



Control relay, 24VAC, 8DI(2AI), 4DO relays, display, time

Part no. **EASY512-AB-RC**
 Catalog No. **274101**

EL-Nummer (Norway) **4519750**

Delivery program

| | | | |
|--------------------------------|--|--------|--|
| Basic function | | | easy500 |
| Description | | | Stand alone customized laser inscription or delivery with user program possible with EASY-COMBINATION-* product (article No. 2010781) |
| Inputs | | | |
| Digital | | | 8 |
| of which can be used as analog | | | 2 |
| Outputs | | | |
| Quantity of outputs | | | Relays: 4 |
| Outputs | | Number | 4 |
| Additional features | | | |
| Real time clock | | | # |
| Display & keypad | | | # |
| Supply voltage | | | 24 V AC |
| Software | | | EASY-SOFT-BASIC/-PRO |
| Connection type | | | screw terminal |

Technical data

General

| | | | |
|------------------------|--|----|--|
| Standards | | | EN 55011, EN 55022, IEC/EN 61000-4, IEC 60068-2-6, IEC 60068-2-27 |
| Approvals | | | CSA UL EAC |
| Dimensions (W x H x D) | | mm | 71.5 x 90 x 58 (4 PE) |
| Weight | | kg | 0.2 |
| Mounting | | | Top-hat rail IEC/EN 60715, 35 mm or screw fixing using fixing brackets ZB4-101-GF1 (accessories) |

Terminal capacities

| | | | |
|------------------------|--|-----------------|-----------------------|
| Solid | | mm ² | 0.2/4 (AWG 22 - 12) |
| Flexible with ferrule | | mm ² | 0.2/2.5 (AWG 22 - 12) |
| Standard screwdriver | | mm | 0.8 x 3.5 |
| Max. tightening torque | | Nm | 0.6 |

Climatic environmental conditions

| | | | |
|-------------------------------|---|-----|---|
| Operating ambient temperature | | °C | In accordance with IEC 60068-2-1, -25 - +55 |
| Condensation | | | Take appropriate measures to prevent condensation |
| LCD display (clearly legible) | | °C | 0 - 55 |
| Storage | θ | °C | -40 - +70 |
| relative humidity | | % | in accordance with IEC 60068-2-30, IEC 60068-2-78 5 - 95 |
| Air pressure (operation) | | hPa | 795 - 1080 |

Ambient conditions, mechanical

| | | | |
|--|-------------|---------|--|
| Protection type (IEC/EN 60529, EN50178, VBG 4) | | | IP20 |
| Vibrations | | Hz | In accordance with IEC 60068-2-6 constant amplitude 0.15 mm: 10 - 57 constant acceleration 2 g: 57 - 150 |
| Mechanical shock resistance (IEC/EN 60068-2-27) semi-sinusoidal 15 g/11 ms | | Impacts | 18 |
| Drop to IEC/EN 60068-2-31 | Drop height | mm | 50 |
| Free fall, packaged (IEC/EN 60068-2-32) | | m | 1 |
| Mounting position | | | Vertical or horizontal |

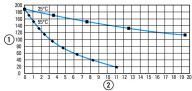
Electromagnetic compatibility (EMC)

| | | | |
|---|--|-----|---|
| Overvoltage category/pollution degree | | | III/2 |
| Electrostatic discharge (ESD) | | | |
| applied standard | | | nach IEC/EN 61000-4-2 |
| Air discharge | | kV | 8 |
| Contact discharge | | kV | 6 |
| Electromagnetic fields (RFI) to IEC EN 61000-4-3 | | V/m | 10 |
| Radio interference suppression | | | EN 55011 Class B, EN 55022 Class B |
| Burst | | kV | according to IEC/EN 61000-4-4 Supply cables: 2 Signal cables: 2 |
| power pulses (Surge) | | | according to IEC/EN 61000-4-5 2 kV (supply cables, symmetrical) |
| Immunity to line-conducted interference to (IEC/EN 61000-4-6) | | V | 10 |

Insulation resistance

| | | | |
|---|--|--|--------------------------------------|
| Clearance in air and creepage distances | | | EN 50178, UL 508, CSA C22.2, No. 142 |
| Insulation resistance | | | EN 50178 |

Back-up of real-time clock

| | | | |
|---------------------------------------|--|-------|--|
| Back-up of real-time clock | | |  <p>① Backup time (hours) with fully charged double layer capacitor ② Service life (years)</p> |
| Accuracy of real-time clock to inputs | | s/day | typ. ± 2 (± 0.2 h/Year) depending on ambient air temperature fluctuations of up to ± 5 s/day (± 0.5 h/year) are possible |

