

The Eaton logo, consisting of the letters 'EATON' in a bold, sans-serif font with a small circle between the 'A' and 'O'.The Cutler-Hammer logo, consisting of the words 'Cutler-Hammer' in a bold, sans-serif font.

EZ Intelligent Relay

Product Focus

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.



Because of the extensive EZ product range, users can always find the best solution for their needs. Solutions can be as simple as a compact stand-alone intelligent relay with a few timing relays and a timer switch, or as complex as a large-scale network of EZ intelligent relays that are processing several hundred

I/O with local and remote expansion modules and graphic visualization. The need for user-friendly operation and programming is consistently met and forms the basis for the outstanding features found in the EZ family of products.



Technical overview: The right device for every application

EZ500 intelligent relay

For controlling small applications with up to 12 input/output signals

EZ700 intelligent relay

For controlling medium-sized applications with up to 40 input/output signals

EZ800 intelligent relay

For controlling large-scale applications with up to 300 input/output signals

EZD intelligent relay

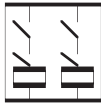
For controlling large-scale applications with powerful visualization functions



- 8 digital inputs



- 4 digital inputs or optionally 4 transistor outputs



- 128 rungs of 3 contacts and 1 coil each



- 16 operating and message texts



- 2 analog inputs (10-bit) optional (not with 230 VAC)



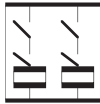
- 2 high-speed inputs, 1 kHz (only DC devices)



- 12 digital inputs



- 6 digital relay outputs or optionally 8 transistor outputs



- 128 rungs of 3 contacts and 1 coil each



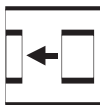
- 16 operating and message texts



- 4 analog inputs (10-bit) optional (not with 230 VAC)



- 2 high-speed inputs, 1 kHz (only DC devices)



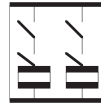
- 1 digital expansion or network connection



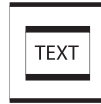
- 12 digital inputs



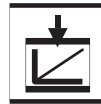
- 6 digital relay outputs or optionally 8 transistor outputs



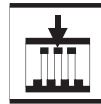
- 256 rungs of 4 contacts and 1 coil each



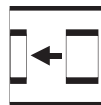
- 32 operating and message texts



- 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



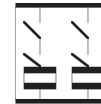
- 1 analog input (10 bit)



- 12 digital inputs



- 4 digital relay outputs or optionally 4 transistor 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 V AC)



- 4 high-speed inputs, 3/5 kHz (only DC devices)



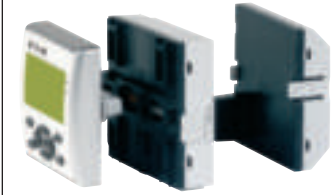
- 1 digital expansion or network connection



- Networkable via EZ-NET with up to 8 stations



- 1 analog input (10 bit)

