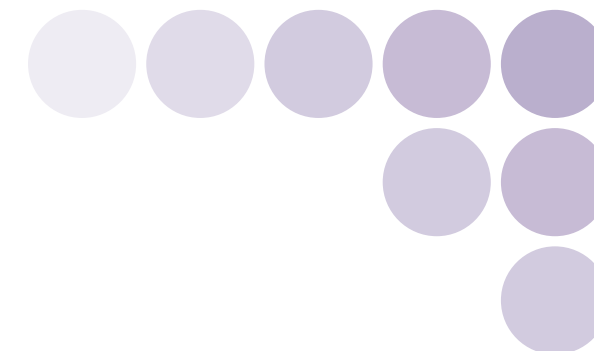


Open Network for High-Speed Control

CompoNet

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



Fast and Intelligent



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.

Note: Do not use this document to operate the Unit.

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Authorized Distributor:

In the interest of product improvement,
specifications are subject to change without notice.

Cat. No. R140-E1-04

Printed in Japan
0408 (0610)

realizing

New Lineup



**Unconventional!
Super thin!**

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

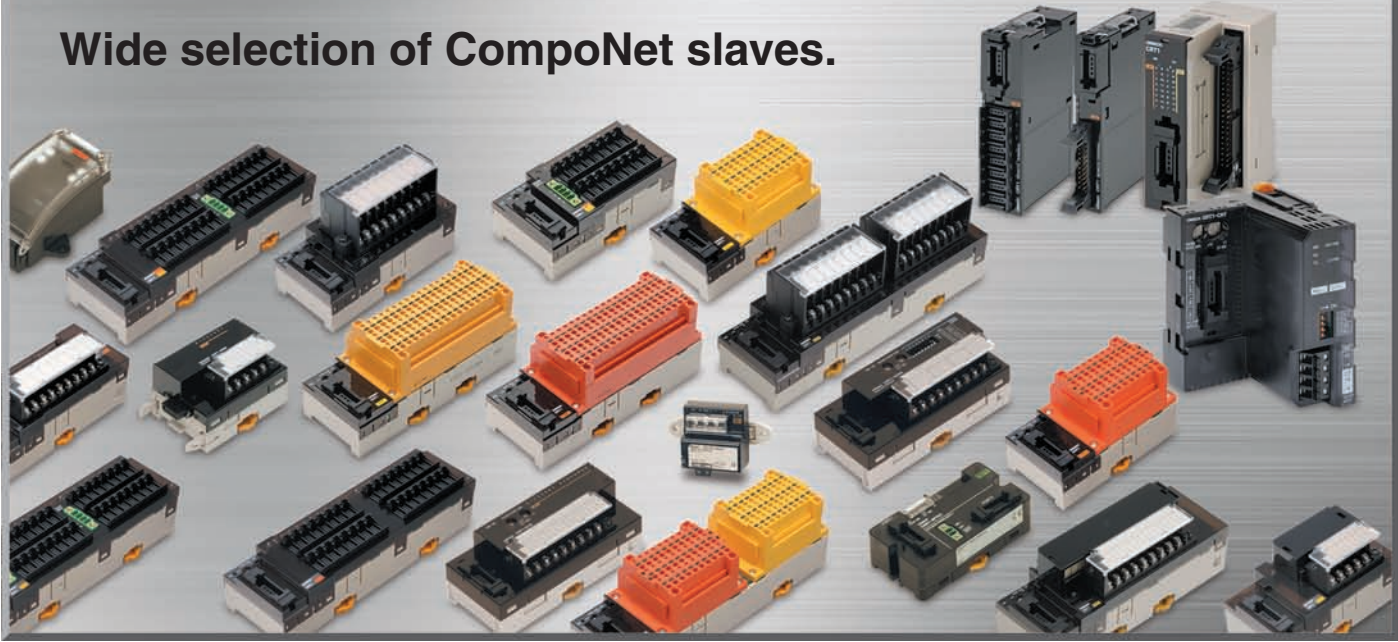
Actual Size

15 mm

CompoNet Digital I/O Slaves 16 points with MIL Connector **New** P54

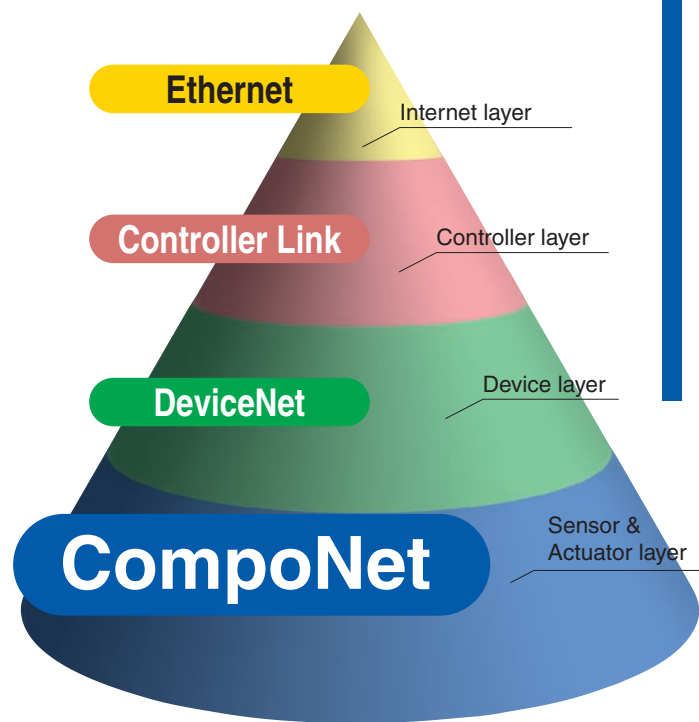
- CRT1-VID16ML/VOD16ML(-1)

