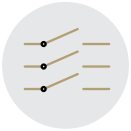
AUTOMATE™

INSTALLATION & OPERATION MANUAL

4 Channel Motor Controller



DRY CONTACT INPUT

GROUP CONTROL

Automate | 4 Channel Motor Controller provides individual and group control of one to four ML motors.

This motor controller can be activated manually or automatically via Dry Contact Switches, TCP/IP protocol and RS485 communication and can be customised to suit a variety of configurations, allowing singel window control, floor control and entrie building control.

Part #: MT02-0401-331011 Automate | 4 Motor Controller 85-240VAC Input

Features:

- Individual and Group Control of up to 4 ML motors.
- 4 individual Inputs for dry contact switches via termina; block and RJ45.
- 2 Master Inputs for dry contact control of all 4 motors and making larger groups.
- Customisable motor groups and dry contact function using DIP switch selections.
- Advanced control using ARC Serial Commands via TCP/IP and RS485.

SAFETY INSTRUCTIONS

Important safety instructions to be read prior to operation.

- It is important for the safety of persons to follow the enclosed instructions.
- Persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge should not be allowed to use this product.
- Frequently inspect for improper operation. Do not use if repair or adjustment is necessary.

Consignes de sécurité importantes à lire avant utilisation.

- Pour la sécurité des personnes, il est important de suivre les instructions fournies.
- Les personnes (y compris les enfants) dont les capacités physiques, sensorielles ou mentales sont réduites ou qui manquent d'expérience et de connaissances ne devraient pas être autorisées à utiliser ce produit.
- Gardez les télécommandes hors de la portée des enfants.
- Inspectez fréquemment l'utilisation non conforme. Ne pas utiliser si une réparation ou un réglage est nécessaire.

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.

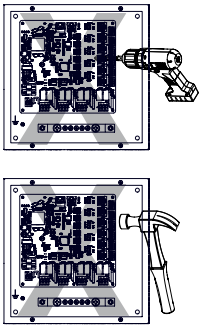
- Do not expose to water, moisture, humid and damp environments or extreme temperatures.
- Persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge should not be allowed to use this product.
- Use or modification outside the scope of this 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.

DANGER - RISK OF ELECTRIC SHOCK

WARNING: INSTALLATION BY LICENSED ELECTRICAL WORKERS ONLY. COVER SHALL NOT BE REMOVED IN NORMAL USE.

DANGER - RISQUE DE CHOC ELECTRIQUE

ATTENTION: INSTALLATION PAR DES ÉLECTRICIENS AGRÉÉS UNIQUEMENT. LE COUVERCLE NE DOIT PAS ÉTRE RETIRÉ EN UTILISATION NORMALE.



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

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

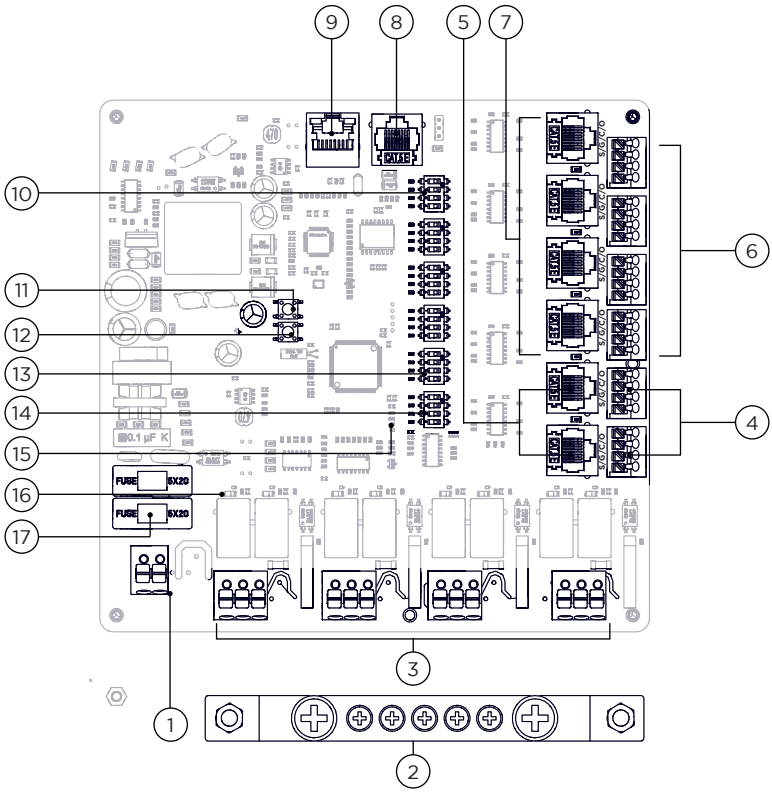
Do not dispose of in general waste.
Please recycle batteries and damaged electrical products appropriately.

