

Robot Modes & Switch Sequences



UK Electronics
Skills Foundation

The modes are shown on the two-character seven-segment display on the robot. The switches allow you to select a mode, for example:

'2A_2D_A' = press A twice, press D twice, press A once

This will put the robot into mode J2 = allows the switch controller to be used like a joystick (forwards/backwards and left/right)

Mode	Name	Switch sequence	Notes
r0	Modes using the switch controller to guide the robot		
J0	Forwards/backwards/spin mode – spin driving with switch controller	3A	Left switch controls the left motor and the right switch controls the right motor
J1	Stop/slow/fast curve/spin forward mode – spin driving with switch controller	2A_D_A	No reverse in this mode Used in Activity 2
J2	Forwards/backwards/left/right – driving with switch controller	2A_2D_A	The left switch controls forwards/backwards movement and the right switch controls left and right movement
r1	Simple activity modes		
A0	Run forwards for a period of time	A_D_2A	Used in activity 5
A1	Run backwards for a period of time	A_D_A_D_A	
A2	Spin right for a period of time	A_D_A2_D_A	
A3	Spin left for a period of time	A_D_A_3D_A	
A4	Run test sequence	A_D_A4_D_A	
A5	Run demo sequence	A_D_A5_D_A	
r2	Bump modes		
b0	Line bump – detect and reverse away from lines made from black tape	A_2D_2A	Bump perimeter formed with black tape
b1	Bug line bump – same as 'b0' but avoid lines in a manner more like a mouse or a bug	A_2D_A_D_A	Bump perimeter formed with black tape
b2	Wall bump – detect obstacles with bump switches and reverse away	A_2D_A_2D_A	Uses switches to detect bump against solid objects
r3	Follow modes		
F0	Follow black tape lines		
F1	Follow light source		
r4	Programming modes		
P0	Input distance commands from keys		Programming using the robot switches
S0	Run stored sequence		
S1	Input sequence from keys		
S2	Save sequence to internal memory		
S3	Get sequence from internal memory		
S4	(test mode)		
P1	Input sequence from a black/white strip		Inputting a program with a barcode card
S0	Run stored sequence		

Mode	Name	Switch sequence	Notes
S1	Scan a strip of commands		
S2	Save sequence to internal memory		
S3	Get sequence from internal memory		
S4	(test mode)		
r5	Sketch/drawing modes		
S0	Draw a spiral		
S1	Spirograph mode		
r6	Lab modes		
L0	Stopwatch mode		
r7	Distance modes		
d0	unused		
d1	unused		
d2	Calibrate the wheel distance sensors		Necessary before first use of "r4/P0" mode