EM-339A-PLI

Read status command. 16 bytes starting from address 41101.

Byte array index	Term	Remark	Type
0	Bus mode	0=Bus not controlling direction, 1=Bus controls direction, 2=Bus control with timeout, stop at timeout, 3=Bus control with local buttons stop, 4=Both 2 and 3 in use. Returns 0 in bus mode 2 when timeout and in bus mode 3 when local stop and with both in mode 4.	U8
1	Direction	0=off, 1=Forward, 2=Stop, 3=Backward	U8
2	Motor A current:	Measured motor current.	U8
3	Motor B current:	Measured motor current.	U8
4	Current limit	Motor current limit value.	U8
5	Motor A position counter	msb part of the 16bit value.	
6	Motor A position counter	16bit motor position pulse counter value lsb part.	U16
7	Motor B position counter	msb part of the 16bit value.	
8	Motor B position counter	16bit motor position pulse counter value lsb part.	U16
9	Supply voltage	Measured supply voltage value.	U8
10	Motor A pwm value	Motor output pwm value 0-255	U8
11	Motor B pwm value	Motor output pwm value 0-255	U8
12	Fault code	1=Homing, or position lost, 2=over current, 3=No pulses detected, 4=Position dif. too high, 5=Over voltage. 6=Safety edge activated, 7=Bus timeout with bus mode 2 and 4.	U8
13	Position status	Value shows where motors are regarding to move area parameters. rev stop=1, rev slow down=2, middle area=3, fwd slow down=4, fwd stop=5.	U8
14	Inputs	Fwd,rev,stop,home and emergency inputs status on/off shown as bitmap: Fwd=bit0,rev=bit1,stop=bit2, home=bit3, emergency=bit4. Example: bitmap 0b00001001 means fwd and home inputs are on, others are off. Example: bitmap 0b00001001 means fwd and home inputs are on, others are off.	U8
15	Safety edge input	Analog value of safety edge input.	U8

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Control command. 12 bytes starting from address 41001.

Byte array index	Term	Remark	Type
0	Bus mode	* 0=Bus not controlling position, 1=Bus controls position, 2=Bus control with timeout, stop at 5s timeout, 3=Bus control with local buttons stop, 4=Both 2 and 3 in use. Returns to 0 in bus mode 2 when timeout and in bus mode 3 when local stop and with both in mode 4. To continue, reset this by first setting bus mode to 0 and then again to wanted value. When timeout occurs, on board led shows timeout fail 7 blinks, motors are stopped. This can be reset locally by pressing shortly home/reset button. Or by bus with first setting bus mode to 0 and then to some value.	U8
1	Direction command	0=off, 1=Forward, 2=Stop, 3=Backward, 4=Activates home run, 5=Reset faults, with fail 7 you need also set bus mode to 0.	U8
2	Speed	Motor speed setting. 0-255, 255 = 100%. This can be used to overwrite driver's own speed value. With 0 driver uses speed value regarding to speed and slowdown parameters. However actual speed value (= motor voltage) is affected by various things like current limit, compensation, voltage regulation and synchronization. When this is used slow down positions aren't affecting speed because this value overwrites it.	U8
3	Current limit	Motor current limit value, 0-255. This can be used to overwrite driver's own current limit value. With 0 driver uses its own value from parameter. Value 10=1A and so on.	U8
4	Backward limit	msb part of the 16bit value.	
5	Backward limit	16bit stop position as pulses when driving backward. When these limits are 0, then driver uses values given by parameters.	U16
6	Backward slow down	msb part of the 16bit value.	
7	Backward slow down	16bit slowdown position when driving backward. This value is added to backward limit so changing backward limit keeps the slow down distance still the same.	U16
8	Forward slow down	msb part of the 16bit value.	

9	Forward slow down	16bit slowdown position when driving forward. This value is decreased from forward limit so changing forward limit keeps the slow down distance still the same.	U16
10	Forward limit	msb part of the 16bit value.	
11	Forward limit	16bit stop position when driving forward.	U16

Parameters read/write Starting address 40101

Byte array index	Term	Remark	Type
0	Parameter 1	msb part of the 16bit value.	
1	Parameter 1	Parameter 1	U16
2	Parameter 2	msb part of the 16bit value.	
3	Parameter 2	Parameter 2	U16
4	..		
5	..		
6	Parameter N	msb part of the 16bit value.	
7	Parameter N	Up to 50 parameters. Number of parameters can be read with device info.	U16

There can be 8bit and 16bit parameters in a device, but all parameters are transferred as 16bit. With 8bit parameters msb is ignored.
Writing parameters also saves them to non-volatile memory which can take about 50ms – 150ms.
Response message is sent when saving is done.
Please note parameter memory can last only 100 000 saving times,
when parameters like speed and current limit needs to be adjusted on the fly use control command instead.

Device info. 20 bytes starting from address 40001.

Byte array index	Term	Remark	Type
0	Protocol version	Value = 2	U8
1	Protocol minor version	Default = 0 Minor version can be used to distinct different control and status message configurations.	U8
2	Not in use		U8
3	Device version	Version of the connected device. 10 means v1.0 in datasheet, 25 is v2.5 and so on.	U8
4	Not in use		U8
5	Parameters	Number of parameters in a device, see datasheet for parameter descriptions	U8
6	No in use		U8
7	Name letters	Number of letters in a device name. 1-11.	U8
8	Char 1	Name characters ASCII. Unused characters have value 0.	U8
9	Char 2		U8
10	Char 3		U8
11	Char 4		U8
12	Char 5		U8
13	Char 6		U8
14	Char 7		U8
15	Char 8		U8
16	Char 9		U8
17	Char 10		U8
18	Char 11		U8
19	Not in use		U8