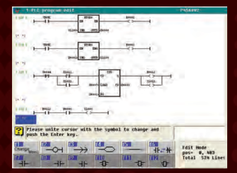
User-Friendly Software and Hardware Solutions

Software PLC (Standard)

- Built-in-software PLC is fully programmable to communicate with other robots, machines and peripheral equipment, as well as manage internal robot operations.
- Hundreds of included functions allow Nachi Software PLC to perform complex tasks and replace external PLC devices, which control entire work cells without added hardware.



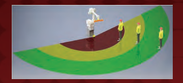
OpenNR-IF (Optional)

- OpenNR is a C++ library which allows external PC based control of a Nachi robot. This allows a user to easily interface Nachi FD or CFD robot controllers to devices, such as: industrial control software, cameras, joysticks and sensors for custom manufacturing solutions. Additional functionality includes: robot operation and monitoring via PC, remote monitoring and traceability, and real-time production tracking.

Collaborative Robot Technologies (Optional)

- *Mode #1: Safety-Rated Monitored Stop* - The robot can be stopped in a safe position allowing the operator to load, unload or add parts, as well as perform other tasks without shutting off robot motor power.
- *Mode #2: Direct Teach* – Allows user to "hand guide" robot for programming and to modify taught points.

- *Mode #3: Speed and Separation Monitoring* - Safety-rated sensors detect human presence; speed of robot is limited proportionally to the distance between robot and human.



- *Mode #4: Force and Torque Limiting* – Performing a risk assessment and limiting robot force enables humans to work side-by-side with robots without fear of harm. If robot contacts a human or other object, it will stop upon contact, without causing injury or damage.

FD on Desk Robot Simulator (Optional)

- Nachi's proprietary robot simulation software tool, which can run on a laptop or desktop computers.
- It simulates all critical components of the Nachi FD robot control platform and provides a 3D environment for creating accurate and realistic-looking work cells.
- There's a wide variety of uses, including: offline programming, application setup, personnel training, problem diagnosis and engineering (reach and CycleTime verification).
- Use CAD drawings to simplify creation of complex paths with CAD-to-Path utility.

Advanced Process Technologies

Force Control Functions (Optional)

- Allows Nachi robots to apply constant force along a contoured path.
- Uses "feel" to insert parts with tight tolerances.
- Trace or match angled surfaces for assembly.

Integrated Vision (Optional)

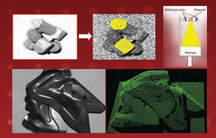
*(Maximize efficiency and control of your process with Nachi Vision Technologies.)**

NV-PRO VISION SYSTEM

- Supports 2D, 3D and laser vision technologies, while offering high-speed image acquisition and measurements.
- Expandable up to four cameras on a single system for maximum flexibility.
- Supports conveyor synchronization (line tracking) technology for on-the-fly handling capability.
- A fully integrated vision solution with image display on teach pendant for simplified setup and operation. *Ethernet socket communication and user-task functions allow Nachi robots to also communicate with third-party vision systems.

NV-PRO EX — 3D SURFACE MATCHING VISION SYSTEM

- Uses advanced dot cloud projection technology to match surface contour images to known CAD or library image part geometry.
- Using Nachi NV-Pro EX dot cloud vision technology, components lacking easily identifiable features, such as, holes or defined edges, can be selected based upon surface contour and picked from bins of randomly arranged parts. This technology saves cycle time, as multiple parts queue from single image process sequence.



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- 24-Hour Service and Support
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- Applications and Engineering Services
- Locally Stocked Spare Parts
- Easy Integration with Sensor Technology
  - Vision Systems
  - Laser Scanner
  - Safety
  - Force Feedback
  - Conveyor Synchronization

SRA Series

SRA Compact

	SRA100B	SRA100J
Reach (mm):	2071	1634
Payload:	100kg	100kg
Axes:	6	6
Repeatability:	±0.1mm	±0.1mm

SRA Standard Reach

	SRA100	SRA166	SRA210(D)(V)*
Reach (mm):	2654	2654	2674
Payload:	100kg	166kg	210kg
Axes:	6	6	6
Repeatability:	±0.1mm	±0.1mm	±0.15mm

	SRA240	SRA250
Reach (mm):	2674	2792
Payload:	240kg	250kg
Axes:	6	6
Repeatability:	±0.2mm	±0.2mm

*(D) – Foundry
*(V) – Ceiling Mount

SRA Long Reach

	SRA120EL	SRA133L
Reach (mm):	3099	2951
Payload:	120kg	133kg
Axes:	6	6
Repeatability:	±0.15mm	±0.15mm

	SRA166L
Reach (mm):	2951
Payload:	166kg
Axes:	6
Repeatability:	±0.15mm

SRA Shelf Mount

	SRA100BT	SRA166HT	SRA166T	SRA166TL
Reach (mm):	2231	3041	3153	3734
Payload:	100 kg	166 kg	166kg	166kg
Axes:	6	6	6	6
Repeatability:	±0.1 mm	±0.1 mm	±0.1mm	±0.1mm

	SRA210HT	SRA210T	ST210TP
Reach (mm):	3041	3192	3025
Payload:	210 kg	210kg	80 kg
Axes:	6	6	7
Repeatability:	±0.15mm	±0.15mm	±0.3 mm

Clean Room

	MC35C/50C/70C	ST133CF	ST166CF
Reach (mm):	2050	2654	2654
Payload:	35/50/70kg	133 kg	166 kg
Axes:	6	6	6
Repeatability:	±0.07mm	±0.2 mm	±0.2 mm

