EZ SERIES INTELLIGENT RELAYS

EZ Series

Easy Operation with Maximum Benefits

The Eaton EZ intelligent relays provide basic functions that users could only implement previously with individually installed and wired devices. The EZD multi-function displays offer powerful visualization functions.

The EZ intelligent relays bring timers, relays, counters, special functions, inputs and outputs into one compact device that is easily configured. The EZ family of products provides exceptional levels of flexibility together with substantial savings in commissioning time and effort.

The EZ intelligent relays are available in more than 20 different styles that support from 12 I/O up to 320 I/O points providing the ideal solution for lighting, energy management, industrial control, watering, pump control, HVAC and home automation.

Once EZ products are installed, changes are easily accomplished through front panel programming, eliminating the need to change wiring and wiring diagrams increasing the savings realized.

Other terms often used for intelligent relay are relay replacer, control relay and smart relay.

Simplicity and User-Friendly Operation

EZ and EZD products are known for their user-friendly operation and programming. Every rung or circuit connection is wired just like you remember: Contact – Contact – Contact – Coil – Done! The devices allow the "wiring" of 128 or 256 rungs or circuit connections. Series and parallel connections, which make up a major part of a control circuit, are easily created without previous programming knowledge. Ready-to-use function blocks are simply integrated in the wiring with coils, and contacts are provided for additional functions.

EZ820-DC-RC shown smaller than actual size.

EZ719-DC-RC shown smaller than actual size.

EZ512-DC-RC shown smaller than actual size.

EZD-80-B shown smaller than actual size.

Everything Needed is Built-In

Depending on the device selected, EZ and EZD products provide users with timing relays, flash relays, counters, comparators, timer switches and other ready-to-use functions. The circuit diagram display of serial and parallel connections, unlike the display of AND and OR operations in a function block diagram, offers a more manageable display of the circuit. Every EZ and EZD intelligent relay features an integrated power flow display to ensure safe operation during commissioning and helps identify errors in the circuit diagram. For ease-of-use, energized rungs are highlighted, and non-energized rungs are dimmed.

Security Means Safety

The finished circuit diagram is stored internally and can also be saved externally on a memory module (EEPROM) for transport, security and backup. Multi-level password protection secures your circuit diagram from unauthorized viewing, editing, copying or deleting.

EZ500 Series

EZ500 Series— for controlling small applications with up to 12 input/output signals. Models are available with and without displays. DIN rail mounted.

- **8 Digital Inputs**
- **4 Digital Inputs**
- **128 Rungs of 3 Contacts and 1 Coil Each**
- **16 Operating and Message Texts**
- **2 Analog Inputs (10-Bit) Optional (Not with 240 Vac)**
- **2 High-Speed Inputs, 1 kHz (Only DC Devices)**

EZ512-DC-RC shown smaller than actual size.

EZ512-AC-RC shown smaller than actual size.

To Order

MODEL NO.	DESCRIPTION	INPUTS					OUTPUTS
		Vac	24 240 Vac	110 to Vdc	12 Vdc	24 ANALOG	RELAY
EZ512-AC-R	12 I/O, no clock, display	—	8	—	—	—	4
EZ512-AC-RC	12 I/O, clock, display	—	8	—	—	—	4
EZ512-AC-RCX	12 I/O, clock, no display	—	8	—	—	—	4
EZ512-DC-R	12 I/O, no clock, display	—	—	—	8	2	4
EZ512-DC-RC	12 I/O, clock, display	—	—	—	8	2	4
EZ512-DC-RCX	12 I/O, clock, no display	—	—	—	8	2	4

Comes complete with installation guide.
Ordering Example: EZ512-AC-RCX, *12 I/O, clock, no display.*

EZ700 Series— for controlling medium-sized applications with up to 40 input/output signals. DIN rail mounted.

- 12 Digital Inputs
- 6 Digital Relay Outputs
- 128 Rungs of 3 Contacts and 1 Coil Each
- 16 Operating and Message Texts
- 4 Analog Inputs (10-Bit) Optional (Not with 230 Vac)
- 2 High-Speed Inputs, 1 kHz (Only DC Devices)
- 1 Digital Expansion or Network Connection

EZ700 Series

EZ719-DC-RC shown smaller than actual size.

