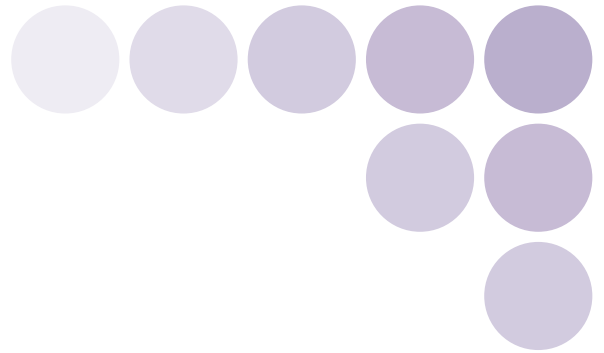


Open Network for High-Speed Control

# CompoNet

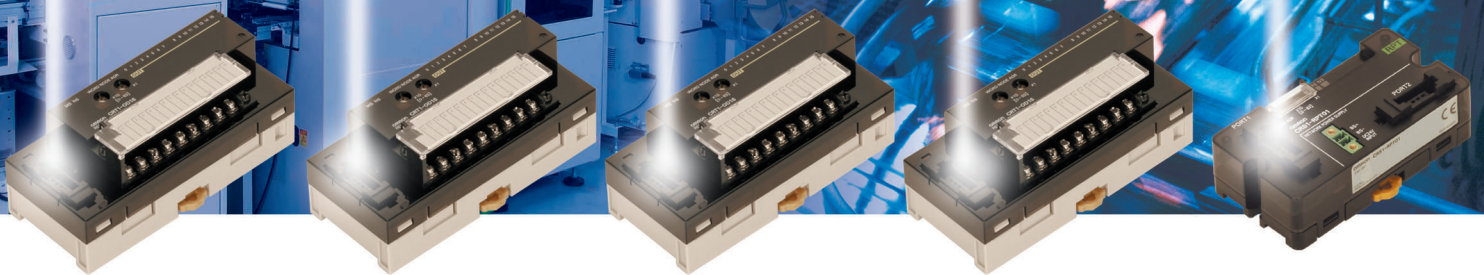
- CompoNet Master Unit  
CS1W-CRM21/CJ1W-CRM21
- CompoNet Slave Unit  
CRT1 Series
- CompoNet Repeater Unit  
CRS1 Series



Fast and  
Intelligent



# CompoNet™







# New Lineup



**Unconventional!  
Super thin!**

- Thinnest slaves in the industry.
- Fit in small spaces in panels or devices.
- Attachable with DIN Track or screws.

Actual Size

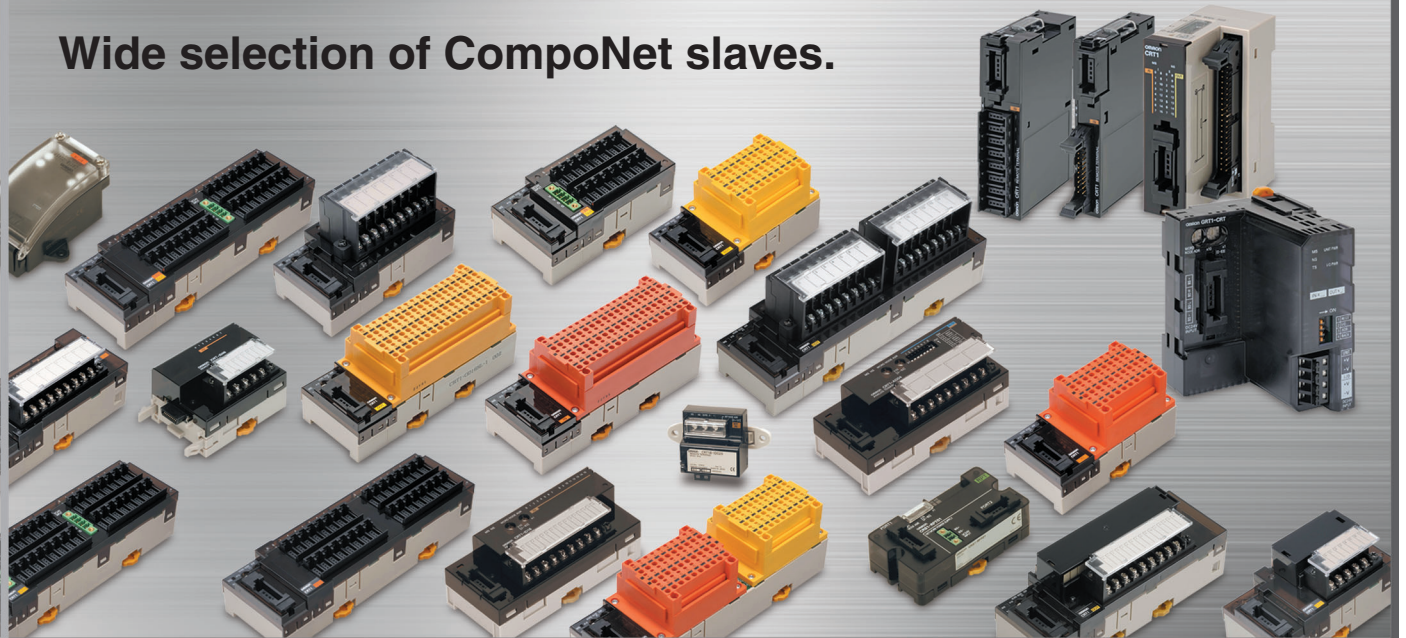
15 mm

CompoNet Digital I/O  
Slaves 16 points with MIL  
Connector

New

- CRT1-VID16ML/VOD16ML(-1)

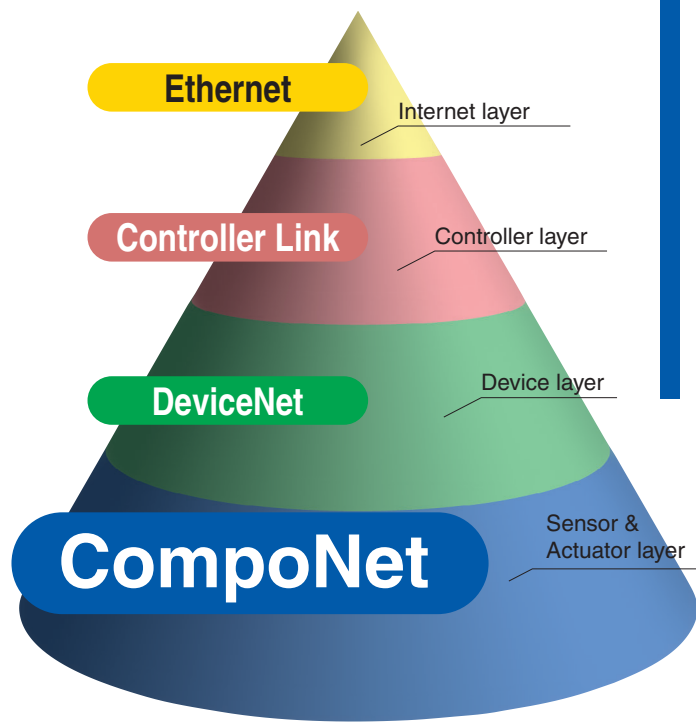
Wide selection of CompoNet slaves.





# A new global standard for smarter control networking

## What is CompoNet?



By combining OMRON's application experience with proven CIP communications technology, CompoNet provides an efficient networking solution for smart sensors, actuators and remote I/O. Fast I/O data exchange and easy setup are combined with transparent messaging for access to intelligent field devices.

Seamless CIP messaging through multiple layers of networks means you can access intelligent field devices from anywhere in your control system, and without having to program communications code in your controller.

Using CompoNet as the control network shortens your development time, reduces wiring, and simplifies troubleshooting and machine maintenance. All to help you build the best machines in less time.

### What is CIP?

CIP (Common Industrial Protocol) was developed as a communications protocol for industrial applications. Initially used in DeviceNet on CAN networks, it is now an open standard operating on several different physical layers.

The main advantage of CIP is its seamless data transfer between different layers of CIP networks. Whether transferring cyclic I/O data, configuration settings or downloading control programs, you will not have to worry which device is connected where.

Therefore you can freely choose the best CIP network for each part of your system, and mix them any way you want.

## CompoNet is an ODVA network

The CIP communications standard, as used in the EtherNet/IP™, DeviceNet™ and CompoNet™ networks, is controlled by the ODVA, the Open DeviceNet Vendors Association. With nearly 300 member companies worldwide developing a wide variety of products, the ODVA promotes the advantages of seamless networking, and makes sure that products adhere to the standard for easy interconnection between vendors. OMRON, as one of the four founding members of the ODVA, plays a leading role in developing future technologies for industrial networking.

