



**Electric rotary multi-revolution  
actuators**

## **MODACT MONED, MOPED**

Type numbers 52 030 - 52 036

## **MODACT MONEDJ**

Type numbers 52 030 - 52 032



ZPA Pečky, a.s. is certified company in accordance with ISO 90001 as amended.

# 1. APPLICATION

The electric actuators **MODACT MONED, MOPED, MONEDJ** are designed for shifting valves and/or other elements for which they are suitable with their reversible rotary motion. Other using than that for controlling valves should be discussed with the manufacturer. The actuators can operate in circuits of remote control. The actuators can also operate in circuits of automatic regulation with the regime S 4 - 25 %; 1200 h<sup>-1</sup>.

# 2. OPERATING CONDITIONS, OPERATING POSITION

## Operating conditions

The actuators **MODACT MONED, MOPED, MONEDJ** are resistant against influence of operating conditions and external effects of the classes AC1, AD5, AD7, AE4, AE6, AF2, AG2, AH2, AK2, AL2, AM-2-2, AN2, AP3, BA4 a BC3 according to ČSN 33 2000-5-51 ed. 3.

When the actuator is installed on a free area it is recommended to fit it with a light shelter against direct impact of atmospheric effects. The shelter should overlap the actuator contour by at least 10 cm at the height of 20 – 30 cm.

The electric actuators can be installed in areas with non-flammable and non-conductive dust, provided that this does not adversely influence their function. Here, it is necessary to strictly observe ČSN 34 3205. It is recommended to remove dust as soon as its layer is about 1 mm thick.

### Notes:

*The area under a shelter means the one where falling of atmospheric precipitations under an angle up to 60° from the vertical is prevented.*

*The electric actuator must be installed in a place where cooling air has a free access. Minimum distance from a wall for access of air is 40 mm. Therefore, the area where the electric actuator is installed must be sufficiently large, clean and ventilated.*

## Temperature

Surrounding temperatures for **MODACT MONED, MONED Control** actuators are from -25 °C to +70 °C and from -40 °C to +60 °C.

Surrounding temperatures for **MODACT MOPED, MOPED Control** actuators are from -25 °C to +60 °C and from -40 °C to +60 °C.

Surrounding temperatures for **MODACT MONEDJ, MONEDJ Control** actuators are from -25 °C to +70 °C.

Relative humidity from 10 % to 100 % with condensation.

## Classes of external effects – extract from ČSN 33 2000-5-51 ed 3.

### Class

- 1) AC1 – above-sea level ≤ 2000 m
- 2) AD5 – spouting water; water may spout in all directions  
AD7 – shallow immersion, possible sporadic partial or full coverage (only MPSP)
- 3) AE4 – slight dust formation  
AE6 – strong dust formation
- 4) AF2 – occurrence of corrosive or polluting agents is atmospheric; presence of corrosive pollutants is significant
- 5) AG2 – mean mechanical strain; in normal industrial operations
- 6) AH2 – mean vibrations; in normal industrial operations
- 7) AK2 – serious risk of plant and moulds growth
- 8) AL2 – serious risk of occurrence of animals (*insects, birds, small animals*)
- 9) AM-2-2 – normal level of signal voltage. No additional requirements.
- 10) AN2 – mean solar radiation. Intensity > 500 and ≤ 700 W / m<sup>2</sup>
- 11) AP3 – mean seismic impacts; acceleration > 300 Gal ≤ 600 Gal
- 12) BA4 – capability of persons; instructed persons
- 13) BC3 – frequent contact of persons with ground potential; persons often touch foreign conductive parts or stand on conductive substrate

## Corrosion protection

Actuators are standardly delivered with surface treatment corresponding to category of corrosion aggressiveness C1, C2 and C3 according to ČSN EN ISO 12944-2.

On customer's request is possible to do surface treatment corresponding to category of corrosion aggressiveness C4, C5-I and C5-M.

In following table is provided an overview of environment for each categories of corrosion aggressiveness according to ČSN EN ISO 12944-2.

Corrosion aggressiveness level	Example of typical environment	
	Outdoor	Indoor
<b>C1</b> (very low)		Heated buildings with clean atmosphere e.g. offices, shops, schools, hotels.
<b>C2</b> (low)	Atmosphere with low level of pollution. Mostly outdoor areas.	Unheated buildings, in which may occur condensation, e.g. stocks, sports halls.
<b>C3</b> (middle)	Urban industrial atmospheres, mild pollution of sulfur dioxide. Seaside areas with middle salinity.	Production areas with high humidity and low air pollution, e.g. food industry, processing factories, breweries.
<b>C4</b> (high)	Industrial areas and seaside areas with middle salinity.	Chemical plants, swimming pools, seaside shipyard.
<b>C5-I</b> (very high – industrial)	Industrial areas with high humidity and aggressive atmosphere.	Buildings or areas with predominantly continuous condensation and high air pollution.
<b>C5-M</b> (very high – seaside)	Seaside areas with high salinity.	Buildings or areas with predominantly continuous condensation and high air pollution.

## Operating position

Working position of actuators **MODACT® MONED, MOPED, MONEDJ** actuators with plastic lubricant – any position.

The actuators with plastic lubricant are labelled “*Filled: solid grease*” on the power box at the side of the hand-wheel.

Actuators with oil charge – position limited only by slope of electric motor axis – max. 15° under the horizontal level. In this way, reducing of service life of rubber sealing of the electric motor shaft by possible fragments or impurities from the oil filling is prevented.

When the actuator is assembled with the electric motor above the horizontal plane the oil filling should be topped up so that reliable lubrication of the motor pinion is ensured.

The actuators with oil filling are not labeled.

## Lubrication

The actuators are lubricated with plastic consistent lubricants or gearbox oil PP 80.

### Lubricants

Type number of actuator	Adjusting speed of output shaft [min <sup>-1</sup> ]	Surrounding temperature [°C]		
		-25 +70	-40 +60	-25 +60
52 030, 52 031, 52 032	up to 40	M	M	M
52 033, 52 034	above 40	O	O	O
52 035	applies to all speeds	O	O	O
52 036	applies to all speeds	O	O	O

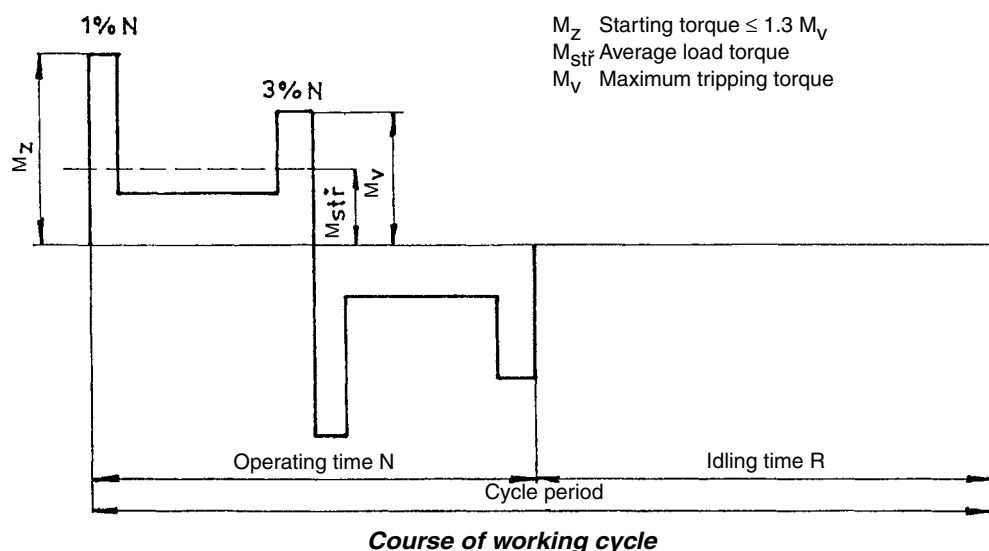
**Poznámka:** M – plastic lubricant  
O – gearbox oil

### 3. OPERATION MODE, SERVICE LIFE OF ACTUATORS

#### Operation mode

The actuators can be operated with the type of loading S2 according to ČSN EN 60 034-1. The run period at temperature +50 °C is 10 minutes; the mean value of loading torque should not exceed 60 % of the value of maximum tripping torque  $M_V$ . The actuators can also work in the regime S4 (*interrupted run with start-up*) according to ČSN EN 60 034-1. Load factor  $N/N+R$  is max. 25 %; the longest working cycle  $N+R$  is 10 minutes (*course of working cycle is shown in the figure*). The highest number of closing operations in automatic regulation is 1200 cycles per hour. Mean value of loading torque with load factor 25 % and surrounding temperature +50 °C is not higher than 40 % of maximum tripping torque  $M_V$ .

The highest mean value of loading torque is equal to rated torque of the actuator.



#### Service life of actuators

The actuator intended for shut-off valves must be able to perform at least 10,000 operating cycles (*C - O - C*).

The actuator intended for regulating purposes must be able to perform at least 1 million cycles with operation time (*during which the output shaft is moving*) at least 250 hours. Service life in operating hours (*h*) depends on load and number of switching. Not always, high frequency of switching influences positively accuracy of regulation. For attaining the longest possible faultless period and service life, frequency of switching is recommended to be set to the lowest number of switching necessary for the given process. Orientation data of service life derived from the set regulation parameters are shown in the following table.

When using reversing contactor unit the service life of actuator is 1 million starts

Service life [h]	830	1 000	2 000	4 000
Number of starts [1/h]	Max. number of starts 1200	1 000	500	250

When using reversing contactless unit the service life of actuator is 3 million starts

Service life [h]	2490	3000	6000	12000
Number of starts [1/h]	3600	3000	1500	750

### 4. TECHNICAL DATA

#### Supply voltage

Supply voltage of electric motor: **MODACT MONED, MOPED** 3 x 230/400 V, +10 %, -15 %, 50 Hz  $\pm 2$  %  
 3 x 220/380 V +10 %, -15 %, 50 Hz; +3 % -5 %  
**MODACT MONEDJ** 1 x 230 V, +10 %, -15 %, 50 Hz  $\pm 2$  %  
 1 x 220 V +10 %, -15 %, 50 Hz; +3 % -5 %  
 (*or according to data on the rating plate*)

Actuators designed to operate at another voltage and frequency than those given above are available upon special request. For more details, refer to the Technical conditions.

## Protective enclosure

Protective enclosure of actuators: **MODACT MONED, (MODACT MONED Control), MONEDJ – IP 55**  
**MODACT MOPED (MODACT MOPED Control) – IP 67**

## Noise

Level of acoustic pressure A	max. 85 dB (A)
Level of acoustic output A	max. 95 dB (A)

## Tripping torque

Tripping torque is set at the manufacturer according to the customer's requirements within the range given in Table No. 1 or No. 2. If setting of tripping torque is not required maximum tripping torque of the required type number of the electric actuator is set.

## Starting torque

The starting torque of the actuator is a calculated value determined by the starting torque of the electric motor and the total gear ratio and efficiency of the actuator. After run reversion, the actuator can produce a starting torque for the duration of 1 to 2 revolutions of the output shaft when torque-limit switching is locked. This can take place in either end position or in any intermediate position.

## Self-locking

The actuator is self-locking provided that the load only acts in the direction against motion of the actuator output shaft. Self-locking is ensured by a roller arrest immobilizing the electric motor rotor even in the case of manual control.

In order to observe safety regulations, the actuators cannot be used for driving transportation lifting devices with possible transport of persons or for installations where persons can stand under the lifted load.

## Sense of rotation

When looking at the output shaft in the direction towards the control box, the CLOSE direction of rotation is identical with the clockwise sense.

## Working stroke

The ranges of working stroke are given in Table No. 1 or No. 2.

## Rising spindle

In the design variants with connecting dimensions, Shapes A and C, the actuators can be adapted for mounting to the valve with a rising spindle that projects over the upper end of the actuator output shaft in the end position of the valve. The space reserved for the rising spindle is clearly shown in the dimensional sketches. The user should mount a cylindrical guard of the rising spindle instead of the port cover at the control box top, if required. This guard has not been included in the delivery of the actuator.

## Manual control

Manual control is performed directly by a handwheel (*without clutch*). It can be used even when the electric motor is running (*the resulting motion of the output shaft is determined by the function of the differential gear*). When the handwheel is rotated clockwise the output shaft of the actuator also rotates clockwise (*when looking at the shaft towards the control box*). On condition that the valve nut is provided with left-hand thread, the actuator closes the valve.

**Torque-limit switches in the actuator are set and work when the actuator is under voltage.**

**When using the manual control, ie. actuator is controlled mechanically, the torque-limit switches doesn't work and the valve can be damaged.**

# 5. ACTUATOR OUTFIT

## Position indicator

The actuator can be fitted with a display as an option for electronic system DMS2 ED. Actuator with electronic system DMS2 is equipped with two-line display.

## Anti-condensation heater

Anti-condensation heater is connected to DMS and DMS ED electronic circuit. Switching of the anti-condensation heater is controlled by a thermostat. From the factory is the switching temperature set to 10°C. The temperature is adjustable by adjusting software DMS2. Input power of the anti-condensation heater is 10W / 230V.

## Local control

Local control serves for controlling the actuator from the site of its installation. It includes two change-over switches: one with positions "Remote control - Off - Local control", the other "Open - Stop - Close".

The former change-over switch can be built-in as two-pole or four-pole. The change-over switches are installed in a terminal-board box and the control elements on the lid of this terminal-board box.

## Dynamic brake

The brake is an optional accessory to the actuators fitted with electronics **DMS2** and **DMS2 ED Control**. As switching elements are used contactors (*mechanical contacts*) or SSR (*modern contactless switching elements*).

After opening the switching element (*contactor or SSR*), it induces dynamic braking moment in the motor for several tenths of second. During the rest period of the actuator no braking torque is developed. The brake reduces dramatically time of the actuator run-down and regulation is thus more precise. The used brakes BR2 are controlled, impulse for action comes from the control unit. Corresponding variant of the brake is chosen according to the electric motor output and the type of switching elements.

Corresponding variant is chosen according to the electric motor power:

<b>contactors</b>	<b>BR2 550</b>	<b>output up to 550 W</b>
	<b>BR 2,2</b>	<b>output up to 2,2 kW</b>
<b>SSR</b>	<b>BR2 BK 550</b>	<b>output up to 550 W</b>
	<b>BR BK 2,2</b>	<b>output up to 2,2 kW</b>

## Switching of electric motor, contactor unit

The actuators in variants Control are fitted with built-in reversing contactor combinations or SSR switches. First variant is assembled from two contactors and second variant from contactless switches.

The combination also includes mechanical blocking that prevents both contactors from being closed at the same time. This could, for instance, happen in case of wrong connection of jumpers on the terminal board. The blocking is not dimensioned for long-term action. The over-current relays protects the electric motor against over-loading and is dimensioned with respect to its output. According to the actuator version, the contactors are controlled by the regulator, change-over switch of local control or external input. Control voltage is 230 V / 50 Hz as a standard; it is supplied via contacts of position and/or moment micro-switches. Thus, these micro-switches need not be led out of the actuator. Contactors have defined service life at least 1 million cycles.

To extend the service life we recommend using contactless reversing unit with a minimum service life of 3 million cycles. The standard control voltage is 24V DC. It is used for output into 4 kW or 7.5 kW. The unit consists of semiconductor elements - thyristors.

# 6. ELECTRIC PARAMETERS

## External electric connection

### a) Actuator terminal board

The electric actuator is equipped with a terminal board for connection to external circuits. This terminal board uses screw terminals allowing conductors with a maximum cross-section 4 mm<sup>2</sup> to be connected. Access to the terminal board is obtained after removal of the terminal box cover. All control circuits of the electric actuator are brought out to the terminal board. The terminal box is fitted with cable bushings for connecting the electric actuator. The electric motor is fitted with an independent box with a terminal board and a bushing.

### b) Connector

According to the customer's requirements the **MODACT MONED**, **MOPED**, **MONEDJ** actuators can be fitted with the connector to provide for connection of control circuits. This connector uses screw terminals allowing conductors with a maximum cross-section 4 mm<sup>2</sup> to be connected. ZPA Pečky, a.s. also supplies a counterpart for the cable. In order to connect the cable to this counterpart it is necessary to use special crimping pliers.

