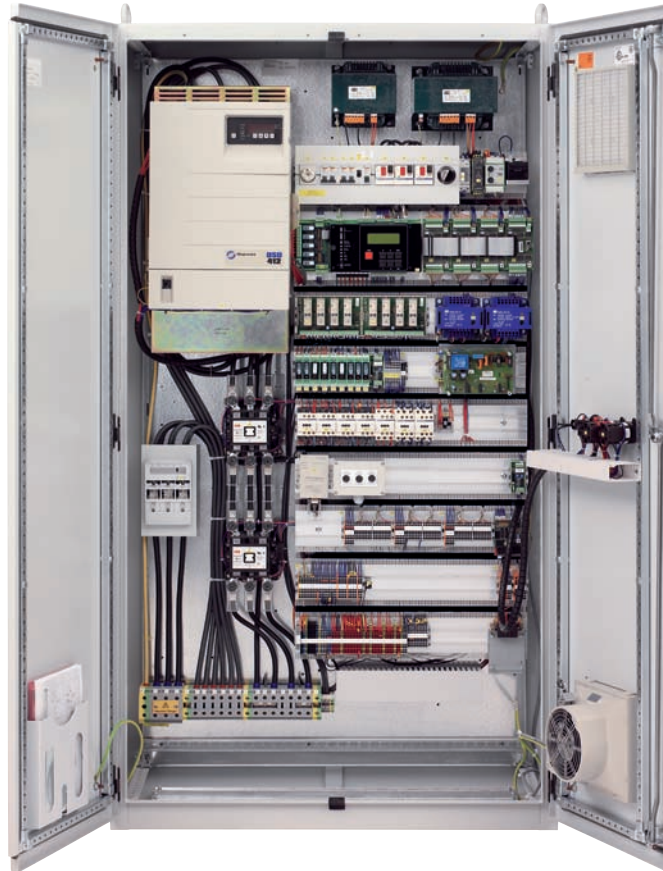


# MPC

## Custom 'High Performance' Elevator Control Systems



Our Elevator Control Concept 'MPC' covers the majority of 'complex' and 'custom' elevators up to 8-car groups, with the requirement for providing Absolute Positioning Systems with high contract speeds. Each system is individually engineered and chosen if our standard Control Packages - 'MRL' (for machine-roomless elevators), 'MPH' (for small hydraulic elevators) and 'MFE' (for frequency-controlled elevators) do not meet the very special requirements of these specific projects.

These custom designed systems always present an exciting design challenge for our engineers. In cooperation with our customers we develop a tailored and economically viable Control Solution, which includes complete Project Engineering, Manufacturing, Testing, & Implementation Services, backed by long-term support.

Our MPK 400 Microprocessor Controller range provides the core of these systems. Features such as the flexible and modular

structure of serial communications via LON Fieldbus from control to the car, including serial integration of the shaft signals via our KSB Shaft Bus system, meet the highest technological standards.

KSB works on the basis of approved CAN physics and provides very simple yet effective connection of the serial shaft signals to the Elevator Control System with the use of pluggable Landing Bus Modules. Cost and time savings are achieved by reduced errors in assembly and fast and simple installation through pre-configured bus hardware.

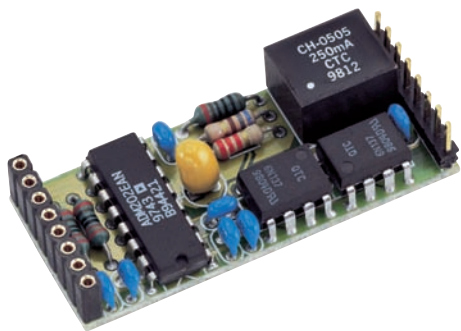
In addition to the more conventionally controlled frequency inverters, our MPK 400 offers the possibility to control inverters by way of a simplified serial Direct Control Protocol (termed DCP 3 or DCP 4) which was developed by Kollmorgen as a joint project with several leading frequency inverter manufacturers. This makes the more sophisticated 'direct-into-floor' ap-

proach possible. Furthermore, with DCP 3 and DCP 4, error and event messages from the inverter are transmitted to the MPK 400's control display. The Parameter settings of the frequency regulator can also be viewed and changed through our LHT 4 Elevator Handheld Terminal, or remotely by using 'Visual Lift', Kollmorgen's Remote Monitoring package.

