



### 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               | LC1F225...LC1F500                  |
| Network type                        | AC                                 |
| Thermal overload class              | Class 10 conforming to IEC 60947-4 |
| Thermal protection adjustment range | 200...330 A                        |

### Complementary

|                                             |                                                                                                         |
|---------------------------------------------|---------------------------------------------------------------------------------------------------------|
| Network frequency                           | 50/60 Hz                                                                                                |
| Supply voltage limits                       | 17...32 V                                                                                               |
| Mounting support                            | Plate<br>Direct on contactor                                                                            |
| Tripping threshold                          | 1.12 +/- 0.06 In 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                                                                                             |
| [Ith] conventional free air thermal current | 5 A for control circuit                                                                                 |
| [Ue] rated operational voltage              | 1000 V AC 50/60 Hz for power circuit conforming to VDE 0110 group C                                     |
| [Ui] rated insulation voltage               | 1000 V AC power circuit conforming to IEC 60947-4                                                       |
| [Uimp] rated impulse withstand voltage      | 8 kV conforming to IEC 60947-1                                                                          |
| 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<br>Push-button stop |
| Local signalling                            | Trip indicator                                                                                          |
| Temperature compensation                    | -20...70 °C                                                                                             |
| Current consumption                         | <= 5 mA no-load                                                                                         |

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|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Switching capacity in mA | 0...150 mA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 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: solid<br>Control circuit : screw clamp terminals 2 cable 1 mm <sup>2</sup> - cable stiffness: solid<br>Control circuit : screw clamp terminals 1 cable 0.75...2.5 mm <sup>2</sup> - cable stiffness: flexible - with cable end cable end<br>Control circuit : screw clamp terminals 1 cable 0.75...4 mm <sup>2</sup> - cable stiffness: flexible - without cable end cable end<br>Control circuit : screw clamp terminals 2 cable 1...1.5 mm <sup>2</sup> - cable stiffness: flexible - with cable end cable end<br>Control circuit : screw clamp terminals 2 cable 1...2.5 mm <sup>2</sup> - cable stiffness: flexible - without cable end cable end<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                   | 136.8 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Width                    | 150 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Depth                    | 127.6 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Product weight           | 2.32 kg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

## Environment

|                                       |                                                                                                                                                                                                                                                                                                                                               |
|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Standards                             | IEC 60255-17<br>IEC 60255-8<br>EN 60947-4-1<br>VDE 0660<br>IEC 60947-4-1                                                                                                                                                                                                                                                                      |
| Product certifications                | CSA<br>UL                                                                                                                                                                                                                                                                                                                                     |
| Protective treatment                  | TH                                                                                                                                                                                                                                                                                                                                            |
| IP degree of protection               | IP20 conforming to VDE 0106<br>IP20 conforming to IEC 60529                                                                                                                                                                                                                                                                                   |
| 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 at 50 Hz conforming to IEC 255-5                                                                                                                                                                                                                                                                                                         |
| Electromagnetic compatibility         | Radiated radio-frequency electromagnetic field immunity test 10 V/m conforming to IEC 61000-4-3<br>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>Fast transients immunity test 2 kV conforming to IEC 61000-4-4 |

## Contractual warranty

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