## Actuator internal wiring

The internal wiring diagrams of the **MODACT MONED, MOPED, MONEDJ** actuators with terminal designation are shown in this Mounting and operating instructions.

Each actuator is provided with its internal wiring diagram on the inner side of the terminal box. The terminals are marked on a self-adhesive label attached to a carrying strip under the terminal block.

## Isolation resistance

Isolation resistance of electric control circuits against the frame and against each other is min. 20 MΩ. After a dump test, isolation resistance of control circuits is min. 2 MΩ. Isolation resistance of the electric motor is min. 1.9 MΩ. See Technical specifications for more details.

## Electric strength of electric circuits isolation

Circuits of anti-condensation heater		1 500 V, 50 Hz
Electric motor	Un = 1 x 230 V	1 500 V, 50 Hz
	Un = 3 x 230/400 V	1 800 V, 50 Hz

## Deviations of basic parameters

Tripping torque	±12 % of max. value of range
Adjusting speed	- 10 % of max. value of range +15 % of rated value ( <i>idle run</i> )

## Protection

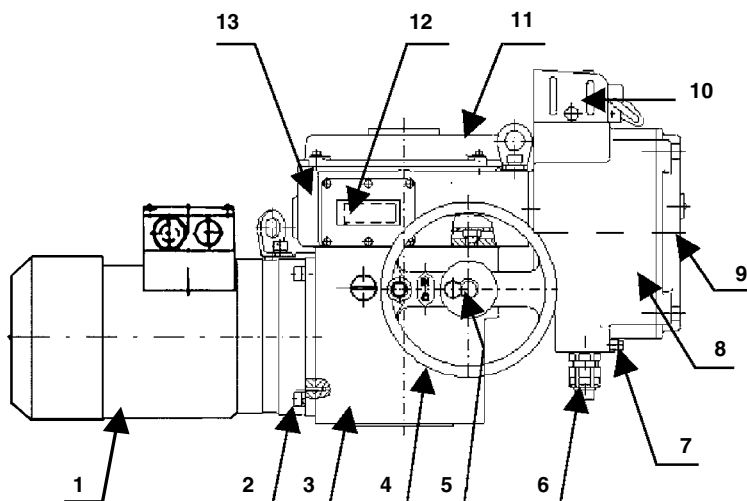
The actuators are fitted with one internal and one external protection terminal for ensuring protection against electric shock injury according to ČSN 33 2000-4-41. One protection terminal is also installed on the electric motor. The protection terminals are marked according to ČSN EN 60 417-1 and 2 (013760).

## 7. DESCRIPTION OF ACTUATOR

The electric actuators are designed for direct mounting on the controlled element. They are connected by a flange and a clutch according to ČSN 18 6314. The actuator flanges also comply with ISO 5210. The clutches for transmitting motion to the valve are:

- shape A (with adapter), according to ISO 5210 and DIN 3210;
- shape B1 (with adapter), according to ISO 5210 (shape B according to DIN 3210);
- shape B3 (without adapter), according to ISO 5210 (shape E according to DIN 3210);
- shape D (without adapter), according to DIN 3210;
- shape C (without adapter), according to DIN 3338.

The adapters are fitted between the electric actuator and the valve.



### Description:

- 1 – electric motor
- 2 – countershaft gear box
- 3 – power gearing
- 4 – wheel of manual control
- 5 – securing screw of hand wheel
- 6 – cable bushings (connector)
- 7 – external protective terminal
- 8 – terminal box
- 9 – terminal box lid (for DMS2 Analog and Profibus with local control and display)
- 10 – block of local control BMO
- 11 – control box lid
- 12 – display
- 13 – control box

Fig. 1 – Actuator set-up (with electronic system DMS2 ED)



The asynchronous electric motor drives, via a drive gearing, the central wheel of the differential gear located in the load-bearing box of the electric actuator (*force gear*). In motor control, the crown wheel of the epicyclic differential is held in constant position by a self-locking screw gear. The hand wheel connected with the screw provides for alternative manual control even when the electric motor is running, without any danger to the operator.

The output shaft is fix-connected with the epicyclic gear catch driver and passes on to the control box where all control elements of the actuator are installed.

The control elements are accessible after the control box lid has been removed.

The actuators designated **MONED, MONEDJ** are used with electric motors with the protective enclosure IP 55; the actuators designated **MOPED** with electric motors with the protective enclosure IP 67. The complete actuator has a protective enclosure according to the electric motor used.

## 8. ELECTRONIC OUTFIT

Electro-mechanical control board is replaced with the electronic system **DMS2** or **DMS2 ED**. Both systems scan position of the output shaft and torque of the electric actuator by contact-free magnetic sensors. Long service life is guaranteed for the contact-free sensors that do not get mechanically worn.

The sensor of the output shaft position is absolute and does not require any backup power supply in case supply voltage is disconnected during operation of the electric actuator. Both systems can be set and monitored by a computer with controlling program (*set parameter can be backed up on a computer*) or manually without a computer (*for the electronics DMS2, parameters can be manually set and it can be checked without computer only if the system is equipped with a display and local control*). They contain diagnostic functions - error messages on the display, memory of recent failures and number of occurrences of respective failures.

The more simple system **DMS2 ED** substitutes the electro-mechanical board and/or provides for controlling the electric actuator by input analog signal as in the version Control.

The system **DMS2** enables the electric actuator to be used for two-position and three-position regulation or to be connected to the industrial bus bar Profibus.

### DMS2 ED

#### Basic outfit:

Control unit	It also contains the sensor of position of the output shaft, 4 push-buttons and 3 signal LEDs for setting and checking the actuator.
Torque-limit unit	
Source unit	Contacts of seven relays ( <i>MO, MZ, PO, PZ, SO, SZ, Ready</i> ) are connected to the terminal board; state of each relay is signalized by LED. The unit enables the heating resistor to be connected and controlled by the thermostat.

#### Optional outfit:

Feedback signal	4 – 20 mA
Analog regulator	
Position Indicator – LED display	
Local control	
Contactors or block of contact-less control – for version Control	
Electronic brake	

#### Main merits:

- Absolute scanning of position independent of backup power supply.
- Simple setting by 4 push-buttons, computer PC or PDA.
- Possibility of back-up making of set parameters on PC.
- Intended for direct substitution of electromechanical components of the electric actuator.

#### Parameters:

Scanning of position	Contact-less magnetic
Scanning of torque	Contact-less magnetic
Working stroke	2 – 1700 rev.

Blocking of torque	0 – 20 s at reversing in limit positions
Input signal	0 (4) – 20 mA with switched on regulator function Local/Remote control, Local open/close
Output signal	7 x relay 250 V AC, 3 A ( <i>MO, MZ, PO, PZ, SO, SZ, READY</i> ) Position signal 4 – 20 mA max. 500 Ω, active/passive, galvanic-isolated LED display ( <i>optional</i> ) Electronic brake ( <i>optional</i> )
Power supply of electronic	230 V AC, 50 Hz, 4 W, over-voltage category II

## DMS2

### Basic outfit:

Control unit	It also includes a sensor of the output shaft position, 2 signal LED.
Torque-limit unit	
Source unit	It includes: <b>2 relays</b> for electric motor control; <b>Relay Ready</b> with change-over contact connected to the terminal board; <b>Signalling relays</b> 1 – 4 with one pole of the switching contact connected to the terminal board; Second poles of the switching contacts of relays 1 – 4 are interconnected and brought out to the terminal COM. Heating resistor switched by a thermostat is connected to the unit. The unit controls power switches of the electric motor ( <i>contactors or contact-less switching</i> ). The electronic brake can be connected to the unit.
Unit of display	Two-row display, 2 x 12 alpha-numeric characters.
Unit of push-buttons	Push-buttons " <b>Open</b> ", " <b>Close</b> ", " <b>Stop</b> ", selector switch " <b>Local</b> ", " <b>Remote</b> ", " <b>Stop</b> ".

### Recommended outfit:

**Electronic brake** – the actuator can be fitted with the electronic brake – this reduces the actuator run-down after switching-off.

**Optional outfit** (*the electric actuator must be fitted with one of these units*):

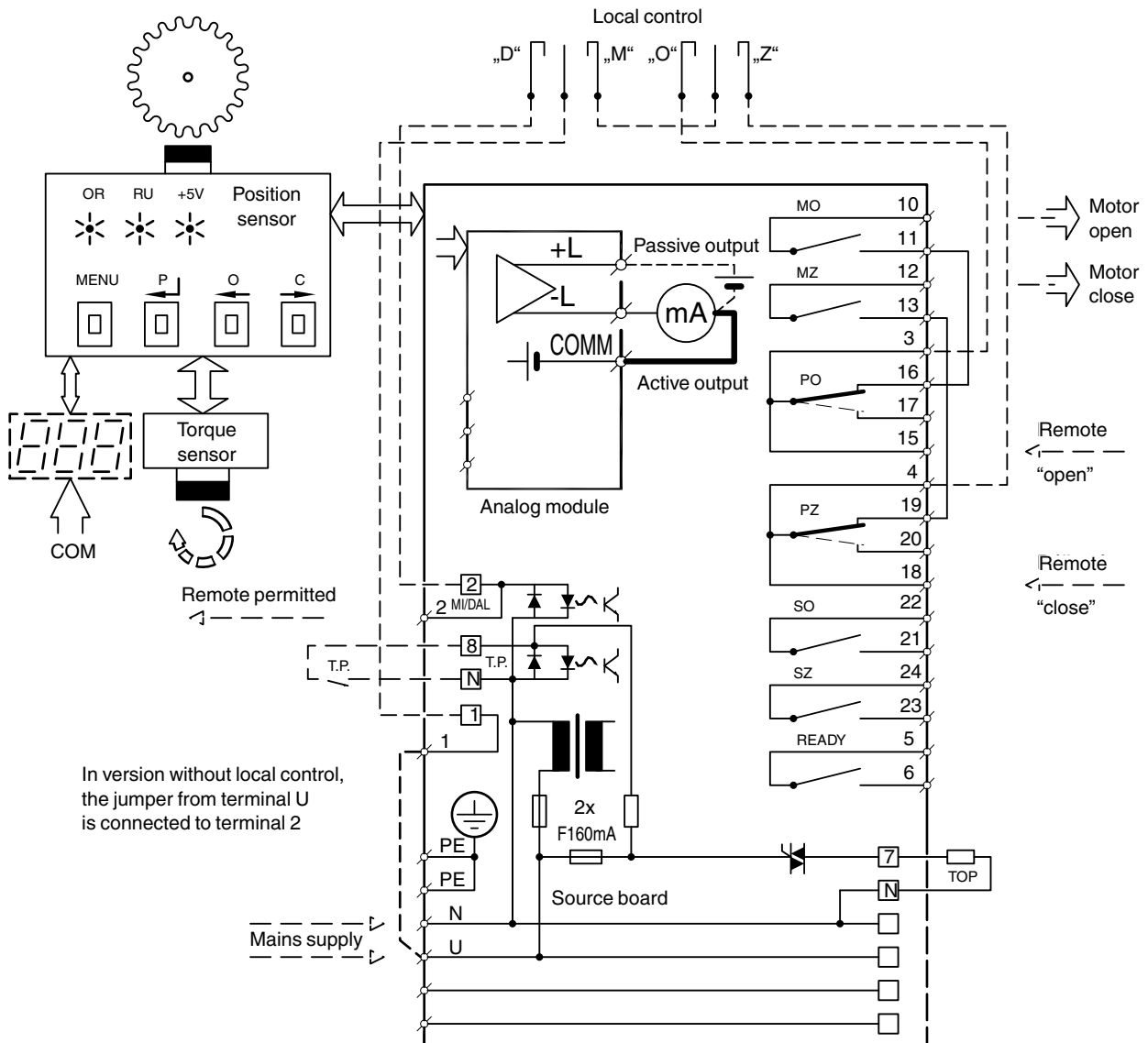
**Unit of two- and three-position control** – Control of the electric actuator by shifting to position "Open" and "Close" or by analog signal 0 (4) – 20 mA.

**Unit of connection Profibus** – control of the electric actuator by industrial bus bar Profibus.

The electronic control DMS2 checks, within its function, sequence and fall-out of phases of supply voltage too.

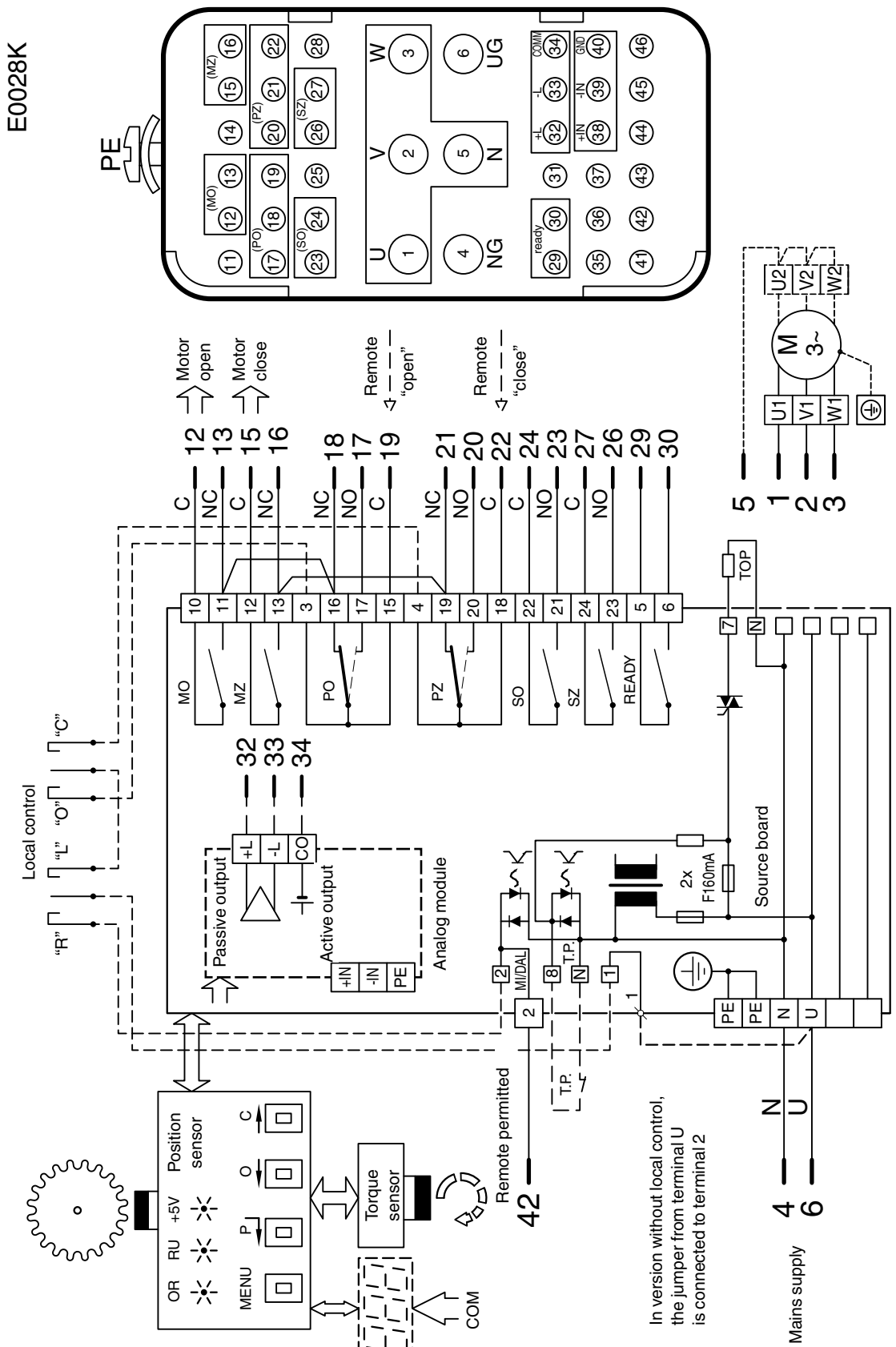
Example of wiring diagram of electronics **DMS2 ED** in version  
**Substitution of electro-mechanical board**  
*(actuators MODACT MONED, MOPED, MONEDJ)*

