AUTOMATE®

PROGRAMMING MANUAL

AUTOMATE | DC [25mm/1.1Nm/28rpm] RS485/RJ45

ELECTRONIC LIMIT

SELECTABLE SPEED

BI-DIRECTIONAL COMMUNICATION

FAVORITE POSITION

RS-485 CONTROL

AUTOMATE | DC [25mm/1.1Nm/28rpm] RS485/RJ45 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.

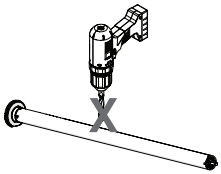
FEATURES:

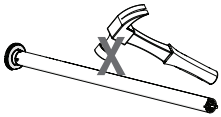
- Electronic Limits
- RS-485 Serial 2 wire Communication
- Bi-Directional Communication
- 3 x Selectable rpm
- Favorite Position
- Roller & Tilt Modes.
- Manual Control Button

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.
- This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.
- This appliance must only be supplied at rated voltage.
- The drive shall be disconnected from its power source during cleaning, maintenance and when replacing parts Cleaning and user maintenance shall not be made by children do not allow children to play with fixed controls. Keep remote controls away from children.
- Frequently examine the installation for imbalance and signs of wear or damage to cables and springs.
- Before installing the drive, remove any unnecessary cords and disable any equipment not needed for powered operation.
- The mass and dimensions of the driven part must be compatible with the rated torque and rated operating time of the appliance.
- The driven part must be compatible with the rated torque and operating time of the appliance as follows:
  For MT01-1225-069005,MT01-1225-069006:
  Rated torque of 1.1Nm, rated operating time of 12 minutes and minimum tube diameter of ø25mm.
- The A-weighted emission sound pressure level of the appliance is less than or equal to 70dB(A).

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.

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

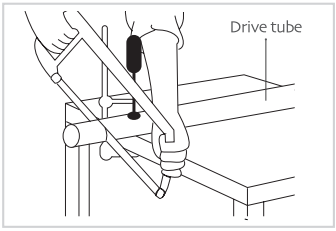
RECOGNIZED COMPONENT
Intertek 5005833

CAN ICES-3 (B)/NMB-3(B)

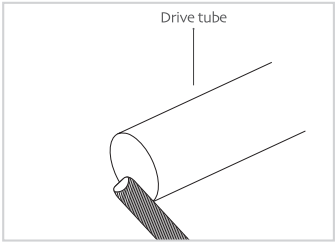
CONTENTS

1 ASSEMBLY

Step 1. Cut roller tube to required length.

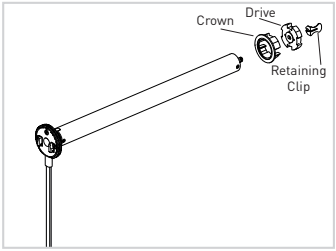


Step 2. Ensure roller tube is clean and free from burrs.



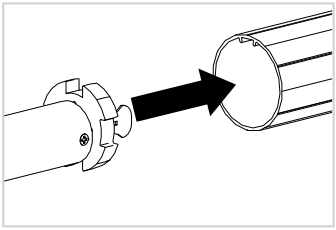
Step 3. Fit required crown, drive and bracket adapters.

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.



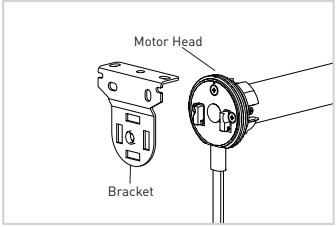
Step 4. Slide Motor into tube.