**Note:** CompoNet and DeviceNet are registered trademarks of the ODVA.

ODVA Website: <http://www.odva.org/>



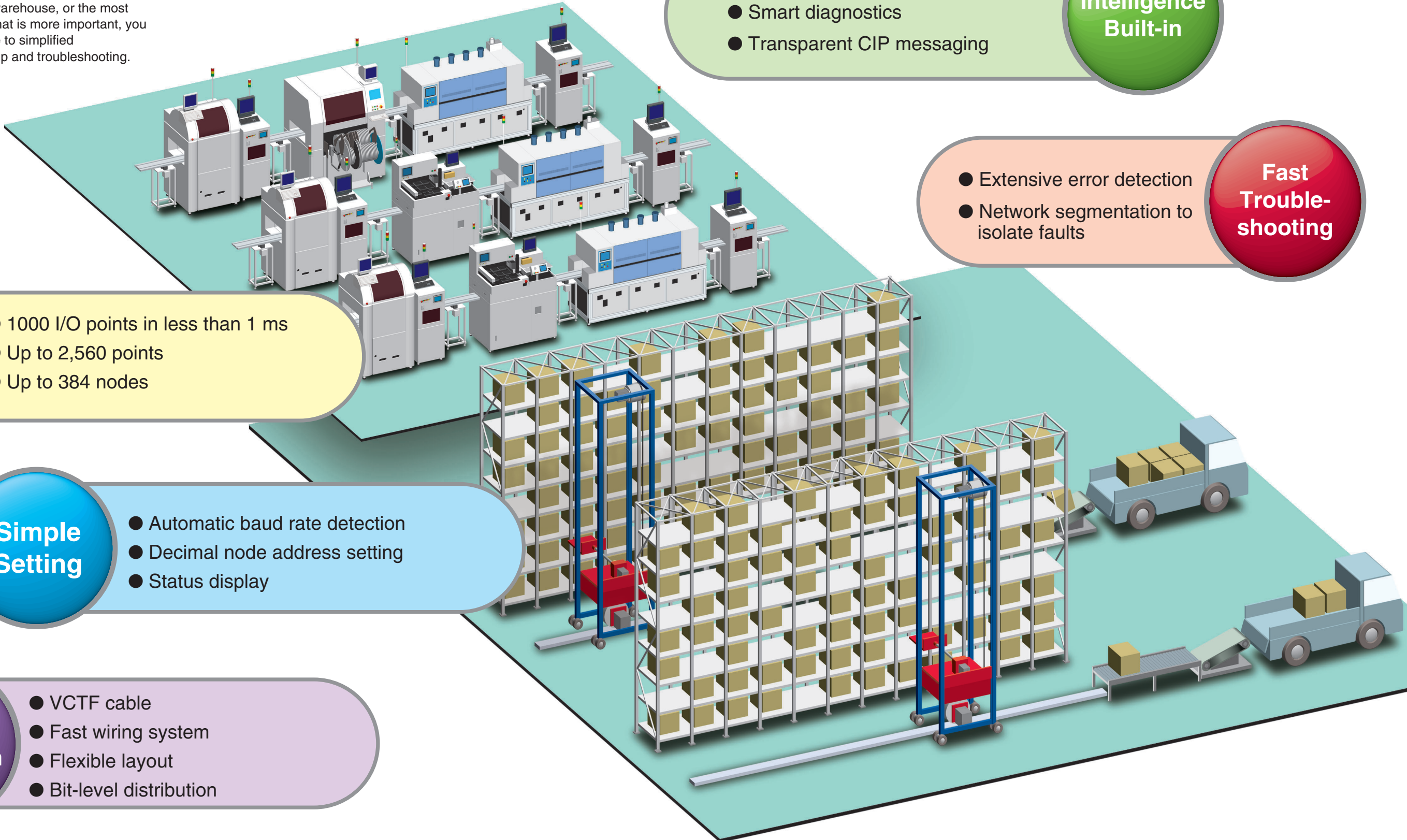
## INDEX

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# CompoNet - Achieve more with less effort.

Conventional networks are either fast, but simple limited-capacity buses for control, or complex information-exchange systems for configuration and monitoring. CompoNet, however, offers the ideal mix of high speed, ample capacity, and ease-of-use needed to let you build the best machine, the smartest warehouse, or the most flexible conveyor system. And what is more important, you can achieve this in less time, due to simplified programming, wiring, device setup and troubleshooting.



**High Performance**

- 1000 I/O points in less than 1 ms
- Up to 2,560 points
- Up to 384 nodes

**Simple Setting**

- Automatic baud rate detection
- Decimal node address setting
- Status display

**Easy Installation**

- VCTF cable
- Fast wiring system
- Flexible layout
- Bit-level distribution

**Intelligence Built-in**

- Preventive maintenance data
- Smart diagnostics
- Transparent CIP messaging

**Fast Troubleshooting**

- Extensive error detection
- Network segmentation to isolate faults



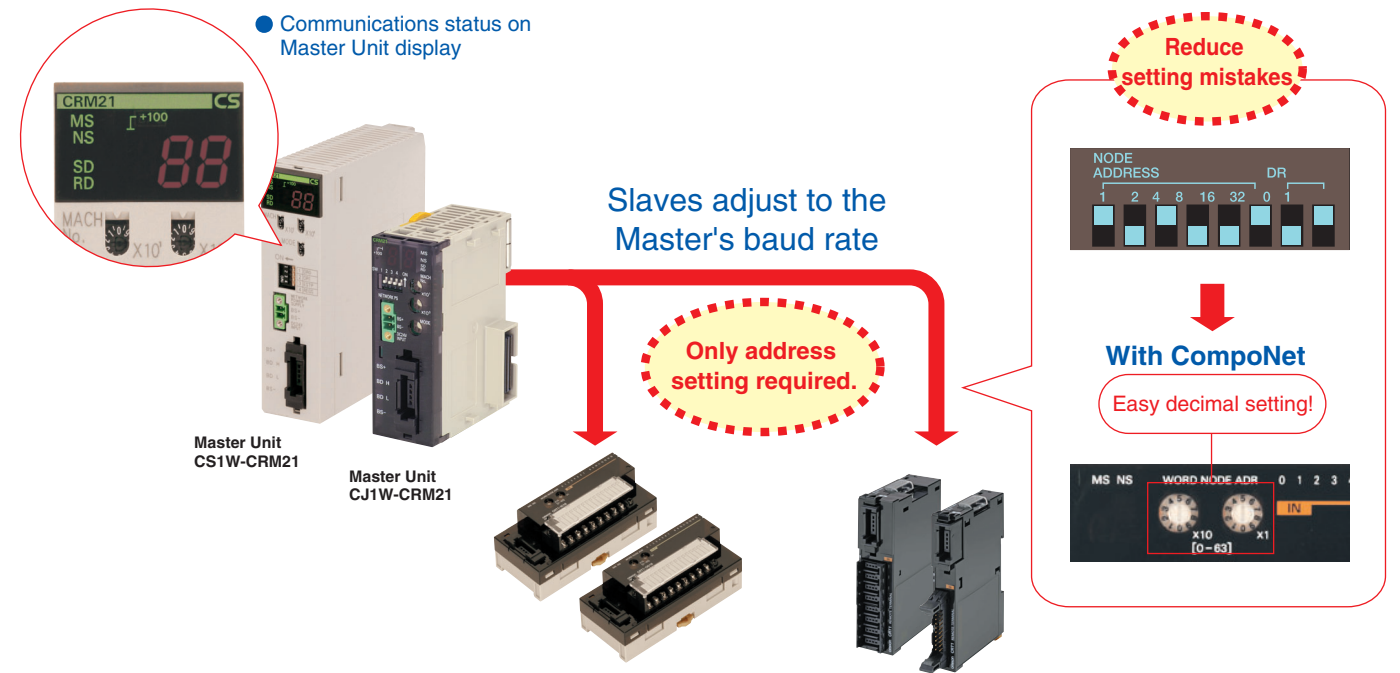
# CompoNet enhances machine performance!

● In electronic parts production, every millisecond counts



## Simple Setting

CompoNet is up and running in minutes. Set the master's mode and baud rate, and the address on each slave. Then plug in and go; no software settings required.