E0001



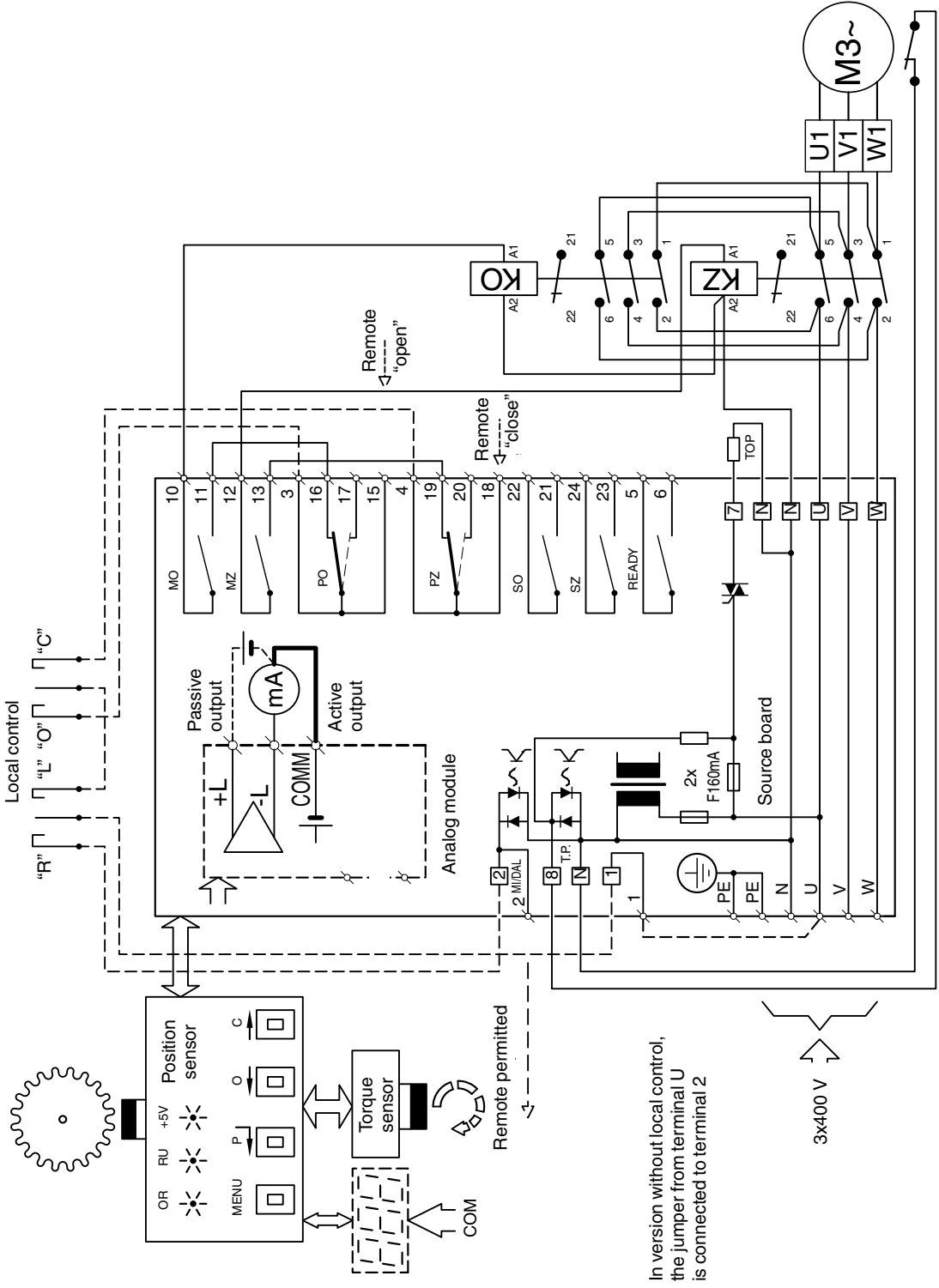
**Note:** Here, contacts of relays MO, MZ, SO, SZ are shown with power supply switched off; with power supply switched off contacts PO, PZ are shifted to the position drawn in dashed line.

Example of wiring diagram of electronics **DMS2 ED** in version **Substitution of electro-mechanical board with connector connection**  
**(actuators MODACT MONED, MOPED)**



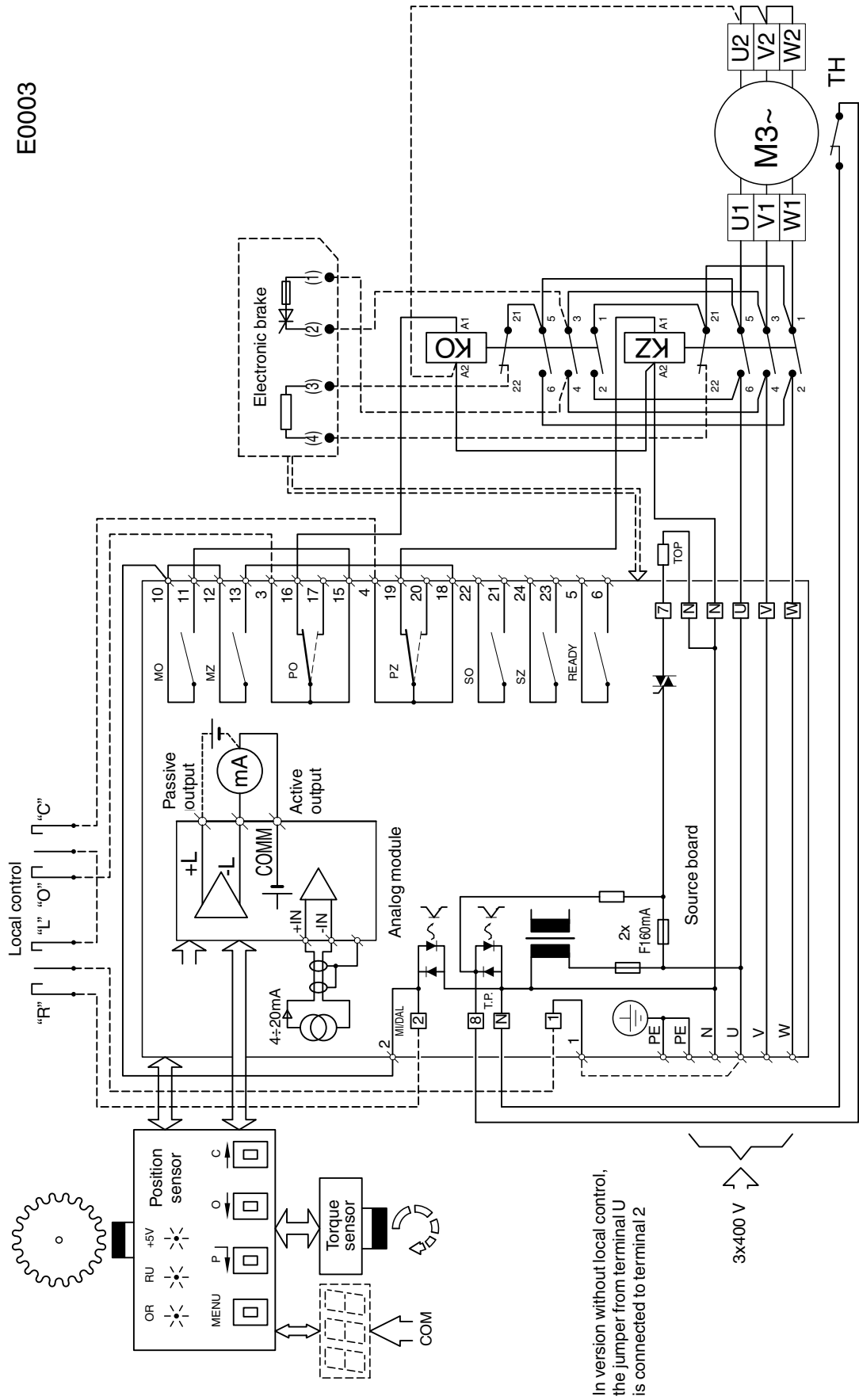
Example of wiring diagram Substitution of electro-mechanical board with contactors and three-phase electric motor  
 (actuators MODACT MONED, MOPED)

E0002



Example of wiring diagram of electronics DMS2 ED in version Control (actuators MODACT MONED, MOPED)

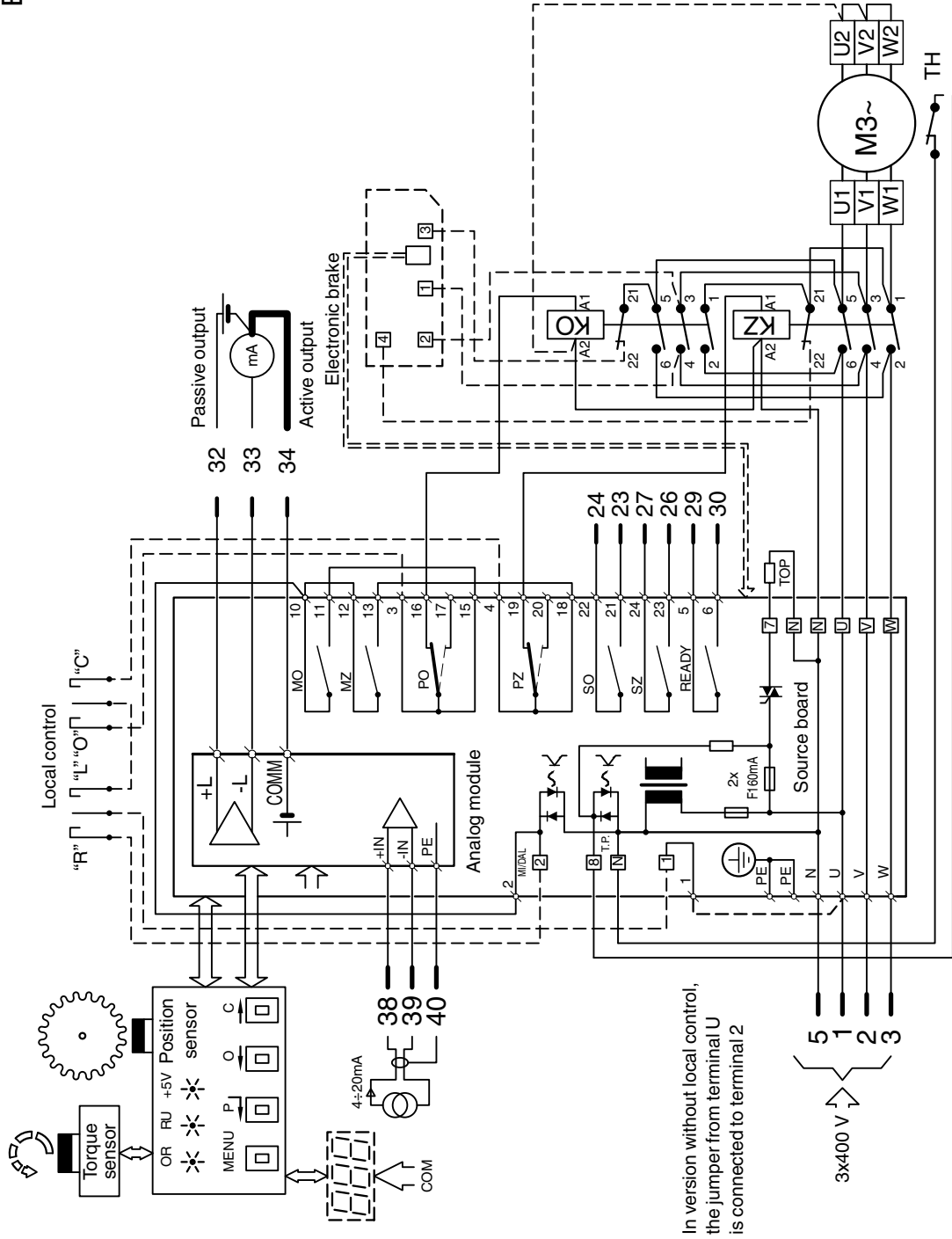
E0003



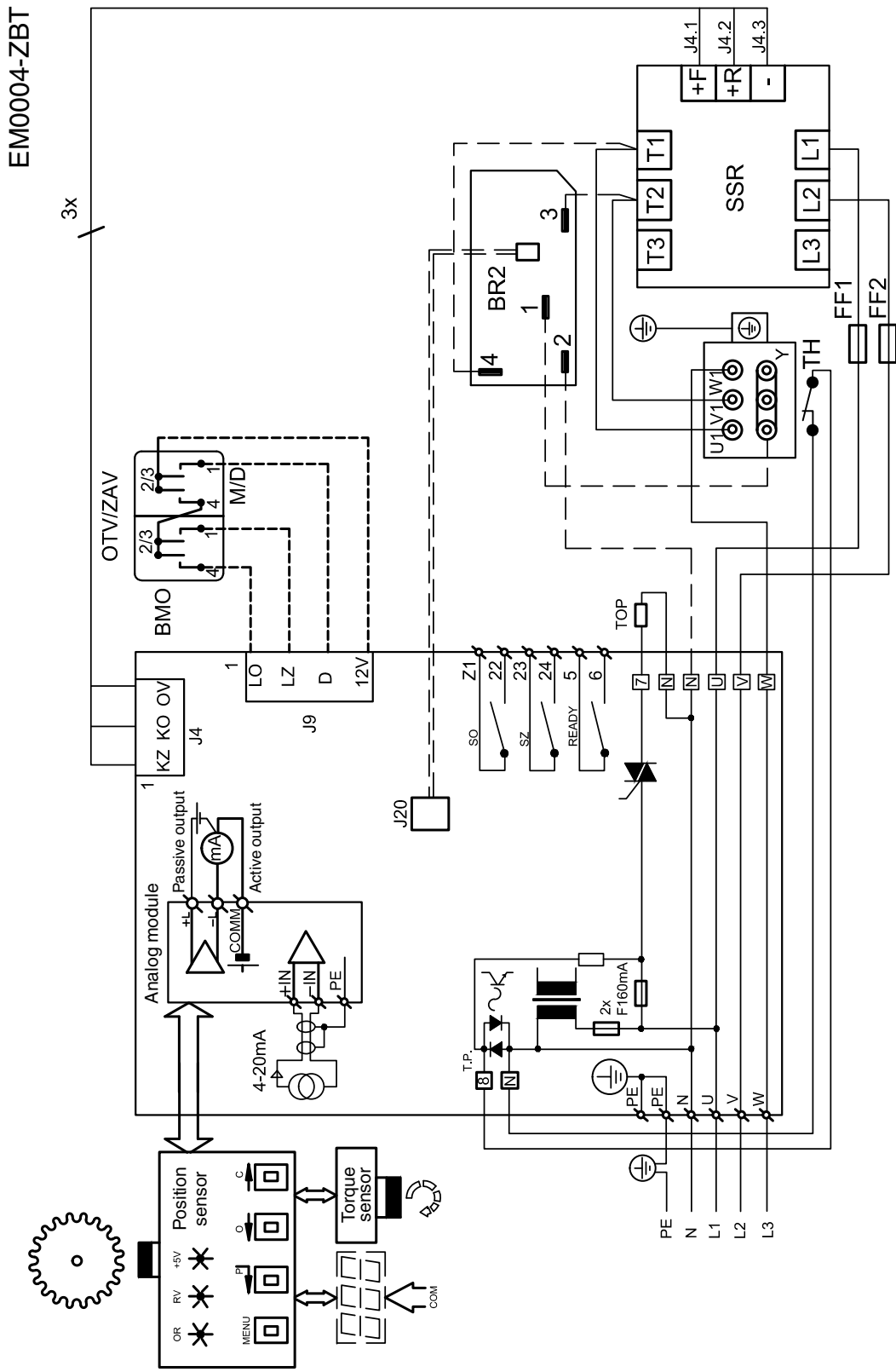
**Note:** Here, contacts of relays MO, MZ, SO, SZ are shown with power supply switched off; with power supply switched on contacts PO, PZ are shifted to the position drawn in dashed line.

