

# TRAINING

Robot & Welding  
Training Courses  
2024



In cooperation with



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### **Panasonic Robot & Welding Modular Training Courses**

Panasonic CONNECT boasts a broad portfolio of solutions to meet all customer requirements – from components through to complete plant solutions for modern industry. Robot & Welding offers a variety of individual courses for training staff in production and sales to seamlessly operate the sophisticated and broadly diversified range of machinery.

## Learning from experts





## Practical, effective and individual

The latest modular role-based training courses are designed for plant operators, robot programmers and system partners who are tasked with the creation, correction and maintenance of the robot programs as well as system integration and service. Thanks to the modular structure, specific training courses can be combined individually to take account of the differ-

ent training needs of operators and maintenance personnel. The Panasonic Training Centre in Neuss offers the optimum learning environment to fulfil these requirements. The goal is to empower the workforce to achieve the best possible production yields at the highest level of quality and the lowest cost.



## Quick Overview

	TRAINING	COURSE DURATION	ORDER CODE	PAGE
<b>PROGRAMMING</b>	Basic	3 days	TR0250	7
	Basic Handling	3 days	TR025H	7
	 Robot Specialist [DVS® 1184 Module 5-6]	5 days	TR0251	8
	Advanced	3 days	TR0252	9
	External Axes	1 day	TR0253	10
	Touch Sensor I	1 day	TR0254	11
	Touch Sensor II	1 day	TR0255	12
	Touch Sensor III (SLS)	2 days	TR0256	13
	Multilayer Welding (MNU)	2 days	TR0257	14
	Offline Programming I (DTPS)	3 days	TR0258	15
	Offline Programming II (DTPS)	3 days	TR0259	16
<b>SYSTEM</b>	System Familiarisation	1 day	TR0260	17
<b>INTEGRATION &amp; MAINTENANCE</b>	Basic Mechatronics	4 days	TR0270	18
	System Integration	4 days	TR0271	19
	Integrating Options (see overview)	1 day each	TR0300-TR1025	20
<b>WELDING PROCESS</b>	Basic MAG Welding (Level 1)	1 day	TR0280	21
	Basic TIG Welding (Level 1)	1 day	TR0281	21
	Basic MIG Welding (Level 1)	1 day	TR0282	21
	Advanced Welding (Level 2)	2 days	TR0283	22
	Arc Sensor I	1 day	TR0284	23
	Arc Sensor II (TFS)	1 day	TR0285	24
	 Cooperative Robot Specialist (according to DVS® 1184 Module 1-4)	5 days	TR0286	25
<b>OPTIONS</b>	All other training options on request	On request See optional training	TR0300-TR1032	6

## Optional training

### TRAINING INFORMATION: ON REQUEST

PRODUCT NAME	PLATFORM	ORDER NO. USER TRAINING*	ORDER NO. HARDWARE INTEGRATION	HARDWARE TRAINING*	PRODUCT NO.
3D/Mirror Transformation Function	Robot	TR1000			YA-1UPWM1
Arc Sensor Function	Robot	TR0284	TR2001	<input type="checkbox"/>	YA-1VPXF1
Auto Backup Software	PC	TR1002			YA-1NPCS1
Auto Compensation of Tool	Robot	TR1003	TR2003	<input type="checkbox"/>	YA-1RPWE1
Auto Extension / AVC	Robot	TR1004			YA-1TPWX1
Bead Eye <b>NEW</b>	PC + Robot	TR1034	TR2034	<input type="checkbox"/>	YA-VPXH1T01
Cooperative Robot Motion (optional)	Robot	TR1005	TR2005	<input type="checkbox"/>	YA-1NPJF1
Ext. Robot Axis Monitor Function	Robot	TR1006			YA-1NPWL1
External Axis Harmonious Function	Robot	TR1007			YA-1UPHA1
External Sensor Connection	Robot	TR1008	TR2008	<input type="checkbox"/>	YA-1UPSE1
Feeder AMP Switching Unit	Robot	TR1009	TR2009	<input type="checkbox"/>	YA-1VPUC1
Fixed Tool Function	Robot	TR1010	TR2010	<input type="checkbox"/>	YA-1UPXB1
Flexible Multi-Cooperative Robot Function	Robot	TR1011	TR2011	<input type="checkbox"/>	YA-1UPJA1
Gantry Pair Function	Robot	TR1012			YA-1VPWG1
iWNB <b>NEW</b>	PC	TR1035	TR2035	<input type="checkbox"/>	YY-NWBST1
Laser Sensor Interface	Robot	TR1013	TR2013	<input type="checkbox"/>	YA-1UPSL1
Parallel Sequence Function	Robot	TR1014			YA-1UPXA1
Production Management Function	PC	TR1015			YA-1UPXD1
Robot Data Access Function	Robot	TR1016	TR2016	<input type="checkbox"/>	YA-1UPXE1
Switching of TAWERS and General Welder Function	Robot	TR1017			YA-1TPWU1
TAWERS VPRS <b>NEW</b>	PC + Robot	TR1033	TR2033	<input type="checkbox"/>	YA-1VPCV1
TAWERS Welding Data Log	Robot	TR1018			YA-1TPWY2T01
Teaching Update Log	Robot	TR1019			YA-1UPXC1
Thick Plate Touch Sensor Software	Robot	TR1020			YA-1UPST1
Thick Plate Welding Function	Robot	TR1021			YA-1UPM*
Touch Sensor Function	Robot	TR0254	TR2022	<input type="checkbox"/>	YA-1VPWS1
Twin Harmonizer Software	Robot	TR1023			YA-1UPJA1Y00
Twin Robot Tandem Welding Function	Robot	TR1024	TR2024	<input type="checkbox"/>	YA-1UPMF1
Virtual Manipulator	Robot / PC	TR1025	TR2025	<input type="checkbox"/>	YA-1VPCT1
Weld Navigation (General Welder)	Robot	TR1026			YA-1UPWQ1
Weld Process Manager	Robot	TR1027			YA-1UPWW1
Welding Condition Editor III + SLS Editor	PC	TR1028			YA-1UPCW1
Welding Condition Editor Software / Thick Plate Software PC	PC	TR1029			AYF01048
Welding Data Log (General Welder)	Robot	TR1030			YA-1UPWY2T01
Welding Data Management	Robot	TR1031			YA-1TPWY2
Welding Data Software	PC	TR1032			YA-1NPCK1
Safety Monitor Function <b>NEW</b>	Robot	TR1033	TR2033	<input type="checkbox"/>	YA-2JPXV1

