

LED INDICTOR

PWR Status LED

Colour	Display Pattern	Status
Green	Steady	System ON, Normal
Red	Long Single Flash	Over Voltage Protection
Red	Short Single Flash	Over Temperature Protection
Red	Short Double Flash	Under Voltage Protection
Red	Short Triple Flash	Over Current Protection

CAN Status LED

Colour	Display Pattern	Status
Green	Steady	System ON, CAN Communication Normal, Master ID1
Blue	Steady	System ON, CAN Communication Normal, Slave ID2
White	Steady	System ON, CAN Communication Normal, Slave ID3
Amber	Steady	System ON, CAN Communication Normal, Slave ID4
Yellow	Steady	System ON, CAN Communication Normal, Slave ID5
Turquoise	Steady	System ON, CAN Communication Normal, Slave ID6
Red	Long Single Flash	CAN Communication Error

Output Status LED

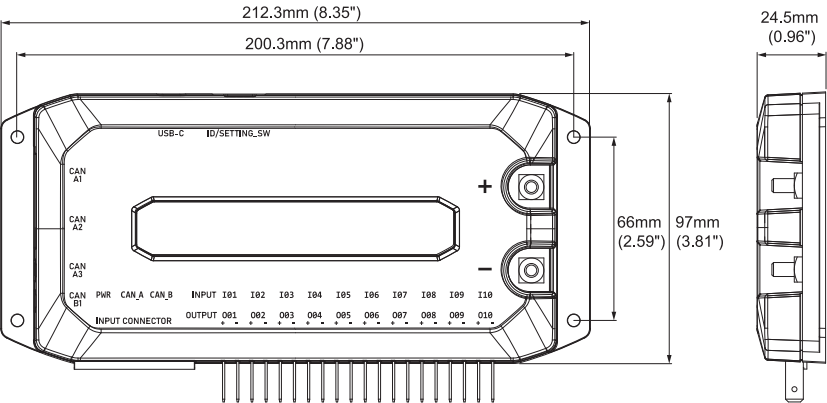
Colour	Display Pattern	Status
-	Steady	Output Activated
Red	Short Single Flash	Over / Under Voltage Protection
Amber	Short Single Flash	Over Current Protection

Input Status LED

Colour	Display Pattern	Status
Green	Steady	Input Activated

CONTENTS

- 1. Main Console Unit x 1 pc
- 2. Input Terminal Block x 1 pc
- 3. M5 Nut for Power Terminal 2 pcs
- 4. Screw Washer x 2pcs
- 5. Female Blade Terminal x 20 pcs
- 6. Blade Terminal Housing x 20pcs
- 7. Sheet metal screws x 4 pcs



AC-MA100-D1 / AC-MA100-D2

AXIXLINK NETWORK MAIN CONSOLE UNIT

Proper installation of this vehicle control system is **crucial to ensuring safe and effective operation**. Failure to follow correct procedures **can result in system malfunctions, vehicle failure, electrical hazards, or even fire risks**. Only **trained professionals** with expertise in automotive electrical systems should perform the installation.

Pre-Installation Requirements

- Installation must be performed by qualified professionals with expertise in automotive electrical systems.
- Consult vehicle service manuals to prevent interference with safety-critical functions.

Installation Safety Protocols

- Contamination Prevention: Avoid introducing metal shavings into the unit; use an ESD-approved cover during nearby drilling.
- Battery Connection Sequence: Do not connect the system to the vehicle battery until all wiring is completed and verified.
- Grounding Compliance: Secure grounding to the negative battery terminal to ensure system integrity.
- Airbag System Considerations: Components and wiring must not obstruct airbag sensors or deployment zones.
- Electrical Circuit Integrity: Reference vehicle wiring diagrams to prevent disruptions to factory-in stalled systems.
- High-Current Wiring Standards: Use properly terminated high-current connections to mitigate overheating and fire risks.
- Wire Gauge Specifications: Power wires must be rated at 125% of maximum current and fused at the source.
- Firewall & Pass-Through Protection: Apply protective grommets or convolute tubing when routing wires through metal surfaces.
- Drilling Precautions: Inspect both sides of the surface before drilling; deburr edges and seal exterior holes using silicon seam sealer.

