

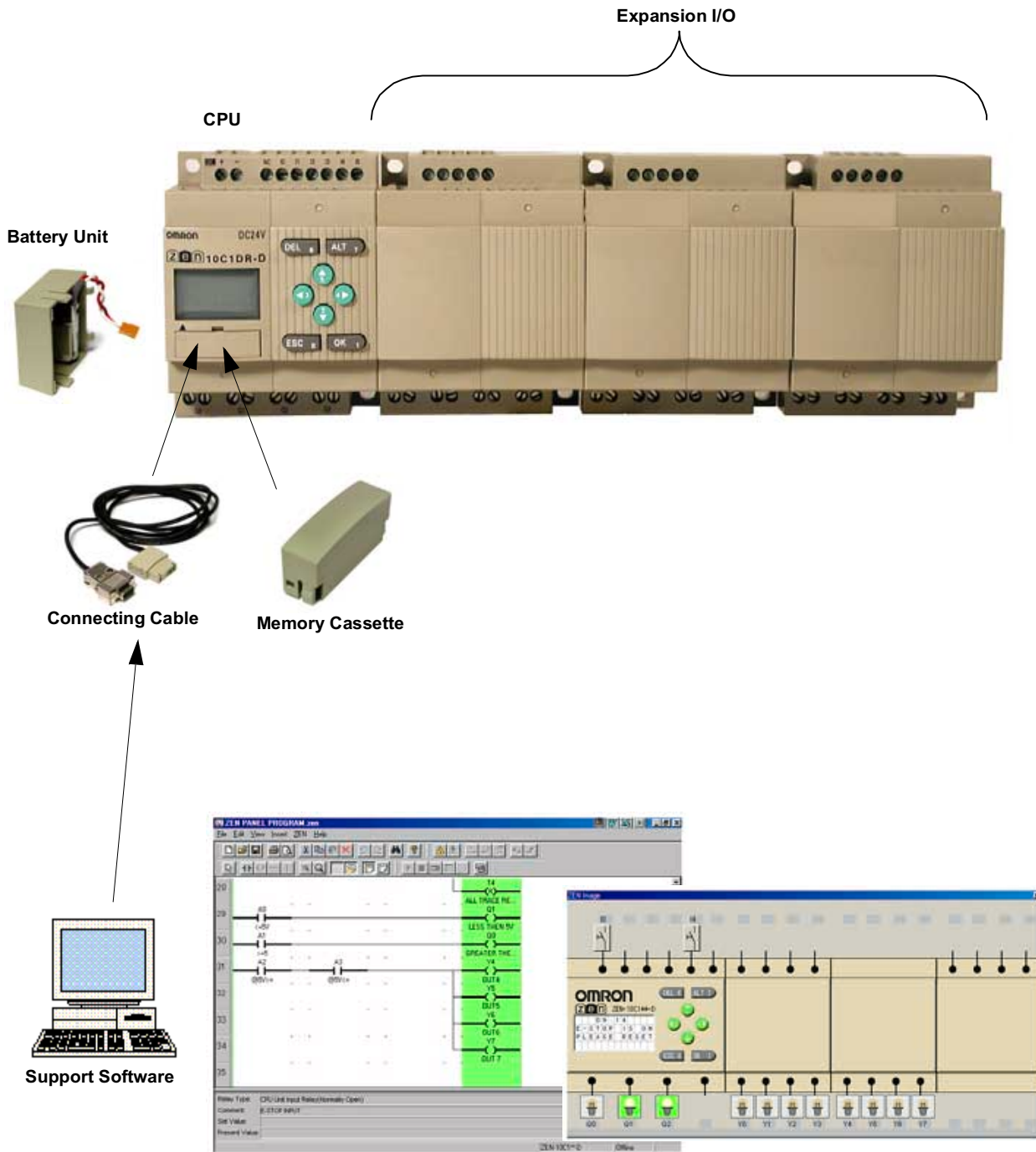
Introducing Omron's new simple logic controller

ZEN has the features and functions of both a programmable controller and smart relay to allow simple yet powerful control. Apply the ZEN to small scale control applications where simple functionality and low cost are critical. Control programs can be created using the 32-bit Windows based ZEN support software or using the operation buttons on the front panel (LCD models only). The ZEN is also flexible, with 6 CPU types, multiple expansion options, and a wide selection of accessories options.