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

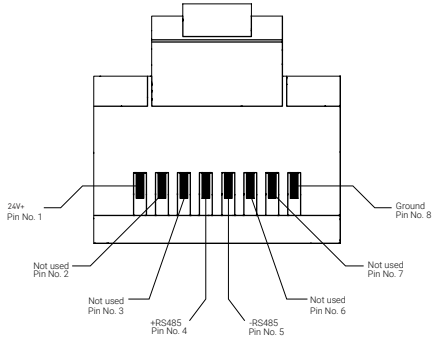
2.1 Motor Specifications

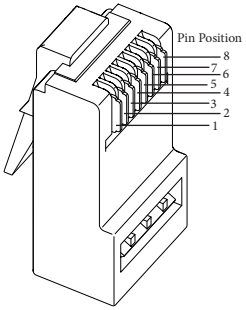
Voltage Input Range	**24V**
Rotation speed	28 RPM
Torque	1.1Nm
Operating Temperature Range	-10C - 50C -14F - 122F

2.2 Power and RS-485 Communication

This motor is 24V powered alongside the data cable communication via an RS-485 network.

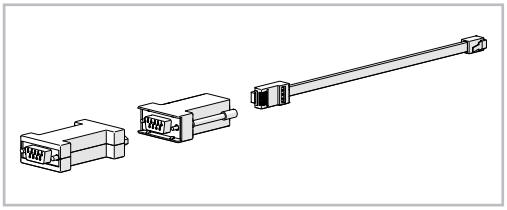
Pin no.	Pinout Definition	T568A Color	T568B Color
1	**24V+**	*white/green stripe*	*white/orange stripe*
2	*Not used*	*green solid*	*orange solid*
3	*Not used*	*white/orange stripe*	*white/green stripe*
4	**+ RS485**	*blue solid*	*blue solid*
5	**- RS485**	*white/blue stripe*	*white/blue stripe*
6	*Not used*	*orange solid*	*green solid*
7	*Not used*	*white/brown stripe*	*white/brown stripe*
8	**Signal Ground**	*brown solid*	*brown solid*





Accessories for PC communication (Power Supply needs to be added separately)

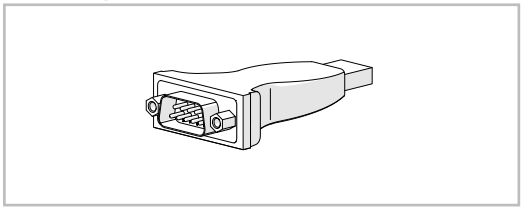
Serial Kit RS232/485 DB9 RJ9-45 Cable



p/n MT02-0406-000001

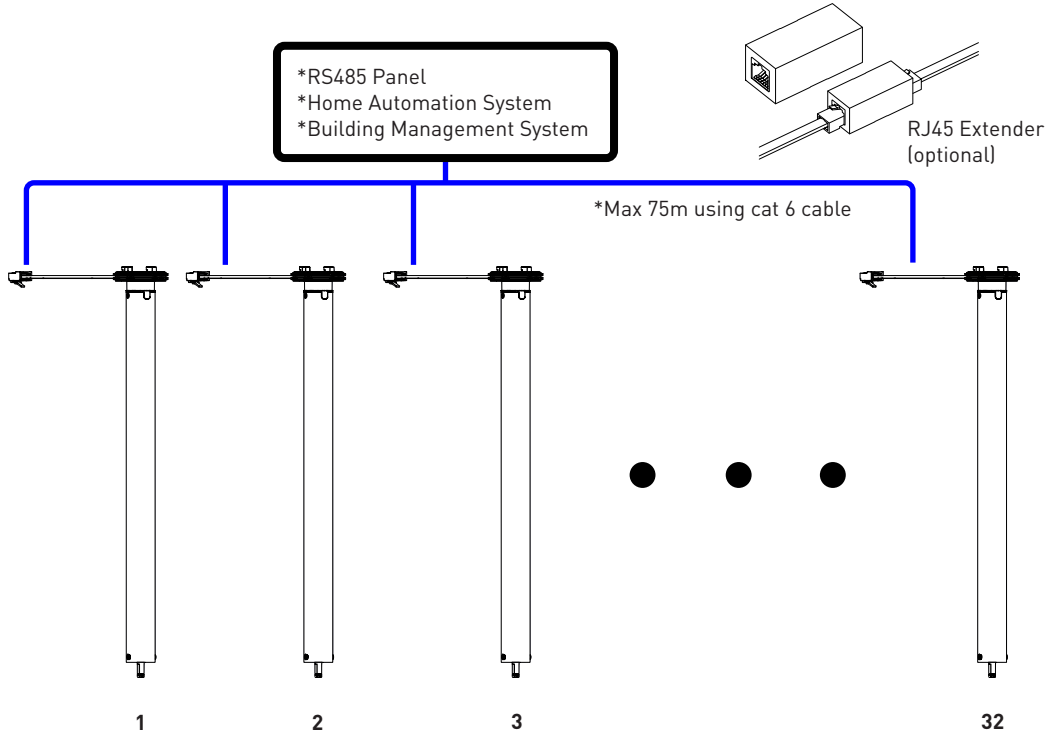
(Includes RS485 to RS232 Adaptor, DB9 to RJ45 Connector and RJ9 to RJ45 Cable)