Repetition accuracy of timing relays

| | | | |
|---------------------------------------|--|-----|---------|
| Accuracy of timing relays (of values) | | % | ± 1 |
| Resolution | | | |
| Range "S" | | ms | 10 |
| Range "M:S" | | s | 1 |
| Range "H:M" | | min | 1 |

Retentive memory

| | | | |
|--------------------------------------|--|--|--------------------|
| Write cycles of the retentive memory | | | 1000000 (10^6) |
|--------------------------------------|--|--|--------------------|

Power supply

| | | | |
|---------------------------|-------|----|--|
| Rated operational voltage | U_e | V | 24 AC |
| Permissible range | U_e | | 20.4 - 26.4 V AC |
| Frequency | | Hz | 50/60 ($\pm 5\%$) |
| Input current | | | normally 200 mA at 24 V AC 50/60 Hz |
| Voltage dips | | ms | \leq In accordance with IEC 61131-2 ≤ 20 |
| Fuse | | A | $\geq 1A$ (T) |
| Power loss | P | W | Normally 6 |

Digital inputs 24 V DC

| | | | |
|----------------|--|--|-------------|
| Status Display | | | LCD-Display |
|----------------|--|--|-------------|

Digital inputs 24 V AC

| | | | |
|-------------------------------------|-------|------|--|
| Number | | | 8 |
| Inputs can be used as analog inputs | | | 2 (I7,I8) |
| Status Display | | | LCD-Display |
| Potential isolation | | | from power supply: no between digital inputs: no from the outputs: yes to interface/memory card: no |
| Rated operational voltage | U_e | V AC | 24 |
| Input voltage (AC = sinusoidal) | U_e | V | Signal 0: 0 - 6 V AC Signal 1: > 8 V AC / > 11 V DC (I7, I8), 14 - 26.4 V AC (I1 - I6) |
| Rated frequency | | Hz | 50 - 60 |
| Input current at signal 1 | | mA | I1 - I6: 4 (at 24 V AC, 50 Hz) I7, I8: 2 (at 24 V AC/DC) |
| Deceleration time | | ms | 80/66% (0 \rightarrow 1/1 \rightarrow 0, debounce ON 50/60Hz) for AC |
| Cable length | | m | normally 40 (max. per input) |

Analog inputs

| | | | |
|---------------------------------|--|----|--|
| Number | | | 2 (I7, I8) |
| Potential isolation | | | from power supply: no between digital inputs: no from the outputs: yes to interface/memory card: no |
| Input type | | | DC voltage |
| Signal range | | | 0-10 V DC |
| Resolution | | | 0.01 V analog 0.01 V digital 10 Bit (value 0 - 1023) |
| Input impedance | | kΩ | 11.2 |
| Accuracy of actual value | | | |
| two devices from series | | % | ± 3 |
| Within a single device | | % | ± 2, (I7, I8, I11, I12) ± 0.12 V |
| Conversion time, analog/digital | | ms | Input delay ON: 20; Input delay OFF: each cycle time |
| Input current | | mA | < 1 |
| Cable length | | m | ≤ 30, screened |

Relay outputs

| | | | |
|---|----------------|-------------------|---|
| Number | | | 4 |
| Outputs in groups of | | | 1 |
| Parallel switching of outputs for increased output | | | Not permissible |
| Protection of an output relay | | | Miniature circuit-breaker B16 or fuse 8 A (slow) |
| Potential isolation | | | from power supply: yes From the inputs: yes Safe isolation according to EN 50178: 300 V AC Basic isolation: 600 V AC |
| Lifespan, mechanical | Operations | x 10 ⁶ | 10 |
| Contacts | | | |
| Conventional thermal current (10 A UL) | | A | 8 |
| Recommended for load: 12 V AC/DC | | mA | > 500 |
| Short-circuit-proof cos φ = 1, characteristic B16 at 600 A | | A | 16 |
| Short-circuit-proof cos φ = 0.5 to 0.7, characteristic B16 at 900 A | | A | 16 |
| Rated impulse withstand voltage U _{imp} of contact coil | | kV | 6 |
| Rated operational voltage | U _e | V AC | 250 |
| Rated insulation voltage | U _i | V AC | 250 |
| Safe isolation according to EN 50178 | | V AC | 300 between coil and contact 300 between two contacts |
| Making capacity | | | |
| AC--15, 250 V AC, 3 A (600 ops./h) | Operations | | 300000 |
| DC-13, L/R ≤ 150 ms, 24 V DC, 1 A (500 S/h) | Operations | | 200000 |
| Breaking capacity | | | |
| AC-15, 250 V AC, 3 A (600 Ops./h) | Operations | | 300000 |
| DC-13, L/R ≤ 150 ms, 24 V DC, 1 A (500 S/h) | Operations | | 200000 |
| Filament bulb load | | | |
| 1000 W at 230/240 V AC | Operations | | 25000 |
| 500 W at 115/120 V AC | Operations | | 25000 |
| Fluorescent lamp load | | | |
| Fluorescent lamp load 10 x 58 W at 230/240 V AC | | | |
| With upstream electrical device | Operations | | 25000 |
| Uncompensated | Operations | | 25000 |
| Fluorescent lamp load 1 x 58 W at 230/240 V AC, conventional, compensated | Operations | | 25000 |
| Switching frequency | | | |
| Mechanical operations | | x 10 ⁶ | 10 |
| Switching frequency | | Hz | 10 |
| Resistive load/lamp load | | Hz | 2 |
| Inductive load | | Hz | 0.5 |
| UL/CSA | | | |
| Uninterrupted current at 240 V AC | | A | 10 |