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/>

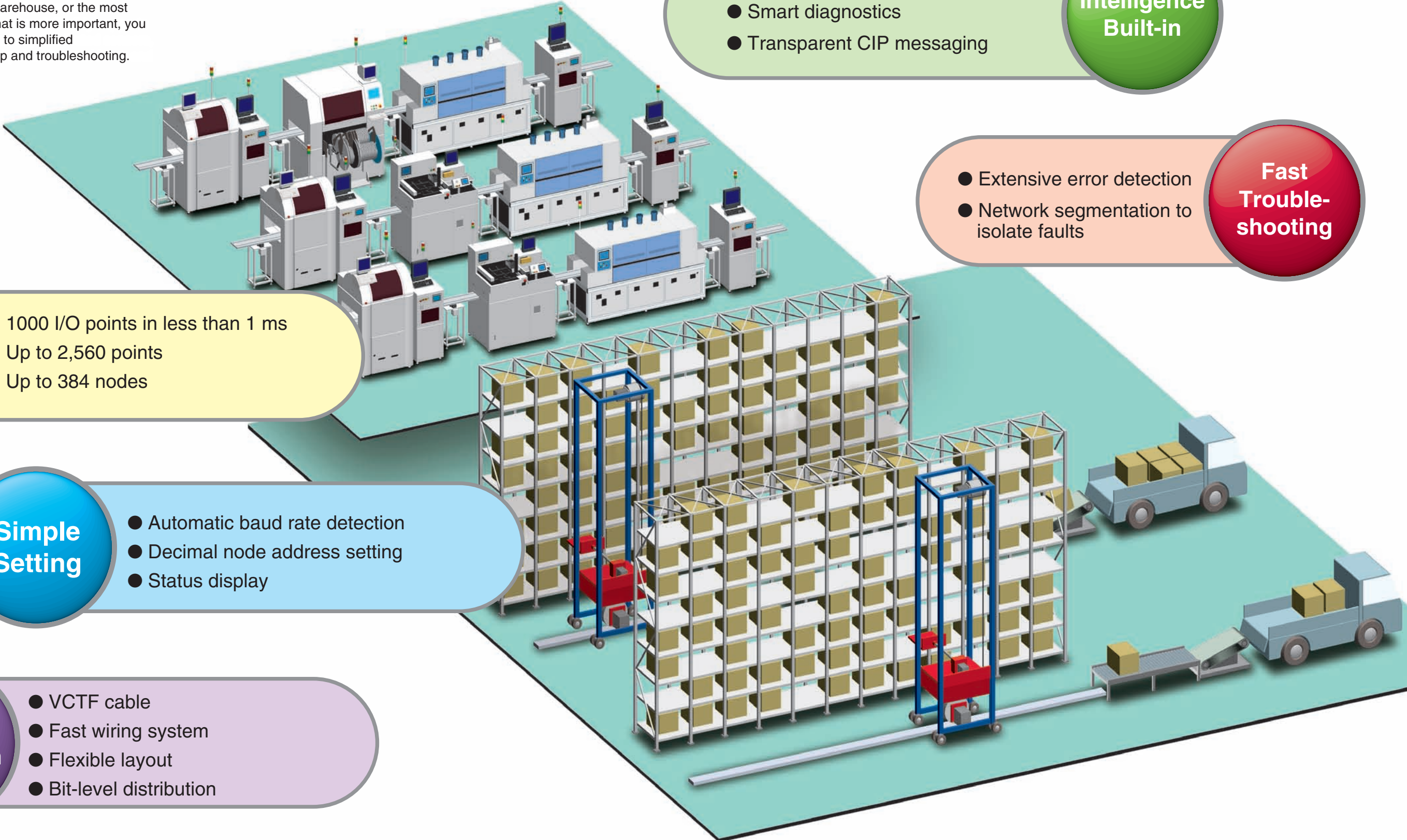


INDEX

Concept	6
CompoNet Network Specifications	14
CompoNet Open-network Information	15
CompoNet Product Introductions	16
CompoNet Family	20

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

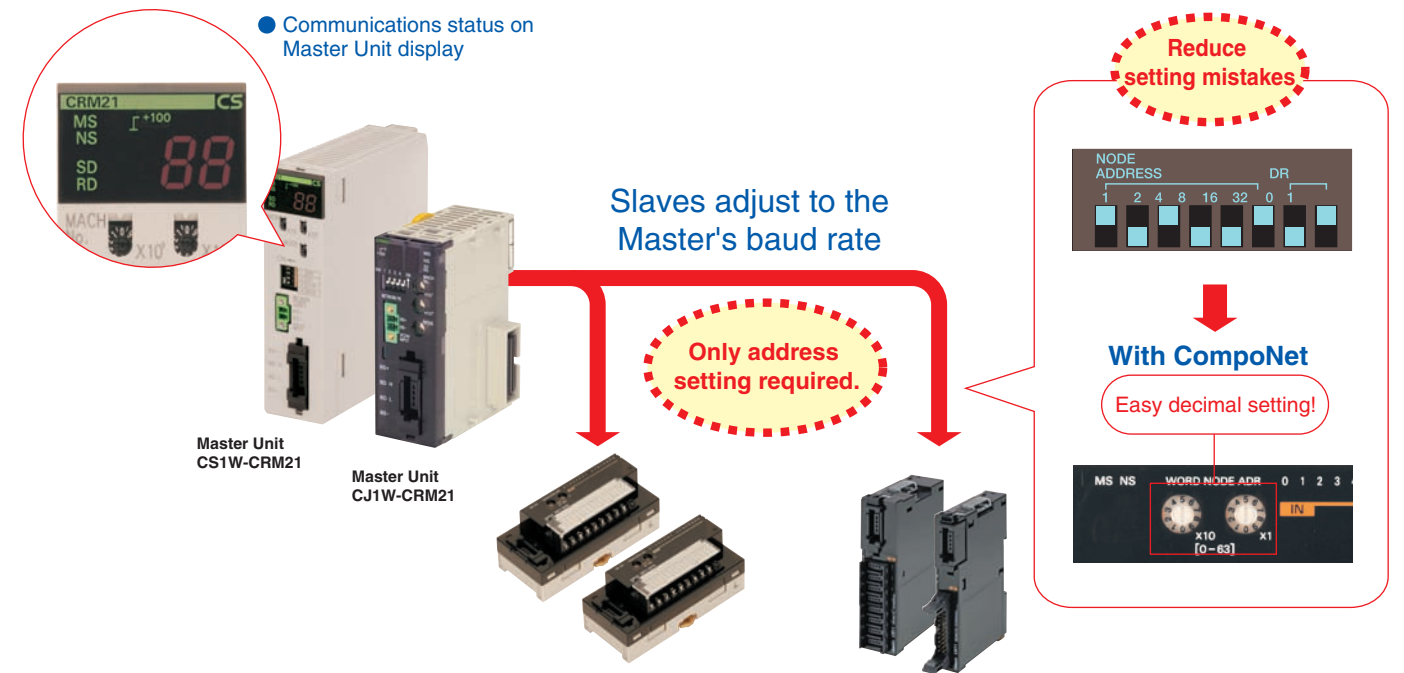
CompoNet enhances machine performance!

