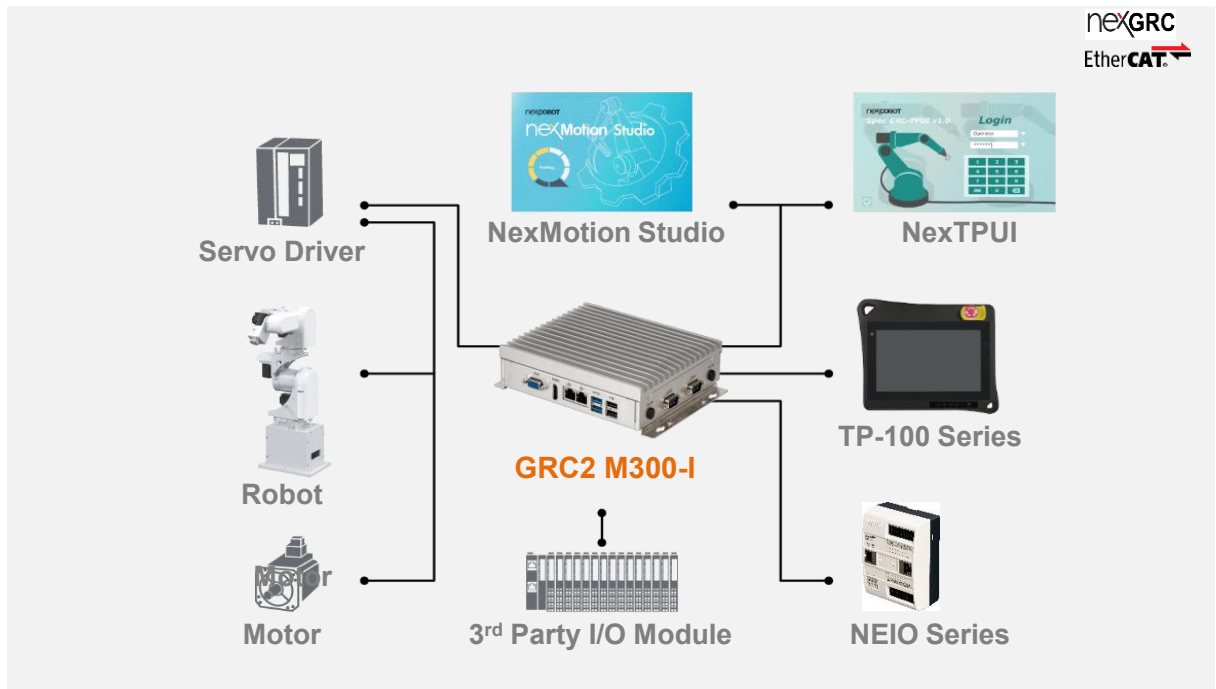


GRC2 M300 Series

General Robot Controller
Intel® Celeron® processor J6412 Quad Cord 2.6GHz



nexGRC
EtherCAT



Main Features

- Compact size
- Suitable for small payload SCARA, Delta robot, qualified 6-axis articulated robot
- Support robot group up to 4 groups. Control functions include PTP/Line/3D arc
- Support extension single-axis control up to 16 axes. Control functions include PTP/Jog/Halt/Stop
- Provide EtherCAT extension port for connecting more EtherCAT slaves
- Compatible with NexCOBOT teach pendant
- Integrated with NexCOBOT software: NexMotion Studio/ NexTPUI

Product Overview

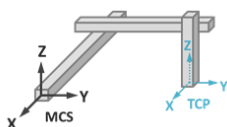
The **GRC2 M300-I** series performs real-time robot control, supports several standard robots, and provides an EtherCAT port for connecting to EtherCAT slaves such as servo drives and I/O modules.

It is integrated with the powerful configuration tool **NexMotion Studio**, which allows users to configure EtherCAT topology, devices, robot parameters, extended axis control, and additional I/O devices. The series also includes **NexTPUI**, an HMI for teach pendants that enables easy robot operation.