Ne pas jeter avec les déchets ordinaires.
Veuillez recycler les piles et les produits électriques endommagés de manière appropriée.

RECOGNIZED COMPONENT
Intertek
5005833

CONTENTS

1 OVERVIEW



#	ITEM	FUNCTION
1	AC Input	Connect to mains power supply
2	Earth Rail	Connect earth/ground wires of inputs and outputs.
3	AC Output	Connect to up to 4x mechanical limit motors
4	Master Push Terminals	Connect to standard dry contact wall switches
5	Master RJ45 Ports	Connect to RJ45 dry contact wall switches
6	Individual Switch Push Terminals	Connect to 4x standard dry contact wall switches
7	Individual Switch RJ45 Ports	Connect to 4x RJ45 dry contact wall switches
8	RS485 Port	Communicate using ARC Serial Commands by RS485
9	TCP/IP Port	Communicate using ARC Serial Commands by TCP/IP
10	Motor Select DIP Switch	Select motor/s for each individual switch control
11	Motor Select Button	Update PCB with new motor & mode selections
12	Programming Button	Reset intermediate position programming
13	Switch Mode DIP Switch	Select how th eindividual switch/s will function
14	Master Mode DIP Switch	Select how the master switch/s will function
15	Power LED	Indicate PCB power and programming status
16	Motor LEDs	Indicate motor movement for 4x motors
17	Fuses	Protection for over-current and over-voltage

2 SPECIFICATIONS

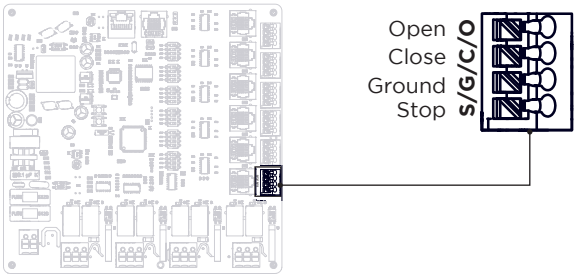
2.1 Motor controller

Input	85 - 240VAC, 1.25(1.25)A EACH CHANNEL
Power Factor	0.47
No load power loss	1.65W
Efficiency with 100% load @ 110V	68%
Efficiency with 100% load @ 240V	68%
Operating temperature range	32°F - 122°F | [0°C - 50°C]
Operating humidity conditions	20% - 60%
Storage temperature range	-4°F - 158°F | [-20°C - 70°C]
Storage humidity conditions	< 80%
Fuses	2x 250V, 5A

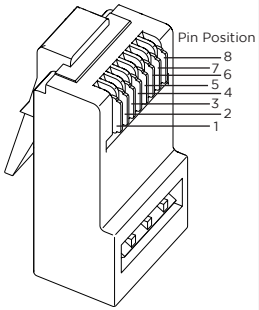
2.2 Wire gauge & Strip Lengths

AC Input & Output Terminals	
Wire Gauge	1.0 - 2.5mm^2 (14 - 18AWG)
Wire Type	Solid core & stranded
Wire Strip Length	11mm - 12mm
Master & Individual Push Terminals	
Wire Gauge	1.0 - 1.5mm^2 (16 - 18AWG)
Wire Type	Solid core & stranded
Wire Strip Length	8.5mm - 9.5mm

2.3 Dry Contact Terminals

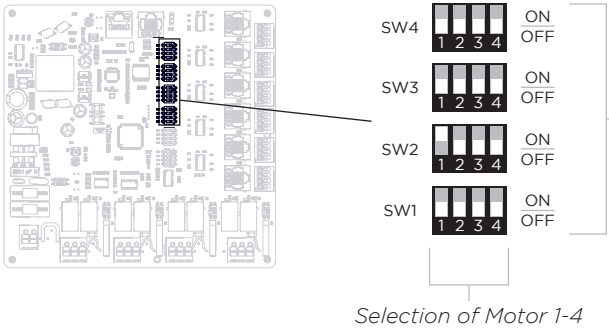


2.4 Dry Contact RJ45

Pin no.	Pinout Definition	T568A Color	T568B Color	Pins of plug face
1	Pre-set 1 *Default: 20% open*	*white/green stripe*	*white/orange stripe*	
2	Pre-set 2 *Default: 40% open*	*green solid*	*orange solid*	
3	Pre-set 3 *Default: 60% open*	*white/orange stripe*	*white/green stripe*	
4	12V+	*blue solid*	*blue solid*	
5	Pre-set 4 *Default: 80% open*	*white/blue stripe*	*white/blue stripe*	
6	Down	*orange solid*	*green solid*	
7	Up	*white/brown stripe*	*white/brown stripe*	
8	Ground	*brown solid*	*brown solid*	

