UNIVERSAL SERVO-DRIVE SERV 01

USE: The unit is used for continuous operating of flaps, gates, outlets, technological points and other equipment which requires exact connected two-way control.

DESIGN: The unit is block-shaped, made of stainless steel. It is connected to the technological units through a grooved output shaft. Cable entries are made through PG sleeves, connected by connectors to the electronic panel. The inner part is covered by a stainless steel sealed cover. Protection class IP54.

MOUNTING: The unit can be mounted by four M8 bolts.

DESCRIPTION: The function is based on a definable turning of the output shaft: variant A from 0 to 400 degrees (one turn), variant B from 0 to 3600 degrees (ten turns). The end positions and adjustable intermediate position are indicated by LED and optionally signalized by a relay output. The positions can be set after unfixing the top cover. The two-way communication with the control unit is realized through the 485 line and indicated by LED. A three-way switch for manual control if needed, blocking is realized by the key switch.

CONTROL: RS485 - with two-way communication
manual – three-way switch with priority to orders from the communication line
optionally a all-or-nothing remote controlled relay – needs to be stated when ordering
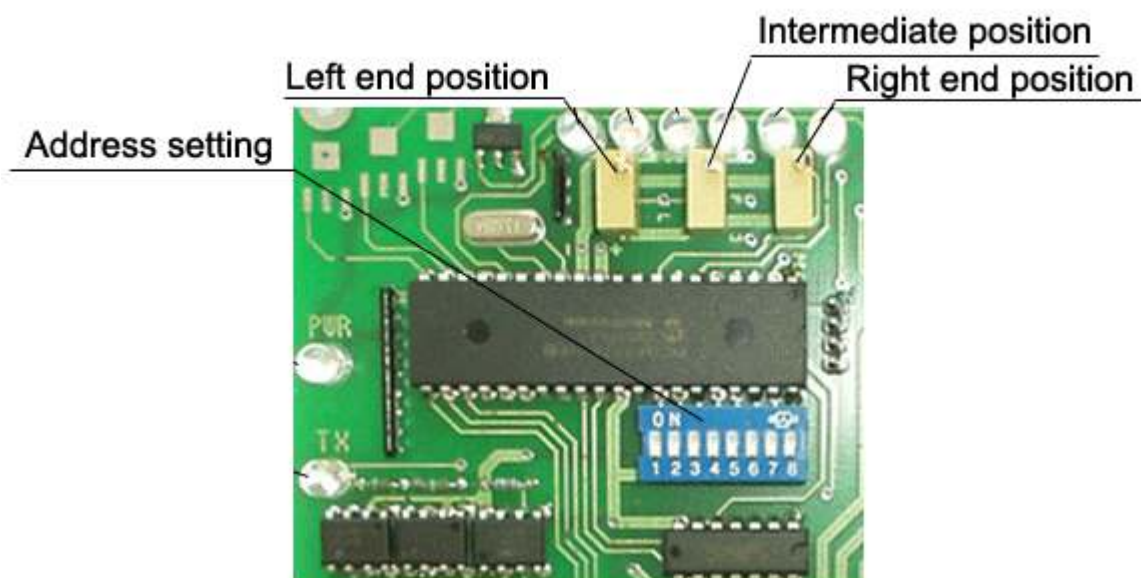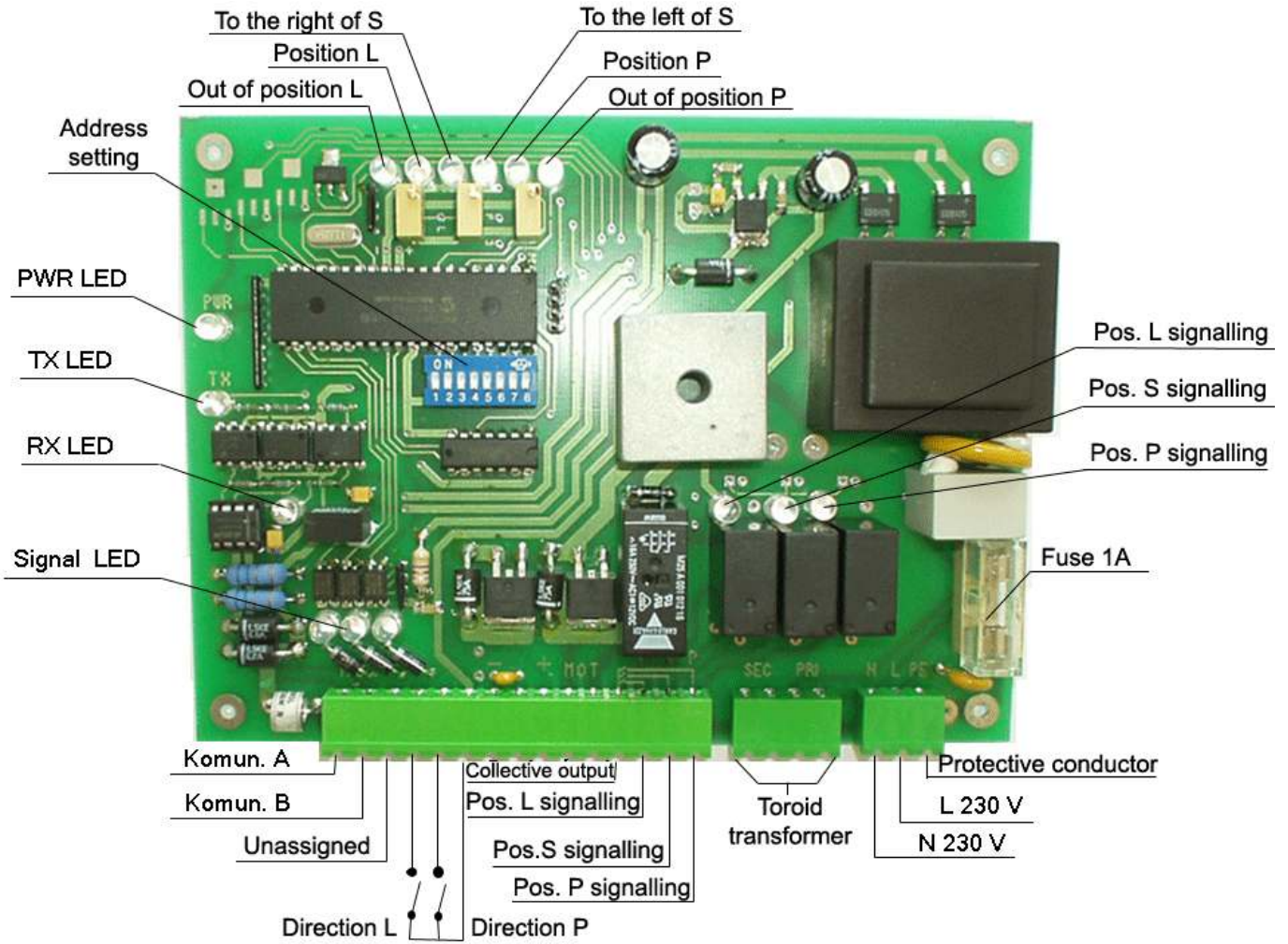
POSITIONING:

Position setting is carried out by a trimmer with simultaneous voltage checking at measuring pins or PIC terminals. A ten-revolution trimmer allows for exact setting in the range of 0-5V. The right position value needs to be lower than the left position value and the intermediate position needs to be set between the left and right position. The clockwise turning the trimmer moves the position to the left. The change can be seen only after the new turning into the set position.

setting	trimmer	PIC terminal	measuring point	basic setting
left end position	left	5	A	4V (max. 5V)
right end position	right	4	B	2,5V
intermediate position	intermediate	3	C	1V (min. 0V)

To the right of S
Position L
Out of position L

To the left of S
Position P
Out of position P

Address setting

PWR LED

TX LED

RX LED

Signal LED

Pos. L signalling
Pos. S signalling
Pos. P signalling

Fuse 1A

Komun. A
Komun. B
Unassigned

Collective output
Pos. L signalling
Pos.S signalling
Pos. P signalling

Direction L   Direction P

Toroid transformer

Protective conductor
L 230 V
N 230 V

In case the external manually control is not needed, the printed circuit is settled by DIP6 switch for position setting or for critical state control.
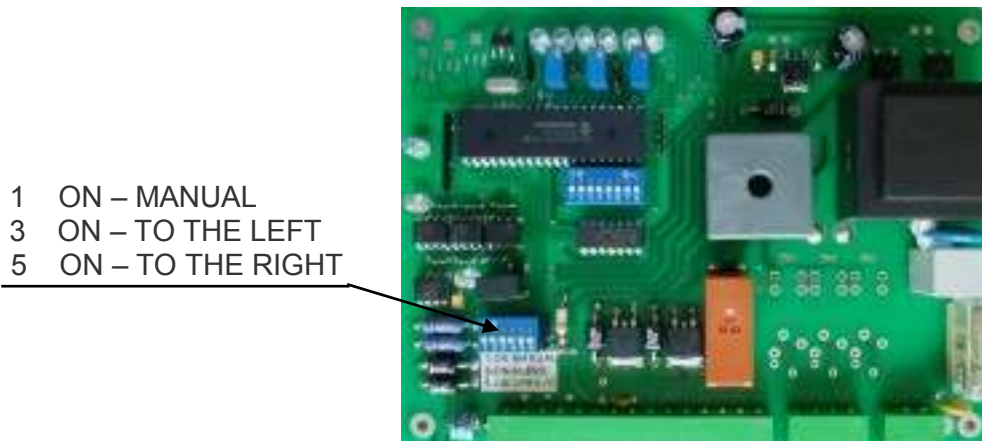
1   ON – MANUAL
3   ON – TO THE LEFT
5   ON – TO THE RIGHT

ADDRESS SETTING:

The address is set by DIP8 switch as shown in the chart. Range from 0 to 255 (decimal).

1	2	3	4	5	6	7	8
128	64	32	16	8	4	2	1

1=ON
0=OFF

Decimal address	Binary address (DIP)
1	000001
2	000010
3	000011
4	000100
.	.
10	001010
.	.
128	100000
.	.
170	101010
.	.
255	111111

COMMUNICATION DESCRIPTION:

Communication is in ASCII code with characteristics 8/N/1 (i.e. 8 data bits, none parity, 1stop bit), speed 9600 bps.

1. Servo control:

[AAA BB>

[- initial character (ASCII code 28h)
A   - address (hundreds)
A   - address (tens)
A   - address (ones)
     - space (ASCII code 20h)
BB   - control instruction
>   - terminator (ASCII code 3Eh)

2. BB Control instructions:

ASCII	Instruction	Answer
L	left end position	#AAA BCDDD
P	right end position	#AAA BCDDD
S	intermediate position	#AAA BCDDD
X1	intermediate position 1	#AAA BCDDD
X2	intermediate position 2	#AAA BCDDD
X3	intermediate position 3	#AAA BCDDD
.	.	.
.	.	.
XF	intermediate position 16	#AAA BCDDD
V	SW version	#AAA 06.03
others		actual position

3. Answer from the servo

#AAA BCDDD>

#	initial character	
AAA	device address	
	space	
B	l	left end position
	p	right end position
	s	actual intermediate position
C	e	error state
	1	device is all right
BC	00	engine alive
DDD	relative value from the sensor	
>	terminator	

Communication example:

Instruction:

                <170 L>   turn engine to the left position

Answer:

	#170 p1098	servo is leaving the right end position
or	#170 s1098	servo out of the end positions
or	#170 0e058	servo in error state
or	#170 00108	servo alive

TECHNICAL PARAMETERS:

Power supply …….…………………………… 230V/50 Hz
Protection…………………………………………..IP 54
Input………………………….............………… max. 60 W
Output shaft rotation speed......…….......……... 0,1ot / sec
Twist moment……......………………….…….…80Nm
Turning accuracy ....….……………….......... min 2,5°
Turning angle ...…………………………….400 or 3600°
Output ......…….…RS485, relay contact 250V AC/ 1A
Max. environment temperature……..…...………. +55 °C
Gross weight ………………………...……...…… 8,3kg
Operation mode ....interrupted operation