



### Main

|                                     |                                    |
|-------------------------------------|------------------------------------|
| Range                               | TeSys                              |
| Product name                        | TeSys LRF                          |
| Device short name                   | LR9F                               |
| Product or component type           | Electronic thermal overload relay  |
| Relay application                   | Motor protection                   |
| Product compatibility               | LC1F185...LC1F265                  |
| Network type                        | AC                                 |
| Thermal overload class              | Class 10 conforming to IEC 60947-4 |
| Thermal protection adjustment range | 132...220 A                        |

### Complementary

|                                                          |                                                                                     |
|----------------------------------------------------------|-------------------------------------------------------------------------------------|
| Network frequency                                        | 50/60 Hz                                                                            |
| Supply voltage limits                                    | 17...32 V                                                                           |
| Mounting support                                         | Direct on contactor<br>Plate                                                        |
| Tripping threshold                                       | 1.12 +/- 0.06 I <sub>n</sub> tripping conforming to IEC 60947-4-1                   |
| Surge withstand                                          | 4 kV conforming to IEC 61000-4-5                                                    |
| Contacts type and composition                            | 1 NO + 1 NC                                                                         |
| [I <sub>th</sub> ] conventional free air thermal current | 5 A for control circuit                                                             |
| [U <sub>e</sub> ] rated operational voltage              | 1000 V AC 50/60 Hz for power circuit conforming to VDE 0110 group C                 |
| [U <sub>i</sub> ] rated insulation voltage               | Power circuit: 1000 V AC conforming to IEC 60947-4                                  |
| [U <sub>imp</sub> ] rated impulse withstand voltage      | IEC 60947-1 8 kV                                                                    |
| Phase failure sensitivity                                | Tripping in 4 s +/- 20 % conforming to IEC 60947-4-1                                |
| Reset                                                    | Manual reset on front relay                                                         |
| Control type                                             | Dial white full-load current adjustment<br>Test button red<br>Push-button red reset |

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                              | Push-button stop                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Local signalling             | Trip indicator                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Temperature compensation     | -20...70 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Current consumption          | <= 5 mA no-load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Switching capacity for alarm | 0...150 mA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Maximum voltage drop         | <2.5 V closed state                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Connections - terminals      | Control circuit: screw clamp terminals 1 cable 0.75...2.5 mm <sup>2</sup> - cable stiffness: flexible - with cable end<br>Control circuit: screw clamp terminals 1 cable 0.75...2.5 mm <sup>2</sup> - cable stiffness: solid<br>Control circuit: screw clamp terminals 1 cable 0.75...4 mm <sup>2</sup> - cable stiffness: flexible - without cable end<br>Control circuit: screw clamp terminals 2 cable 1...1.5 mm <sup>2</sup> - cable stiffness: flexible - with cable end<br>Control circuit: screw clamp terminals 2 cable 1...2.5 mm <sup>2</sup> - cable stiffness: flexible - without cable end<br>Control circuit: screw clamp terminals 2 cable 1 mm <sup>2</sup> - cable stiffness: solid<br>Power circuit: lugs-ring terminals M10 |
| Tightening torque            | Control circuit: 1.2 N.m on screw clamp terminals<br>Power circuit: 35 N.m on screw clamp terminals                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Height                       | 101 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Width                        | 115 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Depth                        | 123.5 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Net weight                   | 0.95 kg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

## Environment

|                                       |                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Standards                             | IEC 60255-17<br>IEC 60947-4-1<br>IEC 60255-8<br>VDE 0660<br>EN 60947-4-1                                                                                                                                                                                                                                                                          |
| Product certifications                | UL<br>CSA                                                                                                                                                                                                                                                                                                                                         |
| Protective treatment                  | TH                                                                                                                                                                                                                                                                                                                                                |
| IP degree of protection               | IP20 conforming to IEC 60529<br>IP20 conforming to VDE 0106                                                                                                                                                                                                                                                                                       |
| Ambient air temperature for operation | -20...55 °C conforming to IEC 60255-8                                                                                                                                                                                                                                                                                                             |
| Ambient air temperature for storage   | -40...85 °C                                                                                                                                                                                                                                                                                                                                       |
| Operating altitude                    | <= 2000 m without derating                                                                                                                                                                                                                                                                                                                        |
| Fire resistance                       | 850 °C conforming to IEC 60695-2-1                                                                                                                                                                                                                                                                                                                |
| Mechanical robustness                 | Shocks: 13 Gn for 11 ms conforming to IEC 60068-2-7<br>Vibrations 5...300 Hz: 2 Gn conforming to IEC 60068-2-6                                                                                                                                                                                                                                    |
| Dielectric strength                   | 6 kV 50 Hz conforming to IEC 255-5                                                                                                                                                                                                                                                                                                                |
| Electromagnetic compatibility         | Resistance to electrostatic discharge: 6 kV in indirect mode conforming to IEC 61000-4-2<br>Resistance to electrostatic discharge: 8 kV in air conforming to IEC 61000-4-2<br>Radiated radio-frequency electromagnetic field immunity test: 10 V/m conforming to IEC 61000-4-3<br>Fast transients immunity test: 2 kV conforming to IEC 61000-4-4 |

## Packing Units

|                              |          |
|------------------------------|----------|
| Unit Type of Package 1       | PCE      |
| Number of Units in Package 1 | 1        |
| Package 1 Weight             | 1.035 kg |
| Package 1 Height             | 13 cm    |
| Package 1 width              | 15 cm    |
| Package 1 Length             | 16.5 cm  |
| Unit Type of Package 2       | S04      |
| Number of Units in Package 2 | 11       |
| Package 2 Weight             | 12.03 kg |
| Package 2 Height             | 30 cm    |
| Package 2 width              | 40 cm    |

|                              |           |
|------------------------------|-----------|
| Package 2 Length             | 60 cm     |
| Unit Type of Package 3       | P06       |
| Number of Units in Package 3 | 44        |
| Package 3 Weight             | 59.048 kg |
| Package 3 Height             | 80 cm     |
| Package 3 width              | 80 cm     |
| Package 3 Length             | 60 cm     |

### Offer Sustainability

|                            |                                                                                                                             |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Sustainable offer status   | Green Premium product                                                                                                       |
| REACH Regulation           | <a href="#">REACH Declaration</a>                                                                                           |
| EU RoHS Directive          | Compliant<br><a href="#">EU RoHS Declaration</a>                                                                            |
| Mercury free               | Yes                                                                                                                         |
| RoHS exemption information | <a href="#">Yes</a>                                                                                                         |
| China RoHS Regulation      | <a href="#">China RoHS declaration</a><br>Product out of China RoHS scope. Substance declaration for your information       |
| Environmental Disclosure   | <a href="#">Product Environmental Profile</a>                                                                               |
| Circularity Profile        | <a href="#">End of Life Information</a>                                                                                     |
| WEEE                       | The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins |
| PVC free                   | Yes                                                                                                                         |

### Contractual warranty

|          |           |
|----------|-----------|
| Warranty | 18 months |
|----------|-----------|