Example of wiring diagram of electronics **DMS2 ED** in version **Control with connector connection**  
**(actuators MODACT MONED, MOPED)**

E0027K



Example of wiring diagram of electronics **DMS2 ED** in version **Control with contact-less switching of electric motor**

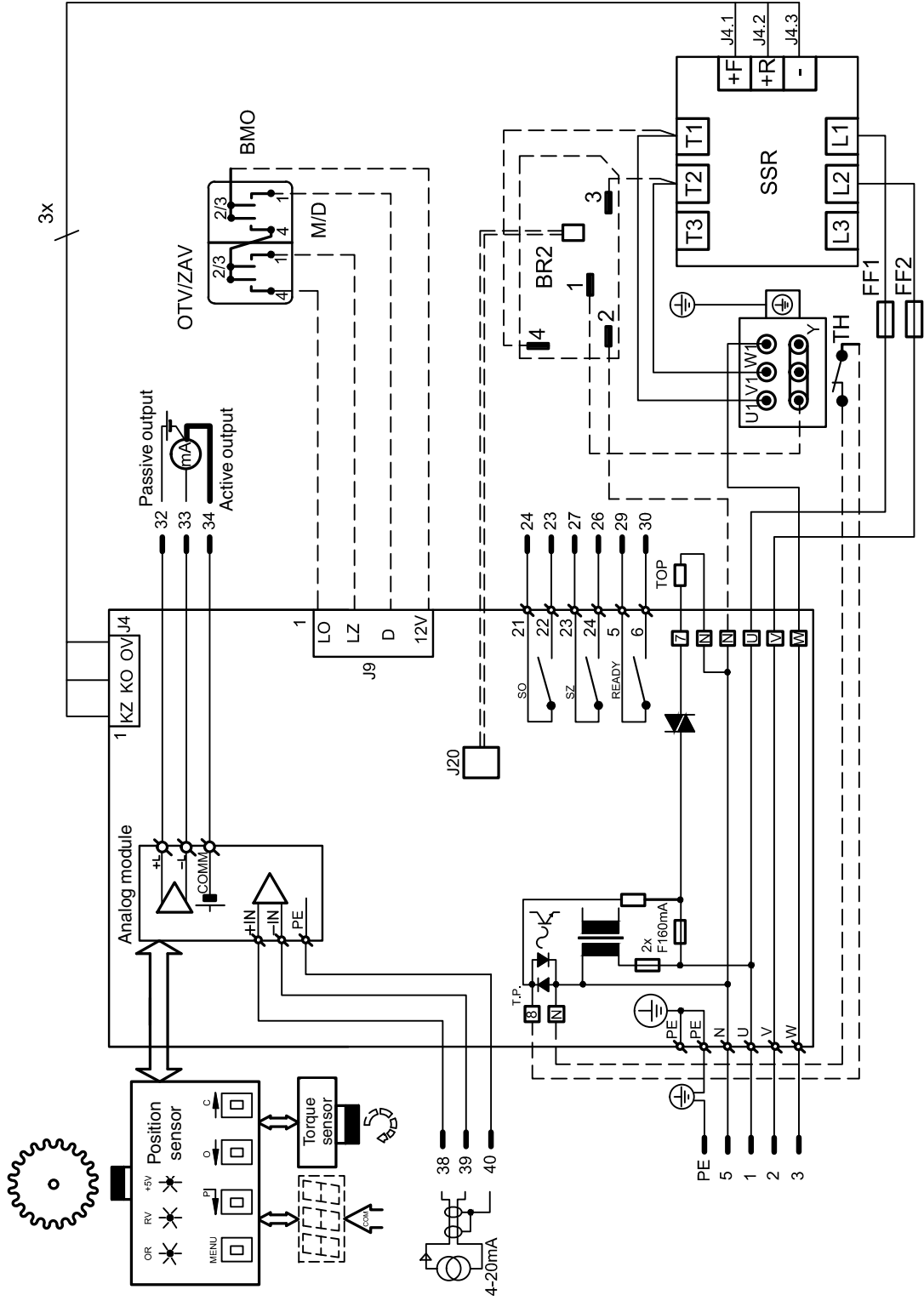


**Note:** Here, contacts of relays MO, MZ, SO, SZ are shown with power supply switched off; with power supply switched on, PO, PZ are shifted to the position drawn in dashed line.



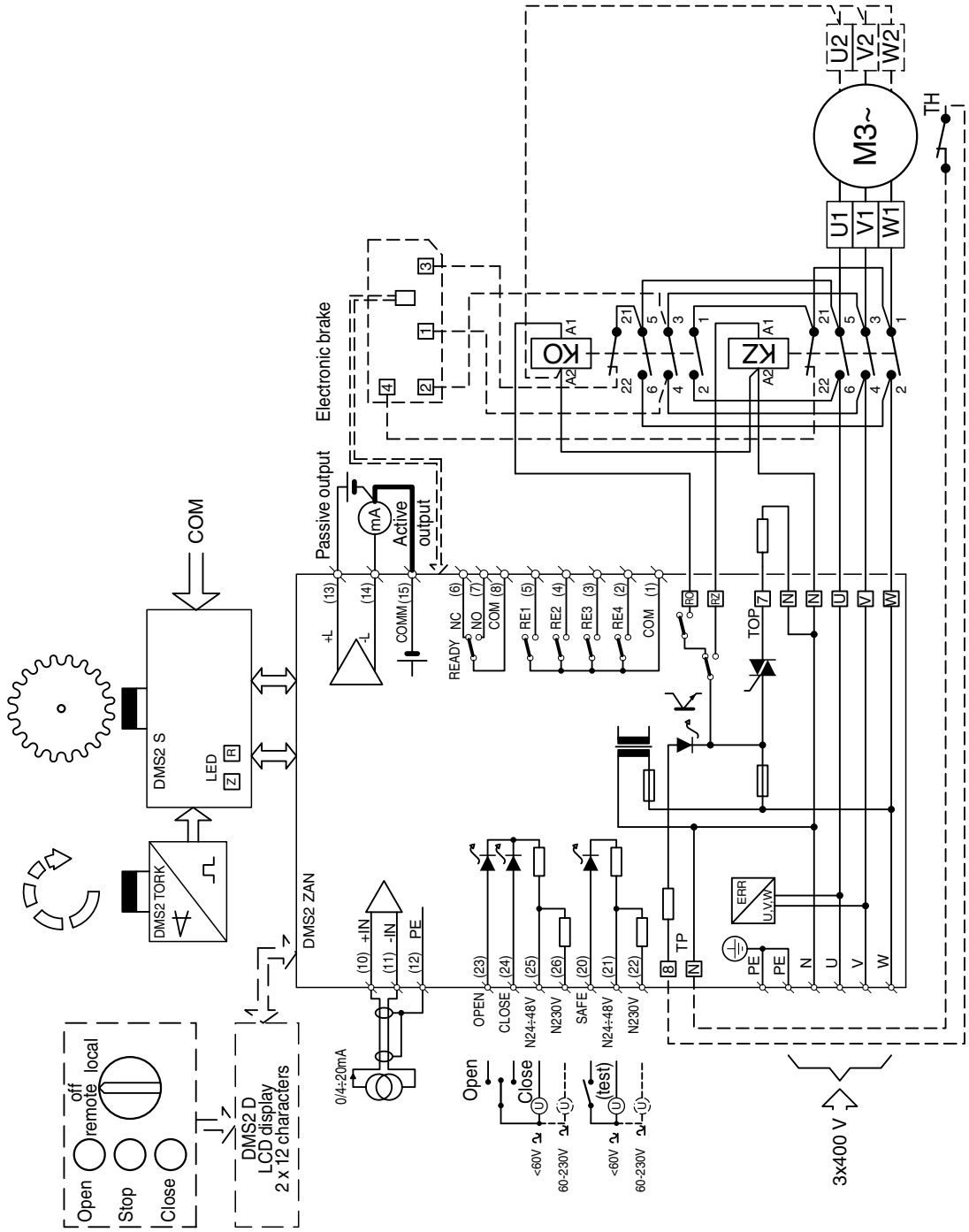
Example of wiring diagram of electronics **DMS2 ED** in version **Control** with contact-less switching of electric motor with connector connection

EM0043K-ZBT



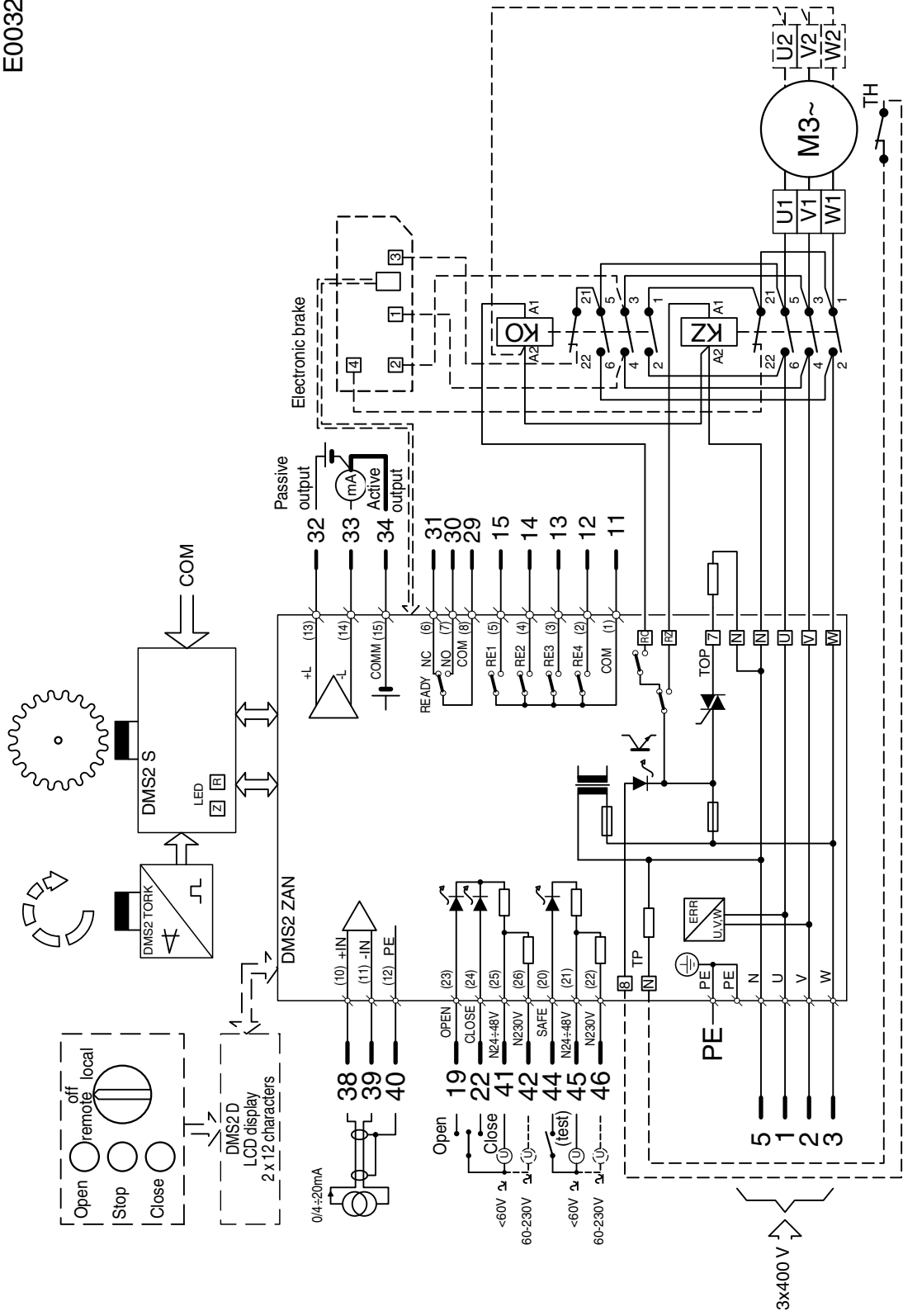
Example of wiring diagram of electronics **DMS2 Analog** in version **Control (actuators MODACT MONED, MOPED)**

E0006



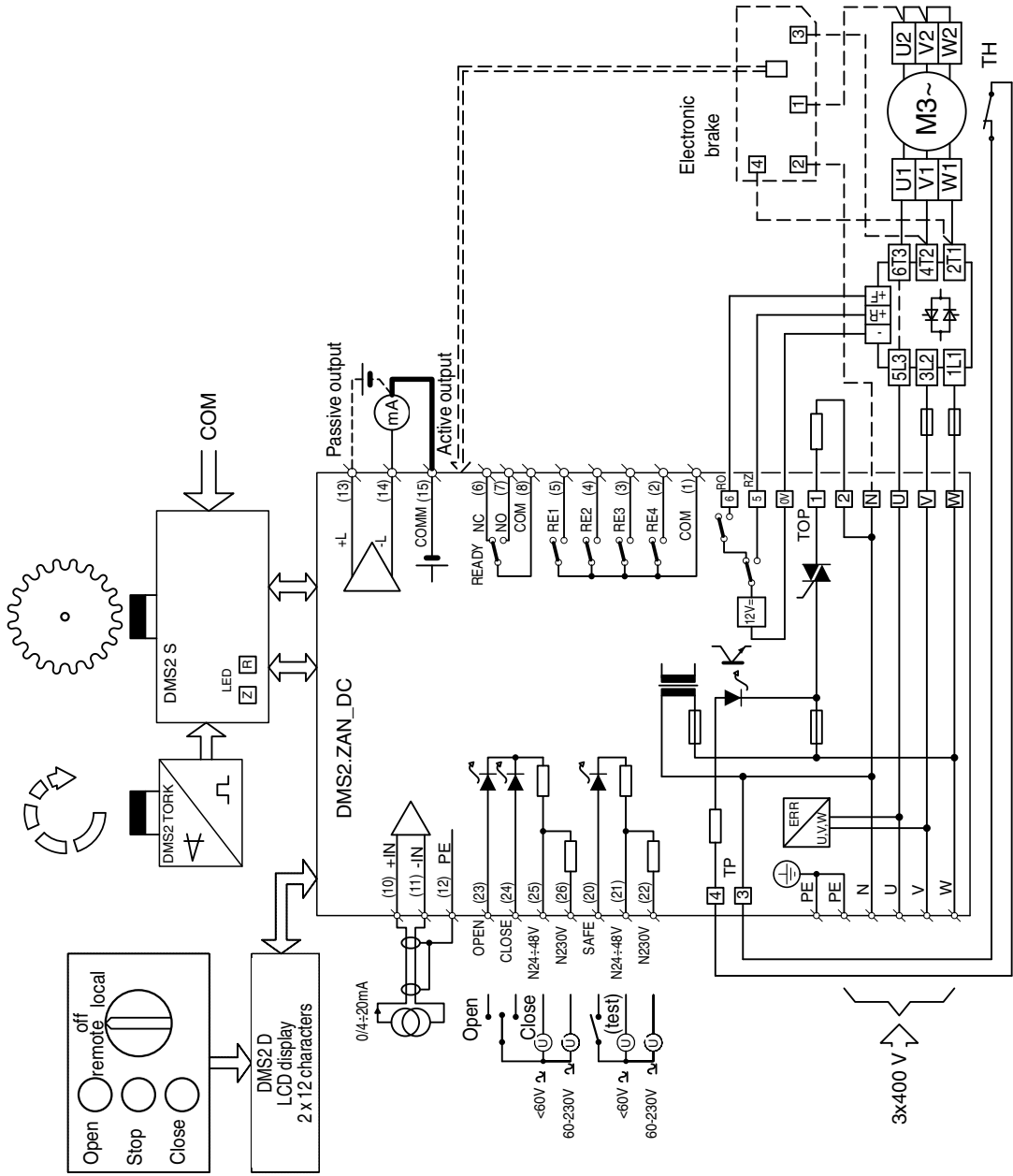
Example of wiring diagram of electronics **DMS2 Analog** in version **Control** with connector connection  
**(actuators MODACT MONED, MOPED)**