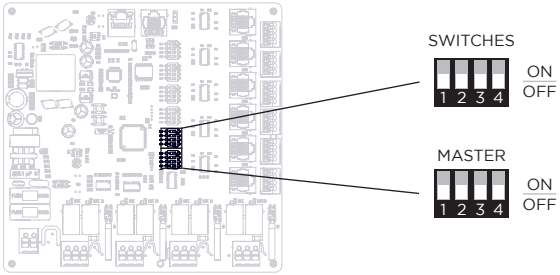
2.5 Motor GROUP DIP Switches (SW1, SW2, SW3, SW4)

Use these DIP switches to group motors to the corrosponding switch.
NOTE: Master switches are grouped to controll all 4x motors.



2.6 Motor MODE DIP Switches (MASTER, SWITCHES)

Use these DIP switches to select which operation modes the shades will follow when a dry contact input of UP, DOWN or STOP is received.



2.6.1 Table of Motor Operation MODES

	Mode	Description	DIP Switch Setting
1	**Maintained Motor Action** (Default - as shipped)	*Required Switch Type* = **SPDT Momentary (with Center OFF)** Motor moves to limit when an Open or Closed button is pressed and released. **Single Press (while moving)** If a button is pressed and released one time while the motor is moving, the motor will stop.	
2	**SOBR** (Stop On Button Release)	*Required Switch Type* = **SPDT Momentary (with Center OFF)** Motor moves toward limit as long as an Open or Close button is pressed and held. Motor stops when button is released.	
3	**Momentary Action** (Latch and Run)	*Required Switch Type* = **SPDT Momentary (with Center OFF)** Motor moves toward limit as long as an Open or Close button is pressed and held. If the button is released within 1.5 seconds, then the motor stops. If the button is held for more than 1.5 seconds, then the motor wil latch and run to limit.	
4	**Sequencing Action** (Single Pole Single Throw)	*Required Switch Type* = **SPST Momentary "Doorbell" Single Press** When connected to the "Close" pin; A momentary contact and release of a switch will move the Motor towards the limit. The motor will stop at the limit unless the switch is pressed again while moving. In this instance the motor will stop. Subsequent button presses will move the motor in the opposite direction. This results in a "sequencing" action, allowing the user to control the motor to go Up, Stop, Down, Stop using successive button presses. When connected to the "Open" pin; A maintained contact will run the motor in the Open direction. A broken connection will run the motor in the Close direction. This allows the user tp itilize a common maintained light switch to operate the motor to the Open and Close limits, but the motor cannot be stopped in between. (It should be possible for a user to perform a "quick toggle" of the switch - Off, then On again in less than 0.5 seconds, to achieve Stop). If a magnetic window sensor switch is connected to this Open pin and the contact is maintained (requires a normally closed magnetic switch) the motor will Open and remain there until the magnetic switch is retuned to "broken contact position".	
5	**Tilt Mode 1** Typically used for shades with **small** vanes.	*Required Switch Type* = **SPDT Momentary (with Center OFF)** **Single Press** Motor tilts toward limit (using 0.10 second pulses) when Open or Close button is pressed and held. Motor stops when button is released, or motor reaches a limit. If a button is pressed and held for >1.5 seconds then released, the motor will run to limit. Pressing the button again while the motor is moving will stop the motor.	
6	**Tilt Mode 1** Typically used for shades with **medium** vanes.	*Required Switch Type* = **SPDT Momentary (with Center OFF)** Motor moves to limit when an Open or Closed button is pressed and released. **Single Press** As pere Mode 5, but 0.25 second pulses.	
7	**Tilt Mode 1** Typically used for shades with **large** vanes.	*Required Switch Type* = **SPDT Momentary (with Center OFF)** Motor moves to limit when an Open or Closed button is pressed and released. **Single Press** As per Mode 5, but 0.50 second pulses.	

