

# Motor management - EMM 3-230AC/500AC-16-IFS - 2297536

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Electronic motor management with integrated current transformers up to 16 A - active power measurement for overload and underload monitoring of motors and systems for optimum protection. 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



## Key Commercial Data

Packing unit	1 pc
GTIN	
GTIN	4046356175784

## Technical data

### Note

Utilization restriction	EMC: class A product, see manufacturer's declaration in the download area
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### Dimensions

Width	22.5 mm
Height	99 mm
Depth	114.5 mm

### Ambient conditions

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

### Input data

Input name	Device supply
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## Technical data

### Input data

Rated control circuit supply voltage $U_s$	230 V AC
Control supply voltage range	92 V AC ... 253 V AC
Rated control supply current $I_s$	10 mA
Switching threshold	48 V AC ("0" signal)
	96 V AC ("1" signal)
Input name	Digital inputs (IN1 - IN4)
Number of inputs	4 (IN1 - IN4)
Rated actuating voltage $U_c$	230 V AC
Rated actuating current $I_c$	3.5 mA

### 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	230 V AC (Relay output)
Continuous load current	500 mA

### Current measurement

Measuring via	Internal current transformer
Basic accuracy	typ. 0.5 %

### Voltage measurement/phase-to-neutral voltage

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

### Power measurement

Power range	14 kW
Basic accuracy	typ. 2 %

### General

Test voltage input/output	8 kV
Mounting position	Vertical (horizontal DIN rail)
Assembly instructions	In rows with zero spacing
Operating mode	100% operating factor
Operating voltage display	Green LED
Status display	LED yellow right rotation (R), LED yellow left rotation (L), LED green data communication
Indication	Red LED

### Connection data

Connection name	Control circuits
Connection method	Screw connection
Stripping length	8 mm
Screw thread	M3

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## Technical data

### Connection data

Conductor cross section solid	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

### Connection data 2

Connection name	Load circuit
Connection method	Screw connection
Stripping length	8 mm
Screw thread	M3
Conductor cross section solid	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

### Standards and Regulations

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

### Insulation characteristics

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

### Conformance/approvals

Designation	ATEX
Identification	# II (2) G [Ex e] [Ex d] [Ex px]
	# II (2) D [Ex t] [Ex p]
Certificate	PTB 10 ATEX 3024
Designation	UL, USA/Canada
Certificate	NKCR.E140324
Designation	Safety Integrity Level (SIL, IEC 61508)
Identification	≤ 1
Additional text	Safe shutdown
Designation	Safety Integrity Level (SIL, IEC 61508)
Identification	1
Additional text	Motor protection
Designation	Category (ISO 13849)

# Motor management - EMM 3-230AC/500AC-16-IFS - 2297536

## Technical data

### Conformance/approvals

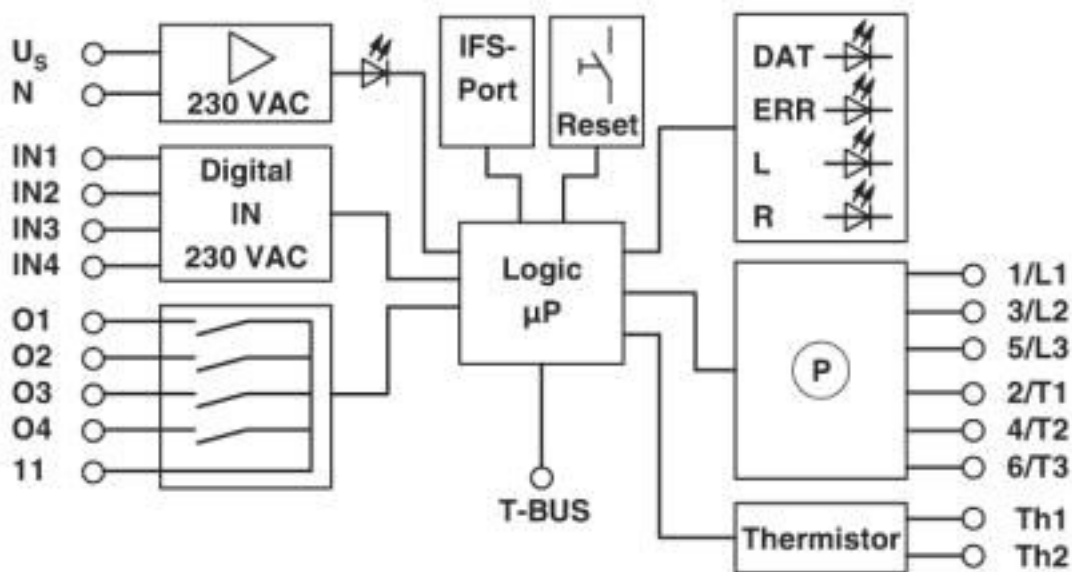
Identification	≤ 1
Additional text	Safe shutdown
Designation	Performance Level
Identification	≤ b
Additional text	Safe shutdown

### Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

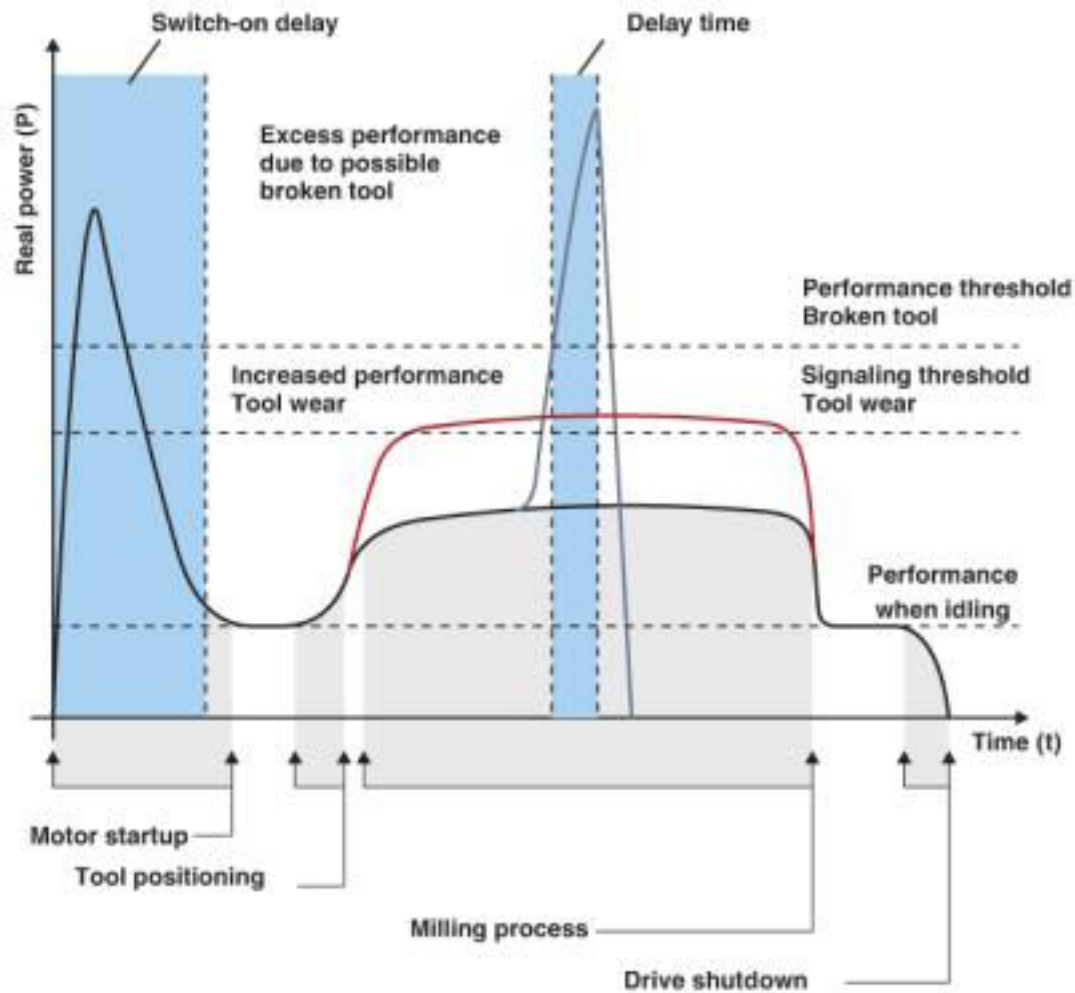
## Drawings

Block diagram



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