

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



2297497

<https://www.phoenixcontact.com/gb/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	DK7512
Product key	DK7512
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 <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross-section flexible	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
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 <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross-section flexible	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross-section AWG	24 ... 14

## Signaling

Status display	LED (yellow)
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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Standards/regulations	EN 60947
	EN 60947-4-2

## Mounting

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

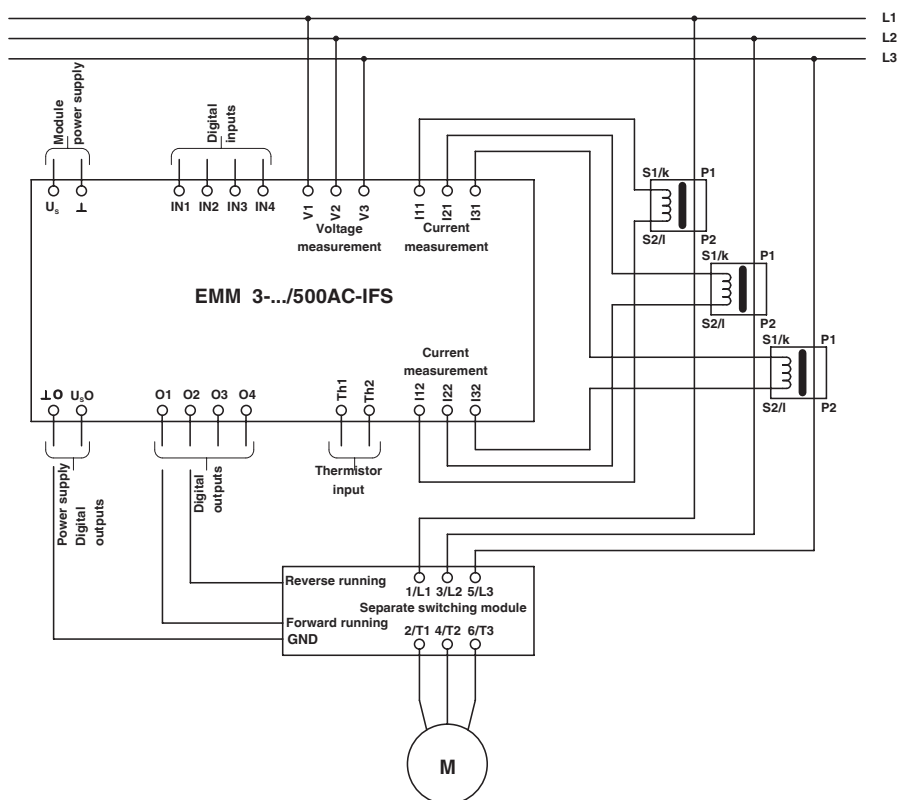
# EMM 3- 24DC/500AC-IFS - Motor management

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## Drawings

Connection diagram



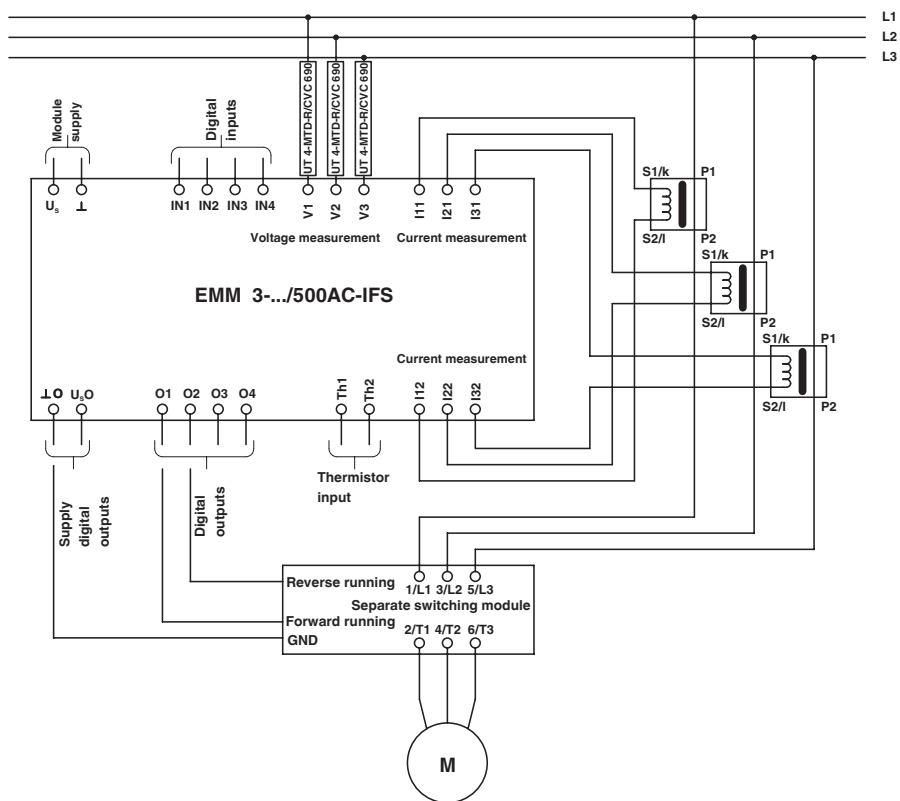
# EMM 3- 24DC/500AC-IFS - Motor management