3 INSTALLATION

3.1 Standard Dry Contact Switches

Provides basic control of UP, DOWN and STOP.
Refer to DIP Switch Mode table for additional functions to enable:

- Bell Press (SPST) Switch
- Magnetic Reed Switch
- Shades with vanes (Small, Medium, Large)
- UP, DOWN and STOP function (eg. Latch and Run)

IMPORTANT

Ensure all motors have their limits set and are operating correctly.
NOTE: Refer to the motor datasheet for maximum motor run time.

1. Connect all motors and switches to the outputs of the controller, ensuring that cables are restrained within the nominated cable knockout.
2. Select the Switch MODE
   NOTES: *There are 2x Switch MODE DIP switch gangs on the PCB:*
   - ***SWITCHES:*** *Mode for all individual input switches.*
   - ***MASTER:*** *Mode for all master inputs.*
3. Select the Motor Group
   NOTES:
   - *Each DIP switch gang corresponds to an individual switch input.*
   - *Each switch present on the gang corresponds to a motor.*
   - *By moving a switch to the ON position, the corresponding motor is added to the motor group for the given switch.*
   - *Inputs on a master terminal control all 4x motors.*
4. Complete the mains power connection to the controller, ensuring that cables are restrained within the nominated cable knockout.
5. Press and hold the Motor Select Button for 3 seconds.
   NOTE: *If the motor is moving in the wrong direction, disconnect the mains power supply and reverse the L1 and L2 wires for each impacted motor.*

Set up is now complete.

3.2 RJ45 Dry Contact Switches

Adds additional option for intermediate pre-set positions.

IMPORTANT

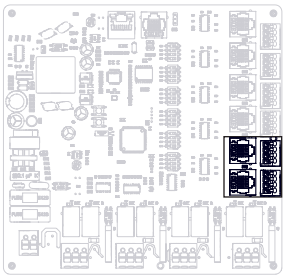
Ensure all motors have their limits set and are operating correctly.
NOTE: Refer to the motor datasheet for maximum motor run time.

1. Complete all steps for the standard dry contact switches (section 3.1).
2. Press and hold the PROGRAM button for 3 seconds.
   NOTE: *This initiates a motor calibration mode. All connected motors will move to their upper limit, lower limit, then return to the upper limit. Once completed, the RJ45 dry contact switch can connveniently move the shade to intermediate pre-set positions.*

Set up is now complete.

4 ADVANCED SETUP & FUNCTIONS

4.1 Daisy Chain



Each 4CH motor controller contains 2x master dry contact cage clamp terminal blocks and 2x master RJ45 ports. Each respective terminal is wired parallel to each other, meaning that a dry contact connection received on one terminal (eg. UP shorted to GND on Master 1) will be passed through to the other terminal (eg. UP signal also presnt on Master 2).

To setup the 4CH motor controller for daisy chaining, simply connect the master port of one controller to the spare maste rport of another.

NOTES:

- Master daisy chain connection is for dry contact only.
- ARC Serial Commands are not transmitted via daisy chain.
- A Signal received on the master port/s will control all 4x motors.
- It is recommended to daisy chain using the same type of switch being used to control the motors (ie. Don't daisy chain using the RJ45 port if standard dry contact switches are being used).

Max Distance for Daisy Chain: 1000m using 18-gauge (1mm2) wire.
Max Quantity of Controllers on Bus: 32 controllers.

4.2 Setting New Pre-Set Positions

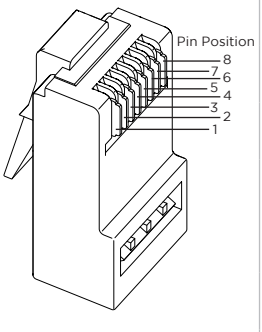
1. Move the shade, or group of shades to the desired position.
2. On a switch that is paired to the shade group, press the desired pre-set position button (eg. pre-set 1) on the dry contact switch for 3 seconds. The current position will now be saved for the motors.

4.3 Resetting Pre-Set Positions

To reset the pre-set positions, press the 'PROGRAMMING' button for 3 seconds. The motor controller will now re-calibrate to the limits of each shade and restore all pre-set positions to their default values.

