

NEW

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## ZP3 - NEW ELECTRONIC CONTROL FOR ELECTRIC ACTUATORS

ZPA PEČKY, j.s.c as the manufacturer of electric actuators modact. Has newly designed the generation of actuators control system open fully electronic basic. This new concept has been developed during two years with the aim not only to replace present state electromechanic control board by fully electronic one but to offer the customer. A lot of new functions that were up to now capable of solution only by the supervising control system.

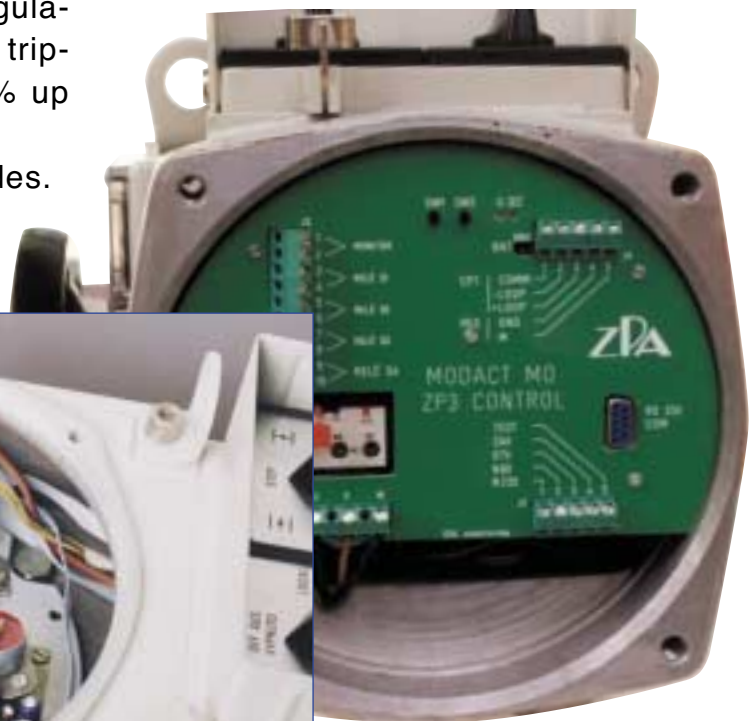
The new philosophy of the MODACT MO, MT, MPS and other types is shown on picture.

The building - block system in basic range provides the two position regulation and the user is able to setup tripping torque in the range from 50% up to 100%.

The fully equipped system provides.

Three position regulation with position feedback signal (cpt).

- Information about actuators output shaft position is displayed on lcd panel in % even during power supply failure.



