Representative Image

# Alternate Catalog No. EF146-150
# Catalog No. 1SAX351001R1101

**Description: EF146-150 Electronic Overload Relay**

**UPC No 4013614442230**

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The EF146 is an self-supplied electronic overload relay, which means no extra external supply is needed. It offers reliable and fast protection for motors in the event of overload or phase failure. Easy to use like a thermal overload relay and compatible with standard motor applications, the electronic overload relay is convincing, above all, due to its wide setting range, high accuracy, high operational temperature range and the possibility to select a trip class (10E, 20E, 30E). Further features are the temperature compensation, trip contact (NC), signal contact (NO), automatic- or manual reset selectable, trip-free mechanism, STOP- and Test function and a trip indication. The overload relays are connected directly to the contactors. The EF65, EF96 and EF146 have ATEX and IECEx certification 1) 1) ATEX is valid for products produced from week 42, 2014. IECEx is valid for products produced from week 15, 2017.

## Descriptors

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|---|---|
| Category | Overload Relays |

## Specifications

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|---|---|
| Product Name | Electronic Overload Relay |
| Rated Operational Voltage | Auxiliary Circuit 600 V AC / DC<br>Main Circuit 1000 V AC |
| Rated Operational Current | 150 A |
| Setting Range | 54 ... 150 A |
| Rated Impulse Withstand Voltage | Auxiliary Circuit 6 kV<br>Main Circuit 8 kV |
| Rated Insulation Voltage | 1000 V |
| Number of Poles | 3 |
| Number of Auxiliary Contacts NC | 1 |
| Number of Auxiliary Contacts NO | 1 |
| Number of Protected Poles | 3 |
| Trip Class | class 10E<br>class 20E<br>class 30E |
| Conventional Free-air Thermal Current | Auxiliary Circuit NC 6 A<br>Auxiliary Circuit NO 6 A |
| Rated Frequency | Auxiliary Circuit 50 Hz<br>Auxiliary Circuit 60 Hz<br>Auxiliary Circuit DC<br>Main Circuit 50Hz<br>Main Circuit 60 Hz |
| Rated Operational Current AC-3 | 150 A |
| Degree of Protection | Housing IP20<br>Main Circuit Terminals IP10 |
| Pollution Degree | 3 |
| Suitable For | AF116<br>AF140<br>AF146 |
| Rated Operational Current AC-15 | (240 V) NC 3 A<br>(240 V) NO 3 A<br>(400 V) NC 1.1 A<br>(400 V) NO 1.1 A<br>(500 V) NC 0.75 A<br>(500 V) NO 0.75 A |

## Specifications

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|---|---|
| Rated Operational Current DC-13 | (125 V) NC 0.55 A<br>(125 V) NO 0.5 A<br>(24 V) NC 1.5 A<br>(24 V) NO 1.5 A<br>(250 V) NC 0.27 A<br>(250 V) NO 0.27 A<br>(60 V) NC 0.55 A<br>(60 V) NO 0.55 A |
| Connecting Capacity Main Circuit | Flexible with Ferrule 1x 10 ... 70 mm²<br>Flexible with Ferrule 2x 10 ... 35 mm²<br>Flexible with Insulated Ferrule 1x 10 ... 70 mm²<br>Flexible with Insulated Ferrule 2x 2 ... 35 mm²<br>Flexible 1x 10 ... 70 mm²<br>Flexible 2x 10 ... 35 mm²<br>Rigid 1x 10 ... 95 mm²<br>Rigid 2x 10 ... 35 mm² |
| Connecting Capacity Auxiliary Circuit | Flexible with Ferrule 1/2x 0.75 ... 2.5 mm²<br>Flexible with Insulated Ferrule 1/2x 0.75 ... 2.5 mm²<br>Flexible 1/2x 0.75 ... 2.5 mm²<br>Rigid 1/2x 1 ... 4 mm² |
| Wire Stripping Length | Auxiliary Circuit 9 mm<br>Main Circuit 20 mm |
| Tightening Torque | Auxiliary Circuit 0.8 ... 1.2 N·m<br>Main Circuit 10 N·m |
| Mounting Position | Position 1 to 6 |
| Power Loss | at Rated Operating Conditions per Pole 0.204 ... 1.575 W |
| Standards | IEC/EN 60947-1<br>IEC/EN 60947-4-1<br>IEC/EN 60947-5-1<br>UL 60947-1<br>UL 60947-4-1 |
| Recommended Screw Driver | Auxiliary Circuit Pozidriv 2<br>Main Circuit Hexagon 4 |
| Maximum Operating Voltage UL/CSA | Main Circuit 600 V AC |
| Ampere Rating UL/CSA | 150 A |
| Contact Rating UL/CSA | (NC:) B600<br>(NC:) Q600<br>(NO:) B600<br>(NO:) Q600 |
| Connecting Capacity Main Circuit UL/CSA | Flexible 1x 6-00 AWG<br>Flexible 2x 6-2 AWG<br>Stranded 2x 6-2 AWG<br>Stranded 1x 6-00 AWG |
| Ambient Air Temperature | Operation -25 ... +70 °C<br>Operation Compensated -25 ... +70 °C<br>Storage -50 ... +85 °C |
| Ambient Air Temperature Compensation | Yes |
| Connecting Capacity Auxiliary Circuit UL/CSA | Flexible 1/2x 18-10 AWG<br>Stranded 1/2x 18-10 AWG |
| Resistance to Shock acc. to IEC 60068-2-27 | 11 ms Pulse 25g |
| Maximum Operating Altitude Permissible | 2000 m |
| RoHS Status | Following EU Directive 2011/65/EU |
| Resistance to Vibrations acc. to IEC 60068-2-6 | 5g / 3 ... 150 Hz |
| Tightening Torque UL/CSA | Auxiliary Circuit 7 ... 1 in·lb<br>Main Circuit 70 in·lb |
| Object Classification Code | F |

## Classifications

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|---|---|
| ETIM 5.0 | EC001080 - Electronic overload relay |
| ETIM 6.0 | EC001080 - Electronic overload relay |
| ETIM 7 | EC001080 - Electronic overload relay |
| eClass | 7.0 27371502 |
| ETIM 4 | EC001080 - Electronic overload relay |

## Dimensions

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|---|---|
| Product Net Width | 89.0 mm |
| Product Net Height | 150.4 mm |
| Product Net Weight | 0.879 kg |
| Product Net Depth / Length | 105.2 mm |

## Package Information

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|---|---|
| Package Level 1 Units | 1 piece |
| Package Level 1 Width | 160 mm |
| Package Level 1 Depth / Length | 97 mm |
| Package Level 1 Gross Weight | 0.984 kg |
| Package Level 1 EAN | 4013614442230 |
| Package Level 1 Height | 107 mm |
| Package Level 2 Width | 489 mm |
| Package Level 2 Units | 20 piece |
| Package Level 2 Depth / Length | 332 mm |
| Package Level 2 EAN | 4013614483394 |
| Package Level 2 Gross Weight | 20.243 kg |
| Package Level 2 Height | 227 mm |

## Ordering

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|---|---|
| ECN | N |
| Customs Tariff Number | 85364900 |
| ECCN | N |
| ABB MDF Code | 3DL - Relays (LV / Control + Protection) |