## **DeviceNet Communications Unit**

# E5ZN-DRT

CSM\_E5ZN-DRT\_DS\_E\_3\_1

## Streamlined Communications from Temperature Controller to PLC

- The E5ZN Modular Temperature Controller is connected to the DeviceNet network.
- The I/O link function allows setting and monitoring (e.g., of present values) for the E5ZN Modular Temperature Controller to be performed without communications programming.
- Up to 16 E5ZN Modular Temperature Controllers can be connected to one Unit.
- All the parameters for the E5ZN can be uploaded or downloaded in one operation using DeviceNet Configurator.

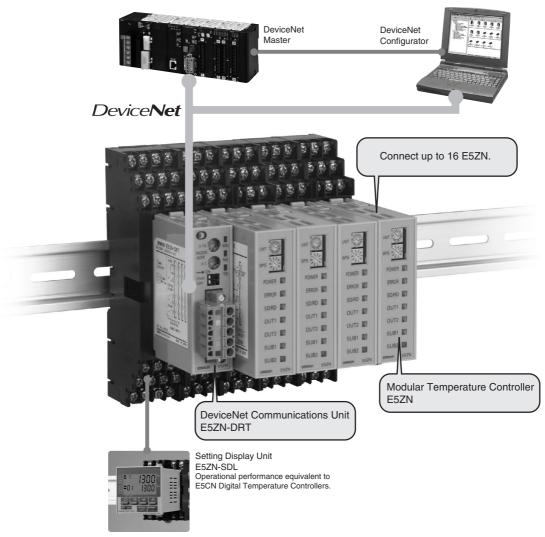
 $\triangle$ 

Refer to Safety Precautions for All Temperature Controllers.



## **Features**

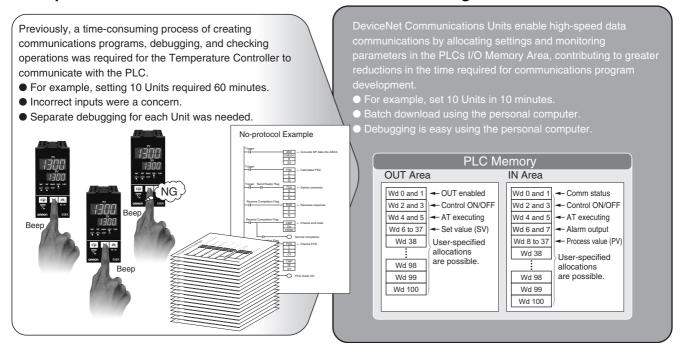
## DeviceNet Communications Unit Enables Program-free Communications with Temperature Controllers



OMRON 1

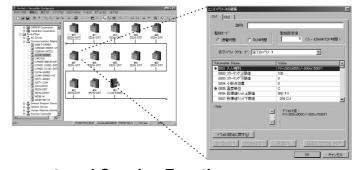
### **Features**

### Startup Time Is Six Times Faster and No Communications Programs Are Needed



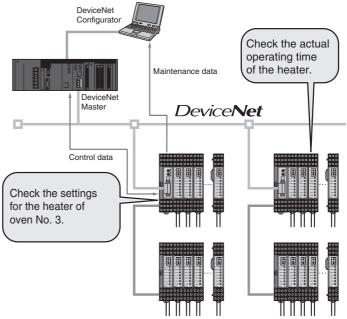
### Manage All E5ZN Together from the DeviceNet Configurator

Use the DeviceNet Configurator for E5ZN initial settings and temperature control wiring to enable immediate execution.



### Improved Maintenance with Monitoring, Comment, and Copying Functions

- Measure the heater control time (RUN time monitor) to manage heater life expectancy.
- Monitor supply voltages, such as those for Temperature Controller and Communications Unit power supplies, and network power supplies.
- User-specified names can be set for each heater and Communications Unit, enabling the location of errors to be checked quickly.
- Upload/download Temperature Controller parameters to the Communications Unit.
   This shortens the time required to replace Temperature Controllers.



## **Model Number Structure**

## **■** Model Number Legend

E5ZN-DRT

DRT: DeviceNet communications

## **Ordering Information**

## **■ List of Models**

Name	External input power supply voltage	Applicable Temperature Controller	Model
DeviceNet Communications Unit	24 VDC	E5ZN	E5ZN-DRT
Terminal Unit			E5ZN-SCT24S

Note: A DeviceNet Communications Unit and Terminal Unit are required to connect to DeviceNet. Two End Plates are provided with E5ZN-SCT24S Terminal Units. When mounting to a DIN track, be sure to mount End Plates on both sides.