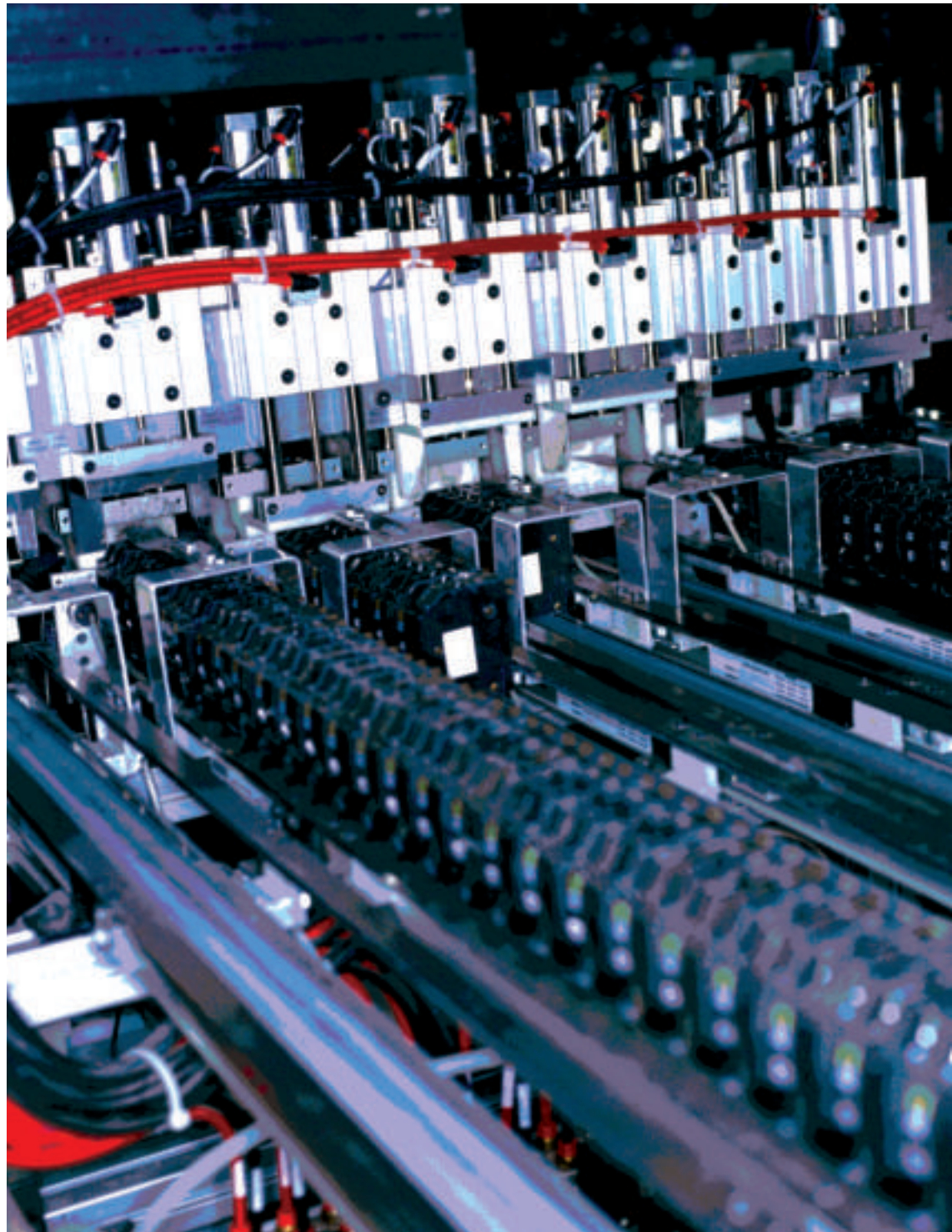


EZ800 and EZD intelligent relays

The EZ800 and EZD intelligent relays provide expanded capabilities. Users can network up to eight modules to easily support applications with over 300 I/O points. A control system can be designed by using a single local program or by using several programs on different distributed devices. Up to 1000 meters can be covered by the network. The intelligent relays can also be easily integrated with higher-level automation networks such as PROFIBUS-DP, CANopen, DeviceNet and AS-Interface.

EZD multi-function display

The EZD supports all of the functions of the EZ800 and provides a full graphical display. It replaces the 7-segment display and indicates fault messages and operating steps graphically or in plain text. The function buttons on the EZD can be used to display and modify set points during operation. High-speed signal counting, frequency measurement and incremental encoder processing can all be seamlessly implemented with an EZ800 or an EZD.



Communication made easy. Simple and inexpensive networking.



EZ-NET

By integrating the EZ-NET network, which allows up to eight stations consisting of EZ800 or EZD devices, communication can be accomplished up to a distance of 1000 meters. It does not matter if the devices involved are running their own programs or are only used as remote input/output modules.

Furthermore, all stations can be expanded locally using the EZ-LINK interface. This enables EZ and EZD devices to be used seamlessly with applications involving 12 to more than 300 I/O points. The EZD also features the option of a simple point-to-point connection with an EZ800 or another EZD via a serial interface.

