



 **neuromeka**  
Neuromeka Co.,Ltd.

*Robot as a Tool, Robot as a Service, Robots for Every Workplace.*



# neuromeka

Neuromeka supports automation for small and medium-sized manufacturers using easy-to-use and economic cobots (collaborative robots). Neuromeka's cobots can cowork with people safely and be programmed easily to apply a variety of applications. Neuromeka is constructing ecosystem for RaaS (robot-as-a-service) platform business based on cobots which helps small and medium-sized companies to deploy and operate robot automation without in-house robot experts. We are to contribute our robot technology to improve every client's productivity.

|      |      |   |
|------|------|---|
| 2013 | 02   | founding Neuromeka at Namyangju (Gyeonggi)  |
|      | 07   | releasing NRMKFoundation SDK  |
|      | 10   | releasing NRMKPlatform SDK  |
| 2014 | 01   | Venture Company certification   |
|      | 01   | installing R&D center   |
|      | 07   | relocating HQ in Seongsu (Seoul)  |
|      | 09   | releasing STEP/PC and STEP/BBB  |
|      | 10   | releasing IGoT/HUB  |
| 2015 | 07   | releasing CONTY app   |
|      | 08   | releasing IGoT/WSN  |
| 2016 | 05   | attracting series-A investment  |
|      | 07   | releasing STEP2   |
|      | 10   | releasing Indy RP   |
|      | 11   | establishing SCRC (Smart Connected Robot Center)  |
| 2017 | 02   | INNOBIZ certification   |
|      | 03   | releasing Indy3/5/10  |
|      | 04   | relocating HQ in Apgujung (Seoul)   |
|      | 06   | attracting series-B investment  |
|      | 06   | relocating SCRC (Smart Connected Robot Center) in POSTECH, C5 (Pohang)                              |
|      | 07   | setting up Production BU in SCRC  |
|      | 09   | releasing Indy7   |
|      | 12   | Robot Company of The Year (in Industrial Robots)  |
|      | 2018 | 05  |
| 06   |      | establishing V-SCRC in HCMC (Vietnam)   |
| 06   |      | establishing CILab (cobot intelligence laboratory) in POSTECH                                       |
| 07   |      | starting System Engineering business  |
| 07   |      | releasing D (Delta robot brand)   |
| 07   |      | starting production of Indy7  |
| 08   |      | attracting series-C investment  |
| 09   |      | Red Dot Design Award (Indy7)  |
| 10   |      | starting System Engineering BU (business unit)  |
| 10   |      | relocating Production BU (business unit)  |
| 12   |      | Robot Company of The Year (in Industrial Robots)  |
| 12   |      | KDB NextRound Blue Frog Award   |
| 2019 | 06   | relocating HQ in Seongsu (Seoul)  |
|      | 09   | releasing Indy12  |
|      | 09   | releasing IndyEye   |
|      | 10   | releasing IndyCARE  |
|      | 10   | relocating to expand Branch Office in Daejeon   |
|      | 12   | Robot Company of The Year (in Industrial Robots)  |
|      | 12   | 2019 Korea Regional Balance Award   |
| 2020 | 06   | attracting bridge Investment  |
|      | 07   | unicorn Startups selection (Ministry of SMEs and Startups)  |
|      | 07   | IR52 Jang Young-shil Award  |
|      | 12   | Indy7 New Product Certification (NEP)   |
|      | 12   | 2020 Robot Company of the Year (industrial robot sector) Award                                      |
|      | 12   | establishing China B.O. in Yancheng   |
| 2021 | 05   | Expansion of Daejeon branch (Jukdong, Daejeon, Korea)   |
|      | 06   | excellent corporation R&D center (Ministry of Science and ICT)                                      |
|      | 08   | attracting series-D investment  |
|      | 12   | 2021 Robot Company of the Year (industrial robot sector) Award                                      |
|      | 12   | governmental commendation, Minister of Trade, Industry and Energy (merit for industrial technology) |
| 2022 | 12   | Certificate of the Innovative Product (Ministry of Trade, Industry and Energy)                      |
|      | 04   | 2022 Design Innovation Company by the Ministry of Trade, Industry and Energy                        |

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# Collaborative Robot

Your first industrial robot for small and medium sized manufacturers

# Indy

'Indy' is Neuromeka's flagship cobot model we designed and manufactured. Guaranteeing workers' safety based on innovative collision detection algorithms, Indy supports more intuitive direct teaching by impedance control as well as online and offline programming with the teach pendant app running on android tablets. 'Indy' series consists of five models in terms of payload, e.g. 'Indy3/5/7/10 and 12' (3kg, 5kg, 7kg, 10kg and 12kg), and there is also 'Indy-RP2', 7 DOF model. Indy can be equipped with standard tools, such as grippers, vision sensors, etc., through standard extension port at its wrist link.