EZ719-AC-RCX shown smaller than actual size.

MODEL NO.	DESCRIPTION	INPUTS					OUTPUTS
		24 Vac	110 to 240 Vac	12 Vdc	24 Vdc	ANALOG	RELAY
EZ719-AC-RC	18 I/O, clock, display	—	12	—	—	—	6
EZ719-AC-RCX	18 I/O, clock, no display	—	12	—	—	—	6
EZ719-DC-RC	18 I/O, clock, display	—	—	—	12	4	6
EZ719-DC-RCX	18 I/O, clock, no display	—	—	—	12	4	6

Comes complete with installation guide. **Ordering Example: EZ719-AC-RCX,** *18 I/O, clock, no display.*

EZ800 Series

EZ800 Series— for controlling large scale applications with up to 320 input/ output signals. Models are available with and without displays. DIN rail mounted.

- 12 Digital Inputs
- 6 Digital Relay Outputs
- 256 Rungs of 4 Contacts and 1 Coil Each
- 32 Operating and Message Texts
- 4 Analog Inputs (10-Bit) Optional (Not with 230 Vac)
- 4 High-Speed Inputs, 3/5 kHz (Only DC Devices)
- 1 Digital Expansion or Network Connection
- Networkable via EZ-NET with Up to 8 Stations
- 1 Analog Output (10 bit)

EZ819-AC-RC shown smaller than actual size.

To Order

MODEL NO.	DESCRIPTION	INPUTS			OUTPUTS	
		110 to 240 Vac	24 Vdc	ANALOG	RELAY	ANALOG
EZ819-AC-RC	18 I/O, clock, display	12	—	—	6	—
EZ819-AC-RCX	18 I/O, clock, no display	12	—	—	6	—
EZ819-DC-RC	18 I/O, clock, display	—	12	4	6	—
EZ819-DC-RCX	18 I/O, clock, no display	—	12	4	6	—
EZ820-DC-RC	19 I/O, clock, display	—	12	4	6	1
EZ820-DC-RCX	19 I/O, clock, no display	—	12	4	6	1

Comes complete with installation guide. **Ordering Example: EZ819-DC-RCX,** *18 I/O, clock, no display.*

EZD Modular Relays

The EZD modular intelligent relays allows you to assemble a system to meet your exact requirements. A system consists of the following components:

1. EZD display with or without buttons
2. CPU with or without clock; in a variety of power configurations
3. I/O module

- **12 Digital Inputs**
- **4 Digital Relay Outputs**
- **256 Rungs of 4 Contacts and 1 Coil Each**
- **24 KB Mask Memory on a Fully Graphical, Backlit Display (64 x 132 Pixels)**
- **4 Analog Inputs (10-Bit) Optional (Not with 230 Vac)**

- **4 High-Speed Inputs, 3/5 kHz (Only DC Devices)**
- **1 Digital Expansion or Network Connection**
- **Networkable via EZ-NET with Up to 8 Stations**
- **1 Analog Output (10-Bit)**

EZD Assembly. Display + CPU + I/O Module. Shown smaller than actual size.

EZD80-B shown smaller than actual size.

EZD-CP8-NT shown smaller than actual size.

EZD-R16 shown smaller than actual size.

EZD Displays and CPU/Power Supply

To Order	
MODEL NO.	**DESCRIPTION**
EZD-80	EZD display
EZD-80-B	EZD display with buttons
EZD-CP8-ME	EZD CPU with 24 Vdc, power supply, clock
EZD-CP8-NT	EZD CPU with 24 Vdc, power supply, clock, EZ-Net
EZD-AC-CP8-ME	EZD CPU with 100 to 240 Vac, power supply, clock
EZD-AC-CP8-NT	EZD CPU with 100 to 240 Vac, power supply, clock, EZ-Net

Comes complete with installation guide. **Ordering Example: EZD-80-B,** EZD display with buttons.

