Product Information

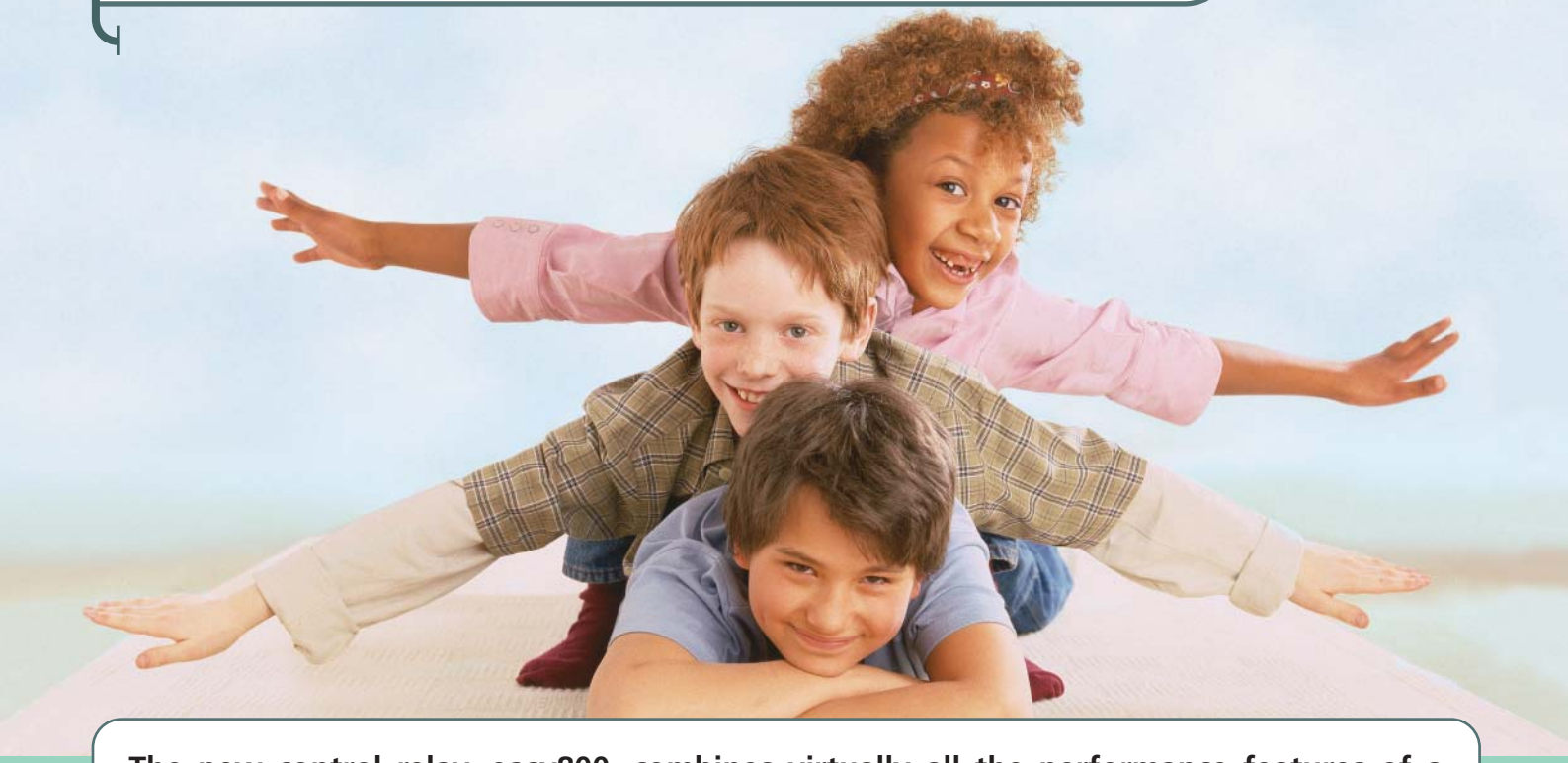
Switching, Control and Communication – SIMPLY easy

The easy400, 600, 800 control relays

MOELLER

Think future. Switch to green.

Start up and control – SIMPLY easy



The new control relay, easy800, combines virtually all the performance features of a PLC with the handling convenience of easy. Together with the easy400 and easy600, it forms a cohesive system with uniform accessories, software and operation, designed for intelligent solutions in machine and instrument control or in building services.