## Spec **Indy7**

|                                  |                                     |
|----------------------------------|-------------------------------------|
| DOF                              | 6 (all revolute)                    |
| Payload                          | 7kg                                 |
| Joint Motion Range               | 1,2,3,4,5 : ±175deg   6 : ±215deg   |
| Maximum Joint Speed              | 1,2,3 : 150deg/s   4,5,6 : 180deg/s |
| Maximum Tool Speed               | 1m/s                                |
| Maximum Reach                    | 1.3m                                |
| Maximum Workspace w/Full Payload | 0.8m                                |
| Repeatability                    | 100µm                               |
| Weight                           | 28kg                                |



## Spec **Indy7 Pro (with IndyEye)**

|                                  |                                     |
|----------------------------------|-------------------------------------|
| DOF                              | 6 (all revolute)                    |
| Payload                          | 7kg                                 |
| Joint Motion Range               | ±360deg for all joints              |
| Maximum Joint Speed              | 1,2,3,4 : 150deg/s   5,6 : 180deg/s |
| Maximum Tool Speed               | 1m/s                                |
| Maximum Reach                    | 1.3m                                |
| Maximum Workspace w/Full Payload | 0.8m                                |
| Repeatability                    | 50µm                                |
| Weight                           | 28kg                                |



## Spec **Indy12**

|                                  |                                     |
|----------------------------------|-------------------------------------|
| DOF                              | 6 (all revolute)                    |
| Payload                          | 12kg                                |
| Joint Motion Range               | ±360deg for all joints              |
| Maximum Joint Speed              | 1,2 : 120deg/s   3,4,5,6 : 150deg/s |
| Maximum Tool Speed               | 1m/s                                |
| Maximum Reach                    | 1.8m                                |
| Maximum Workspace w/Full Payload | 1.2m                                |
| Repeatability                    | 100µm                               |
| Weight                           | 55kg                                |



## Spec **Indy-RP2 (Controlled by STEP3)**

|                                  |                                       |
|----------------------------------|---------------------------------------|
| DOF                              | 7 (all revolute)                      |
| Payload                          | 5kg                                   |
| Joint Motion Range               | ±175deg for all joints                |
| Maximum Joint Speed              | 1,2,3,4 : 150deg/s   5,6,7 : 180deg/s |
| Maximum Tool Speed               | 1m/s                                  |
| Maximum Reach                    | 1.3m                                  |
| Maximum Workspace w/Full Payload | 0.8m                                  |
| Repeatability                    | 100µm                                 |
| Weight                           | 30.5kg                                |



## Spec **IndyCB**

|                  |  |
|------------------|--|
| Controller       | STEP2                                      |
| Interfaces       | EtherCAT, EtherNet, USB, CAN, RS232, RS485 |
| I/O              | DI/O 32ch, AI/O 4ch                        |
| Control Box Size | 420 x 360 x 222 mm                         |
| Power            | max. 700w (avg. ~350w)                     |
| Weight           | ~ 15.5kg                                   |
| Supply Voltage   | 100~240 Vac, 50~60hz                       |



## O B S O L E T E

### Spec

|                                  |                        |
|----------------------------------|------------------------|
| DOF                              | 6 (all revolute)       |
| Payload                          | 3kg                    |
| Joint Motion Range               | ±175deg for all joints |
| Maximum Joint Speed              | 90deg/s                |
| Maximum Tool Speed               | 1m/s                   |
| Maximum Reach                    | 1.0m                   |
| Maximum Workspace w/Full Payload | 0.6m                   |
| Repeatability                    | 100µm                  |
| Weight                           | 17kg                   |

### Indy3



### Indy5

|                                  |                        |
|----------------------------------|------------------------|
| DOF                              | 6 (all revolute)       |
| Payload                          | 5kg                    |
| Joint Motion Range               | ±175deg for all joints |
| Maximum Joint Speed              | 90deg/s                |
| Maximum Tool Speed               | 1m/s                   |
| Maximum Reach                    | 1.2m                   |
| Maximum Workspace w/Full Payload | 0.8m                   |
| Repeatability                    | 100µm                  |
| Weight                           | 25kg                   |



### Indy10

|                                  |                                   |
|----------------------------------|-----------------------------------|
| DOF                              | 6 (all revolute)                  |
| Payload                          | 10kg                              |
| Joint Motion Range               | ±175deg for all joints            |
| Maximum Joint Speed              | 1,2 : 60deg/s   3,4,5,6 : 90deg/s |
| Maximum Tool Speed               | 1m/s                              |
| Maximum Reach                    | 1.5m                              |
| Maximum Workspace w/Full Payload | 1.0m                              |
| Repeatability                    | 100µm                             |
| Weight                           | 40kg                              |



