EMM 3- 24DC/500AC-IFS - Motor management

2297497

https://www.phoenixcontact.com/in/products/2297497

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Electronic motor management for operation with external current transformer- active power measurement for overload and underload monitoring of motors and systems for optimum protection for all performance classes. Freely parameterizable switching and signaling thresholds.

Your advantages

- Optional connection to INTERFACE system and PROFIBUS-GATEWAY-IFS via TBUS
- Freely parameterizable signaling or switching thresholds
- Digital outputs control external switching elements

Commercial Data

Item number	2297497
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	CK7
Product Key	CK7512
Catalog Page	Page 16 (C-5-2019)
GTIN	4046356175753
Weight per Piece (including packing)	263 g
Weight per Piece (excluding packing)	263 g
Customs tariff number	85371098
Country of origin	DE

Technical Data

Notes

Utilization restriction

EMC note	EMC: class A product, see manufacturer's declaration in the download area

Product properties

Product type	Electronic motor manager
Product family	CONTACTRON
Operating mode	100% operating factor

Electrical properties

Number of phases	3
Maximum power dissipation for nominal condition	2.5 W
Test voltage input/output	8 kV

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	25 mA
Switching threshold	9.6 V DC ("0" signal)
	19.2 V DC ("1" signal)

Insulation characteristics

Rated insulation voltage	500 V
Rated surge voltage	6 kV
Overvoltage category	III
Degree of pollution	2
Insulation characteristics between the input and output circuits	Safe isolation (IEC 60947-1)
Insulation characteristics between the thermistor input and output	Basic insulation (IEC 60947-1)

Input data

Digital inputs

Number of inputs	4 (IN1 - IN4)
Rated actuating voltage U_C	24 V DC
Rated actuating current I_C	3.3 mA

Voltage measuring input V1, V2, V3

Input voltage range	42 V AC ... 575 V AC
Typical input current at U_N	< 0.5 mA

Current measuring input L1/T1, L2/T2, L3/T3

Typical input current at U_N	5 A (Secondary external converter)

Power measurement

Basic accuracy	typ. 2 %
Power range	4.5 kW (x amplitude transmission factor for current transformer)

Voltage measurement/star voltage

Basic accuracy	typ. 0.75 %
Voltage range	0 V AC ... 350 V AC (Phase-to-neutral voltage)

Current measurement

Basic accuracy	typ. 0.5 %
Current range	140 mA ... 5 A
Measuring via	External push-through current transformers connected upstream

Output data

Output name	Acknowledging contacts O1-O4
Note	The meaning of the acknowledgement outputs can be freely parameterized, see user manual
Number of outputs	4
Nominal output voltage	24 V DC (semiconductor output)
Output voltage range	19.2 V DC ... 30 V DC
Continuous load current	500 mA
Residual voltage	< 200 mV
Protective circuit	Suppressor diode
Surge voltage protection	> 33 V DC

Connection data

Control circuits

Connection method	Screw connection
Stripping length	8 mm
Screw thread	M3
Conductor cross section rigid	0.2 mm² ... 2.5 mm²
Conductor cross section flexible	0.2 mm² ... 2.5 mm²
Conductor cross section AWG	24 ... 14

Load circuit

Connection method	Screw connection
Stripping length	8 mm
Screw thread	M3
Conductor cross section rigid	0.2 mm² ... 2.5 mm²
Conductor cross section flexible	0.2 mm² ... 2.5 mm²
Conductor cross section AWG	24 ... 14

Signaling

Status display	Yellow LED
Operating voltage display	Green LED

Error indication	Red LED
Data communication display	green LED

Dimensions

Width	22.5 mm
Height	99 mm
Depth	114.5 mm

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-25 °C ... 70 °C
Ambient temperature (storage/transport)	-25 °C ... 70 °C

Approvals

ATEX

Identification	☐ II (2) G [Ex e] [Ex d] [Ex px]
	☐ II (2) D [Ex t] [Ex p]
Certificate	PTB 10 ATEX 3024

UL, USA/Canada

Certificate	NKCR.E140324

Safety Integrity Level (SIL, IEC 61508)

Identification	≤ 1
Note	Safe shutdown

Safety Integrity Level (SIL, IEC 61508)

Identification	1
Note	Motor protection

Category (ISO 13849)

Identification	≤ 1
Note	Safe shutdown

Performance Level

Identification	≤ b
Note	Safe shutdown

Standards and regulations

Standards/regulations

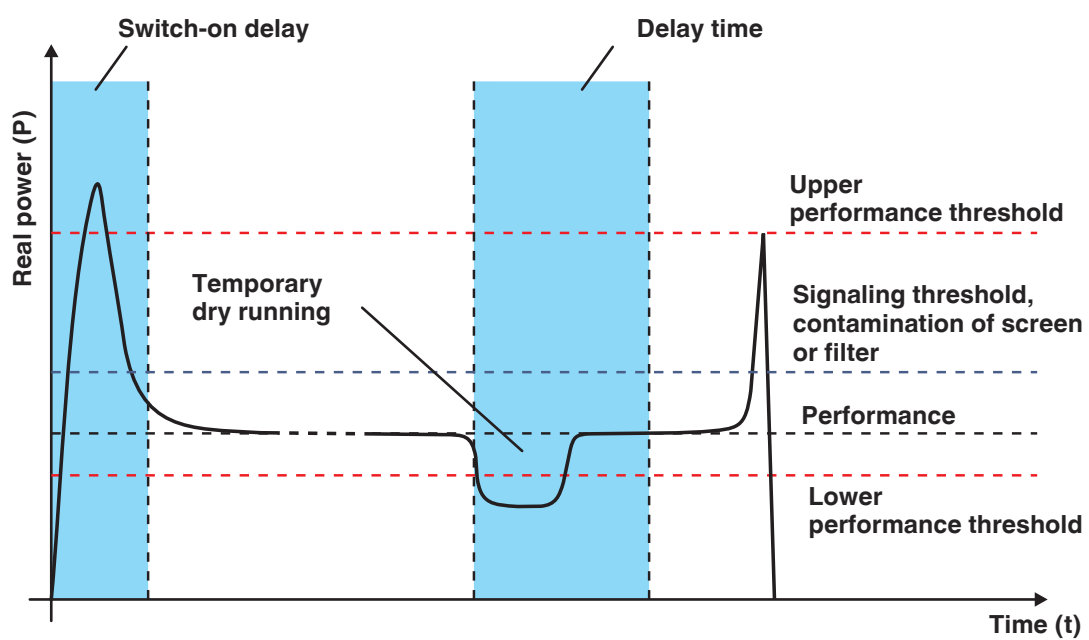| Standards/regulations	DIN EN 50178
	EN 60947
	EN 60947-4-2

Mounting

Mounting type	DIN rail mounting
Assembly instructions	in rows with zero spacing
Mounting position	Vertical (horizontal DIN rail)

Drawings

Diagram

Switch-on delay

Delay time

Real power (P)

**Temporary
dry running**

**Upper
performance threshold**

**Signaling threshold,
contamination of screen
or filter**

Performance

**Lower
performance threshold**

Time (t)

Status monitoring: air bubbles in motor-operated pumps

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Block diagram
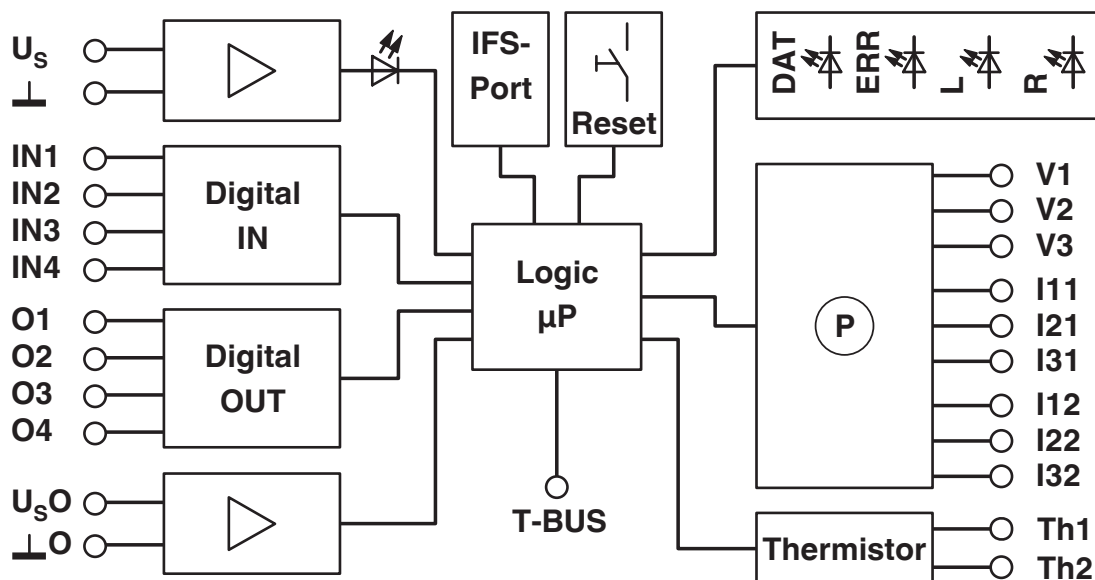
Connection diagram
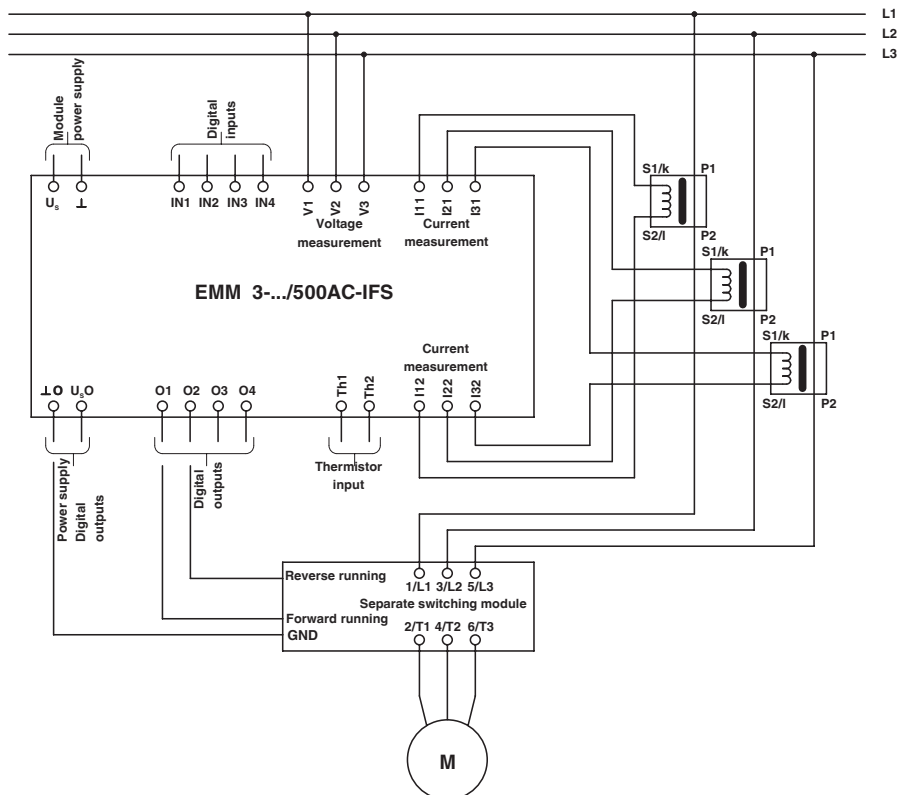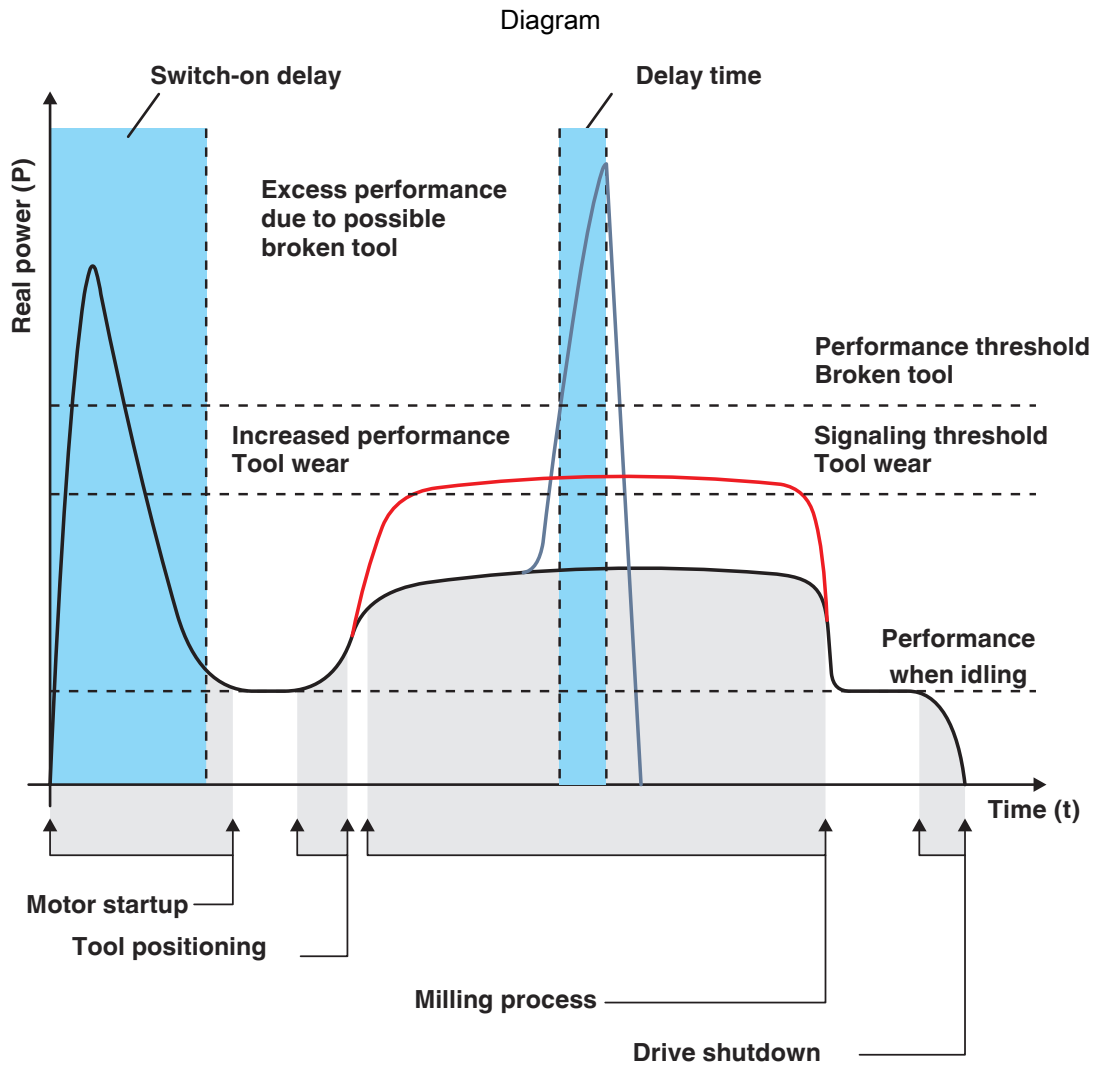
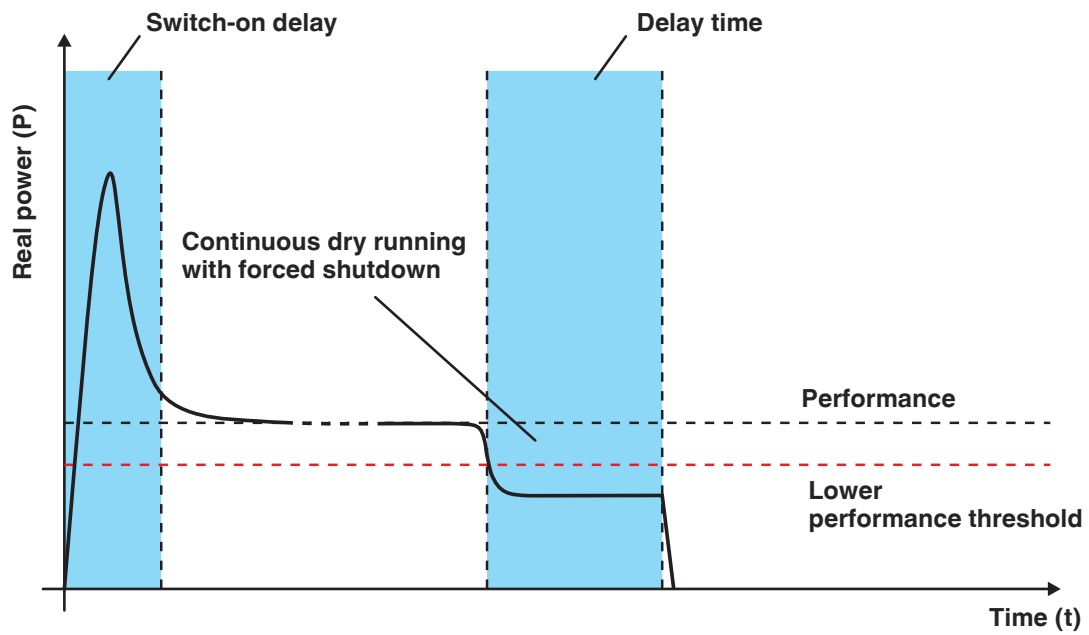## Diagram

Status monitoring: machine tool for milling

Connection diagram
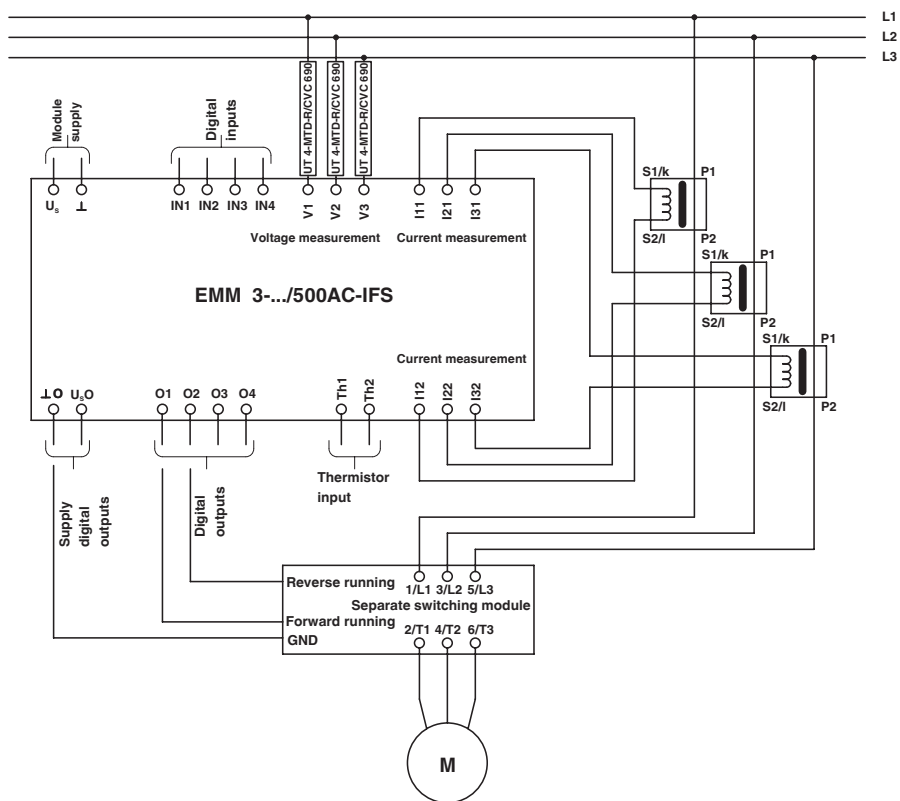
EMM 3-.../500AC-IFS with connected CONTACTRON VOLTAGE CONVERTER

Diagram

Status monitoring: dry run in motor-operated pumps

Approvals

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

UL Listed
Approval ID: FILE E 140324

cUL Listed
Approval ID: FILE E 140324

ATEX
Approval ID: PTB 10 ATEX 3024

Classifications

ECLASS

ECLASS-11.0	27370804
ECLASS-13.0	27370804
ECLASS-12.0	27370804

ETIM

ETIM 8.0	EC002572

UNSPSC

UNSPSC 21.0	39121100

Environmental Product Compliance

REACh SVHC	Lead 7439-92-1

China RoHS	Environmentally Friendly Use Period = 50 years
	For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"

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Mandatory Accessories

IFS-USB-DATACABLE - Data cable

2320500

https://www.phoenixcontact.com/in/products/2320500

Used for communicating between industrial PCs and Phoenix Contact devices with the 12-pos. IFS data port, such as QUINT UPS or TRIO UPS.

Accessories

ME 22,5 TBUS 1,5/ 5-ST-3,81 GY - DIN rail bus connectors

2201937

https://www.phoenixcontact.com/in/products/2201937

DIN rail connector, color: gray, nominal current: 8 A (parallel contacts), rated voltage (III/2): 125 V, number of positions: 5, pitch: 3.81 mm, mounting: DIN rail mounting, locking: without, mounting: without, type of packaging: packed in cardboard, Item with gold-plated contacts, bus connectors for connecting with electronics housings, 5 parallel contacts

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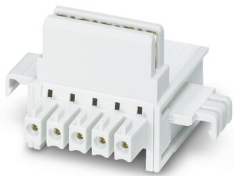
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IFS-USB-DATACABLE - Data cable

2320500

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Used for communicating between industrial PCs and Phoenix Contact devices with the 12-pos. IFS data port, such as QUINT UPS or TRIO UPS.

EM-PB-GATEWAY-IFS - Data interface

2297620

https://www.phoenixcontact.com/in/products/2297620

Gateway for the connection of up to 32 INTERFACE system devices to a higher-level controller via PROFIBUS DP. The INTERFACE system devices are connected to the Gateway via DIN rail connectors, the DIN rail connectors are provided.

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EM-MODBUS-GATEWAY-IFS - Data interface

2901528

https://www.phoenixcontact.com/in/products/2901528

Gateway for the connection of up to 32 INTERFACE system devices via Modbus/TCP to a higher-level controller. The INTERFACE system devices are connected to the Gateway via DIN rail connectors, the DIN rail connectors are provided.

EM-CAN-GATEWAY-IFS - Data interface

2901504

https://www.phoenixcontact.com/in/products/2901504

Gateway for the connection of up to 32 INTERFACE system devices to a higher-level controller via CANopen®. The INTERFACE system devices are connected to the Gateway via DIN rail connectors, the DIN rail connectors are provided.

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EM-PNET-GATEWAY-IFS - Data interface

2904472

https://www.phoenixcontact.com/in/products/2904472

Gateway for the connection of up to 32 INTERFACE system devices via PROFINET to a higher-level controller. The INTERFACE system devices are connected to the Gateway via DIN rail connectors, the DIN rail connectors are provided.

EM-ETH-GATEWAY-IFS - Data interface

2901988

https://www.phoenixcontact.com/in/products/2901988

Gateway for the connection of up to 32 INTERFACE system devices to a higher-level controller via EtherNet/IP™. The INTERFACE system devices are connected to the Gateway via DIN rail connectors, the DIN rail connectors are provided.

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IFS-CONFSTICK-L - Memory block

2901103

https://www.phoenixcontact.com/in/products/2901103

Multi-functional memory block with handle for the INTERFACE system; for easy storage and back up of the configuration.

IFS-CONFSTICK - Memory block

2986122

https://www.phoenixcontact.com/in/products/2986122

Multi-functional memory block for the INTERFACE systemf for easy storage and backup of the configuration.

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UT 4-MTD-R/CVC 690/SET - Feed-through terminal block

2901667

https://www.phoenixcontact.com/in/products/2901667

The voltage transducer set makes it possible to insert the electronic motor management module (EMM 3-.../500AC-IFS) in 690 V mains.

MM-CONF-SET - Configuration package

2297992

https://www.phoenixcontact.com/in/products/2297992

Configuration package for the EMM ... IFS, comprising CONTACTRON-DTM-IFS, USB programming adapter, and user manual on CD.

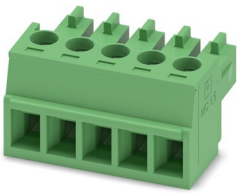# EMM 3- 24DC/500AC-IFS - Motor management

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MC 1,5/ 5-ST-3,81 - PCB connector

1803604

https://www.phoenixcontact.com/in/products/1803604

PCB connector, nominal cross section: 1.5 mm^2, color: green, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Socket, number of potentials: 5, number of rows: 1, number of positions: 5, number of connections: 5, product range: MC 1,5/..-ST, pitch: 3.81 mm, connection method: Screw connection with tension sleeve, screw head form: L Slotted, conductor/PCB connection direction: 0 °, plug-in system: COMBICON MC 1,5, locking: without, mounting: without, type of packaging: packed in cardboard

IMC 1,5/ 5-ST-3,81 - Printed-circuit board connector

1857919

https://www.phoenixcontact.com/in/products/1857919

PCB connector, nominal cross section: 1.5 mm^2, color: green, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Pin, number of potentials: 5, number of rows: 1, number of positions: 5, number of connections: 5, product range: IMC 1,5/..-ST, pitch: 3.81 mm, connection method: Screw connection with tension sleeve, screw head form: L Slotted, conductor/PCB connection direction: 0 °, plug-in system: COMBICON MC 1,5, locking: without, mounting: without, type of packaging: packed in cardboard

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IMC 1,5/ 5-ST-3,81SET IL IFS 2M - Plug

1784729

https://www.phoenixcontact.com/in/products/1784729

Assembled connecting cable, IL-IFS, 2 m in length

US-EMLP (15X5) - Plastic label

0828790

https://www.phoenixcontact.com/in/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

UC-EMLP (15X5) - Plastic label

0819301

https://www.phoenixcontact.com/in/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

PHOENIX CONTACT (I) Pvt. Ltd.
A-58/2, Okhla Industrial Area, Phase - II, New Delhi-110 020

+91.1275.71420
info@phoenixcontact.co.in