E0032K



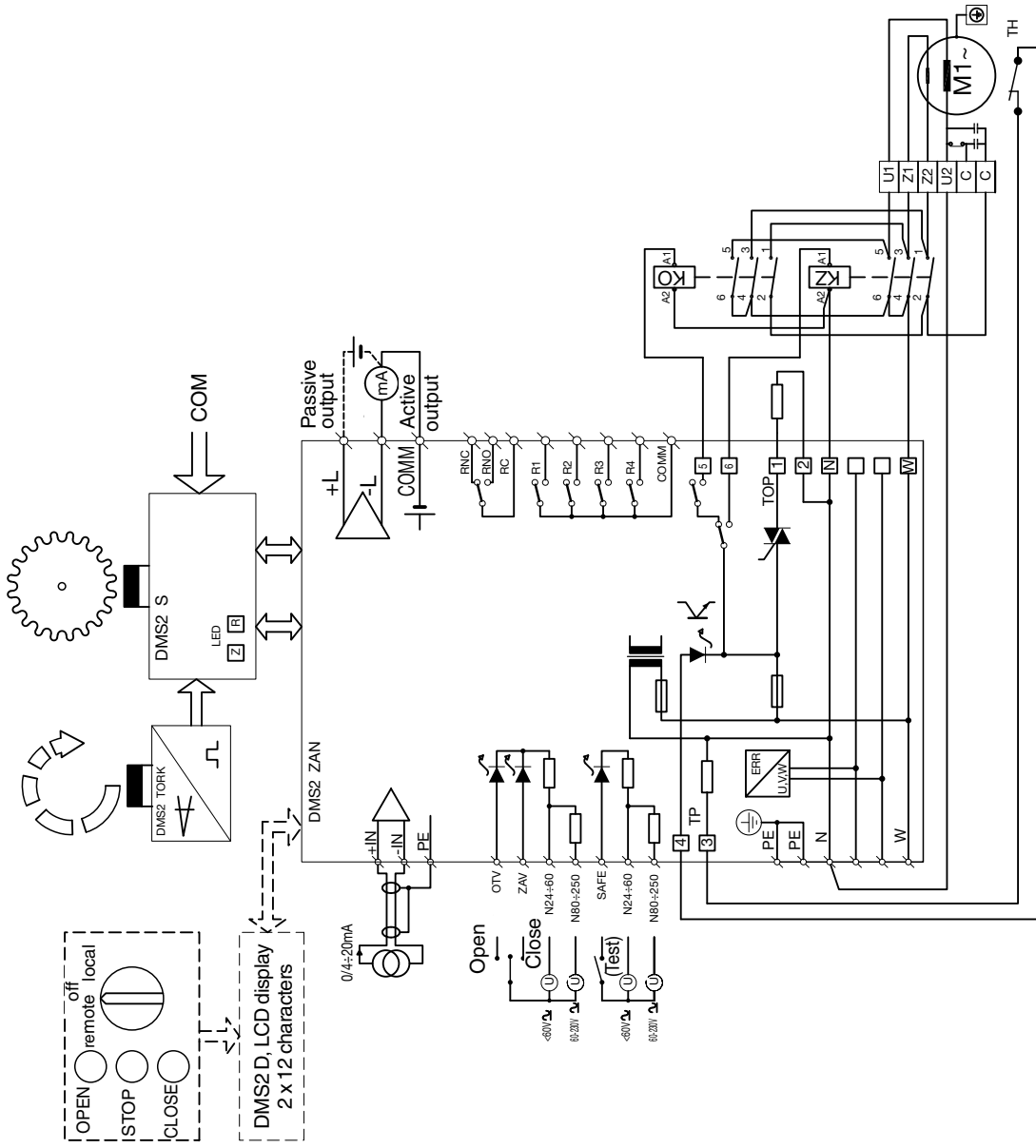
Example of wiring diagram of electronics **DMS2 Analog** with contact-less switching of electric motor  
**(actuators MODACT MONED, MOPED)**

E0031

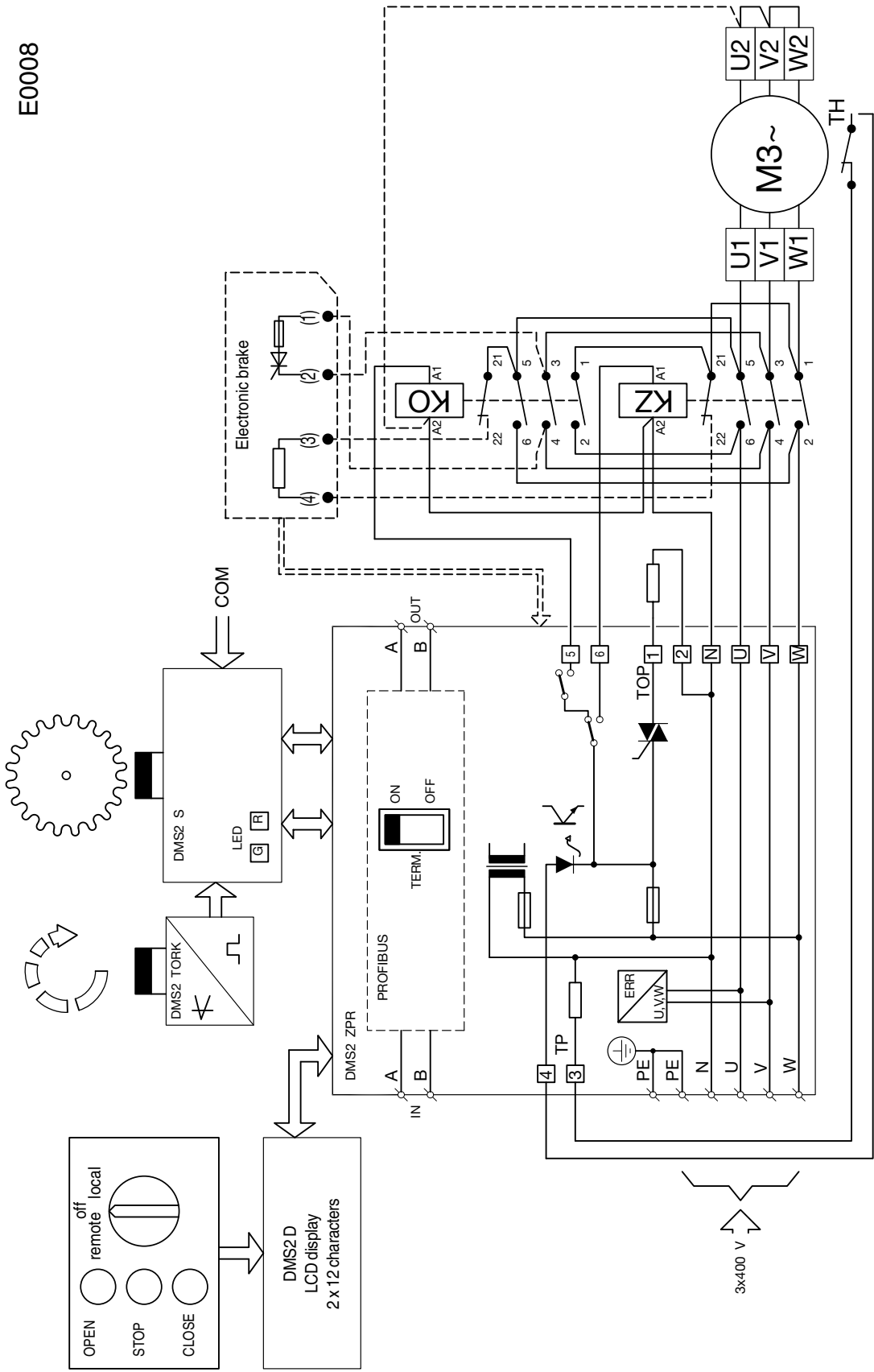


Example of wiring diagram of electronics DMS2 Analog (actuators MODACT MONEDJ)

E0007



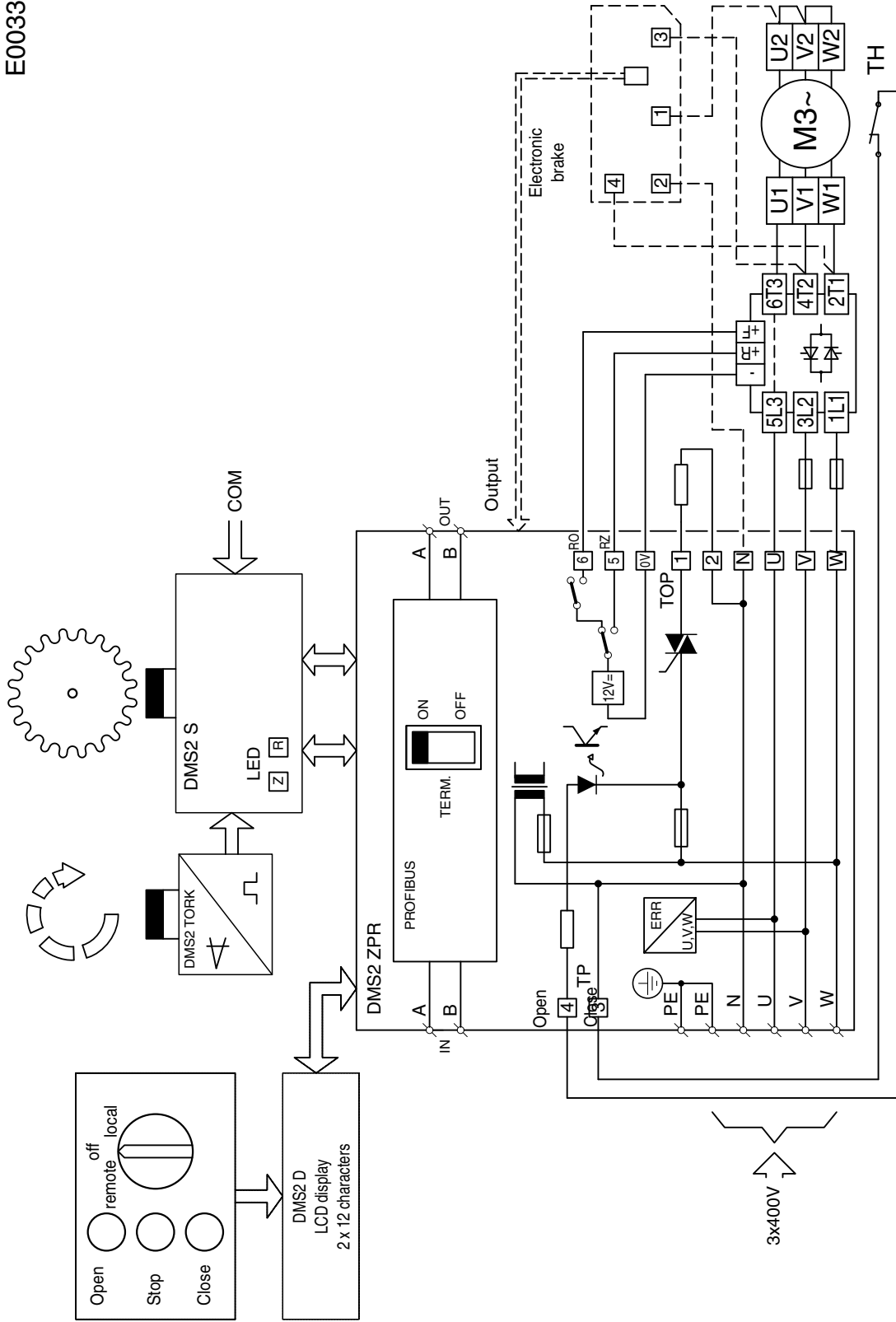
Example of wiring diagram of electronics **DMS2 Profibus (actuators MODACT MONED, MOPED)**



E0008

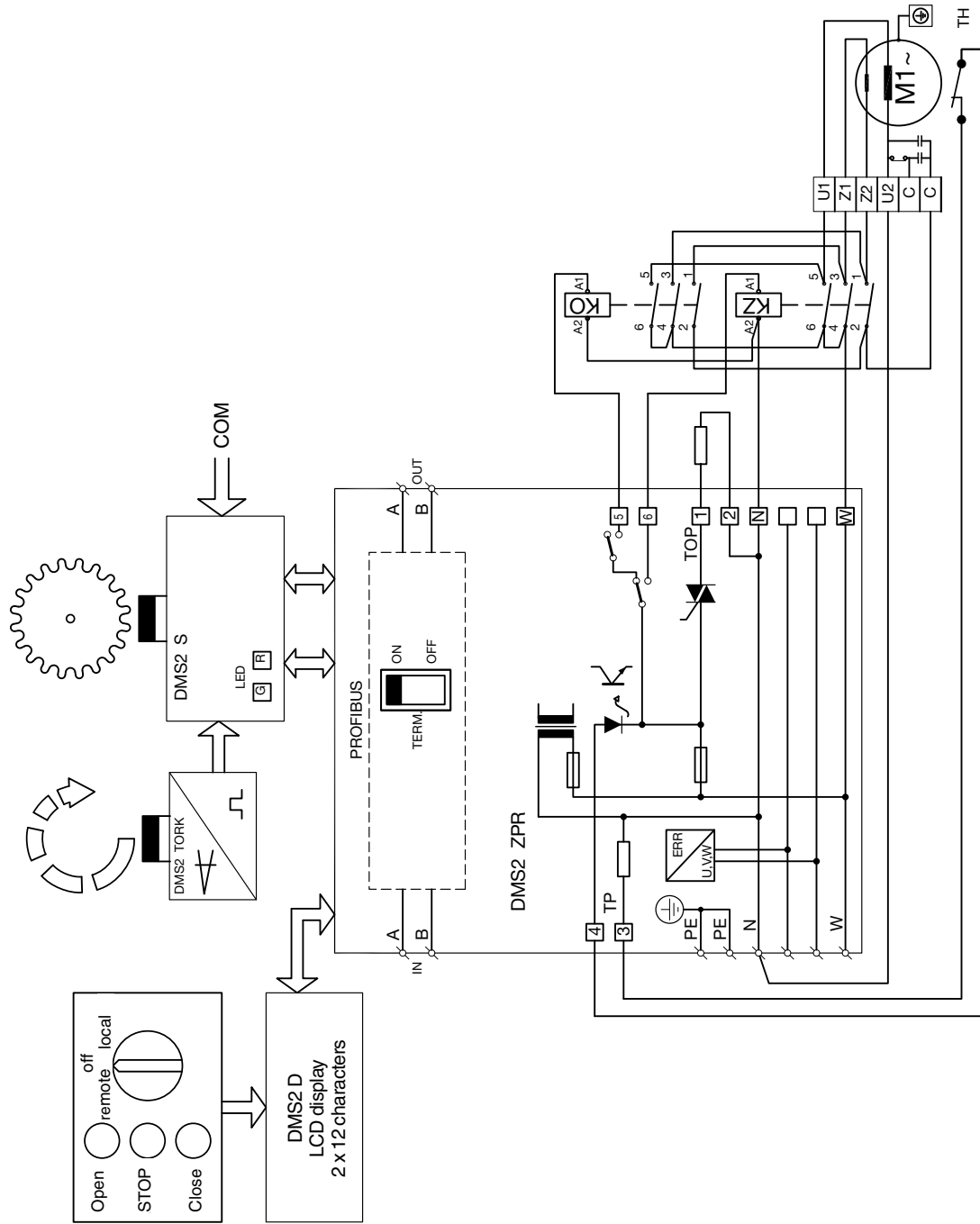
Example of wiring diagram of electronics **DMS2 Profibus** with contact-less switching of electric motor  
**(actuators MODACT MONED, MOPED)**

E0033

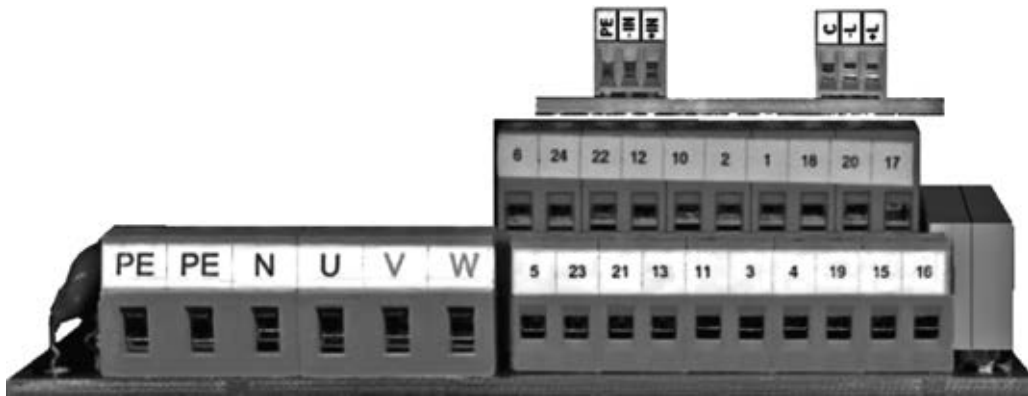


Example of wiring diagram of electronics **DMS2 Profibus** in version **Control (actuators MODACT MONEDJ)**

