

Control units

MAGTRONIC KOM 1/2

KOM 1 control unit

The KOM control unit has been developed for the operation of Matrix/Magdrive linear drives and Telemag telescopic columns in 24 VDC technology. The KOM 1 control unit with integrated transformer and rectifier has plug connections for mains cable and hand or foot switch, as well as up to 4 motor connections and 1 limit switch connection (option). Optionally a hand switch, foot switch or else an infrared receiver can be plugged directly into the control element connection. All control and motor supply cables are locked after correct connection and sealed by sealing rings. Thanks to intelligent circuit, in no-load operation it is not the main transformer but an auxiliary transformer which is active and which maintains only the control voltage for the operating element (standby circuit). The transformer in the KOM control unit is protected against overheating by thermal protection. The integrated total current cut-off in the control unit prevents the current consumption being exceeded, as is the case on driving onto a stop or on overload and thus protects the drives. The motor outputs can be delivered optionally with individual current cut-off. Four 6 V batteries connected in series can be delivered as an option for the KOM 1

control unit. The batteries are installed in the compartment of the control unit provided for this. This permits operation independent of the mains for a limited period. The capacity of the batteries is 1,2 Ah. A discharge is indicated by an acoustic signal. The KOM 1 control unit is available ex works in two versions, without battery, or completely with batteries (not with individual current cut-off). Only batteries delivered by the factory may be used. The battery compartment is ventilated separately. In mains operation, the batteries are charged automatically, an electronic overload and total discharge protection is integrated. It is still possible to lower the drive on discharge. The control box is ultrasonically welded and has the degree of protection of IP66.



KOM 2 control unit

The KOM 2 control unit has been developed in microprocessor technology for many types of applications:

- Single operation of up to 5 drives
- Parallel running of 2 or 2 x 2 drives (except for Magdrive)
- Memory function of up to 3 drives (except for Magdrive)
- Single operation of up to 3 drives and parallel running of 2 drives (except for Magdrive)

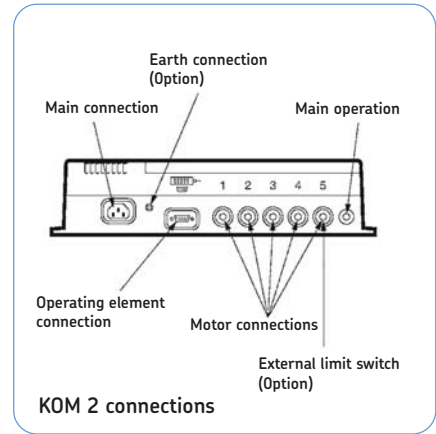
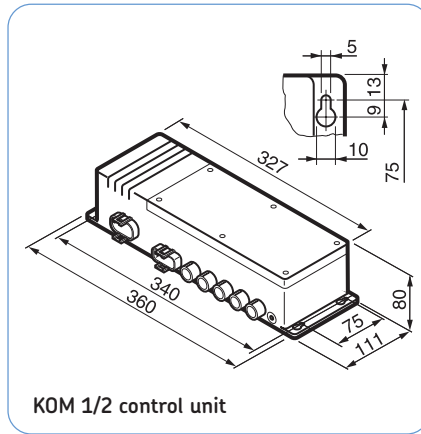
The drive groups cannot be operated simultaneously. These varied possibilities of combination open up new solutions in drive engineering. However, you must make sure for all combinations that only one function can be performed in each case. The technical construction corresponds in its basic principles to the KOM 1 control unit with up to 5 motor connections or 4 motor connections and 1 limit switch connection (option).

Technical data:	Unit	KOM 1	KOM 2
Type of control	-	Low voltage	Microprocessor ¹⁾
Motor connection	-	4	5 (4 with limit switch)
Limit switch connection optional	-	1	1
Operating element connection	-	1	1
Mains connection	-	1	1
Voltage/frequency	V/Hz	230/50	230/50
Voltage/frequency	V/Hz	120/60	120/60
Voltage/frequency	V/Hz	100/50-60	100/50-60
Output power	-	24 VDC/6 A	24 VDC/6 A
Duty cycle: Intermittent mode	Int.	1min./9min.	1min./9min.
Ambient temperature	°C	0 to +40	0 to +40
Degree of protection	IP	66	66
Approvals	-	EN60601.1 and EN60601.1-2	EN60601.1 and EN60601.1-2
	-	UL2601	UL2601
Weight	kg	5,8	5,8

1) The control is not first failure-proof.