Rapid commissioning
The indication of where current is flowing in the circuit, during actual operation or testing, simplifies and speeds up commissioning and makes it more reliable. All the easy devices have a current flow indicator.

Great space savings
There is space for easy anywhere. The standard 45 mm front dimension is equally suitable for use in service distribution boards in building services installations, or in control panels on machines and in industrial control systems. In each case, the easy replaces several conventional components and switching devices in a fraction of their space requirement.

easy – One for all
The easy series of control relays offers the user 3 variants in each case, suitable for a wide range of applications. There are the AC devices with potential-free relay outputs, and the DC devices with the option of relay or transistor outputs. The voltage range for the input signals is always identical with the supply voltage. The easy relays are fully functional in temperatures ranging from -25° to 55° C.
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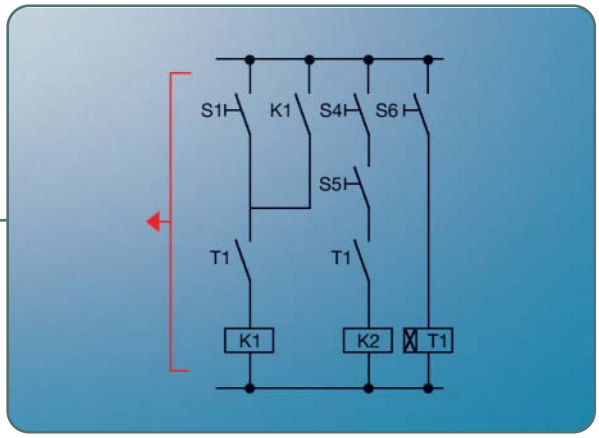
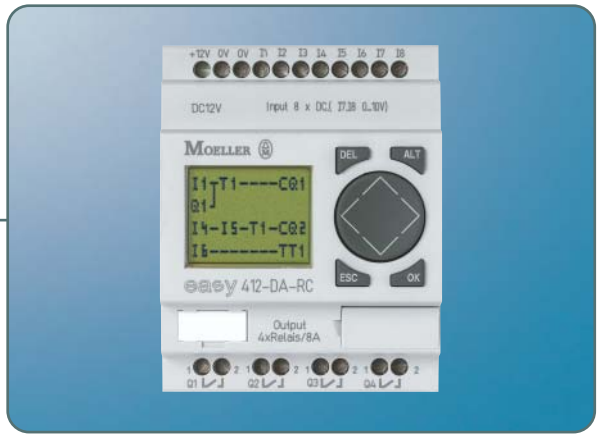
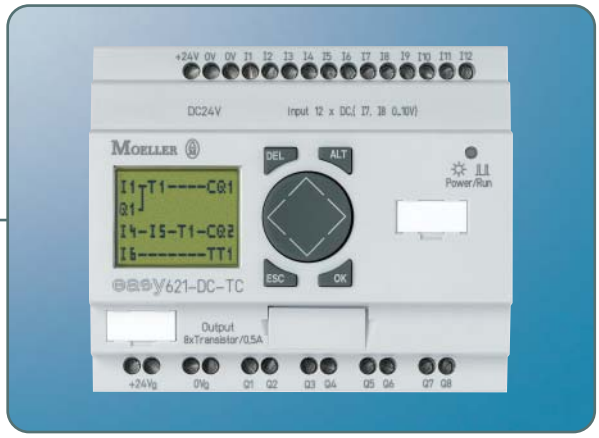
Logic links instead of wiring
Circuit diagrams form the basis for all electrical applications. Conventionally, the resulting circuits are implemented by wiring of switching and control devices. With the easy control relay, this is done quite simply using keystrokes or the convenient easy-soft software at the PC, for making the logic connections. Input is simply menu guided, and available in either 5 or 10 languages. This saves mounting and wiring costs and above all, precious time, making the easy quite an expert for world markets.



