



### Main

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| Range                               | TeSys                                                                                                                                                                                         |
| Product name                        | TeSys LF                                                                                                                                                                                      |
| Device short name                   | LF4MP                                                                                                                                                                                         |
| Product or component type           | Enclosed DOL reversing starter                                                                                                                                                                |
| Device application                  | AS interface                                                                                                                                                                                  |
| Device composition                  | Circuit-breaker<br>AS interface module<br>Reversing contactor                                                                                                                                 |
| Utilisation category                | AC-3                                                                                                                                                                                          |
| Network type                        | AC                                                                                                                                                                                            |
| Control circuit voltage             | 24 V for AC circuit at 50/60 Hz                                                                                                                                                               |
| Thermal protection adjustment range | 0.4...0.63 A                                                                                                                                                                                  |
| Control type                        | Selector switch 3 positions for start/stop/start - 1 - 0 - 2<br>Rotary handle for protection control - OFF - Trip - ON<br>Key switch 2 positions for local/AS-Interface control - bus - local |

### Complementary

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| Motor power kW                               | 0.18 kW at 400/415 V - AC at 50/60 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Network frequency                            | 50/60 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| [Ue] rated operational voltage               | 30 V - DC for output control relay<br>250 V - AC at 50/60 Hz for output control relay<br>415 V - AC at 50/60 Hz for power circuit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| [Uimp] rated impulse withstand voltage       | 2.5 kV for AS-Interface conforming to IEC 60947-1<br>2.5 kV for sensor conforming to IEC 60947-1<br>2.5 kV for 24 V conforming to IEC 60947-1<br>6 kV for power circuit conforming to IEC 60947-1                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Insulation resistance                        | > 1000 mOhm between output and communication                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Insulation                                   | Between input and communication<br>1500 V between output and internal logic<br>1500 V between output and ground                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| [Ui] rated insulation voltage                | 415 V AC at 50/60 Hz conforming to IEC 60947                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| [Ithe] conventional enclosed thermal current | 5 A for output control relay at 40 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Protection type                              | Short-circuit protection (magnetic)<br>Thermal protection<br>Phase failure<br>Inductive overvoltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Breaking capacity                            | At 400/415 V conforming to IEC 60947-2<br>At 230/240 V conforming to IEC 60947-2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Mechanical durability                        | Contactor : 30 Mcycles<br>Circuit breaker : 0.1 Mcycles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Electrical durability                        | Relay : $\geq$ 1 Mcycles - 24 V with 30 cyc/mn - DC-3 - 0.25 A<br>Relay : 0.5 Mcycles - 24 V with 15 cyc/mn - DC-3 - 1 A<br>Relay : 0.2 Mcycles - 24 V with 6 cyc/mn - DC-12 - 2 A<br>Relay : 0.1 Mcycles - 24 V with 6 cyc/mn - DC-12 - 5 A<br>Relay : 5 Mcycles - 24 V with 30 cyc/mn - AC-14 - 0.25 A<br>Relay : 1 Mcycles - 24 V with 15 cyc/mn - AC-14 - 0.5 A<br>Relay : 0.5 Mcycles - 24 V with 15 cyc/mn - AC-14 - 1 A<br>Relay : 1 Mcycles - 24 V with 15 cyc/mn - AC-12 - 1 A<br>Relay : 0.1 Mcycles - 24 V with 6 cyc/mn - AC-12 - 5 A<br>Contactor : 0.8 Mcycles - AC-3 - 8.5 A<br>Circuit breaker : 0.1 Mcycles |

The information provided in this documentation contains general descriptions and/or technical characteristics of the performance of the products contained herein. This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications. It is the duty of any such user or integrator to perform the appropriate and complete risk analysis, evaluation and testing of the products with respect to the relevant specific application or use thereof. Neither Schneider Electric Industries SAS nor any of its affiliates or subsidiaries shall be responsible or liable for misuse of the information contained herein.