Control units MAGTRONIC KOM 1/2



Both special hand or foot switches, as well as a special infrared receiver are required for the microprocessor control. Batteries can also be delivered as an option for the KOM 2 control unit.

Installation, dimensioning and capacity are identical with the KOM 1. The housing is also ultrasonically welded and has the degree of protection of IP66. The technical instructions must be complied with on starting up. Applications which do not exclude danger to persons must be provided with guards by the user.

To achieve a high degree of operating convenience and safety, the KOM 1/2 control units can be extended with a number of accessories. Please refer to datasheet L5328,2935DE for the various possibilities of interconnecting the drive and control elements.



Control unit

MAGTRONIC KOM 2

KOM 2 enhanced power control unit

In order to allow simultaneous operation of between 1 and 5 Matrix linear actuators or Telemag telescopic columns using 24 VDC technology, the KOM control range has now been extended to include a more powerful version. The KOM 2 enhanced power control unit has an integrated toroidal mains transformer and AC/DC converter, and is fitted with connections for a mains cable and operating element, plus a choice of up to 5 motor connections or 3 motor and 2 option connections. A hand switch can be plugged directly into the operating element connection. Once all control and motor cables have been correctly connected, they are locked and sealed with sealing rings. An intelligent circuit means that an auxiliary transformer takes over from the main transformer during no-load operation. The transformer in the KOM control unit has thermal cut-off protection against overheating. The control unit is built to IP66 protection standards and must be protected from penetrating moisture. Its installation and dimensions are identical to those of the existing KOM 2 control units. The unit meets EN 60601-1 and UL 2601 technical testing standards.

The following functions are possible:

- Single operation of up to 5 actuators
- Parallel operation of 2 to 4 actuators
- Parallel operation of 2 or 2x2 actuators
- Memory function with 3 freely selectable positions
- Single operation of up to 3 actuators and parallel operation of 2 actuators
- Customer-specific solutions

Actuators with pulse transmitters must be used for all functions. Depending on load, the actuator groups can be operated simultaneously: see max. power output and operating mode. Depending on the application, the enhanced power control unit can be operated either in intermittent mode (1 min./9 min.) with max. power output of 9 A (DC) or in short time mode (3 min.) with max. power output of 12 A. This range of possible combinations opens up new opportunities for actuator technology solutions. However, it is important to bear in mind the limits of the whole system with respect to the max. permissible power output of the control unit. When selecting the actuators for use in applications requiring parallel operation of 4 actuators, it is important to consider the max. total current load or power output from the current/load characteristics of



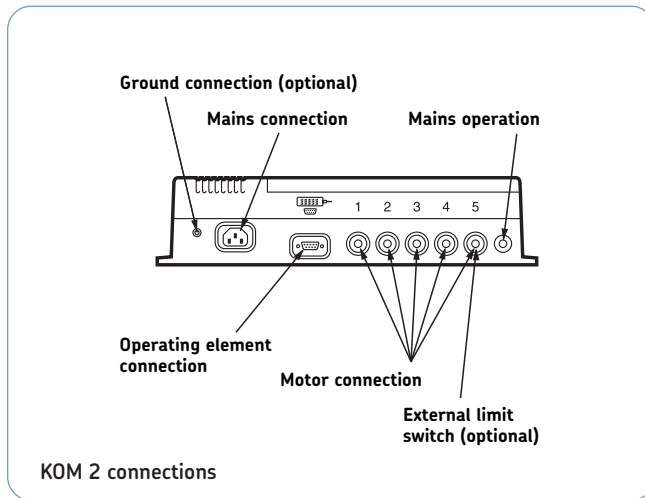
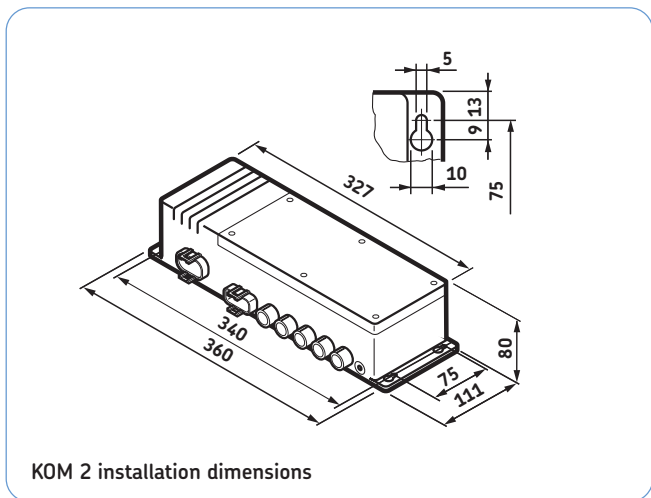
the actuators. The technical instructions must be followed when installing the unit. Appropriate safety features must be provided where an application poses any risk of personal injury. In order to provide a high standard of operator convenience and safety, a range of accessories is available for use with the KOM 2 enhanced power control unit. For information about other configurations for connecting the actuator and operating elements with the control units, see datasheet L5328,2935EN.