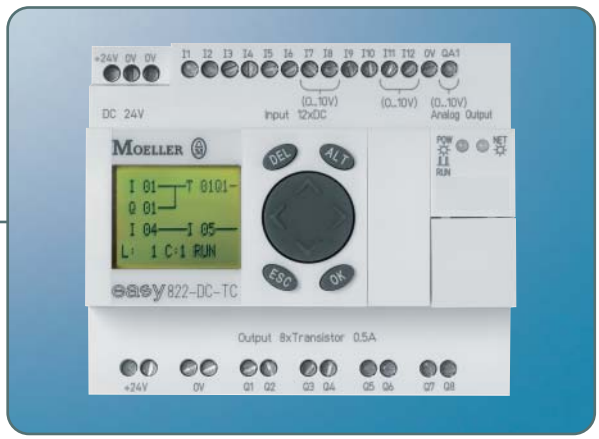
The easy400 control relay
Eight inputs, four relay or transistor outputs. In all the DC variants, there is the option of two analog inputs. The easy412 has three contacts and one coil for circuit configuration in each of up to 41 lines of logic.



The easy600 control relay
Twelve inputs, six relay or eight transistor outputs. In all the DC variants, there is the option of two analog inputs. The easy600 has three contacts and one coil in series for circuit configuration in each of up to 121 lines of logic.
The built-in display can show up to eight texts of 48 characters each. For each text, two variables or module parameters can be included in the display. The user can thus read texts and values on the display in plain text.



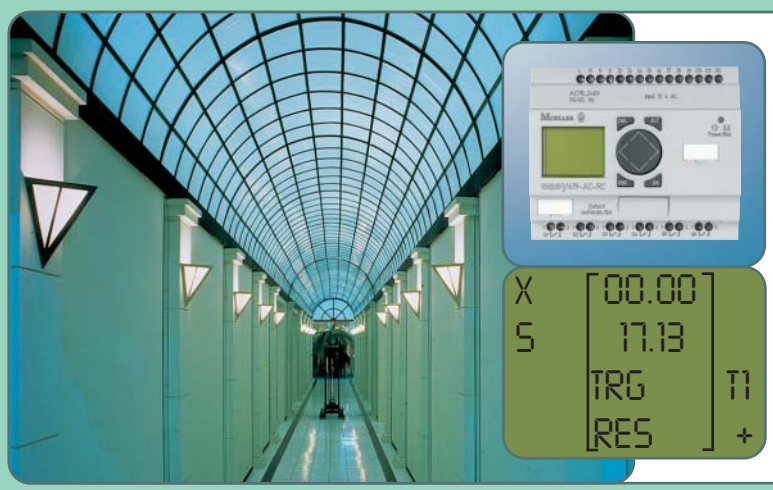
The easy800 control relay
Twelve inputs, six relay or eight transistor outputs. In all the DC variants, there is the option of four analog inputs and also of one analogue output. The easy800 has four contacts and one coil in series for circuit configuration in each of up to 256 lines of logic.
The built-in display can show up to 32 texts of 64 characters each. For each text, the user can include several variables or module parameters in the display at any point. He can thus read texts and values on the display in plain text.
Counting high-speed signals, measuring frequency or evaluating incremental encoder readings are no problem with easy800. Computing, data storage or communication via the NET network – all simply easy.



easy Showing Your Business in a Favourable Light

Lighting for shop windows:

- Automatic daylight- and clock-controlled switching of lighting and external advertising shows products in a "favourable light".
- Lighting can be activated in the event of an alarm or at random.
- Program protection via password.
- Supply and input voltage 100 to 240 V AC.
  Direct switching of the load current via relay.
  Direct connection of, for example, standard recessed switches to easy.



Lighting control for buildings:

- Both centralized and decentralized impulse-relay function switching of lights is possible.
- A real-time controlled Off pulse enables central disconnection of the lighting for power saving purposes.
- A basic unit can control up to 12 separate groups of lighting. Convenience lighting control such as that of a central light for cleaning, semi-lighting in the stair well or a pulse for pre-warning of a dark phase can be configured.
- Suitable for fitting in low-voltage distribution boards due to 45 mm standard front dimension, and either 4, 6, 8 or 12 times MCB width.

