ROBOT INTEGRATION
AUTOMATION OF WELDING PROCESSES

PARTNER UP AND GET A SHARE OF
our extensive knowhow and experience with robotic welding
WELDING POWER SOURCES FOR ROBOT INTEGRATION

Welding power sources for robot integration complete with peripheral equipment for MIG/MAG, TIG and Plasma welding. Choose a robot integration setup, which matches today’s technological requirements. Partner up and get a share of our extensive knowhow and experience with robotic welding.

ROBOTIC WELDING ADDS VALUE TO MANUFACTURERS’ BUSINESS:

- Increased efficiency. Higher welding speed increases production output and lowers production time per workpiece.
- Increased production capacity. The increased production output enables manufacturers to attract large orders and to stay competitive.
- Improved product quality. Uniform welds and high quality in welding finish make manufacturers’ products better.

COOPERATION WITH ROBOT MANUFACTURERS

Migatronic welding power sources are among the most advanced on the market. Our power sources and peripheral equipment for robot integration have been tested by experienced system integrators and are applied in automated welding solutions all over the world. Our cooperation with several manufacturers of industrial robots, such as FANUC Robotics, Yaskawa Motoman, KUKA, ABB and Universal Robots, gives us access to state-of-the-art robot technology. Our many years of experience on the market make us a reliable supplier of high-tech automated welding equipment.
**WELDING POWER SOURCE BENEFITS**

**Dependability:** MIG/MAG, TIG and Plasma welding power sources dedicated to robotic welding deliver dependable performance at all times.

**Complete packages:** The power sources are available in three flexible packages with all peripheral equipment necessary to ensure an efficient robotic welding setup.

**Efficient communication:** High-quality robot control interfaces ensure efficient and correct communication between welding power source and robot.

**Compatibility:** The robot control interface can integrate with all robot brands using anybus or analog/digital I/O communication.

**Seam tracking:** Seam tracking ensures exact welding of the seam throughout the welding process.

**Touch sensing:** Through touch sensing, the robot welding torch uses the tip of the welding wire to find the workpiece and sense where to start the weld.

**Good arc ignition:** Good arc ignition ensures a stable arc from the very beginning of each weld. This leads to uniformity, higher quality in welding finish and a better product.

**Data collection (MIG):** MigaLog software enables collection of welding data from the welding machine. It is possible to extract conclusive evidence for verification in accordance with EN and ISO welding standards.

**Free software updates:** Software updates are available for downloads at all times on migatronic.com.

**IGC® - Intelligent Gas Control:** An automated welding production has long arc hours and will have a large consumption of protection gas. Intelligent Gas Control technology prevents over-consumption of gas and ensures long-term savings. With weld pools always perfectly protected, the quality of each weld is improved.

**IAC – Intelligent Arc Control:** MIG welding with IAC entails a 100 per cent stable and focused short arc for downward welding of root passes. It ensures that also downward welds live up to quality requirements.

**TIG-A-Tack:** The semi-automatic TIG-A-Tack function makes extremely small and precise fixations without root protection gas in austenitic stainless steel. This lowers the risk of weakened corrosion resistance and deformation. The fixations are invisible in the final weld seam.

**D.O.C.® (Dynamic Oxide Control):** Quicker AC TIG welding. D.O.C. increases welding speed by 30 % and reduces consumption of both energy and tungsten electrodes. It ensures a controlled, narrow cleaning zone when welding aluminium.

**Synergy Plus:** Sets all primary pulse parameters for TIG welding in DC mode.

"The robot cell was 100 per cent accurate at the first go, and the finish of the large batches of welds is now beautiful and uniform. Migatronic’s high-tech power source is very efficient and powerful. It features a pulse function and intelligent gas control, which reduces weld spatter as well as gas consumption. All things considered, the robot cell has significantly reduced our production time and costs”

Roy Mæland, responsible for day-to-day operations at Aarsland Stål & Lakk, Norway
THE FLEXIBLE MIG/MAG ROBOT SETUP

ROBOT CONTROL INTERFACE
The RCI* interface for all robot brands can be built into the power source or delivered as an external unit:
- RCI* I/O, external interface
- AnyBus, external interface
- AnyBus, internal interface

Configurable solutions for AnyBus systems:
- EtherNet/IP
- PROFINET
- DeviceNet
- EtherCAT
- PROFIBUS

The RCI* for I/O interface for MIG/MAG connects analog/digital I/O signals through a SUB-D-9 and a SUB-D-25 connector. Purchase of RCI* Anybus allows the user to convert the interface into a Fieldbus interface, either mounted internally in the power source or externally in its own physical box. Both systems are easily configured as desired.

