# **RS485** Communication **MINAS A4A**

## **AE-LINK RS485 open network**

PTP control by servo built-in positioning function

- Positioning unit is not required
- Universal RS485 communication without using specific IC
- Low cost with Ethernet cable



### [Typical system configuration]



#### • Application specific IC is not required.



### Cable cost 1/10



#### Network specification

| Item                 | Description                            |
|----------------------|--|
| Communication rate   | 38.4/307.2 kbps                        |
| Physical layer       | RS485 half duplex                      |
| Cable                | Shielded twisted pair cable            |
| Communication period | Approx. 1 ms/axis (@307.2 kbps)        |
| Topology             | Bus (terminating resistor is required) |
| Operating command    | Target position                        |

### Features of drive

### Simple setup

Thanks to the proprietary real time auto tuning, gain can be set easily by simple operation.

### Quick response

High rigid mechanics can be driven at higher rate, i.e. speed response frequency of 1000 Hz, increasing production efficiency.

### Low vibration

Vibration suppression control enables a low rigidity mechanics driven at low vibration.

### Compact

Industry's lowest level compact size (1/2 of Panasonic precedent product), contributing space saving of the site.

### High precision

The standard model can response to full closed control, achieving high precision positioning.

### Expandable

For feedback scale, common A/B/Z phase pulse signal type can be used.

### **Drive list**

|             |                                | Motor rated output |                |                |                |                |                |        |                |                |           |           |                |
|-------------|--------------------------------|--------------------|----------------|----------------|----------------|----------------|----------------|--------|----------------|----------------|-----------|-----------|----------------|
|             |                                | 50 W               | 100 W          | 200 W          | 400 W          | 750 W          | 1 kW           | 1.5 kW | 2 kW           | 3 kW           | 4 kW      | 5 kW      | 7.5 kW         |
| Drive power | Single phase<br>100 to 115 VAC | A                  | A              | В              | С              |                |                |        |                |                |           |           |                |
|             |                                | MADD<br>T1105A     | MADD<br>T1107A | MBDD<br>T2110A | MCDD<br>T3120A |                |                |        |                |                |           |           |                |
|             | Single phase<br>200 to 240 VAC | A                  |                | A              | В              |                |                |        |                |                |           |           |                |
|             |                                | MADD<br>T1205A     |                | MADD<br>T1207A | MBDD<br>T2210A |                |                |        |                |                |           |           |                |
|             | Single/2 phase                 |                    |                |                |                | С              | [              | )      |                |                |           |           |                |
| ddns        | 200 to 240 VAC                 |                    |                |                |                | MCDD<br>T3520A | MDDD<br>T5540A |        |                |                |           |           |                |
| <u>-</u>    | 3-phase<br>200 to 230 VAC      |                    |                |                |                |                |                |        | E              | F              | F         | =         | G              |
|             |                                |                    |                |                |                |                |                |        | MEDD<br>T7364A | MFDD<br>TA390A | MF<br>TB3 | DD<br>A2A | MGDD<br>TC3B4A |

Upper line: Frame size symbol Lower line: Typical drive part number Note: Some motors do not match part numbers in the table.

### **Applicable standards**

• TUV

٠CE

RoHS





Note: AE-LINK is a registered trade mark of Asahi Engineering.

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#### [External view]

Dimensions (mm): W40 × H150 × D132 (A frame)



\* Dual connector: J.S.T. Mfg. Co., Ltd.

04JFAT-SAXGSA-C (4-pole) 05JFAT-SAXGSA-C (5-pole)









### or AE-LINK **<Master>**

Asahi Engineering Co., Ltd. Manufacturer/

### **PLC Direct Access AE-LINK Motion Controller**

### PI-1200 (RS-232C) / PI-1300 (Ethernet)

### Features

### Building a motion network at low cost under PLC

### PLC direct access

- The controller runs the motion program installed in PI while accessing PLC data register.
- Preparation of ladder program for communication is not required on PLC.
- · No CPU burden on PLC.

### Simple motion control through data register

- Motors can be controlled by operating PLC data register.
- · Multiaxial motors can be controlled/monitored by simply operating numeric values on the data register.
- · PLC operator having no knowledge on communication of motion (AE-LINK) can control the motor.

### Stepping motor can be mixed

The motion network can contain servo motor and stepping motor.



### Specification

| Item                               | Description  |  |  |  |  |
|------------------------------------|--|--|--|--|--|
| Power supply                       | 24 VDC±10% 300 mA MAX  |  |  |  |  |
| Operating temperature and humidity | 0 to 50°C, 90%RH max. (no dewing)  |  |  |  |  |
| Outline dimensions (mm)            | W24 × D110 × H150 (PI-1200), W25 × D109 × H184 (PI-1300)                       |  |  |  |  |
| Communication with PLC             | PI-1200: RS-232C 115.2 kbps/38.4 kbps Conforms to various corporate protocols. |  |  |  |  |
|                                    | PI-1300: Ethernet 10/100 BASE-T Conforms to various corporate protocols.       |  |  |  |  |
| Program loader                     | RS-232C 38.4 kbps  |  |  |  |  |
| Control signal I/O                 | Initialization input, system alarm output and node alarm output                |  |  |  |  |
| Motion network                     | AE-LINK 307.2 kbps/38.4 kbps (Selection on DIP switch)                         |  |  |  |  |
| No. of connection nodes            | Max. 16  |  |  |  |  |
| Motion control                     | PTP (Point to Point)   |  |  |  |  |

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### Features

### Building servo and step mixed motion network at a low cost

- Drive has built-in software NC, requiring no host NC controller
- High performance CPU enhances drive functionalities
  - · Built-in origin return function
  - Triangle driving prevention function
  - Step-out detection function
  - Motor over current protection function
  - Vibration suppression function
- Up to 31 axes can be connected to the same network (Depending on the master specification)



### Specification

| Part No. | Input power<br>supply | Applicable<br>motor | Applicable Driving<br>motor capacity o |   | Drive outline                                   |  |
|----------|-----------------------|---------------------|--|---|---|--|
| D3910S   | 24 VDC                | 2-phase             | 1.5 A/phase                            |   | Board type micro step drive                     |  |
| D3080S1  | 24 to 48 VDC          | 2-phase             | 2.55 A/phase                           | 0 | High precision micro step drive                 |  |
| D3080S2  | 24 to 48 VDC          | 2-phase             | 5.1 A/phase                            | 0 | High precision high power micro step drive      |  |
| D4390S   | 100 VAC               | 2-phase             | 2.55 A/phase                           | 0 | AC supply input high precision micro step drive |  |
| D4370S   | 24 VDC                | 5-phase             | 1.5 A/phase                            |   | Board type half step drive                      |  |
| D4130S   | 24 VDC                | 5-phase             | 1.5 A/phase                            |   | High precision micro step drive                 |  |
|          | •                     |                     |  |   | ·   |  |

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for AE-LINK **<Slave>** 

### **AE-LINK Compatible Stepping Motor Drive Series**





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