### CARACTERISTIC OPTION

Active Wire Feed Process	Robot	TR300	TR2300	<input type="checkbox"/>	YA-1TPMW1
Collet Tip Weld Table	Robot	TR301	TR2301	<input type="checkbox"/>	YA-1TPME1
HD-MAG Weld Table	Robot	TR302			YA-1TPMH1
MIG braze software	Robot	TR319			YA-1TPUW1T02
Optional weld <b>NEW</b> table	Robot	TR303			YA-1TPUW1T17
Pulse MIX	Robot	TR321			YA-1TPXG1
Spiral Weaving	Robot	TR304			YA-1UPWA1
Stitch Welding Function <b>NEW</b>	Robot	TR305			YA-1UPWR1
Super Active TAWERS HP	Robot	TR320			YA-1TPMV1T05
TAWERS Active Aluminum	Robot	TR310	TR2310	<input type="checkbox"/>	YA-1TPMN1
TAWERS Active Brazing	Robot	TR311	TR2311	<input type="checkbox"/>	YA-1TPMP1
TAWERS Aluminum	Robot	TR312			YA-1TPMM1
TAWERS Hot Active	Robot	TR313	TR2313	<input type="checkbox"/>	YA-1TPMX1
TAWERS Pulse Stitch Welding Function	Robot	TR314			YA-1TPWR1
TAWERS Super Active	Robot	TR306	TR2306	<input type="checkbox"/>	YA-1TPMV1
TAWERS Super Active Aluminum	Robot	TR309	TR2309	<input type="checkbox"/>	YA-1TPMV1T03
TAWERS Super Active HBC	Robot	TR307	TR2307	<input type="checkbox"/>	YA-1TPMV1T01
TAWERS Super Active Zinc-Coated Steel (S-Zi-Tech)	Robot	TR308	TR2308	<input type="checkbox"/>	YA-1TPMV1T02
TAWERS Synchronous Weaving Low-pulse	Robot	TR315			YA-1TPMM1T01
TAWERS TIG Software	Robot	TR317			YA-1TPMT1
TAWERS Zinc-Coated Steel (Zi-Tech)	Robot	TR316			YA-1TPMZ1
TIG Filler Stitch Welding Function	Robot	TR318	TR2318	<input type="checkbox"/>	YA-1UPWZ1
TAWERS TIG Software	Robot	TR317			YA-1TPMT1
TIG Filler Stitch Welding Function	Robot	TR318		<input type="checkbox"/>	YA-1UPWZ1

\* mostly only necessary for system partners

## Basic

### Online Robot Control Programming G2 / G3 / G4

<b>TARGET GROUP:</b>	Plant operators, robot programmers and system partners tasked with the creation, correction and maintenance of the robot programs as well as system integration and service.
<b>TRAINING GOALS:</b>	<p>Participants will learn how to:</p> <ul style="list-style-type: none"> <li>› Explain the most important safety requirements and guidelines</li> <li>› Distinguish basic system components</li> <li>› Understand the program structure</li> <li>› Perform and adjust the TCP test</li> <li>› Use different coordinate systems</li> <li>› Move robots and create simple programs</li> <li>› Create linear, circular and pendular program points</li> <li>› Edit existing programs</li> <li>› Use the most important basic commands and functions</li> <li>› Create a welding program</li> <li>› Set and adjust welding parameters</li> <li>› Move program sections in parallel</li> <li>› Use teach, test and auto mode</li> <li>› Resolve and handle simple disruptions</li> <li>› Perform a system data backup</li> </ul>
<b>OPTION:</b>	<p>Handling option for e.g. gripper (without welding function)</p> <ul style="list-style-type: none"> <li>› Use inputs / outputs manually</li> <li>› Inputs / outputs via function keys</li> <li>› Inputs / outputs via automatic commands</li> <li>› Loop query commands</li> </ul>
<b>PREREQUISITE:</b>	<p>Basic PC know-how.          Technical understanding.          Safety Regulations <a href="#">[see Page 27]</a></p>

**COURSE DURATION:**  
3 days

**TRAINING TIMES:**  
9 am to 4:30 pm (by arrangement)

**NUMBER OF PARTICIPANTS:**  
Min. 2 persons per training event (individual training on request)

**CATERING:**  
Lunch and beverages are included in the price

**TRAINING DOCUMENTATION:**  
Training folder  
Safety instructions  
Operating manual

**CERTIFICATION:**  
Participants will be awarded a certificate when they have achieved the set training objectives as proof of participation

**TRAINING LOCATION:** Neuss

**BOOKING CODE:** TR0250

**Option:**  
Handling Training  
**BOOKING CODE:** TR025H

## Robot Specialist

### Training for the G2 / G3 / G4 Series [DVS® 1184 Module 5-6] Online Robot Control Programming G2 / G3 / G4

**TARGET GROUP:** Plant operators, robot programmers and system partners tasked with the creation, correction and maintenance of the robot programs as well as system integration and service.