# Co-Industrial Robot

a high-performance industrial robot with cobot's safety and ease

# ICoN

'ICoN' is a next-generation co-industrial robot with the safety and ease-of-use features of the Neuromeka collaborative robot 'Indy'. By adding an advanced collision detection algorithms, status indicators, and peripheral safety devices such as laser scanners, safety that was not found in existing industrial robots has been greatly improved. Direct teaching by impedance control, tablet-based teach pendant app 'CONTY', and force sensor-based Lead-Through devices enable easy programming. 'ICoN' provides high productivity by providing 2.3 times the speed and high repeatability compared to cobots, up to IP67 waterproof and dustproof rating, and 4 pneumatic lines. total 7 models are provided according to the payload and reach.

| Spec                | ICoN3  |
|---------------------|--|
| Maximum Reach       | 560mm  |
| Payload             | 3kg  |
| Weight              | 23kg   |
| Ingress Protection  | IP65   |
| Repeatability       | ±30µm  |
| DOF                 | 6 (all revolute)   |
| Joint Motion Range  | 1: ±170deg   2: -110/+120deg   3: -110/+155deg<br>4: ±200deg   5: ±120deg   6: ±350deg |
| Maximum Joint Speed | 1: 450deg/s   2: 450deg/s   3: 525deg/s<br>4: 600deg/s   5: 600deg/s   6: 800deg/s     |



| Spec                | ICoN7  |
|---------------------|--|
| Maximum Reach       | 710mm  |
| Payload             | 7kg  |
| Weight              | 49kg   |
| Ingress Protection  | IP65   |
| Repeatability       | ±30µm  |
| DOF                 | 6 (all revolute)   |
| Joint Motion Range  | 1: ±170deg   2: -100/+135deg   3: -120/+156deg<br>4: ±200deg   5: ±135deg   6: ±360deg |
| Maximum Joint Speed | 1: 380deg/s   2: 350deg/s   3: 480deg/s<br>4: 490deg/s   5: 565deg/s   6: 815deg/s     |



| Spec                | ICoN7L   |
|---------------------|--|
| Maximum Reach       | 920mm  |
| Payload             | 7kg  |
| Weight              | 53kg   |
| Ingress Protection  | IP67   |
| Repeatability       | ±30µm  |
| DOF                 | 6 (all revolute)   |
| Joint Motion Range  | 1: ±170deg   2: -100/+135deg   3: -120/+156deg<br>4: ±200deg   5: ±135deg   6: ±360deg |
| Maximum Joint Speed | 1: 380deg/s   2: 320deg/s   3: 390deg/s<br>4: 490deg/s   5: 565deg/s   6: 815deg/s     |



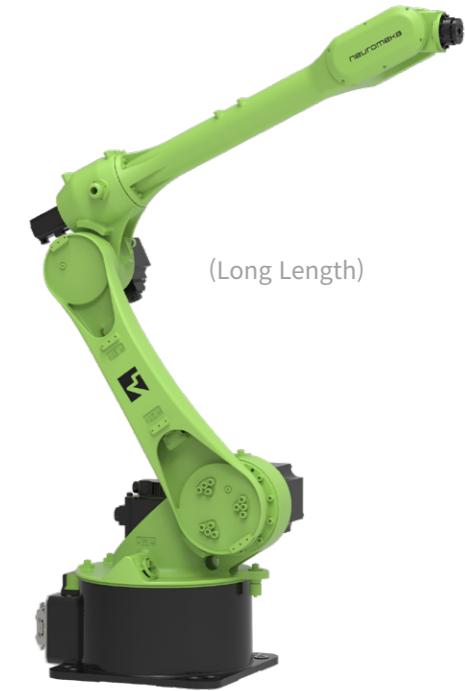
| Spec                | ICoN10   |
|---------------------|--|
| Maximum Reach       | 1420mm   |
| Payload             | 10kg   |
| Weight              | 180kg  |
| Ingress Protection  | wrist IP67   |
| Repeatability       | ±30µm  |
| DOF                 | 6 (all revolute)   |
| Joint Motion Range  | 1: ±170deg   2: -85/+150deg   3: -95/+170deg<br>4: ±195deg   5: ±135deg   6: ±360deg |
| Maximum Joint Speed | 1: 200deg/s   2: 200deg/s   3: 200deg/s<br>4: 370deg/s   5: 370deg/s   6: 600deg/s   |



