

ELR H51-IESSC-24DC500AC-06 - Hybrid motor starter



2902746

<https://www.phoenixcontact.com/us/products/2902746>

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Short-circuit-proof hybrid motor starter for reversing 3~ AC motors up to 550 V AC, with 24 V DC input, 0.6 A output current, emergency stop function, and adjustable overload shutdown. Can only be used with EM-RD and EM-RI adapters or power distribution board.

Your advantages

- 22.5 mm wide
- Safety level in accordance with IEC 61508-1: SIL 3, ISO 13849: PL e
- Reduction in wiring
- Long service life
- Space saving
- Adjustable current for bimetal function
- Low-wear switching

Commercial data

Item number	2902746
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	C470
Product key	CK7452
Catalog page	Page 37 (C-5-2019)
GTIN	4046356673624
Weight per piece (including packing)	429 g
Weight per piece (excluding packing)	350 g
Customs tariff number	85371098
Country of origin	DE

ELR H51-IESSC-24DC500AC-06 - Hybrid motor starter



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Set consists of

FUSE-10X38-16A-GR - Fuse

2903126

<https://www.phoenixcontact.com/us/products/2903126>



Fuse, number: 10 Pcs., fuse type: Fuse (CC), nominal current: 16 A, tripping characteristic: super-fast blow (gR)

Technical data

Product properties

Product type	Hybrid motor starters
Product family	CONTACTRON
Operating mode	100% operating factor

Electrical properties

Number of phases	3
Motor starter type	Reversing starter
Maximum power dissipation for nominal condition	1.7 W
Switching frequency	≤ 2 Hz (Load-dependent)
Maximum power dissipation	2.8 W
Minimum power dissipation	0.88 W
Coordination type	2

Supply

Rated control circuit supply voltage U_S	24 V DC
Control supply voltage range	19.2 V DC ... 30 V DC
Rated control supply current I_S	40 mA
Protective circuit	Surge protection
	Reverse polarity protection; Parallel polarity protection diode

Insulation characteristics

Rated insulation voltage	500 V
Rated surge voltage	6 kV
Overvoltage category	III
Degree of pollution	2
Insulation characteristics between the control input and control supply voltage, and auxiliary circuit to the main circuit	Safe isolation (IEC 60947-1) at operating voltage ≤ 300 V AC
	Basic insulation (IEC 60947-1) at operating voltage 300 V AC ... 500 V AC
Isolation characteristics between the control input and control supply voltage to auxiliary circuit	Safe isolation (IEC 60947-1) in the auxiliary circuit ≤ 300 V AC

Input data

Control

Input name	Control input right/left
Rated actuating voltage U_C	24 V DC
Triggering voltage range	19.2 V DC ... 30 V DC
Rated actuating current I_C	5 mA
Switching threshold	9.6 V ("0" signal)
	19.2 V ("1" signal)
Switching level	< 5 V DC (For EMERGENCY STOP)
Typical turn-off time	< 30 ms

Protective circuit	Reverse polarity protection
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Output data

AC output

Rated operating voltage U_e	500 V AC
Operating voltage range	42 V AC ... 550 V AC
Mains frequency	50/60 Hz
Load current range	75 mA ... 600 mA (see to derating)
Trigger characteristic in acc. with IEC 60947-4-2	Class 10A
Cooling time	20 min. (for auto reset)
Leakage current	0 mA
Protective circuit	Surge protection; Varistor Short-circuit protection; Fuse

Acknowledge output

Note	Confirmation: floating change-over contact, signal contact
Contact switching type	1 changeover contact
Switching capacity in accordance with IEC 60947-5-1	3 A (230 V, AC15) 2 A (24 V, DC13)

Connection data

Control circuits

Connection method	Screw connection
Stripping length	8 mm
Screw thread	M3
Conductor cross section rigid	0.2 mm ² ... 2.5 mm ²
Conductor cross section flexible	0.2 mm ² ... 2.5 mm ²
Conductor cross section AWG	24 ... 14
Tightening torque	0.5 Nm ... 0.6 Nm 5 lb _f -in. ... 7 lb _f -in.

Load circuit

Connection method	Screw connection
Stripping length	8 mm
Screw thread	M3
Conductor cross section rigid	0.2 mm ² ... 2.5 mm ²
Conductor cross section flexible	0.2 mm ² ... 2.5 mm ²
Conductor cross section AWG	24 ... 14
Tightening torque	0.5 Nm ... 0.6 Nm 5 lb _f -in. ... 7 lb _f -in.