EZD Controller I/O Modules

MODEL NO.	DESCRIPTION	INPUTS				OUTPUTS
		240 Vac	110 to Vdc	24 ANALOG	RELAY	ANALOG
EZD-AC-R16	16 I/O	12	—	—	4	—
EZD-R16	16 I/O	—	12	4	4	—
EZD-RA17	17 I/O	—	12	4	4	1

Comes complete with installation guide. **Ordering Example: EZD-RA17,** 17 I/O.

MODEL	EZD-AC-R16	EZD-R16	EZD-RA17
SUPPLY VOLTAGE	Supply via EZD-CP8 module		
HEAT DISSIPATION	0.5 W	0.5 W	0.5 W
CONTINUOUS CURRENT OUTPUTS	8 A	8 A	8 A
CONNECTION CABLES	0.2 to 4.0 mm² (AWG 22-12), solid 0.2 to 2.5 mm² (AWG 22-12), flexible		
DEGREE OF PROTECTIONS	IP20	IP20	IP20
RFI SUPPRESSION	EN 55011, EN 55022 Class B, IEC 61000-6-1, 2, 3, 4		
AMBIENT OPERATING TEMPERATURE	-25 to 55°C	-25 to 55°C	-25 to 55°C
TRANSPORT AND STORAGE TEMPERATURE	-40 to 70°C	-40 to 70°C	-40 to 70°C
CERTIFICATION, STANDARDS	EN 50178, IEC/EN 60947, UL, CSA		
MOUNTING	Snap fitted to EZD-CP8 module		

EXPANSION MODULES

Expansion modules are available for increasing the input/output of the EZ700/800 and EZD intelligent relays to 24 inputs and up to 16 outputs. Expansion modules can be mounted directly to the EZ/EZD unit.

EZ618-DC-RE shown conected to EZ820-DC-RC (see page A-20), shown smaller than actual size.
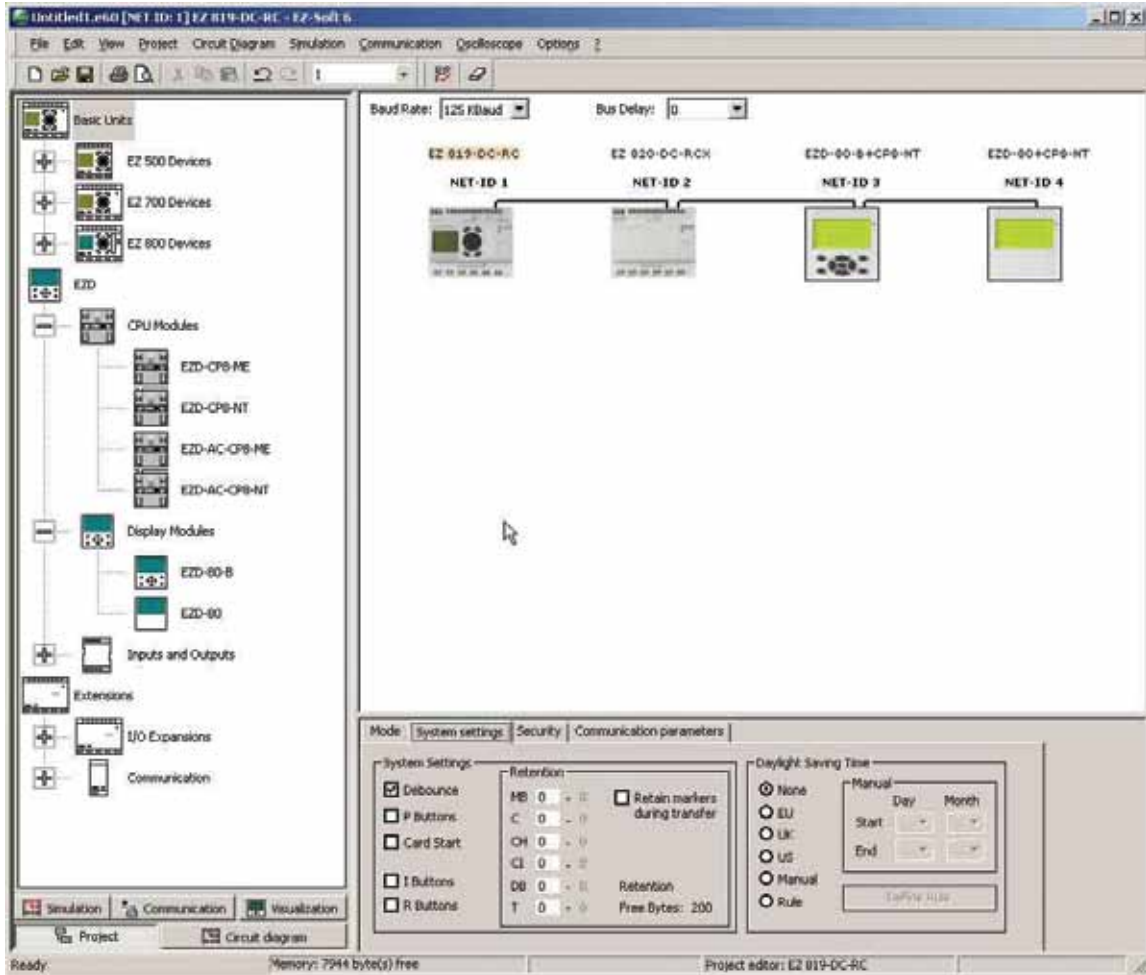
To Order