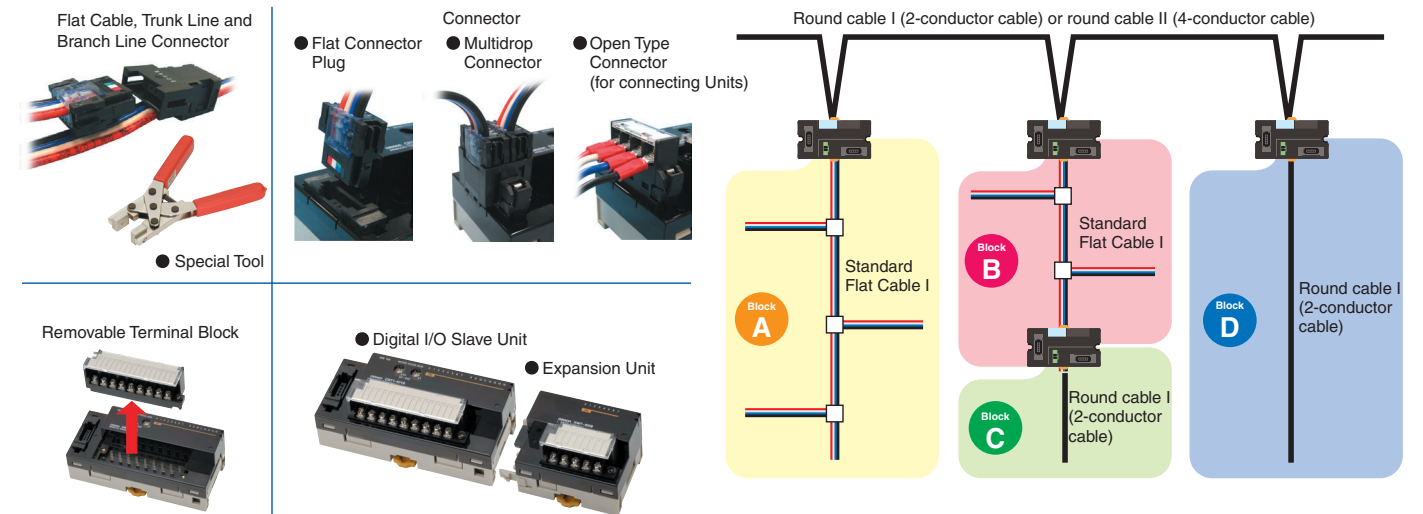
## Easy Installation

CompoNet flat cable and isolation-displacement connectors make installation fast and faultless. Power and communications are combined in one cable.

Branch connectors allow you to easily add or remove devices for maintenance and troubleshooting.

Repeater Units can link sections of different cable types, allowing mixed topology networks.

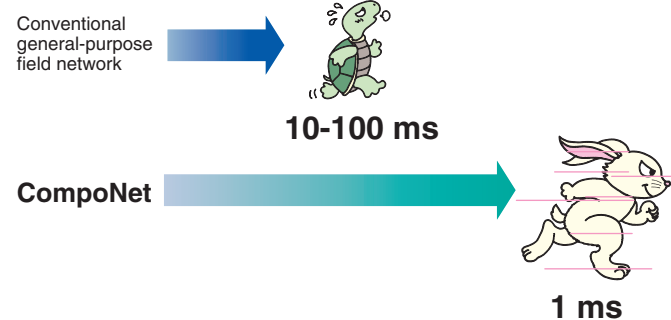
● Alternatively, you can use simple twisted-pair cable and power each node individually.



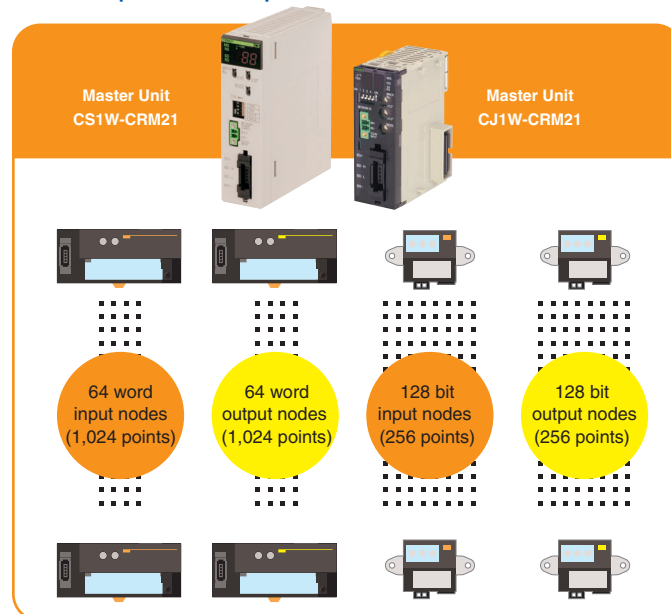
## High Performance, Large Capacity

Splitting production machines into logical modules allows easy customization to meet specific end-user demands.

To keep high performance, a fast and easy-to-extend network is required. The efficiency of CompoNet delivers fast cycle times, even when extending the network with repeaters.



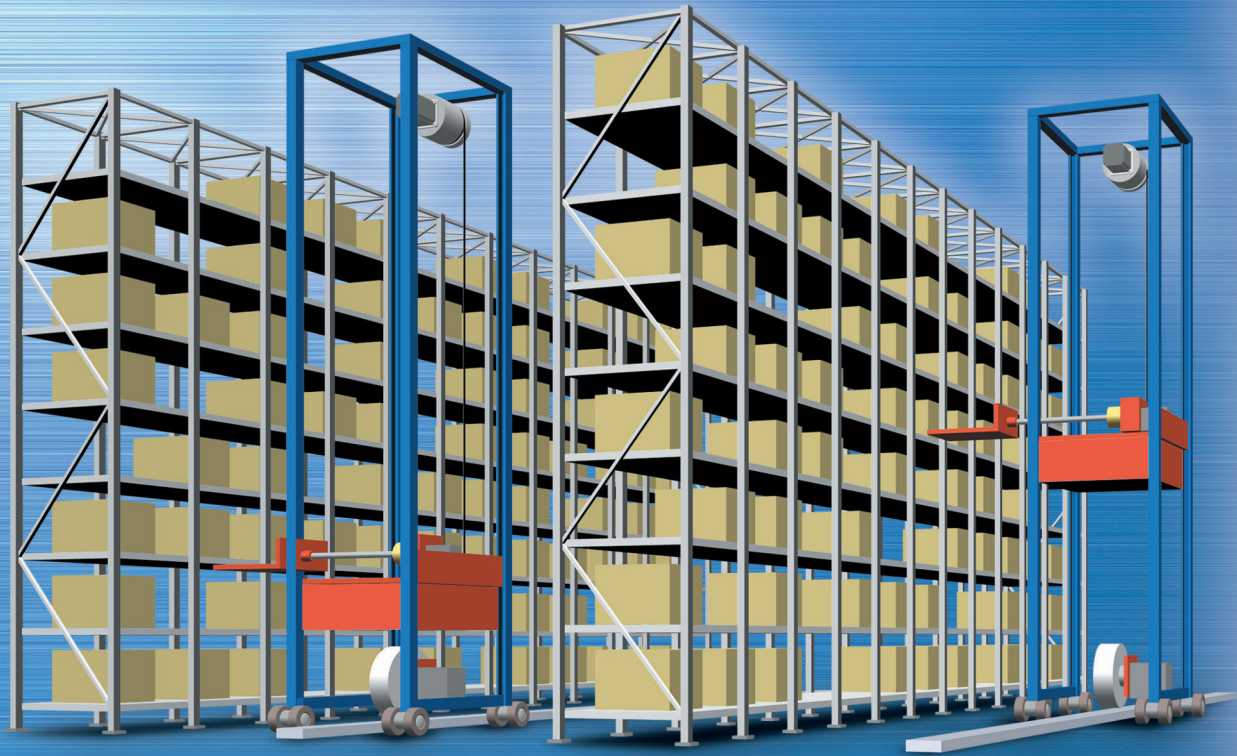
● Each Master Unit can control up to 2,560 I/O points in up to 384 nodes.





# CompoNet helps you decrease engineering!

● In warehouse automation, efficient wiring saves cost

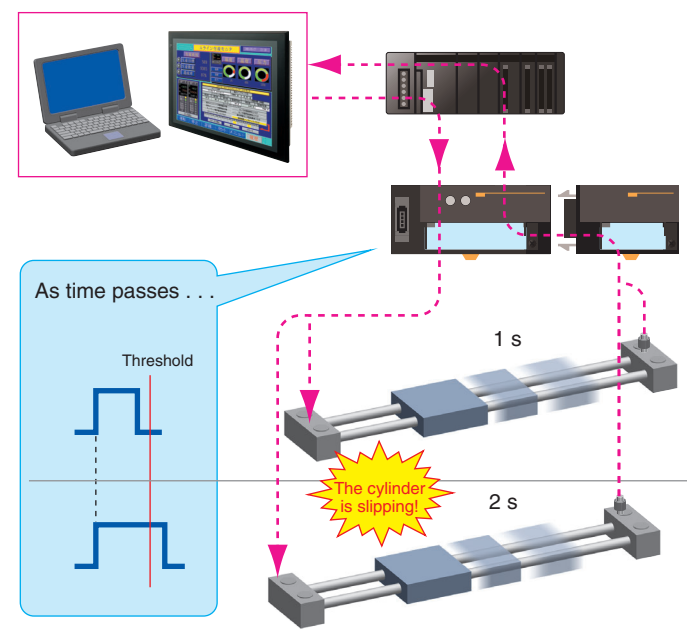
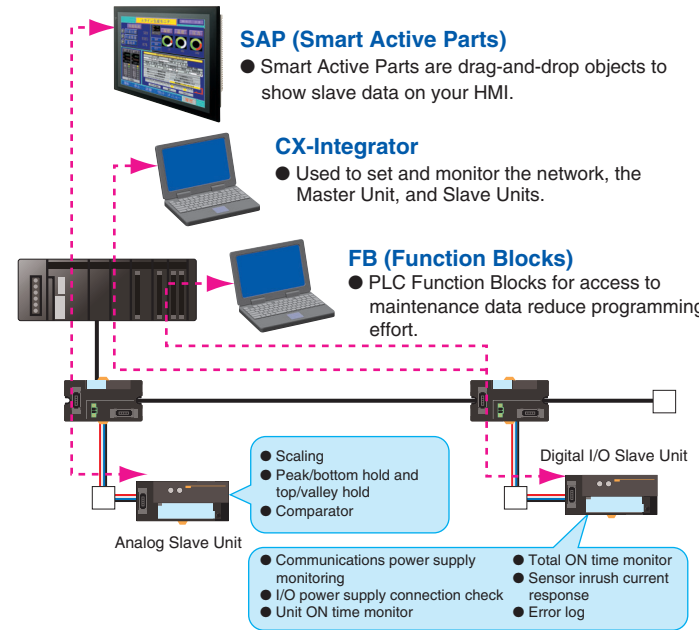


## Intelligence Built-in

All CompoNet slaves contain early-warning systems that monitor system performance continuously. The transparent CIP communications of CompoNet makes it easy to access the diagnostic data in each device.

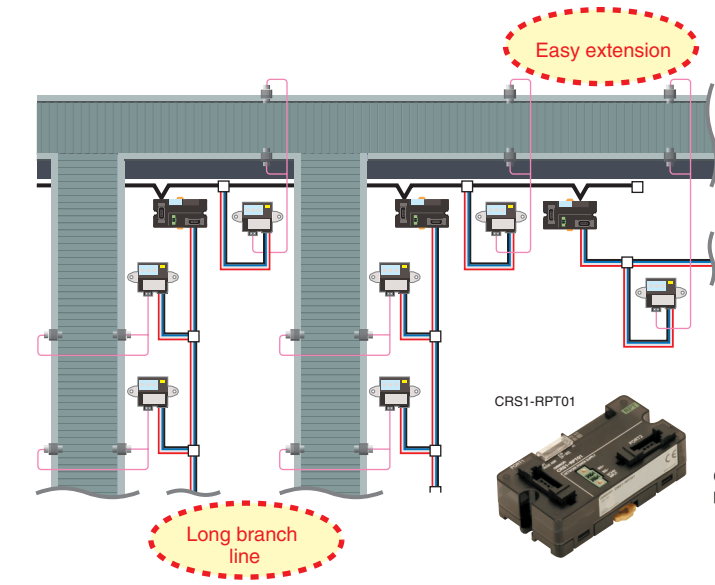
### Smart Features

- Set limit values in each slave to detect reduced machine performance before breakdown.



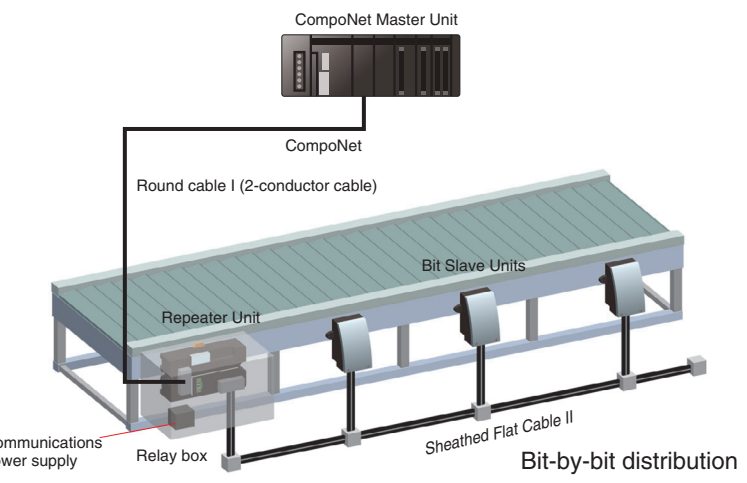
## Flexible Installation

- Using CompoNet flat cable and repeaters allows easy extensions and changes in network layout. By using repeaters, long branch lines can cover a wide area with less cable.



## Bit-level Distribution

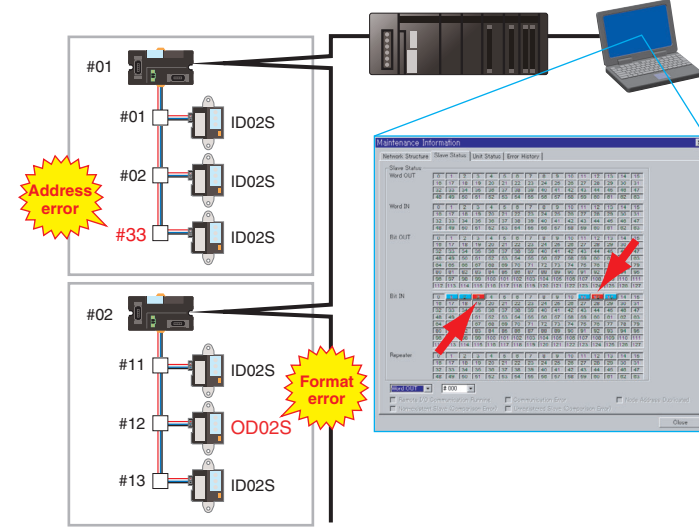
- Mount them wherever you need them. Conveyor lines require just one or two I/O points every few meters. Dust- and splash-proof IP54 bit slaves allow efficient installation with reduced cabling, directly on the line.



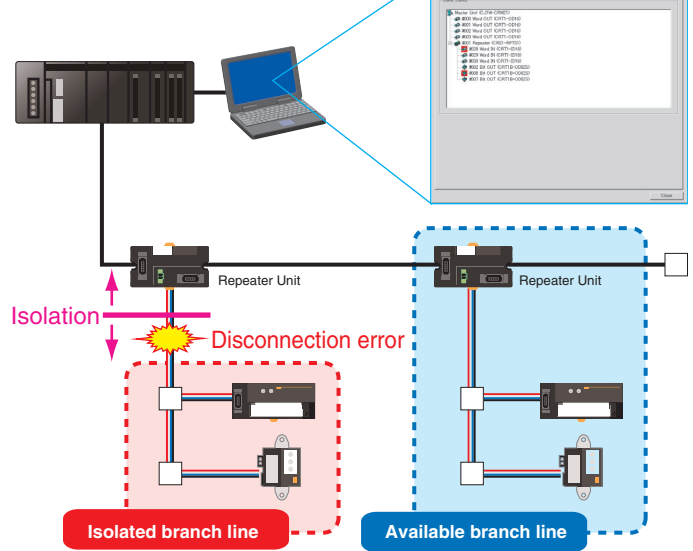
## Fast Troubleshooting

Indication on the Master Unit helps to quickly assess the network status. The CX-Integrator helps you identify wiring errors, power failures or malfunction. By creating network segments separated by repeaters, faults can be isolated to reduce the impact on overall operation.

