MEGMEET
WELDING TECHNOLOGY | Stock Code 002851

Aura series
Flexible Welding Cobot



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MEGMEET's strong technical strength, extensive industry application experience, relentless attention to customer needs, and the spirit of continuous innovation enable us to bring tailor-made products and solutions to help customers achieve greater success.

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2026-09

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System composition

Simple and easy to use with rich configuration

Name: Aura Control Cab (MCC control cabinet)
Protection Rating: IP54
Operating Temperature: 0-50°C
Universal Digital I/O: 16 DI/DO
Dimensions: 450 × 250 × 350 mm



Flexible Welding Cobot









Model	Aura-3	Aura-5	Aura-7	Aura-12
Load	3kg	5kg	7kg	12kg
Working radius	705mm	919mm	988mm	1434mm
Repeatability	±0.03mm	±0.03mm	±0.02mm	±0.03mm
Maximum end speed	⩽1.5 m/s	⩽2.0 m/s	⩽3.2 m/s	⩽3.0m/s
Weight	About 13.8kg	About 16.5kg	About 25kg	About 41kg
Protection level	IP54	IP54	IP67	IP67
Force measurement resolution	0.1N，0.02Nm		0.1N，0.02Nm	
Relative force control accuracy	0.5N，0.1Nm		0.5N，0.1Nm	

Product Features

High Precision

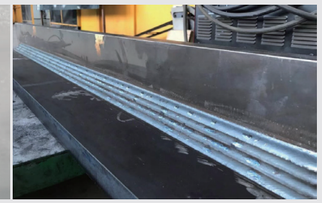
High-Order Dynamics Algorithm

- New-generation Aura control system, newly upgraded OptiMotion2 technology
- Full-Parameter Accuracy Compensation: Absolute accuracy better than 0.3mm, path accuracy better than 0.4mm
- Gun-Wheel Error <0.8mm in X, Y, and Z Axis





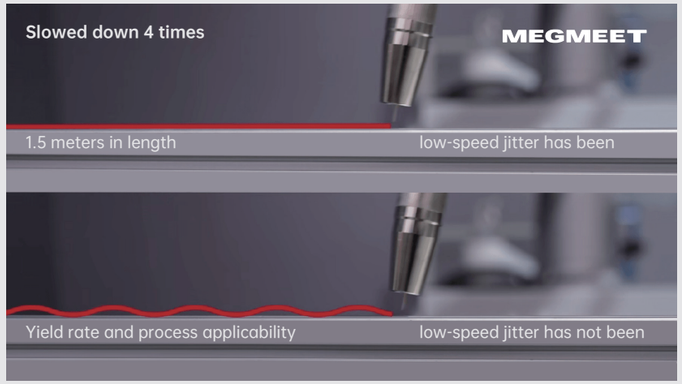




Vibration Suppression Algorithm

- The upgraded vibration suppression algorithm enables the robot to maintain extremely high motion stability even at low speeds

- Active and passive low-speed control strategies completely eliminate low-speed jitter, perfectly solving welding path accuracy and jitter challenges



Product Characteristics

More Flexibility

Larger range of motion of the robot

- Larger range of motion of the robot
  Full joints ±360° range of motion, to protect the welding attitude of multiple curved welding paths, path vibration suppression algorithms are perfectly suited to arc paths, arc path accuracy is better than 0.4mm.

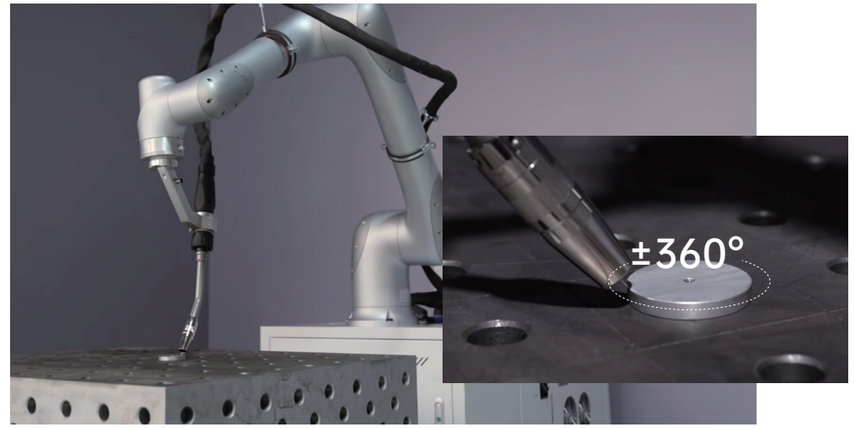
Singularity avoidance algorithm

- The new generation Aura control system supports three kinds of path singularity avoidance algorithms: 1. wrist singularity avoidance; 2. adaptive path singularity avoidance; 3. 4-axis locking singularity avoidance.
- Ensure accurate positioning of TCP and stable running speed, and at the same time, the robot flexibly handles singularities, effectively improving the smoothness of robot movement and avoiding abnormal stopping of movement.
- Simplify the debugging process, improve welding efficiency and ensure welding quality significantly.

