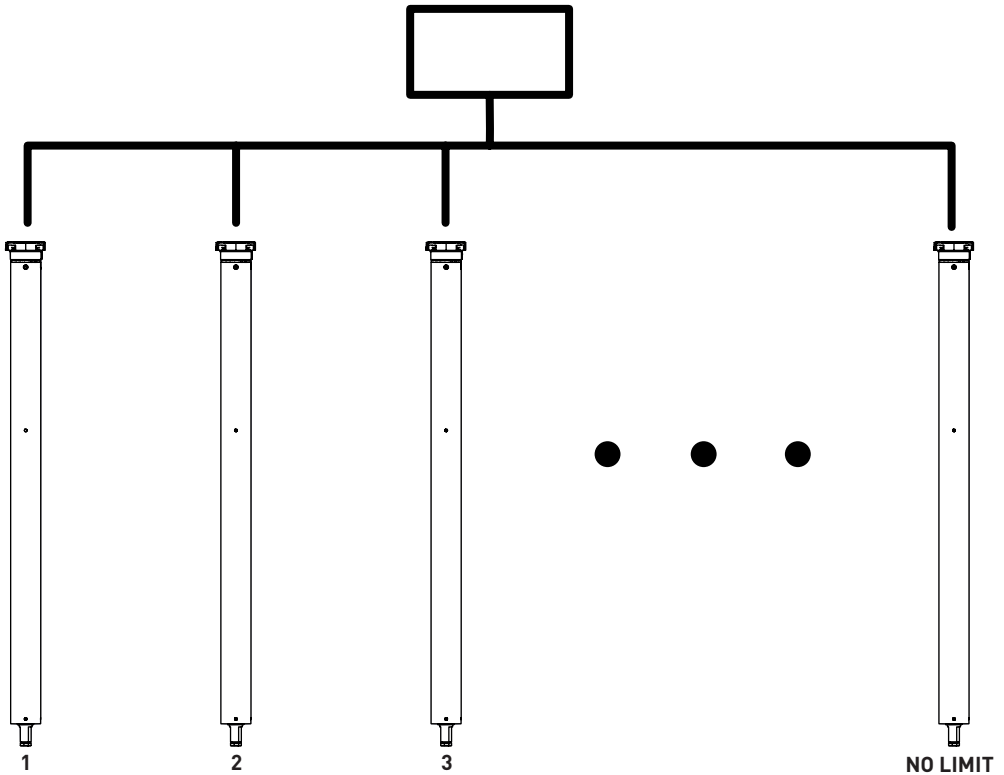
RS485 to USB adaptor



p/n MT02-0406-000002

(for PC / testing connection)

2.3 RS-485 Network Specifications



Each motor on the RS-485 Network has an individual address [Refer to section 4.2].
Following the procedure as outlined in section 4.2, the motors on each RS-485 network must be checked to have a unique address, in order to allow for individual motor control in a network.

3 P1 BUTTON FUNCTIONS

3.1 Motor state test

This table describes the function of a short **P1** Button press/release (<2 seconds) depending on current motor configuration.

P1 Press	Condition	Function Achieved	Visual Feedback	Audible Feedback	Function Described
Short Press	If limit is NOT set	None	No Action	None	No Action
	If limits are set	Operational Control of motor run to limit. Stops if already running. Each continuous Short press will change direction.	Motor Runs	None	Operational control of motor after pairing and limit setting is completed first time

3.2 Motor configuration options

The **P1** Button is utilized to administer motor configurations as described below.

Hold **P1** button on motor head.

No Action



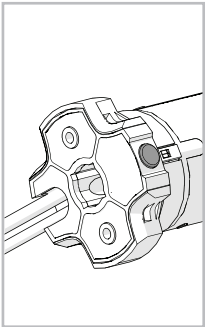
No Action



Reverse Direction



Reset To Factory Settings



P1 button on motor head.

IMPORTANT

Jogs are seen at each time marker, however the beeps are only heard once you release the **P1** button.

4 CONNECTING TO MOTOR AND SETTING/ADJUSTING LIMITS

4.1 Connection Parameters

The serial connection parameters are given in the below table.

Communication Parameter	
Protocol	Asynchronous UART
Baud Rate	9600 bps
Data Bits	8
Parity Bits	N
Stop Bit	1

4.2 Find Motor Address

Downlink - Messages from the Controller/PC sent to RS-485 Motor

Uplink - Messages from the RS-485 Motor sent to the Controller/PC

Start Character	Hub Address (First Half)	Delimiter Charater	Motor Address (Second Half)	Command	Data	End Character
!	XXX	D	YYY	ASCII character	(optional)	;

Hub address (XXX)

To get XXX send “!000V?;” and you will receive the hub address (XXX) in the following format: !XXXV;ZZZZ

Example reply “!1F6V;85E3” Thus XXX = 1F6

Motor Address (YYY)

Send the Hub Address followed by D000v?; to receive YYY

Example: Send “!1F6D000V?; Received message “1F6D1E1U;C53C”) Thus YYY = 1E1

Final Address:

!1F6D1E1;

Motor can now be controlled using motor’s individual address.



IMPORTANT

The system manages communication traffic, however there is a possibility of buffer overflow if large amounts of messages are being transmitted in a short amount of time [in response to global commands].