| Spec                | ICoN12L  |
|---------------------|--|
| Maximum Reach       | 2001mm   |
| Payload             | 12kg   |
| Weight              | 300kg  |
| Ingress Protection  | wrist IP67   |
| Repeatability       | ±60µm  |
| DOF                 | 6 (all revolute)   |
| Joint Motion Range  | 1: ±170deg   2: -95/+155deg   3: -95/+170deg<br>4: ±185deg   5: ±135deg   6: ±400deg |
| Maximum Joint Speed | 1: 175deg/s   2: 175deg/s   3: 170deg/s<br>4: 355deg/s   5: 355deg/s   6: 300deg/s   |



| Spec                | ICoN20   |
|---------------------|--|
| Maximum Reach       | 1702mm   |
| Payload             | 20kg   |
| Weight              | 270kg  |
| Ingress Protection  | wrist IP67   |
| Repeatability       | ±60µm  |
| DOF                 | 6 (all revolute)   |
| Joint Motion Range  | 1: ±170deg   2: -85/+150deg   3: -95/+170deg<br>4: ±180deg   5: ±135deg   6: ±400deg |
| Maximum Joint Speed | 1: 175deg/s   2: 175deg/s   3: 170deg/s<br>4: 360deg/s   5: 360deg/s   6: 600deg/s   |



| Spec                | ICoN20L  |
|---------------------|--|
| Maximum Reach       | 2001mm   |
| Payload             | 20kg   |
| Weight              | 280kg  |
| Ingress Protection  | wrist IP67   |
| Repeatability       | ±60µm  |
| DOF                 | 6 (all revolute)   |
| Joint Motion Range  | 1: ±170deg   2: -85/+150deg   3: -95/+170deg<br>4: ±180deg   5: ±135deg   6: ±400deg |
| Maximum Joint Speed | 1: 175deg/s   2: 175deg/s   3: 170deg/s<br>4: 360deg/s   5: 360deg/s   6: 600deg/s   |

# Autonomous Mobile Robot

versatile autonomous mobile robot with collaborative robot

# Moby

'Moby' is Neuromeka's autonomous mobile robot platform for 'Indy'. 'Moby' makes 'Indy' has non-restriction workspace. 'Moby' can be equipped with various sensors by changing the sensor plate. Moby can be used for delivery, patrol, quarantine, and guidance by replacing workpallets.

Since the four steering wheel modules (2DOF) minimize the deviation of the driving force, the straight-line controllability and the omnidirectional driving direction controllability are excellent.

| Spec           | Moby                                     |
|----------------|--|
| Speed          | 0.01m/s ~ 1.7m/s                         |
| Size           | 0.91m(L) x 0.66m(W) x 0.85m(Maximum1.8m) |
| Manipulator    | Indy7 (6DOF, Payload 7kg)                |
| Total Weight   | 170kg                                    |
| Payload        | 200kg (approx.)                          |
| Power          | battery 24V 50AH x 2EA                   |
| OS             | Ubuntu 18.04, ROS Melodic                |
| Charging Time  | 5 hours (built-in 20A Charger)           |
| Operating Time | 10 hours (Max)                           |



# Delta Robot

Pride of Korean delta robots for high-speed automation

# D

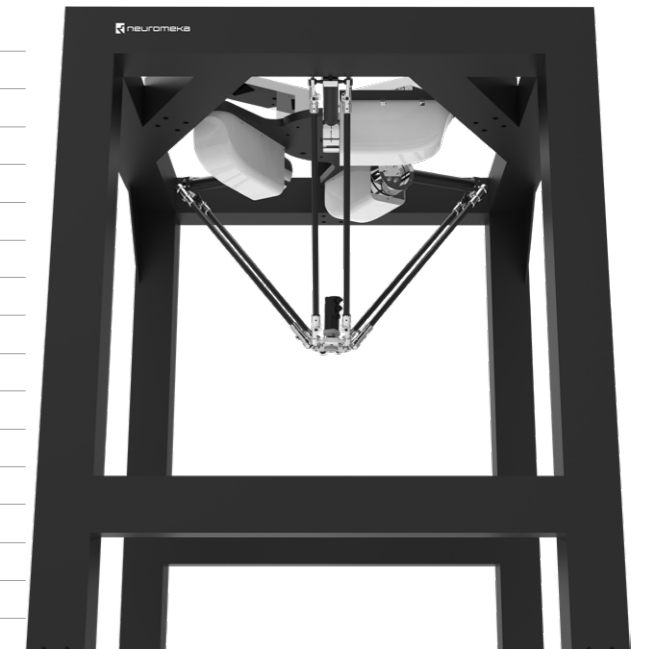
Neuromeka's 'D' is the world-class high-speed high-precision four-axes delta robot based on custom vibration suppression design. In terms of payload capacity and workspace radius two standard models are under production: 'D3' (with 3kg payload) and 'D6' (with 6kg payload). Neuromeka's delta robots provides total automation solutions with custom grippers, conveyor belts, and vision sensors integrated with PLCs in order to satisfy clients' requirement for line automation.