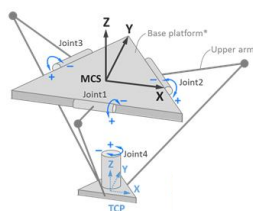
For Industry 4.0 applications, the GRC2 series serves as a general-purpose robot controller that supports standard EtherCAT communication. With its powerful software, it can flexibly configure any number of robot control axes and joint modules, while also expanding to external modules. This meets the demands of diverse application environments and provides a high degree of flexibility for integration and customization.

Support multiple robot

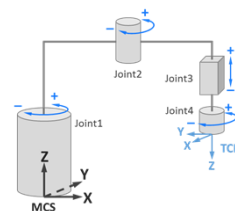
The GRC2 series support several robot type as following.



Cartesian Coordinate Type



Delta Type



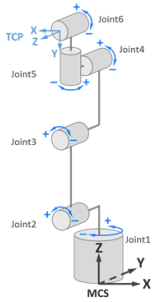
SCARA Type



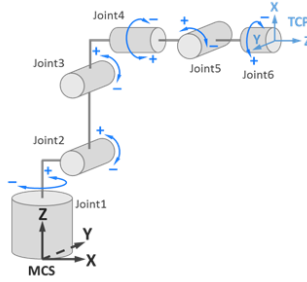
GRC2 M300-I

nexCOBOT

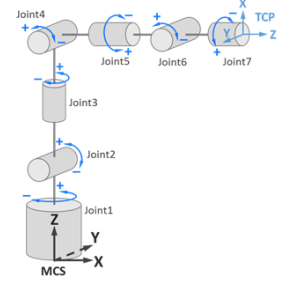
Support multiple robot (Conj.)



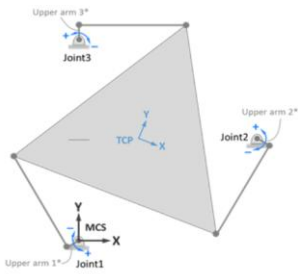
Articulated collaborative robot type



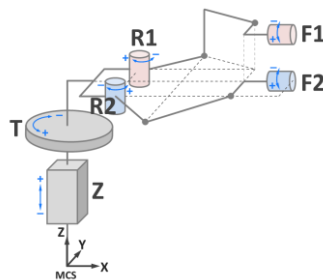
6-axis articulated type



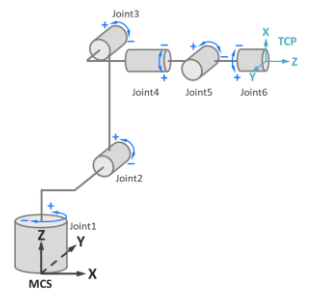
7-axis articulated type



3RRR Robot Type



Wafer Robot Type



Stäubli Robot Type

Integrated with powerful software - NexMotion Studio

NexMotion Studio is software configuration tool for users to setup EtherCAT topology and robot configuration and parameters.

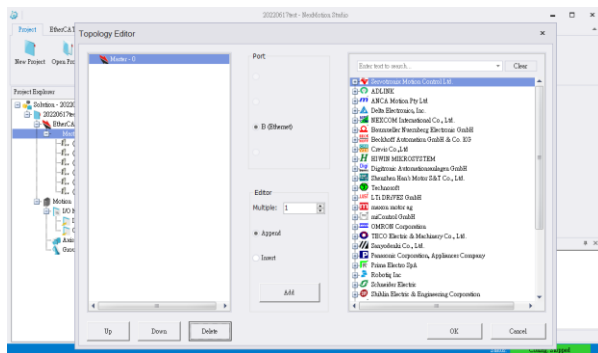
It contains the following main features:

EtherCAT setting/ operation

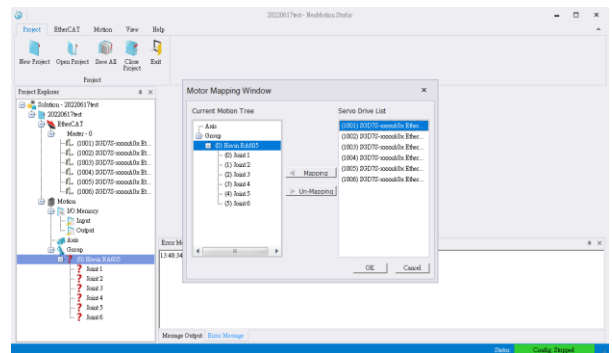
- Build up EtherCAT network topology
- EtherCAT online scanning and offline editing
- EtherCAT Master parameter setting
- Periodic transmission of data (PDO) setting
- Aperiodic transmission of data (SDO) setting
- CiA 402 regulated devices operation

Motion setting/ operation

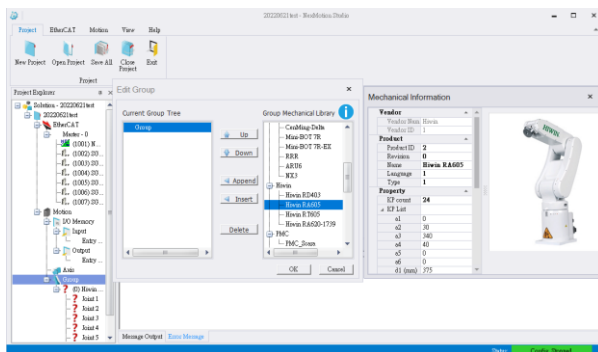
- Single axis setting, mapping and operation
- Group (multiple single axis) mapping and operation
- Input and output (I/O) mapping and operation
- Parameters setting such as acceleration, deceleration, joint axis limit and speed, etc.
- Robot operation and simulation, Run & Test



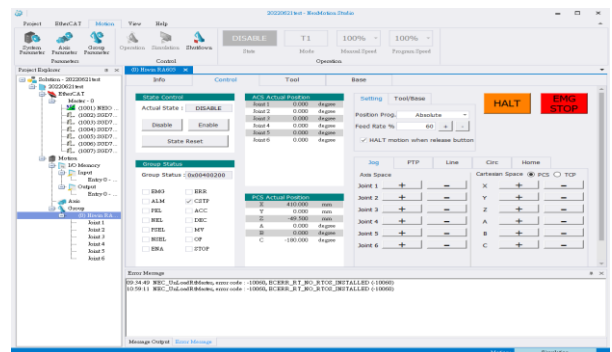
Offline editing



Mapping robot axis



Add group of robot



Quick operation verification

Generate configuration file

- Generate EtherCAT network information file (ENI file) and configuration file (NCF file). These files are further provided to the NexTPUI for use.



Generate configuration file

Compatible with teach pendant and software - NexTPUI

NexTPUI is a human-machine interface (HMI) software for industrial robot application and development. After importing the configuration files, the robot can be operated, programmed on the teach pendant. It contains the following main features:

Real-Time Program

- Create robot script (Task) by project. Programming via NRPL syntax.

Jog

- Robot movement can be made with respect to selected Base or TCP.

I/O

- Use the signals to perform external handshake or operate the external gripper and equipment.

Monitor

- All relevant parameters of the current robot can be known through parameter monitoring, including robot position, status and I/O signals.

Messages

- All relevant robot messages can be checked in Messages, including error message.