All components utilized are either produced in our own electronic production facility or are procured from well-known suppliers. The control system, car operating panels, shaft installation and custom trailing cables are interconnected using a pre-wired plug and socket system. All electrical equipment is pre-fabricated and fully tested at our factory, prior to being delivered as a complete package. Additionally, the MPK 400 can also be supplied to high-volume Elevator OEMs to feature as the core component of their Elevator Control solutions.

### Technical Data MPC

Areas of Use	Passenger and freight elevators
Type of Operation	Traction elevators controlled / uncontrolled Hydraulic elevators
Drive System	Single-Speed drive Pole-changing traction elevators Frequency-regulated traction elevators DC-SCR drive controlled traction elevators Star-Delta starter Direct-Starter Soft-Starter
Control Type	Single-Button Collective non-directional / directional First in - First out Two-Button collective Group control of up to 8 elevators
Shaft Connection	Parallel or serial via LON or Kollmorgen Shaft Bus (KSB)
Door Control	Triggering of three drives with / without automatic doors - with through load facility - with selective door control
Signals	Triggering of floor indicators with analog / digital / Gray inv. / Gray output Direction indicators inside / outside Destination indicator, gong in car, "Elevator in use" indicator
Shaft Encoding System	Magnetic switch encoding with "near landing" option Digital shaft encoding, (plug-in DSK or APS add-on card as position)



Serial Remote Monitoring Interface



EM 16



LHT 4 Hand Terminal

#### Hardware MPK 400

- 16 / 54 MHz 32 bit Motorola processor with LON™ interface TP-XF 78 field bus
- RS 232 interface for telecommunications system / printer / laptop
- 4-line display / optional non-display version with LHT 4 Hand Terminal
- Permanent operating status indicator, additional status information by LED displays
- Short-circuit and overload protection, PTC resistor monitoring device
- Relays for triggering the main contactors
- 5 traveling speeds
- Triggering of three door drives
- 8 inputs  
of which 7 are freely assignable for special functions
- 8 outputs  
of which 7 are freely assignable for special functions
- Optional group interface
- Optional controller triggering
- Optional DSK (Incremental Digital Shaft Copying system)
- Optional APS (Absolute Positioning Digital Shaft Copying system)
- LHT 4 Hand Terminal interface
- 45-wire hanging cable (UNItrail) with unassigned cores (partially shielded) for associated emergency call systems

#### Software

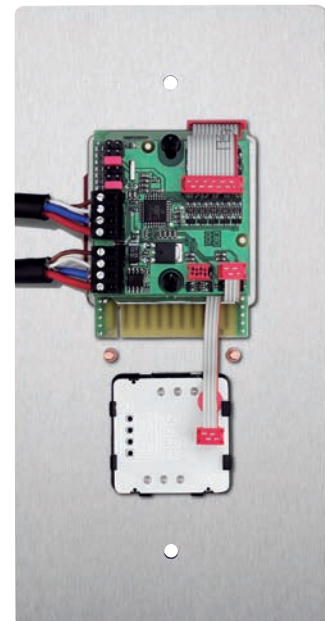
- Event log: plain language display with date / time / stop / statistics / maintenance intervals / trip and operating hours counter
- Language selection: English, German, Dutch, Swedish, Polish, Spanish
- Free inputs and outputs
- Over 1,000 parameters can be set
- Compatible with MPK Easy parameter configuration software
- Integrated automatic self-test mode, emergency call, mis-use recognition
- Adaptive, intelligent group algorithms
- Processor support with service and maintenance work, intelligent service interval indicator
- Attachable device control
- Traffic logging and automatic tendency recognition
- Dynamic and adjustable parking levels / zones
- Serial inverter protocol with DCP 3 / DCP 4 (position to landing-based drive control)
- MPK IQ self optimizing control function
- MPK Green energy saving mode



MPK 400 Microprocessor Controller



Car Top connection box with control unit



Landing Fixture with KSB module

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