High IP Rating Protection

IP67 Protection

- The entire machine is IP67 rated, making it suitable for complex welding conditions.







More flexible

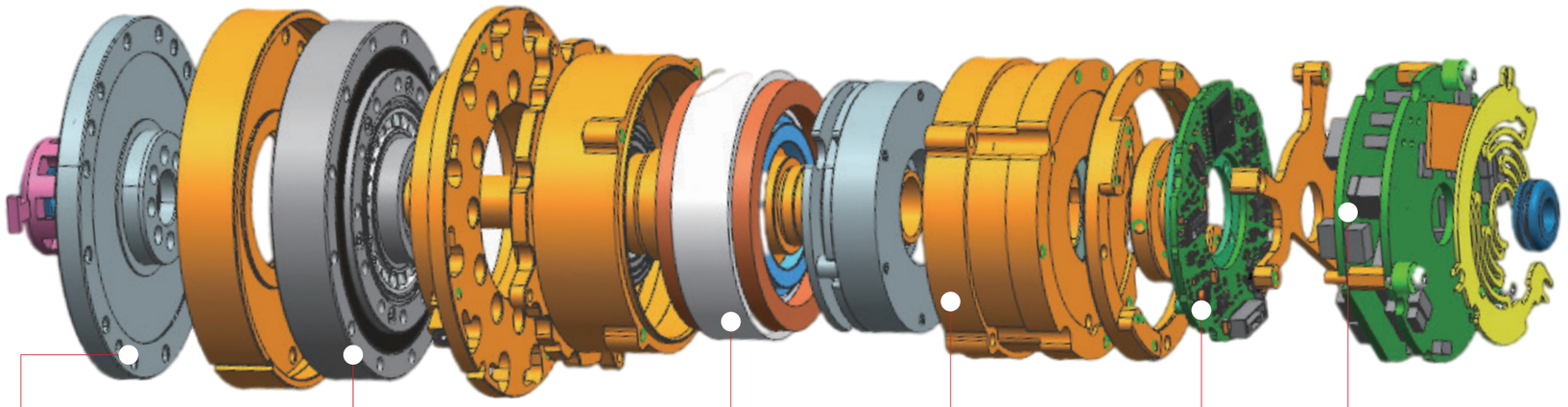
Full-joint force control

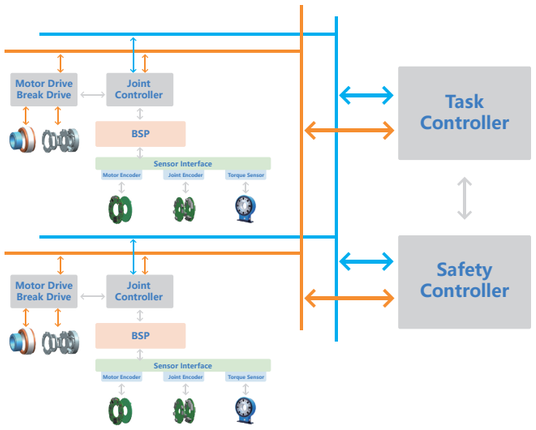
- Each axis features built-in high-precision force sensors, with torque measurement resolution better than 0.1Nm and a joint force control closed-loop frequency >10kHz.
- The practical drag-to-teach function allows for easy dragging of the robot and precise identification of teach points, making teaching effortless.

Safer

Comprehensive, leading safety features

- Sensitive collision detection based on joint torque sensors
- Independent SIL3-rated safety controller
- ⩾21 TÜV functional safety certifications
- Suction-activated brake prevents vehicle from falling in the event of a power outage