	ST166LCF	ST210CF
Reach (mm):	2901.5	2674
Payload:	166 kg	210 kg
Axes:	6	6
Repeatability:	±0.2 mm	±0.3 mm

SRA-H Series (Hollow Arm Robots)

	SRA100H	SRA100HB	SRA100HS	SRA133H
Reach (mm):	2654	2044	1634	2654
Payload:	100kg	100kg	100kg	133 kg
Axes:	6	6	6	6
Repeatability:	±0.1mm	±0.1mm	±0.1mm	±0.1 mm

	SRA133HL	SRA166H	SRA210H	SRA220H(V)*
Reach (mm):	2951	2654	2654	2575
Payload:	133kg	166 kg	210kg	220kg
Axes:	6	6	6	6
Repeatability:	±0.15mm	±0.1mm	±0.15mm	±0.15mm

*(V) – Ceiling Mount

LP Series (Palletizing Robots)

	LP130F
Reach (mm):	3210
Payload:	130kg
Axes:	4
Repeatability:	±0.3mm

	LP180/LP210
Reach (mm):	3210
Payload:	180/210kg
Axes:	4
Repeatability:	±0.4mm

NB/NV/H Series (Arc Welding Robots)

	H5	NB4 (Through Arm)	NB4L (Through Arm)
Reach (mm):	866	1411	2008
Payload:	5kg	4kg	4kg
Axes:	6	6	6
Repeatability:	±0.05mm	±0.08mm	±0.08mm

	NV6	NV6L
Reach (mm):	1402	2006
Payload:	6kg	6kg
Axes:	6	6
Repeatability:	±0.08mm	±0.08mm

CZ Series (Collaborative)

	CZ10
Reach (mm):	1300
Payload:	10kg
Axes:	6
Repeatability:	±0.1mm

MC Series (Medium Payload Robots)

	MC10L	MC10S	MC12S
Reach (mm):	2019	1420	1400
Payload:	10kg	10kg	12kg
Axes:	6	6	6
Repeatability:	±0.06mm	±0.06mm	±0.06mm

	MC20	MC35/50/70
Reach (mm):	1722	2050
Payload:	20kg	35/50/70kg
Axes:	6	6
Repeatability:	±0.06mm	±0.07mm

MC Series (Heavy Payload Robots)

	MC280L	MC350	MC400L	MC470P*	MC500P*
Reach (mm):	3101	2771	3756	2771	3756
Payload:	280kg	350kg	400kg	470kg	500kg
Axes:	6	6	6	6	5
Repeatability:	±0.2mm	±0.2mm	±0.3mm	±0.2mm	±0.3 mm

	MC600	MC700	MC1000DL	SC700DL
Reach (mm):	2890	2890	3972	3972
Payload:	600kg	700 kg	1000 kg	700 kg
Axes:	6	6	6	6
Repeatability:	±0.3mm	±0.3 mm	±0.3 mm	±0.5 mm

*P – Palletizing

ES Series (SCARA Robots)

	ES06
Reach (mm):	350/450/550
Payload:	6kg
Axes:	4
Repeatability:	±0.012mm
Up/Down Stroke:	200/340

	ES12
Reach (mm):	550/700/850
Payload:	12kg
Axes:	4
Repeatability:	±0.015mm
Up/Down Stroke:	350/450

EZ Series (SCARA Robots)

	EZ02(V/F)*
Reach (mm):	450/550
Payload:	2kg
Axes:	6
Repeatability:	±0.02mm
Motion Range (mm):	250/150

	EZ03(V/F)*
Reach (mm):	450/550
Payload:	3kg
Axes:	4
Repeatability:	±0.014mm
Motion Range (mm):	250/150

*V – Invert Mount
*F – Floor Mount

MZ Series (Ultra High-Speed Robots)

	MZ03EL	MZ04(E)(D)(DE)*	MZ07(P)*
Reach (mm):	1102	541	723
Payload:	3kg	4kg	7kg
Axes:	6	6	6/(5)
Repeatability:	±0.03mm	±0.02mm	±0.02mm

	MZ07L(P)*	MZ12
Reach (mm):	912	1454
Payload:	7kg	12kg
Axes:	6/(5)	6
Repeatability:	±0.03mm	±0.04mm

*(D) – IP67
*(DE) – IP67 Collaborative
*(E) – Safe Robot
*(P) – 5 Axes: Palletizing

MR Series (Flexible 7-Axis Robots)

	MR20/MR20L
Reach (mm):	1260/1398
Payload:	20kg
Axes:	7
Repeatability:	±0.06mm

	MR35/MR50
Reach (mm):	2050
Payload:	35/50kg
Axes:	7
Repeatability:	±0.07mm

Robot Controller Models

FDII Controller

AC 200/220/380/400/420/440/460/480/580/600 +/-10% 3-Phase 50/60Hz

Dimensions(mm): 580W x 542D x 1240H

FDI4 Controller

AC 200/220V +/-10% 3-Phase 50/60Hz

Dimensions(mm): 490W x 680D x 240H

CFD Controller

AC200-230V +/-10% 2-Phase or 3-Phase 50/60Hz

Dimensions(mm): 369W x 490D x 173H

CCZ Controller

AC200-230V +/- 10% Single Phase 50/60Hz

Dimensions (mm): 380W x 460D x 260H

FD Smart Teach Pendant

Full Color Touch Screen

Programmable / Customizable Interface

Full Manual Set Included / User Help Functions

Please Note: *Robot specifications are subject to change without notice, contact NRS to verify current specifications.*