




Star-delta contactor combination, 380 V 400 V: 45 kW, 230 V 50 Hz, 240 V 60 Hz, AC operation



Part no. **SDAINLM90(230V50HZ,240V60HZ)**  
 Catalog No. **239937**  
 Alternate Catalog No. **XTSD090D11F**  
 EL-Nummer (Norway) **4131006**

**Delivery program**

|                      |  |  |
|----------------------|--|--|
| Product range        |  | Contactor combinations   |
| Application          |  | Star-delta motor starting for contactor combinations   |
| Accessories          |  | Star-delta combinations SDAINL   |
| Utilization category |  | NAC-3: Normal AC induction motors: starting, switch off during running   |
| Notes                |  | <br>Also suitable for motors with efficiency class IE3. IE3-ready devices are identified by the logo on their packaging. |
| Description          |  | Operating frequency: maximum 30 starts per hour  |

**Rated operational current**

|             |       |   |    |
|-------------|-------|---|----|
| AC-3        |       |   |    |
| 380 V 400 V | $I_e$ | A | 90 |

**Max. rating for three-phase motors, 50 - 60 Hz**

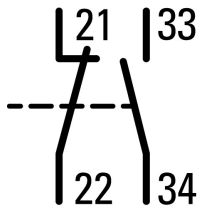
|             |   |    |    |
|-------------|---|----|----|
| AC-3        |   |    |    |
| 220 V 230 V | P | kW | 22 |
| 380 V 400 V | P | kW | 45 |
| 500 V       | P | kW | 55 |
| 660 V 690 V | P | kW | 45 |

|                      |  |   |                          |
|----------------------|--|---|--------------------------|
| Max. changeover time |  | s | 20                       |
| Actuating voltage    |  |   | 230 V 50 Hz, 240 V 60 Hz |
| Voltage AC/DC        |  |   | AC operation             |

**Individual components of the combination**

|                     |          |                        |
|---------------------|----------|------------------------|
| Mains contactor Q11 | Part no. | DILM50 + DILM150-XHI31 |
| Delta contactor Q15 | Part no. | DILM50 + DILM150-XHI11 |
| Star contactor Q13  | Part no. | DILM40 + DILM150-XHI11 |
| Timing relay K1     | Part no. | ETR4-51                |

Spare auxiliary contacts



Q11

**Design verification as per IEC/EN 61439**

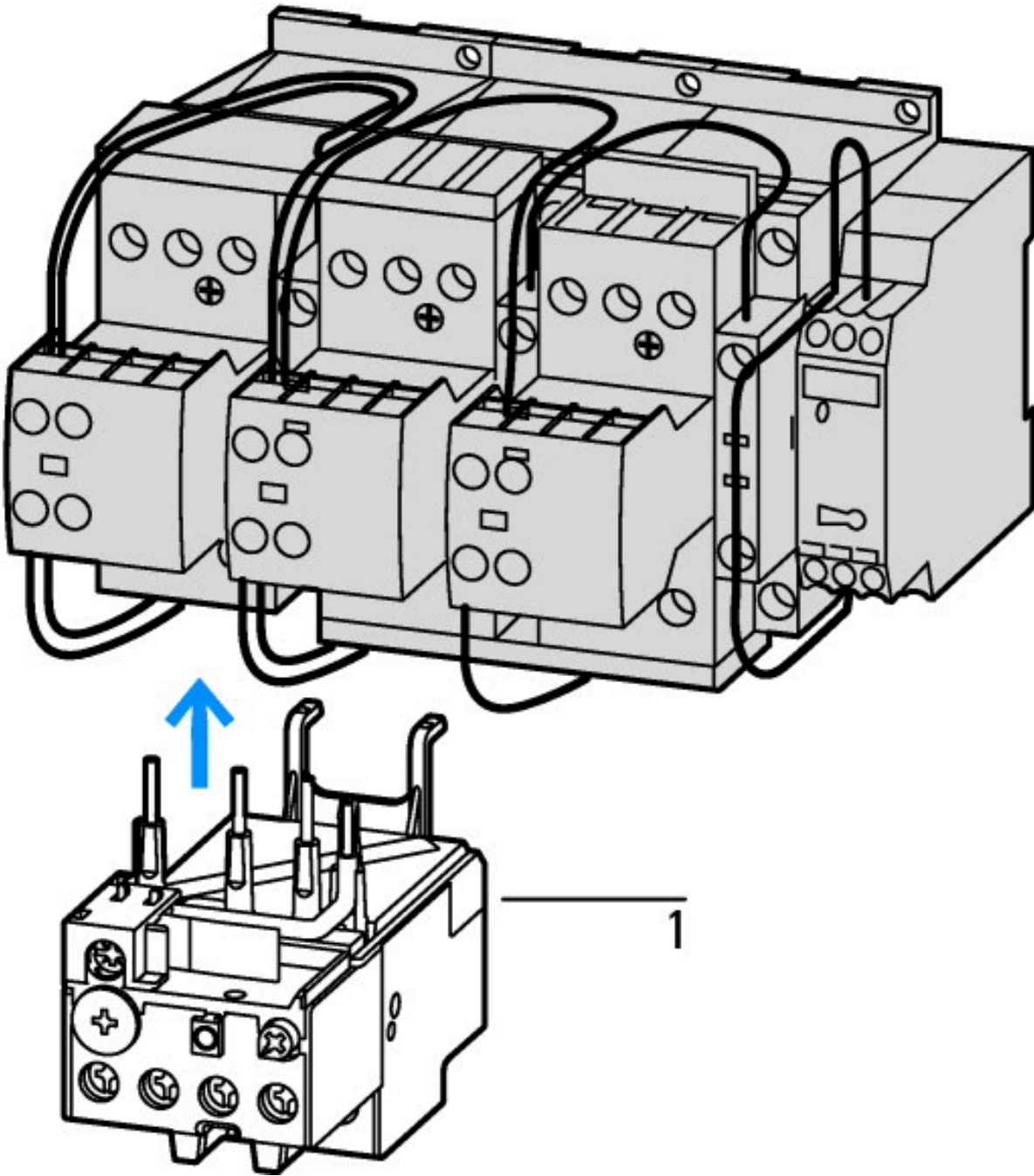
|  |           |   |      |
|--|-----------|---|------|
| Technical data for design verification                   |           |   |      |
| Rated operational current for specified heat dissipation | $I_n$     | A | 90   |
| Heat dissipation per pole, current-dependent             | $P_{vid}$ | W | 10.7 |
| Equipment heat dissipation, current-dependent            | $P_{vid}$ | W | 32.1 |
| Static heat dissipation, non-current-dependent           | $P_{vs}$  | W | 10.2 |

