



### Main

Range	TeSys
Product name	TeSys LF
Product or component type	Enclosed DOL starter
Device application	AS interface
Device composition	Circuit-breaker AS interface module Contactor
Utilisation category	AC-3
Network type	AC
Control circuit voltage	24 V for AC circuit at 50/60 Hz
Thermal protection adjustment range	0.25...0.4 A
Control type	Rotary handle for protection control - OFF - Trip - ON

### Complementary

Motor power kW	0.06 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 250 V - AC at 50/60 Hz for output control relay 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 2.5 kV for sensor conforming to IEC 60947-1 2.5 kV for 24 V conforming to IEC 60947-1 6 kV for power circuit conforming to IEC 60947-1
Insulation resistance	> 1000 mOhm between output and communication
Insulation	Between input and communication 1500 V between output and internal logic 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	Phase failure Inductive overvoltage
Breaking capacity	100 kA at 400/415 V conforming to IEC 60947-2 100 kA at 230/240 V conforming to IEC 60947-2
Mechanical durability	Contactor : 30 Mcycles Circuit breaker : 0.1 Mcycles
Electrical durability	Relay : $\geq$ 1 Mcycles - 24 V with 30 cyc/mn - DC-3 - 0.25 A Relay : 0.5 Mcycles - 24 V with 15 cyc/mn - DC-3 - 1 A Relay : 0.2 Mcycles - 24 V with 6 cyc/mn - DC-12 - 2 A Relay : 0.1 Mcycles - 24 V with 6 cyc/mn - DC-12 - 5 A Relay : 5 Mcycles - 24 V with 30 cyc/mn - AC-14 - 0.25 A Relay : 1 Mcycles - 24 V with 15 cyc/mn - AC-14 - 0.5 A Relay : 0.5 Mcycles - 24 V with 15 cyc/mn - AC-14 - 1 A Relay : 1 Mcycles - 24 V with 15 cyc/mn - AC-12 - 1 A Relay : 0.1 Mcycles - 24 V with 6 cyc/mn - AC-12 - 5 A Contactor : 0.8 Mcycles - AC-3 - 8.5 A Circuit breaker : 0.1 Mcycles
Current consumption	110 mA at 24 V for supply circuit inrush 30 mA at 24 V for supply circuit maintained mode 0 mA at 24 V for supply circuit de-energisation 60 mA for communication bus sensor 20 mA for communication bus during operation
Local signalling	Input/Output status by LED Product status by 3 LEDs

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Number of inputs	2 M12
Nominal input value	19...30 V 0...50 mA - DC
Input description	Status D3 : unused - bit value 1 Status D2 : enable relay - bit value 1 Status D1 : reverse start - bit value 1 Status D0 : forward start - bit value 1 Status D3 : unused - bit value 0 Status D2 : disable relay - bit value 0 Status D1 : reverse stop - bit value 0 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 Command D2 : sensor 1 present - bit value 1 Command D1 : started - bit value 1 Command D0 : ready - bit value 1 Command D3 : sensor 2 missing - bit value 0 Command D2 : sensor 1 missing - bit value 0 Command D1 : stopped - bit value 0 Command D0 : not ready - bit value 0
Response time	Output control relay : <= 15 ms during opening 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 Output control relay : Pg 13 - 10...15 mm Power circuit : Pg 16 - 10...15 mm Supply circuit : Pg 16 - 10...15 mm
Connections - terminals	Supply circuit : HARTING socket Output control relay : HARTING socket Power circuit : screw clamp terminals with 1...2 cables of 1.5...2.5 mm <sup>2</sup> - flexible with cable end Power circuit : screw clamp terminals with 1...2 cables of 1.5...4 mm <sup>2</sup> - flexible without cable end Power circuit : screw clamp terminals with 1...2 cables of 1.5...4 mm <sup>2</sup> - rigid
Tightening torque	Power circuit : 0.8 N.m - with screwdriver flat Ø 5.5 mm
Width	279 mm
Height	245 mm
Depth	179 mm
Product weight	1.3 kg

## Environment

Electromagnetic compatibility	<p>Disturbing field emission class B conforming to CISPR 11            Disturbing field emission class B conforming to ENV 55011            Radiated radio-frequency electromagnetic field immunity test 10 V/m conforming to ENV 50140            Radiated radio-frequency electromagnetic field immunity test 10 V/m conforming to ENV 50204            Radiated radio-frequency electromagnetic field immunity test 10 V/m conforming to IEC 61000-4-3            Conducted RF disturbances 10 V/m conforming to ENV 50141            Conducted RF disturbances 10 V/m conforming to IEC 61000-4-6            Electrical fast transient/burst immunity test 2 kV level 3 conforming to EN/IEC 61000-4-4            Surge immunity test 500 V level 2 - control circuit, line to line - conforming to EN/IEC 61000-4-5            Surge immunity test 2 kV level 2 - control circuit, line to ground - conforming to IEC 61000-4-5            Surge immunity test 2 kV level 4 - power, line to line - conforming to EN/IEC 61000-4-5            Surge immunity test 4 kV level 4 - power, line to ground - conforming to IEC 61000-4-5            Electrostatic discharge 4 kV level 2 - in indirect mode - conforming to EN/IEC 61000-4-2            Electrostatic discharge 8 kV level 3 - in air - conforming to EN/IEC 61000-4-2</p>
Mechanical robustness	<p>Vibrations : 4 Gn during contactor closed conforming to IEC 60068-2-6            Vibrations : 2 Gn during contactor open conforming to IEC 60068-2-6            Shocks : 15 gn during contactor closed conforming to IEC 60068-2-27            Shocks : 10 Gn during contactor open conforming to IEC 60068-2-27</p>
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	<p>EN 60204-1            EN 60439-1            EN 60947-1            IEC 60204-1            IEC 60439-1            IEC 60947-1            UL 508            CSA C22.2 No 14</p>
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