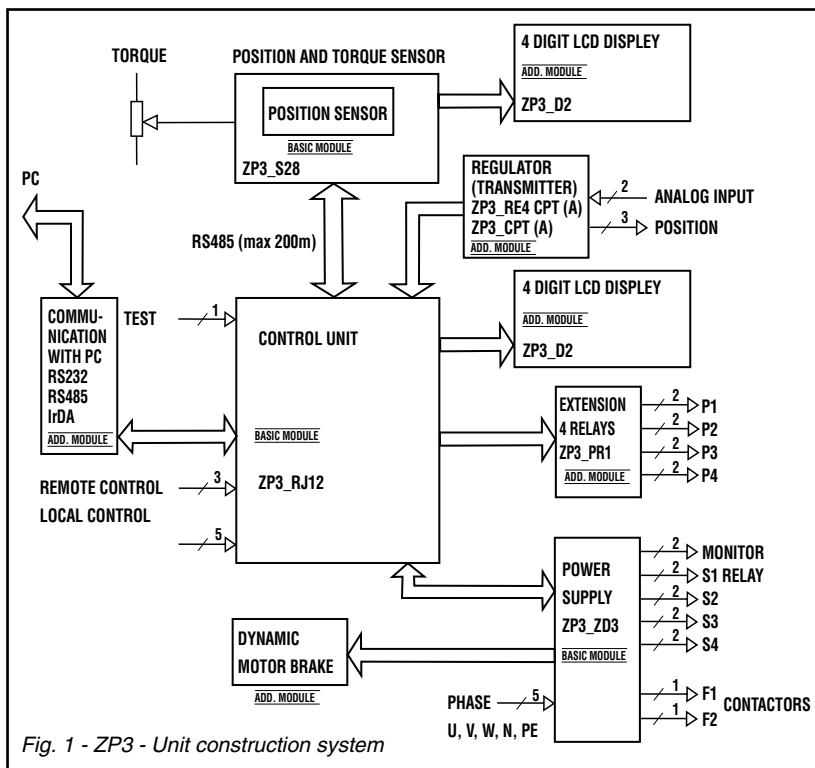


Fig. 1 - ZP3 - Unit construction system

## BASIC MODULES ZP3:

ZP3 S28 - sensor unit  
 (ZP3 S28T) - sensor with thermometer only this unit has to be situated directly inside the actuator

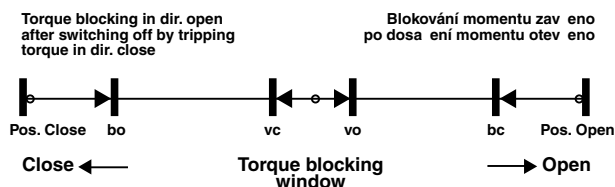
ZP3 RJ12 - control unit  
 ZP3 ZD2 - power supply and programming elements

ZP3 D2 - display  
 This module is necessary for actuator's set-up (can be common for a number of actuators or build-in directly in the actuator. Then displays the actuator's state)

All the other modules are widening the possibilities of this unit construction system for 3 position regulation, economically solves the passive or active position transmitter (always galvanically separated). IrDA communication unit is available for the user.

Sensor unit is equipped by starting torque blocking either during close/open reversion or as a new function also in any position between close/open position.

Useful functions for the user or the service man.



System ZP3 can be delivered in several modifications. In the first place it is delivered build-in in the new type of electric actuators MODACT® MO PE in IP 67 protection. IrDA remote communication with the system is delivered as option.

- The second possibility is to build-in the ZP3 control system into the older actuator types either as simple replacement of present electro-mechanical control board, or fully equipped with the contactors in separate cabinet.
- In the both cases ZP3 system offers a lot of useful functions in comparison with other similar systems.
- The first tripping torque set-up has to be done on the special test bench on max. 100% value. After that it is possible to set-up and change the tripping torque value (without disassembly of the valve) in the range from 100% down to 50% just by the mean of software. This operation can be done by the help of two

microswitches directly from ZP3 control board, or by the special communication module and PC. The communication with ZP3 system brings more useful functions for the user or the service man.

Beside the system set-up, which is user-friendly a lot of useful and important information like errors report and statistics about actuator operation hours, operation hours of the main electric motor, number of contactors switchings etc.

In the basic outfit the system ZP3 has four built-in relays S1-S4 as a standard programmed as the signalling switches for "torque close", "torque open", "position close", position open". The relays function can be freely pre-programmed and if more relays needed, another 4 relays (P1-P4) can be added in additional module.

For troubleless actuators function the phase sequence and presence are automatically monitored.

- This ensures, that the electric motor cannot start rotation in the opposite direction according to the control signal and damage the actuator.
- Operation parameters set-up. Can be done by the two function switches and the display unit according to the user's menu or by pc and original set-up software or by the using hand-size programming device.
- ZP3 system fulfils the european standard demands and is emc certified.

At present the system is prepared also for EEx actuators in "C" class. (hydrogen)

## TECHNICAL PARAMETERS :

### INPUT CONTROL SIGNALS

- local / remote control
- local control open / close
- remote control open / close galvanically separated
- remote control 0 - 10 V, 0 - 20 mA, 4 - 20 mA
- signal test, galvanically separated 20 - 250 V DC / AC (error signal of the superior system)

### OUTPUT SIGNALS:

- S1 - S4 relaus, 250 V AC 2A, 30 V DC
- monitor of motion / central error, relay 250 V AC, 30 V DC
- 4 - digit LCD display
- RS 232 / 482 , 485 interface

- electric motor dynamic brake

### SET-UP PARAMETERS:

- position open, position close
- starting torque blocking (window, reversion in both and positions)
- motor switching off in direction open (close) - derived from position, torque (always)
- S1 - S4 relay function, P1 - P4 (any function MO, MC, PO, PC, SO, SC)
- motor stepping mode (period duty factor)
- 3 - position regulation parameters - control signal, insensitiveness, increase / decrease mode