GRAPHIC/REMOTE²
Remote control unit for MIG power sources:
- Graphic display
- Impact-proof case with adjustable strap and suspension fittings
- Shielded signal cable

WIRE COIL HOLDER *)
External mounting of wire coil for MIG/MAG:
- Suits wire reels ø200/300 mm
- Incl. wire hub brake

*) Optional

ROBOT WIRE FEEDER
RWF 30 MIG/MAG robot wire feeder with four roll wire feed system and electronic tacho control of wire feed speed. Available with:
- Built-in functions, e.g. IGC® supporting Migatronic MIG welding processes
- Built-in Air Blow system for cleaning of gas nozzle using compressed air
- Touch sensing

TECHNICAL DATA

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<thead>
<tr>
<th>Protection class</th>
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<td>Duty cycle, max. 40°C A/%</td>
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<tr>
<td>Standards</td>
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<td>Wire diameter, mm</td>
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<td>Wire feed speed, m/min</td>
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<tr>
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</table>

POWER SOURCE: SIGMA SELECT ROBO
Water coupling and current coupling are equipped with screw fastening.
MIG SOLUTIONS

MIG POWER SOURCES
Sigma Select Robo 300
Sigma Select Robo 400
Sigma Select Robo 550

MIG POWER SOURCES INCLUDE
Graphic control panel incl. 0.5 m cable
Diffusion-slow gashose, 2.7 m
Standard welding program package (Synergic function required)

MANDATORY EQUIPMENT
Air-cooled or water-cooled power source incl. flow control
RCI4 I/O or ANYBUS interface
RWF 30 (robot wire feeder): Four-roll wire feed system. Built-in functions, e.g. IGC® - Intelligent Gas Control, Touch Sensing, Air Blow system for cleaning of gas nozzle using compressed air.

OPTIONAL FUNCTIONS
Synergic DC
Synergic DC / Pulse
IAC – Intelligent Arc Control
PowerArc
Sequence
MigaJob
MigaLOG
DUO Plus
Sequence and Sequence Repeat
Welding function package: DUO Plus, MigaJob, MigaLog, Sequence, Sequence Repeat

OPTIONAL WELDING PROGRAM PACKAGES
Mild steel
Stainless steel
Aluminium
All included
Individual programs

OPTIONAL EQUIPMENT
Field bus module
Trolley
Interconnection with plug for RWF – Air
Interconnection with plug for RWF – Water
Earth cable
Wire feed roll
Mounting plate for RWF 30 (depending on robot)
Accessories for wires
Calibration certificate
SIGMA SELECT ROBO

Sigma Select ROBO 300, 400 and 550 A three-phase power sources for MIG/MAG welding of all materials. The power sources can be upgraded throughout their service lives by adding programs and functions according to requirements. Sigma Select ROBO is designed for intelligent welding beyond the ordinary.
THE FLEXIBLE TIG/PLASMA ROBOT SETUP

ROBOT CONTROL INTERFACE
The RCI² for TIG and Plasma is connected to the power source via CAN-bus and enables the user to choose between hard-wired transfer of both digital and analog I/O signals or Fieldbus-based transfer of signals between robot controller and power source.

EXTRA COOLING UNIT
External cooling of plasma torch for high performance and high duty cycle.

PI AC/DC EXTERNAL CONTROL PANEL
TIG AC/DC control panel with D.O.C® - function - all relevant parameters for professional welding results in all materials.

