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Network-Compatible Products, Controller

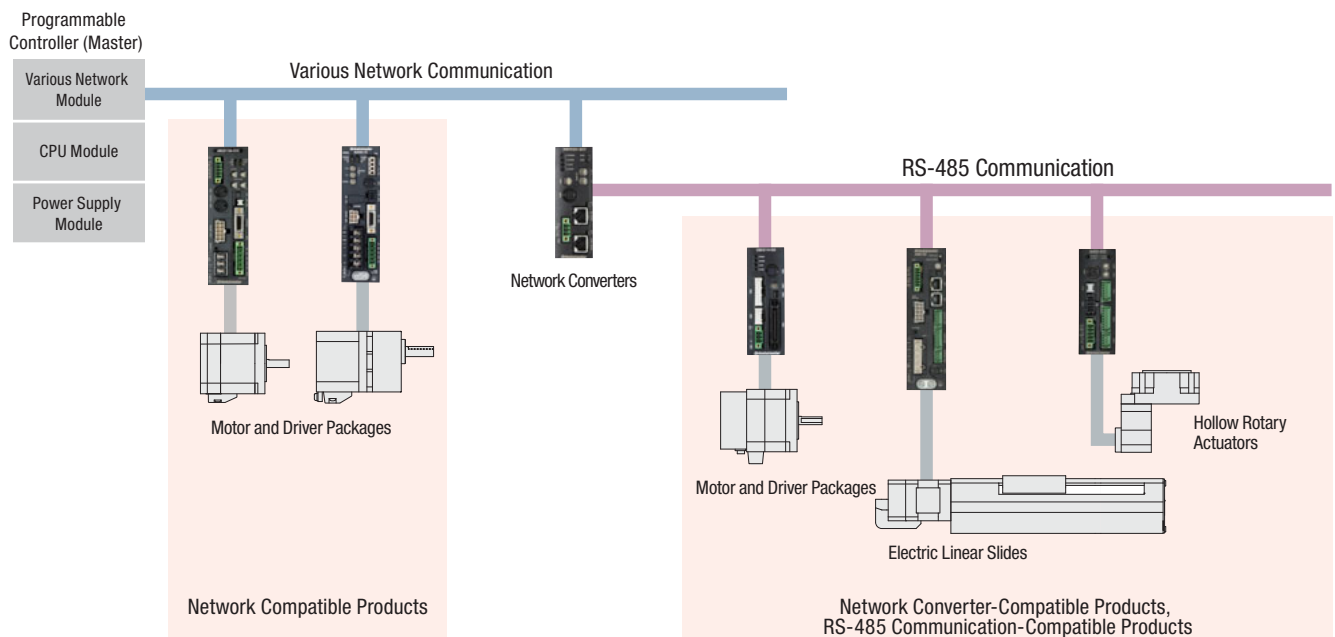# Overview of Network Compatible Products

Motor control via network communication can detect the status of the motor directly by data. This results in a shorter development period and increased reliability and maintainability of the equipment.
By expanding the network compatible product lineup, Oriental Motor meets diversifying network environments of factory automation.

■Features

Network-compatible products offer the following benefits:
- Simple wiring achieves space saving for wiring and smaller equipment size.
- Transmission distance can be extended up to several hundred meters. This makes wiring route design easier and enables products to be positioned in appropriate locations.
- Simple wiring achieves a reduction in the man-hours for the wiring process and in the cost of wiring.
- Operating status is monitored by product input/output information, alarm, etc. This achieves improved maintainability via the system.
- Simple wiring makes wiring and checking process easier when replacing the product.

■Network Configuration Example

Programmable Controller (Master)

Various Network Module

CPU Module

Power Supply Module

Various Network Communication

Network Converters

RS-485 Communication

Motor and Driver Packages

Network Compatible Products

Hollow Rotary Actuators

Motor and Driver Packages

Electric Linear Slides

Network Converter-Compatible Products, RS-485 Communication-Compatible Products

■Compatible Network

EtherCAT®

EtherCAT is an Ethernet (IEEE802.3)-compliant, open, high-speed, industrial network system.
● EtherCAT® is registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany.

CC-Link

CC-Link (Control&Communication Link) is the open field network promoted by CC-Link Partner Association.
● CC-Link is a registered trademark of CC-Link Partner Association.

Modbus (RTU)

Modbus is the open field network with Modbus Protocol installed. Modbus is used widely in the fields of factory and process automation because its protocol specification is open to the public and it is very simple.
● Modbus is a registered trademark of Schneider Automation Inc.

MECHATROLINK

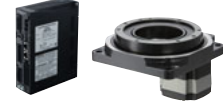MECHATROLINK-Ⅱ and MECHATROLINK-Ⅲ are motion networks promoted by MECHATROLINK Members Association.
✽MECHATROLINK is a registered trademark of MECHATROLINK Members Association.

■Network Compatible Products

●Built-in Controller Type Stepper Motors

Stepper Motors αSTEP		0.72° Stepper Motors	
AZ Series	**AR** Series	**RKII** Series	**CRK** Series

AC power supply input ➜ Page A-22
DC power supply input ➜ Page A-170

AC power supply input ➜ Page A-68
DC power supply input ➜ Page A-212

AC power supply input ➜ Page A-118

DC power supply input ➜ Page A-304

●Linear & Rotary Actuators

Stepper Motors αSTEP **AZ/AR** Series Equipped			
EAS Series	**EZS** Series	**EAC** Series	**DGII** Series

AC/DC power supply input ➜ Page E-26

AC/DC power supply input ➜ Page E-73

AC/DC power supply input ➜ Page E-124

AC/DC power supply input(✱) ➜ Page E-232

(✱DC power supply input is only for **AR** series)

Stepper Motors αSTEP **AZ** Series Equipped	0.72° Stepper Motors Equipped
DRS2 Series	**DRLII** Series

DC power supply input ➜ Page E-200

DC power supply input ➜ Page E-220

●Network Converters

EtherCAT-Compatible	CC-Link-Compatible		MECHATROLINK-Compatible	
NETC01-ECT	**NETC01-CC**	**NETC02-CC**	**NETC01-M2**	**NETC01-M3**

DC power supply input ➜ Page F-6

DC power supply input ➜ Page F-8

DC power supply input ➜ Page F-8

DC power supply input ➜ Page F-9

DC power supply input ➜ Page F-9

Network-Compatible Products Overview

EtherCAT

ModBUS (RTU)

CC-LINK, MECHATROLINK

Network Converters
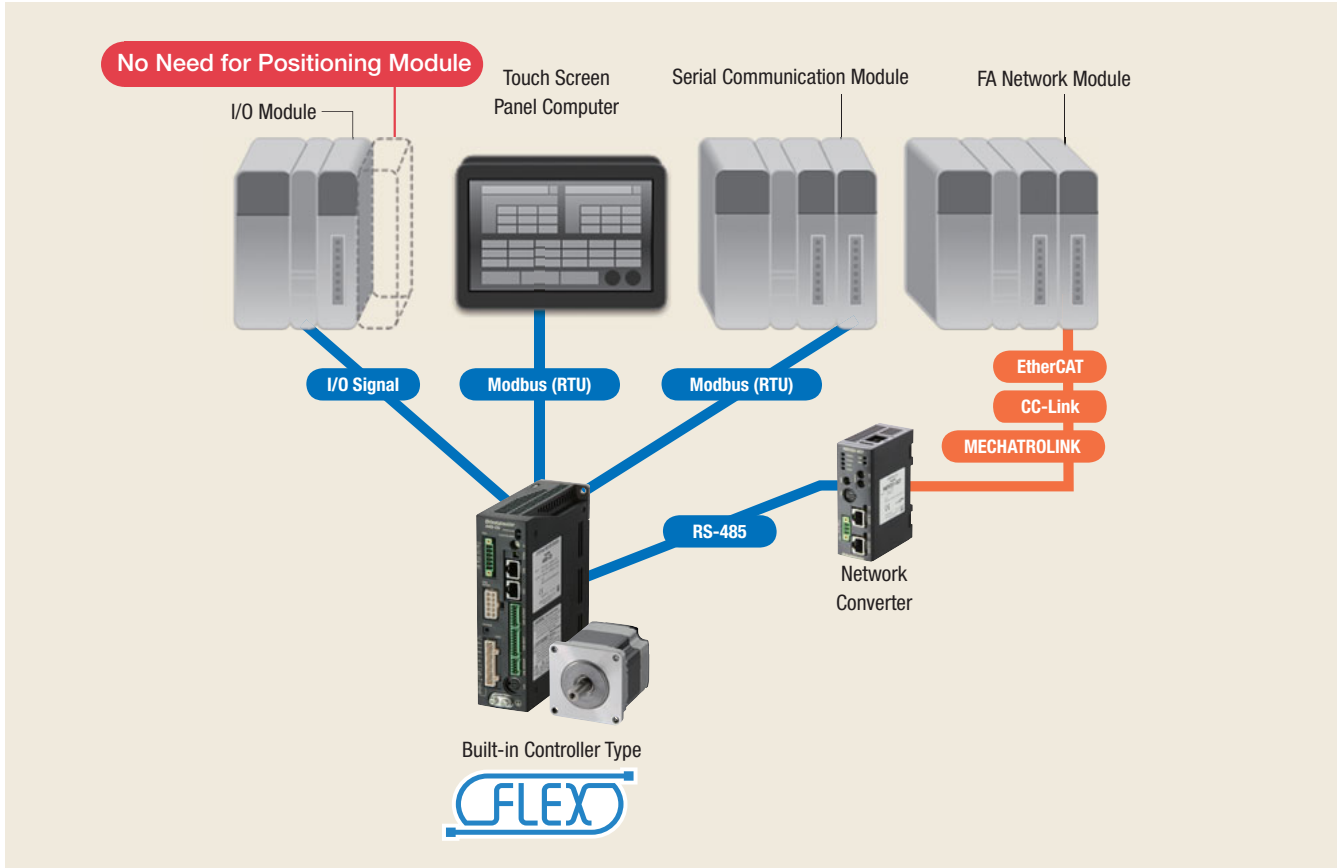
Controller Overview

SCX11

CAD Data Manuals **www.orientalmotor.eu** **Contact TEL** Germany/Others: 00800 22 55 66 22 | UK/Ireland: 01256-347090
France: 01 47 86 97 50 | Italy: 02-93906346 | Switzerland: 056 560 5045

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■Equipped with Industrial Network Communications for Various Host Systems

FLEX is the collective name for industrial network communication products that support I/O control, Modbus (RTU) control, and FA network control via network converters.
These products enable simple connection and simple control, shortening the total lead time for system construction.

No Need for Positioning Module

I/O Module

Touch Screen
Panel Computer

Serial Communication Module

FA Network Module

I/O Signal

Modbus (RTU)

Modbus (RTU)

EtherCAT

CC-Link

MECHATROLINK

RS-485

Network
Converter

Built-in Controller Type

FLEX

● **Advantages of FLEX Products**

FLEX, which has a degree of freedom for selecting various industrial communication systems, not only realizes various design ideas, but also reduces labor and costs.

Simple Wiring

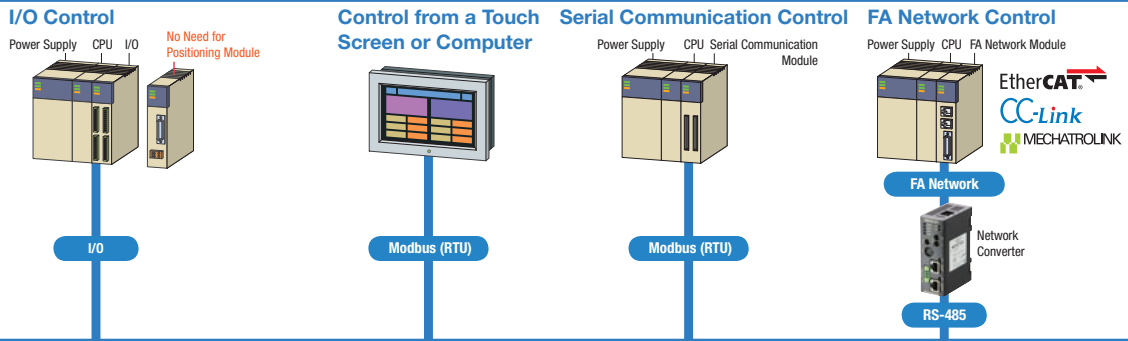Labor Saving

Time Saving

Low Cost

● **Recommendation of System Configuration by FLEX for Each Interface**
● Use of the Switch
● Use of the I/O Unit of PLC
● Use of the Touchscreen
● Use of the Serial Communication Unit of PLC
● Use of the Touch-Screen Panel Computer and the PC
● Use of the FA Network Unit

FLEX Solution

FLEX means simple control, simple connection, and lower costs.

