

## Hybrid motor starter - ELR H51-2.4-DIN-RAIL-SET - 2902953

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Complete package consisting of ELR H51-IESSC-24DC500AC-2 and EM-RD-ADAPTER for mounting on 35 mm DIN rails.

### Your advantages

- 22.5 mm wide
- Safety level according to IEC 61508-1: SIL 3, ISO 13849: PL e
- Reduction in wiring
- Long service life
- Space saving
- Adjustable current for bimetal function
- Low-wear switching



### Key Commercial Data

|                                      |   |
|--------------------------------------|---|
| Packing unit                         | 1 pc  |
| GTIN                                 | <br>4 046356 701891 |
| GTIN                                 | 4046356701891   |
| Weight per Piece (excluding packing) | 350.000 g   |
| Custom tariff number                 | 85371098  |
| Country of origin                    | Germany   |

### Technical data

#### Dimensions

|        |          |
|--------|----------|
| Width  | 22.5 mm  |
| Height | 185 mm   |
| Depth  | 142.6 mm |

#### Ambient conditions

|   |                                     |
|---|-------------------------------------|
| Ambient temperature (operation)         | -25 °C ... 70 °C (observe derating) |
| Ambient temperature (storage/transport) | -40 °C ... 80 °C                    |

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## Technical data

### Ambient conditions

|                      |          |
|----------------------|----------|
| Maximum altitude     | ≤ 2000 m |
| Degree of protection | IP20     |

### Device supply

|  |                             |
|--|-----------------------------|
| Rated control circuit supply voltage $U_s$ | 24 V DC                     |
| Control supply voltage range               | 19.2 V DC ... 30 V DC       |
| Rated control supply current $I_s$         | 40 mA                       |
| Type of protection                         | Surge protection            |
|  | Reverse polarity protection |

### Input data

|                               |                               |
|-------------------------------|-------------------------------|
| Input name                    | Control input right/left      |
| Rated actuating voltage $U_c$ | 24 V DC                       |
| Triggering voltage range      | 19.2 V DC ... 30 V DC         |
| Rated actuating current $I_c$ | 5 mA                          |
| Switching threshold           | 9.6 V ("0" signal)            |
|                               | 19.2 V ("1" signal)           |
| Switching level               | < 5 V DC (For EMERGENCY STOP) |
| Typical turn-off time         | < 30 ms                       |

### Output data load output

|   |                                    |
|---|------------------------------------|
| Output name                                       | AC output                          |
| Rated operating voltage $U_e$                     | 500 V AC                           |
| Operating voltage range                           | 42 V AC ... 550 V AC               |
| Mains frequency                                   | 50/60 Hz                           |
| Load current range                                | 180 mA ... 2.4 A (see to derating) |
| Trigger characteristic in acc. with IEC 60947-4-2 | Class 10A                          |
| Cooling time                                      | 20 min. (for auto reset)           |
| Leakage current                                   | 0 mA                               |
| Type of protection                                | Surge protection                   |
|   | Short-circuit protection           |

### Output data reply output

|   |  |
|---|--|
| Output name                                   | Acknowledge output   |
| Note  | Confirmation: floating change-over contact, signal contact |
| Contact type                                  | 1 PDT  |
| Switching capacity according to IEC 60947-5-1 | 3 A (230 V, AC15)  |
|   | 2 A (24 V, DC13)   |

### General

|                     |  |
|---------------------|--|
| Motor starter type  | Reversing starter                                  |
| Switching frequency | ≤ 2 Hz (Load-dependent)                            |
| Mounting position   | vertical (horizontal DIN rail, motor output below) |

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## Technical data

### General

|                           |                                     |
|---------------------------|-------------------------------------|
| Mounting type             | DIN rail mounting                   |
| Assembly instructions     | alignable, for spacing see derating |
| Operating mode            | 100% operating factor               |
| Maximum power dissipation | 4.1 W                               |
| Minimum power dissipation | 0.88 W                              |
| Operating voltage display | Green LED                           |
| Status display            | Yellow LED                          |
| Indication                | Red LED                             |

