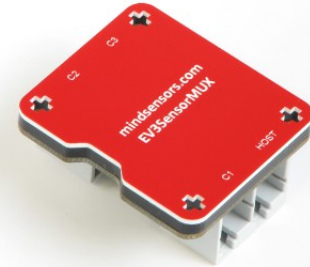


What is EV3 Sensor Multiplexer

EV3 Sensor Multiplexer is an in-line adapter to connect up to three EV3 sensors to NXT brick, EV3 brick, Arduino using [EVShield](#) or NXShield, and Raspberry Pi using [PiStorms](#) or BrickPi on a single port.



****Having difficulty getting started?**
Check out the Getting Started Guide at
http://www.mindsensors.com/index.php?controller=attachment&id_attachment=164

Connections

Connect the Host port to your NXT or EV3 (or [EVShield](#) or [PiStorms](#)).

Connect your EV3 sensors to 1 of 3 channels.

Supported Sensors

Supported sensors as follows:

Sensor Name	Supported Modes	Mode Number	bytes	Expected data
EV3 Color	ReflectedLight	0	2	0(very dark) to 100(very light)
	AmbientLight	1	2	0(very dark) to 100(very light)
	Color	2	2	0 to 7
EV3 Gyro	Angle	0	2	-32768 to 32767 degrees
	Rate	1	2	-440 to 440 degrees/second
EV3 Infrared	Proximity Beacon	0	1	0(very close) to 100(far away)
		1	8	proximity: (see above) heading: -25 to 25
	Remote	2	4	0 to 11
EV3 Ultrasonic	CM	0	2	3 to 255 cm
	Inches	1	2	1 to 99 in
	Presence	2	1	0(False) to 1(True)
EV3 Touch	State	15	1	0(not pressed) to 1(pressed)

*****Chart only reflects modes supported by the Mindstorms block.**
Other possible modes may work with other programming environments.

For details about data returned by each sensor or modes, please refer to EV3 IDE help pages.

Programming Techniques for EV3 Sensor Multiplexer

EV3:

To use capabilities of the sensor, please download EV3 blocks available at following URL:

http://www.mindsensors.com/index.php?controller=attachment&id_attachment=161

Installation instructions for EV3 block are available at:

<http://www.mindsensors.com/content/13-how-to-install-blocks-in-ev3>

Download EV3 sample program from following URL and modify it to suit your needs.

http://www.mindsensors.com/index.php?controller=attachment&id_attachment=162

NXT-G:

Not supported. It is recommended to use the new EV3 software for your NXT programming.

NXC:

Download the sample programs and library file for the EV3 Sensor Adapter available at following location, and include the library file it in your program by #include directive. Be sure to modify the I2C address for the channel of the EV3 Sensor Multiplexer.

http://www.mindsensors.com/index.php?controller=attachment&id_attachment=299

RobotC:

To be implemented.

Advanced Information

I2C Bus address

Factory Default Addresses:

Channel 1: 0xA0

Channel 2: 0xA2

Channel 3: 0xA4

I2C Registers:

The EV3 Sensor Multiplexer appears as a set of registers with following interpretation and operations.

Register	Read	Write
0x00-0x07	Software version - <i>Vx.nn</i>	-
0x08-0x0f	Vendor Id - <i>mndsnsrs</i>	-
0x10-0x17	Device ID - <i>Ev3SMux</i>	-
Sensor data		
0x52	Current selected mode.	Set sensor mode
0x54	Sensor read data	-
0x55	Sensor read data (depending on sensor and mode)	-
0x56	Sensor read data (depending on sensor and mode)	-
0x57	Sensor read data (depending on sensor and mode)	-
0x58	Sensor read data (only for infrared sensor)	-
0x59	Sensor read data (only for infrared sensor)	-
0x5A	Sensor read data (only for infrared sensor)	-
0x5B	Sensor read data (only for infrared sensor)	-
0x74	Ready Flag (returns value of 1 if the EV3 sensor is ready to send data, 0 if it is not)	