● 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.



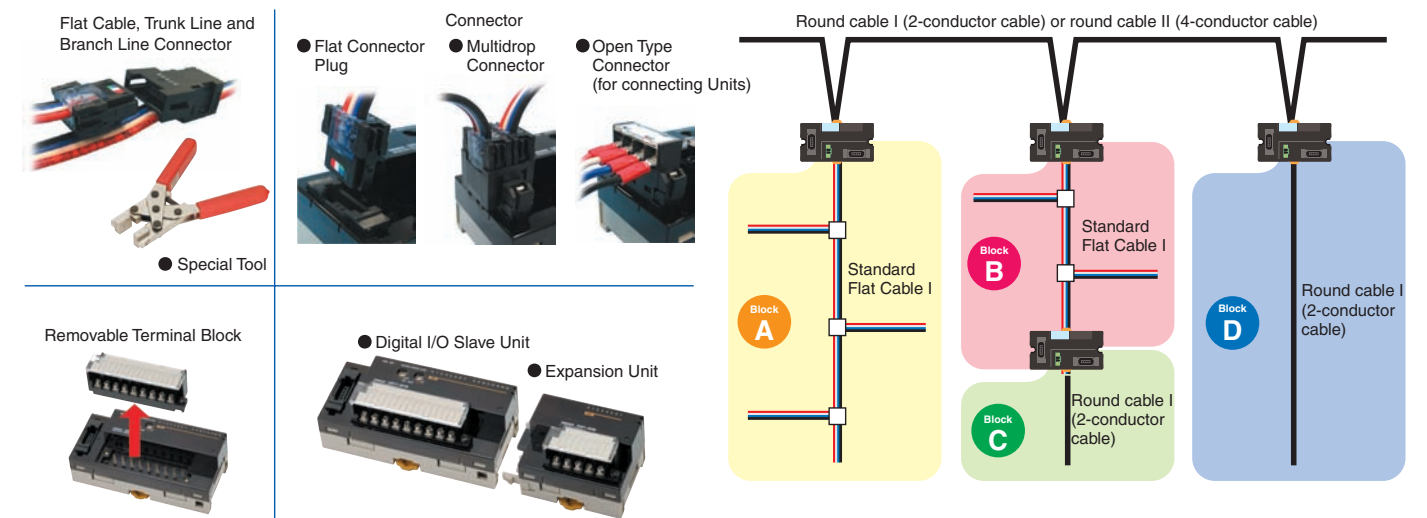
Easy Installation

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.

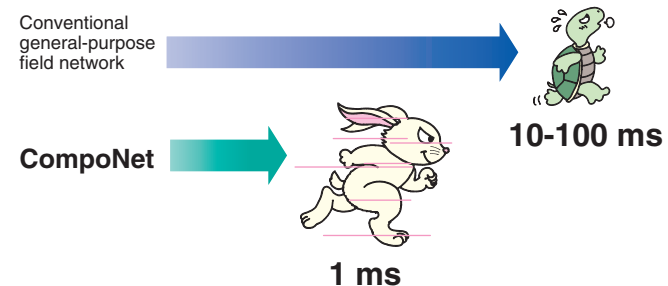
● Alternatively, you can use simple twisted-pair cable and power each node individually.



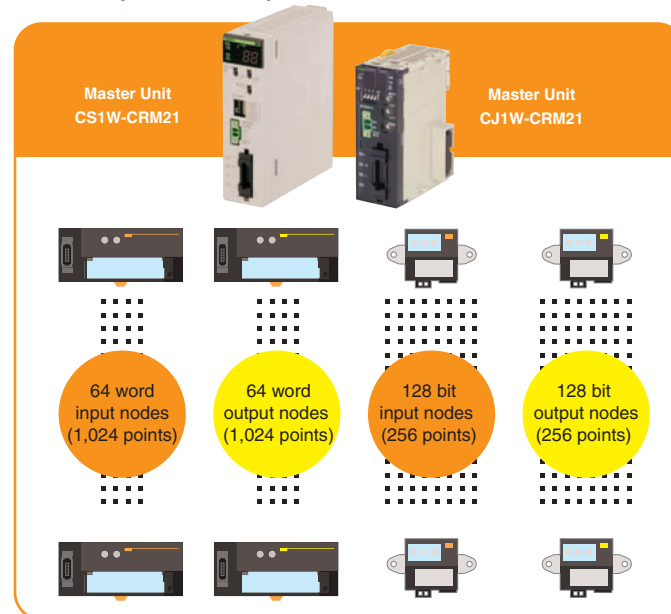
High Performance, Large Capacity

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.



