

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



2297497

<https://www.phoenixcontact.com/pc/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
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
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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)
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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 mm ² ... 2.5 mm ²
Conductor cross section flexible	0.2 mm ² ... 2.5 mm ²
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 mm ² ... 2.5 mm ²
Conductor cross section flexible	0.2 mm ² ... 2.5 mm ²
Conductor cross section AWG	24 ... 14

Signaling

Status display	Yellow LED
Operating voltage display	Green LED

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Error indication	Red LED
Data communication display	green LED

Dimensions

Width	22.5 mm
Height	99 mm
Depth	114.5 mm

Material specifications

Color	gray (RAL 7042)
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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
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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

DIN EN 50178

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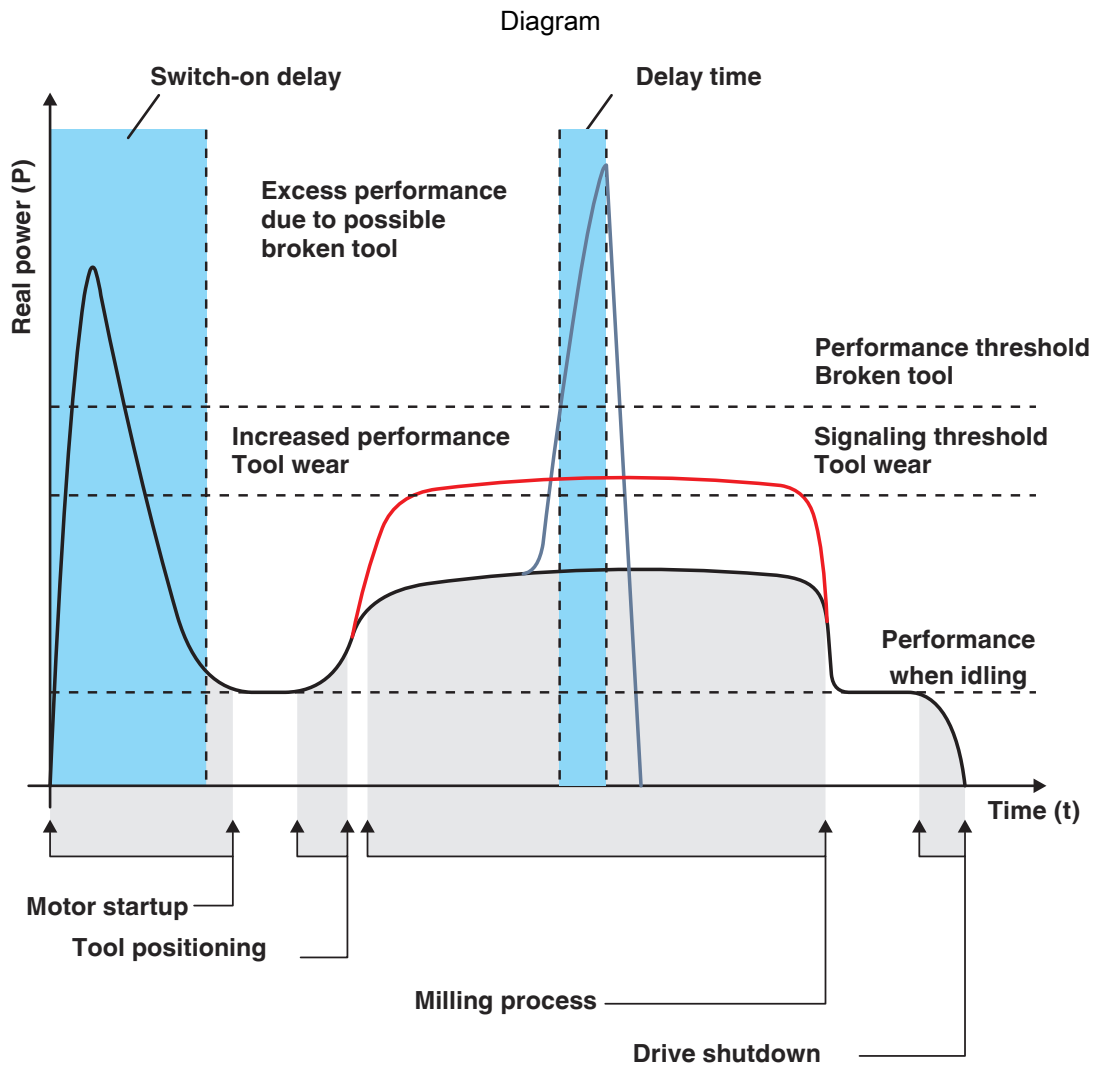
<https://www.phoenixcontact.com/pc/products/2297497>