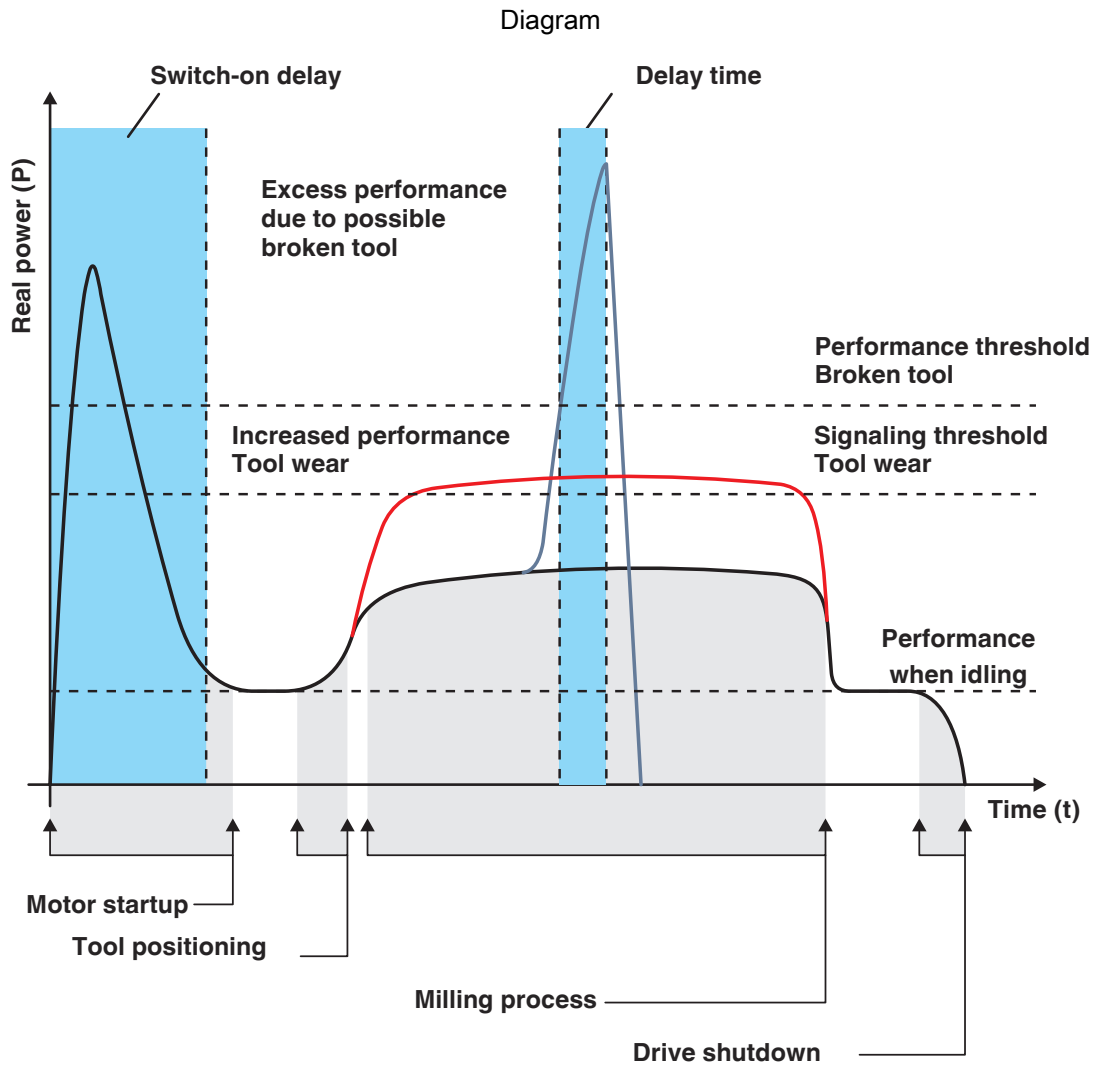
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Connection diagram