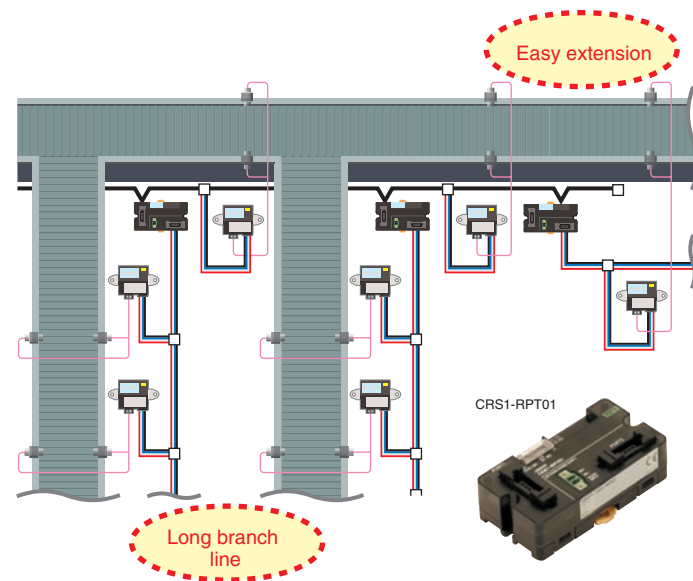
CompoNet helps you decrease engineering!

● In warehouse automation, efficient wiring saves cost



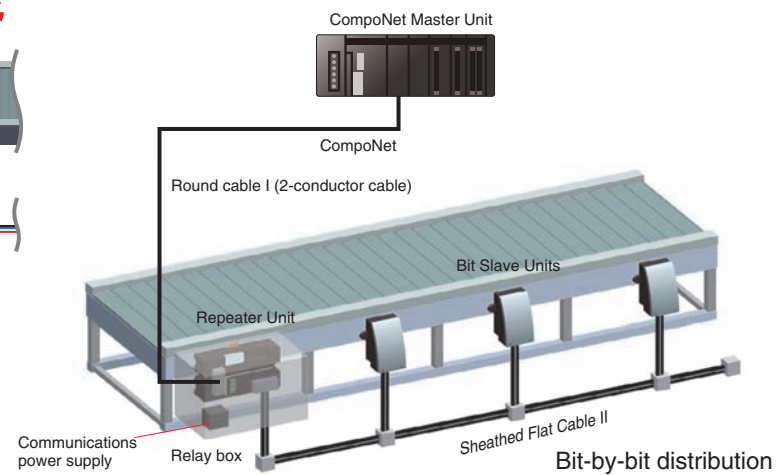
Flexible Installation

- 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.

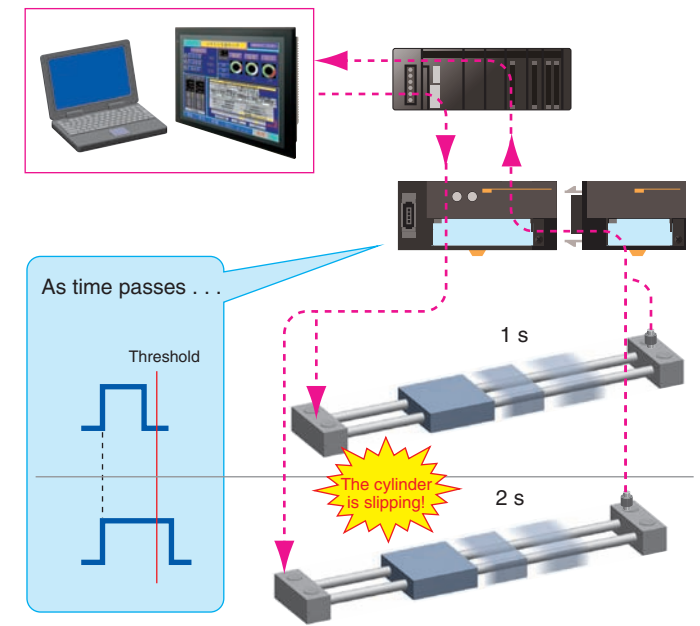
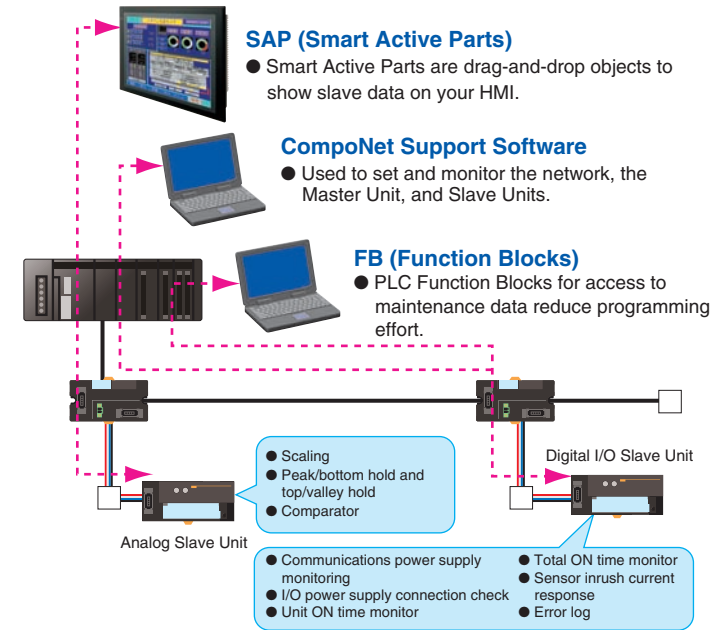


Intelligence Built-in

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

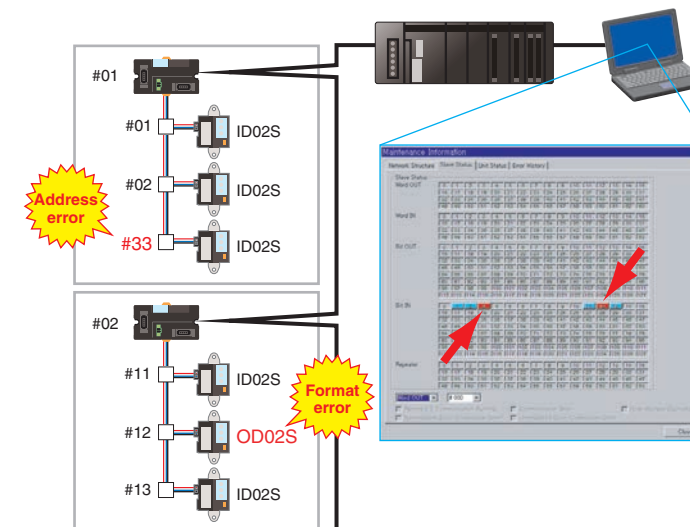
- Set limit values in each slave to detect reduced machine performance before breakdown.



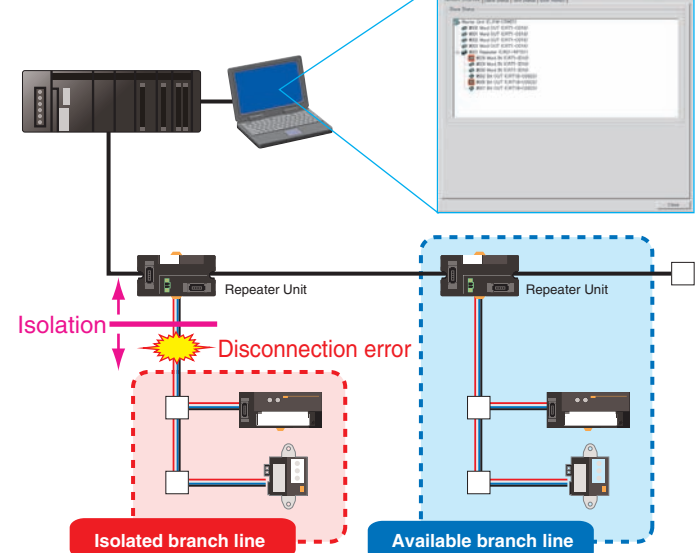
Fast Troubleshooting

Indication on the Master Unit helps to quickly assess the network status. CompoNet Support Software 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

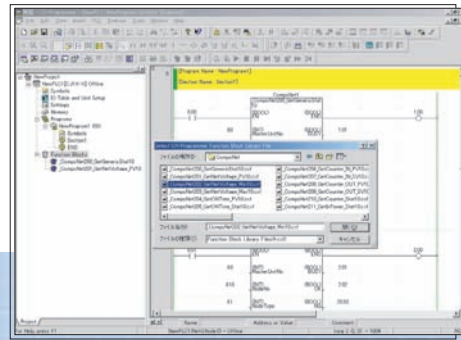


Network Isolation

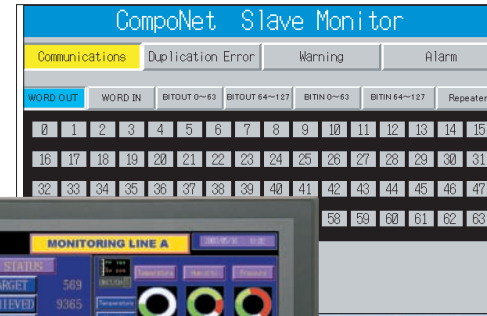


The open CompoNet system is prepared for the future.

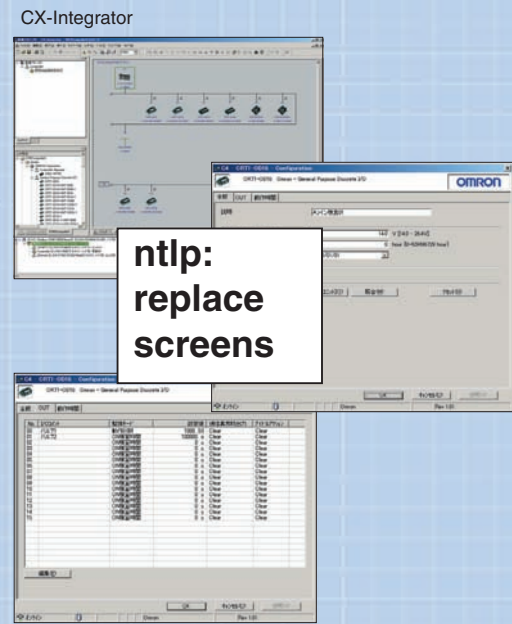
Supported by the members of the ODVA worldwide, CompoNet allows you to select the best devices for your application. OMRON's technology and the ODVA's certification will assure plug-and-play operation between devices from different vendors.