Communication modules are available that allow EZ and EZD intelligent relays to be connected to AS-Interface, PROFIBUS-DP, CANopen and DeviceNet network systems.

Communication modules provide automation interaction

Communication connections to the production process give more flexibility and control.

Commanding, signaling, monitoring and controlling on bit level

A network connection is often worthwhile for simple operating steps often found in production processes. The Actuator-Sensor Interface, or AS-I, can provide 31 slaves simultaneously with 248 binary data items. For machine building applications, AS-I is the optimal network connection choice because input/output data can be transferred with a very fast reaction time of only 5 ms. As a result, it is possible to start up several motors simultaneously in a materials handling application.

The EZ205-ASI communication module makes network connection easy. It can be connected via the EZ-LINK connection to all expandable EZ units. The two-wire AS-I cable is simply wired to the module— that's it! Data exchange is then organized by a higher level AS-I master.



DeviceNet™

CANopen

Transferring complex data

More powerful fieldbus systems like the PROFIBUS-DP are used for complex automation tasks. These may involve transporting large data sets, such as several analog values, setpoints, counter states or timer parameters. With PROFIBUS-DP, up to 20 bytes

of data per station can be transferred with each scan, and up to 126 nodes can be linked together over a distance of 1200 meters. The EZ204-DP gateway makes EZ intelligent relays more flexible and powerful. Entire parameter sets of EZ can be read or exchanged by a network

connection. If recipes require different parameter sets to be transferred to EZ, clock times, counter states, setpoints and actual values can be controlled by a suitable master on this powerful network system.

Connection to world standard fieldbus systems

Similar to the EZ204-DP, the EZ221-CO network communication module for CANopen and the EZ222-DN for DeviceNet offer the same functions.

Stand alone EZ display with a high degree of protection

EZ intelligent relay with EZD display provides IP65 protection

The EZD-CP4-500 or EZD-CP4-800 supply and communication module can be combined with an EZD display and EZ intelligent relay providing users with the option of using a stand-alone display with IP65 protection for all EZ500/700 and EZ800 applications.



1



2



3



4

1 & 2 Plug & play

Plug & play technology allows users to connect an EZD display (EZD-80 or EZD-80-B) to an EZ intelligent relay via an EZD-CP4 supply and communication module. The EZD-CP4 module is factory shipped with five meters of serial connection cable that can be cut to any required length allowing the

display to be mounted up to five meters away from the intelligent relay.

No software or drivers are needed for the connection - EZD-CP4 is a genuine plug & play device. I/O wiring can be kept in the control panel and the EZD-CP4 simply snaps to the EZD display. When properly mounted, the display is

protected to IP65. The display includes a backlight that offers optimum legibility.

Two EZ-CP4 modules are available: EZD-CP4-500 is used with all EZ500/700s and the EZD-CP4-800 is used with all EZ800 and EZD-CP8 devices.

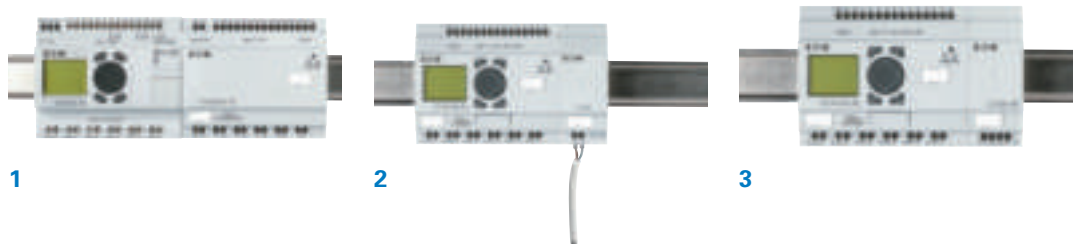
1, 3 & 4 EZD provides HMI-Control

When an EZD display is directly connected to an EZD-CP8 with optional input/output modules, the EZD becomes a compact HMI control device. It combines the functionality of an EZ800 with powerful visualization functions. The two modules are simply plugged together.