Post-Installation Verification

- Conduct system functionality tests to verify proper operation of lighting and warning components.
- Ensure vehicle horn, lighting, and safety features remain unaffected.
- Provide documentation to operators and maintenance personnel for future reference.
- Retain installation instructions for continued safety compliance and servicing.

Failure to comply with these safety protocols may result in vehicle malfunction, property damage, severe injury, or fire hazards. Proper installation safeguards both the vehicle operator and surrounding individuals while ensuring the optimal performance of the control system.

SPECIFICATIONS

Model	AC-MA100-D1	AC-MA100-D2
Input voltage	9~16VDC	20~32VDC
Connection	PWR: M5 Nut Power Tap Terminal Input: 12-Port, Screw Terminal Block include + / - Output: 10-Ports, 20 Blade Type Connector	
No. of output / input	10 outputs / 10 inputs	
Max. total current	90A (continuous) / 100A (1-minutes)	50A (continuous) / 60A (1-minutes)
Standby current (12V)	w/ IGN input: 60mA ; w/o IGN input: 0.01mA	
IGN Input	Input 1 only	
Digital Input	Input 1~10	
Analogue Input	Input 1~10 (Variable voltage 0~20V @ 1V steps)	Input 1~10 (Variable voltage 0~36V @ 1V steps)
Negative input (GND sense)	Input 2~10	
PWM input	Input 2~5 @ < 2kHz	
Input resistance (12V)	Input 1 @16kΩ, Input 2~5 @10kΩ, Input 6~10@22kΩ	
Output fuse size	2A, 5A, 7.5A, 10A, 15A, 20A, 25A Adjustable	2A, 5A, 7.5A, 10A, 15A Adjustable
Motor control H-bridge	2 set (output 7&8, output 9&10)	
Voltage Limiter	High limit 9.0V ~ 20.0V (@ 0.1V steps) ; Low limit 9.0V ~ 20.0V (@ 0.1V steps)	High limit 20V~32V (@ 0.1V steps) ; Low limit 20V~32V (@0.1V steps)
LED indicator	PWR status & diagnostic, 1 pc, non-programmable CAN status & diagnostic, 2 pcs, non-programmable Input status, 10pcs, non-programmable Output status, 10pcs, adjustable colour & programmable	
Temperature Sensor	Built-in	
Ambient Light Sensor	Via expansion only	
No. of CAN_BUS Port	2 x RJ45 with 12V Power 2 x 4-PIN Connector	2 x RJ45 with 24V Power 2 x 4-PIN Connector
No. of CAN_BUS Network	2 Networks	
PC connection	Via USB Type C port	
Operating Temperature Range	-40°C to 60°C (-40°F to 140°F)	