### Extensive Error Detection



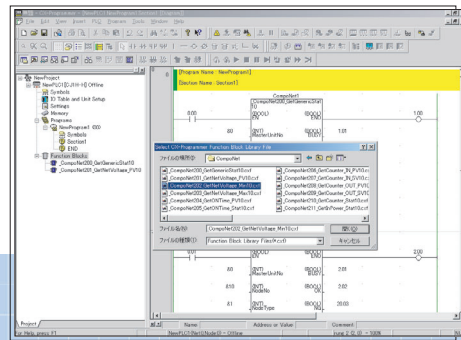
### Network Isolation





# The open CompoNet system is prepared for the future.

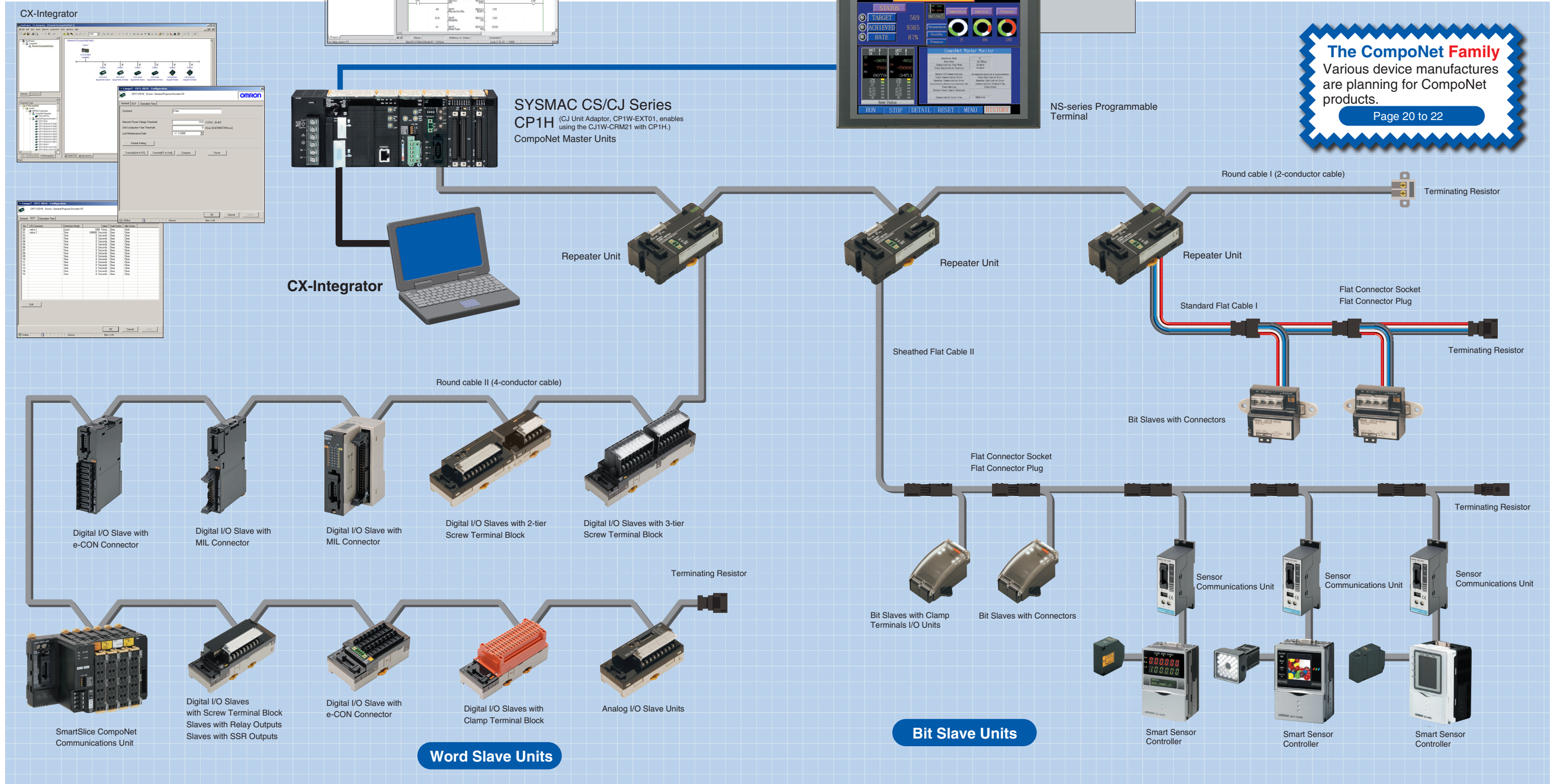
Supported by the members of the ODVA worldwide, CompoNet allows you to select the best devices for your application. OMRON's technology and the ODVA's certification will assure plug-and-play operation between devices from different vendors.



**Function Block Library**  
The function block library is a collection of functional objects for Programmable Controllers (PLCs). The function blocks provided by OMRON can be incorporated into user programming to reduce design work and increase standardization and quality of control device interfaces.



**Smart Active Parts Library**  
The SAP library is a collection of screen parts for Programmable Terminals. The parts provided by OMRON can be incorporated into user-created screens to reduce design work and increase standardization and quality for control device interfaces.  
SAP (Smart Active Parts)  
<http://www.omron.com/>

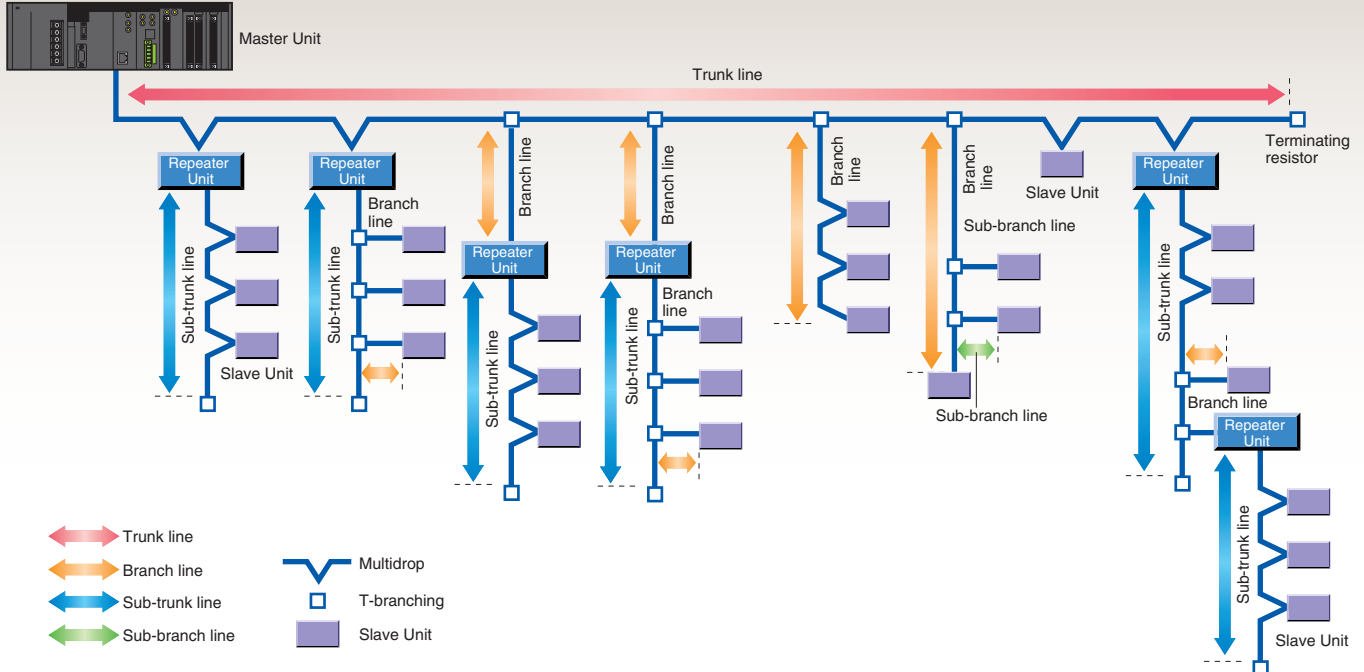




# CompoNet Network Specifications

## Cable Types, Baud Rates, and Maximum Distances

This section provides specifications on the maximum cable length and maximum number of nodes for each type of cable. Do not exceed these specifications.



### Restrictions (at Baud Rate of 4 Mbits/s (No Branch Lines))

Cable type	Maximum length per segment (maximum length with Repeater Units)	Branch line length per segment	Total branch line length per segment	Branch location restrictions	Maximum number of Slave Units per segment (See note 2.)
Round cable I	30 m (90 m)	0 m (See note 1.)	0 m (See note 1.)	---	32 nodes
Flat cable I, flat cable II, and round cable II	30 m (90 m)	0 m (See note 1.)	0 m (See note 1.)	---	32 nodes

Note 1: T-branches cannot be connected (only multidrop connections are possible).

2: Number of nodes including Repeater Units

### Restrictions (at Baud Rate of 3 Mbits/s)

Cable type	Maximum length per segment (maximum length with Repeater Units)	Branch line length per segment	Total branch line length per segment	Branch location restrictions	Maximum number of nodes per branch (See note 1.)	Sub-branch line length per segment	Total sub-branch line length per segment	Maximum number of Slave Units per segment (See note 2.)
Round cable I	30 m (90 m)	0.5 m	8 m	3 branches/m	1 node	0 m	0 m	32 nodes
Flat cable I, flat cable II, and round cable II	30 m (90 m)	0.5 m	8 m	3 branches/m	1 node	0 m	0 m	32 nodes

Note 1: The maximum number of nodes per branch is the maximum number of Slave Units or Repeater Units that can be connected to one branch line using multidrop or T-branch connections (sub-branches).