Signaling

Status display	Yellow LED
Operating voltage display	Green LED

Error indication	Red LED
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Dimensions

Width	22.5 mm
Height	160 mm
Depth	114.5 mm

Material specifications

Flammability rating according to UL 94	V0 (Housing)
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Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-25 °C ... 70 °C (observe derating)
Ambient temperature (storage/transport)	-40 °C ... 80 °C
Altitude	≤ 2000 m

Approvals

ATEX

Identification	⊕ II (2) G [Ex e] [Ex d] [Ex px]
	⊕ II (2) D [Ex t] [Ex p]
Certificate	PTB 12 ATEX 3004

UL approval

Certificate	NLDX.E228652
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Safety Integrity Level (SIL, IEC 61508)

Identification	≤ 3
Note	Safe shutdown

Safety Integrity Level (SIL, IEC 61508)

Identification	2
Note	Motor protection

Performance Level (ISO 13849)

Identification	e
Note	Safe shutdown

Category (ISO 13849)

Identification	≤ 3
Note	Safe shutdown

CCC

Identification	GB/T 14048.6-2016
Certificate	2020970304000811

UL data

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SCCR	100 kA (500 V AC (fuse: 30 A class CC/30 A class J (high fault)))
	5 kA (500 V AC (fuse: 20 A RK5 (standard fault)))
FLA	0.6 A (500 V AC)
Group installation	20 A (class RK5, SCCR 5kA, #24 - 14 AWG max. solid and stranded)
	30 A (class CC or J, SCCR 100kA, #24 - 14 AWG max, solid and stranded)
Category code	NLDX / NRNT

Standards and regulations

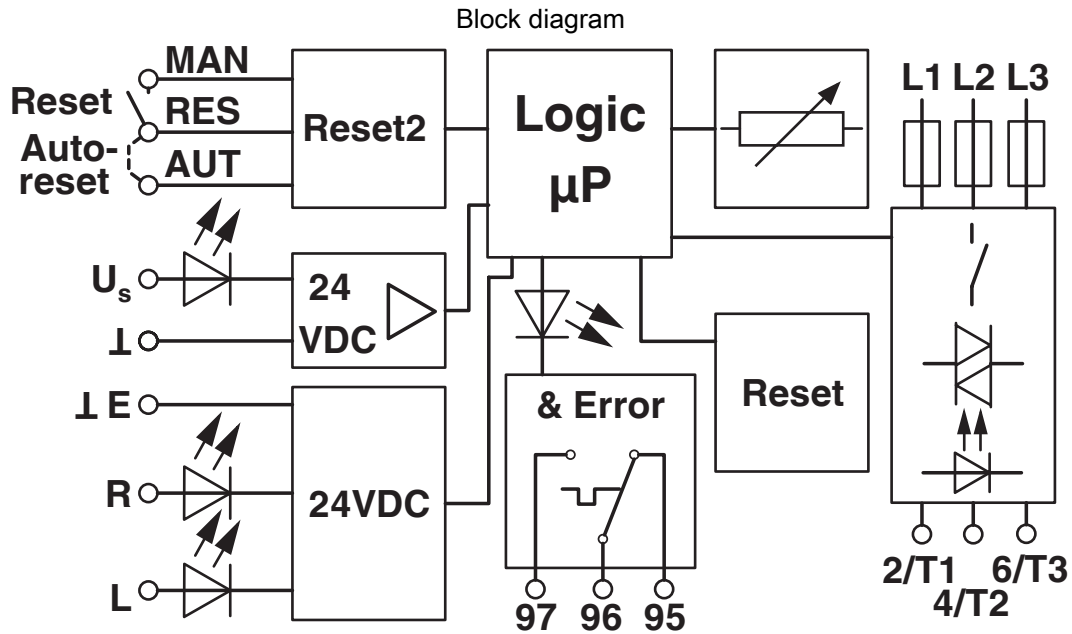
Standards/regulations

Standards/regulations	IEC 60947-1
	EN 60947-4-2
	IEC 61508
	ISO 13849

Mounting

Mounting type	Bus bar mounting
	DIN rail mounting
Assembly note	alignable, for spacing see derating
Mounting position	vertical (horizontal DIN rail, motor output below)

Drawings



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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2902746>