4.4 RS485

4.4.1 RS485 Terminal Design

Pin no.	Pinout Definition	T568A Color	T568B Color	Pins of plug face
1	5V+	*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*	

4.4.2 RS485 Parameters

Protocol	USART
Baud rate	9600 (default), or 115200
Date bit	8
Parity bit	None
Stop bit	1

4.4.3 RS485 Message Format to 4CH Motor Controller

Start Character	Controller Address	Command	Data	End Character
!	3 byte ASCII	1 byte ASCII	Optional	;
	0-9 & A-Z, broadcast address 000 for querry, range 001-zzz	non-numerical ASCII	"?" for inquiry of motor status	

4.4.4 RS485 Message Format to Mechanical Limit Motor Address

Start Character	Controller Address	Delimiter Character	Motor Address	Command	Data	End Character
!	3 byte ASCII	D	3 byte ASCII	1 byte ASCII	Optional	;
	0-9 & A-Z, broadcast address 000 for querry, range 001-zzz		0-9 & A-Z, broadcast address 000 for querry, range 001-zzz	non-numerical ASCII	"?" for inquiry of motor status	

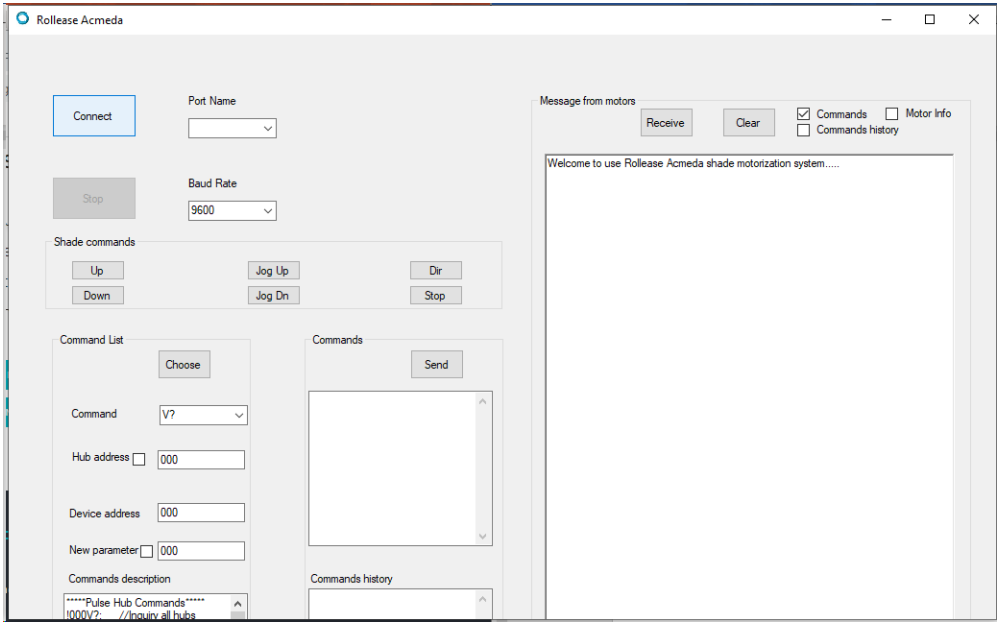
4.4.5 RS485 Setup (Via RA Serial Port Application)

Allows for control over an RS485 network.

IMPORTANT

Ensure all motors have their limits set and are operating correctly.
NOTE: Refer to the motor datasheet for maximum motor run time.

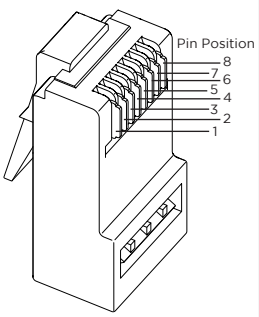
1. Complete all steps for the standard dry contact switches (section 3.1).
2. Press and hold the PROGRAM button for 3 seconds.
   NOTE: *This initiates a motor calibration mode. All connected motors will move to their upper limit, lower limit, then return to the upper limit.*
3. Download the RA Serial Port Application (Serial String Compiler & Testing Tool) available on the Rollease Acmeda website.
4. Run the application.
5. Referring to the serial commands table of this manual, send commands to the 4CH motor controller to operate the shades.



Set up is now complete.

4.5 TCP/IP

4.5.1 TCP/IP Terminal Design

Pin no.	Pinout Definition	T568A Color	T568B Color	Pins of plug face
1	TX+	white/green stripe	white/orange stripe	
2	TX-	green solid	orange solid	
3	RX+	white/orange stripe	white/green stripe	
4	TRD2+	blue solid	blue solid	
5	TRD2-	white/blue stripe	white/blue stripe	
6	RX-	orange solid	green solid	
7	TRS3+	white/brown stripe	white/brown stripe	
8	TRD3-	brown solid	brown solid	

4.5.2 TCP/IP Parameters

Operating Software	LinQ Tool
WiFi bridge	Wireless router
WiFi frequency	2.4GHz
IP protocol	IPv4

4.5.3 TCP/IP Message Format

Start Character	Controller Address	Command	Data	End Character
!	3 byte ASCII	1 byte ASCII	Optional	;
	0-9 & A-Z, broadcast address 000 for querry, range 001-zzz	non-numerical ASCII	"?" for inquiry of motor status	

NOTES:
As commands over TCP/IP are sent to the IP address of the 4CH Motor Controller, no delimiter is required in the message format.

