GRC2-V100 / GRC2-H100

General Robot Controller

- Servo Driver
- NexMotion Studio
- NexTPUI
- Robot
- GRC2-V100
- TP-100 Series
- Motor
- 3rd Party I/O Module
- NEIO Series
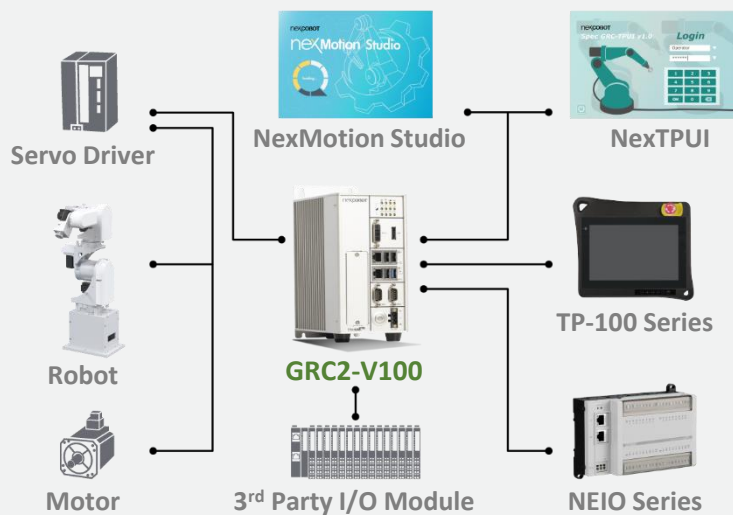
Main Features

- 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

GRC2 series perform real-time robot control, support several standard robots and provide EtherCAT port for user to connect with EtherCAT slaves such as EtherCAT servo drive or EtherCAT I/O modules. It integrated with powerful configuration tool "NexMotion Studio", which users can configure EtherCAT topology, devices, robot parameters, extend axis control and extend more I/O devices. It also provides "NexTPUI", which is a HMI for teach pendant to operate robots easily. For the Industry 4.0, the GRC2 series provide a general-purpose robot controller that supports standard EtherCAT communication. With the powerful software, It can freely configure any number of robot control axis joint modules and can also freely expand external modules, which meets the needs of multiple application environments and provide high degrees of freedom for any application and integration.
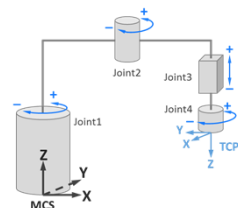
Support multiple robot

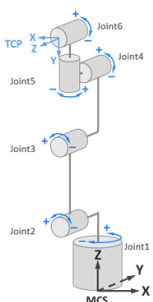The GRC2 series support several robot type as following.
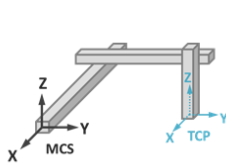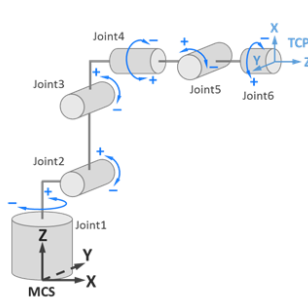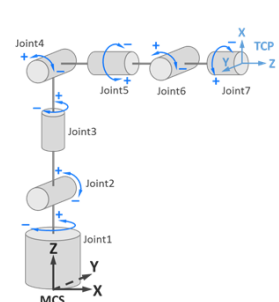

Cartesian coordinate type
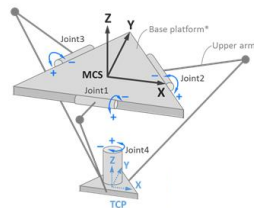
Delta type

SCARA type

Articulated collaborative robot type


6-axis articulated type

7-axis articulated 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
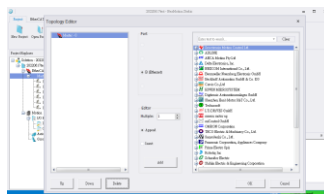
Offline editing
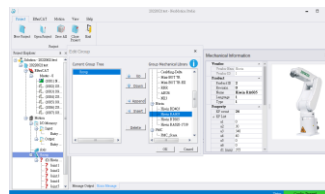
Add group of robot

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.
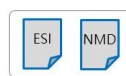- Robot operation and simulation, Run & Test
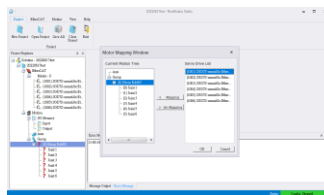
Mapping robot axis
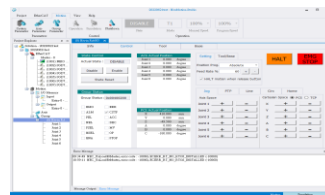
Quick operation verification

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, programed 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 respective to selected Base or TCP.

