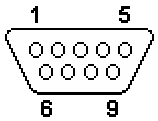
MSX-Computer Joystick connector

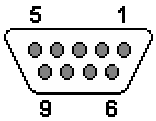
(Giovanni R. Nunes)

Connectors:

On the computer:
Sub-D 9 pins (male)



On the Joystick / Mouse:
Sub-D 9 pins (female)



Joystick connections:

Pin	Signal	Direction
1	FWD	I
2	BACK	I
3	LEFT	I
4	RIGHT	I
5	+5V	
6	TRG 1	I/O
7	TRG 2	I/O
8	OUT	O
9	GND	

If a mouse is connected to a joystick-port, the pins are used as follows:
(Laurens Holst and Giovanni R. Nunes)

Mouse connections:

Pin	Signal	Direction
1	data b0	(in)
2	data b1	(in)
3	data b2	(in)
4	data b3	(in)
5	+5V	(out)
6	trigger 1	(in)
7	trigger 2	(in)
8	strobe	(out)
9	ground	

The system works as follows:

The MSX Mouse sends 2 signed bytes to the computer, X and Y. This byte must be added to the current X and Y location, so it is a relative movement. So X=0 means X is the same, X=1 means X=+1 and X=255 means X=-1. This is very easy to implement, however it poorly supports mouse speed control, because it's a digital signal. Well, anyways, those 2 bytes are transferred in 4 parts. The computer reads pins 1-4 four times, afterwards signalling the mouse to ready the next 4 bits by complementing pin 8.