| | | |
|---|------|------------------------|
| Uninterrupted current at 24 V DC | A | 8 |
| AC | | |
| Control Circuit Rating Codes (utilization category) | | B 300 Light Pilot Duty |
| Max. rated operational voltage | V AC | 300 |
| max. thermal continuous current $\cos \varphi = 1$ at B 300 | A | 5 |
| max. make/break $\cos \varphi \neq$ capacity 1 at B 300 | VA | 3600/360 |
| DC | | |
| Control Circuit Rating Codes (utilization category) | | R 300 Light Pilot Duty |
| Max. rated operational voltage | V DC | 300 |
| Max. thermal uninterrupted current at R 300 | A | 1 |
| Max. make/break capacity at R 300 | VA | 28/28 |

Supply voltage U_{Aux}

| | | | |
|------------|---|---|---|
| Power loss | P | W | 6 |
|------------|---|---|---|

Design verification as per IEC/EN 61439

| | | | |
|--|------------|----|--|
| Technical data for design verification | | | |
| Rated operational current for specified heat dissipation | I_n | A | 0 |
| Heat dissipation per pole, current-dependent | P_{vid} | W | 0 |
| Equipment heat dissipation, current-dependent | P_{vid} | W | 0 |
| Static heat dissipation, non-current-dependent | P_{vs} | W | 6 |
| Heat dissipation capacity | P_{diss} | W | 0 |
| Operating ambient temperature min. | | °C | -25 |
| Operating ambient temperature max. | | °C | 55 |
| IEC/EN 61439 design verification | | | |
| 10.2 Strength of materials and parts | | | |
| 10.2.2 Corrosion resistance | | | Meets the product standard's requirements. |
| 10.2.3.1 Verification of thermal stability of enclosures | | | Meets the product standard's requirements. |
| 10.2.3.2 Verification of resistance of insulating materials to normal heat | | | Meets the product standard's requirements. |
| 10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects | | | Meets the product standard's requirements. |
| 10.2.4 Resistance to ultra-violet (UV) radiation | | | Meets the product standard's requirements. |
| 10.2.5 Lifting | | | Does not apply, since the entire switchgear needs to be evaluated. |
| 10.2.6 Mechanical impact | | | Does not apply, since the entire switchgear needs to be evaluated. |
| 10.2.7 Inscriptions | | | Meets the product standard's requirements. |
| 10.3 Degree of protection of ASSEMBLIES | | | Meets the product standard's requirements. |
| 10.4 Clearances and creepage distances | | | Meets the product standard's requirements. |
| 10.5 Protection against electric shock | | | Does not apply, since the entire switchgear needs to be evaluated. |
| 10.6 Incorporation of switching devices and components | | | Does not apply, since the entire switchgear needs to be evaluated. |
| 10.7 Internal electrical circuits and connections | | | Is the panel builder's responsibility. |
| 10.8 Connections for external conductors | | | Is the panel builder's responsibility. |
| 10.9 Insulation properties | | | |
| 10.9.2 Power-frequency electric strength | | | Is the panel builder's responsibility. |
| 10.9.3 Impulse withstand voltage | | | Is the panel builder's responsibility. |
| 10.9.4 Testing of enclosures made of insulating material | | | Is the panel builder's responsibility. |
| 10.10 Temperature rise | | | The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices. |
| 10.11 Short-circuit rating | | | Is the panel builder's responsibility. |
| 10.12 Electromagnetic compatibility | | | Is the panel builder's responsibility. |
| 10.13 Mechanical function | | | The device meets the requirements, provided the information in the instruction leaflet (IL) is observed. |