More input/output

Central and Decentralized Expansion Made Easy

The EZ700, EZ800 and EZD accommodate I/O expansion locally or remotely using a variety of different configurations.



1

2

3

1

By connecting an EZ618-AC-RE, EZ618-DC-RE or EZ620-DC-TE expansion module, users can create an intelligent relay with 24 inputs and up to 16 outputs. These three expansion modules are simply fitted onto the EZ controller and directly connected using the EZ-LINK interface connector.

2

Alternatively, a connection can be set up using the EZ200-EZ coupling module and a 2-wire cable allowing an expansion module to be remotely mounted up to 30 meters away.

3

The EZ202-RE expansion module provides two additional relay outputs that can be connected directly using the EZ-LINK connector.



EZ512-AC-RC



EZ512-DC-TCX



EZ512-DA-RC

Basic units	500 basic units											
Application	Stand-alone operation											
Type	EZ512-AB-RC	EZ512-AB-RCX	EZ512-AC-R	EZ512-AC-RC	EZ512-AC-RCX	EZ512-DA-RC	EZ512-DA-RCX	EZ512-DC-R	EZ512-DC-RC	EZ512-DC-RCX		
Supply voltage	24 V AC		100 - 240 V AC			12 V DC		24 V DC				
Heat dissipation	5 VA		5 VA			2 W		2W				
Inputs, digital	8	8	8	8	8	8	8	8	8	8		
Inputs, analog 0 - 10 V (optional)	2	2	-	-	-	2	2	2	2	2		
Outputs, digital (R=relay,T=trans.)	4R	4R	4R	4R	4R	4R	4R	4R	4R	4R		
Outputs, analog 0 - 10 V	-	-	-	-	-	-	-	-	-	-		
LCD display / keypad	Yes / Yes	- / -	Yes / Yes	Yes / Yes	- / -	Yes / Yes	- / -	Yes / Yes	Yes / Yes	- / -		
7-day / year time switch	Yes / Yes	Yes / Yes	- / -	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	- / -	Yes / Yes	Yes / Yes		
Continuous current outputs [1]	8A	8A	8A	8A	8A	8A	8A	8A	8A	8A		
Short-circuit proof with power factor 1	Line protection B16, 600 A											
Short-circuit proof with power factor 0.7... 0.7	Line protection B16, 900 A											
Connection cables	0.2 - 4.0 mm ² (AWG 22-12), solid 0.2 - 2.5 mm ² (AWG 22-12), flexible											
Degree of protection	IP 20											
RFI suppression	EN 55011, EN 55022 Class B, IEC 61000-6-1, 2, 3, 4											
Ambient operating temperature	- 25 °C ... + 55 °C											
Transport and storage temperature	- 40 °C ... + 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											
Dimensions (W x H x D) mm	71.5 x 90 x 58 mm											

[1] Relay = 8 A (10 A to UL) with resistive load, 3 A with inductive load/transistor outputs = 0.5 A / 24 V DC, max 4 outputs switchable in parallel.

[2] With backlight in continuous operation - 10 °C ... 0 °C.

[3] In stand-alone operation the EZD-...CP8-... CPU slices can also be mounted on a DIN 50022 top-hat rail, 35 mm or as screw mounting with EZB4-101-GF1 fixing brackets.



EZ719-AC-RCX



EZ721-DC-TC

700 basic units

Expandable (EZ2...EZ6...)

<i>EZ512-DC-TC</i>		<i>EZ512-DC-TCX</i>		<i>EZ719-AB-RC</i>		<i>EZ719-AB-RCX</i>		<i>EZ719-AC-RC</i>		<i>EZ719-AC-RCX</i>		<i>EZ719-DA-RC</i>		<i>EZ719-DA-RCX</i>		<i>EZ719-DC-RC</i>		<i>EZ719-DC-RCX</i>		<i>EZ721-DC-TC</i>		<i>EZ721-DC-TCX</i>	
				24 V AC				100 - 240 V AC				12 V DC				24 V CD							
				7 VA				10 VA				3.5 W				3.5 W							
8	8	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
2	2	4	4	-	-	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
4T	4T	6R	6R	6R	6R	6R	6R	6R	6R	6R	6R	6R	6R	6R	6R	6R	6R	6R	6R	6R	6R	6R	8T
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Yes / Yes	- / -	Yes / Yes	- / -	Yes / Yes	- / -	Yes / Yes	- / -	Yes / Yes	- / -	Yes / Yes	- / -	Yes / Yes	- / -	Yes / Yes	- / -	Yes / Yes	- / -	Yes / Yes	- / -	Yes / Yes	- / -	Yes / Yes	- / -
Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes
0.5A	0.5A	8A	8A	8A	8A	8A	8A	8A	8A	8A	8A	8A	8A	8A	8A	8A	8A	8A	8A	8A	8A	8A	0.5 A
-	-	Line protection B16, 600 A																		-	-		
-	-	Line protection B16, 900 A																		-	-		
0.2 - 4.0 mm ² (AWG 22-12), solid 0.2 - 2.5 mm ² (AWG 22-12), flexible																							
IP 20																							
EN 55011, EN 55022 Class B, IEC 61000-6-1, 2, 3, 4																							
- 25 °C ... + 55 °C																							
- 40 °C ... + 70 °C																							
EN 50178, IEC/EN 60947, UL, CSA																							
On top-hat rail to DIN 50022, 35 mm or screw mounting with EZB4-101-GF1 fixing brackets																							
107.5 x 90 x 58 mm																							



EZ819-AC-RC



EZ822-DC-TC



EZD-80-B



EZD-CP4

Basic units	800 basic units									
Application	Expandable (EZ2..., EZ6...), networkable (EZ-NET)									
Type	EZ819-AC-RC	EZ819-AC-RCX	EZ819-DC-RC	EZ819-DC-RCX	EZ820-DC-RC	EZ820-DC-RCX	EZ821-DC-TC	EZ821-DC-TCX	EZ822-DC-TC	EZ822-DC-TCX
Supply voltage	100 - 240 V AC				24 V DC					
Heat dissipation	10 VA				3.4 W					
Inputs, digital	12	12	12	12	12	12	12	12	12	12
Inputs, analog 0 - 10 V (optional)	-	-	4	4	4	4	4	4	4	4
Outputs, digital (R=relay,T=trans.)	6R	6R	6R	6R	6R	6R	8T	8T	8T	8T
Outputs, analog 0 - 10 V	-	-	-	-	1	1	-	-	1	1
LCD display / keypad	Yes / Yes	- / -	Yes / Yes	- / -	Yes / Yes	- / -	Yes / Yes	- / -	Yes / Yes	- / -
7-day / year time switch	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes
Continuous current outputs [1]	8A	8A	8A	8A	8A	8A	0.5A	0.5A	0.5A	0.5A
Short-circuit proof with power factor 1	Line protection 816, 600 A						-	-	-	-
Short-circuit proof with power factor 0.7... 0.7	Line protection 816, 900 A						-	-	-	-
Connection cables	0.2 - 4.0 mm ² (AWG 22-12), solid 0.2 - 2.5 mm ² (AWG 22-12), flexible									
Degree of protection	IP 20									
RFI suppression	EN 55011, EN 55022 Class B, IEC 61000-6-1, 2, 3, 4									
Ambient operating temperature	- 25 °C ... + 55 °C									
Transport and storage temperature	- 40 °C ... + 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									
Dimensions (W x H x D) mm	107.5 x 90 x 72 mm									

[1] Relay = 8 A (10 A to UL) with resistive load, 3 A with inductive load/transistor outputs = 0.5 A / 24 V DC, max 4 outputs switchable in parallel.

[2] With backlight in continuous operation - 10 °C ... 0 °C.

[3] In stand-alone operation the EZD-...CP8-... CPU slices can also be mounted on a DIN 50022 top-hat rail, 35 mm or as screw mounting with EZB4-101-GF1 fixing brackets.