| Spec           | D3                               |          |       |
|----------------|----------------------------------|----------|-------|
| Weight         | 60kg                             |          |       |
| Payload        | 3kg                              |          |       |
| DOF            | 4axis                            |          |       |
| Reachable Area | XY Axis                          | 800mm    |       |
|                | XY Axis                          | 300mm    |       |
|                | Roll Axis                        | ±180 deg |       |
| Repeatability  | ±0.1mm                           |          |       |
| Actuator       | AC servo motor, absolute encoder |          |       |
| Cycle Time     | Path<br>25 x 305 x 25            | Payload  | Cycle |
|                |                                  | 0kg      | 0.30s |
|                |                                  | 1kg      | 0.45s |
|                |                                  | 2kg      | 0.51s |
|                |                                  | 3kg      | 0.55s |



| Spec           | D6                               |          |       |
|----------------|----------------------------------|----------|-------|
| Weight         | 80kg                             |          |       |
| Payload        | 6kg                              |          |       |
| DOF            | 4axis                            |          |       |
| Reachable Area | XY Axis                          | 1300mm   |       |
|                | XY Axis                          | 500mm    |       |
|                | Roll Axis                        | ±180 deg |       |
| Repeatability  | ±0.1mm                           |          |       |
| Actuator       | AC servo motor, absolute encoder |          |       |
| Cycle Time     | Path<br>25 x 305 x 25            | Payload  | Cycle |
|                |                                  | 0kg      | 0.30s |
|                |                                  | 1kg      | 0.36s |
|                |                                  | 2kg      | 0.37s |
|                |                                  | 3kg      | 0.39s |
|                |                                  | 4kg      | 0.41s |
|                |                                  | 5kg      | 0.43s |
| 6kg            | 0.45s                            |          |       |



## Vision Solution

Reasonable price and reliable performance

# IndyEye

Deep learning based, high-performance vision solution IndyEye offers affordable solutions through low-cost vision sensor and deep learning server sharing.

Unlike former vision sensors that require demanding working conditions, IndyEye can be applied flexibly to any working environment without large space or bright lights, and deep learning server sharing can store working objects data to respond to customer requests. In small and medium-sized manufacturer that require variants of manufacturing lines frequently, IndyEye enables a variety of tasks and quick application.



| Spec                  | IndyEye                      |
|-----------------------|------------------------------|
| Size                  | 67mm x 67mm x 74.4mm         |
| Processing Time       | 250~1500ms/img               |
| Field of View (H/V/D) | 86° ±5° / 70° ±5° / 100° ±5° |
| Interface             | USB 2.0                      |
| Working distance      | 5cm-70cm                     |

## Smart Actuator

Integrated module for your own cobot

# CORE

Neuromeka's smart actuators 'CORE' are joint driving modules with frameless motor, harmonic drive, magnetic brake, multi-turn absolute encoder, EtherCAT slave board, and motor driver integrated through a common hollow axis structure. Hollow axis design enables aesthetic robot design for motor power lines and EtherCAT control lines go through the hole.

'CORE' series (adopted to Indy lineup) consists of four models in terms of rated power, e.g. 'CORE100/200/500 and 1000' (100W, 200W, 500W, and 1300W, respectively). Every 'CORE' module supports torque command update up to 8kHz, and users can implement customized servo algorithm at the user application level. As 'CORE' modules are provided without outer frame by default, it helps to design users' custom robot.



| Spec                       | CORE100     | CORE200     | CORE500      | CORE1000     |
|----------------------------|-------------|-------------|--------------|--------------|
| Rated Power                | 100W        | 200W        | 500W         | 1130W        |
| Rated Voltage              | 48V         | 48V         | 48V          | 48V          |
| Maximum Continuous Current | 3.8A        | 4.8A        | 11.7A        | 22.6A        |
| Rated Output Torque        | 21Nm        | 50Nm        | 121Nm        | 515Nm        |
| Rated Output Speed         | 180deg/s    | 150deg/s    | 150deg/s     | 120deg/s     |
| Size                       | Ø80 x 135mm | Ø90 x 145mm | Ø142 x 155mm | Ø178 x 195mm |
| Weight                     | 1.45kg      | 1.84kg      | 4.87kg       | 9.1kg        |

# Robot Controller

Realtime embedded EtherCAT master robot controller

# STEP

‘STEP’ comes with NRMKPlatform SDK, a software framework for development of realtime control applications on Linux/Xenomai environment which is the hard realtime OS. Development environment running on MS Windows® is also provided in order for engineers unfamiliar with Linux environment to develop embedded control applications.