E0009

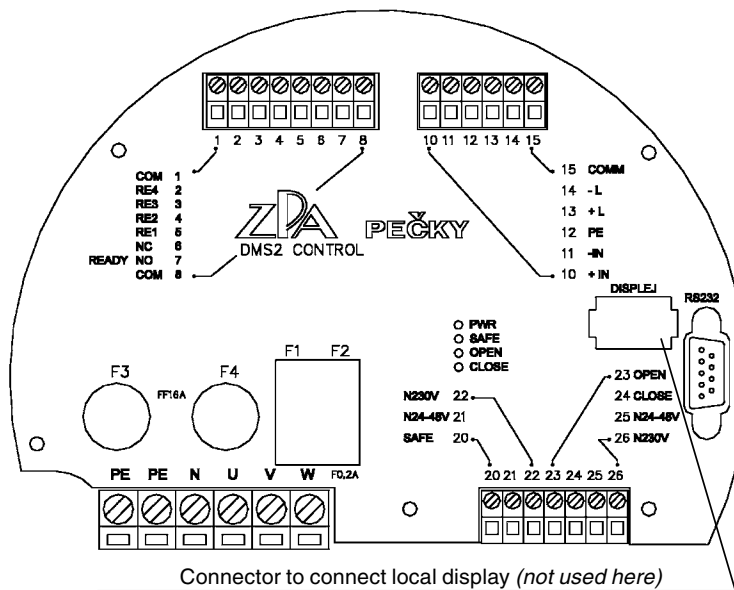




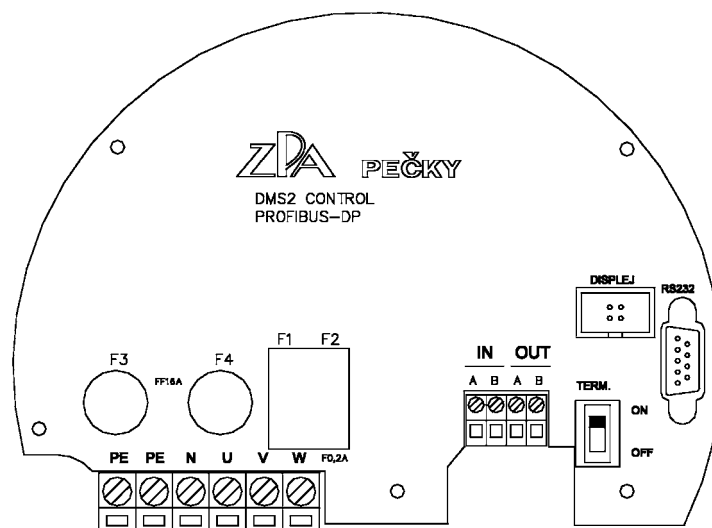


**The terminal board of the actuator with electronics DMS2 ED**

**Note:** If the actuator is of one-phase version the supply mains inlet is only connected to the terminals **PE, N, U**. The terminals **V, W** will remain unconnected.



**Terminal board of DMS2 Analog**



**Terminal board of DMS2 Profibus**

**Note:** The actuators **MONEDJ** are supplied from single-phase mains. The inlet is connected to the terminal **N** (middle conductor) and **W** (phase conductor). The terminals **U, V** will remain unconnected.

**Table 1 – Electric actuators MODACT MONED, MOPED – basic parameters**  
 With 1T29002 (1LE1002) electric motors – supply voltage 3 x 230/400 V, 50 Hz, protection IP 55 (MODACT MONED), IP 67 (MODACT MOPED)

Type marking	Moment [Nm]		Adjusting speed [1/min]	Working stroke [revol.]	Type of lubricant	Electric motor				Weight [kg]	Type No.	
	Tripping	Starting				Type	Power [kW]	RPM [1/min]	I <sub>n</sub> (400V) [A]		z	basic
MONED (MOPED) 40/135-7		135	7			1T29002-0CC2	0.09	635	0.53	1,8		X X V X N(P)ED
MONED (MOPED) 40/220-9		220	9			1T29002-0CC2	0.18	875	0.85	2,0		X X 0 X N(P)ED
MONED (MOPED) 40/135-15		135	15			1T29002-0CC2	0.18	875	0.85	2,0		X X 1 X N(P)ED
MONED (MOPED) 40/100-25	20 – 40	100	25			1T29002-0CB2	0.25	1365	0.80	3,0		X X 2 X N(P)ED
MONED (MOPED) 40/60-40		60	40			1T29002-0CB2	0.25	1365	0.80	3,0		X X 3 X N(P)ED
MONED (MOPED) 40/95-50		95	50		●	1T29002-0CA2	0.37	2755	1.06	3,4		X X 4 X N(P)ED
MONED (MOPED) 40/60-80		60	80		●	1T29002-0CA2	0.37	2755	1.06	3,4		X X 5 X N(P)ED
MONED (MOPED) 80/135-7		135	7			1T29002-0CC2	0.09	635	0.53	1,8		X X X X N(P)ED
MONED (MOPED) 80/220-9		220	9			1T29002-0CC2	0.18	875	0.85	2,0		X X 6 X N(P)ED
MONED (MOPED) 80/135-15	40 – 80	135	15			1T29002-0CC2	0.18	875	0.85	2,0		X X 7 X N(P)ED
MONED (MOPED) 80/100-25		100	25			1T29002-0CB2	0.25	1365	0.80	3,0		X X 8 X N(P)ED
MONED (MOPED) 80/104-40		104	40	2 – 1980		1T29002-0CB3	0.37	1350	1.08	3,2	52 0 3 0	X X 9 X N(P)ED
MONED (MOPED) 70/95-50	40 – 70	95	50		●	1T29002-0CA2	0.37	2755	1.06	3,4	connecting dimension	X X A X N(P)ED
MONED (MOPED) 70/90-80		90	80		●	1T29002-0CA3	0.55	2750	1.46	3,7	F10	X X B X N(P)ED
MONED (MOPED) 125/160-7		160	7			1T29002-0CD3	0.12	625	0.82	2,0		X X L X N(P)ED
MONED (MOPED) 125/220-9	80 – 125	220	9			1T29002-0CC2	0.18	875	0.85	2,0		X X C X N(P)ED
MONED (MOPED) 125/170-15		170	15			1T29002-0CC3	0.25	860	0.98	2,2		X X D X N(P)ED
MONED (MOPED) 125/165-25		165	25			1T29002-0CB3	0.37	1350	1.08	3,2		X X E X N(P)ED
MONED (MOPED) 115/150-50	80 – 115	150	50		●	1T29002-0CA3	0.55	2750	1.46	3,7		X X H X N(P)ED
MONED (MOPED) 200/280-9		280	9			1T29002-0CC3	0.25	860	0.98	2,2		X X R X N(P)ED
MONED (MOPED) 200/270-15	100 – 200	270	15			1T29002-0CB3	0.37	1350	1.08	3,2		X X S X N(P)ED
MONED (MOPED) 200/300-25		300	25			1T29002-0CB6	0.55	1365	1.62	3,6		X X T X N(P)ED
MONED (MOPED) 140/180-50	100 – 140	180	50		●	1T29002-0CA6	0.75	2780	1.81	4,5		X X U X N(P)ED
MONED (MOPED) 95/125-7	63 – 95	125	7			1T29002-0CD2	0.09	635	0.53	1,8		X X C X N(P)ED
MONED (MOPED) 100/210-9		210	9			1T29002-0CC2	0.18	875	0.85	2,0		X X 0 X N(P)ED
MONED (MOPED) 100/185-15		185	15			1T29002-0CC3	0.25	860	0.98	2,2		X X 1 X N(P)ED
MONED (MOPED) 100/130-25		130	25			1T29002-0DC2	0.37	915	1.23	2,7		X X 2 X N(P)ED
MONED (MOPED) 100/165-40	63 – 100	165	40			1T29002-0DB2	0.55	1385	1.44	3,7		X X 3 X N(P)ED
MONED (MOPED) 100/140-63		140	63		●	1T29002-0DB3	0.75	1385	1.85	3,6		X X 4 X N(P)ED
MONED (MOPED) 100/200-80		200	80		●	1T29002-0DA3	1,1	2840	2,45	5,7		X X E X N(P)ED
MONED (MOPED) 100/140-100		140	100	2 – 1400	●	1T29002-0EB0	1,1	1405	2,5	4,5		X X 5 X N(P)ED
MONED (MOPED) 100/165-145		165	145		●	1T29002-0EA0	1,5	2835	3,3	5,5		X X F X N(P)ED
MONED (MOPED) 125/160-7	100 – 125	160	7			1T29002-0CC3	0.12	625	0.82	2,0	52 0 3 1	X X D X N(P)ED
MONED (MOPED) 160/210-9		210	9			1T29002-0CC2	0.18	875	0.85	2,0	connecting dimension	X X 6 X N(P)ED
MONED (MOPED) 150/200-16		200	16			1T29002-0DC2	0.37	915	1,23	2,7	F14	X X 7 X N(P)ED
MONED (MOPED) 160/208-25		208	25			1T29002-0DC3	0.55	900	1,68	2,7		X X 8 X N(P)ED
MONED (MOPED) 160/225-40	100 – 160	225	40			1T29002-0DB3	0,75	1385	1,85	3,6		X X 9 X N(P)ED
MONED (MOPED) 160/330-65		330	65		●	1T29002-0EB4	1,5	1410	3,35	4,7		X X A X N(P)ED
MONED (MOPED) 160/275-80		275	80		●	1T29002-0EA0	1,5	2835	3,3	5,5		X X H X N(P)ED
MONED (MOPED) 160/215-100		215	100		●	1T29002-0EB4	1,5	1410	3,35	4,7		X X B X N(P)ED
MONED (MOPED) 160/280-130		280	130		●	1T29002-0EA4	2,2	2855	4,7	6,5		X X J X N(P)ED

MONED (MOPED) 245/340-7	160 – 245	340	7			1T29002-0DD3	0,25	680	1,03	2,6	52	X X 6 X N(P)ED
MONED (MOPED) 230/300-9	160 – 230	300	9			1T29002-0DC2	0,37	915	1,23	2,7	50	X X 0 X N(P)ED
MONED (MOPED) 230/300-16		300	16			1T29002-0DC3	0,55	900	1,68	2,7	52	X X 1 X N(P)ED
MONED (MOPED) 250/325-25	160 – 250	325	25			1T29002-0DEC	0,75	940	2,3	3,8	45	X X 2 X N(P)ED
MONED (MOPED) 250/325-40		325	40			1T29002-0EB0	1,1	1405	2,5	4,5	45	X X 3 X N(P)ED
MONED (MOPED) 230/300-70	160 – 230	300	70		●	1T29002-0EB4	1,5	1410	3,35	4,7	54	X X 4 X N(P)ED
MONED (MOPED) 250/420-80	160 – 250	420	80		●	1T29002-0EA4	2,2	2855	4,7	6,5	49	X X 5 X N(P)ED
MONED (MOPED) 200/260-145	160 – 200	260	145		●	1T29002-0EA4	2,2	2855	4,7	6,5	49	X X 7 X N(P)ED
MONED (MOPED) 400/640-7	230 – 400	640	7			1T29002-0ED4	0,55	675	1,58	3,0	55	X X E X N(P)ED
MONED (MOPED) 370/480-10	230 – 370	480	10			1T29002-0DC3	0,55	900	1,68	2,7	53	X X F X N(P)ED
MONED (MOPED) 400/740-16		740	16			1T29002-0EC4	1,1	925	3,15	3,8	55	X X H X N(P)ED
MONED (MOPED) 400/520-25	230 – 400	520	25			1T29002-0EC4	1,1	925	3,15	3,8	48	X X J X N(P)ED
MONED (MOPED) 400/510-40		510	40			1T29002-0EB4	1,5	1410	3,35	4,7	48	X X K X N(P)ED
MONED (MOPED) 400/520-70		520	70		●	1T29001-0EB6	2,2	1425	4,65	6,1	49	X X L X N(P)ED
MONED (MOPED) 320/420-140	230 – 320	420	140		●	1T29001-0EA6	3,0	2895	6,0	7,9	49	X X M X N(P)ED
MONED (MOPED) 500/800-16	250 – 500	800	16			1T29002-1BD2	1,5	700	4,7	3,5	97	X X 0 X N(P)ED
MONED (MOPED) 470/610-25	250 – 470	610	25			1T29002-0EC4	1,1	925	3,15	3,8	90	X X 1 X N(P)ED
MONED (MOPED) 500/720-40		720	40			1T29002-1BC2	2,2	940	5,7	4,6	93	X X 2 X N(P)ED
MONED (MOPED) 500/670-63	250 – 500	670	63		●	1T29002-1AB5	3,0	1425	6,3	5,4	90	X X 3 X N(P)ED
MONED (MOPED) 500/770-100		770	100		●	1T29002-1AB6	4,0	1435	8,6	5,8	97	X X 4 X N(P)ED
MONED (MOPED) 630/900-16		900	16			1T29002-1BD2	1,5	700	4,7	3,5	99	X X 0 X N(P)ED
MONED (MOPED) 630/1300-22	320 – 630	1300	22			1T29002-1BC2	2,2	940	5,7	4,6	103	X X 1 X N(P)ED
MONED (MOPED) 630/830-35		830	35			1T29002-1AB4	2,2	1425	4,9	5,1	97	X X 2 X N(P)ED
MONED (MOPED) 630/900-63		900	63		●	1T29002-1BB2	4,0	1435	8,4	6,1	97	X X 3 X N(P)ED
MONED (MOPED) 1000/1300-22		1300	22			1T29002-1BC2	2,2	940	5,7	4,6	102	X X 6 X N(P)ED
MONED (MOPED) 1000/1400-35	500 – 1000	1400	35			1T29002-1BB2	4,0	1435	8,4	6,1	105	X X 7 X N(P)ED
MONED (MOPED) 1000/1500-63		1500	63		●	1T29002-1BB6	5,5	1420	11,6	5,8	109	X X 9 X N(P)ED
MONED (MOPED) 1250/1780-45	630 – 1250	1780	45		●	1T29002-1CC3	5,5	955	12,7	5,7	211	X X 0 X N(P)ED
MONED (MOPED) 1250/1650-70		1650	70		●	1T29002-1CB2	7,5	1450	15,4	6,6	206	X X 1 X N(P)ED
MONED (MOPED) 900/1170-100	630 – 900	1170	100		●	1T29002-1CB2	7,5	1450	15,4	6,6	206	X X 2 X N(P)ED
MONED (MOPED) 1800/2400-70	1000 – 1800	2400	70		●	1T29002-1CB6	11	1450	21,5	7,2	217	X X 3 X N(P)ED
MONED (MOPED) 1250/1650-100	630 – 1250	1650	100		●	1T29002-1CB6	11	1450	21,5	7,2	217	X X 4 X N(P)ED
MONED (MOPED) 2500/3850-20	1000 – 2500	3850	20		●	1T29002-1CC3	5,5	955	12,7	5,7	309	X X 0 X N(P)ED
MONED (MOPED) 2500/3600-30		3600	30		●	1T29002-1CB2	7,5	1450	15,4	6,6	304	X X 1 X N(P)ED
MONED (MOPED) 2000/2600-40	1000 – 2000	2600	40		●	1T29002-1CB2	7,5	1450	15,4	6,6	304	X X 2 X N(P)ED
MONED (MOPED) 3900/5100-30	2000 – 3900	5100	30		●	1T29002-1CB6	11	1450	21,5	7,2	315	X X 3 X N(P)ED
MONED (MOPED) 2800/3600-40	1600 – 2800	3600	40		●	1T29002-1CB6	11	1450	21,5	7,2	315	X X 4 X N(P)ED

**Note:**

1) The rated torque is 60 % of the maximum tripping torque for duty S2 and 40 % of the maximum tripping torque for duty S4.