- **Easy Programming**
LCD type CPUs includes 8 operation buttons on the front panel to enable programming in ladder view. Both LED and LCD CPUs can use ZEN support software for ladder programming. Programs can consist of up to 96 lines with 3 inputs and 1 output per line.
- **Wide Variety of Functions**
 - The Real Time Clock (RTC) will support the scheduling of daily, weekly and monthly events.
 - The summertime function allows for daylight savings time changes.
 - User defined messages display user-set character strings, times, timer preset values, counter preset values or analog-converted values.
- **Saving and Copying of Programs**
Optional memory cassettes can be used to save, copy and transfer the ladder program and settings. Programs can also be password protected.
- **Space Saver**
The extreme compact size allows for installation in almost any location (70 x 90 x 56 mm).
- **Flexible Expansion**
Up to 3 expansion I/O modules can be added to any CPU for a maximum of 34 I/O points (18 IN and 16 OUT).
- **Meets International Standards Requirements**
Conforms to UL/CSA standards and EC Directives.
- **Memory Backup**
Program data and system settings are protected by EEPROM to ensure data integrity. An optional battery can be used for systems where the power supply may be interrupted for long periods of time. The battery protects data such as, ON/OFF status of holding bits, holding timers and counters, calendar and clock settings, and the prevent value areas.



System Configuration



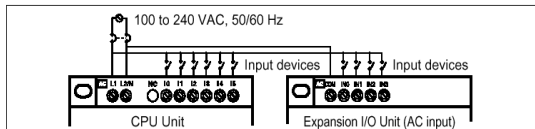
Specifications

■ ZEN Support Software

| Item | Conditions |
|--------------------|--------------------------------------------------------------------|
| Operating system | Windows 95, 98, ME, 2000, or NT4.0 Service Pack 3 |
| CPU | Pentium 133 MHz or better Pentium 200 MHz or better recommended |
| Memory | 64 Mbytes or more |
| HDD | 40 Mbytes or more of available disk capacity |
| Communications | 1 serial port (COM port) |
| CD-ROM Drive | Required |
| Keyboard and mouse | Required |
| Monitor | 800 x 600 dots (SVGA) min., 256 colors min. |

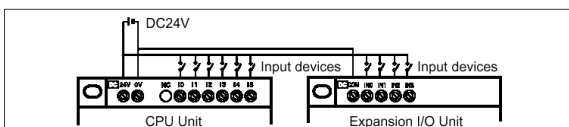
■ I/O Specifications

AC input



| Input Specifications (AC) | | CPU | Expansion I/O |
|---------------------------|---------|----------------------------------------------------------|-----------------------------------------------------------------|
| Input Voltage | | 100 to 240VAC (+10% / -15%), 50/60 Hz | |
| Input Impedance | | 680 kΩ | 83 kΩ |
| Input Current | | 0.15 mA at 100 VAC 0.35 mA at 240 VAC | 1.2 mA at 100 VAC 2.9 mA at 240 VAC |
| ON Voltage | | 80 VAC min. | |
| OFF Voltage | | 25 VAC max. | |
| ON Response Time | 100 VAC | 50 or 70 ms max. (Use input filter settings to switch) | |
| | 240 VAC | 100 or 120 ms max. (Use input filter settings to switch) | |
| OFF Response Time | 100 VAC | 50 or 70 ms max. (Use input filter settings to switch) | |
| | 240 VAC | 100 or 120 ms max. (Use input filter settings to switch) | |
| Isolation Method | | Not isolated | Input terminals and internal signals: Photocoupler isolation |