EZD-CP8-NT



EZD-R16



EZD-TA17

EZD													
Display		Power supply/ Coupling		Power supply / CPU				Inputs / outputs					
<i>EZD-80</i>	<i>EZD-80-B</i>	<i>EZD-CP4-500</i>	<i>EZD-CP4-800</i>	<i>EZD-CP8-ME</i>	<i>EZD-CP8-NT</i>	<i>EZD-AC-CP8-ME</i>	<i>EZD-AC-CP8-NT</i>	<i>EZD-AC-R16</i>	<i>EZD-R16</i>	<i>EZD-RA17</i>	<i>EZD-TT6</i>	<i>EZD-TA17</i>	
Supply viaCP...		24 V DC				100 - 240 V AC		Supply viaCP8-..					
3 W		1.5 W		3 W		8VA		0.5 W					
-	-	-	-	-	-	-	-	12	12	12	12	12	
-	-	-	-	-	-	-	-	-	4	4	4	4	4
-	-	-	-	-	-	-	-	4R	4R	4R	4R	4R	4R
-	-	-	-	-	-	-	-	-	-	1	-	1	
Yes / Yes	Yes / Yes	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
- / -	- / -	- / -	- / -	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	- / -	- / -	- / -	- / -	- / -	- / -
-	-	-	-	-	-	-	-	8A	8A	8A	0.5 A	0.5 A	
-	-	-	-	-	-	-	-	Line protection B16, 600 A			-	-	
-	-	-	-	-	-	-	-	Line protection B16, 900 A			-	-	
-	-	0.2 - 4.0 mm ² (AWG 22-12), solid 0.2 - 2.5 mm ² (AWG 22-12), flexible						0.2 - 2.5 mm ² (AWG 22-12), flexible					
IP 65		IP 20											
EN 55011, EN 55022 Class B, IEC 61000-6-1, 2, 3, 4													
Clearly legible at - 5 °C ...+ 50 °C [2]*		- 25 °C ... + 55 °C											
- 40 °C ... + 70 °C													
EN 50178, IEC/EN 60947, UL, CSA													
Front mounting in 2 x 22.5 mm standard drill holes		n/a [3] (snap fitted on EZD-80...)						n/a (snap fitted on EZD-...CP8-...)					
86.5 x 86.5 x 20 mm		78 x 58 x 36.2 mm		107.5 x 90 x 29.5 mm				88.1 x 90 x 25 mm					



EZ618-DC-RE



EZ202-RE



EZ204-DP



EZ205-ASI

Accessories	Expansion modules				Expansion modules				
Application	Digital inputs / outputs 107.5 x 90 x 58 mm				Communication				
Type	EZ202-RE	EZ618-AC-RE	EZ618-DC-RE	EZ620-DC-TE	EZ200-EZ	EZ204-DP	EZ205-ASI	EZ221-CO	EZ222-DN
Supply voltage	-	100-240 V AC	24 V DC		-	24 V AC	-	24 V AC	24 V AC
Heat dissipation	1 W	10 VA	4 W		1 W	2 W	1 W	1 W	1 W
Inputs, digital	-	12	12	12	-	-	-	-	-
Inputs, analog 0 - 10 V (optional)	-	-	-	-	-	-	-	-	-
Outputs, digital (R=relay, T=trans.)	2R	6R	6R	8T	-	-	-	-	-
Outputs, analog 0 - 10 V	-	-	-	-	-	-	-	-	-
LCD display / keypad	-/-	-/-	-/-	-/-	-/-	-	-	-	-
7-day / year time switch	-/-	-/-	-/-	-/-	-/-	-	-	-	-
Continuous current outputs [1]	8A	8A	8A	0.5 A	-	-	-	-	-
Short-circuit proof with power factor 1	Line protection B16, 600 A				-	-	-	-	-
Short-circuit proof with power factor 0.7...	Line protection B16, 900 A				-	-	-	-	-
Connection cables	0.2 - 4.0 mm ² (AWG 22-12), solid 0.2 - 2.5 mm ² (AWG 22-12), flexible				0.2 - 4.0 mm ² (AWG 22-12), solid 0.2 - 2.5 mm ² (AWG 22-12), flexible				
Degree of protection	IP 20				IP 20				
RFI suppression	EN 55011, EN 55022 Class B, IEC 61000-6-1, 2, 3, 4				EN 55011, EN 55022 Class B, IEC 61000-6-1, 2, 3, 4				
Ambient operating temperature	- 25 °C ... + 55 °C				- 25 °C ... + 55 °C				
Transport and storage temperature	- 40 °C ... + 70 °C				- 40 °C ... + 70 °C				
Certification, standards	EN 50178, IEC/EN 60947, UL, CSA				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				On top-hat rail to DIN 50022, 35 mm or screw mounting with EZB4-101-GF1 fixing brackets				