4.3 Check motor direction

Downlink Message	Uplink Message	Comments
!XXXDYYYc;		Motor rotates in "close" (down) direction
!XXXDYYYo;		Motor rotates in "open" (up) direction
!XXXDYYYcA;		Motor jogs in "close" (down) direction
!XXXDYYYoA;		Motor jogs in "open" (up) direction
!XXXDYYYs;		Motor "STOP" command – ceases rotation
!XXXDYYYpM02;	!XXXDYYYpM02;	Reverse Motor rotation direction

Motor response without limits set is the uplink message: **!XXXDYYYU;**

The "U" character in the uplink message is to tell the user that the position of the motor is unknown as the limits have not yet been set.

4.4 Set Upper and Lower Limits

Move the shade into desired position using the jog/rotate commands as given in section 4.3 or alternatively use the motor button **P1** to move shade into position. After the shade is in the desired position, set the limit position.

Downlink Message	Uplink Message	Comments
!XXXDYYYpEoH;	!XXXDYYYpEoH;	Set shade current position as the top limit
!XXXDYYYpEcH;	!XXXDYYYpEcH;	Set shade current position as the bottom limit

Motor Response



IMPORTANT

Cycle shade up and down prior to setting limits to settle fabric



IMPORTANT

Cycle shade up and down prior to setting limits to settle fabric



Initial set-up is now complete

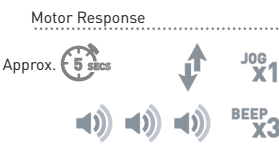
Verify the shade limits have been set by sending the close and open commands to the motor.

Downlink Message	Uplink Message	Comments
!XXXDYYYc;	!XXXDYYYU;	Motor rotates in "close" (down) direction
!XXXDYYYo;	!XXXDYYYU;	Motor rotates in "open" (up) direction

4.5 Adjust Limits

Once the shade limits have been established, they may be adjusted at any time.

Downlink Message	Uplink Message	Comments
!XXXDYYYpEoA;	!XXXDYYYpEoA;	Adjust the top limit
!XXXDYYYpEcA;	!XXXDYYYpEcA;	Adjust the bottom limit



Once motor responds to adjust limit command, shade may be re-positioned using commands in section 4.3. Once shade is in desired position, limit may be set again by issuing commands in section 4.4. Motor will respond to new set limits by the following:



4.6 Delete Limits

Shade limits can be deleted in order to re-enter setup mode. Limits can then be re-set by following the procedure in section 4.4.

Downlink Message	Uplink Message	Comments
!XXXDYYYpEoA;	!XXXDYYYpEoA;	Adjust the top limit

4.7 Set a Favorite position

Move shade into desired position using the commands as given in section 4.3.

When shade is in preferred position, set as favorite position using string below.

Downlink Message	Uplink Message	Comments
!XXXDYYYpEmH;	!XXXDYYYpEmH;	Set current position as favorite position



4.8 Send shade to favorite position

At any time during motor operation, shade may be sent to favorite position. Command is given in the table below.

Downlink Message	Uplink Message	Comments
!XXXDYYYf1;	!XXXDYYYrDD1bDD2;	Send shade to favorite position

Shade will move into favorite position. Response in uplink message (DD1) is the position of the shade percentage between the upper and lower limit. DD2 is the angle of the motor shaft.

4.9 Delete Favorite position

If favorite position is desired to be adjusted or to be erased all together, the following command deletes the favorite position from the motor's memory.

Downlink Message	Uplink Message	Comments
!XXXDYYYpEmC;	!XXXDYYYpEmC;	Delete currently set favorite position

Motor Response



4.10 Send Shade to Percentage Position

Shade can be sent to a specific percentage position between the upper and lower limits. The upper limit is the open position (0%), and lower limit is the closed position (100%). Shade can be moved to a specific percentage between the limits by the command below. Shade position may also be read at any time by the command below.

Downlink Message	Uplink Message	Comments
!XXXDYYYmDDD;	!XXXDYYY<DD1bDD2;	Send Motor to percentage position between limits
!XXXDYYYr?;	!XXXDYYYrDD1bDD2;	Request current shade position between limits

Shade will move into percentage position. Response in uplink message (DD1) is the position of the shade in percentage between the upper and lower limit. DD2 is the angle of the motor shaft.

4.11 Reset Motor to Factory Settings

Motor can be reset to factory settings in order to erase the pairing relationship between PC controller and the motor, as well as remove all limits and speed adjustment settings.

Downlink Message	Uplink Message	Comments
!XXXDYYYpR*;	!XXXDYYYpR*;	Reset Motor to factory settings

Previous motor address will be retained and will not be changed when the motor is reset to factory settings.

5TROUBLE SHOOTING

automateshades.com

Problem	Cause	Remedy
Motor is not responding	Motor is powered on but has no response	Re-check RS-485 wire connections and re-attempt to connect to motor
	Uplink message received: !XXxECRC;ZZZZ	Command sent to motor has not been received. ZZZZ is the error message sent from the motor. Ensure communication wires are connected correctly, and re-attempt to connect to motor.
	Power failure	Check power supply to motor is connected and active
	Incorrect wiring	Check that wiring is connected correctly (refer to motor installation instructions)