Technical data ETIM 7.0

| | | |
|--|---|-------------|
| PLC's (EG000024) / Logic module (EC001417) | | |
| Electric engineering, automation, process control engineering / Control / Programmable logic control (SPS) / Logic module (ecl@ss10.0.1-27-24-22-16 [AKE539014]) | | |
| Supply voltage AC 50 Hz | V | 20.4 - 26.4 |
| Supply voltage AC 60 Hz | V | 20.4 - 26.4 |

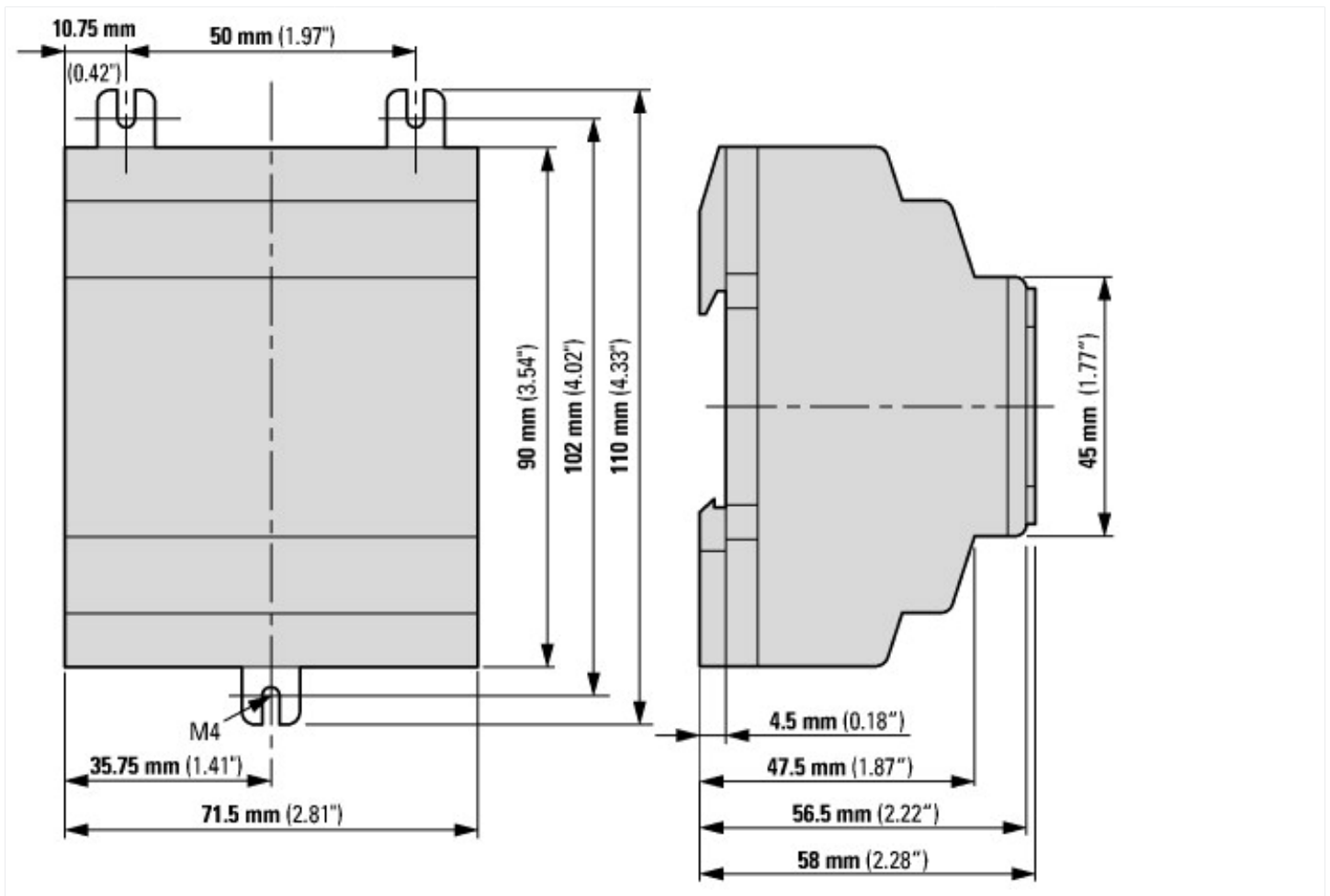
| | | |
|---|---|-------|
| Supply voltage DC | V | 0 - 0 |
| Voltage type of supply voltage | | AC |
| Switching current | A | 8 |
| Number of analogue inputs | | 2 |
| Number of analogue outputs | | 0 |
| Number of digital inputs | | 8 |
| Number of digital outputs | | 4 |
| With relay output | | Yes |
| Number of HW-interfaces industrial Ethernet | | 0 |
| Number of interfaces PROFINET | | 0 |
| Number of HW-interfaces RS-232 | | 0 |
| Number of HW-interfaces RS-422 | | 0 |
| Number of HW-interfaces RS-485 | | 0 |
| Number of HW-interfaces serial TTY | | 0 |
| Number of HW-interfaces USB | | 0 |
| Number of HW-interfaces parallel | | 0 |
| Number of HW-interfaces Wireless | | 0 |
| Number of HW-interfaces other | | 1 |
| With optical interface | | No |
| Supporting protocol for TCP/IP | | No |
| Supporting protocol for PROFIBUS | | No |
| Supporting protocol for CAN | | No |
| Supporting protocol for INTERBUS | | No |
| Supporting protocol for ASI | | No |
| Supporting protocol for KNX | | No |
| Supporting protocol for MODBUS | | No |
| Supporting protocol for Data-Highway | | No |
| Supporting protocol for DeviceNet | | No |
| Supporting protocol for SUCONET | | No |
| Supporting protocol for LON | | No |
| Supporting protocol for PROFINET IO | | No |
| Supporting protocol for PROFINET CBA | | No |
| Supporting protocol for SERCOS | | No |
| Supporting protocol for Foundation Fieldbus | | No |
| Supporting protocol for EtherNet/IP | | No |
| Supporting protocol for AS-Interface Safety at Work | | No |
| Supporting protocol for DeviceNet Safety | | No |
| Supporting protocol for INTERBUS-Safety | | No |
| Supporting protocol for PROFIsafe | | No |
| Supporting protocol for SafetyBUS p | | No |
| Supporting protocol for other bus systems | | No |
| Radio standard Bluetooth | | No |
| Radio standard WLAN 802.11 | | No |
| Radio standard GPRS | | No |
| Radio standard GSM | | No |
| Radio standard UMTS | | No |
| IO link master | | No |
| Redundancy | | No |
| With display | | Yes |
| Degree of protection (IP) | | IP20 |
| Basic device | | Yes |
| Expandable | | No |
| Expansion device | | No |
| With timer | | Yes |
| Rail mounting possible | | Yes |