IECEE CB Scheme

Approval ID: DE1-51298



EAC

Approval ID: RU*C-DE.*08.B.00520*



IECEE CB Scheme

Approval ID: DE1-60642



UL Listed

Approval ID: FILE E 228652



cUL Listed

Approval ID: FILE E 228652



ATEX

Approval ID: PTB 12 ATEX 3004

cULus Listed

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Classifications

ECLASS

ECLASS-11.0	27370905
ECLASS-12.0	27370905
ECLASS-13.0	27370905

ETIM

ETIM 9.0	EC001037
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UNSPSC

UNSPSC 21.0	25173900
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Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	7(a), 7(c)-I

China RoHS

Environment friendly use period (EFUP)	EFUP-50
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.

EU REACH SVHC

REACH candidate substance (CAS No.)	Lead(CAS: 7439-92-1)
SCIP	e20a3afa-fa2c-40f8-9861-db69c9ebd4bb

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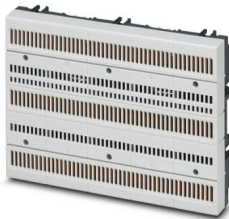
<https://www.phoenixcontact.com/us/products/2902746>

Mandatory accessories

EM-CPS-225 - Power distribution board

1002634

<https://www.phoenixcontact.com/us/products/1002634>



Modular power distribution board with CrossLink® interface, 125 A, 3-pos., touch-proof and protection against polarity reversal, width: 225 mm

EM-CPS-405 - Power distribution board

1002635

<https://www.phoenixcontact.com/us/products/1002635>



Modular power distribution board with CrossLink® interface, 125 A, 3-pos., touch-proof and protection against polarity reversal, width: 405 mm

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EM RD-ADAPTER - Adapter

2902747

<https://www.phoenixcontact.com/us/products/2902747>

Adapter for mounting short circuit-proof hybrid motor starters of type ELR-H51 ... on 35 mm DIN rails.



EM RI-ADAPTER COMPACT - Adapter

2902748

<https://www.phoenixcontact.com/us/products/2902748>

Adapter for mounting short circuit-proof hybrid motor starters of type ELR-H51 ... on 60 mm power busbars. Compact design with 160 mm design height.



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EM RI-ADAPTER CLASSIC - Adapter

2902831

<https://www.phoenixcontact.com/us/products/2902831>

Adapter for mounting short-circuit proof hybrid motor starters of type ELR-H51 ... on 60 mm power busbars. Classic design with 200 mm design height.



Accessories

BRIDGE- 2 - Bridge

2900746

<https://www.phoenixcontact.com/us/products/2900746>

3-phase loop bridge for CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 0.3 m, with ferrules.



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BRIDGE- 3 - Bridge

2900747

<https://www.phoenixcontact.com/us/products/2900747>

3-phase loop bridge for 3 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 0.3 m, with ferrules.



BRIDGE- 4 - Bridge

2900748

<https://www.phoenixcontact.com/us/products/2900748>

3-phase loop bridge for 4 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 0.3 m, with ferrules.



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BRIDGE- 5 - Bridge

2900749

<https://www.phoenixcontact.com/us/products/2900749>

3-phase loop bridge for 5 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 0.3 m, with ferrules.



BRIDGE- 6 - Bridge

2900750

<https://www.phoenixcontact.com/us/products/2900750>

3-phase loop bridge for 6 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 0.3 m, with ferrules.



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BRIDGE- 7 - Bridge

2900751

<https://www.phoenixcontact.com/us/products/2900751>

3-phase loop bridge for 7 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 0.3 m, with ferrules.



BRIDGE- 8 - Bridge

2900752

<https://www.phoenixcontact.com/us/products/2900752>

3-phase loop bridge for 8 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 0.3 m, with ferrules.



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BRIDGE- 9 - Bridge

2900753

<https://www.phoenixcontact.com/us/products/2900753>

3-phase loop bridge for 9 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 0.3 m, with ferrules.



BRIDGE-10 - Bridge

2900754

<https://www.phoenixcontact.com/us/products/2900754>

3-phase loop bridge for 10 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 0.3 m, with ferrules.



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BRIDGE- 2-1M - Bridge

2901542

<https://www.phoenixcontact.com/us/products/2901542>

3-phase loop bridge for 2 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 1 m



BRIDGE- 3-1M - Bridge

2901655

<https://www.phoenixcontact.com/us/products/2901655>

3-phase loop bridge for 3 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 1 m



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BRIDGE- 4-1M - Bridge

2901658

<https://www.phoenixcontact.com/us/products/2901658>

3-phase loop bridge for 4 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 1 m



BRIDGE- 5-1M - Bridge

2901544

<https://www.phoenixcontact.com/us/products/2901544>

3-phase loop bridge for 5 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 1 m



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BRIDGE- 6-1M - Bridge

2901649

<https://www.phoenixcontact.com/us/products/2901649>

3-phase loop bridge for 6 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 1 m



BRIDGE- 2-3M - Bridge

2901543

<https://www.phoenixcontact.com/us/products/2901543>

3-phase loop bridge for 2 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 3 m



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BRIDGE- 3-3M - Bridge

2901656

<https://www.phoenixcontact.com/us/products/2901656>

3-phase loop bridge for 3 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 3 m



BRIDGE- 4-3M - Bridge

2901659

<https://www.phoenixcontact.com/us/products/2901659>

3-phase loop bridge for 4 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 3 m



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BRIDGE- 5-3M - Bridge

2901545

<https://www.phoenixcontact.com/us/products/2901545>

3-phase loop bridge for 5 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 3 m



BRIDGE- 6-3M - Bridge

2901697

<https://www.phoenixcontact.com/us/products/2901697>

3-phase loop bridge for 6 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 3 m



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BRIDGE- 7-3M - Bridge

2901698

<https://www.phoenixcontact.com/us/products/2901698>

3-phase loop bridge for 7 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 3 m



BRIDGE- 8-3M - Bridge

2901700

<https://www.phoenixcontact.com/us/products/2901700>

3-phase loop bridge for 8 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 3 m



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BRIDGE- 9-3M - Bridge

2901701

<https://www.phoenixcontact.com/us/products/2901701>

3-phase loop bridge for 9 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 3 m



BRIDGE-10-3M - Bridge

2901702

<https://www.phoenixcontact.com/us/products/2901702>

3-phase loop bridge for 10 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 3 m



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BRIDGE- 2- 2M/0,3M - Bridge

2909897

<https://www.phoenixcontact.com/us/products/2909897>



3-phase loop bridge for 2 CONTACTRON modules, with screw connection and 22.5 mm housing width, cable length between the modules: 0.3 m, connecting cable: 2 m

BRIDGE- 3- 2M/0,3M - Bridge

2909898

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3-phase loop bridge for 3 CONTACTRON modules, with screw connection and 22.5 mm housing width, cable length between the modules: 0.3 m, connecting cable: 2 m

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BRIDGE- 4- 2M/0,3M - Bridge

2909899

<https://www.phoenixcontact.com/us/products/2909899>



3-phase loop bridge for 4 CONTACTRON modules, with screw connection and 22.5 mm housing width, cable length between the modules: 0.3 m, connecting cable: 2 m

US-EMLP (15X5) - Plastic label

0828790

<https://www.phoenixcontact.com/us/products/0828790>



Plastic label, Card, white, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: adhesive, lettering field size: 15 x 5 mm, Number of individual labels: 189

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UC-EMLP (15X5) - Plastic label

0819301

<https://www.phoenixcontact.com/us/products/0819301>



Plastic label, Sheet, white, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: adhesive, lettering field size: 15 x 5 mm, Number of individual labels: 10

EM-CPS-TB3/63A - Connection module

1002633

<https://www.phoenixcontact.com/us/products/1002633>



Connection module with integrated spring-loaded terminals for cables from 1.5 to 16 mm², 3-pos., maximum 63 A

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FUSE-10X38-30A-MR - Fuse

2903119

<https://www.phoenixcontact.com/us/products/2903119>



Fuse, number: 10 Pcs., fuse type: Fuse (CC), nominal current: 30 A, tripping characteristic: fast-blow (F)

FUSE-10X38-20A-GR - Fuse

2903384

<https://www.phoenixcontact.com/us/products/2903384>



Fuse, number: 10 Pcs., fuse type: Fuse (CC), nominal current: 20 A, tripping characteristic: super-fast blow (gR)

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FUSE-10X38-16A-GR - Fuse

2903126

<https://www.phoenixcontact.com/us/products/2903126>



Fuse, number: 10 Pcs., fuse type: Fuse (CC), nominal current: 16 A, tripping characteristic: super-fast blow (gR)

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