DC input



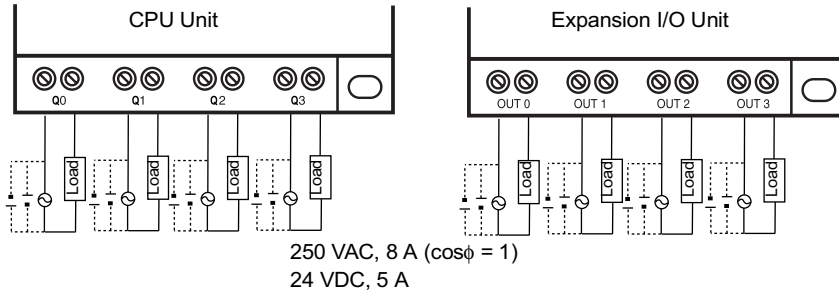
| Input Specifications (DC) | | CPU and Expansion I/O |
|---------------------------|--|------------------------------------------------------------------------------------|
| Input Voltage | | 24 VDC (+10% / -15%) |
| Input Impedance | | CPU Unit DC input: 4.8 kΩ; CPU Unit shared AD input: 5.0 kΩ; Expansion I/O: 4.7 kΩ |
| Input Current | | 5 mA typical |
| ON Voltage | | 16.0 VDC min. |
| OFF Voltage | | 5.0 VDC max. |
| ON Response Time | | 15 or 50 ms (Use input filter settings to switch) |
| OFF Response Time | | 15 or 50 ms max. (Use input filter settings to switch) |

Analog Input

Analog specifications (IN 4 and IN 5)

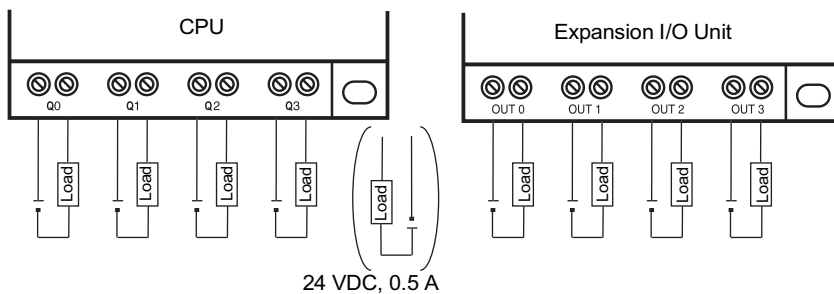
| Item | Description |
|------------------------------------|------------------|
| Input Range | 0 to 10 V |
| Input Impedance | 150 k Ω |
| Resolution | 0.1 V (1/100 FS) |
| Overall Precision (at -25 to 55°C) | 10% FS |
| Analog digital Conversion Monitor | 0 to 10.5 V |

Relay Output



| Item | Description |
|----------------------------|--------------------------------------------------------------------|
| Maximum Switching Capacity | 8 A at 250 VAC (COS ϕ =1), 5 A at 24 VDC |
| Minimum Switching Capacity | 10 mA at 5 VDC |
| Relay Life | Electrical: 50,000 operations Mechanical: 10 million operations |
| ON Response Time | 15 ms max. |
| OFF Response Time | 5 ms max. |

Transistor Output

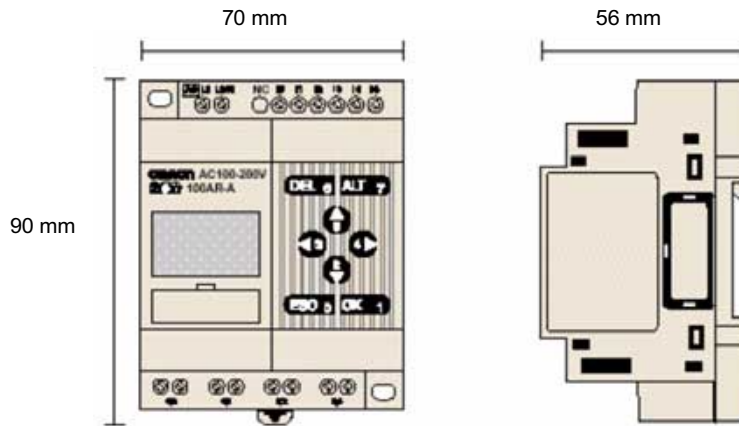


| Item | Description |
|----------------------------|--------------------------|
| Maximum Switching Capacity | 20.4 to 26.4 VDC, 500 mA |
| Leakage Current | 0.1 mA max. |
| Residual Voltage | 1.5 V max. |
| ON Response Time | 1 ms max. |
| OFF Response Time | 1 ms max. |