‘STEP’ is integrated with EtherLab, which has been proven open-source EtherCAT master stack for many systems, for multi-axes synchronized high-speed realtime distributed control. Development of standard EtherCAT based realtime control applications is supported by CoE (CANopen-over-EtherCAT) protocol based programming interface. Software tools are provided for automatic generation of basic CoE based application codes. Legacy devices with RS485 or CAN interfaces can be connected for standard ports. In order to facilitate CAN based applications NRMKPlatform SDK has RT CAN and CanFestival (open-source CANOpen framework software) installed.

‘STEP2’ is the default controller responsible for realtime control of Indy lineup, and runs 4kHz model-based impedance control algorithms. ‘STEP3’, a performance model intended for advanced research and development, is integrated with a high-performance GPU card and NVIDIA TensorRT library which facilitates development of a variety of algorithms based on high-speed deep learning inference computation.



| Spec      | STEP2                                   | STEP3                           |
|-----------|---|---------------------------------|
| Platform  | Fanless Braswell Industrial PC          | Skylake Industrial PC           |
| CPU       | Intel Celeron Braswell soc (4X, 1.6GHz) | Intel Skylake i7-6700K (3.4GHz) |
| RAM       | 4GDDR3                                  | 8GDDR4                          |
| Storage   | 128G SSD(SATA3)                         | 128G SSD                        |
| Ethernet  | 1port                                   | 1port                           |
| EtherCAT  | 1port                                   | 1port                           |
| GPIO      | 16pin                                   | N/A                             |
| RS485/422 | 1port                                   | 1port                           |
| RS232     | 2port                                   | 1port                           |
| CAN       | 1port                                   | N/A                             |
| Dim       | 204 x 185 x 52                          | 350 x 265 x 182                 |
| Optional  | -                                       | Geforce GTX 1080 Ti             |

# Robot Software

Control Engine for Cobots

# IndyFramework

‘IndyFramework 2.0’ is the Neuromeka’s proprietary software framework developed for efficient development of effective cobot applications. Operating on robot controller ‘STEP’ environment, it is capable of controlling a robot at maximum 8kHz (in case of STEP3 controller). Thanks to general-purpose robust control algorithm library for articulated robots coping with kinematic singularity and model uncertainties as well as innovative collision detection algorithm a variety of robotic tasks can be implemented safely and stably. Furthermore, its software architecture is designed to accommodate extension for more features because a number of system functions necessary for automation system deployment and remote connected maintenance are included.

| Function  | Features  |
|---|---|
| High-speed control on hard RT OS  | Native EtherCAT master running on realtime OS Xenomai optimized for ‘STEP’<br>Robot control frequency of maximum 8kHz (4kHz for ‘STEP2’)  |
| General-purpose articulated robot control library                       | Efficient kinematics and dynamics algorithm for a variety of robot structures<br>Nonlinear H-infinity optimal control based robust control algorithm<br>Stable task control capability near kinematic singularities<br>Impedance control algorithm in three-dimensional space<br>A variety of path planning algorithms and trajectory interpolation algorithms in joint and task space  |
| Safety and convenience by operation without fences                      | Collision detection based ‘power and force limiting’ feature<br>Realtime monitoring and limitation of joint velocities and currents<br>Online programming for joint and frame moves by ‘CONTY’ (Android teach pendant app)<br>Direct teaching for joint move programming by physically moving robot joints<br>Impedance teaching for frame move programming by physically moving the robot end-effector in selected translation and/or orientation directions     |
| System utility functions to facilitate automation system implementation | Standard tool modules such as electrical grippers, electro-magnetic grippers, vacuum suction tools, automatic bolt runners<br>Fully isolated DIO (each 16 channels) and high-performance AIO (each 2 channels)<br>Independent EtherCAT port for interface of external slaves (via internal EtherCAT hub)<br>TCP/IP, Modbus, and OPC-UA for interfacing external PLCs and/or controllers (SDK programming may be necessary)<br>Standard IoT protocols such as MQTT |
| Smart Connected Maintenance   | Remote online SW update (‘CONTY’ app, realtime robot control runtime, and motor driver firmware)<br>Log file transfer for remote diagnosis for system malfunction<br>Webcam based operation black-box feature for remote site monitoring  |
| Extendable robot SW architecture  | Plugin structure for control logic extension<br>Python-based robot motion script programming<br>SDK for extension of robot functionalities and algorithms   |



# Teach Pendant

Everyone's teach pendant for cobot programming

# CONTY

'CONTY' is the teach pendant app (running on Android OS) developed independently to program every cobot of Neuromeka. As such it runs on every standard android tablet. Communicating with the robot controller 'STEP' in wired or wireless manner, it supports online and offline programming of Indy lineup as well as direct teaching. Thanks to abundant features designed intuitively anyone can program Neuromeka's cobot.