SYSTEM OVERVIEW

AC-MA100-D1 / AC-MA100-D2				
PWR	-	GND	M5 NUT	AC-MA100-D1: 9~16VDC AC-MA100-D2: 20~32VDC
	+	+VDC	M5 NUT	CAUTION! DO NOT REVERSE THE POLARITY Check polarity before connecting the device.
ID/ Setting	SW1	Terminal Resistance	6 Keys DIP Switch	See "ID/Setting Switch Setting" section
	SW2-3	Reserved		-
	SW4-6	Console ID Selection		See "ID/Setting Switch Setting" section
USB	-	USB interface for PC programming	USB Type C	Connects to PC for programming See "GUI Software Manual" for more information.
CAN_A1	-	CAN NETWORK 1 interface with 12V or 24V Power	RJ45	Connects to other AXIXLINK Network peripheral
CAN_A2	-	CAN NETWORK 1 interface with 12V or 24V Power	RJ45	Connects to other AXIXLINK Network peripheral
 CAN_A3	PIN1	CAN NETWORK 1 CAN_H	4-PIN Connector	Connects to other AXIXLINK Network peripheral
	PIN2	Wake IN/OUT		
	PIN3	CAN NETWORK 1 CAN_L		
	PIN4	GND		
 CAN_B1	PIN1	CAN NETWORK 2 CAN_H	4-PIN Connector	Reserved for CAN NETWORK 2
	PIN2	Wake IN/OUT		
	PIN3	CAN NETWORK 2 CAN_L		
	PIN4	GND		
INPUT	INPUT1	ANALOGUE/DIGITAL INPUT	12-Port Terminal Block	+ve or variable voltage Use as IGN input to turn ON or OFF the SYSTEM
	INPUT2	ANALOGUE/DIGITAL INPUT		+ve or -ve or variable voltage
	INPUT3	ANALOGUE/DIGITAL INPUT		+ve or -ve or variable voltage
	INPUT4	ANALOGUE/DIGITAL INPUT		+ve or -ve or variable voltage
	INPUT5	ANALOGUE/DIGITAL INPUT		+ve or -ve or variable voltage
	INPUT6	ANALOGUE/DIGITAL INPUT		+ve or -ve or variable voltage
	INPUT7	ANALOGUE/DIGITAL INPUT		+ve or -ve or variable voltage
	INPUT8	ANALOGUE/DIGITAL INPUT		+ve or -ve or variable voltage
	INPUT9	ANALOGUE/DIGITAL INPUT		+ve or -ve or variable voltage
	INPUT10	ANALOGUE/DIGITAL INPUT		+ve or -ve or variable voltage
	INPUT_PWR	-		parallel to PWR for ease of wiring
		+		
OUTPUT	OUTPUT1+	2A, 5A, 7.5A, 10A, 15A, 20A*, 25A* Adjustable	Blade Type Connector	AC-MA100-D1: 90A (continuous) / 100A (1-minutes) AC-MA100-D2: 50A (continuous) / 60A (1-minutes)
	OUTPUT1 -		Blade Type Connector	
	OUTPUT2+	2A, 5A, 7.5A, 10A, 15A, 20A*, 25A* Adjustable	Blade Type Connector	
	OUTPUT2 -		Blade Type Connector	
	OUTPUT3+	2A, 5A, 7.5A, 10A, 15A, 20A*, 25A* Adjustable	Blade Type Connector	
	OUTPUT3 -		Blade Type Connector	
	OUTPUT4+	2A, 5A, 7.5A, 10A, 15A, 20A*, 25A* Adjustable	Blade Type Connector	
	OUTPUT4 -		Blade Type Connector	
	OUTPUT5+	2A, 5A, 7.5A, 10A, 15A, 20A*, 25A* Adjustable	Blade Type Connector	
	OUTPUT5 -		Blade Type Connector	
	OUTPUT6+	2A, 5A, 7.5A, 10A, 15A, 20A*, 25A* Adjustable	Blade Type Connector	
	OUTPUT6 -		Blade Type Connector	
	OUTPUT7+	2A, 5A, 7.5A, 10A, 15A, 20A*, 25A* Adjustable May set to a set of H-bridge with OUTPUT 8	Blade Type Connector	
	OUTPUT7 -		Blade Type Connector	
	OUTPUT8+	2A, 5A, 7.5A, 10A, 15A, 20A*, 25A* Adjustable May set to a set of H-bridge with OUTPUT7	Blade Type Connector	
	OUTPUT8 -		Blade Type Connector	
	OUTPUT9+	2A, 5A, 7.5A, 10A, 15A, 20A*, 25A* Adjustable May set to a set of H-bridge with OUTPUT10	Blade Type Connector	
	OUTPUT9 -		Blade Type Connector	
	OUTPUT10+	2A, 5A, 7.5A, 10A, 15A, 20A*, 25A* Adjustable May set to a set of H-bridge with OUTPUT9	Blade Type Connector	
	OUTPUT10 -		Blade Type Connector	

*Only available on AC-MA100-D1

PC PROGRAMMING

All control buttons and function wires must be programmed through PC via GUI software.
For more information about PC programming and Software, please refer to Software Manual or contact your sales representative.