COLD WIRE FEEDER
TIG/Plasma feeder with four-roll wire feed system:
- Built-in functions, e.g. synchronised pulse on wire that follows machine settings
- Memory for individual settings
- Up to eight feeders connected to a welding machine

WIRE COIL HOLDER
External mounting of wire coil for TIG and Plasma:
- Suits wire reels ø200/300 mm
- Incl. wire hub brake

TECHNICAL DATA CWF
<table>
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<th>TECHNICAL DATA</th>
<th>CWF</th>
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<tr>
<td>Wire feed speed, m/min.</td>
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POWER SOURCE:
PI 350
PI 500 ROBO
PI 350 PLASMA
THE FLEXIBLE TIG/PLASMA ROBOT SETUP

RCI2 I/O interface prepared for anybus communication.

COLD WIRE FEEDER

Cold Wire Feeder: four-roll wire feed system, synchronised pulse on wire and memory for individual settings.

ROBOT CONTROL INTERFACE

RCF I/O interface prepared for anybus communication.
TIG // PLASMA
WELDING POWER SOURCES AND PERIPHERAL EQUIPMENT

TIG SOLUTIONS

TIG POWER SOURCES
Pi 350 DC W
Pi 350 AC/DC W
Pi 500 Robo DC W
Pi 500 Robot AC/DC W

TIG POWER SOURCES INCLUDE
RCI² I/O interface prepared for digital and analog communication incl. 6 m cable
CAN plug incl. CAN distributor box
Remote control plug incl. Arc Detect signal
IGC® - Intelligent Gas Control with flow control
Built-in water flow control
Diffusion-slow gas hose, 2.7 m

MANDATORY EQUIPMENT
Rack or standard trolley/wheels

OPTIONAL EQUIPMENT
Cold Wire Feeder
Wire feed roll
Holder for CWF
Fieldbus module
Mounting plate for CWF (depending on robot)
Accessories for wires

PI ROBO
Pi ROBO 350 and 500 A power sources for TIG welding of mild and stainless steel and aluminium, with or without pulse function. Pi power sources are designed for heavy duty welding with intelligent functions for improved efficiency and welding quality.
**PLASMA SOLUTIONS**

**PLASMA POWER SOURCE**

Pi 350 Plasma W

**PLASMA POWER SOURCE INCLUDES**

RCI² I/O interface prepared for digital and analog communication incl. 6 m cable

IGC® - Intelligent Gas Control with flow control

Double CAN plug incl. CAN distributor box

Remote control plug incl. Arc Detect signal

Built-in water flow control

Diffusion-slow gashose, 2.7 m

**MANDATORY EQUIPMENT**

Rack or standard trolley/wheels

**OPTIONAL EQUIPMENT**

Cold Wire Feeder

Wire feed roll

Holder for CWF

Fieldbus module

Mounting plate for CWF (depending on robot)

External cooling unit

Accessories for wires

**PI PLASMA**

Pi Plasma 350 is a high-performance power source for welding mild and stainless steel, with or without pulse function. It ensures uniform, high-quality welds in the 5-350 A current range.
# TECHNICAL DATA

*We reserve the right to make changes.*

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<tr>
<th>POWER SOURCE</th>
<th>SIGMA SELECT ROBO 300 // 300 IAC</th>
<th>SIGMA SELECT ROBO 400 // 400 IAC</th>
<th>SIGMA SELECT ROBO 550</th>
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<tr>
<td>Mains voltage +/- 15% (50-60Hz), V</td>
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<td>3x400</td>
<td>3x400</td>
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<tr>
<td>Fuse, A</td>
<td>16</td>
<td>20</td>
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<td>Mains current, effective, A</td>
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<td>Mains current, max., A</td>
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<td>0.85</td>
<td>0.90</td>
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<td>Duty cycle 100% /20°C (MIG), A/%/V</td>
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<td>345/100/31,5 // 310/100/29,5</td>
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<td>220/25 // 270/100/27,5</td>
<td>300/100/29,0 // 280/100/28,0</td>
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<tr>
<td>Duty cycle 60% /40°C (MIG), A/%/V</td>
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<td>370/60/32,5 // 350/60/31,5</td>
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<th>POWER SOURCE</th>
<th>PI 350 DC W // 350 AC/DC W</th>
<th>PI 500 ROBO DC W // 350 AC/DC W</th>
<th>PI 350 PLASMA</th>
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<tr>
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<td>5-500</td>
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<tr>
<td>Mains voltage +/- 15 %, V</td>
<td>3x400</td>
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<td>Fuse, A</td>
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<td>32</td>
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<td>350</td>
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