2: Number of nodes including Repeater Units

### Restrictions (at Baud Rate of 1.5 Mbits/s)

Cable type	Maximum length per segment (maximum length with Repeater Units)	Branch line length per segment	Total branch line length per segment	Branch location restrictions	Maximum number of nodes per branch (See note 1.)	Sub-branch line length per segment	Total sub-branch line length per segment	Maximum number of Slave Units per segment (See note 2.)
Round cable I	Without branches	0 m (See note 3.)	0 m (See note 3.)	---	---	---	---	32 nodes
	With branches	30 m (90 m)	2.5 m	3 branches/m	3 nodes	0 m	0 m	32 nodes
Flat cable I, flat cable II, and round cable II	30 m (90 m)	2.5 m	25 m	3 branches/m	3 nodes	0.1 m (See note 4.)	2 m (See note 4.)	32 nodes

Note 1: The maximum number of nodes per branch is the maximum number of Slave Units or Repeater Units that can be connected to one branch line using multidrop or T-branch connections (sub-branches).

2: Number of nodes including Repeater Units

3: T-branches cannot be connected (only multidrop connections are possible).

4: T-branch connections from sub-branch lines.

### Restrictions (at Baud Rate of 93.75 kbits/s)

Cable type	Maximum length per segment (maximum length with Repeater Units)	Branch line length per segment	Total branch line length per segment	Branch location restrictions	Maximum number of nodes per branch (See note 1.)	Sub-branch line length per segment	Total sub-branch line length per segment	Maximum number of Slave Units per segment (See note 2.)
Round cable I	500 m (1500 m)	6 m	120 m	3 branches/m	1 node	---	---	32 nodes
Flat cable I, flat cable II, and round cable II	No restrictions to a total length per segment of 200 m							32 nodes

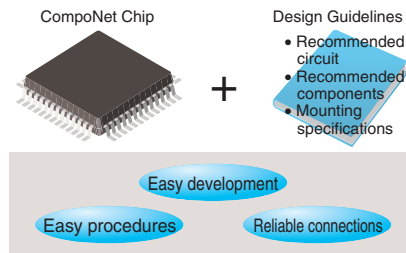
Note 1: The maximum number of nodes per branch is the maximum number of Slave Units or Repeater Units that can be connected to one branch line using multidrop or T-branch connections (sub-branches).

2: Number of nodes including Repeater Units

# CompoNet Open-network Information

## OMRON actively promotes open networks.

OMRON sells CompoNet-compatible ASICs and MPUs while providing development support with a specialized team. Adopting this open network effectively reduces development costs and shortens development time by simplifying the development of CompoNet devices. The following two types of CompoNet slaves are available to match the characteristics of the device to be developed.



Bit Slave Units	Thirty-two or fewer I/O For bit-level ON/OFF control I/O port interface
Word Slave Units	Interface for 256 points User-set messages can be sent and received. DPRAM I/F
Masters	Communications for 1,280 inputs and 1,280 outputs User-set messages can be sent and received. DPRAM I/F

Refer to the following for inquiries regarding open networks.

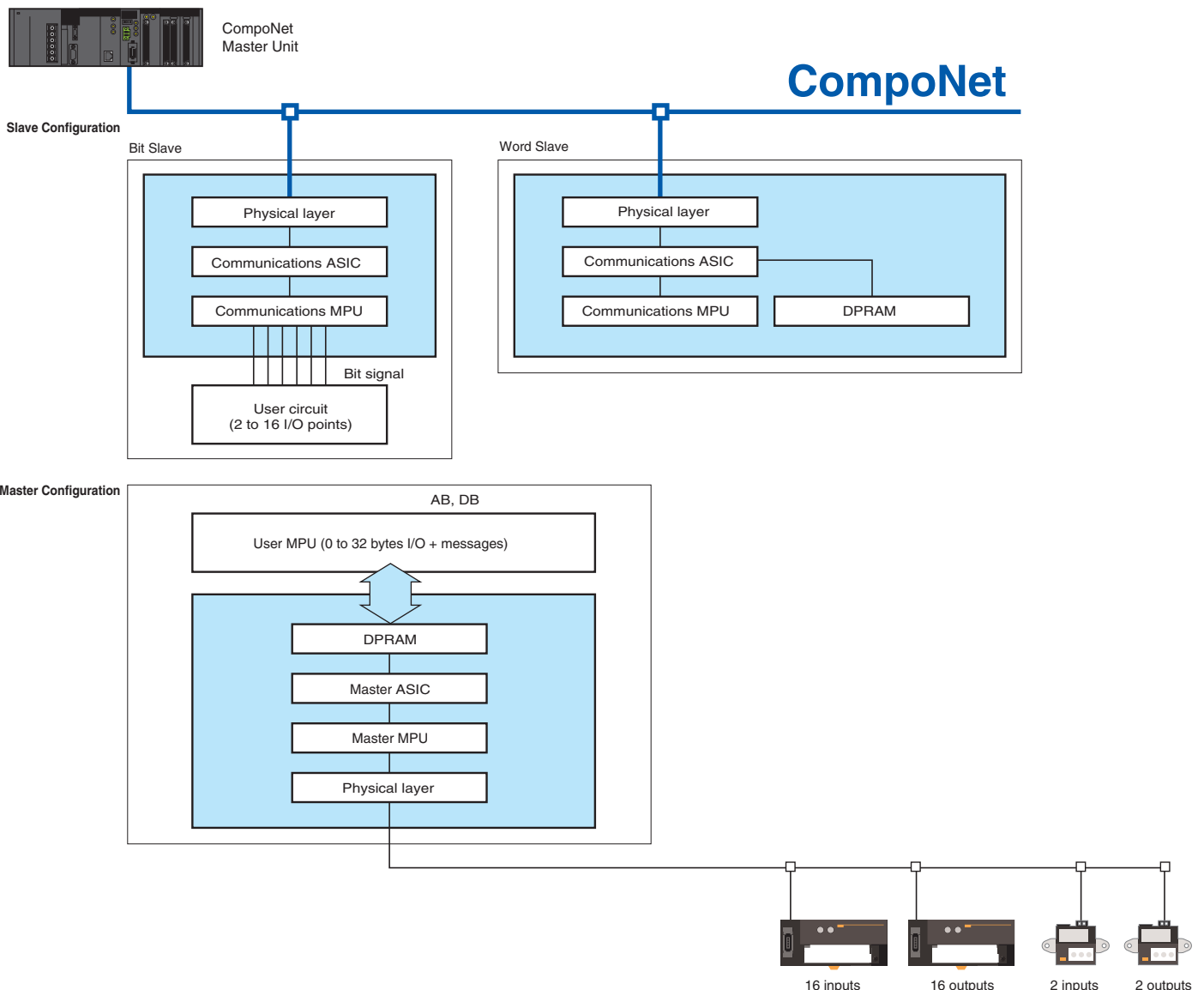
Technology Development Center Headquarters, Integration Strategy & Business Development Center,  
Telephone: +81-77-565-5315, Email: open\_integration@omron.co.jp

The latest information is available on the following site.

<http://www.omron.com/>

From the home page, select *Products Index - FA System Devices - Open Technology*

### ● Range of Open Technology





### Master Units

#### ■ Master Units



CJ Series  
CJ1W-CRM21

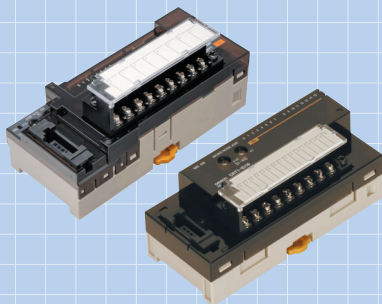


CS Series  
CS1W-CRM21

### Word Slaves

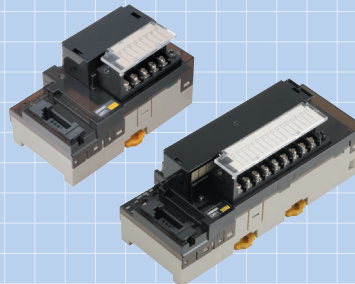
#### Digital I/O Slaves

#### ■ Two-tier Screw Terminal Block



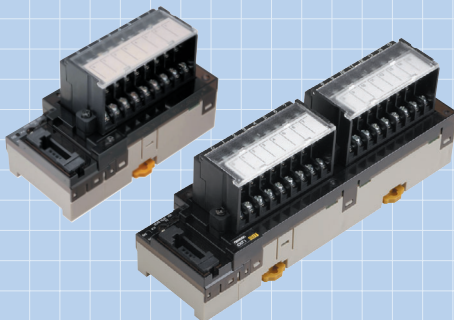
- Input Units  
CRT1-ID08(-1) **NEW**  
CRT1-ID16(-1)
- Output Units  
CRT1-OD08(-1) **NEW**  
CRT1-OD16(-1)
- I/O Units  
CRT1-MD16(-1) **NEW**