Dimensions

Unit mm

■ CPU (all types) and Expansion I/O (all types)



Ordering Information

Important note for ordering:

Choose normally stocked products whenever possible to ensure availability that matches your schedule. Normally stocked items are shown as shaded in the Ordering Information tables. Non-stocked items are available but are subject to longer lead times. For the most up-to-date information on stock status, contact your Omron representative.

■ CPU and Expansion I/O

| Name | Type | I/O | Power Supply Voltage | Inputs | Input Voltage | Outputs | LCD and Buttons | Calendar and Clock | Analog Input | Part Number | | |
|---------------|------|--------|----------------------|--------|----------------|------------|-----------------|--------------------|--------------|--------------|--------------|---------|
| CPU | LCD | 10 | 100 to 240 VAC | 6 | 100 to 240 VAC | 4 | Relays | Yes | Yes | No | ZEN-10C1AR-A | |
| | LED | | | | | | | No | No | No | ZEN-10C2AR-A | |
| | LCD | 24 VDC | 24 VDC | | Relays | Yes | Yes | Yes | ZEN-10C1DR-D | | | |
| | LED | | | | | No | No | Yes | ZEN-10C2DR-D | | | |
| | LCD | | | | | Transistor | Yes | Yes | Yes | ZEN-10C1DT-D | | |
| | LED | | | | | | No | No | Yes | ZEN-10C2DT-D | | |
| Expansion I/O | 8 | — | — | 4 | 100 to 240 VAC | 4 | Relays | — | — | — | ZEN-8EAR | |
| | | | | 4 | 24 VDC | 4 | Relays | — | — | — | ZEN-8EDR | |
| | 4 | — | — | 4 | 100 to 240 VAC | — | — | — | — | — | ZEN-4EA | |
| | | | | 4 | 24 VDC | — | — | — | — | — | — | ZEN-4ED |
| | | | | — | — | — | 4 | Relays | — | — | — | ZEN-4ER |
| | 8 | — | — | 4 | 24 VDC | 4 | Transistor | — | — | — | ZEN-8EDT | |

■ Accessories

| Name | Specifications | Remarks | Part Number |
|----------------------|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| Memory Cassette | EEPROM | Enables programs and parameter settings to be saved or copied to another ZEN | ZEN-ME01 |
| Connecting Cable | 2m RS-323C (9-pin D-sub connector) | | ZEN-CIF01 |
| Battery | 10 year min. battery life 77°F (25°C) | Use to prevent loss of calendar, clock, holding bits, holding timer preset values, counter preset values, and other data when the power is turned OFF for an extended amount of time (for 2 days or more at 77°F (25°C)) | ZEN-BAT01 |
| ZEN Support Software | Runs on Windows 95, 98, 2000, ME or NT 4.0 | Specifically designed for the ZEN (CD-ROM) | ZEN-SOFT01-V2 |
| Training Kit | | An education kit which contains ZEN-10C1AR-A, ZEN-ETL01, ZEN-CIF01, ZEN-SOFT01-V2, and appropriate manuals | ZEN-STARTER-01 |

■ Manuals

| Description | Part Number |
|--------------------------------------------------|-------------|
| ZEN Programmable Relays Operation Manual | W385 |
| ZEN-SOFT01 ZEN Support Software Operation Manual | W386 |
| ZEN Brochure | SB-ZEN1 |

OMRON®

OMRON ELECTRONICS LLC

One East Commerce Drive
Schaumburg, IL 60173

1-800-55-OMRON

OMRON ON-LINE

Global - <http://www.omron.com>
USA - <http://www.omron.com/oei>
Canada - <http://www.omron.com/oci>

OMRON CANADA, INC.

885 Milner Avenue
Scarborough, Ontario M1B 5V8

416-286-6465