Standards/regulations	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



Status monitoring: machine tool for milling

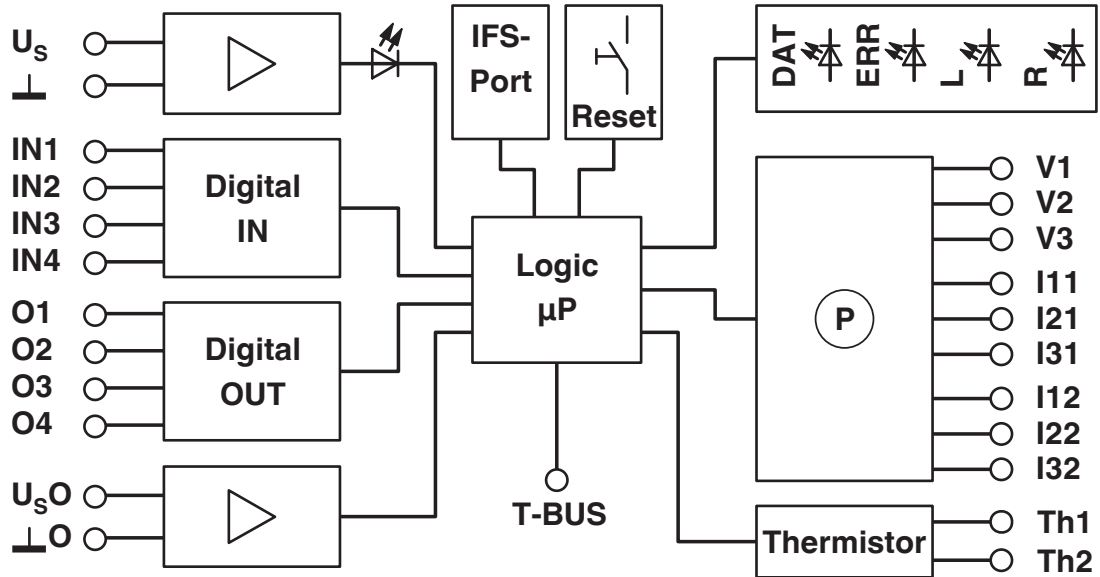
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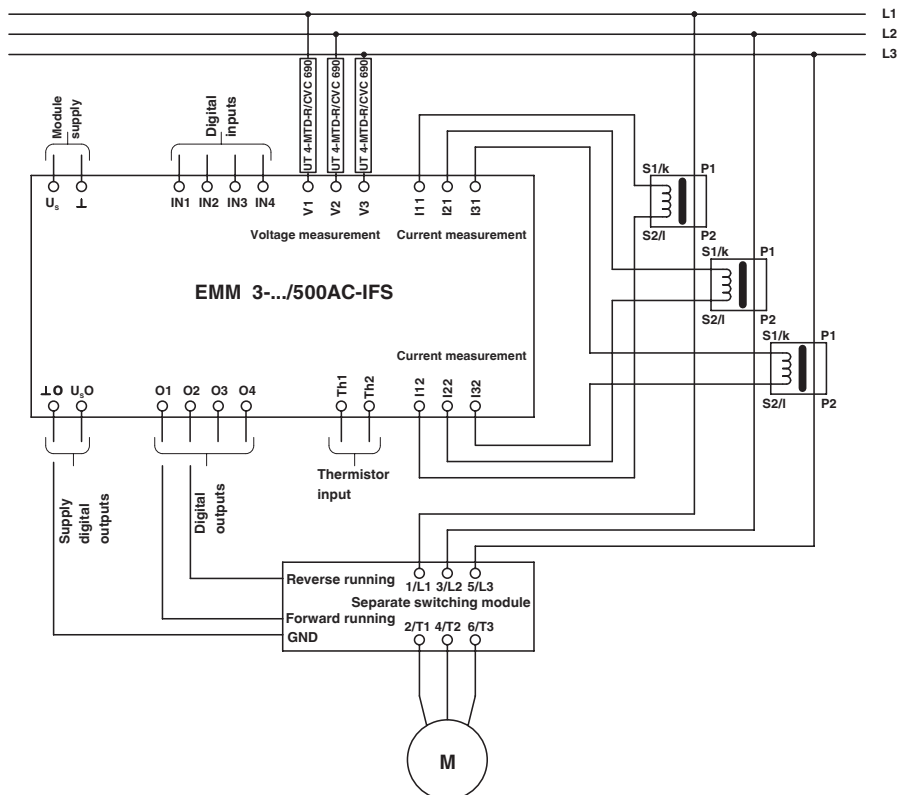
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Block diagram