Greenhouses:

- Daylight- and temperature governed control of skylights, heating, blowers, watering and lighting.
- Recording and processing of up to four analog values such as temperature, humidity or brightness.
- Processing, comparison, display and output of the analog values via convenient arithmetical functions and analog output.
- Setting of required values directly at the device.
- Manual intervention possible at any time via external switches or the four built-in cursor keys.

easy Helps Industry Save Costs

HGV cooling system:

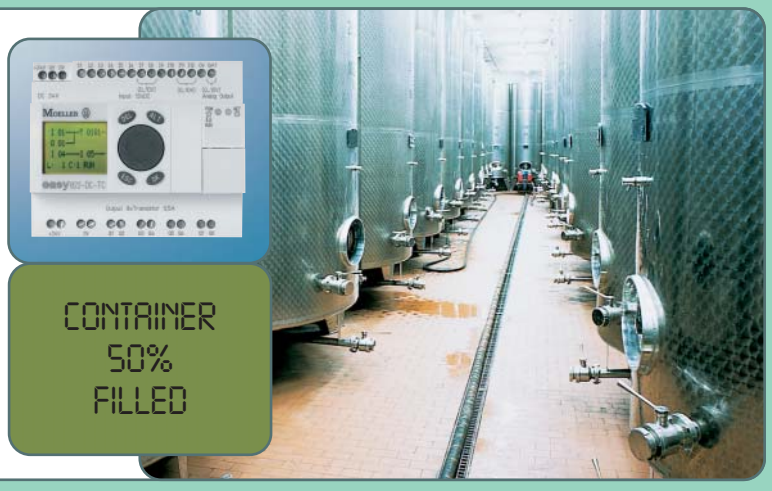
- Operating temperature range -25 °C to +55 °C of all the easy devices enables them to be used directly in outdoor installations, on vehicles, etc.
- easy is particularly cost efficient: it can do without the keypad and display window and then costs less. Here an LED signals the operating status. The easy circuit diagrams are used in all easy devices, whether or not they have a display window.
- Temperature, pressure, etc. can be recorded via analog inputs.
- Devices mounted by fitting onto top-hat rail, or by screw fixing using the mounting brackets.

Machine control:

- Plug-in memory module enables duplication of easy circuit diagram without a PC. Any subsequent changes to the circuit diagram which may be necessary, can be undertaken off-site, the memory module sent to site and the modifications read into the easy there.
- Adjustable start-up behaviour (RUN or STOP), which then governs the operating mode when the power is switched on, facilitates commissioning.
- Detection of short circuits and selective disconnection of the transistor outputs in the event of short circuit or overload.

Container control:

- Straightforward and economic communication over distances of up to 1000 m via the built-in NET interface.
- Up to 32 status and indication texts can be displayed, each with several variables, in a back-lit window, for example to compare setpoint and actual values for fill levels, run times, etc.
- Application variable, due to presetting of various mixing and running times via direct parameter input into the device.



With Built-in NET – Communication simplified

The easy800 control relays can be simply and economically networked with one another by means of the built-in NET network interface. Up to eight easy800 units can communicate with one another via this interface at a distance of up to 1000 m, irrespective of whether the individual device is processing its own program or being used merely as a remote input/output module. Furthermore, each easy800 device can be locally expanded via the easy Link interface. This feature enables easy control relays to be used throughout automation applications of from 12 to more than 300 I/O points.

The operator can monitor the entire network from the PC. The PC can be connected to any station on the network via the programming device interface.

easy in Automatic Interaction – With Fieldbus Connection to the Production Process

Commanding, indicating, monitoring and control at Bit level

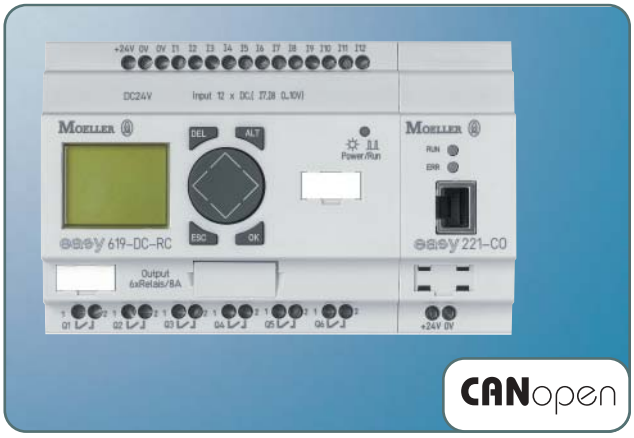
Even for straightforward sequences, such as in production processes, the bus connection is worthwhile. The actuator-sensor interface, AS-i for short, can supply 31 stations simultaneously with up to 248 binary instructions. AS-i is the ideal bus connection for machine building. Input and output data being transmitted in the particularly short time of only 5 ms means that, for example, several motors can be started at absolutely the same time (e.g. in mechanical handling).
The EASY205-ASI communication module makes connecting to the bus particularly easy. It can be coupled centrally to any expandable easy basic units, as well as to easy600 and easy800 devices via easy-Link. Then you simply wire the two-core AS-i cable with the module – and that's it! The data exchange is handled at a higher level via an AS-i Master.

