Programmable Cam Controller EPC48

ZANDER AACHEN

User Information

English translation

Correct Use

Cam controllers are employed everywhere, where actors must be marked exactly in firm assignment to the machine positions, for instance at packaging machines. The EPC48 is a high performance cam-controller with a 16-bit-processor system and memory-programming capacity. It has fully programmable control over the activities of processing machines e.g. packaging machines or glue machines. A connected shaft - or path encoder picks up the momentary machine position and transfers this information to the EPC48, which activates the respective outputs according to the program. Text display and programming unit are integrated.

Features

- Absolute shaft encoder up to 1000 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

Function

Thanks to clear text-conversation programming is very simple and can be learnt in a very short time. The clear text-dialogues can be programmed in different languages.

All outputs are selected as frequently as desired without loss of speed. **EPC48** has a real time multitasking operating system without firm cycle times. Thus an optimum at speed is reached.

It is possible to store and select up to 32 complete programs by manual keyboard entry or external controls. These different programs can be copied as desired, even in segments.

Simple connection to PLC, machine terminals or personal computers is possible via digital control inputs / outputs or serial interface.

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

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.

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.

The **EPC48** 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.

Your packaging machine or production facility will be more intelligent, more flexible, faster and user-friendlier with **EPC48**.

If you are not convinced by now you should talk to us - we integrate even your most unusual special requirements.

EPC48 – *40 years industrial experience of ZANDER-cam controllers lies in it.*

Safety Precautions

⚠️

- The installation and operation must be carried out by qualified personnel only,
- who is familiar with the professional handling of machine equipment,
- who is familiar with the valid rules of industrial safety and accident prevention,
- who read and understood the operating instructions and the system manual.
- The safe function of the device during machine operation cannot be guaranteed in case of wrong connection or improper operation. This may lead to fatal injuries.
- Pay attention to country specific regulations.
- The electrical installation must be performed after disconnecting the device and the machine from the mains supply.
- The wiring must be carried out according to the instructions of this operating manual.

- The person who programs the device must be protected against electrostatic discharge (ESD protection).
- Opening the device, any manipulation of the device and the avoidance of the safety facilities are not permitted.
- All relevant safety regulations and standards must be attended to.
- Non-observance of the safety regulations may cause death, severe injuries or substantial damage to property.
- Before use, please, read the operating instructions and keep it in a safe place. Make sure that the operating instructions are always available for installation, initial operation and maintenance.

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User Information

Installation
Operating voltage: AC 230V/115V
Mains frequency AC: 50-60Hz
Residual ripple < 5%
Power consumption: approx. 20VA
Temperature range: 0 - +40^{0}C
Protection: IP65 front
Weight: approx. 3000g
Fitting position: as desired

Shaft encoder-Connection
Resolution: 10-bit-binary input
electrically isolated
360/1000 steps / revolution
Integr. power supply. DC 12V, 250mA
Input voltage: DC 10-30V
Input frequency: max. 7000Hz
1000 r.p.m. at 360 steps/revolution

Outputs
48 transistor outputs
DC 10-60V, 100mA, plus-switching
Electrically separated by optocoupler
2 European standard size pc boards with 24 outputs each
Rear 37-pole Sub-D plug-in connection

Program Alternation Input
6 bit binary, 1 transfer signal
DC 10-30V electrically isolated

Serial Interface
V24, RS232-level, 300-9600 baud

Processor System
16-bit-CMOS processor system V50
32MHz Clock
128KB EPROM, 896KB RAM
Battery-buffered, with retentive memory

Display
4x20 characters LCD yellow/black
supertwisted, behind-shined
Hight of symbols approx. 5 mm

Keys
Integrated foil-coated keys with pressure point, number block, cursor controlling and function keys, IP65

Programming
Integrated programming unit
Clear text-dialogue entry via keys or
personal computer
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
output-switching areas, deleting whole
program, program selection,
program (segment) copying, static
angle correction, in-operation correction, delay-time entry per output,
installation,
program load / safe
Test/initialization routine

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 aluminium support-place
Printed circuit boards in European format
replaceable on rear side without disassembly of case
All electrical connections on rear side
with plug-in terminals
Mains connections and key-operated
switch with screw-type plug-in connectors

Shaft encoder EPR-WG3
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 - 55^{0}C
Weight: approx. 500g
Vibration: 100m/s^2 (10-10000Hz)
Connection: plug-in connector IP54
Cable length: 3m, 5m, 10m (Option)
(see seperate data-sheet)

Accessories
EPRPRO for Windows:
PC-Program for programming,
data-transfer,
text editing, documentation
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
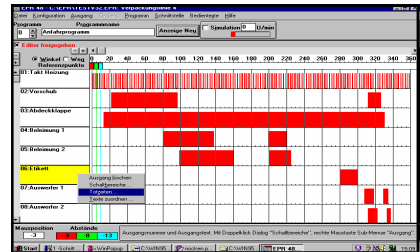
EPRPRO for Windows - programming couldn´t be easier.

The PC-Software for all EPR/EPC-devices.

Dimension Drawing
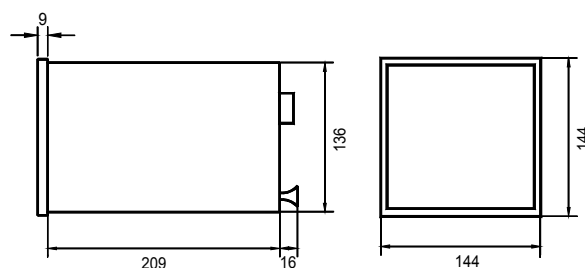
Variants

Order no. 585740	EPC48, 230V AC
Order no. 585741	EPC48, 115V AC
Order no. 585482	EPR-WG3 shaft encoder binary code
Order no. 585716	EPRPRO für windows XP, Win7 32Bit

See user manual for complete descritption of the device.

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