Technical data:	Unit	KOM 2
Type of control	-	Microprocessor *
Motor connection	-	5 (4 with limit switch)
External options	-	1
Operating element connections	-	1
Mains connections	-	1
Voltage/current/frequency	V/A/HZ	230/2,0/50-60
Voltage/current/frequency	V/A/HZ	120/3,5/60-60
Power output/operating mode	-	
Total output: intermittent mode	Int.	24 VDC/9 A/1/9 min.
Total output: short time operation	ST.	24 VDC/12 A/3 min.
Per output	-	max. 24 VDC/6 A
Ambient temperature	°C	+10 to +40
Degree of protection	IP	66
Approvals	-	EN 60601-EN 60601-1-2, UL 2601-1
Weight	kg	2,6

* The control is not first failure-proof.



Control unit MAGTRONIC KOM 2



Control unit

MAGTRONIC KOM 3

KOM 3 small control unit

The KOM small control unit has been developed for requirements in the operation of a maximum of 3 Matrix/Magdrive linear drives or Telemag telescopic columns in 24 VDC technology. The KOM 3 small control unit with integrated transformer and rectifier has plug connections for mains cable and hand or foot switch, as well as up to 3 motor connections or 2 motors and 1 limit switch connection (option). Optionally a hand switch, foot switch or else an infrared receiver can be plugged directly into the control element connection. All control and motor supply cables are locked after correct connection and sealed by sealing rings. Thanks to intelligent circuit, in no-load operation it is not the main transformer but an auxiliary transformer which is active and which maintains only the control voltage for the operating element (standby circuit). The transformer in the KOM control unit is protected against overheating by thermal protection. The integrated total current cut-off in the control unit prevents the current consumption being exceeded, as is the case on driving

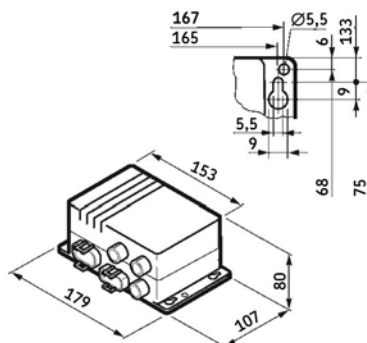
onto a stop or on overload and thus protects the drives. The control box is ultrasonically welded and has the type of protection of IP66. To achieve a high degree of operating convenience and safety, the KOM 3 control units can be extended with a number of accessories. Please refer to datasheet L5328, 2935EN for the various possibilities of inter-connecting the drive and control elements.



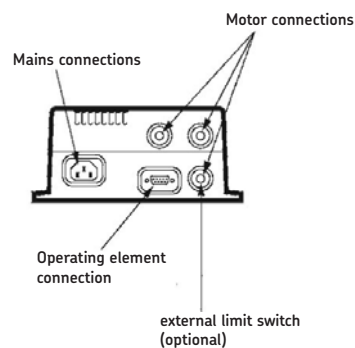
Technical data:	Unit	KOM 3
Type of control	-	Low voltage
Motor connection	-	3 (2 with limit switch)
Limit switch connection optional	-	1
Operating element connection	-	1
Mains connections	-	1
Voltage/frequency	V/HZ	230/50
Voltage/frequency	V/HZ	120/60
Voltage/frequency	V/HZ	100/50-60
Output power	-	24 VDC/6 A
Duty cycle: Intermittent mode	Int.	1min./9min.
Ambient temperature	°C	0 to +40
Degree of protection	IP	66
Approvals	-	EN60601.1 and
	-	EN 60601.1-2
	-	UL2601
Weight	kg	2,8



