

SUMMARY

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1. MULTI-POSITIONER

The converter can execute up to 12 point-to-point completely programmable movements. These movements can be selected in sequence or individually.

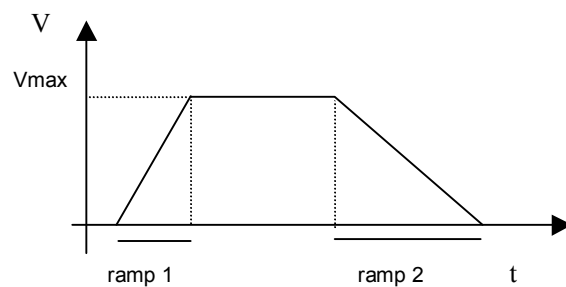
To enable the multipositioner: **c70 = 1**. The standard positioner must be already enabled (c26=1 and c35=1).

WARNING: while the multipositioner is enabled parameters P02, P08, P13, P14, P18 are used by the internal SW, thus the value can be overwritten.

1.1. PARAMETERS FOR THE MOVEMENTS

Following parameters can be set for each movement:

- movement number N
- Vmax (%)
- ramp1 (ms)
- ramp2 (ms)
- displacement (enc. puls.)



1.2. SEQUENCE

Set **c71 = 0** to enable the SEQUENCE MODE; in **c72** must be set the number of the last movement in the sequence (that number cannot exceed 12). Following commands are allowed for the sequence; the user can give the commands through a logic input or a software switch (logic OR):

L.I. function	sw switch	command	description
22	c73	FIRST	execute the first movement of the sequence
23	c74	PREV	execute the previous movement of the sequence
24	c75	NEXT	execute the next movement of the sequence
25	c76	LAST	execute the last movement of the sequence
26	c77	RESET	reset the sequence
27	c78	SKIPR	skip the previous movement
28	c79	SKIPF	skip the next movement
29	c80	REPEAT	repeat actual movement

The numbers in the first column can be programmed in the software switches c1, c3, c4, c5, c6, c15, c16 to select the function of Logic Inputs.

1.3. INDIVIDUAL SELECTION THROUGH LOGIC INPUTS

Set **c71 = 1** to enable INDIVIDUAL SELECTION MODE through L.I.

The selection of the movement is made by a binary code set through the logic inputs:

L.I. function	sw switch	descrizione
30	c81	Start command
32	/	bit 0 of the movement selection code
33	/	bit 1 of the movement selection code
34	/	bit 2 of the movement selection code
35	/	bit 3 of the movement selection code

The configuration of the logic inputs is read at the low-to high commutation of the start command. The start command can be given to the converter through L.I. or software command c81=1. The switch c81 will be reset automatically by the converter.

EXAMPLE 1:

settings: c5 = 32 (LI5 is bit 0), c6 = 33 (LI6 is bit 1), c7 = 34 (LI7 is bit 2), c8 = 35 (LI8 is bit 3).

suppose that when start goes high:

LI5 = H → bit0 = 1
 LI6 = L → bit1 = 0
 LI7 = H → bit2 = 1
 LI8 = L → bit3 = 0

the binary code obtained is 0101, thus the selected movement is number:

$$N = 8 \cdot \text{bit3} + \text{bit2} \cdot 4 + \text{bit1} \cdot 2 + \text{bit0} \cdot 1 = 4 + 1 = 5$$

EXAMPLE 2:

With the same settings of EXAMPLE 1, suppose that the desired movement is n. 7:

7 dec. = 111 binary :

bit0 = 1 → LI5 = H
 bit1 = 1 → LI6 = H
 bit2 = 1 → LI7 = H
 bit3 = 0 → LI8 = L

1.4. INDIVIDUAL SELECTION THROUGH SOFTWARE SWITCH

Set **c71 = 2** to enable INDIVIDUAL SELECTION MODE through software switch. The user must set in **c89** the number of the desired movement.

If this mode is selected, the L.I. programmed with function 32÷35 are ignored, and only c89 is considered. For the start command see the previous paragraph.

1.5. DISPLAYS AND LOGIC OUTPUTS

New outputs have been added to the standard version : the outputs (to be programmed in c7, c8, c18) for the end-of-movement signals are as follows:

L.O. function	description
17	movement n. 1 executed (stop in position n. 1)
18	movement n. 2 executed (stop in position n. 2)
19	movement n. 3 executed (stop in position n. 3)
20	movement n. 4 executed (stop in position n. 4)
21	movement n. 5 executed (stop in position n. 5)
22	movement n. 6 executed (stop in position n. 6)
23	movement n. 7 executed (stop in position n. 7)
24	movement n. 8 executed (stop in position n. 8)
25	movement n. 9 executed (stop in position n. 9)
26	movement n. 10 executed (stop in position n. 10)
27	movement n. 11 executed (stop in position n. 11)
28	movement n. 12 executed (stop in position n. 12)

In the keypad are displayed following information:

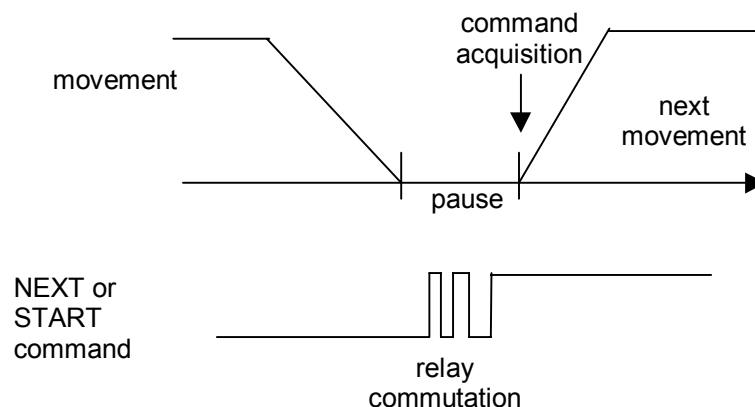
	descrizione
d22	n. encoder pulses made in the actual movement (mod 20000)
d23	n. encoder pulses made in the actual movement (multiple of 20000)
d24	n. of the actual movement (1÷12)

The same informations can be read from serial line, but the format is a little different:

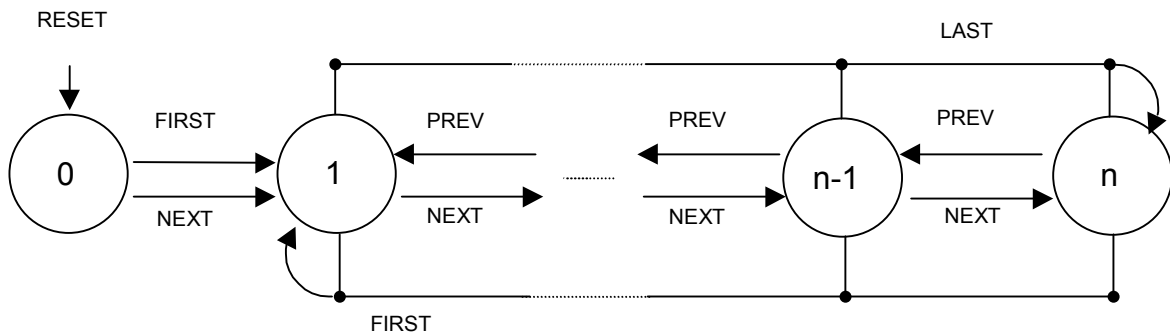
	descrizione
d22	n. encoder pulses made in the actual movement (Least significant word)
d23	n. impulsi encoder percorsi nello spost. attuale (Most significant word)
d24	n. of the actual movement (1÷12)

WARNING: the user can insert a time pause after the end of a movement, in which commands are rejected: that time pause can be set in P100 (0÷500ms).

example:



State diagrams of the sequence: the number of the movements is in the circles, and the arrows simbolize the commands:

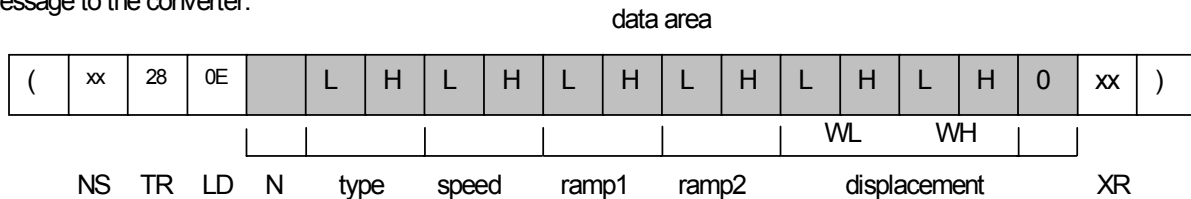


1.6. SERIAL LINE SETTINGS: TDEMACNO PROTOCOL

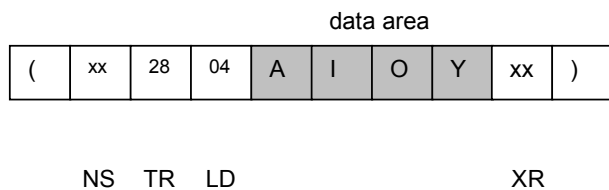
WARNING: the movements can be programmed only through serial line.

Data can be set through serial line with the following data frame (movement number N); that is an extension of the TDEMACNO serial protocol:

message to the converter:

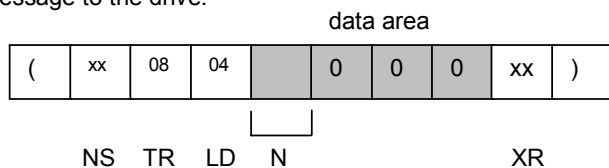


The answer from the drive is equal to “machine status” (see manual). In particular byte “Y” signals if settings are correct.



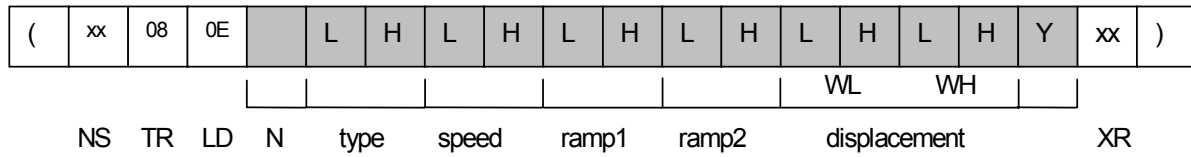
For the meaning of the bytes NS, TR, LD, Y, XR see user manual.
Data can be requested to the converter as follows (movement number N):

Message to the drive:



Answer from the converter:

data area



WARNING: the data of the movement can be saved in EEPROM giving the command c43 = 1.

The field speed is expressed as a percentage of the maximum speed: 16383 corresponds to 100.0% of maximum speed; -8192 corresponds to -50.0% of maximum speed.
The other fields are represented without conversion.

DMBL MULTI-POSITIONER MANUAL V1.03

The contents of this manual is referred to 6.04 software version

If you have any questions about equipment installation or working,
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