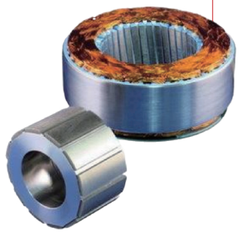




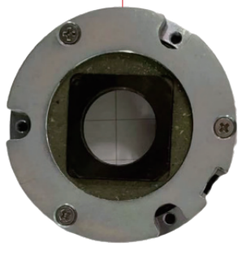
Torque sensor



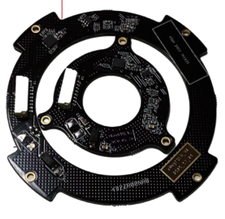
Reducer



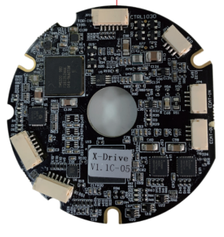
Motor



Brake



Encoder sensor

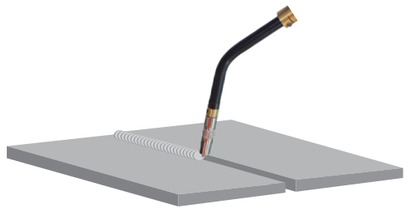


Drive

Arc welding process pack

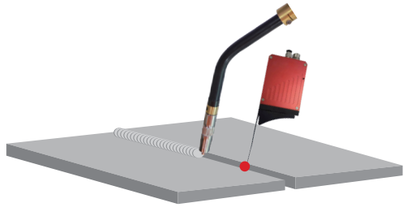
Arc welding basics

- EtherCAT bus communication welder
- Arc welding commands: ArcOn, ArcSet, WMoveL, WMoveC, ArcOff
- Four weaving modes
- Supports spatial weaving
- Intermittent welding
- Online fine-tuning
- Fault monitoring
- Backward check



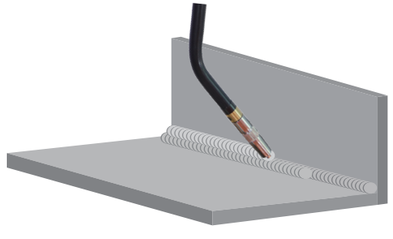
Laser tracking

- Trust Laser, Smart Image AI, Intelligent Laser.
- Linear path laser tracking.
- Triangular swing and sinusoidal swing laser tracking.
- Dynamic search, fuzzy tracking.
- Ground rail axis coordinated laser tracking.
- Width adaptive, laser tracking.



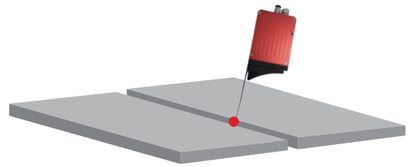
Multi-layer and multi-pass welding

- Simplified programming of multi-layer welds
- Define offset coordinate systems;
- Layer and pass operation and expansion;
- Automatic trajectory saving;
- Weld deviation adjustment;
- Flexible weld process inspection



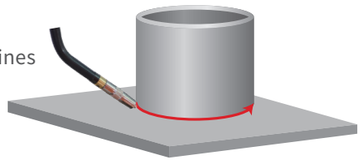
Laser positioning

- TCP/IP communication
- Two-point linear positioning
- Search for arc starting points from scratch
- Search for arc ending points from scratch
- Autonomous hand-eye calibration algorithm
- Compatible with sensors from multiple brands



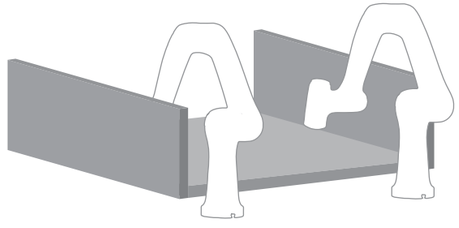
Arc tracking

- Easy programming
- No additional equipment required, compatible with most basic welding machines
- Combined path arc tracking
- Supports plates as thin as 3mm
- Adaptive arc tracking reduces debugging effort
- Separately adjustable left and right, and upper and lower gains



Additional axis synergy

- EtherCAT-based
- PC debugging software
- Wide selection range
- High accuracy with 4-point calibration
- Synergic welding
- Integrated joint module, external axis drive

