



WELDING TECHNOLOGIES GROUP

# ARO Controls

Leaders in Resistance Weld Control Equipment



Quality without compromise

[www.arotechnologies.com](http://www.arotechnologies.com)



## ARO Controls

### About us

For more than 60 years, the name ARO has been synonymous with resistance welding. Today the ARO Welding Technologies Group is a world leader in welding system solutions to the automotive and other industries. Widely acclaimed as the leader in its field, ARO's welding systems and ancillary equipment are chosen by clients who recognise ARO's superior functionality and reliability. Added to this, every ARO product is designed to provide the client with the lowest life cycle costs.

From its headquarters in Chateau du Loir, near Le Mans in France, and through its network of subsidiaries and production sites across Europe, America and Asia, ARO provides world class service to world class clients.

ARO is a division of the multi-disciplined UK-based engineering group, Langley Holdings plc. ([www.langleyholdings.com](http://www.langleyholdings.com))



ARO headquarters, Chateau du Loir, France

### Electronics

ARO Controls is the electronics division of ARO and is a world-renowned specialist in resistance weld controls. Located next to ARO headquarters, ARO Controls' state-of-the-art facilities have been specifically developed for weld controls design and manufacture.

ARO's continuous programme of research and development embrace the latest technologies to deliver high performance, high quality products at the best possible prices.

Our main areas of expertise are:

- Industrial electronics
- Embedded software
- Networking software
- Power electronics
- Motion control
- Electrical cabinet design
- EMC (electromagnetic compatibility)
- PLC programming



ARO Controls, Chateau du Loir, France



*'For more than 60 years, the name ARO has been synonymous with resistance welding'*



## DC welding

### MFDC Controllers

ARO offers a complete range of MFDC (medium frequency) cabinets:

#### Benefits

- Reduction of energy consumption
- Ability to manage up to 256 welding schedules
- Wide choice of options
- Compact design
- Maximum flexibility and safety



As the controllers are compatible with a large majority of field buses used in the welding sector such as Interbus-S, DeviceNet, Profibus DP, Profinet IO and Ethernet IP they can be easily integrated into robotic or automated applications.

### Adaptive Welding

Through extensive research and development, ARO has designed an intelligent and efficient control system known as Adaptive Welding. This revolutionary system automatically compensates process variations to guarantee superior weld quality.

#### Features

- Automatically recognises and adapts to the presence of resistive materials (glues, etc.)
- Automatic compensation of electrode wear
- Automatically recognises and adapts to changes in material
- Compensates for shunting effects
- USB and Ethernet connection for configuration and calibration by computer
- Communication by field bus with robots and PLCs



#### Benefits

- Improved weld quality
- Reduction in time and associated cost savings for equipment start-up
- Costs savings through reduced documentation and maintenance of welding schedules
- Reduction of expulsions which minimises maintenance costs
- Reduced off-line quality control expenses
- Easier welding of complex materials (boron steel, TRIP, dual phase, etc.)





## AC welding

ARO has, for many years, been recognised as a specialist in the AC welding field. ARO's proven **2X16 III Control System** with its user-friendly and robust interface has been incorporated in many thousands of welding systems around the world.



For pedestal welding machines, the following function options are available:

- Programme cascades
- Seam welding
- Multi welding

### Robotic Applications

A comprehensive range of controls are compatible with the majority of field buses used in the welding sector such as Interbus-S, DeviceNet, Profibus DP, Profinet IO and Ethernet IP therefore facilitating their integration into a robot application.

The robot cabinet has been designed to allow installation on different robot brands.

### T1500 – T5000 Range of Welding Cabinets

- Integrated HMI
- Large power range (36kVA to 550kVA)
- Network voltage from 200V to 690V
- Capable of managing up to 128 welding schedules
- High variety of options
- Modular
- Optional media panel
- Compatible with PC software:
  - ARONET : supervisor
  - ARODMS : off-line





### T1400

The T1400 is a sophisticated, compact welding cabinet based on a standardised design that ensures reliability and safety and is designed to operate two manual guns.

#### Main Characteristics

- Power : 75kVA at 50%
- Ambient temperature : 45 °C
- Network voltage from 380V to 480V
- Up to 60 welding programmes
- Programming via a pocket or laptop computer
- Compatible with ARONET/ARODMS

The T1400 is derived from a proven design in which all components are known and predefined in a technical specification. The standardisation of the T1400 provide a reliable solution to the welding operation.



### AR01

The AR01 control cabinet stands out for its simplicity and its intuitive HMI. Developed specifically for extreme industrial applications, it can be installed rapidly and simply thanks to the regrouped connections on the back of the unit. Providing a robust, compact and high performance solution, the AR01 control cabinet has already been used in thousands of installations world-wide and guarantees an optimal return on investment.

#### Main Characteristics

- Power : 32 to 56kVA
- Network voltage from 230V to 460V- 50/60Hz



*'ARO Controls' cabinets have already been used in thousands of installations worldwide and guarantee an optimal return on investment'*





## iBox: Servo Management

### iBox

For electric guns and machines, ARO offers the iBox, which centralises all resistance welding parameters into one process controller.

Programming and supervision of all welding parameters (time, current, force) are regrouped in just one cabinet, delimiting responsibilities between the robot and the welder.

As a result, the management of the welding parameters in a single controller allows almost any 6-axis robot (pneumatic welding, handling, refurbished etc.) to manage an electric weld gun without significant modifications to its application.

Thanks to its force sensor management capability, the iBox provides advanced functions improving the welding process and quality:

- Force controlled and monitored
- Gap compensation
- Force profiles
- Detection of indentation and expansion
- Servo equalising

The iBox can be either AC (up to 550 kVA) or DC (up to 465 kVA) and adaptive!

iBox can manage :

- Robot servo guns
- Stationary machines
- Manual servo guns



### Test Box

The Test Box is a simplified iBox designed specifically for the maintenance department.

- Quick trouble-shooting of servo installations
- Fast on-site assessment of problem source : gun or robot / cable harness
- Off-line resolver adjustment, torque checking and other diagnosis features
- Preventive maintenance of servo motors





## Software

### ARONET

ARO weld controllers can be networked to a central computer running the ARONET software. All the functions of each and every welder can be accessed in real time on the central computer.

#### Benefits

- Increased workshop availability
- Traceability of all events and weld results for process improvement and quality assurance
- Powerful yet user-friendly interface to supervise the entire factory, whilst respecting the concept of production cells

These benefits make ARONET a perfect choice for optimised production, quality and maintenance.

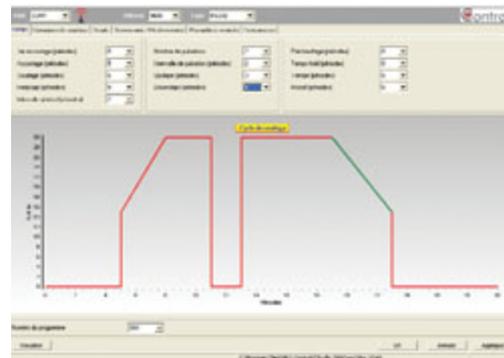
#### Compatibility

Microsoft Windows XP, 7, VISTA on 32bit and 64bit computers and laptops.



### ARODMS

ARODMS is an easy to use off-line programming and archiving software. Weld schedules can also be printed for reference.



### ARO Service

Complementing ARO's worldwide network of subsidiaries and agents, is the ARO Controls service team who provides expert customer support across the globe at every project level, from application consultancy and welding expertise to after sales service and training.



*'Statistical Process Control (SPC) becomes a reality with ARONET...'*





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