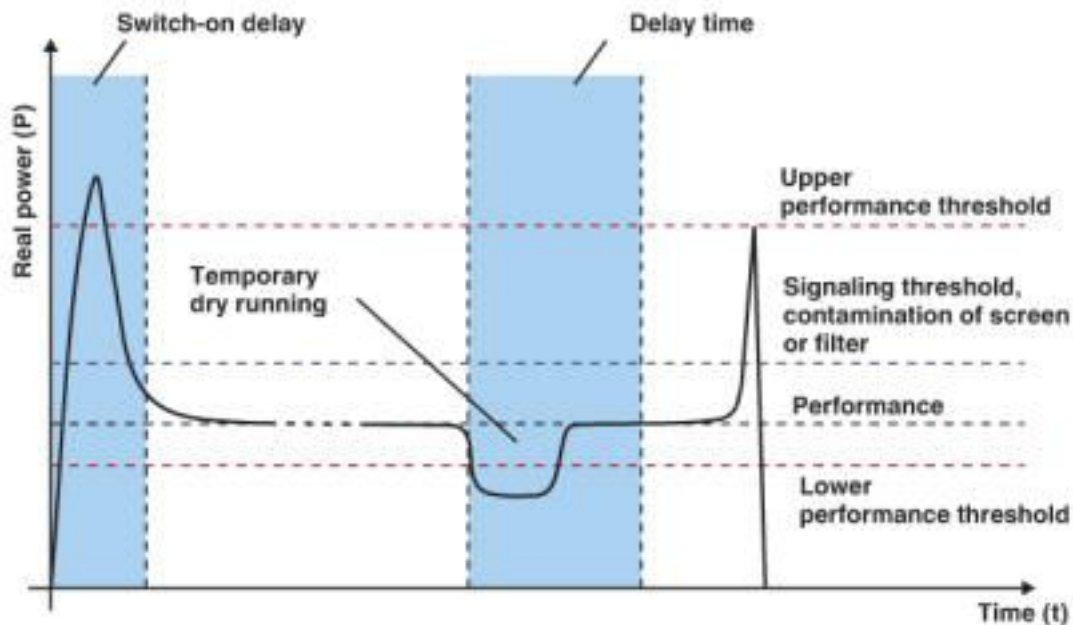
Diagram



Status monitoring: machine tool for milling

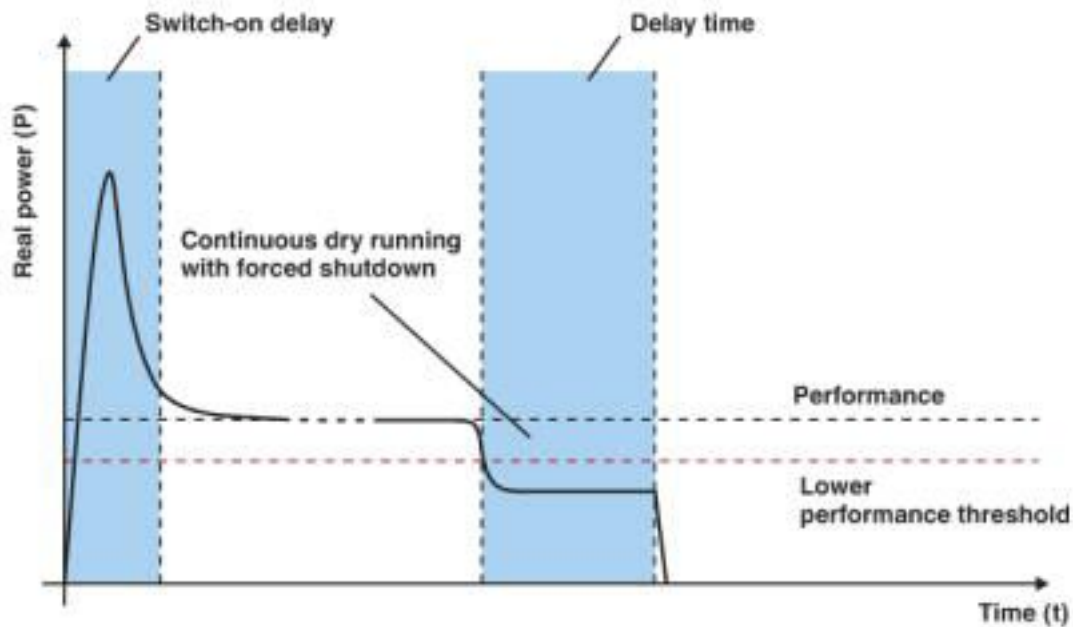
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Diagram