EZ221-CO



EZ222-DN



EZ200-POW



EZ400-POW

Accessories	Switched-mode power supply units	
Application		
Type	<i>EZ200-POW</i>	<i>EZ400-POW</i>
Supply voltage	100 - 240 V AC	
Maximum range	85 - 264 V AC	
Output voltage	24 V DC (+/- 3%)	
Output current (rated value)	0.25 A	1.25 A
Overcurrent limitation form	0.3 A	1.4 A
Short-circuit proof (secondary)	Yes	Yes
Overload proof	Yes	Yes
Potential isolation (prim./sec.)	Yes, SELV (to EN 600950, VDE 805)	
Others	Additional output voltage 12 DC, 20 mA	-
Connection cables	0.2 - 4.0 mm ² (AWG 22-12), solid 0.2 - 2.5 mm ² (AWG 22-12), flexible	
Degree of protection	IP 20	
RFI suppression	EN 55011, EN 55022 Class B, IEC 61000-6-1, 2, 3, 4	
Ambient operating temperature	- 25 °C ... + 55 °C	
Transport and storage temperature	- 40 °C ... + 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 the 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, the scaled software packages EZSoftBasic and EZSoft are 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

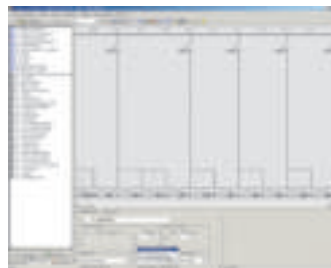
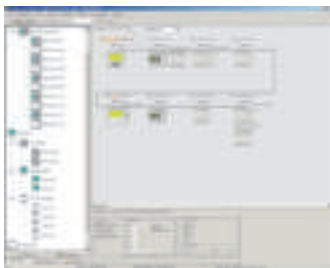
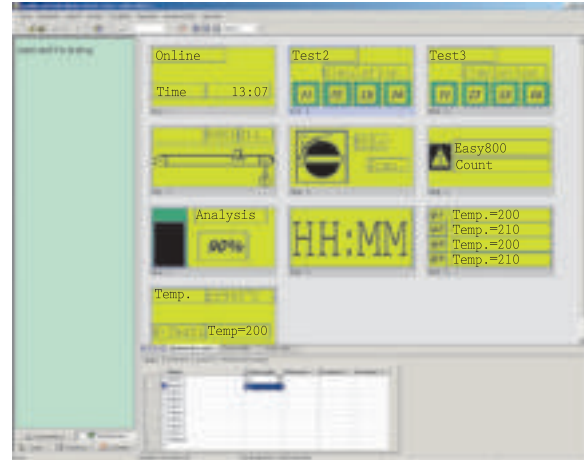
EZSoft supports users who are configuring, programming and defining parameters for EZ intelligent relays and creating visualization functions for EZD displays. When intelligent relays are connected to EZ-NET, all connected devices can be accessed and their programs loaded from a single intelligent relay.