**TRAINING GOALS:** Participants will learn how to:

- › Explain the most important safety requirements and guidelines
- › Distinguish basic system components
- › Understand the program structure
- › Perform and adjust the TCP test
- › Use different coordinate systems
- › Move robots and create simple programs
- › Create linear, circular and pendular program points
- › Edit existing programs
- › Use the most important basic commands and functions
- › Create a welding program
- › Set and adjust welding parameters
- › Move program sections in parallel
- › Use teach, test and auto mode
- › Resolve and handle simple disruptions
- › Perform a system data backup
- › Develop advanced basic expertise in automated welding

Test successfully with test components

**PREREQUISITE:** Basic PC know-how  
Technical understanding

**INFORMATION:** This training course offers participants the possibility to qualify as a “robot welder” on completion of the optional welding operator training in accordance with ISO 14732. It is not necessary to complete the “Robot Specialist [DVS® 1184 ] Module 1-4” beforehand.

The sequence of modules can be determined individually by the participant. Modules 1-6 must be completed before taking the welding operator examination in accordance with ISO 14732.

Further training options are also available subsequently. For example, the “Expert in robot welding” or the “Welding operator for fully mechanised and automated welding equipment”. [\[See also page 25\]](#)

Please feel free to contact us for information on the current options.

**COURSE DURATION:**  
5 days

**TRAINING TIMES:**  
9 am to 4:30 pm (by arrangement)

**NUMBER OF PARTICIPANTS:**  
Min. 2 persons  
per training event  
(individual training on request)

**CATERING:**  
Lunch and beverages are included in the price

**TRAINING DOCUMENTATION:**  
Safety instructions  
Operating manual

**CERTIFICATION:**  
Participants will be awarded a certificate when they have achieved the set training objectives as proof of participation

**TRAINING LOCATION:** Neuss

**BOOKING CODE:** TR0251



## Advanced Online Programming with Robot Control G2 / G3 / G4

<b>TARGET GROUP:</b>	Plant operators, robot programmers and system partners tasked with the creation, correction and maintenance of the robot programs as well as system integration and service.
<b>TRAINING GOALS:</b>	<p>Participants will learn how to:</p> <ul style="list-style-type: none"> <li>› Perform calculations with global and local variables</li> <li>› Evaluate input signals, set output signals automatically and manually</li> <li>› Carry out programming with position variables from the variable menu</li> <li>› Extend available coordinate systems as well as create a user coordinate system (with walkthrough)</li> <li>› Optimise welding programs (cycle time / avoid delay)</li> <li>› Carry out programming with additional logic commands (counters, jump instructions, loop, IF THEN)</li> <li>› Make settings with advanced welding parameter commands with ARC-Start-CraterSLP, Wirestick release</li> <li>› Change the program start method</li> <li>› Optimise TCP</li> <li>› Process label sections</li> <li>› Perform conversion functions, incl.mirroring programs</li> <li>› Change the characteristic curve during the program</li> <li>› Create and use different tools</li> <li>› Perform advanced data transfer / backup function</li> <li>› Make advanced welding machine settings</li> </ul>
<b>PREREQUISITE:</b>	Participants must have successfully completed the basic training course for the G2 / G3 / G4 series. Technical understanding.

**COURSE DURATION:**

3 days

**TRAINING TIMES:**

9 am to 4:30 pm (by arrangement)

**NUMBER OF PARTICIPANTS:**

Min. 2 persons per training event (individual training on request)

**CATERING:**

Lunch and beverages are included in the price

**TRAINING DOCUMENTATION:**Training folder:  
Safety instructions  
Operating manual**CERTIFICATION:**

Participants will be awarded a certificate when they have achieved the set training objectives as proof of participation

**TRAINING LOCATION:** Neuss**BOOKING CODE:** TR0252

## External Axes

<b>TARGET GROUP:</b>	The course is designed for plant operators who create welding programs on systems equipped with Panasonic external axes. Robot programmers.
<b>TRAINING GOALS:</b>	Participants will learn how to: <ul style="list-style-type: none"> <li>› Distinguish which mechanism to select</li> <li>› Perform programming using external axes without harmonizer</li> <li>› Use the harmonizer function and determine necessity</li> <li>› Execute defined movements without a program</li> <li>› Perform external axis shifts</li> <li>› Transmit external axis data</li> <li>› Adapt the MDI data</li> </ul>
<b>PREREQUISITE:</b>	Participants must have successfully completed the basic training course.

**COURSE DURATION:**

1 day

**TRAINING TIMES:**

9 am to 4:30 pm

**NUMBER OF PARTICIPANTS:**

Min. 2 persons per training event (individual training on request)

**CATERING:**

Lunch and beverages are included in the price

**TRAINING DOCUMENTATION:**
Training folder  
Safety instructions  
Operating manual
**CERTIFICATION:**

Participants will be awarded a certificate when they have achieved the set training objectives as proof of participation

**TRAINING LOCATION:** Neuss

**BOOKING CODE:** TR0253


## Touch Sensor I

<b>TARGET GROUP:</b>	The course is designed for programmers who create welding programs using the Panasonic touch sensor. Robot programmers.
<b>TRAINING GOALS:</b>	Participants will learn how to: <ul style="list-style-type: none"> <li>› Create programs progressively on sample parts using the touch sensor</li> <li>› Distinguish and program search functions</li> <li>› Program logic commands to control the touch sensor</li> <li>› Analyse and resolve faults in the welding process</li> </ul>
<b>PREREQUISITE:</b>	Participants must have successfully completed the basic training course and demonstrate spatial awareness.
<b>OPTIONAL:</b>	Day 2 with the customer components.