Setting

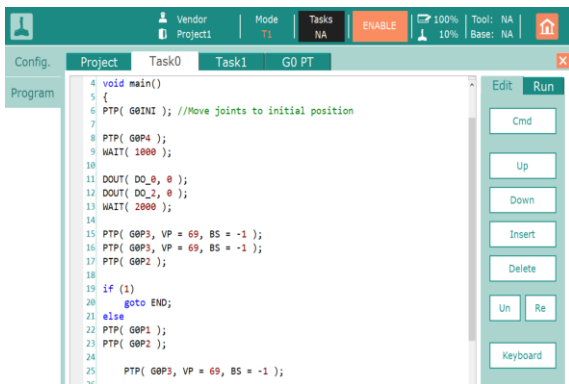
- Contains Network, System, Maintain, About, Language, Account.

Configuration

- Contains 6 sub-functions of Tool, Base, Home, Program, Jog, Track.

NRPL

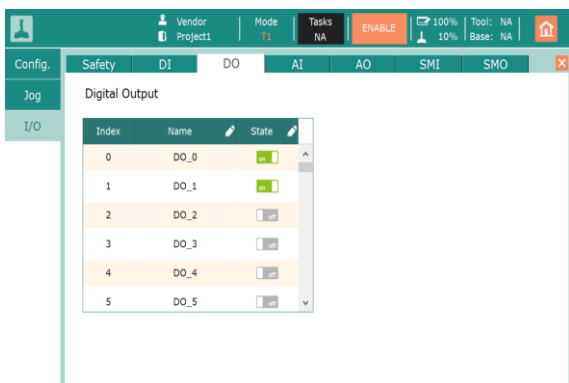
- NRPL(NexMotion Real-time Programming Language) is a C language-like programming specially developed for industrial automation and robot motion control. Support multi-tasks.