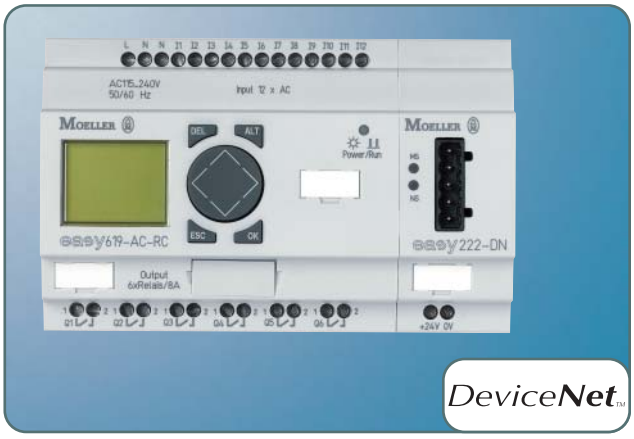
Transferring complex programs

More powerful fieldbus systems, such as Profibus DP, are used for more complex automation tasks in which the user has to transfer relatively large sets of data, e.g. several analog values, setpoint values, counter readings or time parameters. Profibus DP can transfer up to 20 Bytes per station in each bus cycle, and can link up to 126 stations at distances of up to 1200 m. This bus connection, the EASY204-DP, makes easy control relays even more flexible and versatile, because it enables complete easy parameter sets to be read or even exchanged via the bus. This comes into its own, for example, where recipes for mixed products need to be replaced and new parameter values in easy are therefore required. The time values, clock settings, counter readings, setpoint or actual values can then be monitored by a suitable bus master via this high-performance fieldbus system.

Connection to standard fieldbus systems worldwide

The EASY221-CO unit offers the same functions as those discussed in the paragraph above, for CANopen, and EASY222-DN for DeviceNet. DeviceNet is used frequently in the USA and Canada. Easy is thus proven to be a product for world markets also as far as it networking capability is concerned.

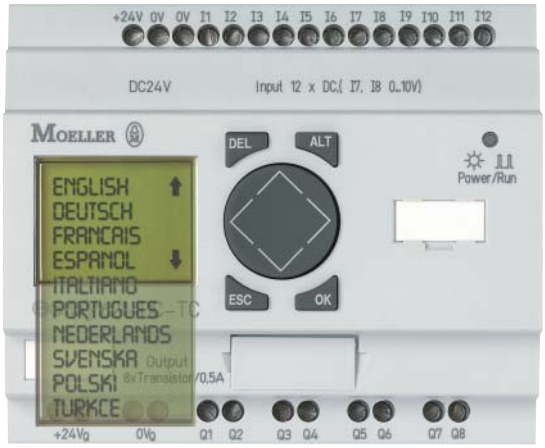




Local and Remote Expansion - Simply easy

The expandable basic units of the easy600 and easy800 series permit local or remote expansion of inputs/outputs. Combining them with EASY 618-AC-RE, EASY618-DC-RE or EASY620-DC-TE expansion modules produces a unit with 24 inputs and up to 16 outputs. These three expansion modules are linked directly to the basic unit via the easy-Link interface. Alternatively, connection can be achieved via the EASY200-EASY coupling module and a simple twisted-pair cable up to 30 m in length. Even complex and extensive circuits can thus be achieved simply using easy. In the event that you need still more I/O, the EASY202-RE module offers another two relay outputs.