I/O

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

Configuration

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

Setting

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

Messages

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

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.
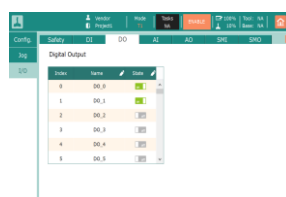
Monitor

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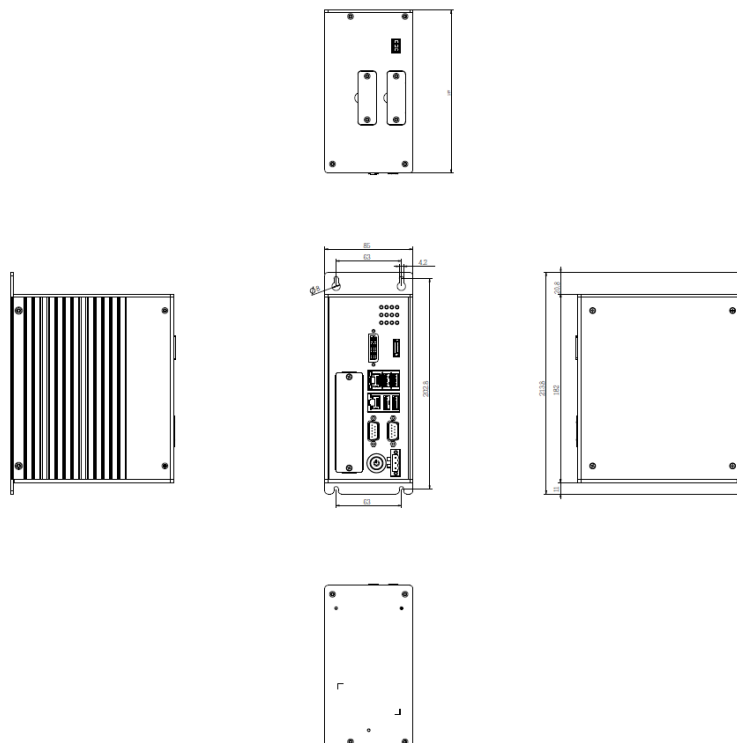

Real-Time Program

Jog

I/O

Configuration

| Model	GRC2-V100	GRC2-H100
Mounting	Vertical	Horizontal
Power Input	24 V_{DC}	
Specify For	SCARA/Delta/Qualified Articulated 6 Axis	
Supported Robot Group	Default: 1 Group, Maximum up to 2 Groups (Optional)	
EtherCAT Port	1 x EtherCAT	
Supported Hardware	TP-100 Series (Optional)	
Supported Software	NexMotion Studio, NexTPUI (Pre-installed)	
Add-on Solution Package	Conveyor Tracking/ Multi-Robot/ Multi-Task	
Dimensions	90 mm(W) x 185mm (D) x 251mm (H)	298.6 mm(W) x 249mm (D) x 68mm (H)
Weight	2.27 kg	3.24 kg
Communication	1 x GbE / Modbus TCP, NexTPUI remote control	3 x GbE / Modbus TCP, NexTPUI remote control
I/O Interface	• 1 x DVI-I, 1 x DP • 1 x EtherCAT LAN port • 1 x Intel® I210AT GbE LAN port • 3 x USB 2.0, 1 x USB 3.0 • 2 x RS232/422/485 • 2 x Mini PCIe	• 1 x HDMI, 1 x VGA • 1 x EtherCAT LAN port • 3 x Intel® I211AT GbE LAN port • 6 x USB 2.0, 2 x USB 2.0 • 2 x RS232/422/485 • 1 x Mini PCIe • 1 x Reset Switch
Environment	• Operating temperature: -5°C to 55°C • Storage temperature: -20°C to 80°C • Relative humidity: 10% to 95% (non-condensing) • Shock protection: • HDD: 20G, half sine, 11ms, IEC60068-27 • CFast: 50G, half sine, 11ms, IEC60068-27	• Operating temperature: 0°C to 50°C • Storage temperature: -20°C to 80°C • Relative humidity: 10% to 90% (non-condensing) • Shock protection: • HDD: 20G, half sine, 11ms, IEC60068-27
Certifications	CE/FCC Class A	
Ordering Information	GRC2-V100 (P/N:A0J700GRC00XF)	GRC2-H100 (P/N:A0JF0GRC001XF)

nexcoBoT
Open Robots & Machines

Dimension Drawing
GRC2-V100

Dimension Drawing
GRC2-H100

Last Update: 9/19/2022
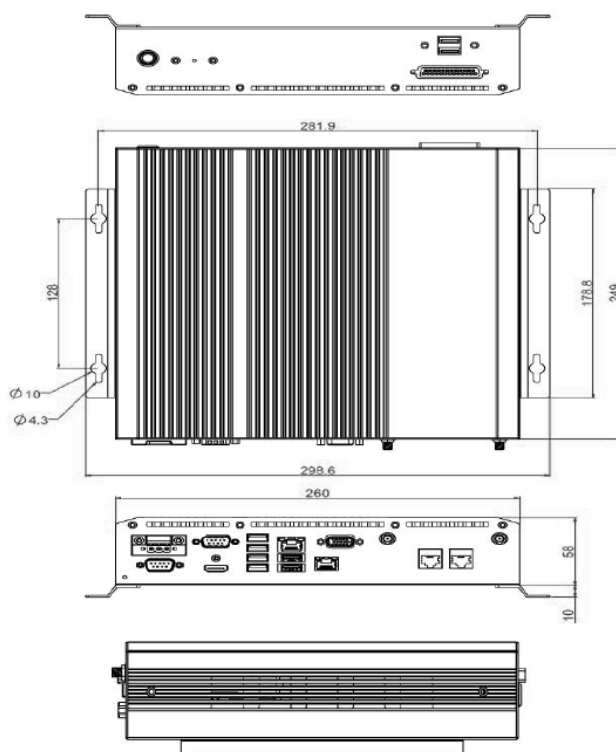
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