**COURSE DURATION:**

1 day

**TRAINING TIMES:**

9 am to 4:30 pm

**NUMBER OF PARTICIPANTS:**

Min. 2 persons per training event (individual training on request)

**CATERING:**

Lunch and beverages are included in the price

**TRAINING DOCUMENTATION:**

Training folder  
Safety instructions  
Operating manual

**CERTIFICATION:**

Participants will be awarded a certificate when they have achieved the set training objectives as proof of participation

**TRAINING LOCATION:** Neuss

**BOOKING CODE:** TR0254

## Touch Sensor II

<b>TARGET GROUP:</b>	The course is designed for programmers who create welding programs using the Panasonic touch sensor. Robot programmers.
<b>TRAINING GOALS:</b>	Participants will learn how to: <ul style="list-style-type: none"> <li>› Use Transbase touch / shift functions (3D shift)</li> <li>› Use external axis touch / shift</li> </ul>
<b>PREREQUISITE:</b>	Participants must have successfully completed the basic training course plus Touch Sensor I and demonstrate spatial awareness.

**COURSE DURATION:**

1 day

**TRAINING TIMES:**

9 am to 4:30 pm

**NUMBER OF PARTICIPANTS:**

Min. 2 persons per training event (individual training on request)

**CATERING:**

Lunch and beverages are included in the price

**TRAINING DOCUMENTATION:**

Training folder  
Safety instructions  
Operating manual

**CERTIFICATION:**

Participants will be awarded a certificate when they have achieved the set training objectives as proof of participation

**TRAINING LOCATION:** Neuss

**BOOKING CODE:** TR0255

## Touch Sensor III (SLS)

<b>TARGET GROUP:</b>	The course is designed for programmers who create welding programs using the Panasonic touch sensor. Robot programmers.
<b>TRAINING GOALS:</b>	<p>Participants will learn how to:</p> <ul style="list-style-type: none"> <li>› Use the database-based (advanced function) of the touch sensor</li> <li>› Manage database records</li> <li>› Understand the streamlined, clearly laid out program structure</li> <li>› Use graphical menu guidance</li> <li>› Use search direction programming for pipes</li> <li>› Use search direction programming for parallel and twisted components in fillet welds</li> <li>› Use search direction programming for V- and HV-welds</li> <li>› Handle automation of V- and HV-welds that have different starting and ending distances</li> </ul>
<b>PREREQUISITE:</b>	<p>Participants must have successfully completed the basic training course and demonstrate very good spatial awareness.</p> <p>Touch Sensor I &amp; II not necessary but useful.</p>

**COURSE DURATION:**  
2 days

**TRAINING TIMES:**  
9 am to 4:30 pm

**NUMBER OF PARTICIPANTS:**  
Min. 2 persons per training event (individual training on request)

**CATERING:**  
Lunch and beverages are included in the price

**TRAINING DOCUMENTATION:**  
Training folder  
Safety instructions  
Operating manual

**CERTIFICATION:**  
Participants will be awarded a certificate when they have achieved the set training objectives as proof of participation

**TRAINING LOCATION:** Neuss

**BOOKING CODE:** TR0256

## Multilayer Welding (MNU)

<b>TARGET GROUP:</b>	The course is designed for experienced robot programmers who create complex welding programs using the Panasonic robot as well as technicians and engineers.
<b>TRAINING GOALS:</b>	<p>Participants will learn how to:</p> <ul style="list-style-type: none"> <li>› Use the database-based multilayer welding function (MNU)</li> <li>› Manage database records</li> <li>› Understand the streamlined, clearly laid out program structure</li> <li>› Use graphical menu guidance</li> <li>› Perform multilayer welding (MNU) in both directions</li> <li>› Use pendular motions with different starting and ending distances</li> <li>› Program external axes with multi-rotation and multilayer welding</li> </ul>
<b>PREREQUISITE:</b>	Participants must have successfully completed the basic training course and demonstrate very good spatial awareness.

**COURSE DURATION:**

2 days

**TRAINING TIMES:**

9 am to 4:30 pm

**NUMBER OF PARTICIPANTS:**

Min. 2 persons per training event (individual training on request)

**CATERING:**

Lunch and beverages are included in the price

**TRAINING DOCUMENTATION:**

Training folder  
Safety instructions  
Operating manual

**CERTIFICATION:**

Participants will be awarded a certificate when they have achieved the set training objectives as proof of participation

**TRAINING LOCATION:** Neuss

**BOOKING CODE:** TR0257

## Offline Programming I (DTPS)

<b>TARGET GROUP:</b>	Robot programmers and system partners, engineers, IT specialists, technicians, technical drawers from the field of mechanical engineering. Interested parties with knowledge of CAD.
<b>TRAINING GOALS:</b>	<p>Participants will learn how to:</p> <ul style="list-style-type: none"> <li>› Establish a network connection to the robot</li> <li>› Download backups via the PC (auto data receiving)</li> <li>› Read error / system information</li> <li>› Create virtual installations in DTPS</li> <li>› Assign a backup to a virtual installation</li> <li>› Import CAD components</li> <li>› Create standard CAD components</li> <li>› Position and assemble CAD components</li> <li>› Assign CAD components to external axes</li> <li>› Perform accessibility tests with DTPS</li> <li>› Create cycle time analyses with DTPS</li> <li>› Apply the teach / weld navigator function</li> <li>› Create work plans and copy to the robot controller</li> </ul>
<b>PREREQUISITE:</b>	<p>Participants must have successfully completed the basic training course for the G2 / G3 / G4 series. DTPS software Sound PC knowledge is also an absolute requirement. Spatial awareness. CAD knowledge would be advantageous. A high-performance laptop (PC) with Windows 8 / 10 / 11 for each participant, PC mouse, mouse pad and administrator rights to install software.</p>

**COURSE DURATION:**

3 days

**TRAINING TIMES:**

9 am to 4:30 pm

**NUMBER OF PARTICIPANTS:**

Min. 2 persons per training event (individual training on request)