## **Specifications**

## **■** Ratings

Power supply voltage	DeviceNet	24 VDC (for internal circuits)		
	External input power supply	24 VDC (for RS-485 communications circuits and Temperature Controllers)		
Allowable voltage range	DeviceNet	11 to 25 VDC		
	External input power supply	20.4 to 26.4 VDC		
Power consumption (See note 2.)	DeviceNet	Approx. 1.1 W (for a current of 45 mA at 24 VDC)		
	External input power supply	Approx. 0.5 W (for a current of 20 mA at 24 VDC)		
Connectable Temperature Controllers		E5ZN Series		
Maximum number of connectable Temperature Controllers		16		
Ambient operating temperature		-10 to 55°C (with no icing or condensation)		
Ambient operating humidity		25% to 85%		
Ambient storage temperature		-25 to 65°C (with no icing or condensation)		

Note: 1. Do not use an inverter output as the power supply. (Refer to Safety Precautions for All Temperature Controllers.)

2. The power consumption for the Temperature Controllers is not included.

3

## **■** Characteristics

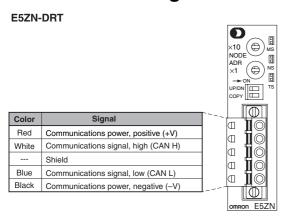
Insulation resistance	20 M $\Omega$ min. (at 100 VDC)				
Dielectric strength	500 VAC, 50/60 Hz for 1 min between the DIN track and all DeviceNet connector terminals and between the DIN track and all terminal socket terminals				
Vibration resistance	10 to 55 Hz, 10 m/s² for 2 hrs each in ±X, ±Y, and ±Z directions				
Shock resistance	150 m/s <sup>2</sup> , 3 times each in $\pm$ X, $\pm$ Y, and $\pm$ Z directions				
Weight	100 g max.				
Safety standards	cULus508				
	EMS:	Electrostatic Discharge (ESD) Radiated Electromagnetic Fields Electrical Fast transients/BURST Surge Transients	EN61006-2, EN61000-4-2 ( EN61006-2, EN61000-4-3 ( EN61006-2, EN61000-4-4 ( EN61006-2, EN61000-4-5 (	10 V/m) 2 kV/DC power- line to ground	line, 1 kV/Signal-line) : 1 kV/DC power-line) : 2 kV/Signal-line
	EMI:	Conducted Disturbances Radiated Emissions (electric field)	EN61006-2, EN61000-4-6 (	line to line 10 V)	: 0.5 kV/DC power-line)

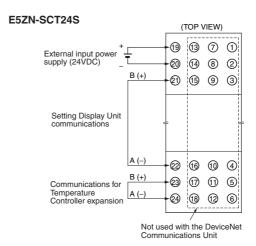
## **■** Communications (for Temperature Controller Expansion)

Transmission line connection method	RS-485 multipoint	
Communications method	RS-485 (2-wire, half-duplex)	
Synchronization method	Start-stop synchronization	
Baud rate	38,400 bps	
Transmission code	ASCII	
Data bit length	7 bits	
Stop bit length	2 bits	
Error detection	Vertical parity (even)	
	BCC (block check character)	
Flow control	None	
Number of Units that can be connected in parallel	16 Units max. (32 channels)	