### Connection data

|                                  |   |
|----------------------------------|---|
| Connection name                  | Control circuits                                  |
| Connection method                | Screw connection                                  |
| Stripping length                 | 8 mm  |
| Screw thread                     | M3  |
| Conductor cross section solid    | 0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>       |
| Conductor cross section flexible | 0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>       |
| Conductor cross section AWG      | 24 ... 14   |
| Torque                           | 0.5 Nm ... 0.6 Nm                                 |
|                                  | 5 lb <sub>f</sub> -in. ... 7 lb <sub>f</sub> -in. |

### Connection data 2

|                                  |   |
|----------------------------------|---|
| Connection name                  | Load circuit                                      |
| Connection method                | Screw connection                                  |
| Stripping length                 | 8 mm  |
| Screw thread                     | M3  |
| Conductor cross section solid    | 0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>       |
| Conductor cross section flexible | 0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>       |
| Conductor cross section AWG      | 24 ... 14   |
| Torque                           | 0.5 Nm ... 0.6 Nm                                 |
|                                  | 5 lb <sub>f</sub> -in. ... 7 lb <sub>f</sub> -in. |

### Insulation characteristics

|                          |  |
|--------------------------|--|
| Rated insulation voltage | 500 V  |
| Rated surge voltage      | 6 kV   |
| Overvoltage category     | III  |
| Degree of pollution      | 2  |
| Designation              | Insulation characteristics between the control input and control supply voltage, and auxiliary circuit to the main circuit |
| Insulation               | Safe isolation (IEC 60947-1) at operating voltage ≤ 300 V AC   |
|                          | Safe isolation (EN 50178) at operating voltage ≤ 300 V AC  |
|                          | Basic isolation (IEC 60947-1) at operating voltage 300 ... 500 V AC  |
|                          | Safe isolation (EN 50178) at operating voltage 300 ... 500 V AC  |

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## Technical data

### Insulation characteristics

|             |   |
|-------------|---|
| Designation | Isolation characteristics between the control input and control supply voltage to auxiliary circuit |
| Insulation  | Safe isolation (IEC 60947-1) in the auxiliary circuit $\leq 300$ V AC                               |
|             | Safe isolation (EN 50178) in the auxiliary circuit $\leq 300$ V AC                                  |

### Standards and Regulations

|                       |                       |
|-----------------------|-----------------------|
| Designation           | Standards/regulations |
| Standards/regulations | IEC 60947-1           |
|                       | EN 60947-4-2          |
|                       | IEC 61508             |
|                       | ISO 13849             |

### Conformance/approvals

|                 |   |
|-----------------|---|
| Designation     | ATEX                                    |
| Identification  | # II (2) G [Ex e] [Ex d] [Ex px]        |
|                 | # II (2) D [Ex t] [Ex p]                |
| Certificate     | PTB 07 ATEX 3145                        |
| Designation     | UL approval                             |
| Certificate     | NLDX.E228652                            |
| Designation     | Safety Integrity Level (SIL, IEC 61508) |
| Identification  | $\leq 3$                                |
| Additional text | Safe shutdown                           |
| Designation     | Safety Integrity Level (SIL, IEC 61508) |
| Identification  | 2                                       |
| Additional text | Motor protection                        |
| Designation     | Performance Level (ISO 13849)           |
| Identification  | e                                       |
| Additional text | Safe shutdown                           |
| Designation     | Category (ISO 13849)                    |
| Identification  | 3                                       |
| Additional text | Safe shutdown                           |

### UL data

|                    |  |
|--------------------|--|
| SCCR               | 100 kA (480 V AC (fuse: 30 A class CC/30 A class J (high fault)))      |
|                    | 5 kA (480 V AC (fuse: 20 A RK5 (standard fault)))                      |
| FLA                | 2.4 A (480 V AC)   |
| Group installation | 20 A (class RK5, SCCR 5kA, #24 - 14 AWG max. solid and stranded)       |
|                    | 30 A (class CC or J, SCCR 100kA, #24 - 14 AWG max. solid and stranded) |
| Category code      | NLDX / NRNT  |