WIRING

Wire Gage vs Maximum Current Draw Through The Wire

To ensure safe and reliable operation of the systems, it is critical that the wire gauge used matches the maximum current draw of the user's application. Failing to follow these guidelines may result in the system not functioning correctly or compromising system safety.

		22AWG	20AWG	18AWG	16AWG	14AWG	12AWG	10AWG	8AWG	6AWG	4AWG	2AWG
FEET	10A	3'	5'	7.5'	12'	19.5'	31'	49'	78'	124'	197'	314'
	20A	Ins.	Ins.	4'	6'	9.5'	15.5'	24.5'	39'	62'	98.5'	157'
	30A	Ins.	Ins.	Ins.	4'	6.5'	10.5'	16.5'	26'	41.5'	66'	104'
	40A	Ins.	Ins.	Ins.	3'	5'	7.5'	12.5'	19.5'	31'	49.5'	78.5'
	50A	Ins.	Ins.	Ins.	Ins.	4'	6'	10'	15.5'	25'	39.5'	63'
	60A	Ins.	Ins.	Ins.	Ins.	3'	5'	8'	13'	20.5'	33'	52.5'
	70A	Ins.	Ins.	Ins.	Ins.	3'	4.5'	7'	11'	17.5'	28'	45'
	80A	Ins.	Ins.	Ins.	Ins.	Ins.	4'	6'	10'	15.5'	24.5'	39'
	90A	Ins.	Ins.	Ins.	Ins.	Ins.	3.5'	5.5'	8.5'	14'	22'	35'
		0.5mm ²	0.75mm ²	1mm ²	1.5mm ²	2.5mm ²	4mm ²	6mm ²	10mm ²	16mm ²	25mm ²	35mm ²
METERS	10A	0.9m	1.5m	2.3m	3.7m	5.9m	9.4m	14.9m	23.8m	37.8m	60m	95m
	20A	Ins.	Ins.	1.2m	1.8m	2.9m	4.7m	7.5m	11.9m	18.9m	30m	47m
	30A	Ins.	Ins.	Ins.	1.2m	2.0m	3.2m	5.0m	7.9m	12.6m	20m	31m
	40A	Ins.	Ins.	Ins.	0.9m	1.5m	2.3m	3.8m	5.9m	9.4m	15m	29m
	50A	Ins.	Ins.	Ins.	Ins.	1.2m	1.8m	3.0m	4.7m	7.6m	12m	19.2m
	60A	Ins.	Ins.	Ins.	Ins.	0.9m	1.5m	2.4m	4.0m	6.2m	10m	16m
	70A	Ins.	Ins.	Ins.	Ins.	0.9m	1.4m	2.1m	3.4m	5.3m	8.5m	13.7m
	80A	Ins.	Ins.	Ins.	Ins.	Ins.	1.2m	1.8m	3.0m	4.7m	7.4m	11.8m
	90A	Ins.	Ins.	Ins.	Ins.	Ins.	1m	1.6m	2.5m	4.2m	6.7m	10.6m

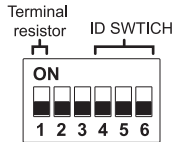
Ins. = Insufficient

ID/SETTING SWITCH SETTING

Terminal Resistance

To ensure reliable communication and prevent signal reflection in the AXIXLINK CAN-bus network, adjust the terminal resistor switch (**SW1**) as follows:

- When working with one or two console units in a system network, set the terminal resistors switch (**SW1**) to ON position.
- If more than two units are used in a system network, ensure that only two units have their terminal resistor switches set to ON. All other units must have their switches set to OFF.
- Do not add additional termination resistors unless specifically required by a technician.



ID_Switch

In the **AXIXLINK CAN-bus network**, each device must have a **unique identifier** to ensure proper communication and data routing.

- Use the **ID switch (DIP switch)** to assign a unique ID to each device.
- Confirm that the selected ID **matches the system configuration** and does not conflict with other devices on the network.

	MASTER1	SLAVE2	SLAVE 3	SLAVE 4	SLAVE 5	SLAVE 6
ID_Switch						