

Read status 1

Data bytes	Value/range	Description
Slave address	1 – 247	
Read holding registers	3	
Address msb	0x04	Address 41101
Address lsb	0x4C	
Quantity msb	0	It can be selected to read all or only part of the status data. When zero is used all status data is returned.
Quantity lsb	0-7	Note that quantity is as 16bit registers, but data can have 8bit, 16bit and 32bit values.
CRC lsb	0-255	Read only status data that is needed to keep com. fast.
CRC msb	0-255	

Read status 1 response

Data bytes	Value/range	Description
Slave address	1 – 247	
Read holding registers	3	
Byte count	2-14	
Bus mode	0-6	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. 5=Bus control selected by input. 6=Local control selected by input. 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 6 blinks, motor is stopped. This can be reset locally by pressing shortly reset button. Or by bus with first setting bus mode to 0 and then to some value.
Direction	0-3	0=off, 1=Forward, 2=Stop, 3=Backward
Motor current	0-255	Measured motor current 10=1A.
Current limit	0-255	Motor current limit value.
Set position, msb	0-3	Servo set position value, 16bit, range 0-1023.
Set position, lsb	0-255	
Motor position, msb	0-3	Servo motor feedback position value, 16bit, range 0-1023.
Motor position, lsb	0-255	
Supply voltage	0-255	Measured supply voltage value. Value 25 = 10V.
Motor PWM	0-255	Motor output pwm value.
Fault code	0-9	1=overcurrent, 2=pulses missing, 3=overtemp, 4=overvoltage, 5=driving timeout, 6=bus com. Timeout
Set input	0-255	Analog value of position set input.
Inputs	0-7	Limit sw fw, limit sw bw, reset inputs state on/off shown as bitmap: Limit sw fw=bit0, limit sw bw=bit1, reset=bit2. Example: bitmap 0b00000101 means limit sw fw and rese inputs are on, others are off.
Not in use	0	Zero is added to keep byte count even if needed by modbus implementation.
CRC lsb	0-255	
CRC msb	0-255	

Control command

Data bytes	Value/range	Description
Slave address	1 – 247	
Write multiple registers	16	
Address msb	0x03	Address 41001
Address lsb	0xE8	
Quantity msb	0	
Quantity lsb	1-3	
Byte count	2-6	
Bus mode	0-4	* 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 6 blinks, motor is stopped. This can be reset locally by pressing shortly reset button. Or by bus with first setting bus mode to 0 and then to some value.
Servo set position, msb	0-3	16bit servo set value. Range 0-1023. To drive, bus has to be controlling position with bus mode cmd.
Servo set position, lsb	0-255	
Command	0,5,6,7	0=no command, return to 0 after command is performed, 5=Force drive to bw direction, 6=stop, 7=clear fault. When fault is cleared from status message return this value to 0.
Speed	0-255	Maximum speed value as motor voltage. Speed is proportional to supply voltage. f.ex. With value 127 maximum voltage to motor is 50% of supply voltage. With 0 parameter value is used instead.
Current limit	0-255	Current limit value. With 0 parameter value is used instead. 10 = 1A.
CRC lsb	0-255	
CRC msb	0-255	

* Local/bus controlling can be selected by various options.

It can be selected that the bus only controls the driver, or bus controls until timeout is detected or until a local input command is used.

Additionally its possible to use local/bus control parameter to set limit sw bw input to work as local/bus control selection. In that case the original input function is not used.

When set with parameter, this bus mode is constantly 5 or 6 depending on the input state. In this bus mode, value is only indicative and can not be changed, local/bus selection input controls it.

On power up local/bus control selection returns to local when local/bus parameter is not set = 0.

Control command response

Data bytes	Value/range	Description
Slave address	1 – 247	
Write multiple registers	16	
Address msb	0x03	Address 41001
Address lsb	0xE8	
Quantity msb	0	
Quantity lsb	1-3	
CRC lsb	0-255	
CRC msb	0-255	