

Bill of Materials for ES24 - Programmer Extension Full Kit V0.0

Item	Description	Qty	Designator	Package
	HARDWARE			
1	M3 Thumbscrew	4		-
			NB: Construct-A-Rack	
2	M3 x 6mm Bolt PH	4		-
			NB: Doefper Compatible Rails	
	PANEL			
3	ES24 - Programmer Extension Front Panel A	1		-
	KITS			
4	ES24 - Programmer Extension PCB Set V0.0	1		-
5	ES24 - Programmer Extension Hardware Kit V0.0	1		-
6	ES24 - Programmer Extension Component Kit V0.0	1		-

Bill of Materials for ES24 - Programmer Extension Component Kit V0.0 - Stage 1

Item	Description	Qty	Designator	Package
CAPACITOR				
1	470pF 5% C0G	1	C101	RAD-0.2N
2	10nF 63V Polyester	1	C102	RAD-0.2
3	22nF 63V Polyester	1	C103	RAD-0.2
CONNECTOR				
4	1x2 Pin 20mm Header	1	D103	2.54MM
5	1x4 Pin 20mm Header	3	S101, S102, S103	-
6	IDC20 RA Box Header	1	J201	-
DIODE				
7	1N4148	5	D101, D102, D104, D105, D106	DIODE-0.3
OPTO-ELECTRONIC				
8	3mm Yellow LED	1	D103	2MA
POTENTIOMETER				
9	100KB LIN - 18T Spline	3	P101, P102, P103	ALPHA 16MM
RESISTOR				
10	1K0 1% 0.5W Metal Film	1	R112	AXIAL-0.4
11	1K2 1% 0.5W Metal Film	1	R110	AXIAL-0.4
12	1K3 1% 0.5W Metal Film	1	R111	AXIAL-0.4
13	47K 1% 0.5W Metal Film	3	R101, R102, R109	AXIAL-0.4
14	100K 1% 0.5W Metal Film	1	R104	AXIAL-0.4
15	150K 1% 0.5W Metal Film	3	R105, R106, R108	AXIAL-0.4
16	220K 1% 0.5W Metal Film	3	R113, R114, R115	AXIAL-0.4
17	470K 1% 0.5W Metal Film	1	R107	AXIAL-0.4
18	1M0 1% 0.5W Metal Film	1	R103	AXIAL-0.4
SWITCH				
19	SPDT PB PCB RAEXT [ON-MOM]	1	S103	-
20	SPDT PCB RAEXT [ON-OFF-ON]	2	S101, S102	-

Bill of Materials for ES24 - Programmer Extension Component Kit V0.0 - Stage2

Item	Description	Qty	Designator	Package
CAPACITOR				
1	470pF 5% C0G	1	C101	RAD-0.2N
2	10nF 63V Polyester	1	C102	RAD-0.2
3	22nF 63V Polyester	1	C103	RAD-0.2
CONNECTOR				
4	1x2 Pin 20mm Header	1	D103	2.54MM
5	1x4 Pin 20mm Header	3	S101, S102, S103	-
6	IDC20 RA Box Header	1	J201	-
DIODE				
7	1N4148	5	D101, D102, D104, D105, D106	DIODE-0.3
OPTO-ELECTRONIC				
8	3mm Yellow LED	1	D103	2MA
POTENTIOMETER				
9	100KB LIN - 18T Spline	3	P101, P102, P103	ALPHA 16MM
RESISTOR				
10	1K0 1% 0.5W Metal Film	1	R112	AXIAL-0.4
11	1K2 1% 0.5W Metal Film	1	R110	AXIAL-0.4
12	1K3 1% 0.5W Metal Film	1	R111	AXIAL-0.4
13	47K 1% 0.5W Metal Film	3	R101, R102, R109	AXIAL-0.4
14	100K 1% 0.5W Metal Film	1	R104	AXIAL-0.4
15	150K 1% 0.5W Metal Film	3	R105, R106, R108	AXIAL-0.4
16	220K 1% 0.5W Metal Film	3	R113, R114, R115	AXIAL-0.4
17	470K 1% 0.5W Metal Film	1	R107	AXIAL-0.4
18	1M0 1% 0.5W Metal Film	1	R103	AXIAL-0.4
SWITCH				
19	SPDT PB PCB RAEXT [ON-MOM]	1	S103	-
20	SPDT PCB RAEXT [ON-OFF-ON]	2	S101, S102	-