Control unit MAGTRONIC KOM 3



KOM 3 control unit



KOM 3 connections



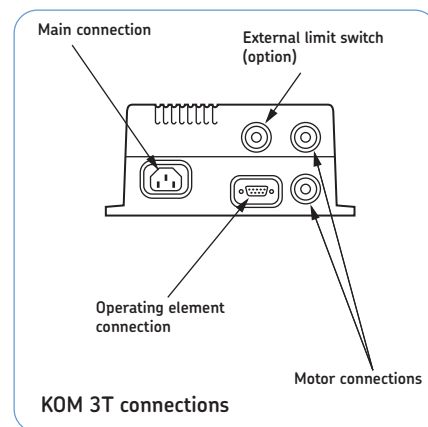
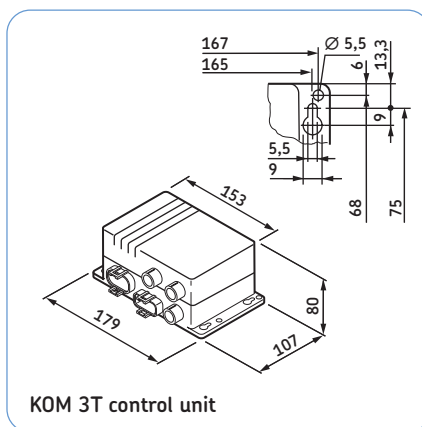
Control unit

MAGTRONIC KOM 3T with toroidal transformer

KOM 3T control unit

The control unit KOM 3T has been developed for the operation of TLT Telemag 24 VDC telescopic column. KOM 3T with integrated toroidal transformer and rectifier is equipped with connection ports for mains cable, hand switch and up to 2 motors (e.g. for one TLT double stroke Telemag) and 1 limit switch connection (optional). Either a hand switch, a foot switch or an infrared receiver can be plugged directly into the control element connection. All control and motor supply cables are locked after correct connection and sealed by sealing rings. The toroidal transformer in the KOM 3T control unit is protected against overheating by thermal protection. It has a minimal electronic emission and a consumption of nearly 0 Watt in the no-load operation. There is a separate current cut-off integrated for each motor. This prevents current consumption being exceeded, as in the case of driving onto a stop or on overload and thus protects the drives. The control box is ultrasonically

welded and has the degree of protection IP66. The technical instructions must be followed when installing and starting up the unit. Applications which do not exclude danger to persons must be safely secured by the user. To achieve a high degree of safety, the KOM 3T control unit can be combined with a number of accessories, please refer to datasheet L5328, 2940EN. Please refer to datasheet L5328, 2935EN for the various possibilities of interconnecting the drive and control elements.



Technical data	Unit	KOM 3T
Type of control	-	Low voltage
Motor connection	-	2
Limit switch connection	-	1
Operating element connection	-	1
Mains connection	-	1
Voltage/current/frequency	V/A/HZ	230/1.6/50-60
Voltage/current/frequency	V/A/HZ	120/3.0/50-60
Output power	V/A	2x24/2x5
Duty cycle: intermittent mode	Int.	1 min./9 min.
Ambient temperature	°C	+10 to +40
Degree of protection	IP	66
Protection class	standard	II
Approvals	-	EN 60601-1 and EN 60601-1-2
	-	UL 2601
Weight	kg	1,9