2) The weight data apply to the version with connecting dimensions C, D, E.

3) The table shows the type of electric motors according to MEZ ie 1T29. On delivery the type of electric motor may also be marked according to SIEMENS, ie 1LE1. Other marking symbols are then identical.

4) ● – Mark of actuators filled with oil. Other actuators are filled with plastic lubricant.

**Table 2 – Electric actuators MODACT MONEDJ – basic parameters**  
 – supply voltage 1 x 230 V, 50 Hz, protective enclosure IP 55

Type marking	Control	Torque [Nm]		Adjusting speed [1/min]	Working stroke [revol.]	Typ maziva	Electric motor					Weight [kg]	Type No.			
		Tripping	Starting				Type of el. motor	Power [kW]	RPM [1/min]	I <sub>n</sub> (230 V) [A]	I <sub>Z</sub> / I <sub>n</sub>		basic		additional	
													1	2	3	4
MONEDJ 40/75-25	C	20 – 40	75	25	2-1980		JMO 71-4S	0,25	1400	1,89	3,4	27	52 030 connecting dimension F10	x x 2 x NEDJ x		
MONEDJ 40/50-40	C		50	40			JMO 71-4S	0,25	1400	1,89	3,4	27		x x 3 x NEDJ x		
MONEDJ 40/60-50	C		60	50		◆	JMO 71-2S	0,37	2880	2,53	3,9	27		x x 4 x NEDJ x		
MONEDJ 40/60-80	C		60	80		◆	JMO 71-2M	0,55	2860	3,41	4,0	27		x x 5 x NEDJ x		
MONEDJ 80/135-25	C	40 – 80	135	25			JMO 71-4M	0,37	1400	2,61	3,4	27		x x 8 x NEDJ x		
MONEDJ 70/90-40	C	40 – 70	90	40			JMO 71-4M	0,37	1400	2,61	3,4	28		x x 9 x NEDJ x		
MONEDJ 75/100-50	C	40 – 75	100	50		◆	JMO 71-2M	0,55	2860	3,41	4,0	28		x x A x NEDJ x		
MONEDJ 110/143-25	C	80 – 110	143	25			JMO 71-4M	0,37	1400	2,61	3,4	28		x x E x NEDJ x		
MONEDJ 100/130-40	C	63 – 100	130	40		2-1400		JMO 80-4S	0,55	1395	3,85	3,8		41	52 031 connecting dimension F14	x x 3 x NEDJ x
MONEDJ 95/124-63		63 – 95	124	63			◆	JMO 80-4M	0,75	1400	4,7	4,0		42		x x 4 x NEDJ x
MONEDJ 100/130-80		63 – 100	130	80	◆		JMO 80-2M	1,1	2800	6,6	4,4	43	x x E x NEDJ x			
MONEDJ 100/130-100			130	100	◆		JMO 90-4L	1,5	1400	8,68	3,5	50	x x 5 x NEDJ x			
MONEDJ 95/124-145		63 – 95	124	145	◆		JMO 90-2S	1,5	2830	9,11	4,5	51	x x F x NEDJ x			
MONEDJ 150/195-40		100 – 150	195	40			JMO 80-4M	0,75	1400	4,7	4,0	41	x x 9 x NEDJ x			
MONEDJ 160/208-65		100 – 160		65	◆		JMO 90-4L	1,5	1400	8,68	3,5	42	x x A x NEDJ x			
MONEDJ 160/208-80					80		◆	JMO 90-2S	1,5	2830	9,11	4,5	43	x x H x NEDJ x		
MONEDJ 130/170-145		100 – 130	170	145	◆		JMO 90-2L	2,2	2850	13,02	4,8	51	x x J x NEDJ x			
MONEDJ 250/325-40		160 – 250	325	40			JMO 90-4L	1,5	1400	8,68	3,5	45	52 032 x x 3 x NEDJ x			
MONEDJ 220/286-80		160 – 220	286	80	◆	JMO 90-2L	2,2	2850	13,02	4,8	49	connec. dim. F14 x x 5 x NEDJ x				

The actuators MODACT MONEDJ are fitted with single-phase electric motors Siemens series 1LF7... with running and starting-up capacitors. The manufacturer guarantees 60,000 and 100,000 start-ups for two-pole electric motors (ca 2800 r.p.m.) and four-pole electric motors (ca 1400 r.p.m.), respectively. Then, it is necessary to replace the centrifugal disconnecter of the starting-up capacitor – it is available at ZPA Pečky a.s.

In ZPA Pečky a.s., electric motors of power up to 0.37 kW are fitted with a triac disconnecter that extends the service life to 350,000 start-ups.

If the actuator with a single-phase electric motor is to be used for regulating purposes, it is necessary to take this fact into consideration in setting-up the regulation process (frequency of regulating interventions).

The expected working regime of the actuators MONEDJ should be discussed with the marketing department of ZPA Pečky, a.s.

◆ – Mark of actuators filled with oil. Other actuators are filled with plastic lubricant.

### Electric actuators MODACT MONED, MOPED, MONEDJ

– Specification of meaning of the 6th to 10th place of the type number

Place in the type number... 1<sup>st</sup> 2<sup>nd</sup> 3<sup>rd</sup> 4<sup>th</sup> 5<sup>th</sup> 6<sup>th</sup> 7<sup>th</sup> 8<sup>th</sup> 9<sup>th</sup> 10<sup>th</sup> 11<sup>th</sup>  
**Type number** .....5 2 0 3 x . x x x x ED (J) x

6<sup>th</sup> place of type number

**Table 3**

Connecting dimensions	Version	
	Bushings	Connector
Shape A	5	F
Shape B1	6	G
Shape C	7	H
Shape D	8	J
Shape E	9	K

7<sup>th</sup> place of type number

If one of numerals 1, 3, 5, 7 or 9 is on the 9th place of the type number the character from Table 4 is on the 7<sup>th</sup> place.  
 If one of numerals 2, 4, 6 or 8 is on the 9th place of the type number the character from Table 5 is on the 7<sup>th</sup> place.

**Table 4 – actuator fitted with electronics DMS2 ED**

Outfit	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	H	J	K	L	M	N	V	W	
Local control		x		x		x		x		x		x		x		x		x		x		x		x	
Display			x	x			x	x			x	x			x	x				x	x			x	x
Contactors or contact-less switching					x	x	x	x						x	x	x	x					x	x	x	x
Analog module	transmitter									x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	regulator																	x	x	x	x	x	x	x	x

Place in the type number...1<sup>st</sup> 2<sup>nd</sup> 3<sup>rd</sup> 4<sup>th</sup> 5<sup>th</sup> 6<sup>th</sup> 7<sup>th</sup> 8<sup>th</sup> 9<sup>th</sup> 10<sup>th</sup> 11<sup>th</sup>  
**Type number**.....5 2 0 3 x . x x x x x x x x x  
 7<sup>th</sup> place of type number ↓

**Table 5 – actuator fitted with electronics DMS2**

Two-position or three-position control *) – DMS2	<b>R</b>
Profibus – DMS2	<b>P</b>
Two- or three-position control, without display and local control *) – DMS	<b>T</b>
Modbus	<b>Y</b>

\*) Two- or three-position regulation of the actuator is set at the manufacturer. Unless otherwise specified in the order, the actuator will be set for three-position regulation (control by signal 4 – 20 mA).

8<sup>th</sup> place of type number ↓

Tripping torque, shifting speed	MODACT MONED, MOPED – Table 1
	MODACT MONEDJ – Table 2

9<sup>th</sup> place of type number ↓

**Table 6 – type of electronics, power switches, brake**

Electronics DMS2 ED – without power switches	<b>1</b>
Electronics DMS2 – with contactors	<b>2</b>
Electronics DMS2 ED – with contact-less switches	<b>3</b>
Electronics DMS2 – with contact-less switches	<b>4</b>
Electronics DMS2 ED – with contactors and brake *)	<b>5</b>
Electronics DMS2 – with contactors and brake	<b>6</b>
Electronics DMS2 ED – with contact-less switches and brake *)	<b>7</b>
Electronics DMS2 – with contact-less switches and brake	<b>8</b>
Electronics DMS2 ED – with contactors	<b>9</b>

**Note:** Version 52 03x.xxxxNEDJ is delivered in version 52 03x.xxx1NEDJ, 52 03x.xxx2NEDJ or 52 03x.xxx9NEDJ.  
 \*) If the actuator has DMS2 ED electronic system in configuration Electromechanics board replacement, the electronic brake will not be delivered.

10<sup>th</sup> place of type number ↓

Protective enclosure: MONED, MONEDJ – IP 55; MOPED – IP 67

11<sup>th</sup> place of type number ↓

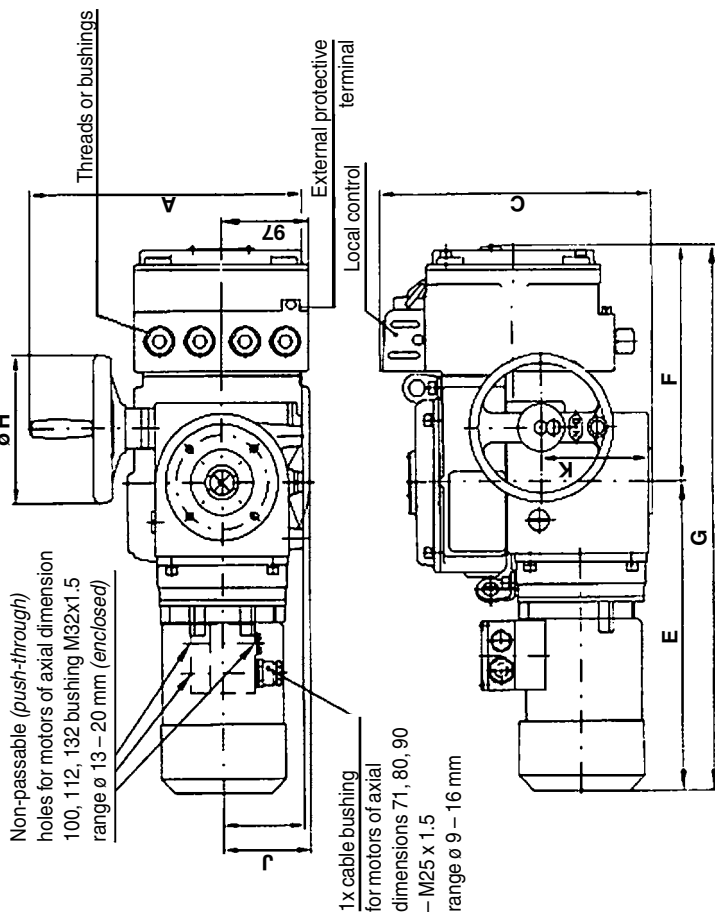
**Table 7 – Surrounding temperatures**

Type of actuator						Temperature [°C]	Označení
MONED		MOPED		MONEDJ			
DMS2 ED	DMS2	DMS2 ED	DMS2	DMS2 ED	DMS2		
✓	✓	✓	✓	x	x	-25 +60	–
✓	✓	✓	✓	x	x	-40 +60	F1
✓	✓	x	x	✓	✓	-25 +70	–

**Note:** ✓ – available version  
 x – not available  
 Relative humidity from 10 % to 100 % with condensation.

**Dimensional sketch of electric actuators MODACT MONED, MOPED**

Type No. 52 030 – 52 035 (version with terminal board)

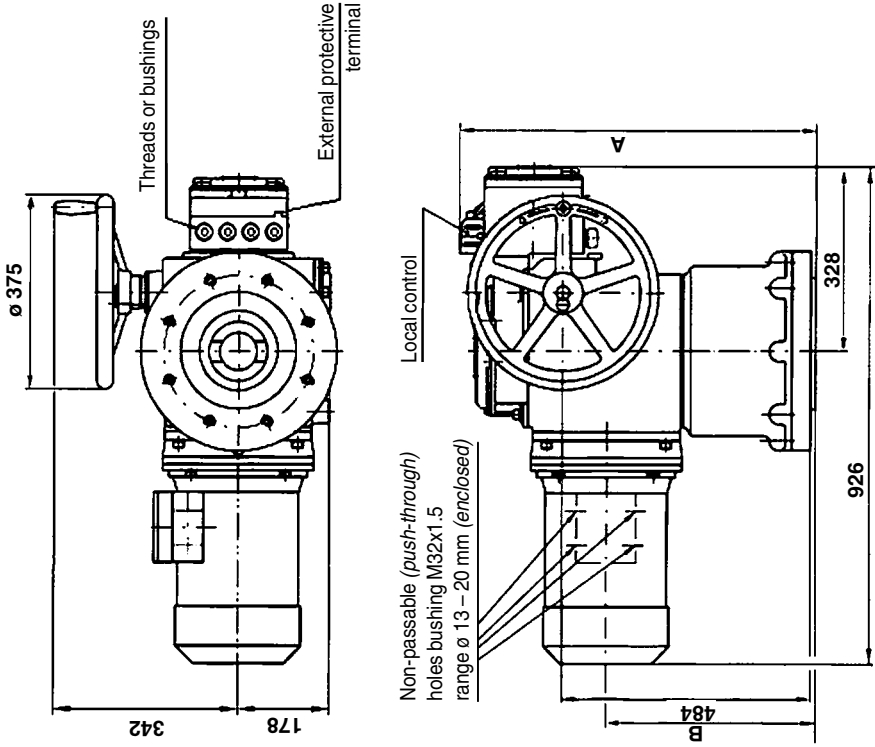


Type designation	A	B	C	D	E	F	G	H	J	K
52 030.xxxxNED	305	90	300	76	334	258	592	160	99	120
52 031.xxxxNED 52 032.xxxxNED	376	120	328	92	436	258	694	200	-	144
52 033.xxxxNED 52 034.xxxxNED	455	145	387	123	519	288	807	250	-	190
52 035.xxxxNED	540	178	445	153	598	298	328	926	-	234

**Note:** For actuators MODACT MONED, MONEJD, the switchboard box has threads for bushings: 3 x thread M20 x 1.5; 1 x thread M25 x 1.5 (the bushings are included in the delivery - wrapped-together part).  
 For actuators MODACT MOPED, the switchboard box has bushings: 1 x M25 x 1.5, range of Ø 13 – 18 mm; 2 x M20 x 1.5, range of Ø 10 – 14 mm; 1 x M20 x 1.5 range of Ø 6 – 12 mm.  
 The electric motor (except for the actuator version with the switchboard box) is always delivered with cable bushing. Connector Harting is always fitted with cable bushings.