Bill of Materials for ES24 - Programmer Extension Component Kit V0.0 - Stage3

Item	Description	Qty	Designator	Package
CAPACITOR				
1	470pF 5% C0G	1	C101	RAD-0.2N
2	10nF 63V Polyester	1	C102	RAD-0.2
3	22nF 63V Polyester	1	C103	RAD-0.2
CONNECTOR				
4	1x2 Pin 20mm Header	1	D103	2.54MM
5	1x4 Pin 20mm Header	3	S101, S102, S103	-
6	IDC20 RA Box Header	1	J210	-
DIODE				
7	1N4148	5	D101, D102, D104, D105, D106	DIODE-0.3
HARDWARE				
8	9mm Earth Tag	1	P101	-
OPTO-ELECTRONIC				
9	3mm Yellow LED	1	D103	2MA
POTENTIOMETER				
10	100KB LIN - 18T Spline	3	P101, P102, P103	ALPHA 16MM
RESISTOR				
11	1K0 1% 0.5W Metal Film	1	R112	AXIAL-0.4
12	1K2 1% 0.5W Metal Film	1	R110	AXIAL-0.4
13	1K3 1% 0.5W Metal Film	1	R111	AXIAL-0.4
14	47K 1% 0.5W Metal Film	3	R101, R102, R109	AXIAL-0.4
15	100K 1% 0.5W Metal Film	1	R104	AXIAL-0.4
16	150K 1% 0.5W Metal Film	3	R105, R106, R108	AXIAL-0.4
17	220K 1% 0.5W Metal Film	3	R113, R114, R115	AXIAL-0.4
18	470K 1% 0.5W Metal Film	1	R107	AXIAL-0.4
19	1M0 1% 0.5W Metal Film	1	R103	AXIAL-0.4

Bill of Materials for ES24 - Programmer Extension Component Kit V0.0 - Stage3

Item	Description	Qty	Designator	Package
	SWITCH			
20	SPDT PB PCB RAEXT [ON-MOM]	1	S103	-
21	SPDT PCB RAEXT [ON-OFF-ON]	2	S101, S102	-
	TRANSISTOR			
22	BC557B PNP Transistor	3	Q101, Q102, Q103	TO-92
23	BC547B NPN Transistor	1	Q104	TO-92

Bill of Materials for ES24 - Programmer Extension Component Kit V0.0 - Stage 4

Item	Description	Qty	Designator	Package
CAPACITOR				
1	470pF 5% C0G	1	C101	RAD-0.2N
2	10nF 63V Polyester	1	C102	RAD-0.2
3	22nF 63V Polyester	1	C103	RAD-0.2
CONNECTOR				
4	1x2 Pin 20mm Header	1	D103	2.54MM
5	1x4 Pin 20mm Header	3	S101, S102, S103	-
6	IDC20 RA Box Header	1	J201	-
DIODE				
7	1N4148	5	D101, D102, D104, D105, D106	DIODE-0.3
OPTO-ELECTRONIC				
8	3mm Yellow LED	1	D103	2MA
POTENTIOMETER				
9	100KB LIN - 18T Spline	3	P101, P102, P103	ALPHA 16MM
RESISTOR				
10	1K0 1% 0.5W Metal Film	1	R112	AXIAL-0.4
11	1K2 1% 0.5W Metal Film	1	R110	AXIAL-0.4
12	1K3 1% 0.5W Metal Film	1	R111	AXIAL-0.4
13	47K 1% 0.5W Metal Film	3	R101, R102, R109	AXIAL-0.4
14	100K 1% 0.5W Metal Film	1	R104	AXIAL-0.4
15	150K 1% 0.5W Metal Film	3	R105, R106, R108	AXIAL-0.4
16	220K 1% 0.5W Metal Film	3	R113, R114, R115	AXIAL-0.4
17	470K 1% 0.5W Metal Film	1	R107	AXIAL-0.4
18	1M0 1% 0.5W Metal Film	1	R103	AXIAL-0.4
SWITCH				
19	SPDT PB PCB RAEXT [ON-MOM]	1	S103	-
20	SPDT PCB RAEXT [ON-OFF-ON]	2	S101, S102	-

Bill of Materials for ES24 - Programmer Extension Component Kit V0.0 - Stage 4

Item	Description	Qty	Designator	Package
	TRANSISTOR			
21	BC557B PNP Transistor	3	Q101, Q102, Q103	TO-92
22	BC547B NPN Transistor	1	Q104	TO-92

Bill of Materials for ES24 - Programmer Extension Hardware Kit V0.0 - Stage2

Item	Description	Qty	Designator	Package
CONNECTOR				
1	3.5mm Mono PCB Socket c/w Nut - Yellow	1	J102	-
2	3.5mm Mono PCB Socket c/w Nut - Red	1	J101	-
HARDWARE				
3	KNOB - Panther Hi-contrast Blue	3	P101, P102, P103	18T SPLINE
OPTO-ELECTRONIC				
4	3mm Clear Lens Mount	1	D103	-

Bill of Materials for ES24 - Programmer Extension PCB Set V0.0

Item	Description	Qty	Designator	Package
	PCB			
1	ES24 - Programmer Extension BackBoard PCB V0.0	1		-
2	Panther LED Carrier PCB V0.0	4		-
3	ES24 - Programmer Extension Stage PCB V0.2	4		-
4	Panther Carrier PCB V1A	8		-
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