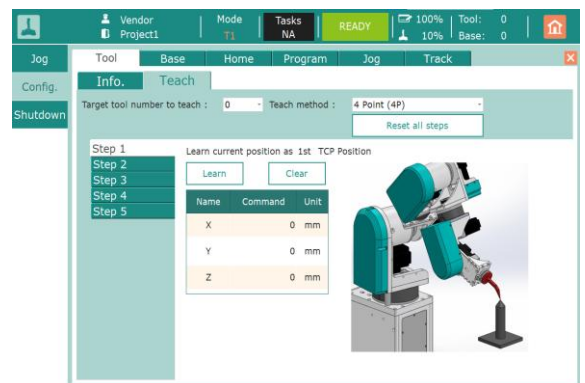
Real-Time Program



Jog



I/O



Configuration

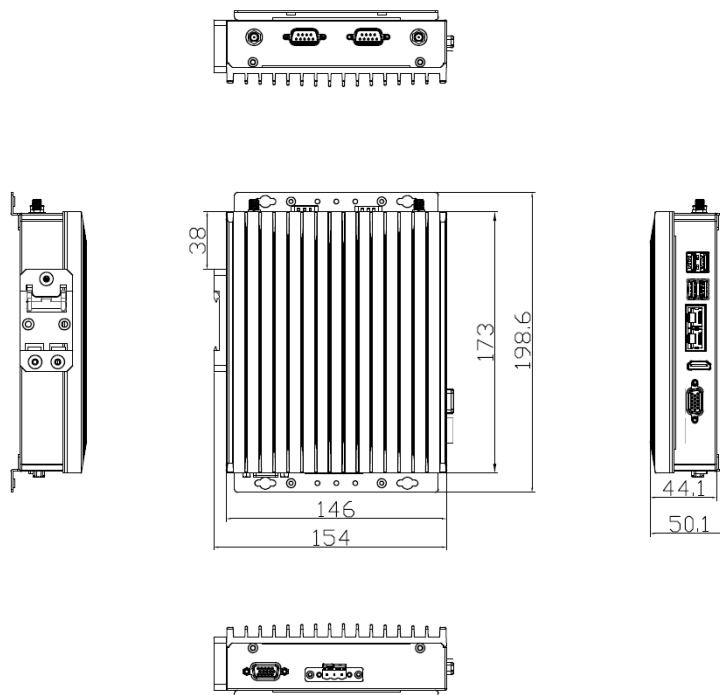
Software Specification

Items	GRC2 (Entry)	GRC2
Max. ECAT Slave	64	64
Max. Axes	64	64
Max. Groups	4	4
Max. NRPL Tasks	4	4
Max. Background Tasks	2	2
NexMotion Studio	V	V
NexTPUI	V	V
I/O Operation	V	V
Safety I/O	V	V
External I/O	V	V
ModbusTCP Server	V	V
ModbusTCP Client	V	V
StringTCP server	V	V
Remote control server	V	V
RSC Communication	V	V
MC Communication (Plugin)	Option	Option
JSL, Joint speed limit	V	V
JAL, Joint acc. Limit	V	V
JSS, Joint Speed suppression	V	V
CSS, Cartesian speed suppression	V	V
Axis PTP	V	V
2-4 Joints Kinematics (XYZ, Delta, SCARA, Wafer)	V	V
3D Line	V	V
3D ARC	V	V
Path smooth	V	V
Contour Motion	V	V
PTMotion	V	V
Position Event	V	V
Tool calibration	V	V
Base calibration	V	V
Conveyor tracking	Option	Option
2-7Joints Kinematics (6R, 7R)		V
HGC, Hand guided control		V
CD, Collision detection		V
Trajectory record & play		V

Hardware Specification

Catalog	Specifications
CPU Support	■ Intel® Celeron® processor J6412 Quad Core 2.6GHz, 10W
Memory	■ DDR4 8GB
Storage	■ 1 x M.2 Key B 2242 128GB SSD, Support PLP.
I/O Interface-Front	■ 1 x VGA and 1 x HDMI display output ■ 1 x EtherCAT port, 1 x Intel® I210 GbE LAN port ■ 4 x USB 3.0 ■ 2 x COM (1 x RS232/422/485, 1 x RS232) via DB9 ■ 1 x 8 bit GPIO (4IN/4OUT) via DB15 ■ 1 x 3-pin DC input, typical 12 or 24V DC input with $\pm 20\%$ range
Expansion Slot	■ 1 x mini-PCIe socket for optional Wi-Fi/3.5G/4G LTE/fieldbus modules
Power Requirement	■ Typical 12 or 24V DC input with $\pm 20\%$ range
Dimensions	■ 85mm (W) $\times$ 157mm (D) $\times$ 214mm (H)
Mounting	■ Wall mount ■ DIN rail (Optional)
Construction	■ Aluminum and metal chassis with fanless design
Environment	■ Operating temperature: Ambient with air flow: 0°C to 50°C (according to IEC60068-2-1, IEC60068-2-2, IEC60068-2-14) ■ Storage temperature: -20°C to 80°C ■ Relative humidity: 10% to 95% (non-condensing) ■ Shock protection: ✓ SSD: 20G, half sine, 11ms, IEC60068-2-27 ✓ CFast: 50G, half sine, 11ms, IEC60068-2-27 ■ Vibration protection w/ CFast & SSD condition: ✓ Random: 2Grms @ 5~500Hz, IEC60068-2-64 ✓ Sinusoidal: 2Grms @ 5~500Hz, IEC60068-2-6
Certifications	■ CE ■ FCC Class A

Dimension Drawing



Pre-Installed Software Package

- Operating system: **Windows 10 IOT**
- Robot Controller: **NexGRC**

Ordering Information

GRC2 M300-I (P/N: 98GRM300I01XF)

NexCOBOT General Robot Controller Advance
Intel® Celeron® J6412 With DDR4 8GB, 128G 3DTLC-PLP
SSD, Win10 License, Without Adapter.

GRC2 M300-I-Entry (P/N: 98GRM300I02XF)

NexCOBOT General Robot Controller Entry
Intel® Celeron® J6412 With DDR4 8GB, 128G 3DTLC-PLP
SSD, Win10 License, Without Adapter.

Optional Function Package:

Conveyor tracking (PN/: TBD)
MC Communication (PN/: TBD)