Connection diagram



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

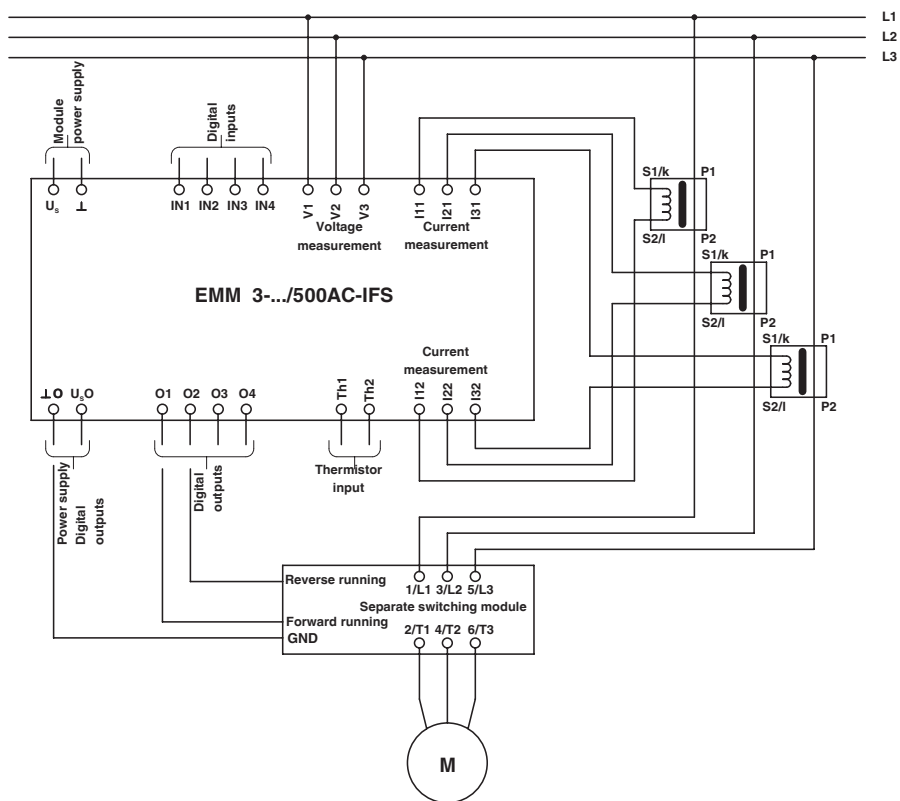
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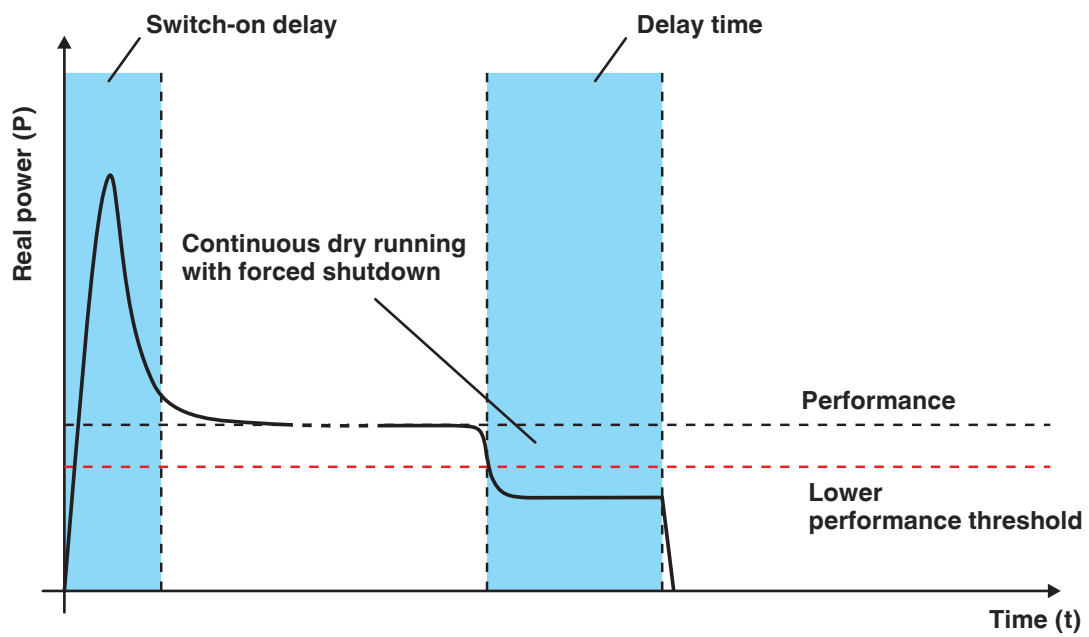
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Connection diagram