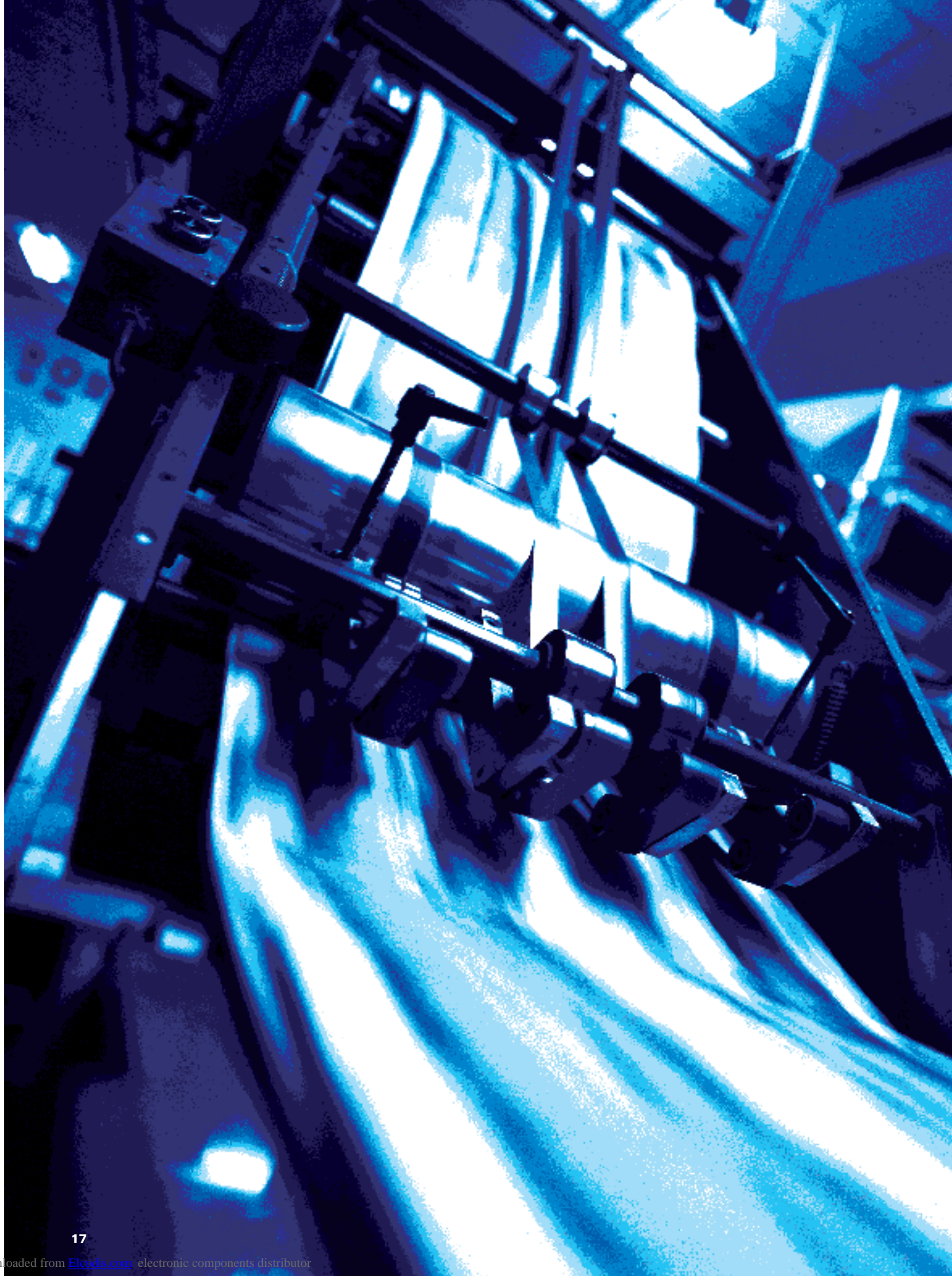
The integrated offline simulation tool allows users to test the functionality of the circuit diagram before commissioning, without the need for a connected device. The comment function for contacts, coils and function blocks helps provide a clear overview of the circuit diagram. A cover sheet with a 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.





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