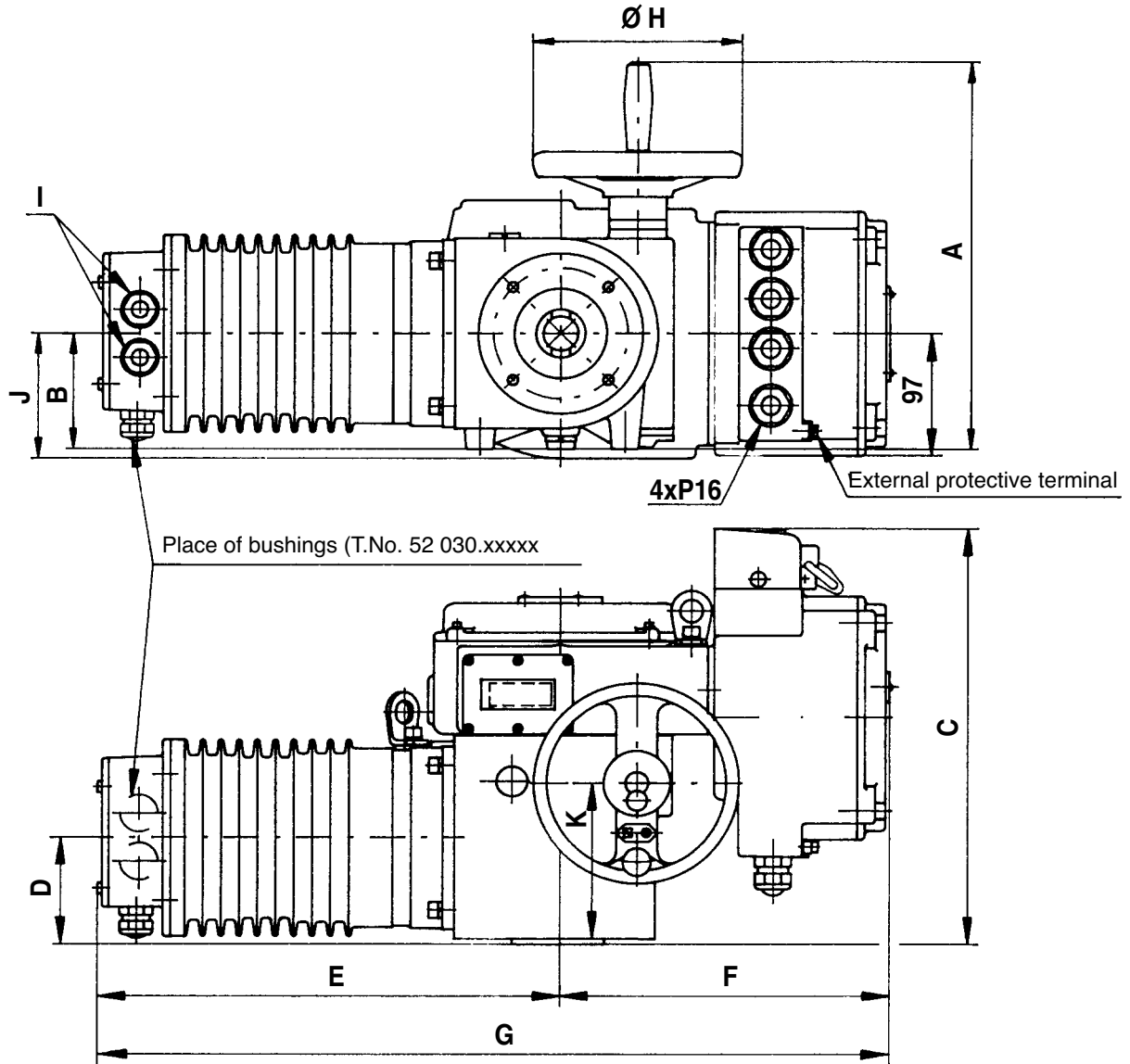
### OPERATION PARAMETERS :

- supply voltage 230 V AC
- operation temperature -25°C up to 70°C, other on request.