MODEL NO.	DESCRIPTION	INPUTS		OUTPUTS
		110 to 240 Vac	24 Vdc	RELAY
EZ202-RE	2 I/O expansion	—	—	2
EZ618-AC-RE	18 I/O expansion	12	—	6
EZ618-DC-RE	18 I/O expansion	—	12	6

Comes complete with installation guide and EZ-LINK-DS to connect expansion module to intelligent relay.
***Ordering Example: EZ618-AC-RE,** 18 I/O expansion.*

Accessories

MODEL NO.	DESCRIPTION
EZ-PC-CAB	EZ500/700 to PC cable
EZ800-PC-CAB	EZ800/EZD to PC cable
EZ200-POW	Power supply, 100-240 Vac input to 24 Vdc at 250 mA
EZ400-POW	Power supply, 100-240 Vac input to 24 Vdc at 1.25 A
EZ-M-32K	EZ500/700 32 K program storage module
EZ-M-256K	EZ800/EZD 256 K program storage module

MODEL	EZ202-RE	EZ618-AC-RE	EZ618-DC-RE
SUPPLY VOLTAGE	—	100 to 240 Vac	24 Vac
HEAT DISSIPATION	1 W	10 VA	4 W
CONTINUOUS CURRENT OUTPUTS	8 A	8 A	8 A
CONNECTION CABLES	0.2 to 4.0 mm^2 (AWG 22-12), solid 0.2 to 2.5 mm^2 (AWG 22-12), flexible		
DEGREE OF PROTECTIONS	IP 20	IP 20	IP 20
RFI SUPPRESSION	EN 55011, EN 55022 Class B, IEC 61000-6-1,2,3,4		
AMBIENT OPERATING TEMPERATURE	-25 to 55°C	-25 to 55°C	-25 to 55°C
TRANSPORT AND STORAGE TEMPERATURE	-40 to 70°C	-40 to 70°C	-40 to 70°C
CERTIFICATION, STANDARDS	EN 50178, IEC/EN 60947, UL, CSA		
MOUNTING	On top-hat rail to DIN 50022, 35 mm or screw mounting with EZB4-101-GF1 fixing brackets		