Serial Adaptor USB to RS232



p/n MT02-0406-000002

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	Operational Control of motor run continuously. Stops if already running.	Motor runs	None	Operational control of motor to verify motor operates.
	If limits are set	Operational Control of motor run to limit. Stops if already running.	Motor Runs	None	Operational control of motor after limit setting is completed first time.

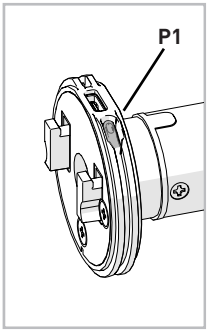
3.2 Motor configuration options

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

Hold **P1** button on motor head.

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

Downlink Message Structure

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

Each message MUST start with the "!" character and end with the ";"character.

Search for Motors on RS-485 network

Downlink Message	Uplink Message	Comments
!000D000v?;	!XXXDXXXvZZZ;...	Motor responds with motor address and version number

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;	!XXXDYYYU;	Motor rotates in "close" (down) direction
!XXXDYYYo;	!XXXDYYYU;	Motor rotates in "open" (up) direction
!XXXDYYYcA;	!XXXDYYYU;	Motor jogs in "close" (down) direction
!XXXDYYYoA;	!XXXDYYYU;	Motor jogs in "open" (up) direction
!XXXDYYYs;	!XXXDYYYU;	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 geven in the tbale 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.

5 ADJUSTING MOTOR SPEED

5.1 Increase or decrease motor speed

Motor speed by default is set to 20rpm. Motor speed may be adjusting between three levels: 40, 30, and 20rpm.

The commands below allow the motor speed to be adjusted

Downlink Message	Uplink Message	Comments
!XXXDYYYpGc*;	!XXXDYYYpGc*;	Increase one speed level
!XXXDYYYpGc*;	!XXXDYYYpGc*;	Decrease one speed level

Motor Response

IMPORTANT

If motor does not react to speed adjustment, the maximum or minimum speed has already been reached.

Current motor speed may be requested at any time by the command below.

Downlink Message	Uplink Message	Comments
!XXXDYYYpSc?;	!XXXDYYYpScZZZ;	Request currently set motor speed

Motor responds with current rotation speed ZZZ in revolutions per minute (RPM)

6 ADJUSTING MOTOR SPEED

6.1 Check motor input voltage level

It may become necessary to check the input voltage of an individual motor on the 24V power network due to erratic behavior of the motor.

Individual motor voltage may be checked by the command below:

Downlink Message	Uplink Message	Comments
!XXXDYYYpVc?;	!XXXDYYYpVcZZZZZ;	Check motor input voltage level

Motor will respond with input voltage level. ZZZZZ is motor input voltage level in mV. Refer to table in section 2.1 for input voltage range parameter.

7 TROUBLE SHOOTING

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)

NOTES

NOTES

ROLLEASE ACMEDA | USA

750 East Main Street | 7th Floor
Stamford, CT 06902, USA

T +1 800 552 5100 | F +1 203 964 0513

ROLLEASE ACMEDA | AUSTRALIA

110 Northcorp Boulevard,
Broadmeadows VIC 3047, AUS

T +61 3 9355 0100 | F +61 3 9355 0110