“Wiring” by Keystroke – Inputting Circuit Configuration and Parameters Directly



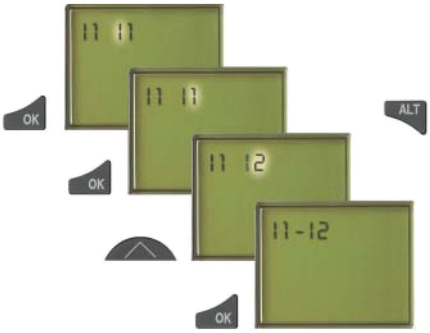
easy to operate

Anyone able to read a wiring diagram will quickly feel comfortable with easy. Every circuit can be input 1:1 on the display of this clever device, using the familiar normally open and normally closed contacts and coils. All the basic and the special functions can be ‘wired up’ with one another simply by keystroke.

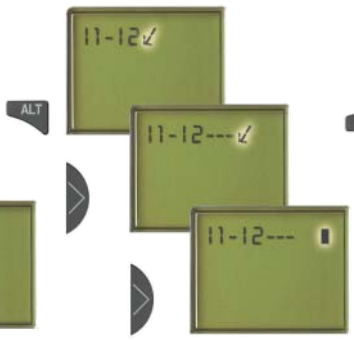
easy also makes sure that there are no misunderstandings: easy400 offers a choice of five menu languages, and easy600 and 800 as many as ten.

Enter contact ”I1“

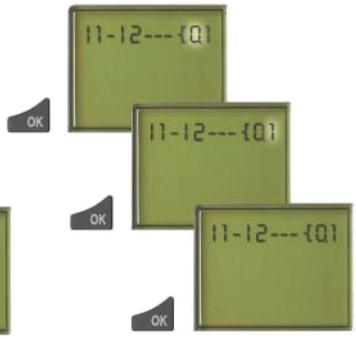
Enter contact ”I2“



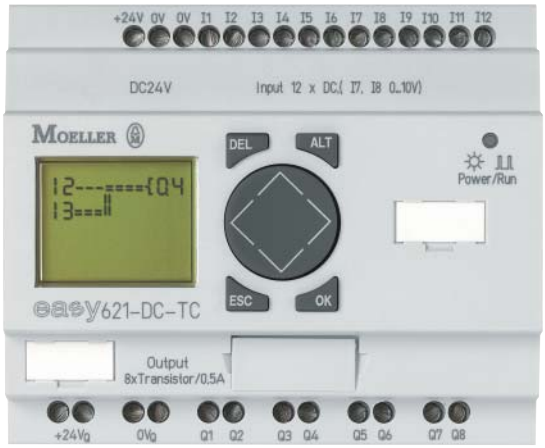
Connect up contact- and coil



Select relay coil ”Q1“



Each of the eight selection buttons has its own specific function. The OK button activates the selected function. The four cursor keys, up, down, left and right, allow the user to make his selection from the actions to be taken. The ESC button reverses the action and the DEL button erases. The ALT button is used to make the logic connections in the wiring diagram. Once you have completed configuration, the control relay tests the circuit, with the current flow indicator showing you how the current flows through the contacts.