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| Current consumption           | 20 mA for output relay<br>110 mA at 24 V for supply circuit inrush<br>30 mA at 24 V for supply circuit maintained mode<br>0 mA at 24 V for supply circuit de-energisation<br>60 mA for communication bus sensor<br>20 mA for communication bus during operation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Local signalling              | Input/Output status by LED<br>Product status by 3 LEDs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Number of inputs              | 2 M12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Nominal input value           | 19...30 V 0...50 mA - DC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Input description             | Status D3 : unused - bit value 1<br>Status D2 : enable relay - bit value 1<br>Status D1 : reverse start - bit value 1<br>Status D0 : forward start - bit value 1<br>Status D3 : unused - bit value 0<br>Status D2 : disable relay - bit value 0<br>Status D1 : reverse stop - bit value 0<br>Status D0 : forward stop - bit value 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Input type                    | Resistive                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Sensor compatibility          | 2 or 3-wire PNP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Output description            | Command D3 : sensor 2 present - bit value 1<br>Command D2 : sensor 1 present - bit value 1<br>Command D1 : started - bit value 1<br>Command D0 : ready - bit value 1<br>Command D3 : sensor 2 missing - bit value 0<br>Command D2 : sensor 1 missing - bit value 0<br>Command D1 : stopped - bit value 0<br>Command D0 : not ready - bit value 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Response time                 | Output control relay : ≤ 15 ms during opening<br>Output control relay : ≤ 10 ms during closing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Contacts type and composition | 1 C/O                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| AS-interface profile          | 7A70 - extended A/B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Cable gland type              | Output control relay : Pg 16 - 10...15 mm<br>Output control relay : Pg 13 - 10...15 mm<br>Power circuit : Pg 16 - 10...15 mm<br>Supply circuit : Pg 16 - 10...15 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Connections - terminals       | Output control relay : screw clamp terminals with 1 cables of 0.5...1.5 mm <sup>2</sup> - flexible with cable end<br>Output control relay : screw clamp terminals with 1 cables of 0.5...1.5 mm <sup>2</sup> - flexible without cable end<br>Output control relay : screw clamp terminals with 1 cables of 0.5...1.5 mm <sup>2</sup> - rigid<br>Power circuit : screw clamp terminals with 1...2 cables of 1.5...2.5 mm <sup>2</sup> - flexible with cable end<br>Power circuit : screw clamp terminals with 1...2 cables of 1.5...4 mm <sup>2</sup> - flexible without cable end<br>Power circuit : screw clamp terminals with 1...2 cables of 1.5...4 mm <sup>2</sup> - rigid<br>Supply circuit : screw clamp terminals with 1...2 cables of 1.5...4 mm <sup>2</sup> - flexible with cable end<br>Supply circuit : screw clamp terminals with 1...2 cables of 1.5...6 mm <sup>2</sup> - flexible without cable end<br>Supply circuit : screw clamp terminals with 1...2 cables of 1.5...6 mm <sup>2</sup> - rigid |
| Tightening torque             | Output control relay : 0.7 N.m - with screwdriver flat Ø 3.5 mm<br>Power circuit : 0.8 N.m - with screwdriver flat Ø 5.5 mm<br>Supply circuit : 1.7 N.m - with screwdriver flat Ø 5.5 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Width                         | 219 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Height                        | 245 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Depth                         | 179 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Product weight                | 1.55 kg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

## Environment

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| Electromagnetic compatibility         | Disturbing field emission class B conforming to CISPR 11<br>Disturbing field emission class B conforming to ENV 55011<br>Radiated radio-frequency electromagnetic field immunity test 10 V/m conforming to ENV 50140<br>Radiated radio-frequency electromagnetic field immunity test 10 V/m conforming to ENV 50204<br>Radiated radio-frequency electromagnetic field immunity test 10 V/m conforming to IEC 61000-4-3<br>Conducted RF disturbances 10 V/m conforming to ENV 50141<br>Conducted RF disturbances 10 V/m conforming to IEC 61000-4-6<br>Electrical fast transient/burst immunity test 2 kV level 3 conforming to EN/IEC 61000-4-4<br>Surge immunity test 500 V level 2 - control circuit, line to line - conforming to EN/IEC 61000-4-5<br>Surge immunity test 2 kV level 2 - control circuit, line to ground - conforming to IEC 61000-4-5<br>Surge immunity test 2 kV level 4 - power, line to line - conforming to EN/IEC 61000-4-5<br>Surge immunity test 4 kV level 4 - power, line to ground - conforming to IEC 61000-4-5<br>Electrostatic discharge 4 kV level 2 - in indirect mode - conforming to EN/IEC 61000-4-2<br>Electrostatic discharge 8 kV level 3 - in air - conforming to EN/IEC 61000-4-2 |
| Mechanical robustness                 | Vibrations : 4 Gn during contactor closed conforming to IEC 60068-2-6<br>Vibrations : 2 Gn during contactor open conforming to IEC 60068-2-6<br>Shocks : 15 gn during contactor closed conforming to IEC 60068-2-27<br>Shocks : 10 Gn during contactor open conforming to IEC 60068-2-27                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| IP degree of protection               | IP54 conforming to IEC 60529                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Protective treatment                  | TC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Fire resistance                       | 960 °C conforming to IEC 60695-2-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Operating altitude                    | 2000 m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Standards                             | EN 60204-1<br>EN 60439-1<br>EN 60947-1<br>IEC 60204-1<br>IEC 60439-1<br>IEC 60947-1<br>UL 508<br>CSA C22.2 No 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Material                              | Steel - white : RAL 9001                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Ambient air temperature for operation | -5...40 °C conforming to IEC 61439-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Ambient air temperature for storage   | -40...80 °C conforming to IEC 61439-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |