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Central-I Family

CiG1-MAS01-4A-01-00

Hardware User's Manual

Revision control table

Version	Description	Date
1.0	Initial (based on Hardware Manual of previous hardware versions)	November 14, 2016
1.1	Remove the unnecessary part	February 25, 2017
1.2	Update the Pictures and RS485 Ports Info	Dec 26,2018

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Scope

This manual describes hardware interfaces of the CiG1-MAS01-4A-01-00

Product description	Part numbers
Controller	CiG1-MAS01-4A-01-00

The -XX defines a product's hardware variant, as describes below.

Product structure

CiG1-MAS01-4A-01-00

The following pictures show the overall structure CiG1-MAS01-4A-01-00 controller

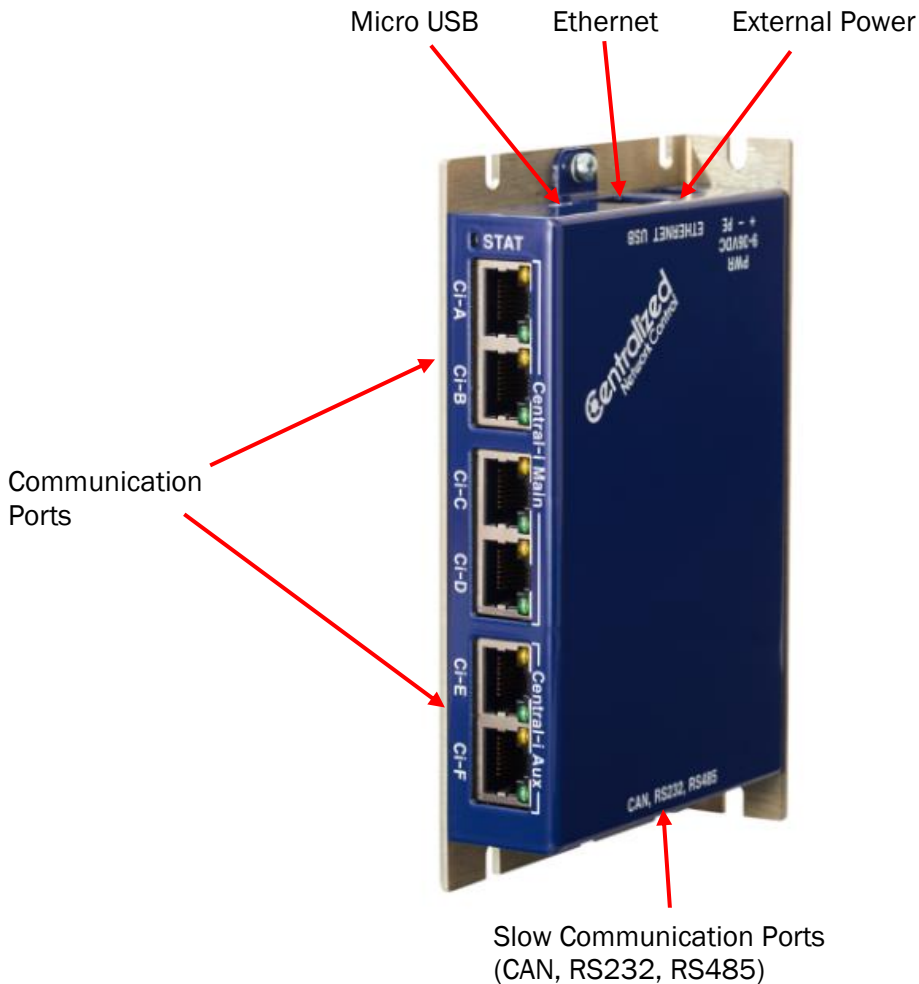


Figure 1: CiG1-MAS01-1A-01-XX Board Overview

Number of Drivers

The CIGI-MAS01-4A-01-00 (amplifier board) supports driving of up to 6 drivers. This means that this controller can control different number and different kinds of drivers.

Products' variants

At the moment, we only have the controller: CIGI-MAS01-4A-01-36, and in the future, we will support more different controller variants.

CONTROLLER – CIGI-MAS01-4A-01-00

This document provides a detailed description of the interface of the controller.

Communication connector

This chapter describes the controller's communication port. There are three communication port on this controller board. We can utilize them to realize the communication between different drivers and controller.

Controller– J1 – Communication Port

Each communication port contains two same Central-I port--Port A and Port B.

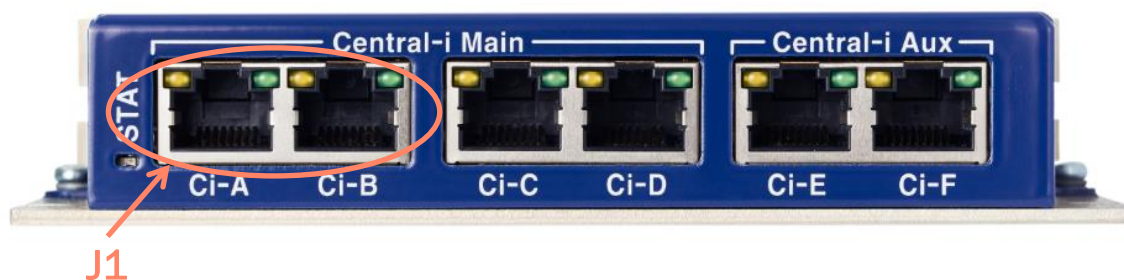


Figure2: Communication Port

Manufacturer: Aico-Electronics Limited
P/N (product side): B563S288GFM002
Cable Type: CAT 5

Controller- J2 – Communication Port

J2 is the same communication port as J1. J2 contains Central-I Port C and Central-I Port D.

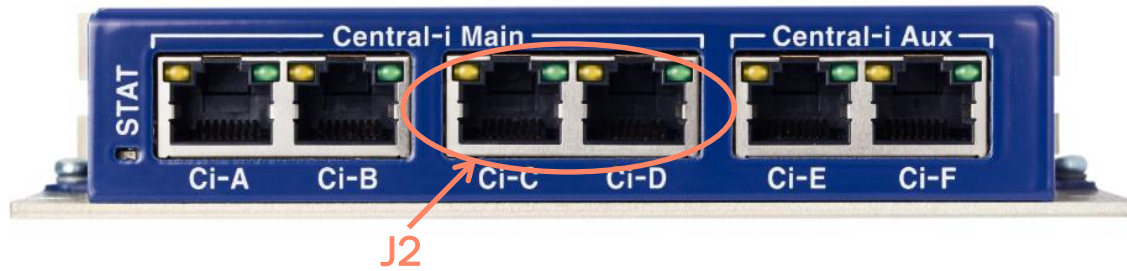


Figure3: Communication Port

Manufacturer: Aico-Electronics Limited
P/N (product side): B563S288GFM002
Cable Type: CAT 5

Controller- J3 – Communication Port

J3 is the same communication port as J1 and J2. J3 contains the auxiliary Central-I communication Port E and Port F.

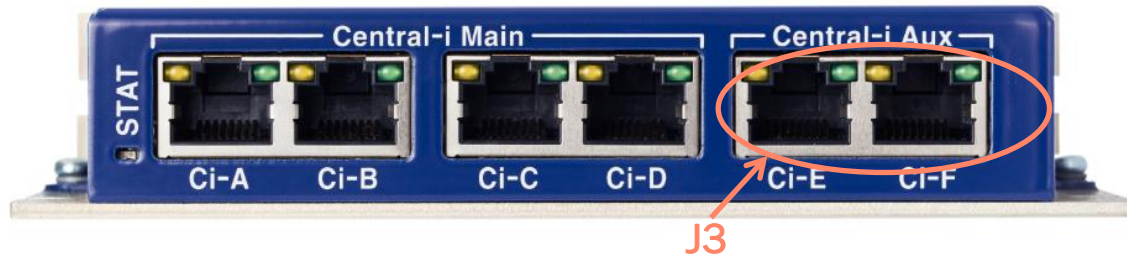


Figure4: Communication Port

Manufacturer: Aico-Electronics Limited
P/N (product side): B563S288GFM002
Cable Type: CAT 5

Controller– J8 – Slow Communication Port

J8 is the slow communication port for this controller which can help realize the communication between the computer and controller. This port can support different type like RS232, RS485 and CAN with dual RJ45.