| | | |
|---------------------------------------|----|------|
| Wall mounting/direct mounting | | Yes |
| Front build in possible | | No |
| Rack-assembly possible | | No |
| Suitable for safety functions | | No |
| Category according to EN 954-1 | | None |
| SIL according to IEC 61508 | | None |
| Performance level acc. EN ISO 13849-1 | | None |
| Appendant operation agent (Ex ia) | | No |
| Appendant operation agent (Ex ib) | | No |
| Explosion safety category for gas | | None |
| Explosion safety category for dust | | None |
| Width | mm | 71.5 |
| Height | mm | 90 |
| Depth | mm | 58 |

Approvals

| | | |
|-----------------------------|--|---|
| Product Standards | | IEC/EN see Technical Data; UL 508; CSA C22.2 No. 142-M1987; CSA C22.2 No. 213-M1987; CE marking |
| UL File No. | | E135462 |
| UL Category Control No. | | NRAQ |
| CSA File No. | | 012528 |
| CSA Class No. | | 2252-01 + 2258-02 |
| North America Certification | | UL listed, CSA certified |
| Degree of Protection | | IEC: IP20, UL/CSA Type: - |

Dimensions



Additional product information (links)

Instruction leaflet "easy control relays" IL05013015Z (AWA2528-2105)

| | |
|--|---|
| Instruction leaflet "easy control relays" IL05013015Z (AWA2528-2105) | https://es-assets.eaton.com/DOCUMENTATION/AWA_INSTRUCTIONS/IL05013015Z2018_02.pdf |
| Manual "easy500, easy700 control relays" MN05013003Z (AWB2528-1508) | |
| Handbuch „Steuerrelais easy500, easy700“ MN05013003Z (AWB2528-1508) - Deutsch | https://es-assets.eaton.com/DOCUMENTATION/AWB_MANUALS/MN05013003Z_DE.pdf |
| Manual "easy500, easy700 control relays" MN05013003Z (AWB2528-1508) - English | https://es-assets.eaton.com/DOCUMENTATION/AWB_MANUALS/MN05013003Z_EN.pdf |
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