#### ■ Screw Terminal Block and Relay Outputs or SSR Outputs



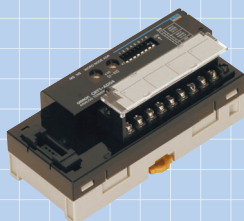
- Relay Outputs  
CRT1-ROS08 **NEW**  
CRT1-ROS16
- SSR Outputs  
CRT1-ROF08 **NEW**  
CRT1-ROF16

#### ■ Three-tier Screw Terminal Block



- Input Units  
CRT1-ID08TA(-1) **NEW**  
CRT1-ID08TAH(-1) **NEW**  
CRT1-ID16TA(-1)  
CRT1-ID16TAH(-1) **NEW**
- Output Units  
CRT1-OD08TA(-1) **NEW**  
CRT1-OD08TAH(-1) **NEW**  
CRT1-OD16TA(-1)  
CRT1-OD16TAH(-1) **NEW**
- I/O Units  
CRT1-MD16TA(-1) **NEW**  
CRT1-MD16TAH(-1) **NEW**

#### Analog I/O Slaves



- Analog Input Unit  
CRT1-AD04
- Analog Output Unit  
CRT1-DA02

#### Expansion Units



- Input Units  
XWT-ID08(-1)  
XWT-ID16(-1)
- Output Units  
XWT-OD08(-1)  
XWT-OD16(-1)

## Word Slaves

### Digital I/O Slaves

#### Vertical Slaves with e-CON Connectors



CRT1-VID08S(-1) **NEW**  
 CRT1-VOD08S(-1) **NEW**

#### Vertical Slaves with MIL Connectors



CRT1-VID16ML(-1) **NEW**  
 CRT1-VOD16ML(-1) **NEW**



CRT1-VID32ML(-1) **NEW**  
 CRT1-VOD32ML(-1) **NEW**  
 CRT1-VMD32ML(-1) **NEW**

#### Horizontal Slaves with e-CON Connectors



##### ● Input Units

- CRT1-ID16S(-1)
- CRT1-ID16SH(-1) **NEW**
- CRT1-ID32S(-1) **NEW**
- CRT1-ID32SH(-1) **NEW**

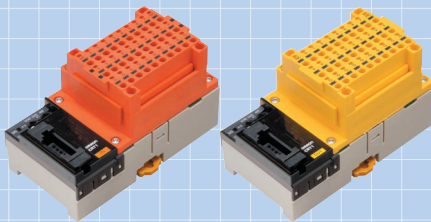
##### ● I/O Units

- CRT1-MD16S(-1)
- CRT1-MD16SH(-1) **NEW**
- CRT1-MD32S(-1) **NEW**
- CRT1-MD32SH(-1) **NEW**

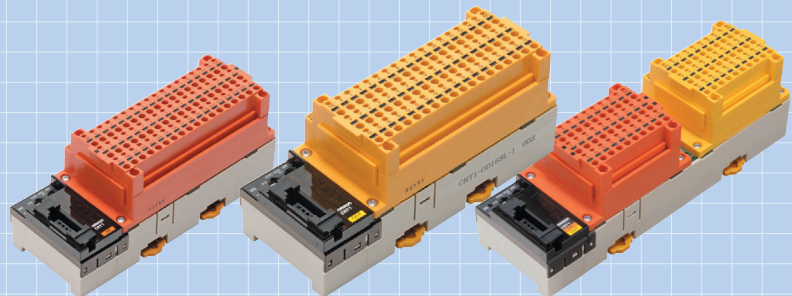
##### ● Output Units

- CRT1-OD16S(-1)
- CRT1-OD16SH(-1) **NEW**
- CRT1-OD32S(-1) **NEW**
- CRT1-OD32SH(-1) **NEW**

#### Horizontal Slaves with Clamp Terminal Blocks



CRT1-ID08SL(-1) **NEW**  
 CRT1-OD08SL(-1) **NEW**



CRT1-ID16SL(-1)  
 CRT1-OD16SL(-1)

CRT1-MD16SL(-1) **NEW**

### SmartSlice GRT1 Series

#### CompoNet Communications Unit



GRT1-CRT

#### SmartSlice I/O Units



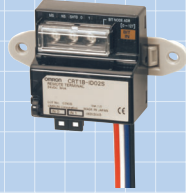
GRT1-ID4(-1)  
 GRT1-OD4(-1)  
 GRT1-ROS2  
 GRT1-AD2  
 GRT1-DA2C  
 GRT1-DA2V  
 GRT1-TS2P  
 GRT1-CT1(-1)



### Bit Slaves

#### Bit Slave with Connectors

- IP20 Input Units with Connectors  
CRT1B-ID02S(-1)  
IP20 Output Units with Connectors  
CRT1B-OD02S(-1)



- IP54 Input Units with Connectors  
CRT1B-ID02SP(-1)  
CRT1B-ID04SP(-1)  
IP54 Output Units with Connectors  
CRT1B-OD02SP(-1)



#### Bit Slaves with Clamps

- IP54 I/O Units with Clamps  
CRT1B-MD04SLP(-1)



### Repeater Unit

- Repeater Unit



CRS1-RPT01

### Peripheral Devices

With CompoNet, connectors can be attached to communications cables and Units to connect to Units and branch or extend cables. The communications cable connection and branching methods depend on the type of cable and the type of branch.

- There are three types of cable used with CompoNet.

- Round Cable I (VCTF 2-conductor cable), Commercially Available
- Standard Flat Cable I: DCA4-4F10
- Sheathed Flat Cable II: DCA5-4F10

- The terminating resistors, connectors, and tools depend on the type of cable.

#### Round cable I (2-conductor cable)

Commercially available

- Open Type Connector (for connecting Units)  
DCN4-TB4



- Terminating Resistor  
DRS1-T



#### Round cable I (4-conductor cable)

Commercially available

- Open Type Connector (for connecting Units)  
DCN4-TB4



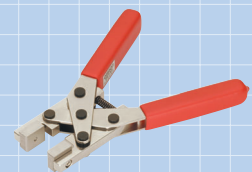
- Terminating Resistor  
DCN4-TM4



- Flat Connector Socket  
DCN4-TR4



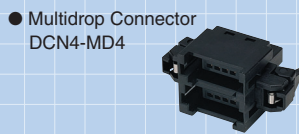
- Special Tool for Standard Flat Cable I  
DWT-A01



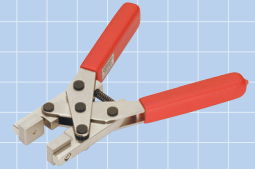
Standard Flat Cable I



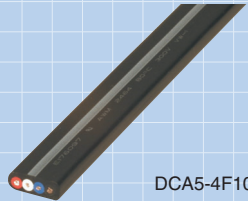
DCA4-4F10



- Special Tool for Standard Flat Cable I DWT-A01



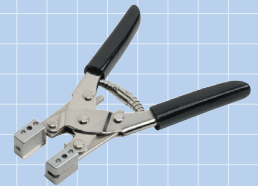
Sheathed Flat Cable II



DCA5-4F10

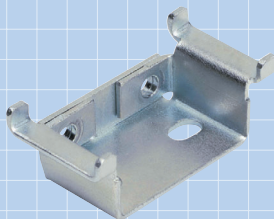


- Special Tool for Sheathed Flat Cable II DWT-A02



Optional Products

■ Attachment Bracket



CRT1-ATT01  
For Digital I/O Slaves - 16 points  
with MIL connector  
CRT1-VID16ML/VOD16ML(-1)



CRT1-ATT02  
For Digital I/O Slaves - 8 points  
with e-CON connector  
CRT1-VID08S/VOD08S(-1)



## Koganei Corporation

Overseas sales areas:  
Europe, North America, Asia-Pacific



+81-42-383-7271 [www.koganei.co.jp](http://www.koganei.co.jp)

CompoNet-compatible Solenoid Valves: JA Series

### Features

1. Thin and Compact: Valve width of only 10 mm with effective area of 3.5 mm<sup>2</sup>.
2. Lower power consumption.  
Standard: 0.5 W Low current type: 0.25 W
3. Two 3-port valves in one body.

CompoNet-compatible Solenoid Valves: F Series

### Features

1. Single/double dual-use valves.
2. Three of valve widths: 10, 15 and 18 mm
3. Uses dual-use fittings for different tube sizes.