\*Available with exclusive tablet for 'CONTY'



| Spec             | CONTY  |
|------------------|--|
| CPU              | Media Tek Deca-Core MT6797T (10-core)              |
| Display          | 10.1inch / 2560 x 1600 (WQXGA)                     |
| OS               | Android  |
| Memory / Storage | 4GB / 64GB eMMC                                    |
| Battery          | 8000mAh  |
| Network          | Wi-Fi 2.4GHz / 5GHz (IEEE 802.11 ac/a/b/g/n) / GPS |
| Size / Weight    | 239mm x 166.9mm x 7.5mm / 550g                     |
| Camera           | 1,300 megapixel (Front, Rear)                      |
| Components       | Tablet, Charger, Cable, Cover case                 |

# Standard Tools

Robot as a Tool

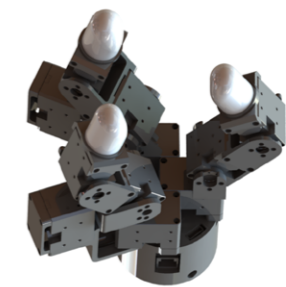
# IndyTools

Neuromeka offers a variety of tools that are required for cobots at an economical price. By collaborating with tool manufacturers used in industrial robots, we provide optimum tools that cobot users need. Gripper for easy transportation of heavy objects during work, low-cost 6-axis F/T sensor that can measure robot's dynamical load robot, movable base for, and more.

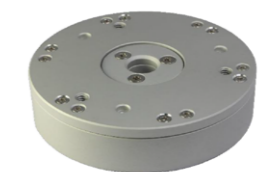
| Spec            | Gripper (MPLM 1630)                                 |
|-----------------|---|
| Gripping Force  | 63N   |
| Stroke          | 2 x 15mm  |
| Jw Closing Time | 0.37s   |
| Power Supply    | 24Vdc   |
| Nominal Current | 0.3   |
| Weight          | 263g  |
| Feature         | Optimized electric gripper for collaborative robots |



| Spec      | Gripper (IndyHand)                              |
|-----------|---|
| Finger    | Fully acuated robot hand(3-finger)              |
| Weight    | 1.7kg   |
| DOF       | 11  |
| Algorithm | Advanced blind grasping algorithm               |
| Control   | Torque control                                  |
| Actuator  | DYNAMIXEL (ROBOTIS)                             |
| Feature   | Flexible grip with three fingers and eleven DOF |



| Spec          | Torque Sensor (RFT76-HA01)                    |
|---------------|---|
| Dimension     | Ø76 x 18.5mm                                  |
| Weight        | 200g  |
| Data Rate     | max 1,000Hz                                   |
| Load Capacity | 300N, 8Nm(torque)                             |
| Resolution    | 200mN, 8mNm(torque)                           |
| Feature       | Capacitance type, 6 axis force with low price |



| Spec    | BASE (Mobile Base)        |
|---------|---------------------------|
| Weight  | About 50kg                |
| Height  | 420mm, 685mm              |
| Feature | Axial folding mobile base |



# Robot Platform Business

Robot as a Service

# IndyGo

'IndyGO', which is the compound word of 'Indy' (Neuromeka's cobot) and 'go' (meaning 'go to clients sites'), stands for the total solution service providing deployment, operation as well as maintenance of cobots for clients. 'IndyGO' provides service covering the whole process of cobot deployment of analysis-design-installation-operation-maintenance necessary. To this end a service platform adopting 'Lean Robotics' methodology is utilized to facilitate automatic diagnosis and analysis of target manual cells. It also provides smart factory feature using industrial IoT and smart connected maintenance.

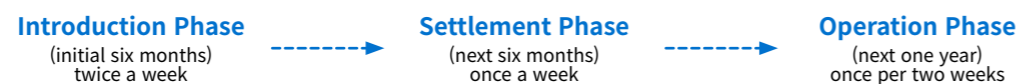
Customized and integrated 'IndyGO' services through thorough analysis of production process provide a most efficient robot layout and operation plan in production line. This enables cost reduction as well as productivity maximization, and can be applied actively to dynamically changing manufacturing processes. 'IndyGO' is specializing in small and medium sized manufacturing companies is provided with leasing and monthly subscription model to minimize the initial investment cost, thereby lowering the barrier to constructing robot automation production line. Robot purchasing, system integration, maintenance and related personnel training can be solved through 'IndyGO' service, and cobot-centered automation can be operated at a reasonable cost, which in turn guarantees quick and high return on investment.