**CATERING:**

Lunch and beverages are included in the price

**TRAINING DOCUMENTATION:**

Training folder  
Safety instructions  
Operating manual

**CERTIFICATION:**

Participants will be awarded a certificate when they have achieved the set training objectives as proof of participation

**TRAINING LOCATION:** Neuss

**BOOKING CODE:** TR0258

## Offline Programming II (DTPS)

<b>TARGET GROUP:</b>	Robot programmers and system partners, engineers, IT specialists, technicians, technical drawers from the field of mechanical engineering. Interested parties with knowledge of CAD.
<b>TRAINING GOALS:</b>	Participants will learn how to: <ul style="list-style-type: none"> <li>› Calibrate systems in DTPS</li> <li>› Create, integrate and execute scripts</li> <li>› Use different transformation functions</li> <li>› Use the Touch Navi function</li> </ul>
<b>PREREQUISITE:</b>	Participants must have successfully completed the basic training course for the G2 / G3 / G4 series and Offline Programming Part I. A high-performance laptop (PC) with Windows 8 / 10 for each participant, PC mouse, mouse pad and administrator rights to install software. DTPS software.

**COURSE DURATION:**

3 days

**TRAINING TIMES:**

9 am to 4:30 pm

**NUMBER OF PARTICIPANTS:**

Min. 2 persons  
per training event  
(individual training on request)

**CATERING:**

Lunch and beverages  
are included in the  
price

**TRAINING DOCUMENTATION:**

Training folder  
Safety instructions  
Operating manual

**CERTIFICATION:**

Participants will be  
awarded a certificate  
when they have achieved  
the set training objectives  
as proof of participation

**TRAINING LOCATION:** Neuss

**BOOKING CODE:** TR0259



## System familiarisation

<b>TARGET GROUP:</b>	New system operators for refreshing knowledge.
<b>TRAINING GOALS:</b>	Participants will learn how to: <ul style="list-style-type: none"><li>› Grasp correlations in overall system operation</li><li>› Use additional system components such as HMI, torch cleaning, gates, switches, buttons, light barriers, scanners, and much more</li></ul>
<b>PREREQUISITE:</b>	Successful completion of the basic training course for the G2 / G3 series is recommended.

**COURSE DURATION:**

1 day (on site)

**TRAINING TIMES:**By agreement, generally  
9 am to 4:30 pm**NUMBER OF PARTICIPANTS:**

1-5 participants

**CATERING:** -**TRAINING DOCUMENTATION:**Use of the customer's  
system documentation**CERTIFICATION:** -**TRAINING LOCATION:**

On site

**BOOKING CODE:** TR0260

## Basic Mechatronics

PROGRAMMING	<b>TARGET GROUP:</b>	The basic course in mechatronics is designed for internal maintenance staff who perform maintenance and repair work independently on Panasonic robot welding systems.
SYSTEM	<b>TRAINING GOALS:</b>	<p>Participants will learn how to:</p> <ul style="list-style-type: none"> <li>› Troubleshoot and resolve the most common errors and alert messages</li> <li>› Replace wear parts</li> <li>› Distinguish the most important control boards</li> <li>› Replace component assemblies (e.g. plug-in cards, power supplies)</li> <li>› Replace wire feeders</li> <li>› Replace motors and gears</li> <li>› Replace encoder batteries</li> <li>› Reference the manipulator and external axes following replacement of motors and gears</li> <li>› Reference the manipulator if “original position” is lost, without making mechanical changes</li> <li>› Perform maintenance inspections</li> </ul>
INTEGRATION AND MAINTENANCE	<b>PREREQUISITE:</b>	<p>Participants must have successfully completed training in a mechanical, electronic profession.</p> <p>Willingness, interest, and the ability to apply and implement learned knowledge in practice.</p> <p>Basic knowledge of programming and operation of Panasonic robots.</p>
WELDING PROCESS		

**COURSE DURATION:**

4 days

**TRAINING TIMES:**

9 am to 4:30 pm

**NUMBER OF PARTICIPANTS:**

Min. 2 persons per training event (individual training on request)

**CATERING:**

Lunch and beverages are included in the price

**TRAINING DOCUMENTATION:**

Training folder  
Safety instructions  
Operating manual

**CERTIFICATION:**

Participants will be awarded a certificate when they have achieved the set training objectives as proof of participation

**TRAINING LOCATION:** Neuss

**BOOKING CODE:** TR0270

## System Integration

<b>TARGET GROUP:</b>	For system partners and system integrators.
<b>TRAINING GOALS:</b>	<p>Participants will learn how to:</p> <ul style="list-style-type: none"> <li>› Commission a new robot</li> <li>› Integrate new hardware</li> <li>› Distinguish components and their function</li> <li>› Wire components</li> <li>› Activate software-related functions in the robot</li> <li>› Adapt the software to the system environment or according to instructions</li> </ul>
<b>PREREQUISITE:</b>	<p>Participants must have successfully completed training in a mechanical or electronic profession.</p> <p>Willingness, interest, and the ability to apply and implement learned knowledge in practice.</p> <p>Basic knowledge of programming and operation of Panasonic robots.</p>

<b>COURSE DURATION:</b> 4 days
<b>TRAINING TIMES:</b> 9 am to 4:30 pm
<b>NUMBER OF PARTICIPANTS:</b> Min. 2 persons per training event (individual training on request)
<b>CATERING:</b> Lunch and beverages are included in the price
<b>TRAINING DOCUMENTATION:</b> Training folder Safety instructions Operating manual
<b>CERTIFICATION:</b> Participants will be awarded a certificate when they have achieved the set training objectives as proof of participation
<b>TRAINING LOCATION:</b> Neuss
<b>BOOKING CODE:</b> TR0271