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/>

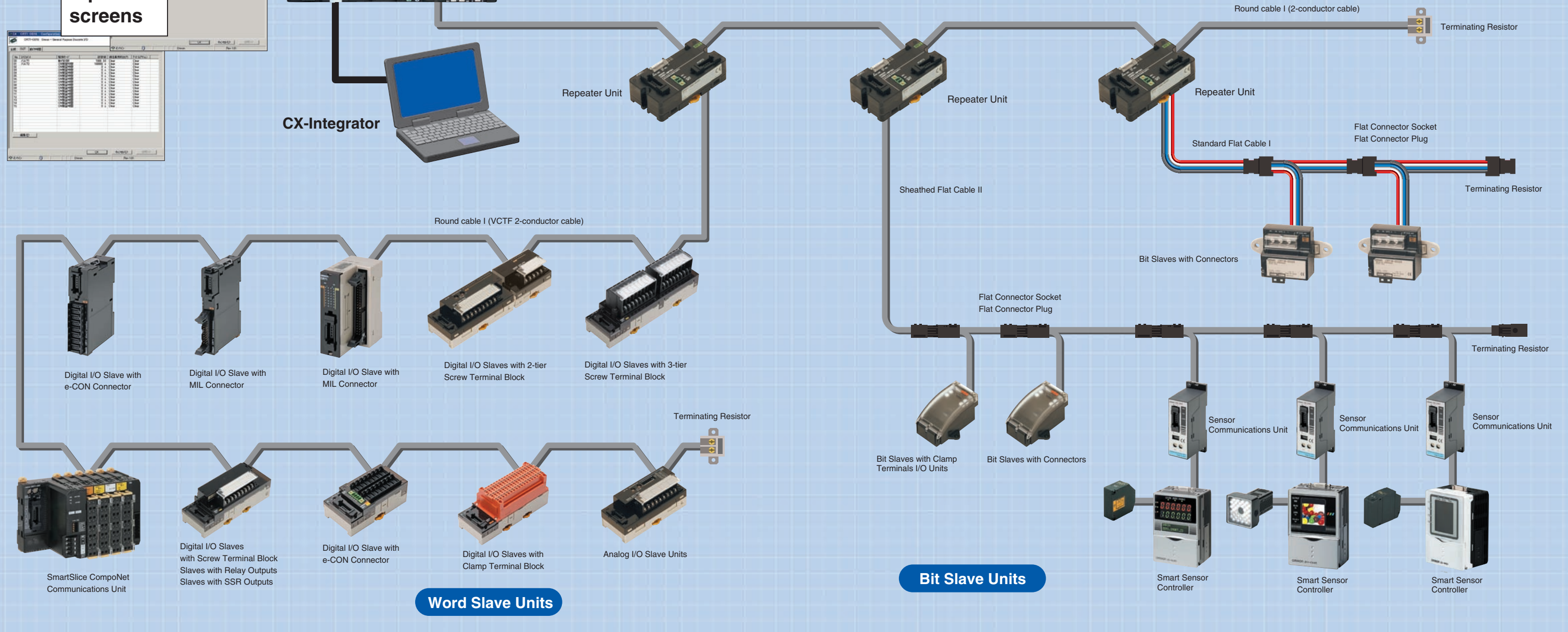


SYSMAC CS/CJ Series CP1H
(CJ Unit Adaptor, CP1W-EXT01, enables using the CJ1W-CRM21 with CP1H.)
CompoNet Master Units



NS-series Programmable Terminal

The CompoNet Family
Various device manufacturers are planning for CompoNet products.
Page 24 to 26



Word Slave Units

Bit Slave Units

Master Units

Master Units



CJ Series
CJ1W-CRM21

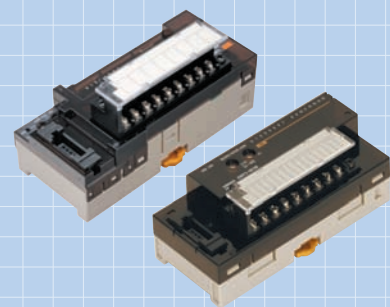


CS Series
CS1W-CRM21

Word Slaves

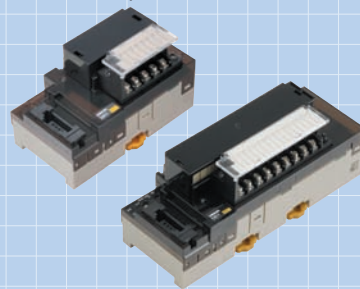
Digital I/O Slaves

Two-tier Screw Terminal Block



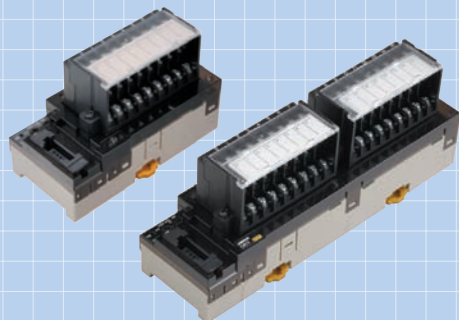
- Input Units
CRT1-ID08(-1) **NEW**
CRT1-ID16(-1)
- Output Units
CRT1-OD08(-1) **NEW**
CRT1-OD16(-1)
- I/O Units
CRT1-MD16(-1) **NEW**

Screw Terminal Block and Relay Outputs or SSR Outputs



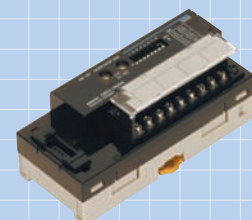
- Relay Outputs
CRT1-ROS08 **NEW**
CRT1-ROS16
- SSR Outputs
CRT1-ROF08 **NEW**
CRT1-ROF16

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)
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**



