

The EPR16 is a programmable cam controller with a 16-Bit-processor system. Your packaging machine or production facility will be more intelligent, more flexible, faster and user friendlier with EPR16. A connected absolute angle encoder picks up the momentary machine position, transfers this information to the EPR16, which activates the respective outputs according to the program.

- Absolute shaft encoder up to 500 r.p.m
- Automatic dead time/delay-time correction
- Program optimizing during operation
- Easy programming via integrated keyboard
- No programming unit required
- 32 programs
- Realtime operating system for highest speed
- Operator terminal and PLC in one unit



### Simplest programming and operation

Programming effected after flow chart, it is very simple and within shortest time easy to learn by plain language dialogue. 9 keys are sufficient for the program input of also complex applications. The plain language dialogue is freely programmable and thus for example possible in different languages. Each output can be arbitrarily frequently switched without lost of speed.

### 32 programs directly in the access

32 complete programs can be stored and selected by keyboard input. The different programs can be copied, also segment by segment.

### Simple interconnection with PLC

A simple interconnection with PLC, machine terminal or personal computer is possible over the 16 digital switching exits or the serial V.24 interface.

### Program optimizing during operation

Efficient correcting functions, e.g. static angle correction or correction for selected outputs are possible in operation.

### Integrated fully automatic delay-time compensation

An automatic delay-time compensation function (dead-time) in operating processors automatically compensates the mechanical delay of connected servo components. A different delay-time compensation can be determined for each output, also separately to the rising or falling edge. The necessary angular advance is continuously calculated as a function of the machine operating speed, thus achieving a proportional time advance of the output signals. It is sufficient to enter one optional delay-time per output in milliseconds.

### Information about clear text display and ser. interface

Current operational data, e.g. machine operating speed, position, angle etc. are indicated on the clear-text-display. A variable conversion factor allows a display in different units of length (e.g. m, mm, inch). As an option current process data can be obtained via serial interface.

### Durably, compactly and reliably

The EPR16 is integrated in a compact panel case with dirt-insensitive foil-coated processure point keys. The modular electronics are based on European standard size PC boards. All components can be replaced at the rear side without disassembling the device.

### Extensive supporting PC software

With **EPRPRO for Windows** we additionally offer an extremely efficient PC software for programming with graphic support inclusive program printout, documentation, programming of the plain language display as well as data communication on disc.

### Additional components

To the cam controller **EPR16** we also supply suitable absolute gray code or binary code encoders, see separate data sheet.

### Our experience - your advantage

Whether packing machines, cleaning machines, labelling machines, textile machines, manufacturing automats - with **EPR16** you control intelligent, fast, flexible, safe and convenient.

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# Programmable Cam Controller EPR16

## Installation

Operating voltage: AC 230V/115V,  
Mains frequency AC: 50-60Hz  
Residual ripple DC: < 5%  
Power consumption: approx. 14VA  
Temperature range: 0 - +40° C  
Protection: IP65 front  
Weight: approx. 1300g  
Fitting position: as desired

## Shaft Encoder Connection

Resolution: 10-bit binary/Gray code input, electrically separated  
Integr. power supply: DC 12V, 250mA  
Input voltage: DC 10-30V  
Input frequency: max. 3500Hz  
binary: 500 r.p.m. with 360 steps / revolution  
gray: 400 r.p.m. with 360 steps / revolution

## Outputs

16 transistor outputs  
DC 10-60V, 100mA, plus-switching electrically separated by optocouplers,  
Rear 37-pol. SUB-D plug-in connection

## Serial Interface

V24, RS232-level, 300-9600 baud

## Processor System

16-Bit-CMOS processor system  
8MHz system cycle, 16MHz clock  
32KB EPROM / 128KB RAM  
Battery-buffered, with retentive memory

## Display

12-digit LED-dot matrix red  
All ASCII characters, special characters  
Height of symbols 5.08 mm  
3 adjustable brightness levels  
Readability up to approx. 5m  
current display alternatively angles  
Machine speed  
Correction angle  
Program number  
Switching status of outputs

## Keys

Integrated foil-coated keys with pressure point, 9 keys, IP65

## Programming

integrated programming unit  
clear text-dialogue entry via keys or personal computer  
Text-display programmable as desired  
optional release by external key-operated switch  
as many circuit-areas as desired without loss of speed  
comfortable input functions for

- Input of new switching areas
- Alterations
- Documentation
- Deleting switching areas
- Deleting whole program
- Program selection
- Program(segment) copying
- Static angle correction
- In-operation correction
- Delay-time input for each output
- Installation
- Program load / safe

## Self-Monitoring

Watch Dog with control-output  
Memory check  
Transfer check serial interface  
Shaft encoder control of unacceptable data  
Overspeed

## Mechanical Construction

Sturdy plastic case in accordance with DIN 144x144mm  
Front: foil-coated keys IP65 on aluminum supported place  
All connections on rear side with plug-in terminals.

## Shaft Encoder EPR-WG2 / EPR-WG3

EPR-WG2 gray: Order-No. 585480  
EPR-WG3 binary: Order-No. 585482  
Resolution: 1 degree, 0-359  
Voltage: DC 10-24V  
Current consumption: 200mA  
Outputs: 20mA, short circuit proof  
Protection: IP65  
Temperature range: 0° to 55° C  
Weight: 500g  
Vibration: 100m/s<sup>2</sup> (10-10000Hz)  
Connection: Plug-in terminal IP54

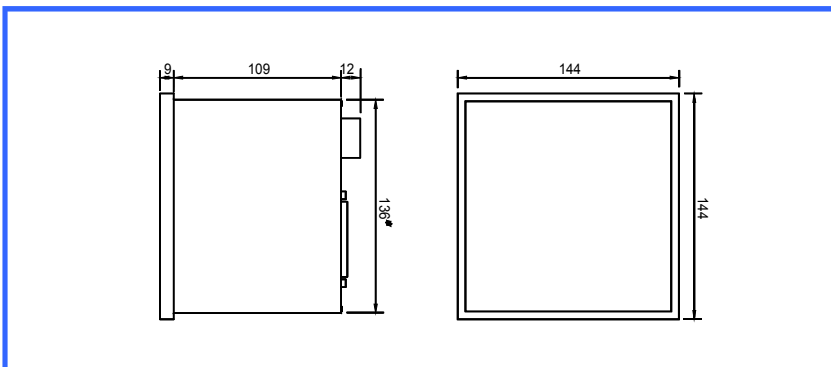
## Accessories

EPR16-RE: plug-in card with 16 relay outputs for each 3A/250V  
Order-No. 485450  
  
EPR16-OK: plug-in card with 16 short circuit proof transistor outputs for each DC 10-30V / 0,5A  
Order-No. 485455

EPRPRO V3.x for Windows XP, 2000, 9x:  
PC software for programming, data transfer, text editing, documentation  
Order-No. 585716 german

Cable for serial interface 2m,  
2x Sub D plug-in connection 25-pol.  
Order-No. 585732

Cable for serial interface 2m,  
1x Sub D plug-in connection 25-pol.  
1x Sub D plug-in connection 9-pol.  
Order-No. 585733



Order-No	Type
585405	EPR 16GT AC230V, Graycode
585406	EPR 16GT AC115V, Graycode
585415	EPR 16BT AC230V, Binary code
585416	EPR 16BT AC115V, Binary code
585450	EPR16-RE Relay-output-card
585455	EPR16-OK Optocoupler-output-card
585882	User manual EPR english