## Integrating Options

<b>TARGET GROUP:</b>	For system partners and system integrators.
<b>TRAINING GOALS:</b>	<p>Participants will learn how to:</p> <ul style="list-style-type: none"> <li>› Commission an option</li> <li>› Cable potential hardware</li> <li>› Activate software</li> <li>› Perform software adaptations to the system environment</li> <li>› Elaborate new software commands and use them</li> </ul>
<b>PREREQUISITE:</b>	<p>Participants must have successfully completed training in a mechanical or electronic profession.</p> <p>Willingness, interest, and the ability to apply and implement learned knowledge in practice.</p> <p>Basic knowledge of programming and operation of Panasonic robots.</p>

**COURSE DURATION:**

1 day

**TRAINING TIMES:**

9 am to 4:30 pm

**NUMBER OF PARTICIPANTS:**

Min. 2 persons  
per training event  
(individual training on request)

**CATERING:**

Lunch and beverages  
are included in the  
price

**TRAINING DOCUMENTATION:**

Training folder  
Safety instructions  
Operating manual

**CERTIFICATION:**

Participants will be  
awarded a certificate  
when they have achieved  
the set training objectives  
as proof of participation

**TRAINING LOCATION:** Neuss

**BOOKING CODE:** On request


## Basic Welding (Level 1)

- TARGET GROUP:** Plant operators, robot programmers and system partners tasked with the creation, correction and maintenance of the robot programs as well as system integration and service.
- TRAINING GOALS:** Participants will learn how to:
- › Distinguish basics in process selection
  - › Make settings for different arc types, gas mixtures and wires
  - › Modify characteristic curves for an area
  - › Handle the fundamentals of torch angles and welding speeds
- PREREQUISITE:** Basic training course for the G2 / G3 / G4 series.

<b>1</b>	<b>MAG WITH PULSE BASIC</b>	SP-MAG
		SP-MAG II
		MTS-C01
		Pulse
		HD-Pulse
<b>2</b>	<b>WIG (TIG) BASIC</b>	TIG
		TAWERS TIG
		TAWERS TIG HF
<b>3</b>	<b>MIG BASIC</b>	MIG ALU WG
		MIG Brazing WG
		MIG SUS
		AC-MIG

**COURSE DURATION:**  
1 day

**TRAINING TIMES:**  
9 am to 4:30 pm

**NUMBER OF PARTICIPANTS:**  
Min. 2 persons per training event (individual training on request)

**CATERING:**  
Lunch and beverages are included in the price

**TRAINING DOCUMENTATION:**  
Training folder  
Safety instructions  
Operating manual

**CERTIFICATION:**  
Participants will be awarded a certificate when they have achieved the set training objectives as proof of participation

**TRAINING LOCATION:** Neuss

**BOOKING CODE:**  
**MAG with Pulse Basic:** TR0280  
**WIG (TIG) Basic:** TR0281  
**MIG Basic:** TR0282

## Advanced Welding (Level 2)

<b>TARGET GROUP:</b>	Welding specialists, welding engineers.
<b>TRAINING GOALS:</b>	The course is designed for optimisation. The same hardware, software, gas, material and wire is selected as in production. Problems and anomalies are clarified. Optimisation of weld parameters using suitable command options.
<b>PREREQUISITE:</b>	Participants must have successfully completed the basic training course for the G2 / G3 series and Basic Welding Part I. Completed welding training or several years' experience with welding. Willingness, interest, and the ability to apply and implement learned knowledge in practice.

**COURSE DURATION:**  
2 days

**TRAINING TIMES:**  
9 am to 4:30 pm

**NUMBER OF PARTICIPANTS:**  
Min. 2 persons  
per training event  
(individual training on request)

**CATERING:**  
Lunch and beverages  
are included in the  
price

**TRAINING DOCUMENTATION:**  
Training folder  
Safety instructions  
Operating manual

**CERTIFICATION:**  
Participants will be  
awarded a certificate  
when they have achieved  
the set training objectives  
as proof of participation

**TRAINING LOCATION:** Neuss

**BOOKING CODE:** TR0283

## Arc Sensor I

### Panasonic Robot Control G3 / G4 Series

<b>TARGET GROUP:</b>	The course is designed for programmers who create welding programs using the Panasonic touch sensor. Robot programmers.
<b>TRAINING GOALS:</b>	Participants will learn how to: <ul style="list-style-type: none"> <li>› Perform parameterisation progressively on sample parts</li> <li>› Extend programs meaningfully using the arc sensor</li> <li>› Adapt parameters for optimum control of the arc sensor</li> <li>› Analyse and resolve faults in the welding process</li> </ul>
<b>PREREQUISITE:</b>	Participants must have successfully completed the basic training course.
<b>OPTIONAL:</b>	A second day with the customer components.

**COURSE DURATION:**

1 day

**TRAINING TIMES:**

9 am to 4:30 pm

**NUMBER OF PARTICIPANTS:**

Min. 2 persons  
per training event  
(individual training on request)

**CATERING:**

Lunch and beverages  
are included in the  
price

**TRAINING DOCUMENTATION:**

Training folder  
Safety instructions  
Operating manual

**CERTIFICATION:**

Participants will be  
awarded a certificate  
when they have achieved  
the set training objectives  
as proof of participation

**TRAINING LOCATION:** Neuss**BOOKING CODE:** TR0284

## Arc Sensor II (TFS) Panasonic Robot Control G3 / G4 Series

**TARGET GROUP:** The course is designed for programmers who want to create complex welding programs using the Panasonic multilayer welding (MNU) option and integrate the arc sensor. Experienced robot programmers, technicians and engineers.