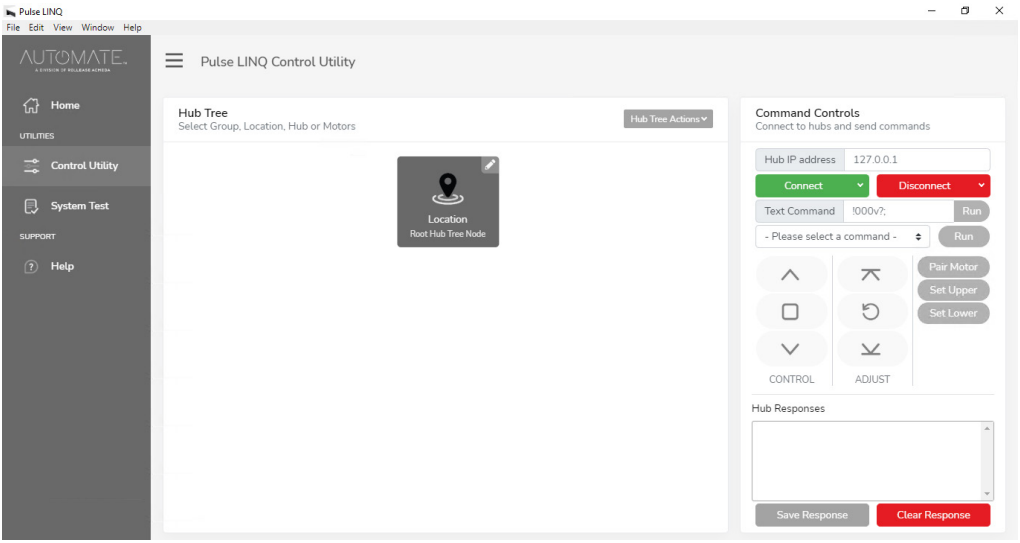
4.5.4 TCP/IP Setup (Via LinQ Tool)

Adds additional option for intermediate pre-set positions.

IMPORTANT

Ensure all motors have their limits set and are operating correctly.
NOTE: Refer to the motor datasheet for maximum motor run time.

1. Complete all steps for the standard dry contact switches (section 3.1).
2. Press and hold the PROGRAM button for 3 seconds.
   NOTE: *This initiates a motor calibration mode. All connected motors will move to their upper limit, lower limit, then return to the upper limit.*
3. Connect a network cable between the 4CH motor controller and router.
4. Download the LinQ Tool available on the Rollease Acmeda website.
5. Run the application.
6. Press the green drop-down arrow on the 'connect' box, and then press 'scan for hubs on the network'. The LinQ tool will now scan for all 4CH motor controllers on the same network as the PC or laptop.
7. Check that the connection has been established by selecting a motor on the LinQ tool, and then pressing the up or down arrow on the LinQ tool command controls box.
8. Refferring to the serial commands table of this manual, send commands to the 4CH motor controller to operate the shades.



Set up is now complete.

5 SERIAL COMMANDS TABLE

5.1 Controller/Global Commands

Cmd	Description	Eg. Downlink	Eg. Uplink	
NAME?	Get controller name	!000NAME?;	!000NAME4CH_MT_CTRL;	TCP/IP
MAC?	Get controller MAC address	!000MAC?;	!000MACaa:bb:cc:11:22:33;	TCP/IP
SN?	Get the serial number	!000SN?;	!00SNMT02-0401-331011;	TCP/IP
FWV?	Get controller firmware version	!000FWV?;	!000FWVA03;	TCP/IP
N?	Get controller name	!000N?;	!000N4CH_MT_CTRL;	RS485
N	Change controller name	!000NBLDG3;	!000NBLDG3;	ALL
V?	Get controller address	!000V?;	!245VA03;	RS485
v?	Get motor addresses	!000v?;	!MT1vM01;!MT2vM01; !MT3vM01;!MT4vM01;	ALL
G	Change controller address	!245G111;	!111A;	RS485
000B	Change baud rate	!000B960; or !000B115;	!000B960; or !000B115;	RS485
P	'MOTOR SELECT' via serial input	!000P;	!000A;	ALL
K	'PROGRAMMING' via serial input	!000K;	!000A;	ALL
T	Test controller connection	!000T;	!000A;	ALL
P?	Get all controller parameters	!111P?;	!111P;SW1,1111;SW2,1010; SW3,1100;SW4,1000; SWM,0010;MST,0100; MT1,LC1,RC1,UT1,DT1,RT1,TA1,TS1,TN1; MT2,LC2,RC2,UT2,DT2,RT2,TA2,TS2,TN2; MT3,LC3,RC3,UT3,DT3,RT3,TA3,TS3,TN3; MT4,LC4,RC4,UT4,DT4,RT4,TA4,TS4,TN4;	ALL
000*	Controller factory reset	!111D000*;	!111D000A;	ALL