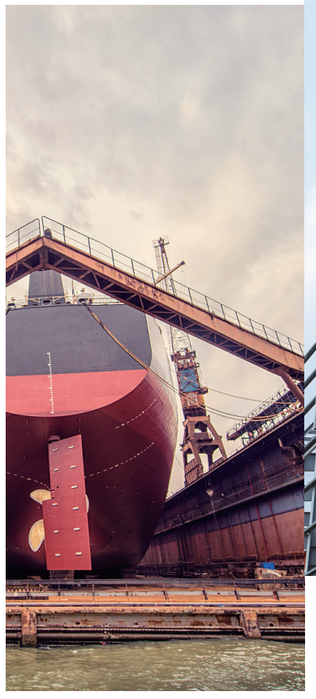


Product Specification

	Aura-3		Aura-5		Aura-7		Aura-12	
Specification								
Payload	3kg		5kg		7kg		12kg	
Reach	705mm		919mm		988mm		1434mm	
Weight	Approximately13.8kg		Approximately16.5kg		Approximately25kg		Approximately41kg	
Degree Of Freedom	6		6		6		6	
MTBF	> 80000h		> 80000h		> 80000h*		> 80000h*	
Power Supply	48VDC		48VDC		48VDC		48VDC	
Programming	Drag teaching, graphical interface		Drag teaching, graphical interface		Drag teaching, graphical interface		Drag teaching, graphical interface	
Performance								
Typical Power Consumption	160w		225w		300w		500w	
Safety	More than 21 adjustable safety features including collision detection, virtual wall, collaboration mode							
Certifications	EN ISO 13849-1, EN ISO 10218-1/PL d, Cat. 3; ISO 15066，EU CE certification，KCs certification，EAC certification							
Force Sensing, Tool Flange	force，x-y-z	moment of force，x-y-z	force，x-y-z	moment of force，x-y-z	force，x-y-z	moment of force，x-y-z	force，x-y-z	moment of force，x-y-z
Force Measurement Resolution	0.1N	0.02Nm	0.1N	0.02Nm	0.1N	0.02Nm	0.1N	0.02Nm
Relative Accuracy of Force Control	0.5N	0.1Nm	0.5N	0.1Nm	0.5N	0.1Nm	0.5N	0.1Nm
Cartesian Stiffness Adjustment Range	0~3000N/m，0~300Nm/rad		0~3000N/m，0~300Nm/rad		0~6000N/m，0~1000Nm/rad		0~18000N/m，0~2500Nm/rad	
Motion								
Repeatability	±0.03 mm		±0.03 mm		±0.02 mm		±0.03 mm	
Motion Joints	Working range	Maximum speed	Working range	Maximum speed	Working range	Maximum speed	Working range	Maximum speed
Axis 1	±360°	180°/s	±360°	180°/s	±360°	180°/s	±360°	120°/s
Axis 2	-155° ~ +140°	180°/s	-160°~ +150°	180°/s	±360°	180°/s	±360°	120°/s
Axis 3	-175°~ +135°	180°/s	-170°~ +140°	180°/s	±360°	234°/s	±360°	180°/s
Axis 4	±360°	180°/s	±360°	180°/s	±360°	240°/s	±360°	234°/s
Axis 5	±360°	180°/s	±360°	180°/s	±360°	240°/s	±360°	240°/s
Axis 6	±360°	180°/s	±360°	180°/s	±360°	240°/s	±360°	240°/s
Maximum Tool Tip Speed	⩽1.5m/s		⩽2.0m/s		⩽3.2m/s		⩽3.0m/s	
Physical characteristics								
IP rating	IP54				IP67			
ISO cleanroom rating	5				5			
Noise level	⩽70dB(A)				⩽70dB(A)			
Operating temperature range	0°C~50°C				0°C~50°C			
Humidity	⩽93% Relative humidity (non-condensing)				⩽93% Relative humidity (non-condensing)			
Robot mounting	Installation at any angle				Installation at any angle			
Tool I/O port	2 digital inputs, 2 digital outputs, 2 analogue inputs				2 digital inputs, 2 digital outputs, 2 analogue inputs			
Tool communication interface	RS485 (shared with 2 analog input pins, the two cannot be used at the same time)				One 100Mbps Ethernet connection via RJ45 port on the base			
Tool I/O power supply	12V/24V 1A（Rated）				(1) 12V/24V 1A (2) 5V 1.5A			
Control Cabinet								
Name	Aura Control Cab （abbreviation ACC）							
IP Rating	IP54							
Operating Temperature Range	0℃~50℃							
Humidity	⩽93% relative humidity (non-condensing)							
Power Input	Single-phase 90V~264VAC, frequency 47-63Hz							
Dimensions	450mm×250mm×350mm							
Weight*	Approximately 15kg							
General Digital IO	16 inputs, 16 outputs (standard)							
Safety IO	5 safety inputs, 4 safety outputs, all with dual redundant channels							
Communication Interface	RS232*1; Gigabit Ethernet RJ45*1; USB 3.0*2; HDMI*1; EtherCAT*1							
Optional Expansion	General-purpose digital I/O modules; analog I/O modules; Incremental encoder signal acquisition modules, etc							

Note: The product involves upgrades, and the actual parameters are subject to the hardware installation manual corresponding to the model; the weight of control cabinets with different configurations may vary slightly.

Industry application
Oriented towards industries



Ship



Steel structure



Construction machinery



Construction machine



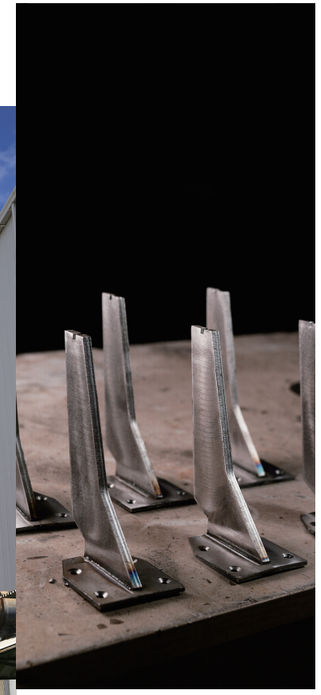
Tobacco machinery



Wind power generation



Environmental protection equipment



Sheet metal parts