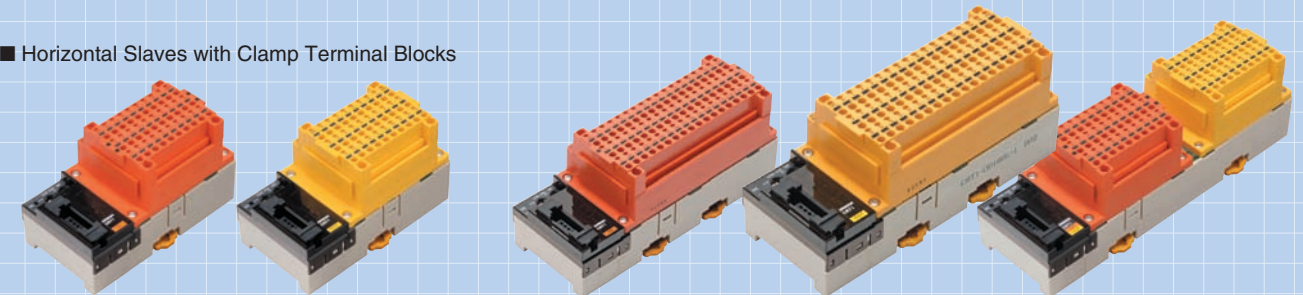
- CRT1-VID32ML(-1) **NEW**
CRT1-VOD32ML(-1) **NEW**
CRT1-VMD32ML(-1) **NEW**

Horizontal Slaves with e-CON Connectors



- Input Units
CRT1-ID16S(-1)
CRT1-ID16SH(-1) **NEW**
CRT1-ID32S(-1) **NEW**
CRT1-ID32SH(-1) **NEW**
- Output Units
CRT1-OD16S(-1)
CRT1-OD16SH(-1) **NEW**
CRT1-OD32S(-1) **NEW**
CRT1-OD32SH(-1) **NEW**
- I/O Units
CRT1-MD16S(-1)
CRT1-MD16SH(-1) **NEW**
CRT1-MD32S(-1) **NEW**
CRT1-MD32SH(-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



- NEW**
GRT1-CRT

SmartSlice I/O Units

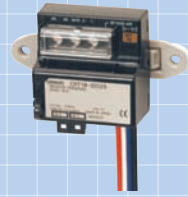


- GRT1-ID4(-1)
- GRT1-OD4(-1)
- GRT1-ROS2
- GRT1-AD2
- GRT1-DA2C
- GRT1-DA2V
- GRT1-TS2P **NEW**
- GRT1-CT1(-1) **NEW**

Bit Slaves

Bit Slave with Connectors

- IP20 Input Units with Connectors
CRT1B-ID02SP(-1)
- IP20 Output Units with Connectors
CRT1B-OD02S(-1)



- IP54 Input Units with Connectors
CRT1B-ID04SP(-1)
- IP54 Output Units with Connectors
CRT1B-OD04SP(-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



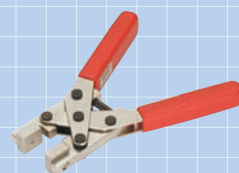
- Terminating Resistor
DCN4-TM4



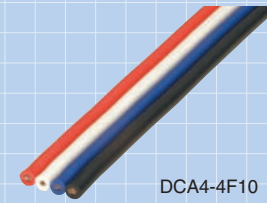
- Flat Connector Socket
DCN4-TR4



- Special Tool for Standard Flat Cable I
DWT-A01



Standard Flat Cable I



DCA4-4F10

- Flat Connector Socket
DCN4-TR4



- Flat Connector Plug
DCN4-BR4



- Multidrop Connector
DCN4-MD4



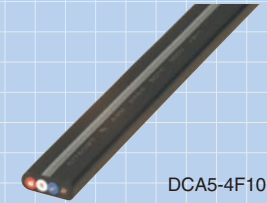
- Terminating Resistor
DCN4-TM4



- Special Tool for Standard Flat Cable I
DWT-A01



Sheathed Flat Cable II



DCA5-4F10

- Flat Connector Socket
DCN5-TR4



- Flat Connector Plug
DCN5-BR4



- Terminating Resistor
DCN5-TM4

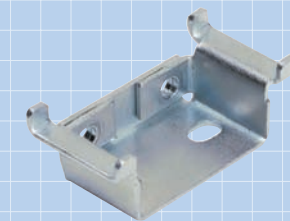


- Special Tool for Sheathed Flat Cable II
DWT-A02



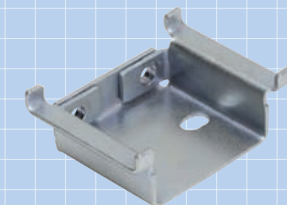
Optional Products

- Attachment Bracket



NEW

CRT1-ATT01



NEW

CRT1-ATT02

Koganei Corporation

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



+81-42-383-7271 www.koganei.co.jp

CompoNet-compatible Solenoid Valves: JA Series

- Features**
- Thin and Compact: Valve width of only 10.5 mm with effective area of 3.5 mm².
 - Lower power consumption. Standard: 0.5 W Low current type: 0.25 W
 - Two 3-port valves in one body.

CompoNet-compatible Solenoid Valves: F Series

- Features**
- Single/double dual-use valves.
 - Three of valve widths: 10, 15 and 18 mm
 - 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**
- Designed for 24 VDC servomotors.
 - Multipoint positioning: up to 512 points.
 - High speed: Up to 800 mm/s.
- Release 2007/4Q

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

- Features**
- Designed for 24 VDC pulse motors.
 - Multipoint positioning: up to 512 points.
 - High power in lower speed range.
- Release 2007/4Q

PATLITE Corporation

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



+81-72-948-8110 www.patlite.co.jp

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

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

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

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

JSK Co., Ltd.

+81-72-661-4071 www.nihon-seigyo.co.jp



CompoNet-serial Transducer:
CHU-001

- Features**
- Connects to bar-code readers.
 - Allows setting from CompoNet master.
 - Supplies power to bar-code reader.
- Available soon

Japan Mobile Platform Co., Ltd

www.jmpc.jp infojmp@jmpc.jp



CompoNet PCI Interface Card:
N11

- Features**
- PCI standard.
 - Electrically isolated by photocoupler; protects main PC.
 - High-performance processor, 512K bytes DPRAM.
- The N11 links high-speed CompoNet to a PCI bus for seamless hierarchy nodes.