### Environmental Product Compliance

|            |  |
|------------|--|
| REACH SVHC | Lead 7439-92-1                           |
| China RoHS | Environmentally Friendly Use Period = 50 |

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## Technical data

### Environmental Product Compliance

|  |   |
|--|---|
|  | For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration" |
|--|---|

## Articles in set

### Hybrid motor starter - ELR H51-IESSC-24DC500AC-2 - 2902744



Short-circuit-proof hybrid motor starter for reversing 3~ AC motors up to 550 V AC, with 24 V DC input, 2.4 A output current, emergency stop function, and adjustable overload shutdown. Can only be used with EM-RD and EM-RI adapters or power distribution board.

### Adapter - EM RD-ADAPTER - 2902747

Adapter for mounting short circuit-proof hybrid motor starters of type ELR-H51 ... on 35 mm DIN rails.



### Fuse - FUSE-10X38-16A-GR - 2903126



Fuse, number: 10 Pcs., fuse type: Fuse (CC), nominal current: 16 A, tripping characteristic: super-fast blow (gR)

## Classifications

### eCl@ss

|            |          |
|------------|----------|
| eCl@ss 4.0 | 27021100 |
| eCl@ss 4.1 | 27021100 |
| eCl@ss 5.0 | 27024000 |
| eCl@ss 5.1 | 27024000 |
| eCl@ss 6.0 | 27024000 |
| eCl@ss 7.0 | 27024002 |
| eCl@ss 8.0 | 27024002 |
| eCl@ss 9.0 | 27370905 |

### ETIM

|          |          |
|----------|----------|
| ETIM 2.0 | EC001037 |
| ETIM 3.0 | EC001037 |

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## Classifications

### ETIM

|          |          |
|----------|----------|
| ETIM 4.0 | EC001037 |
| ETIM 5.0 | EC001037 |
| ETIM 6.0 | EC001037 |
| ETIM 7.0 | EC001037 |

### UNSPSC

|               |          |
|---------------|----------|
| UNSPSC 6.01   | 30211915 |
| UNSPSC 7.0901 | 39121514 |
| UNSPSC 11     | 39121514 |
| UNSPSC 12.01  | 39121514 |
| UNSPSC 13.2   | 25173902 |
| UNSPSC 18.0   | 25173902 |
| UNSPSC 19.0   | 25173902 |
| UNSPSC 20.0   | 25173902 |
| UNSPSC 21.0   | 25173902 |

## Approvals

### Approvals

#### Approvals

UL Listed / cUL Listed / EAC / cULus Listed


#### Ex Approvals

#### ATEX

### Approval details

|           |   |   |               |
|-----------|---|---|---------------|
| UL Listed |  | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a> | FILE E 228652 |
|-----------|---|---|---------------|

|            |   |   |               |
|------------|---|---|---------------|
| cUL Listed |  | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a> | FILE E 228652 |
|------------|---|---|---------------|

|     |   |                          |
|-----|---|--------------------------|
| EAC |  | RU*C-<br>DE.*08.B.00520* |
|-----|---|--------------------------|

## Hybrid motor starter - ELR H51-2.4-DIN-RAIL-SET - 2902953

### Approvals

cULus Listed



### Accessories

#### Spare parts

Fuse - FUSE-10X38-30A-MR - 2903119



Fuse, number: 10 Pcs., fuse type: Fuse (CC), nominal current: 30 A, tripping characteristic: fast-blow (F)

Fuse - FUSE-10X38-20A-GR - 2903384



Fuse, number: 10 Pcs., fuse type: Fuse (CC), nominal current: 20 A, tripping characteristic: super-fast blow (gR)

Fuse - FUSE-10X38-16A-GR - 2903126



Fuse, number: 10 Pcs., fuse type: Fuse (CC), nominal current: 16 A, tripping characteristic: super-fast blow (gR)