NOTES:

- For uplink, controller always replies with own address (eg. 111).
- For P? command, the following variables are presented:
  - All DIP switch congigurations (eg. SW1:1111)
  - Each motor configuration:
    - **XXX** motor address, followed by
    - **LCx** = Last Command
    - **RCx** = Run Counter
    - **UTx** = Up Time
    - **DTx** = Down Time
    - **RTx** = Running Time
    - **TAx** = Tilt Angle Ratio
    - **TSx** = Tilt Steps
    - **TNx** = Tilt Number

    NOTE: *Milliseconds presented in HEX format.*

5.2 Motor Commands (RS485)

Cmd	Description	Eg. Downlink	Eg. Uplink	Notes
N?	Get motor name	!000DMT1N?;	!000DNT1NMotor 1;	-
N	Change motor name	!000DMT1NBed9;	!000DMT1NBed9;	-
Ro?	Get motor room	!000DMT1Ro?;	!000DMT1RoKitchen;	-
Ro	Change motor room	!000DMT1RoKitchen;	!000DMT1RoKitchen;	-
r?	Request current motor position	!000DMT1r?;	!000DMT1U;	'PROGRAMMING' not complete.
			!000DMT1r00b00;	!XXXrYYbZZ; where, XXX = Motor Address YY = Position % ZZ = Tilt After Up travel: 'Tilt Number' variable = 'Tilt Steps' available, meaning ZZ 'Tilt %' = 100% After DOWN travel: 'Tilt Number' = 0, meaning ZZ 'Tilt %' = 0%.
o	Open / Up	!000DMT1o;	!000DMT1o; !000DMT1r50b99;	1st uplink: Confirmation 'o,' 2nd uplink: New position at stop or limit.
c	Close / Down	!000DMT1c;	!000DMT1c; !000DMT1r50b00;	1st uplink: Confirmation 'c,' 2nd uplink: New position at stop or limit.
s	Stop	!000DMT1s;	!000DMT1s; !000DMT1r50b00;	1st uplink: Confirmation 's,' 2nd uplink: New position at stop or limit.
m	Move motor to percentage	!000DMT1m80;	!000DMT1U;	'PROGRAMMING' not complete.
			!000DMT1r80b00;	Eg. Move MT1 to 80%
oA	Tilt Jog Open / Up	!000DMT1oA;	!000DMT1oA; !000DMT1r50b00;	1st uplink: Confirmation 'oA,' 2nd uplink: New position at stop or limit.
cA	Tilt Jog Close / Down	!000DMT1cA;	!000DMT1cA; !000DMT1r50b00;	1st uplink: Confirmation 'cA,' 2nd uplink: New position at stop or limit.
b	Tilt Rotate angle to percentage	!000DMT1b75;	!000DMT1U;	'PROGRAMMING' not complete.
			!000DMT1r00b75;	Calculate the milliseconds required to achieve desired % and then apply the pulse and corrosponding step.
pGa	Set Tilt angle ratio (pulse time)	!000DMTpGa050;	!000DMT1pGa050;	Set'tilt angle ratio' (pulse) to X.XX sec. Eg. 050 = 0.5 seconds.
pGr	Set Tilt steps (moving dist.)	!000DMT1pGr008;	!000DMT1pGr008;	Set 'tilt steps' value to XXX Eg. 004 = 4 steps total.
pPr?	Get motor preset positions	!000DMT1pPrX?;	!000DMT1pPr80;	X = 1, 2, 3, 4 (pre-set positions)
pPrXr	Change motor preset positions	!000DMT1pPrXrYY;	!000DMT1pPr1r80;	X = 1, 2, 3, 4 YY = 0 - 99% Only travel % can be set, not tilt %. Eg. Changed MT1 Pre-set 1 to 80%.
pPm	Move motor to preset position	!000DMT1pPmX;	!000DMT1r80b00;	X = 1, 2, 3, 4