3M Company

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



www.3m.com/interconnects

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

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

Tyco Electronics AMP K.K

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



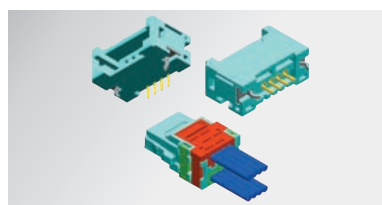
+81-44-844-8080 www.tycoelectronics.com

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

- Features**
- New Chisel Press Contacts for sensor cables.
 - No special crimping tool required for easy termination.
 - Two contact points for good connection and more security.

Honda Connectors, Inc

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



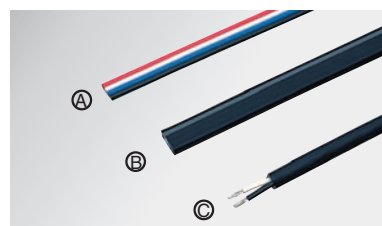
+81-6-6376-4717 www.honda-connectors.co.jp

Connector:
HCN-MD4SMUG()+

- Features**
- One piece connector.
 - Low profile.
 - The current tool can be used for assembly.
- Available soon

SWCC Showa Cable Systems Co., Ltd.

Overseas sales areas:
China, Taiwan, Asia-Pacific



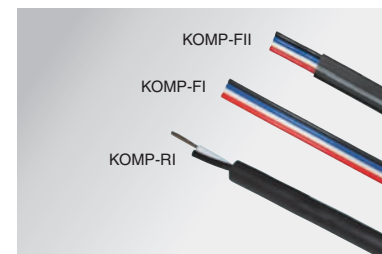
+81-3-3597-7117 www.swcc.co.jp/

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.

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



+81-778-22-1500 www.kuramo.co.jp

KOMP Series CompoNet Flat Cable I:
KOMP-FI

CompoNet Flat Cable II:
KOMP-FII

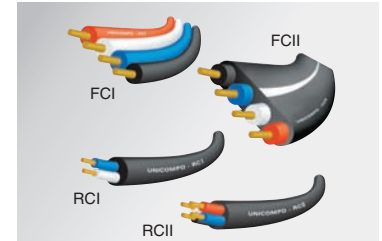
CompoNet Round Cable I and II:
KOMP-RI and KOMP-R2

- Features**
- Heat resistant (90°)
 - Flame resistant (Vertical Tray Flame Test)
 - UL certification (UL13, CL2) (pending)
- Available soon

- Features**
- Oil resistant
 - Flame resistant (Vertical Tray Flame Test)
 - Flame resistant (Vertical Tray Flame Test)
 - UL certification (UL13 PTLC, UL444 CM) (pending)
- Available soon

Nichigoh Communication Electric Wire Co., Ltd

+81-72-923-5104 www.nichigoh.co.jp



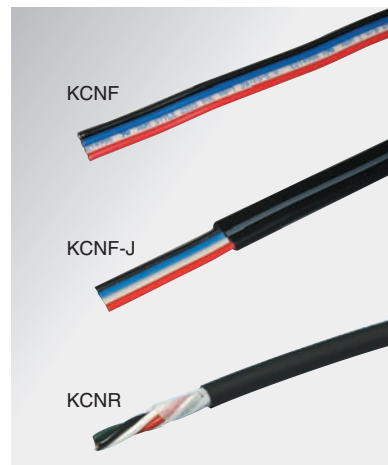
UNICOMPO FCI (CompoNet Flat I)
FCII (CompoNet Flat II)
RCI (CompoNet Round I)
RCII (CompoNet Round II)

- Features**
- Scheduled acquisition of CE marking and UL/Cul certification.
 - NFPA70(NEC) listing.
 - Excellent oil resistance (UNICOMPO FCII, RCI, RCII)
- Under development

Kanetsu Shoji Co., Ltd

Overseas sales area: China

+81-75-662-0996 (FAX)+81-75-662-1184 info-kanetsu@kanetsu.co.jp www.kanetsu.co.jp



CompoNet Flat Cable I

Standard Type:
KCNF

Features

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

CompoNet Flat Cable II

Sheath Type, Adapt to IP54 class system:
KCNF-J

Features

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

CompoNet Round Cable II

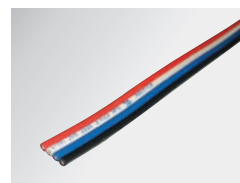
Oil resistant and Highly Flexible
Round Cable for CompoNet:
KCNR-2 (2 conductors)

Features

1. The cable can be used for mobile wiring.
2. Oil and heat-resistant PVC for outer sheath.
3. Conforming standards: UL and cUL.

Available soon

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.
KCN R-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.

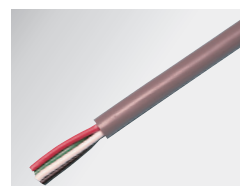


Hanshin Electric Wire & Cable Co., Ltd.
MRC-4

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.

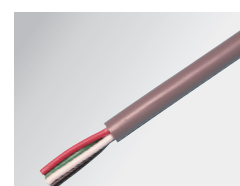
CompoNet Round Cable I and II



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

Feature

Round cable for low cost installation.



Kwai Cable, Ltd.
VCTF-2C & VCTF-4C

Feature

Round cable for low cost installation.

The CompoNet Tool can be used from the CX-One.

(Auto-updating is available from March 2008.)

The CX-Integrator 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.



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 compatible with CompoNet.