'IndyPD' is an on-site cobot specialist for the introduction, maintenance and training of cooperative robot cells.

'IndyPD', which will be dispatched to the field (initially from Neuromeka), provides the most efficient robot layout and operation plan for the production process, and communicates directly with workers to provide an immediate solution to a production process that needs to be changed. In addition, 'IndyPD' also serves as a mentor to train some of the client's employees as 'IndyPD'. He/she educates field staff on how to use cobots, and to solve problems in the field, and helps anyone new to cobots become a competent and skilled cobot specialist. In the future, customers can drive their own automation using in-house 'IndyPD's at a lower cost and can also make 'IndyGO' business by themselves to neighbor partners.

**Full day  
dispatch  
schedule**



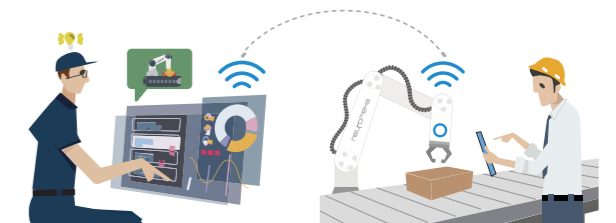
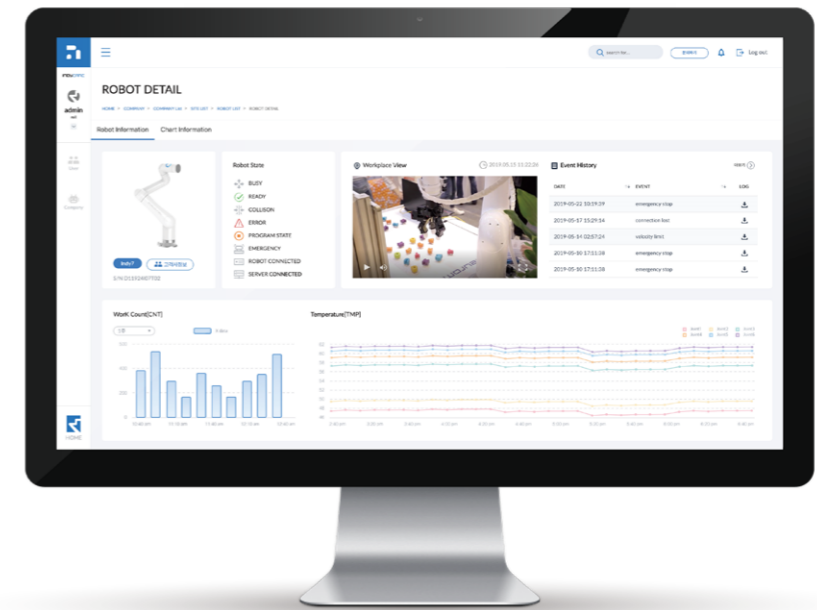
# Remote Management Service

remote management of robots for smart factory

# IndyCARE

'IndyCARE' is a web service created for remote management of cobots. If you have an Internet connection, you can access the cobot's real-time status, operating data, and event logs anytime, anywhere. The operating data has three additional input channels that can be customized to fulfill the user's needs, in addition to Cobot's work counts and the temperature of each joint. We also provide video streaming services of the worksite through the accompanying web camera with cobot.

'IndyCARE' stores event log files and streaming videos for all collision detection and emergency stop situations during work to help determine the causes of robot administrators and enable engineers to provide remote CS support.



## Function

## Features

Real-time monitoring of cobots

Check whether or not operations are started  
Remote management with collision and emergency stop situation monitoring (email alarm function in case of an abnormal situation)

Store work date

Measure the productivity by collecting data on the work count by the Cobots  
Temperature measurement of each joint monitoring for abnormal conditions  
Customizing of data values

Video streaming of worksite

Real-time transmission of the work site situation to the robot administrator with the camera connected to the 'IndyCARE'  
Visually check the status of cobot without visit each worksite

Collecting event log

Collect log files for changes in Cobot status (collision, emergency stop, etc.)  
Subsequent monitoring of missed situations by robot administrators  
Fast analysis of robot anomalies to reduce maintenance time and cost



Robot as a Tool  
Robot as a Service  
Robots for Every Workplace

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