

Controller type ----- Protocol	XUMU and XLA		Stages				Control interface	Input / Output
	Integrated controller (open-loop)	XD-OEM PCB controller (closed-loop)	XD-C PCB controller (closed-loop)	XD-C controller (closed-loop)	XD-M controller (closed-loop)	XD-19 controller (closed-loop)		
Serial communication (ASCII over virtual COM)	USB-C port on breakout board	USB mini B	USB C	USB C	USB C	USB B	Xeryon Windows Interface Python C++ Labview Matlab ASCII code (terminal) (The complete list of commands is available in the controller manual)	Input / Output
UART (TTL/CMOS)	6 pin header on breakout board	IO header	IO header	N/A	Optional	Optional		Input / Output
UART (RS232)	N/A	RS232 on piggyback board	N/A	N/A	Dsub 9 pin	Dsub 9 pin		Input / Output
Ethernet	N/A	Ethernet on piggyback board	N/A	N/A	Optional	Optional		Input / Output
RS422	N/A	RS422 on piggyback board	N/A	N/A	N/A	Optional	Contact Xeryon support team	Input / Output
I2C	N/A	Optional	IO header	N/A	Optional	Optional		Input / Output
EtherCat	N/A	EtherCat on piggyback board	N/A	N/A	N/A	N/A	EtherCat control interface (TwinCat, ...)	Input / Output
Step on pulse	N/A	IO header	IO header	N/A	Dsub 15 / 25	Dsub 15 / 25	Pulse 3,3V or 5V	Input
A quad B input (step on pulse)	N/A	IO header	IO header	N/A	Dsub 15 / 25	Dsub 15 / 25		Input
PWM	N/A	IO header	IO header	N/A	Dsub 15 / 25	Dsub 15 / 25		Input
Analog control (speed & direction)	N/A	IO header	IO header	N/A	Dsub 15 / 25	Dsub 15 / 25	Voltage 0 - 10V	Input
PWM	ZIF connector / 8 pin screw terminal on breakout board	N/A	N/A	N/A	N/A	N/A	Pulse 3,3V	Input
Analog control (speed & direction)	ZIF connector / 8 pin screw terminal on breakout board	N/A	N/A	N/A	N/A	N/A	Voltage 0 - 3,3V	Input
A quad B encoder output	Optional (requires encoder)	Optional (requires encoder)	IO header	N/A	Optional	Optional	Signal: Encoder output	Output
Digital pulse 3,3V	N/A	IO header	IO header	N/A	Dsub 15 / 25	Dsub 15 / 25	Signal: Trigger pulse on specific positions	Output
Digital signal 3,3V	N/A	IO header	IO header	N/A	Dsub 15 / 25	Dsub 15 / 25	Signal: Index found	Output
Digital signal 3,3V	N/A	IO header	IO header	N/A	Dsub 15 / 25	Dsub 15 / 25	Signal: Position reached	Output
Digital signal 3,3V	N/A	Optional	IO header	N/A	Optional	Optional	Signal: Limit passed	Output
Digital signal 3,3V	N/A	IO header	IO header	N/A	Dsub 15 / 25	Dsub 15 / 25	Signal: Error	Output