5.3 Motor Commands (TCP/IP)

Cmd	Description	Eg. Downlink	Eg. Uplink	Notes
N?	Get motor name	!MT1NAME?;	!MT1NAMEMotor1;	-
N	Change motor name	!MT1NBed9;	!MT1NBed9;	-
Ro?	Get motor room	!MT1ROOM?;	!MT1ROOMdefault;	-
Ro	Change motor room	!MT1RoKitchen;	!MT1RoKitchen;	-
r?	Request current motor position	!MT1r?;	!MT1U;	'PROGRAMMING' not complete.
			!MT1r00b00;	!XXXrYYbZZ; where, XXX = Motor Address YY = Position % ZZ = Tilt After Up travel: 'Tilt Number' variable = 'Tilt Steps' available, meaning ZZ 'Tilt %' = 100% After DOWN travel: 'Tilt Number' = 0, meaning ZZ 'Tilt %' = 0%.
o	Open / Up	!MT1o;	!MT1o; !MT1r50b99;	1st uplink: Confirmation 'o,' 2nd uplink: New position at stop or limit.
c	Close / Down	!MT1c;	!MT1c; !MT1r50b00;	1st uplink: Confirmation 'c,' 2nd uplink: New position at stop or limit.
s	Stop	!MT1s;	!MT1s; !MT1r50b00;	1st uplink: Confirmation 's,' 2nd uplink: New position at stop or limit.
m	Move motor to percentage	!MT1m80;	!MT1U;	'PROGRAMMING' not complete.
			!MT1r80b00;	Eg. Move MT1 to 80%
oA	Tilt Jog Open / Up	!MT1oA;	!MT1oA; !MT1r50b00;	1st uplink: Confirmation 'oA,' 2nd uplink: New position at stop or limit.
cA	Tilt Jog Close / Down	!MT1cA;	!MT1cA; !MT1r50b00;	1st uplink: Confirmation 'cA,' 2nd uplink: New position at stop or limit.
b	Tilt Rotate angle to percentage	!MT1b75;	!NT1U;	'PROGRAMMING' not complete.
			!MT1r00b75;	Calculate the milliseconds required to achieve desired % and then apply the pulse and corrosponding step.
pGa	Set Tilt angle ratio (pulse time)	!MT1pGa050;	!MT1pGa050;	Set'tilt angle ratio' (pulse) to X.XX sec. Eg. 050 = 0.5 seconds.
pGr	Set Tilt steps (moving dist.)	!MT1pGr008;	!MT1pGr008;	Set 'tilt steps' value to XXX Eg. 004 = 4 steps total.
pPr?	Get motor preset positions	!MT1pPrX?;	!MT1pPr80;	X = 1, 2, 3, 4 (pre-set positions)
pPrXr	Change motor preset positions	!MT1pPrXrYY;	!MT1pPr1r80;	X = 1, 2, 3, 4 YY = 0 - 99% Only travel % can be set, not tilt %. Eg. Changed MT1 Pre-set 1 to 80%.
pPm	Move motor to preset position	!MT1pPmX;	!MT1r80b00;	X = 1, 2, 3, 4

6 TROUBLE SHOOTING

Problem	Cause	Remedy
Motors not moving	No power to controller	Check all electrical connections to the controller. Check all electrical connections to each of the motors.
	Fuse blown	Check both fuses. Replace as required.
	DIP switch in wrong mode	Check that the DIP switches are in the correct mode, making sure to check that the switch group is set correctly and that a valid operation mode is selected. Try controlling the shades by the master port.
	DIP settings not updated to microcontroller	Press and hold the 'MOTOR SELECT' button for 3 seconds to update the microcontroller with the DIP settings.
	Motor run time reached	Allow the motor/s time to cool down before trying to operate the shade.
Motors moving in the wrong direction	Wiring of L1 and L2 of motor is incorrect	Disconnect the controller from the power, and then swap the L1 and L2 wires of the motor.
Motors not moving as expected	DIP switch in wrong mode	Check that the DIP switches are in the correct mode, making sure to check that the switch group is set correctly and that a valid operation mode is selected. Try controlling the shades by the master port.
	DIP settings not updated to microcontroller	Press and hold the 'MOTOR SELECT' button for 3 seconds to update the microcontroller with the DIP settings.

For additional troubleshooting and setup tutorials, visit:

7 NOTES

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