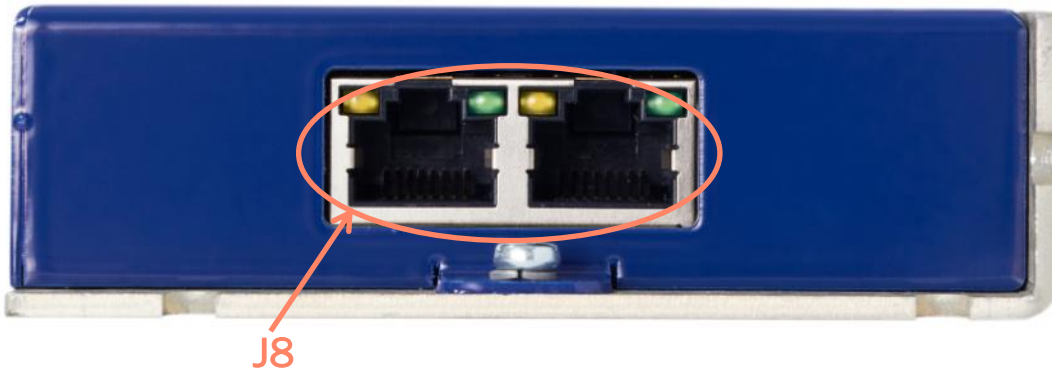


Figure5: Slow Communication Port

Manufacturer: Aico-Electronics Limited
 P/N (product side): B563S288GFM002
 Cable Type: CAT 5

Note – Why dual port connector?

The J3/J4 connector is a dual port RJ45 connector (one is J3 and one is J4). The two ports have identical pinout and are interchangeable. Two ports are provided to support daisy chain connection of CAN Bus or RS-485. It can be also used to connect two types of communication channels at the same time, instead of splitting a cable from a single RJ45 connector.

Pin #	Name	Type	Description
1	GND	PWR	Reference ground
2	RS232_RX	IN	RS2-32 input (comes towards AG300)
3	RS232_TX	Out	RS-232 output (comes from AG300)
4	RS485_B	In/Out	RS-485 bus, inverted
5	RS485_A	In/Out	RS-485 bus, not inverted
6	Sync	In/Out	Synchronization line (future use, consult Agito)
7	CAN_L	In/Out	CAN bus negative line
8	CAN_H	In/Out	CAN bus positive line

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Controller– J5 – Ethernet

This is a communication port which can realize the communication between the computer and controller—Ethernet.

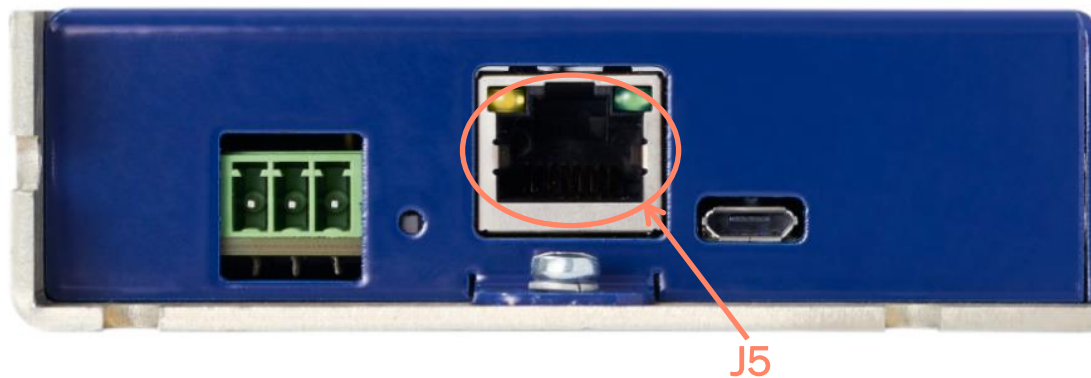


Figure6: Ethernet Port

Manufacturer: Aico-Electronics Limited
P/N (product side): B563S288GFM002
Cable Type: CAT 5

Controller– J6 – Micro USB

This is another communication port which can realize the communication between the computer and controller—Micro USB.



Figure6: Micro USB Port

Note: RS-232 Bridge

The Micro USB connection is implemented using an internal bridge from USB to RS-232 (UART). As a result, the communication performance, from the point of view of the user, is identical to RS-232, using a suitable software driver at the PC side.

Logic Power Connector

This chapter explains the power connectors on this controller board which can provide external power for this board.

Controller– J4 & J7—Logic Power



Figure7: Logic Power Port

Manufacturer: DEGSON
P/N (product side): 15EDGRC3.503P1400AH

Pin #	Name	Type	Description
1	VIN_EXTERNAL	PWR-OUT	External Power supply for controller. 9V to 36VDC.
2	VIN_EXTERNAL_RETURN	PWR-OUT	External Power return
3	GND_EARTH	PWR	Ground_Earth connection

Environmental conditions

Requirement	Units	Allowed range
Operational temperature	°C	0 to 50
Storage temperature	°C	-20 to 70
Humidity	%	<90