EZSoft User-Friendly Circuit Diagram Editor

EZSoft makes things particularly easy for users. The graphical editor shows the circuit diagram immediately in the display format required. Selection menus and drag & drop functions simplify circuit diagram creation. Simply select contacts and coils and connect with the mouse – that's it! In addition to the editing functions, EZSoft is available for straightforward circuit diagram input. All software includes user-friendly menus and Help screens. EZSoft offers the following display formats for viewing, editing and printing out your program:
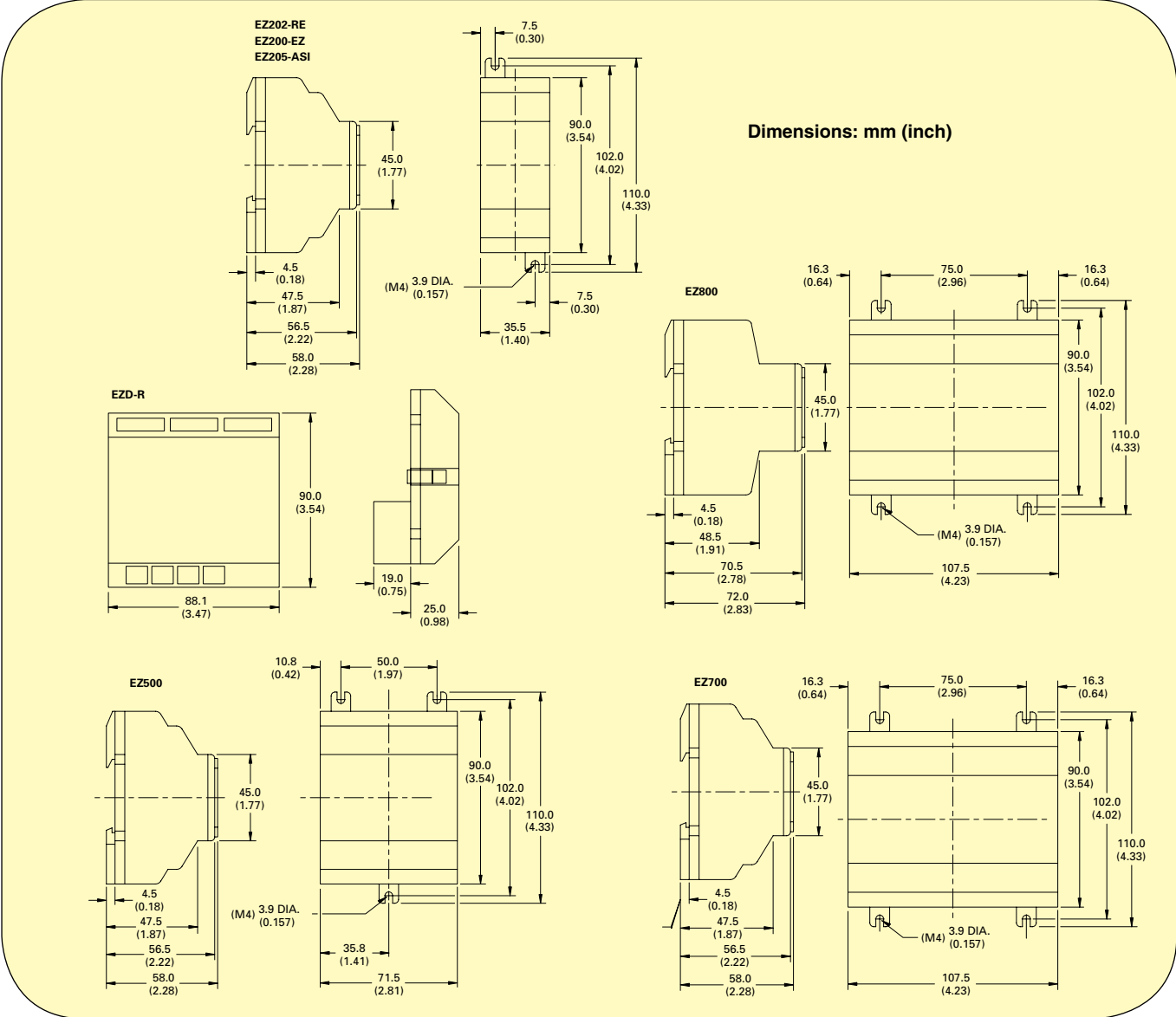
- IEC format, with contact and coil symbols using international standards
- EZ circuit diagram, same as what is seen when programming from the EZ front panel
- ANSI format, in compliance with American standards

EZSoft supports users who are configuring, programming and defining parameters for EZ intelligent relays and creating visualization functions for EZD displays. When intelligent relays are connected to EZ-NET, all connected devices can be accessed and their programs loaded from a single intelligent relay. The integrated offline simulation tool allows users to test the functionality of the circuit diagram before commissioning, without the need for a connected device. The comment function for contacts, coils and function blocks helps provide a clear overview of the circuit diagram. A cover sheet with a customized company logo and different text fields, as well as the cross-reference list with comments, can turn printouts into the perfect documentation for applications.
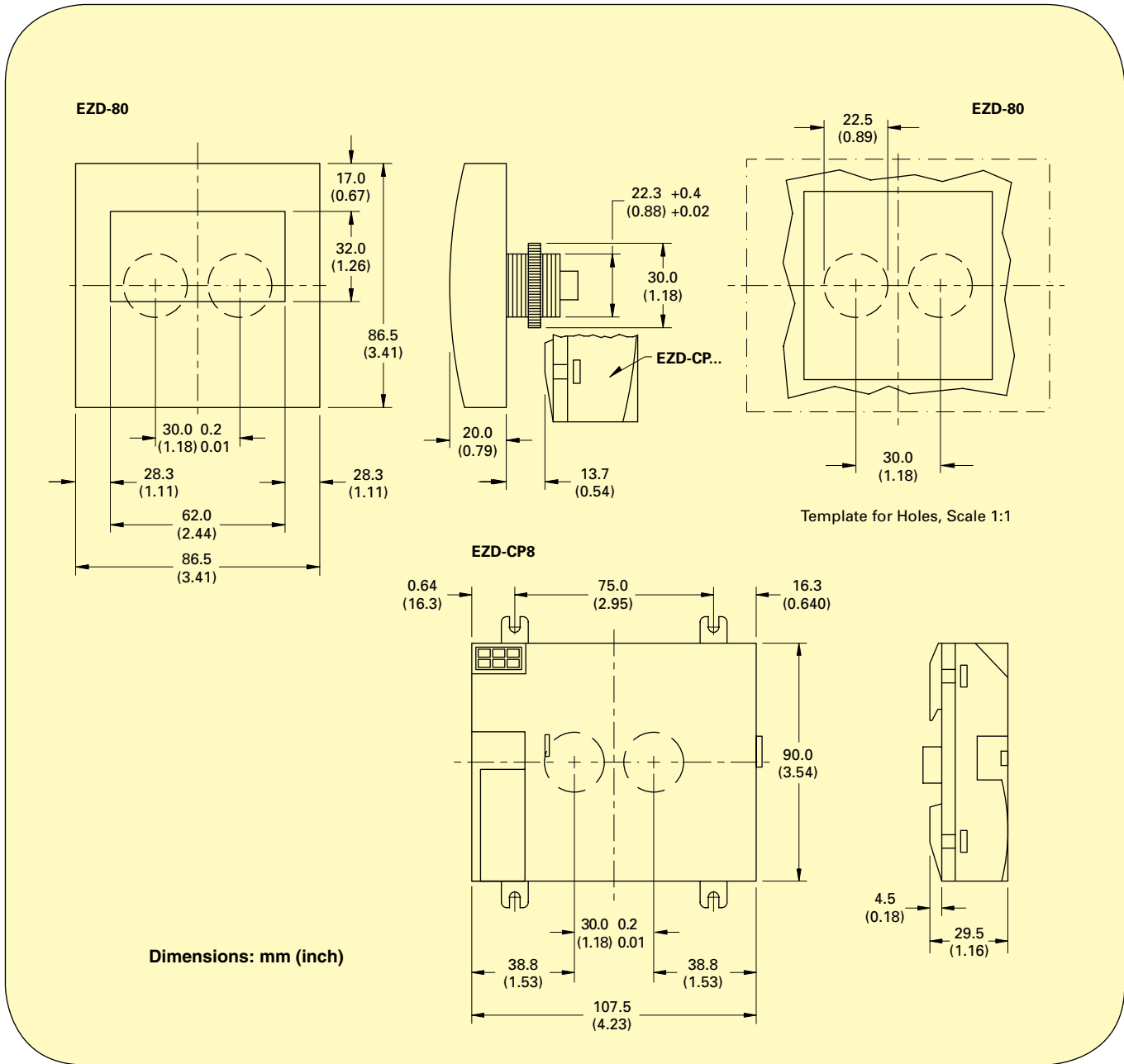
EZ is Maintenance-Free

The finished program is stored in EZ's non-volatile memory until modified. Additional auxiliary power or batteries are not required. The intelligent relays are entirely maintenance-free. Circuit diagrams and parameters are saved in the event of a power failure. If a power failure occurs, the EZ controller stores switch positions and values such as operating hours, meters, counters and timing relays. When power is restored the values are restored. This retentive feature for the different function blocks and data is available on all EZ intelligent relay models.

To Order	
MODEL NO.	**DESCRIPTION**
EZSOFT	Programming software for EZ800 and EZD
EZSOFT-BASIC	Programming software for EZ500/700

Dimensions: mm (inch)

EZ202-RE
EZ200-EZ
EZ205-ASI

EZD-R

EZ800

EZ500

EZ700

EZ500, EZ700 and EZ800 Series

MODEL NO.	EZ512-AC	EZ512-DC-R	EZ719-AC	EZ719-DC-RC	EZ819-AC	EZ819-DC-RC
SUPPLY VOLTAGE	100 to 240 Vac	24 Vdc	100 to 240 Vac	24 Vdc	100 to 240 Vac	24 Vdc
HEAT DISSIPATION	5 VA	2 W	10 VA	3.5 W	10 VA	3.4 W
CONTINUOUS CURRENT OUTPUTS (1)	8 A	8 A	8 A	8 A	8 A	8 A
MOUNTING	On top-hat rail to DIN 50022, 35 mm or screw mounting with EZB4-101-GF1 fixing brackets					
CONNECTION CABLES	0.2 to 4.0 mm² (AWG 22-12), solid 0.2 to 2.5 mm² (AWG 22-12), flexible					
DEGREE OF PROTECTIONS	IP 20					
RFI SUPPRESSION	EN 55011, EN 55022 Class B, IEC 61000-6-1, 2, 3, 4					
AMBIENT OPERATING TEMPERATURE	-25 to 55°C					
TRANSPORT AND STORAGE TEMPERATURE	-40 to 70°C					
CERTIFICATION, STANDARDS	EN 50178, IEC/EN 60947, UL, CSA, Class 1, Div 2					

EZD-80

17.0 (0.67)

32.0 (1.26)

86.5 (3.41)

30.0 (1.18) 0.2 0.01

28.3 (1.11)

28.3 (1.11)

62.0 (2.44)

86.5 (3.41)

20.0 (0.79)

22.3 +0.4 (0.88) +0.02

30.0 (1.18)

13.7 (0.54)

EZD-CP...

EZD-80

22.5 (0.89)

30.0 (1.18)

Template for Holes, Scale 1:1

EZD-CP8

0.64 (16.3)

75.0 (2.95)

16.3 (0.640)

90.0 (3.54)

30.0 (1.18) 0.2 0.01

38.8 (1.53)

38.8 (1.53)

107.5 (4.23)

4.5 (0.18)

29.5 (1.16)

Dimensions: mm (inch)

EZD Displays (EZD-80 and EZD-80B)

SUPPLY VOLTAGE	Supply from EZD-CP8
HEAT DISSIPATION	3 W
MOUNTING	Front Mounting in 2 x 22.5 mm Standard Drill Holes
DEGREE OF PROTECTIONS	IP65
RFI SUPPRESSION	EN 55011, EN 55022 Class B, IEC 61000-6-1,2,3,4
AMBIENT OPERATING TEMPERATURE	Clearly Legible at -5 to 50°C
TRANSPORT AND STORAGE TEMPERATURE	-40 to 70°C
CERTIFICATION, STANDARDS	EN 50178, IEC/EN 60947, UL, CSA, Class 1, Div 2

EZD CPU/Power Supply Module

MODEL	EZD-CP8	EZD-AC-CP8
SUPPLY VOLTAGE	24 Vdc	100 to 240 Vac
HEAT DISSIPATION	3 W	8 VA
MOUNTING	Snap fitted to EZD-80 or on top-hat rail to DIN 50022, 35 mm or screw mounting with EZB4-101-GF1 fixing brackets	