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Control unit

MAGTRONIC KOM 6

Single fault safe processor control unit

KOM 6 control unit

The KOM control units have been developed for the operation of Matrix/ Magdrive linear drives and Telemag telescopic columns in 24 VDC technology. The KOM 6 control unit allows a single fault safety operation in medical applications (e.g. hospital beds) and fulfills completely all requirements of the medical product regulation. The KOM 6 control unit with integrated transformer and rectifier has plug connections for mains cable and hand switch as well as up to 4 motor connections and 1 optional connection. A hand switch can be directly plugged in the operating element connection. All control and motor supply cables are locked after correct connection and tightened by sealing rings. Thanks to smart circuit, in no-load operation it is not the main transformer but an auxiliary transformer which is active. The transformer in the KOM control unit is protected against overheating by thermal protection. The single fault safety of the KOM 6 control unit is defined by two different processors. The control unit only works when both processors are operational. The motors are isolated from the power supply by a safety device that only operates when the

operating element is activated in order to prevent that the motors start to run on their own. Four 6 V batteries connected in series can be delivered as an option for the KOM 6 control unit. The batteries are installed in an especially provided compartment of the control unit thereby permitting mains independent operation for a limited period. The batteries capacity is 1,2 Ah. Only batteries delivered by the factory may be used. The battery compartment is ventilated separately. In mains operation, the batteries are charged automatically, an electronic overload and a total discharge protection is integrated. In battery operation, an acoustic signal indicates a discharge. Even then, it is still possible to lower the drives. The control box is ultrasonically welded and has the degree of protection IPX6. The KOM 6 control unit has been developed in single fault safety microprocessor technology for many kind of applications. It has been approved according to EN60601-1/-2-38 and by the German TÜV. The following functions are possible:

- Single operation of up to 4 drives
- Parallel running of 2 or 2x2 drives
- Memory function with 3 positions, free of choice

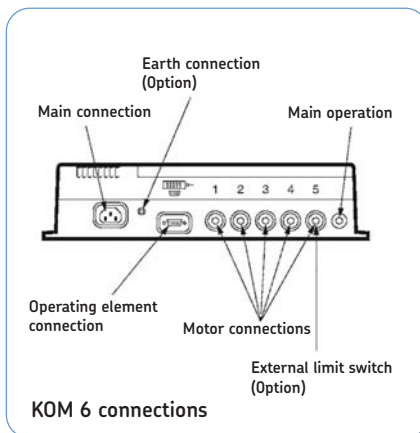
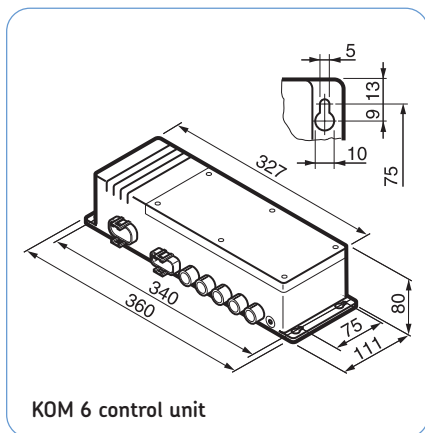


- Combinations of the above variations
 - Customer-specific solutions
- The drive groups cannot be operated simultaneously. These varied combination possibilities present new solutions in drive engineering. However, please note that in all combinations only one particular function can be performed. The technical construction corresponds in its basic principles to the KOM 2 unit with up to 4 motor connections or 3 motor connections and 2 external options. A special hand switch (EHE 6) as well as special locking device (SPP 6) are required for single fault safety microprocessor control unit. The following functions are optional: emergency stop and limit switch. In addition, an external battery pack is available.

Technical data:	Unit	KOM 6	KOM 6 with enhanced power
Type of control	-	Microprocessor	Microprocessor
Motor connection	-	4	4
Operating element connection	-	1	1
Mains connection	-	1	1
Voltage/frequency	V/Hz	230/50	1
Voltage/frequency	V/Hz	120/60	230/50
Voltage/frequency	V/Hz	100/50-60	120/60
Output power	-	24 VDC/6 A	24 VDC/6A/1/9 min.
Duty cycle: Intermittent mode	Int.	1min./9min.	24 VDC/12A/3 min.
Ambient temperature	°C	0 to +40	0 to +40
Degree of protection	IP	X6	X6
Approvals	-	EN 60601-1 and EN 60601-2-38	EN 60601-1 and EN 60601-2-38
	-	Single fault safety	Single fault safety
Weight without/with battery	kg	2,7/4,0	2.7/4.0



Control unit MAGTRONIC KOM 6, Single fault safe processor control unit



The control unit has to be operated in compliance to the technical instructions. Applications which do not exclude danger to persons must be provided with guards by the user. There are many accessories to the KOM 6 control unit available to offer a high degree of operation comfort and safety.