|  |                   |    |  |
|--|-------------------|----|--|
| Heat dissipation capacity  | P <sub>diss</sub> | W  | 0  |
| Operating ambient temperature min.   |                   | °C | -25  |
| Operating ambient temperature max.   |                   | °C | 60   |
| 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  |                   |    | Does not apply, since the entire switchgear needs to be evaluated.   |
| 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. The specifications for the switchgear must be observed.                                   |
| 10.12 Electromagnetic compatibility  |                   |    | Is the panel builder's responsibility. The specifications for the switchgear must be observed.                                   |
| 10.13 Mechanical function  |                   |    | The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.                         |

## Technical data ETIM 7.0

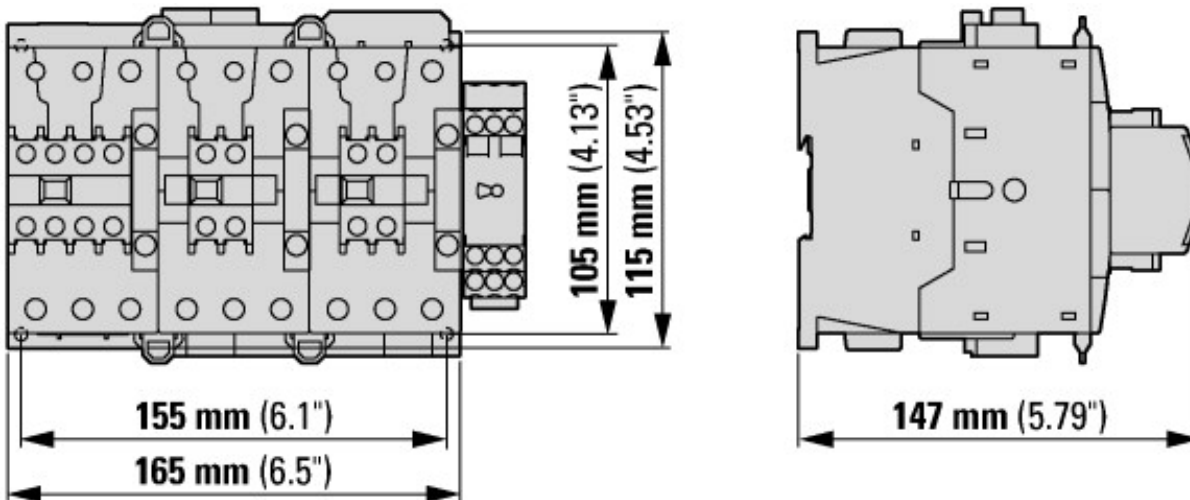
|  |  |    |                      |
|--|--|----|----------------------|
| Low-voltage industrial components (EG000017) / Combination of contactors (EC000010)  |  |    |                      |
| Electric engineering, automation, process control engineering / Low-voltage switch technology / Contactor (LV) / Combination of contactor (ecl@ss10.0.1-27-37-10-09 [AGZ572014]) |  |    |                      |
| Function   |  |    | Star-delta contactor |
| Rated control supply voltage U <sub>s</sub> at AC 50HZ   |  | V  | 230 - 230            |
| Rated control supply voltage U <sub>s</sub> at AC 60HZ   |  | V  | 240 - 240            |
| Rated control supply voltage U <sub>s</sub> at DC  |  | V  | 0 - 0                |
| Voltage type for actuating   |  |    | AC                   |
| Rated operation current I <sub>e</sub> at AC-3, 400 V  |  | A  | 90                   |
| Rated operation power at AC-3, 400 V   |  | kW | 45                   |
| Rated operation power NEMA   |  | kW | 0                    |
| Type of electrical connection of main circuit  |  |    | Screw connection     |
| Degree of protection (IP)  |  |    | IP00                 |
| Degree of protection (NEMA)  |  |    | Other                |

## Characteristics



1: Overload relay

## Dimensions



Basic unit with auxiliary contact module

## Additional product information (links)

### IL03407030Z (AWA2100-2139) Wiring for contactor combinations

IL03407030Z (AWA2100-2139) Wiring for  
contactor combinations

[https://es-assets.eaton.com/DOCUMENTATION/AWA\\_INSTRUCTIONS/IL03407030Z2018\\_05.pdf](https://es-assets.eaton.com/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407030Z2018_05.pdf)