**TRAINING GOALS:** Participants will learn how to:

- › Use the database-based function of the arc sensor
- › Manage database records
- › Understand the streamlined, clearly laid out program structure
- › Use graphical menu guidance
- › Export the TBF data for external evaluation
- › Combine the database functions MNU & SLS
- › Find optimum parameters

**PREREQUISITE:** Participants must have successfully completed the basic training course and demonstrate very good spatial awareness.  
Arc sensor I not necessary but useful.

**COURSE DURATION:**

1 day

**TRAINING TIMES:**

9 am to 4:30 pm

**NUMBER OF PARTICIPANTS:**

Min. 2 persons per training event (individual training on request)

**CATERING:**

Lunch and beverages are included in the price

**TRAINING DOCUMENTATION:**

Training folder  
Safety instructions  
Operating manual

**CERTIFICATION:**

Participants will be awarded a certificate when they have achieved the set training objectives as proof of participation

**TRAINING LOCATION:** Neuss

**BOOKING CODE:** TR0285



## Cooperative Robot Specialist (in accordance with DVS® 1184 Module 1-4)

<b>TARGET GROUP:</b>	Plant operators Welding specialists Welding engineers Experts in robot production
<b>TRAINING GOALS:</b>	MODULE 1-4 "Welding technology" Access the "Welding technology" module directly at SLV Duisburg or following successful completion of the basic training [Module 5-6]. Attention focuses here primarily on the special aspect of automated welding in practice. Learn how to weld your component based on predefined welding instructions (WPS) and discover the positive factors that influence a good welding result with high process stability (incl. final examination).
<b>PREREQUISITE:</b>	It is not necessary to have previously completed the "Roboter Specialist Training for the G2 / G3 / G4 Series [DVS® 1184 ] Module 1". The sequence of modules can be determined individually by the participant. Only modules 1 & 2 must be completed before taking the welding operator examination in module 3.
<b>INFORMATION:</b>	This training course offers participants the possibility to qualify as a "robot welder" on completion of the optional welding operator training in accordance with ISO 14732. Further training options are also available subsequently. For example, the "Expert in robot welding" or the "Welding operator for fully mechanised and automated welding equipment".  Please feel free to contact us for information on the current options.



**COURSE DURATION:**  
5 days

**TRAINING TIMES:**  
On request

**NUMBER OF PARTICIPANTS:**  
Min. 2 persons  
per training event  
(individual training on request)

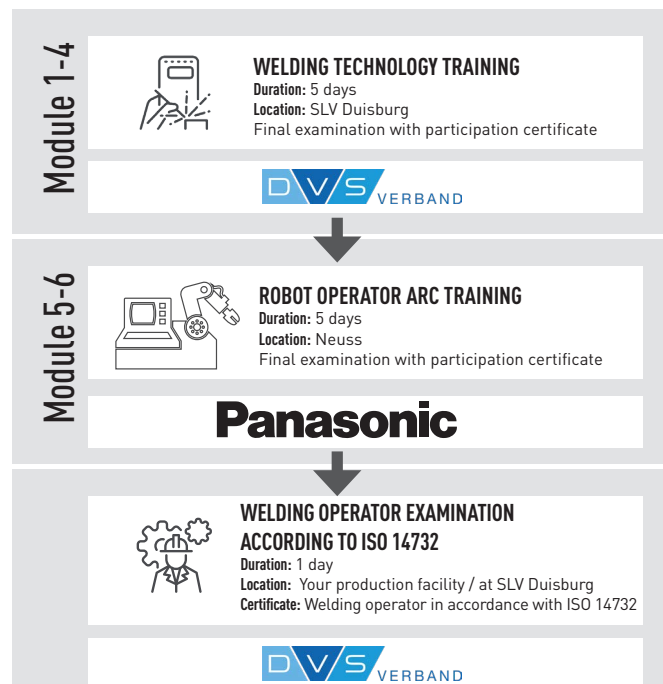
**CATERING:**  
Lunch and beverages  
are included in the  
price

**TRAINING DOCUMENTATION:**  
Training folder  
Safety instructions  
Operating manual

**CERTIFICATION:**  
Participants will be  
awarded a certificate  
when they have achieved  
the set training objectives  
as proof of participation

**TRAINING LOCATION:**  
SLV Duisburg

**BOOKING CODE:** TR0286



## APPLICATION

Applications must be submitted in writing.  
Please send your application to:

### Panasonic Connect Europe GmbH

Robot & Welding  
Customer Service  
Jagenbergstr. 11a  
D41468 Neuss, Germany  
Offer e-mail: pwse.training@eu.panasonic.com

## DATES

The training dates are assigned individually. Please get in touch with us in good time so that we can consider your preferred dates. Reservations can only be processed following submission of a written order. Panasonic reserves the right to postpone the training offered due to special reasons and in consultation with you.

We would like to point out that three people at most may participate in training with robots. This is necessary to ensure effective and high-quality training, since it allows us to address the specific needs of the participants and offer sufficient opportunities to take part in exercises. Should you nonetheless require individual changes, please note that additional costs will be incurred as a result.



## PREREQUISITES

Please check the prior knowledge required to participate in the respective training course. We will be pleased to advise you. Should it transpire during the training course that a participant does not have the required prior knowledge, it may not be possible to make allowance for this participant during the further course of the training.

## TIMES

Our normal training times are Monday through Friday, from 9 am to 4:30 pm and include a lunch break of one hour. Changes are possible by agreement. Beverages and lunch are included during the training period.



## TRAINING DOCUMENTATION

All required manuals/operating instructions and installation instructions will be made available for the training and then retained by the participant.

## CERTIFICATE OF PARTICIPATION

A certificate will be issued upon successful completion of the training to confirm participation.

## ACCOMMODATION

Attached are current contract hotels that are close to the training center. The hotels have a Panasonic tariff. Book early due to possible trade fairs or concerts.