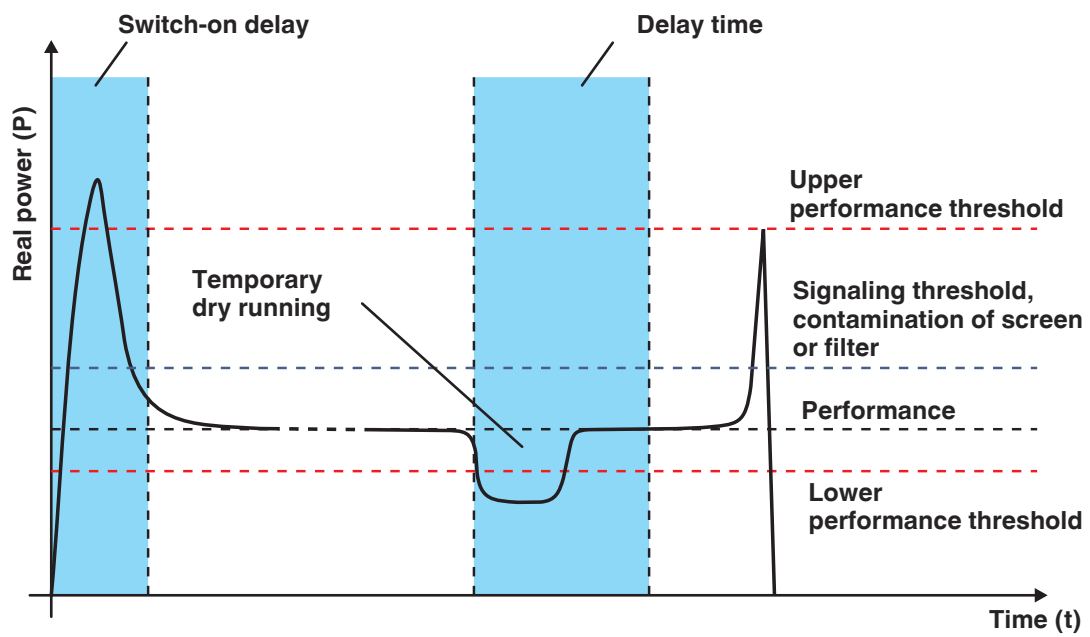


EMM 3-.../500AC-IFS with connected CONTACTRON VOLTAGE CONVERTER



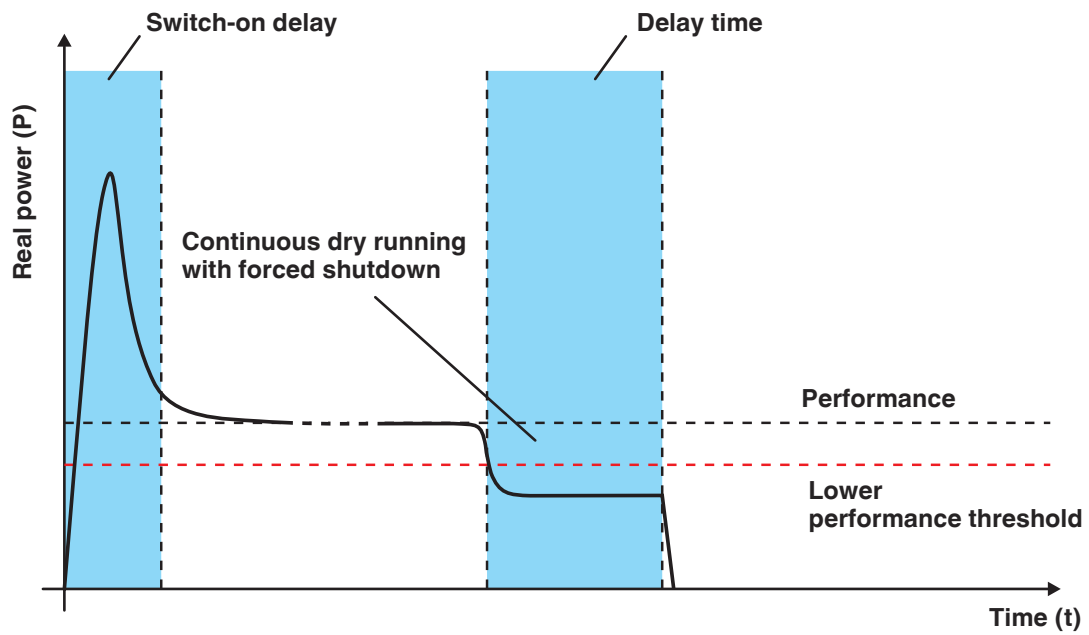
Status monitoring: machine tool for milling

Diagram



Status monitoring: air bubbles in motor-operated pumps

Diagram

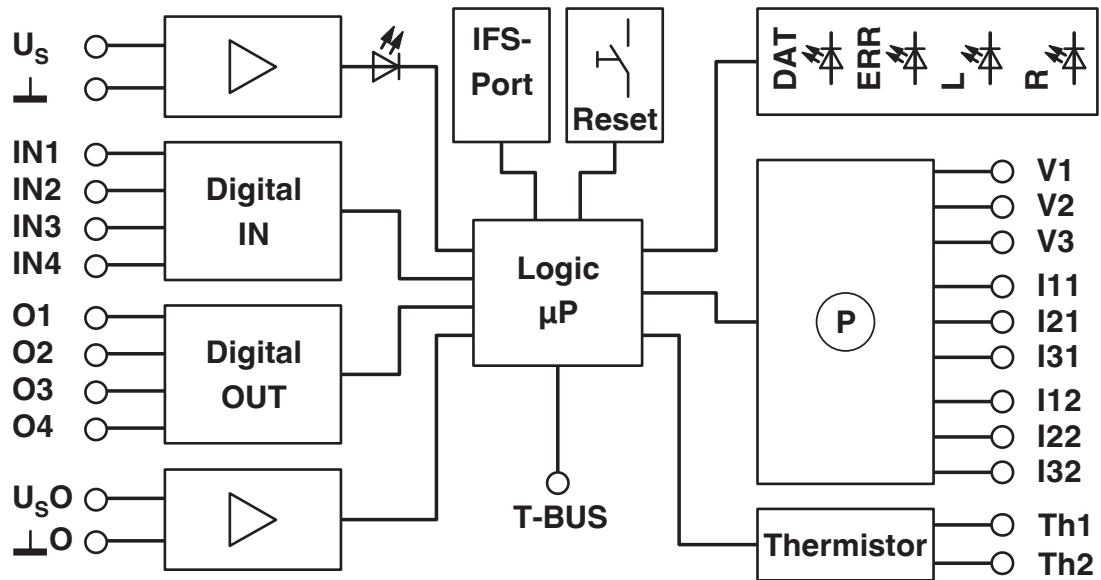


Status monitoring: dry run in motor-operated pumps

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Block diagram



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## Classifications

### ECLASS

ECLASS-13.0

27370804

### ETIM

ETIM 9.0

EC002572

### UNSPSC

UNSPSC 21.0

39121100

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## Environmental product compliance

### EU RoHS

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

### 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	141e0f24-6c49-48b6-a9f1-f1b2bd215171

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