Status monitoring: air bubbles in motor-operated pumps

Diagram



Status monitoring: dry run in motor-operated pumps

# Motor management - EMM 3-230AC/500AC-16-IFS - 2297536

## Classifications

### eCl@ss

eCl@ss 10.0.1	27370804
eCl@ss 4.0	27371100
eCl@ss 4.1	27371100
eCl@ss 5.0	27371600
eCl@ss 5.1	27371600
eCl@ss 6.0	27370800
eCl@ss 7.0	27370804
eCl@ss 8.0	27370804
eCl@ss 9.0	27370804

### ETIM

ETIM 4.0	EC002572
ETIM 5.0	EC002572
ETIM 6.0	EC002572
ETIM 7.0	EC002572

### UNSPSC

UNSPSC 6.01	30211915
UNSPSC 7.0901	39121514
UNSPSC 11	39121514
UNSPSC 12.01	39121514
UNSPSC 13.2	39121104
UNSPSC 18.0	39121104
UNSPSC 19.0	39121104
UNSPSC 20.0	39121104
UNSPSC 21.0	39121104

## Approvals

### Approvals

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Approvals

UL Listed / cUL Listed / EAC / cULus Listed

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Ex Approvals

ATEX

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### Approval details

# Motor management - EMM 3-230AC/500AC-16-IFS - 2297536

## Approvals

UL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 140324
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cUL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 140324
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EAC			RU*C- DE.*08.B.00520*
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cULus Listed			
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## Accessories

### Accessories

#### Configuration set

Configuration package - MM-CONF-SET - 2297992



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

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#### Connector set

Plug - IMC 1,5/ 5-ST-3,81SET IL IFS 2M - 1784729

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

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#### Data cable preassembled

Data cable - IFS-USB-DATACABLE - 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.



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### Accessories

#### Device marking

Plastic label - US-EMLP (15X5) - 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

Plastic label - UC-EMLP (15X5) - 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

#### DIN rail connector

DIN rail bus connectors - ME 22,5 TBUS 1,5/ 5-ST-3,81 GY - 2201937



DIN rail connector, nominal current: 8 A, rated voltage (III/2): 125 V, number of positions: 5, pitch: 3.81 mm, color: gray, mounting: DIN rail, Item with gold-plated contacts, bus connectors for connecting with electronics housings, 5 parallel contacts

#### Gateways/Proxies

Data interface - EM-PB-GATEWAY-IFS - 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.

Data interface - EM-RS232-GATEWAY-IFS - 2901526



Gateway for the connection of up to 32 INTERFACE system devices to a higher-level controller via Modbus/RS-232. The INTERFACE system devices are connected to the Gateway via DIN rail connectors, the DIN rail connectors are provided.

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### Accessories

#### Data interface - EM-RS485-GATEWAY-IFS - 2901527



Gateway for the connection of up to 32 INTERFACE system devices to a higher-level controller via Modbus/RS-485. The INTERFACE system devices are connected to the Gateway via DIN rail connectors, the DIN rail connectors are provided.

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#### Data interface - EM-MODBUS-GATEWAY-IFS - 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.

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#### Data interface - EM-DNET-GATEWAY-IFS - 2901529



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

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#### Data interface - EM-CAN-GATEWAY-IFS - 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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#### Data interface - EM-PNET-GATEWAY-IFS - 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.

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# Motor management - EMM 3-230AC/500AC-16-IFS - 2297536

## Accessories

Data interface - EM-ETH-GATEWAY-IFS - 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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## Memory block

Memory block - IFS-CONFSTICK-L - 2901103



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

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Memory block - IFS-CONFSTICK - 2986122



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

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## PCB plug

Printed-circuit board connector - MC 1,5/ 5-ST-3,81 - 1803604



PCB connector, nominal current: 8 A, rated voltage (III/2): 160 V, nominal cross section: 1.5 mm<sup>2</sup>, number of positions: 5, pitch: 3.81 mm, connection method: Screw connection with tension sleeve, color: green, contact surface: Tin

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Printed-circuit board connector - IMC 1,5/ 5-ST-3,81 - 1857919



PCB connector, nominal current: 8 A, rated voltage (III/2): 160 V, nominal cross section: 1.5 mm<sup>2</sup>, number of positions: 5, pitch: 3.81 mm, connection method: Screw connection with tension sleeve, color: green, contact surface: Tin

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## Necessary add-on products

## Motor management - EMM 3-230AC/500AC-16-IFS - 2297536

### Accessories

Data cable - IFS-USB-DATACABLE - 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.

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