## **Connections**

## **■** Terminal Arrangement

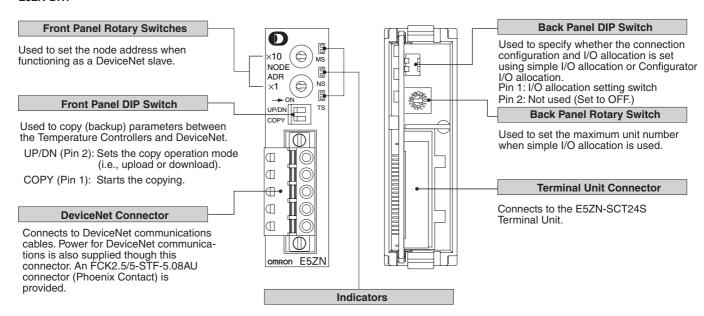




4

## **Nomenclature**

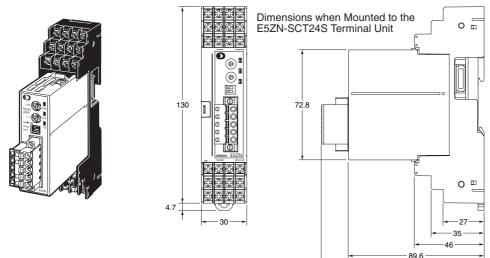
#### E5ZN-DRT



## **Dimensions**

Note: All units are in millimeters unless otherwise indicated.

#### E5ZN-DRT



Note: Be sure to read the precautions for correct use and other precautions in the following user's manuals before using the Communications Unit.

E5ZN-DRT DeviceNet Communications Unit Operation Manual (Cat. No. H119)

DeviceNet Operation Manual (Cat. No. W267)

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

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

(107.5)

#### 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.

#### Warranty and Limitations of Liability

#### WARRANTY

OMRON's exclusive warranty is that the products are free from defects in materials and workmanship for a period of one year (or other period if specified) from date of sale by OMRON.

OMRON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, REGARDING NON-INFRINGEMENT, MERCHANTABILITY, OR FITNESS FOR PARTICULAR PURPOSE OF THE PRODUCTS. ANY BUYER OR USER ACKNOWLEDGES THAT THE BUYER OR USER ALONE HAS DETERMINED THAT THE PRODUCTS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE. OMRON DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED.

#### LIMITATIONS OF LIABILITY

OMRON SHALL NOT BE RESPONSIBLE FOR SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCTS, WHETHER SUCH CLAIM IS BASED ON CONTRACT, WARRANTY, NEGLIGENCE, OR STRICT LIABILITY

In no event shall the responsibility of OMRON for any act exceed the individual price of the product on which liability is asserted.

IN NO EVENT SHALL OMRON BE RESPONSIBLE FOR WARRANTY, REPAIR, OR OTHER CLAIMS REGARDING THE PRODUCTS UNLESS OMRON'S ANALYSIS CONFIRMS THAT THE PRODUCTS WERE PROPERLY HANDLED, STORED, INSTALLED, AND MAINTAINED AND NOT SUBJECT TO CONTAMINATION, ABUSE, MISUSE, OR INAPPROPRIATE MODIFICATION OR REPAIR.

#### **Application Considerations**

#### **SUITABILITY FOR USE**

OMRON shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of products in the customer's application or use of the products.

At the customer's request, OMRON will provide applicable third party certification documents identifying ratings and limitations of use that apply to the products. This information by itself is not sufficient for a complete determination of the suitability of the products in combination with the end product, machine, system, or other application or use.

The following are some examples of applications for which particular attention must be given. This is not intended to be an exhaustive list of all possible uses of the products, nor is it intended to imply that the uses listed may be suitable for the products:

- Outdoor use, uses involving potential chemical contamination or electrical interference, or conditions or uses not described in this catalog.
- Nuclear energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, and installations subject to separate industry or government regulations.
- Systems, machines, and equipment that could present a risk to life or property.

Please know and observe all prohibitions of use applicable to the products.

NEVER USE THE PRODUCTS FOR AN 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.

### PROGRAMMABLE PRODUCTS

OMRON shall not be responsible for the user's programming of a programmable product, or any consequence thereof.

#### **Disclaimers**

#### **CHANGE IN SPECIFICATIONS**

Product specifications and accessories may be changed at any time based on improvements and other reasons.

It is our practice to change model numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the products may be changed without any notice. When in doubt, special model numbers may be assigned to fix or establish key specifications for your application on your request. Please consult with your OMRON representative at any time to confirm actual specifications of purchased products.

#### **DIMENSIONS AND WEIGHTS**

Dimensions and weights are nominal and are not to be used for manufacturing purposes, even when tolerances are shown.

#### PERFORMANCE DATA

Performance data given in this catalog is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of OMRON's test conditions, and the users must correlate it to actual application requirements. Actual performance is subject to the OMRON Warranty and Limitations of Liability.

#### **ERRORS AND OMISSIONS**

The information in this document has been carefully checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical, or proofreading errors, or omissions.

2008.12

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