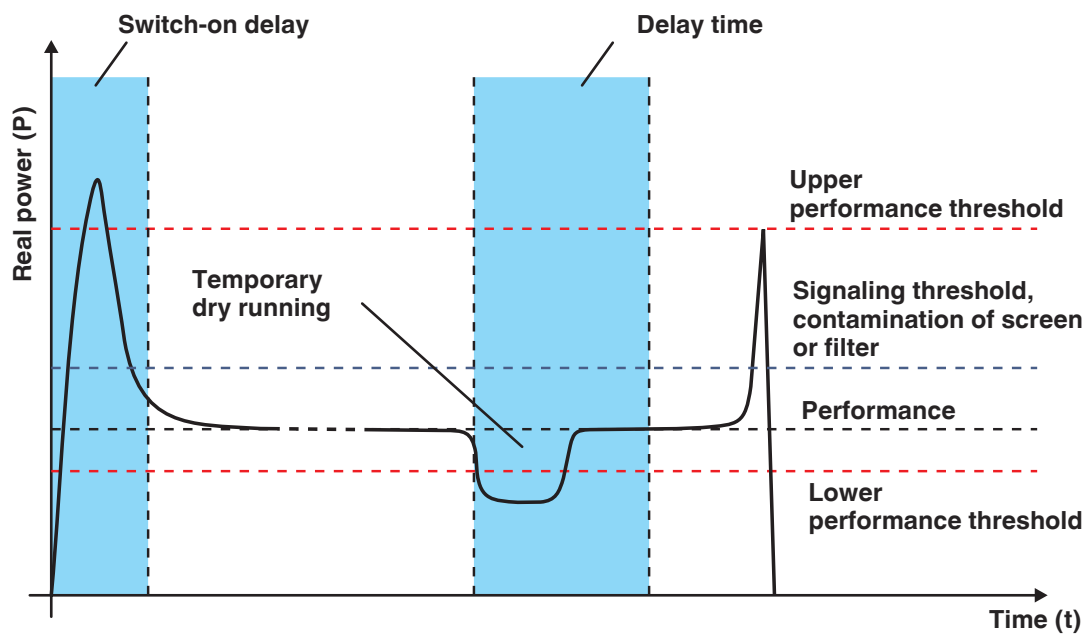


Diagram



Status monitoring: dry run in motor-operated pumps

Diagram



Status monitoring: air bubbles in motor-operated pumps

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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/pc/products/2297497>



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

cULus Listed

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Classifications

ECLASS

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

ETIM

ETIM 9.0	EC002572
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UNSPSC

UNSPSC 21.0	39121100
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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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