Costs are reduced through parts selection and equipment design.
The FLEX-compatible products recommended by Oriental Motor allow for total cost reduction, including host systems such as a PLC.

I/O Control
Power Supply CPU I/O No Need for Positioning Module

I/O

Control from a Touch Screen or Computer

Modbus (RTU)

Serial Communication Control
Power Supply CPU Serial Communication Module

Modbus (RTU)

FA Network Control
Power Supply CPU FA Network Module

EtherCAT
CC-Link
MECHATROLINK

FA Network

Network Converter

RS-485

FLEX-Compatible Products (FLEX)

Position Control

Stepper Motors

Stepper Motors αSTEP
AR Series   AZ Series

0.72° Stepper Motors
RKII Series   CRK Series

Linear & Rotary Actuators

Electric Linear Slides
EAS Series   EZS Series

Electric Cylinders
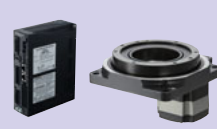EAC Series

Compact Linear Actuators
DRS2 Series   DRLII Series

Hollow Rotary Actuators
DGII Series

● Control System Configuration for Each Built-in Controller Type

① Control via I/O

The positioning module (pulse generator) function is built into the driver, so an operation system using I/O can be configured by connecting directly to a switch box or PLC. A positioning module is not necessary on the PLC side, saving space and simplifying the system.
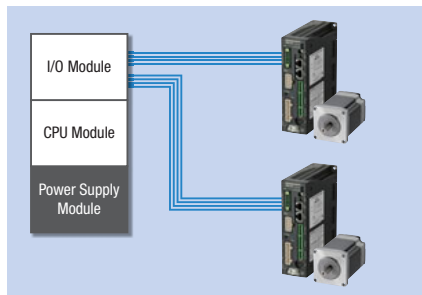
● Example of Using a Switch Box

STR - STOP
CCW - CW
STR - STOP
CCW - CW
Switch Box
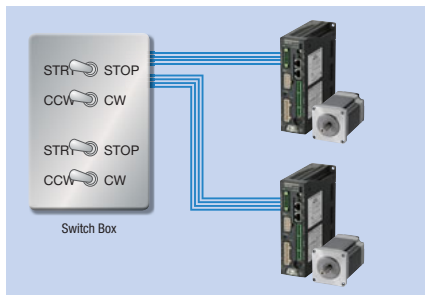
Operating data is set in the driver, and the motor can be started or stopped simply by connecting to the switch at hand. Control can be performed easily without using PLC.

Easy Control   Low-Cost Design

● Example of Using PLC

I/O Module
CPU Module
Power Supply Module

When using PLC, an operation system can be configured by connecting directly to an I/O module. A positioning module is not necessary on the PLC side, so space is saved and the system is simplified.

Easy Control   Low-Cost Design
Space Saving

● Example of Using PLC and a Touch Screen

Touch Screen
I/O Module
CPU Module
Power Supply Module
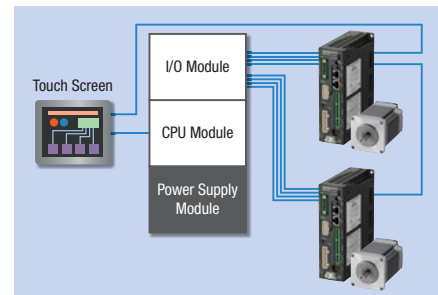
Normally, the motor is started and stopped with I/O. Changing the operating data settings and displaying the monitors and alarms are performed with the touch screen using Modbus (RTU) communication. When there is a lot of setup work, changes can be easily made on the touch screen, which reduces the burden of creating ladders.

Easy Control   Support for Small Lots of Multiple Products

② Control via Modbus (RTU)/RS-485 Communication

RS-485 communication can be used to set operating data and parameters, as well as input operation commands. Up to 31 drivers can be connected to 1 serial communication module. There is a function that enables multiple shafts to be started simultaneously. The Modbus (RTU) protocol is supported and can be used to connect to touch screen and computer.

Easy Control   Simple Wiring   Supports Brands of Serial Module
Motor Controlled by a Computer   Simplified System

③ Control via FA Network

By using a network converter (sold separately), CC-link, MECHATROLINK or EtherCAT communication are possible. All of these can be used to set operating data and parameters, as well as input operation commands.

Easy Control   Simple Wiring
Multi-Axis Control at Low Cost