**TABLE 1 - BASIC PARAMETERS**

Type designation	Torque [Nm]		Rate of adjustment [1/min]	Working stroke [revolution]	Electric motor				Weight [kg]	Type number									
	tripping	starting			Power [kW]	Speed [RPM]	In (400 V) [A]	Ist In (-)		basic					additional				
									1	2	3	4	5	6	7	8	9	10	
MOPE 40/185-9	20 - 40	185	9	2 - 250 (2 - 620)	0,18	830	0,69	2,3		5	2	0	3	0	x	x	0	x	x
MOPE 40/115-15		115	15		0,18	830	0,69	2,3		5	2	0	3	0	x	x	1	x	x
MOPE 40/100-25		100	25		0,25	1325	0,81	3,0		5	2	0	3	0	x	x	2	x	x
MOPE 40/60-40		60	40		0,25	1325	0,81	3,0		5	2	0	3	0	x	x	3	x	x
MOPE 80/185-9	40 - 80	185	9		0,18	830	0,69	2,3		5	2	0	3	0	x	x	6	x	x
MOPE 80/115-15		115	15		0,18	830	0,69	2,3		5	2	0	3	0	x	x	7	x	x
MOPE 75/100-25	40 - 75	100	25		0,25	1325	0,81	3,0		5	2	0	3	0	x	x	8	x	x
MOPE 75/95-40		95	40		0,37	1375	1,05	3,7		5	2	0	3	0	x	x	9	x	x
MOPE 125/185-9	80 - 125	185	9		0,18	830	0,69	2,3		5	2	0	3	0	x	x	C	x	x
MOPE 125/170-15		170	15		0,25	825	0,83	3,0		5	2	0	3	0	x	x	D	x	x
MOPE 115/150-25	80 - 115	115	25	0,37	1375	1,05	3,7		5	2	0	3	0	x	x	E	x	x	
MOPE 100/145-25	63 - 100	145	25	0,37	910	1,19	2,3		5	2	0	3	1	x	x	2	x	x	
MOPE 100/170-40		170	40	0,55	1395	1,42	4,7		5	2	0	3	1	x	x	3	x	x	
MOPE 100/155-63		155	63	0,75	1395	1,86	5,0		5	2	0	3	1	x	x	4	x	x	
MOPE 95/125-100	63 - 95	125	100	1,1	1410	2,65	5,0		5	2	0	3	1	x	x	5	x	x	
MOPE 160/225-16	100 - 160	225	16	0,37	910	1,19	2,3		5	2	0	3	1	x	x	7	x	x	
MOPE 160/230-25		230	25	0,55	900	1,67	3,2		5	2	0	3	1	x	x	8	x	x	
MOPE 160/255-40		255	40	0,75	1395	1,86	5,0		5	2	0	3	1	x	x	9	x	x	
MOPE 135/175-65	100 - 135	175	65	1,1	1410	2,65	5,0		5	2	0	3	1	x	x	A	x	x	
MOPE 135/175-100		175	100	1,5	1410	3,6	4,9		5	2	0	3	1	x	x	B	x	x	
MOPE 250/365-10	160 - 250	365	10	0,37	910	1,19	2,3		5	2	0	3	2	x	x	0	x	x	
MOPE 250/355-16		355	16	0,55	900	1,67	3,2		5	2	0	3	2	x	x	1	x	x	
MOPE 250/350-25		350	25	0,75	895	2,1	3,9		5	2	0	3	2	x	x	2	x	x	
MOPE 250/325-40		325	40	1,1	1410	2,65	5,0		5	2	0	3	2	x	x	3	x	x	
MOPE 210/275-65	160 - 210	275	65	1,5	1410	3,6	4,9		5	2	0	3	2	x	x	4	x	x	

**Dimensional sketch of MODACT® electric actuators**  
**Type No. 52 030.xxxxx, 52 031.xxxxx, 52 032.xxxxx**



Type number	A	B	C	D	E	F	G	$\varnothing H$	I	J	K
52 030.xxxxx	305	90	325	78	351	258	609	160	P13,5	99	120
52 031.xxxxx 52 032.xxxxx	376	120	355	92	457	258	715	200	P16	-	144