### Mercure Hotel Düsseldorf Neuss (2 km away, our recommendation)

Am Derikumer Hof 1  
D-41469 Neuss, Germany  
Booking code: Panasonic / 100073  
Panasonic rate includes breakfast  
+49 (0) 2131 138 424

Email: [martina.feuerstake@gchhotelgroup.com](mailto:martina.feuerstake@gchhotelgroup.com)

Web: [www.hotel-duesseldorf-neuss.com](http://www.hotel-duesseldorf-neuss.com)

## CANCELLATION

Once your application has been confirmed by **Panasonic Connect-GmbH**, cancellations can only be made in writing. A processing charge of 10% of the training fee shall apply in case of cancellations up to seven calendar days prior to the commencement of training. If notice of cancellation is received less than 7 calendar days prior to the start of the event, or if participants fail to attend, 50% of the training fee shall be payable. Alternatively a substitute participant may be nominated.

## SAFETY REGULATIONS

Please familiarise yourself with the following information prior to taking up activities:

- Emergency exits
- First-aid equipment
- Fire extinguishers

**1. Accident prevention regulations:** Accident prevention is a top priority in our company and we therefore demand maximum safety at every workplace. Please review the applicable health and safety regulations carefully before completing any work for us or taking part in training. Failure to observe these statutory regulations may result in injury not only to you but also to our employees. We therefore expect you to comply with the applicable regulations.

**2. Environmental protection and hazardous substances:** You have to comply with the statutory requirements in relation to emission and water protection as well as the requirements under chemicals legislation. Water-polluting substances must not be allowed to escape into the sewer system or the soil under any circumstances. Containers must be provided for collecting and/or storing these substances. You shall be held personally culpable and liable in case of infringements. You must, on request, present proof of attendance at the relevant training courses required for handling hazardous substances.

**3. Workplace:** Only access the workplace area provided for the purpose of your work at Panasonic. Access to other company departments is only permitted to the extent required to complete your work. The workplace must be left clean and tidy.

**4. Ban on smoking:** Smoking is only permitted in the designated areas outside the building. Place cigarette butts and ashes in the designated ashtrays only.

**5. Personal protective equipment:** The training participants are obliged to wear safety shoes. In addition, appropriate personal protective equipment must also be worn to protect against hazards.

**6. Crane systems and industrial trucks:** Unauthorised use of our lifting gear and industrial trucks is prohibited. Should such usage be required for assembly purposes, this must be agreed with us by the service manager. Your employees must have attended the relevant training courses or have the required certification to use our industrial trucks.

**7. Our plant property:** Use of plant equipment, machinery, facilities and materials shall be at your own risk and is only permitted with the approval and knowledge of the responsible department on whose behalf you are working. You must be able to demonstrate the necessary qualifications to use our work equipment.

**8. Your tools:** The tools, machinery, equipment, etc. that you use must comply with BetrSichV (German Health and Safety at Work Regulations) and be approved under German Social Accident Insurance (DGUV). Please lock everything away in the evening and during breaks. We shall not compensate for any loss.

**9. Open flame:** Any work that requires use of open flames is only permitted following our prior consent. We decide whether fire protection personnel should be appointed. All work involving heat must be sanctioned by the service manager.

**10. Scaffolding and ladders:** Only scaffolding and ladders that comply with the requirements of the employers' liability insurance association may be used. Make sure, in particular, that only scaffolding material that is in perfect condition is used. Mobile scaffolding may only be moved if no persons are present on it, while assembly scaffolding in factory buildings and above doors and gates must be secured to ensure that employees are not injured by falling objects. Dismantled scaffolding must be removed immediately.

**11. Waste:** It is prohibited to bring waste into Panasonic. We have containers stationed in all areas where you can separate and dispose of your waste. Our staff will assist you with separation.

**12. Electrical tools and machinery:** A voltage of 230 V is available for using electric power tools and machinery and 400 V for three-phase current. All connections must be VDE-compliant in design. Interventions in existing switchgear and distribution equipment is not permitted.

**13. Live installations:** Always switch off the voltage supply or ensure contact protection when working near open, unprotected, live installations. The disconnection of the voltage during assembly must be reported as early as possible to the service manager so that downtimes can be avoided in other areas.

**14. Accidents:** Should you or one of your employees have an accident, our first-aiders are available to assist you. You are however obliged in general to provide properly trained staff and first-aid material. The regulations applicable to your particular company in relation to reporting accidents shall remain unaffected. Report every accident, emergency or case of damage as follows:

Where did the emergency/incident occur?

What happened?

How many people are injured?

Who is calling?

**15. Non-disclosure agreement:** There may be products in our company that are provided by the customer, which are subject to confidentiality. You are obliged when working in our company not to pass on to third parties any relevant, accessible and visible products and information. Moreover, a general ban on photography applies throughout the entire company premises and buildings, including mobile phones with photographic capability. Panasonic reserves the right to take legal action in case of infringements.

**16. Safeguard clause:** You are to ensure that all occupational health and safety and environmental protection regulations are observed when performing the duties assigned to you. You are obliged to instruct the employees deployed comprehensively as to the content of the data sheet to hand. You shall indemnify us from all claims by third parties that may be asserted against us arising from damages caused in connection with the work performed and that are not attributable to us (indemnity obligation). You must take out adequate liability insurance to cover claims arising from cases of damages and provide us with evidence thereof. The instructions of Panasonic employees must be followed.

## LIABILITY

Panasonic Connect Europe GmbH is not liable for damages resulting from accidents in our plant or as a result of loss of belongings. Storage media that participants bring in with them must not be used. The participant can be held fully liable for damages arising from the use of own storage media.



Panasonic Connect Europe GmbH  
Robot & Welding  
Customer Service  
Jagenbergstraße 11a  
D-41468 Neuss, Germany

**Panasonic**  
**CONNECT**