## IAI Corporation

Overseas sales areas:  
Europe, North America, China, Asia-Pacific



<http://www.intelligentactuator.com/>

Controller for RCA Series  
**ROBO CYLINDER:**  
ACON-C/CG

### Features

1. Designed for 24 VDC servomotors.
2. Multipoint positioning: up to 512 points.
3. High speed: Up to 800 mm/s.

Available soon

Controller for RCP2 Series  
**ROBO CYLINDER:**  
PCON-C/CG

### Features

1. Designed for 24 VDC pulse motors.
2. Multipoint positioning: up to 512 points.
3. High power in lower speed range.

Available soon

## PATLITE Corporation

Overseas sales areas:  
Europe, North America, China, Asia-Pacific



+81-72-948-8110 [www.patlite.co.jp](http://www.patlite.co.jp)

CompoNet Supported  
**Signal Tower:**  
LE-K3(B)P/W-RYG

### Features

1. Use of ultra-bright LED enhanced for illumination.
2. Two selectable sound patterns with adjustable volume.

CompoNet Supported  
**Wall-Mount Signal Tower:**  
WEP-K3(B)-RYG

### Features

1. A 37.5 mm-thin design that significantly enhances integration with equipment as a built-in signal system.
2. Clear vertical cut lens enhanced for illumination over a wide perspective.
3. Built-in audible alarm.

Available soon

## JSK Co., Ltd.



+81-72-661-4071 [www.nihon-seigyo.co.jp](http://www.nihon-seigyo.co.jp)

Componet-serial  
**Transducer:**  
CHU-001

### Features

1. Connects to bar-code readers.
2. Allows setting from CompoNet master.
3. Supplies power to bar-code reader.

Available soon



 [www.3M.com/interconnects](http://www.3M.com/interconnects)

**Mini-Clamp Connector:**  
3710x-xxxx-000 FL

**Features**

1. IDC technology reduces process/cost of wire termination.
2. Crimped using standard pliers to reduce tool costs.
3. Design offers multiple gauges and wire size diameters.

# Tyco Electronics AMP K.K



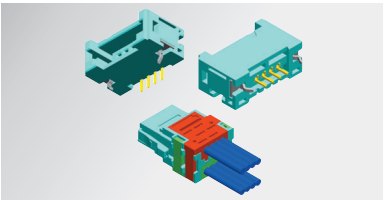
 +81-44-844-8080  [www.tycoelectronics.com](http://www.tycoelectronics.com)

**RITS Connector (e-CON):**  
X-1473562-4

**Features**

1. New Chisel Press Contacts for sensor cables.
2. No special crimping tool required for easy termination.
3. Two contact points for good connection and more security.

# Honda Connectors, Inc



 +81-6-6376-4717  [www.honda-connectors.co.jp](http://www.honda-connectors.co.jp)

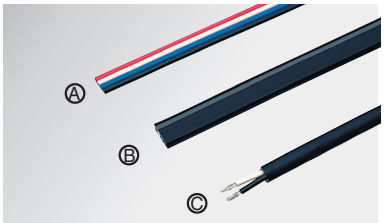
**Connector:**  
HCN-MD4SMUG( )+

**Features**

1. One piece connector.
2. Low profile.
3. The current tool can be used for assembly.

Available soon

# SWCC Showa Cable Systems Co., Ltd.



 +81-3-3597-7117  [www.swcc.co.jp/](http://www.swcc.co.jp/)

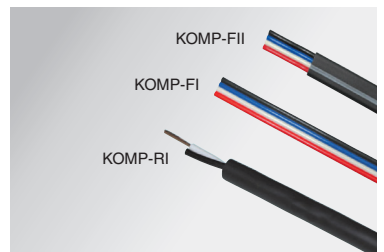
**CompoNet Cable**

**Features**

- Ⓐ TCN-F1 Flat Cable I (4-wire)
- Ⓑ TCN-F2 Flat Cable II (4-wire, with sheath)
- Ⓒ TCN-R1 Round Cable I (2-wire)

Available soon

# Kuramo Electric Co., Ltd.



 +81-778-22-1500  [www.kuramo.co.jp](http://www.kuramo.co.jp)

**KOMP Series CompoNet Flat Cable I:**  
KOMP-FI

**Features**

1. Heat resistance (90°)
2. Flame resistance (Vertical Tray Flame Test)
3. UL certification (UL13, CL2) (under development)

Available soon

**CompoNet Flat Cable II:**  
KOMP-FII

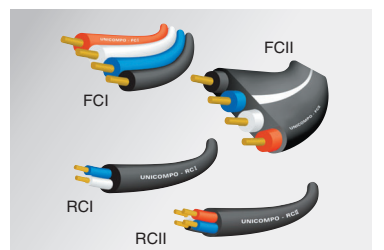
**Features**

1. Heat resistance (90°)
2. Flame resistance (Vertical Tray Flame Test)
3. Flame resistance (Vertical Tray Flame Test)
4. UL certification (UL13 PTLC, UL444 CM) (under development)

Available soon

**CompoNet Round Cable I and II:**  
KOMP-RI and KOMP-RII

# Nichigoh Communication Electric Wire Co., Ltd



 +81-72-923-5104  [www.nichigoh.co.jp](http://www.nichigoh.co.jp)

**UNICOMPO FCI (CompoNet Flat I)  
FCII (CompoNet Flat II)  
RCI (CompoNet Round I)  
RCII (CompoNet Round II)**

**Features**

1. Scheduled acquisition of CE marking and UL/Cul certification.
2. NFPA70(NEC) listing.
3. Excellent oil resistance (UNICOMPO FCII, RCI, RCII)

Under development



**Kanetsu Co., Ltd**

Overseas sales area: China



+81-75-662-0996

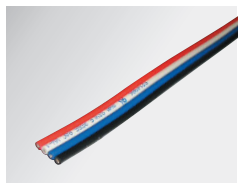


info-kanetsu@kanetsu.co.jp



www.kanetuu.co.jp

## CompoNet Flat Cable I and II



**Daiko. E.W.**  
KCNF

### Features

1. Enables using unique isolation-displacement connectors for CompoNet.
2. Easy one-step IDC connection without insulation stripping.
3. UL AWM, compliant.



**Taiyo Electric Wire & Cable Co., Ltd.**  
KCNF-J

### Features

1. Enables using unique isolation-displacement connectors for CompoNet.
2. PVC jackets with polarity guide line for IP54 system.
3. Easy one-step IDC connection without insulation stripping.
4. UL AWM, compliant.

## Oil-resistant and Highly Flexible Round Cable II for CompoNet



**Taiyo Electric Wire & Cable Co., Ltd.**  
KCNR-4

### Features

1. The cable can be used for mobile and oil-resistant wiring.
2. Insulation colors as recommended by CompoNet specification.
3. UL AWM, compliant.

Available soon

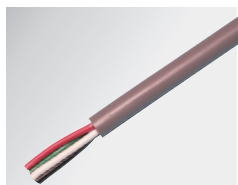


**Hanshin Electric Wire & Cable Co., Ltd.**  
MRC-4

### Features

1. The cable can be used for mobile and oil-resistant wiring.
2. Round cable for low cost installation.
3. UL AWM, CSA compliant.

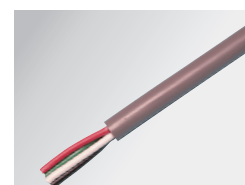
## CompoNet Round Cable I and II



**Onamba Co., Ltd**  
VCTF-2C & VCTF-4C

### Feature

Round cable for low cost installation.



**Kawai Cable, Ltd.**  
VCTF-2C & VCTF-4C

### Feature

Round cable for low cost installation.

# CompoNet Information

## The CX-One now includes the CompoNet Tool.

(Auto-updating is available from March 2008.)

The CX-Integrator allows online reading of the system configuration for PLC networks and serial communications from a personal computer. It makes monitoring network connections, parameter settings, and network diagnosis from a computer very simple.



A file converter from CompoNet Tool to CX-Integrator is available.

Please contact the OMRON sales division.

## Connectable with Round Cable II (4-conductor cable).

Officially approved by ODVA in November 2007. See page 14 for wiring restrictions.

● ODVA Website

<http://www.odva.org>

Visit ODVA's website for products that conform with CompoNet.





## Read and Understand this Catalog

Please read and understand this catalog before purchasing the products. Please consult your OMRON representative if you have any questions or comments.

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This catalog mainly provides information that is necessary for selecting suitable models, and does not contain precautions for correct use. Always read the precautions and other required information provided in product operation manuals before using the product.

- The application examples provided in this catalog are for reference only. Check functions and safety of the equipment before use.
- Never use the products for any application requiring special safety requirements, such as nuclear energy control systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, or other application involving serious risk to life or property, without ensuring that the system as a whole has been designed to address the risks, and that the OMRON products are properly rated and installed for the intended use within the overall equipment or system.

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