EASY 412-AC-RC


EASY 412-DC-TCX


EASY 412-DA-RC


EASY 619-AC-RCX


EASY 621-DC-TC


EASY 819-AC-RC


EASY 822-DC-TC


EASY 618-DC-RE


EASY 202-RE


EASY 204-DP


EASY 205-ASI


EASY 221-CO


EASY 200-POW

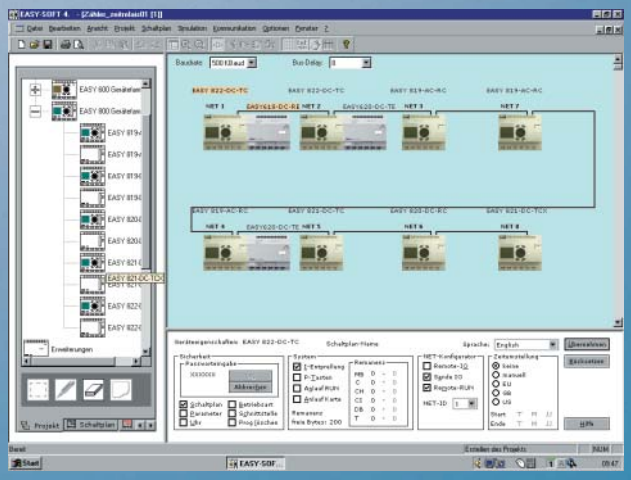

EASY 400-POW

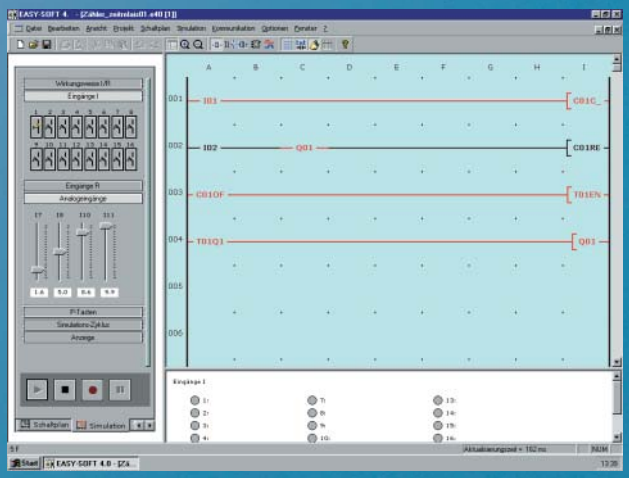
	400 Series Basic Units									600 Series Basic Units, expandable						800 Series Basic Units, expandable, +analog Q										Expansions			Communication					Reserve	
	EASY412-AC-R	EASY412-AC-RC	EASY412-AC-RCX	EASY412-DC-R	EASY412-DC-RC	EASY412-DC-RCX	EASY412-DC-TC	EASY412-DC-TCX	EASY412-DA-RC	EASY619-AC-RC	EASY619-AC-RCX	EASY619-DC-RC	EASY619-DC-RCX	EASY621-DC-TC	EASY621-DC-TCX	EASY819-AC-RC	EASY819-AC-RCX	EASY819-DC-RC	EASY819-DC-RCX	EASY821-DC-TC	EASY821-DC-TCX	EASY820-DC-RC	EASY820-DC-RCX	EASY822-DC-TC	EASY822-DC-TCX	EASY618-AC-RE	EASY618-DC-RE	EASY620-DC-TE	EASY202-RE	EASY200-EASY	EASY204-DP	EASY205-ASI	EASY221-CO	EASY222-DN	EASY200-POW	EASY400-POW
Supply voltage	115/240 V AC			24 V DC					12 V DC	115/240 V AC		24 V DC				115/240 V AC		24 V DC								115/240 V AC	24 V DC		–	–	24 V DC	–	24 V DC	24 V DC		
Heat dissipation	5 VA			2 W						3,5 W						10 VA		3,4 W								10 VA	4 W		1 W	1 W	2 W	1 W	2 W	2 W		
Inputs, digital	8	8	8	8	8	8	8	8	8	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	–	–	–	–	–	–	–	–
Inputs, analog optional (0 - 10 V)	–	–	–	2	2	2	2	2	2	–	–	2	2	2	2	–	–	4	4	4	4	4	4	4	4	–	–	–	–	–	–	–	–	–	–	–
Outputs, digital (R=relay, T=transistor)	4 R	4 R	4 R	4 R	4 R	4 R	4 T	4 T	4 R	6 R	6 R	6 R	6 R	8 T	8 T	6 R	6 R	6 R	6 R	8 T	8 T	6 R	6 R	8 T	8 T	6 R	6 R	8 T	2 R	–	–	–	–	–	–	–
Outputs, analog (0 - 10 V)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	1	1	–	–	–	–	–	–	–	–	–	–	–
LCD, Keypad	Yes	Yes	–	Yes	Yes	–	Yes	–	Yes	Yes	–	Yes	–	Yes	–	Yes	–	Yes	–	Yes	–	Yes	–	Yes	–	–	–	–	–	–	–	–	–	–	–	–
Real-time clock	–/–	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	–/–	–/–	–/–	–/–	–/–	–/–	–/–	–/–	–/–	–/–	–/–
Continuous current of outputs [1]	8 A	8 A	8 A	8 A	8 A	8 A	0,5 A	0,5 A	8 A	8 A	8 A	8 A	8 A	0,5 A	0,5 A	8 A	8 A	8 A	8 A	0,5 A	0,5 A	8 A	8 A	0,5 A	0,5 A	8 A	8 A	0,5 A	8 A	–	–	–	–	–	–	–
Short-circuit proof where cos phi = 1	Cable protection B 16, 600 A						–	–	B 16, 600 A	Cable protection B 16, 600 A				–	–	Cable protection B 16, 600 A				–	–	Cable protection B16, 600 A		–	–	Cable protection B 16, 600 A		–	B 16, 600 A	–	–	–	–	–	–	–
Short-circuit proof where cos phi = 0,5...0,7	Cable protection B 16, 900 A						–	–	B 16, 900 A	Cable protection B 16, 900 A				–	–	Cable protection B 16, 900 A				–	–	Cable protection B 16, 900 A		–	–	Cable protection B 16, 900 A		–	B 16, 900 A	–	–	–	–	–	–	–
Supply leads	0,2 - 0,25 mm², flex./ 0,2 - 4,0 mm², rigid																																			
Degree of protection	IP 20																																			
Interference suppression	EN 55 011 / 55 022 Class B																																			
Operational ambient temperature	-25° C to +55° C																																			
Transport- and storage temperature	-40° C to +70° C[1]																																			
Certification, Standards	EN 50 178, IEC/EN 60947, UL, CSA																																			
Mounting	On top-hat rail to EN 60715, 35 mm or screw fitting with ZB4-101-GF1 fixing brackets																																			
Dimensions (W x H x D) mm	71,5 x 90 x 58 mm									107,5 x 90 x 58 mm						107,5 x 90 x 72 mm										107,5 x 90 x 58 mm			35,5 x 90 x 58 mm						71,5 x 90 x 58 mm	

	EASY200-POW	EASY400-POW
Input voltage range	85 to 264 V AC	85 to 264 V AC
Output voltage	12/24 V DC +/- 3%	24 V DC +/- 3%
Output current, rated value	0,02/0,25 A	1,25 A
Overcurrent limitation	from 0,3 A	from 1,4 A
Other	Additional output voltage 12V DC, 20mA for analog supply	
Potential isolation, primary/secondary	Yes, SELV (to EN 60 0950, VDE 805)	Yes, SELV (to EN 60 0950, VDE 805)
Protection against short circuit (secondary)	Yes	Yes
Overload proof (secondary)	Yes	Yes

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

easy-Soft – The Convenient Way to Input the Circuit Configuration





easy-soft makes programming particularly simple for the user. The graphics editor shows the desired representation of the circuit diagram directly. Selection menus and drag- and drop functions facilitate logic connections. Simply select and connect contacts and coils, all at the click of a mouse button – and that's it! You can choose the user-friendly menus and texts provided by easy-soft in one of five languages.

The following types of display can be selected for viewing, processing and printing out of your program:

- In accordance with IEC international Standards, with contact and coil symbols
- With easy circuit configuration, 1:1 as shown in the easy display window
- In accordance with the American Standard, ANSI

The built-in off-line simulation function enables the user to test that the circuit functions properly before commissioning, and without the module being connected. Notes alongside contacts and coils create clarity. A cover sheet with your own title block, various text boxes and cross-reference list with comments, make your print-out into a professional piece of documentation.

Easy needs no maintenance

Once the program is designed, it is stored in the easy in a non-volatile fashion and retained there forever, or until the next modification. There is no need for an auxiliary voltage supply or a battery. In other words, these control relays are utterly maintenance-free. It is not only circuits and parameters that have to be safeguarded when there is a power failure. Easy also remembers switch positions and values. For example the actual reading on the hours-run meter and other counters, as well as the time elapsed on the timing relay are recorded and can continue to be processed after the system is switched On again. easy series modules in all rating classes offer this remanence.

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Xtra Combinations

Xtra Combinations is the new world of automation from Moeller. This means that one company can now serve all your automation requirements. Moeller is your competent partner for building automation, industrial automation and power distribution. We provide a complete package or individual combinations, depending on your application. And everything fits together perfectly: core products, PLCs, data and process display units, communication products, software standards, accessibility via the Internet, design and solution competence, and professional services. All backed up by Moeller's experience and expertise, spanning more than 100 years, with switchgear, controlgear and PLC technology in the fields of automation and power distribution. What other company offers you so much from a single source? Contact us, we'd like to talk to you.

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