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.

COORDINATION 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

POWER SOURCE: SIGMA SELECT ROBO

TECHNICAL DATA RWF 30

| Protection class | IP 23 |
| Torch connection | EURO |
| Duty cycle, 100% 40°C A/% | 430/100 |
| Duty cycle, max. 40°C A/% | 550/50 |
| Standards | IEC60974-5, IEC60974-10 CL. A |
| Wire diameter, mm | 0.6-1.6 |
| Wire feed speed, m/min | 0.5-30.0 |
| Dimensions (HxWxL), mm | 240x220x308 |
| Weight, kg | 6.8 |
Water coupling and current coupling are equipped with screw fastening.

**ROBOT CONTROL INTERFACE: RCI⁺**

- RCI⁺ Anybus Box for Sigma Select
- RCI⁺ I/O Box for Sigma Select
- RCI⁺ ANYBUS robot interface (built in Sigma Select)

RWF 30 - robot wire feeder for SIGMA SELECT (MIG) with four-roll wire feed system and built-in functions.
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
RCI 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 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 RCP 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.

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

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.

PI PLASMA EXTERNAL CONTROL PANEL
Plasma control panel with up to 64 programs stored in Plasma and TIG.

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

TECHNICAL DATA

<table>
<thead>
<tr>
<th>CWF</th>
<th>Wire feed speed, m/min.</th>
<th>Wire dimension, mm</th>
<th>Dimensions (HxWxL), mm</th>
<th>Weight, kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>CW</td>
<td>0.2-5.0</td>
<td>0.6-2.4</td>
<td>276x211x276</td>
<td>9.6</td>
</tr>
</tbody>
</table>

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 SOLUTIONS

### TIG POWER SOURCES

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
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<tbody>
<tr>
<td>Pi 350 DC W</td>
<td></td>
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<tr>
<td>Pi 350 AC/DC W</td>
<td></td>
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<tr>
<td>Pi 500 Robo DC W</td>
<td></td>
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<tr>
<td>Pi 500 Robot AC/DC W</td>
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</tbody>
</table>

### 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

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### 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

**POWER SOURCE** | **SIGMA SELECT ROBO 300 // 300 IAC** | **SIGMA SELECT ROBO 400 // 400 IAC** | **SIGMA SELECT ROBO 550**
--- | --- | --- | ---
Current range (MIG), A | 15-300 | 15-400 | 15-550
Mains voltage +/- 15% (50-60Hz), V | 3x400 | 3x400 | 3x400
Fuse, A | 16 | 20 | 35
Mains current, effective, A | 15.4 | 17.5 | 27.2
Mains current, max., A | 15.4 | 26.0 | 39.2
Power 100%, kVA | 9.0 | 12.1 | 18.9
Power, max., kVA | 10.7 | 18.0 | 27.1
Power factor | 0.90 | 0.90 | 0.90
Open circuit voltage, V | 50-60 | 65-70 | 75-80
Efficiency | 0.85 | 0.85 | 0.90
Duty cycle 100% /20°C (MIG), A/%/V | 290/28.5 // 300/100/29,0 | 345/100/31.5 // 310/100/29,5 | 475/100/37.8
Duty cycle max. /20°C (MIG), A/%/V | 400/60/34.0 // 400/60/34,0 | 550/60/41.5 | 
Duty cycle 100% /40°C (MIG), A/%/V | 220/25 // 270/100/27,5 | 300/100/29.0 // 280/100/28,0 | 430 / 100 / 35.5
Duty cycle max. /40°C (MIG), A/%/V | 240/26 | 370/60/32.5 // 350/60/31,5 | 510 / 60 / 39.5
Duty cycle max. /40°C (MIG), A/%/V | 300/25/29.0 // 300/80/29.0 | 400/50/34.0 // 400/40/34,0 | 550 / 50 / 41.5
Application class | S/CE | S/CE | S/CE
Protection class | IP 23 // IP 23 | IP 23 | IP 23
Standards | EN/IEC60974-1. EN/IEC60974-10 Cl. A | | |
Dimensions (H x W x L. mm) | 454x260x735 | 454x260x735 | 454x260x735
Weight, kg | 26 | 35 | 36

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**POWER SOURCE** | **PI 350 DC W // 350 AC/DC W** | **PI 500 ROBO DC W // PI 500 ROBO AC/DC W** | **PI 350 PLASMA**
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Current range, A | 5-350 | 5-500 | 5-350
Mains voltage +/- 15 %, V | 3x400 | 3x400 | 3x400
Fuse, A | 25 | 32 | 32
Mains current, effective, A | 17.3 | 26.1 // 27.2 | 26.1
Mains current, max, A | 22.7 | 33.7 // 35.1 | 23.3
Open circuit voltage, V | 95 | 95 | 95
Efficiency | 0.88 | 0.91 // 0.87 | 0.91
Duty cycle 100% /20°C, A/%/V | 340 | 475 | 350
Duty cycle max. /20°C, A/%/V | 350/95 | 500/80 | 350/100
Duty cycle 100% /40°C, A/%/V | 290/21.6 | 420/26.8 | 350/39.0
Duty cycle 60% /40°C, A/%/V | 500/30.0 | | |
Duty cycle max. /40°C, A/%/V | 350/60/24.0 | 500/60/30.0 | 350/100/39
Application class | S/CE/CCC | S/CE/CCC | S/CE
Protection class | IP 23 | IP 23 | IP 23
Standards | EN/IEC60974-1. EN/IEC60974-2. EN/IEC60974-3. EN/IEC60974-10 | | |
Dimensions (H x W x L. mm) | 980x545x1090 | 980x545x1090 | 980x545x1090
Weight, kg | 31 // 72 | 68 // 77 | 85