**Dimensional sketch of electric actuators MODACT MONED, MOPED**

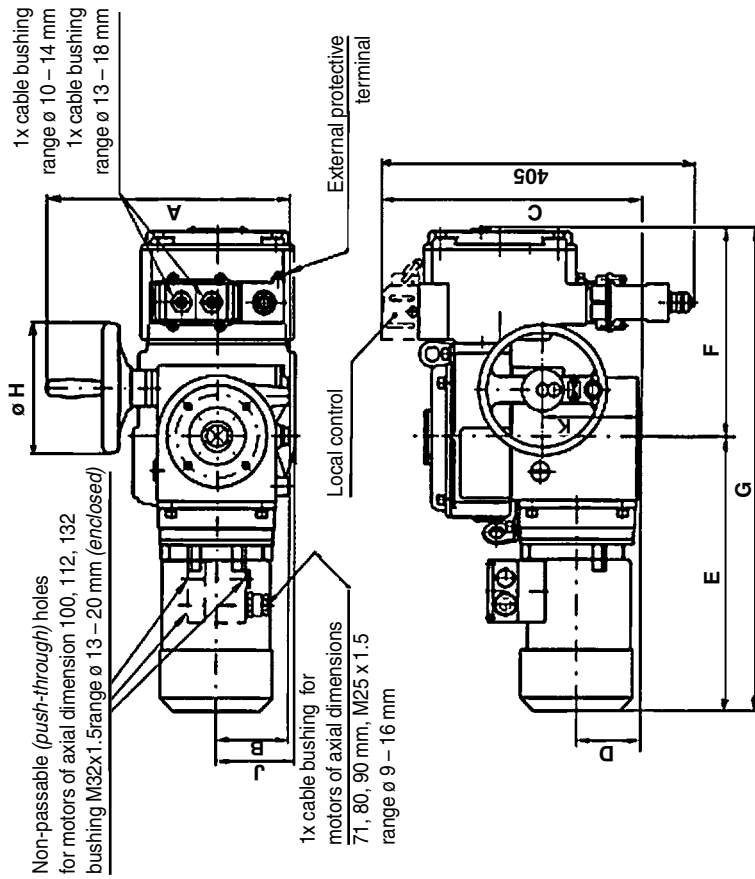
Type No. 52 036 (version with terminal board)



Type designation	A	B
52 036.xxxxNED shape A	785	463
52 036.xxxxNED shape B <sub>1</sub> , C, D, E	740	418

**Dimensional sketch of electric actuators MODACT MONED, MOPEd**

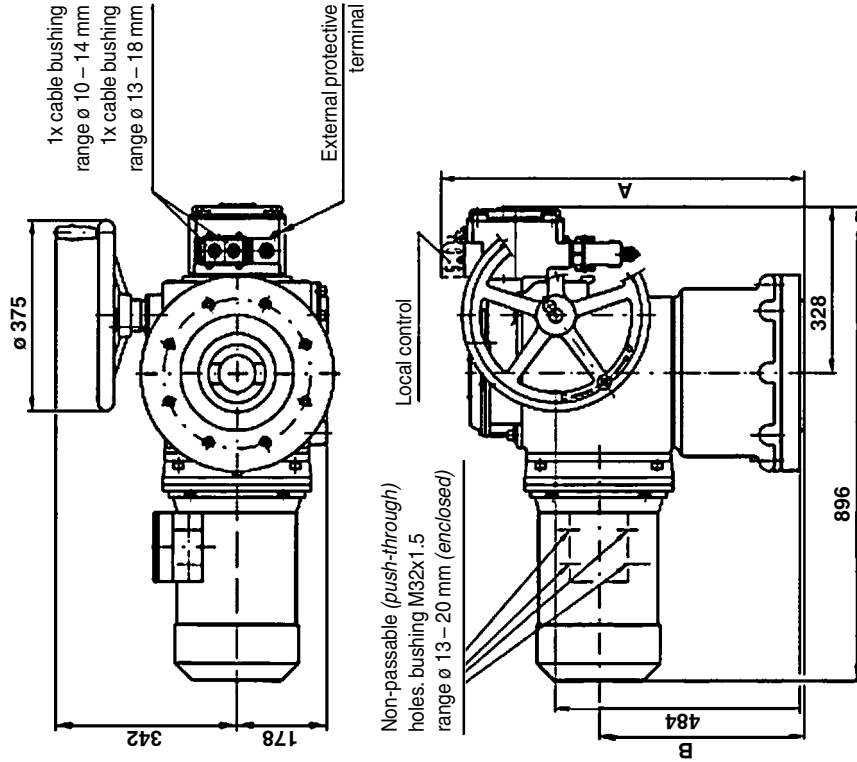
Type No. 52 030.xxxxNED – 52 035 (version with connector)



Type designation	A	B	C	D	E	F	G	$\phi$ H	J	K
52 030.xxxxNED	305	90	325	78	334	258	592	160	99	120
52 031.xxxxNED 52 032.xxxxNED	376	120	350	92	436	258	694	200	-	144
52 033.xxxxNED 52 034.xxxxNED	455	145	410	123	519	288	807	250	-	190
52 035.xxxxNED	540	178	470	153	598	328	926	375	-	234

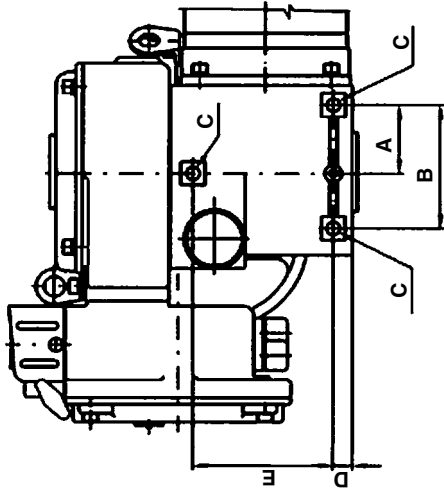
**Dimensional sketch of electric actuators MODACT MONED, MOPEd**

Type No. 52 036 (version with connector)



Type designation	A	B
52 036.xxxxNED shape A	785	463
52 036.xxxxNED shape B <sub>1</sub> , C, D, E	740	418

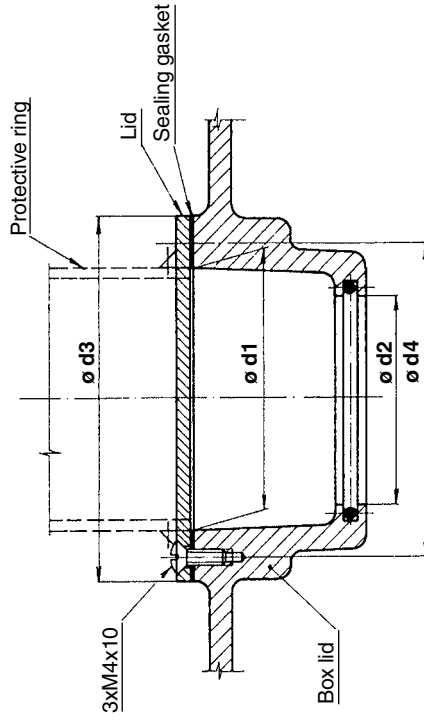
Holes for additional fastening of actuators **MODACT MONED, MOPED,**  
Type No. 52 030 – 52 035



Type designation	Dimension (mm)				
	A	B	C	D	E
52.030.xxxxN	61	110	M10	16	120
52.031.xxxxN 52.032.xxxxN	90	160	M12	21	140
52.033.xxxxN 52.034.xxxxN	110	210	M16	23	200
52.035.xxxxN	120	240	M20	47	220

**Note:**  
The holes for additional fastening of actuators MODACT serve only for catching the weight of the actuators and should not be exposed to any other additional force.

Modification for rising spindle



Dimensions (mm)	Type number				
	52 030	52 031 52 032	52 033 52 034	52 035	52 036
ø d <sub>1</sub>	45	60	80	90	90
ø d <sub>2</sub>	35,5	50,5	75	80,5	80,5
ø d <sub>3</sub>	65	80	110	110	110
ø d <sub>4</sub>	55	70	100	100	100

Protective adapter (including lid hole) – to be made by the customer.



Connecting dimensions of actuators  
**MODACT MONED, MONEDJ, MOPED**, Type No. 52 030 – 52 036  
 – basic version (*without adapter*)

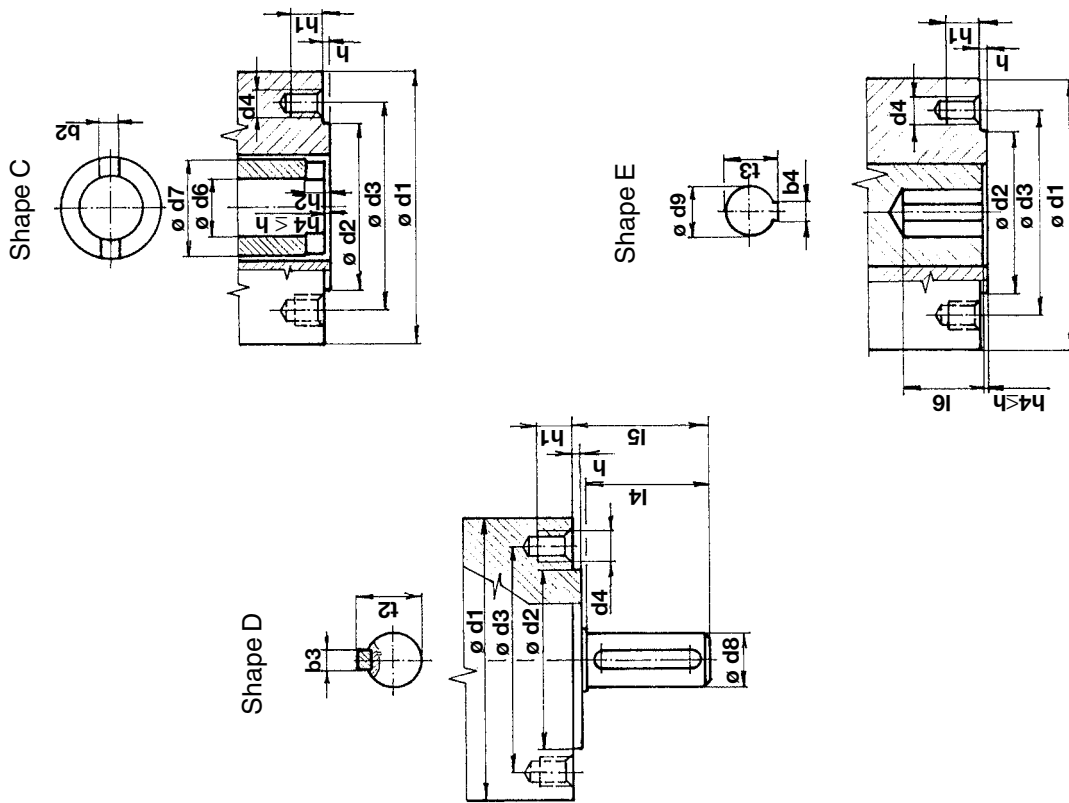
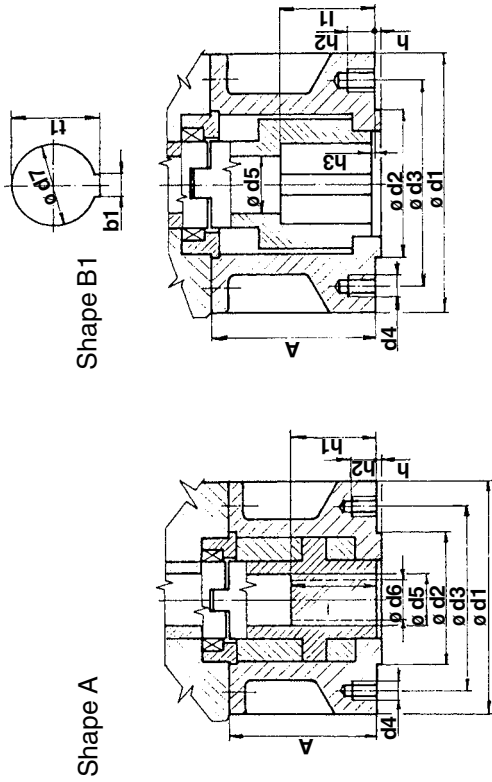


Table of basic connecting dimensions of actuators  
**MODACT MONED, MOPED** (*without adapter*)

Shape	Dimension (mm)	Type number			
		52 030	52 031 52 032	52 033 52 034	52 035 52 036
C, D, E (identical dimensions)	$\varnothing d1$ orientational value	125	175	210	300
	$\varnothing d2$ f8	70	100	130	200
	$\varnothing d3$	102	140	165	254
	d4	M 10	M 16	M 20	M 16
	number of threaded holes	4	4	4	8
C	hmax	3	4	5	5
	h1 min. 1,25d4	12,5	20	25	20
	$\varnothing d7$	40	60	80	100
	h2	10	12	15	16
	b2 H11	14	20	24	30
D	$\varnothing d6$	30	41,5	53	72
	$\varnothing d8$ g6	20	30	40	50
	l4	50	70	90	110
	l2max	22,5	33	43	53,5
	b3 h9	6	8	12	14
E	l5	55	76	97	117
	$\varnothing d9$ H8	20	30	40	50
	l6 min.	55	76	97	117
	t3	22,8	33,3	43,3	53,8
	b4 Js9	6	8	12	14

The dimensions  $\varnothing d6$  and  $l6$  must not be lower than values in the table.  
 The dimensions are given in mm.

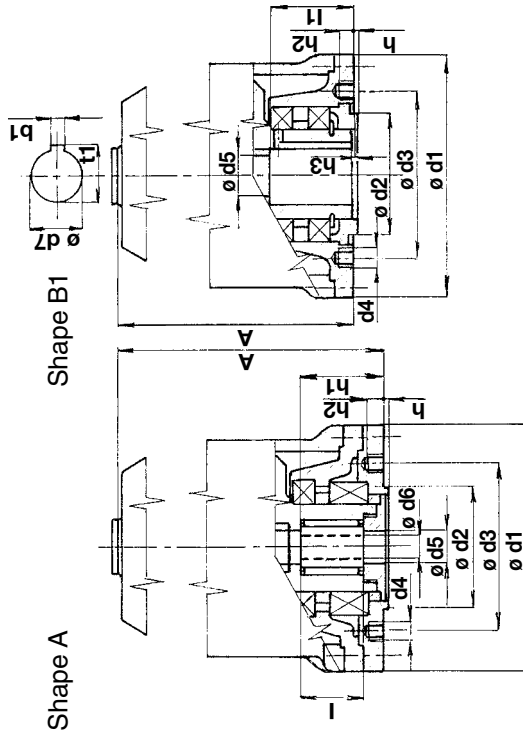
Adapters to actuators **MODACT MONED, MOPED,**  
Type No. 52 030 – 52 035



Assignment of adapters to actuators

Shape	Dimensions (mm)	Type number			
		52 030	52 031 52 032	52 033 52 034	52 035
A, B1 (identical dimensions)	ø d1	125	175	210	300
	ø d2 f8	70	100	130	200
	ø d3	102	140	165	254
	d4	M 10	M 16	M 20	M 16
	number of holes d4	4	4	4	8
	h	3	4	5	5
	h2 min.	12,5	20	25	20
	A	63,5	110	179	155
	ø d5	30	38	53	63
	ø d6 max	28	36	44	60
A	h1 max	43,5	65	92	110
	l min	45	55	70	90
	A	63,5	110	122	155
	ø d5	30	40	50	65
B1	l1 min	45	65	80	110
	h3 max	3	4	5	5
	b1	12	18	22	28
	ø d7 H9	42	60	80	100
	t1	45,3	64,4	85,4	106,4

Adapters to actuators **MODACT MONED, MOPED,**  
Type No. 52 036



Shape	Dimensions (mm)	52 036
A, B1 (identical dimensions)	ø d1	390
	ø d2 f8	230
	ø d3	298
	d4	M 20
	number of holes d4	8
	h	5
	h2 min.	25
	A	740 1+)
	ø d5	72
	ø d6 max	70
A	h1 max	165
	l min	110
	A	695 2+)
	ø d5	72
	l1 min	130
	h3 max	5
B1	b1	32
	ø d7 H9	120
	t1	127,4

**Notes:**  
1+) – The nut is built-in into the actuator  
2+) – The case is built-in into the actuator



Development, production and services of electric actuators and switchboards.  
Top-quality sheet-metal processing (TRUMPF equipment), powder paint shop.

## SURVEY OF PRODUCED ACTUATORS

### **KP MINI, KP MIDI**

Electric rotary (90°) actuators (up to 30 Nm)

### **MODACT MOK, MOKED, MOKP Ex, MOKPED Ex**

Electric rotary (90°) actuators for ball valves and flaps

### **MODACT MOKA**

Electric rotary (90°) actuators for nuclear power stations application outside containment

### **MODACT MON, MOP, MONJ, MONED, MOPED, MONEDJ**

Electric rotary multi-turn actuators

### **MODACT MO EEX, MOED EEX**

Explosion proof electric multi-turn actuators

### **MODACT MOA**

Electric multi-turn actuators for nuclear power stations application outside containment

### **MODACT MOA OC**

Electric multi-turn actuators for nuclear power stations application inside containment

### **MODACT MPR VARIANT**

Electric rotary (160°) lever actuators with a variable output speed

### **MODACT MPS, MPSP, MPSED, MPSPED**

Electric rotary (160°) lever actuators with a constant output speed

### **MODACT MTN, MTP, MTNED, MTPED**

Electric linear thrust actuators with a constant output speed

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Deliveries of assembled actuator + valve (or MASTERGEAR gearbox) combinations

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