

# Bill Of Materials for UZOPROTECT1 LCDsch

## 18 Capacitors

Quantity	References	Value	Description
1	C1	680u	680u 25V 28mA Miniture Electrolytic Capacitor
2	C2,C20	47u	Electrolytic Capacitor, Low ESR, 47 µF, 25 V,
9	C3,C7,C11-C14,C18-C19,C21	0.47u	SMD Multilayer Ceramic Capacitor, 1206
2	C4-C5	220u	Electrolytic Capacitor, 470 µF, 25 V, FR ± 20%, Radial Leaded, 10 mm
1	C6	22u	Electrolytic Capacitor, 470 µF, 25 V, FR ± 20%, Radial Leaded, 10 mm
3	C15-C17	10u	Electrolytic Capacitor, Low ESR, 47 µF, 25 V,

Sub-totals:

## 35 Resistors

Quantity	References	Value	Description
5	R1-R4,R6	12K	SMD1206, 12 kohm, MF25 Series, 250 mW, ± 1%, Axial Leaded, 250 V
6	R5,R10-R11,R13,R18-R19	24K	SMD1206, 250 mW, ± 1%
13	R7-R9,R12,R14-R17,R20-R22,R34,R36	12K	SMD1206, 250 mW, ± 1%
2	R23,R30	1K	SMD1206, 250 mW, ± 1%
6	R24-R29	680	SMD1206, 250 mW, ± 1%
1	R31	6K8	SMD1206, 250 mW, ± 1%
1	R33	6K8	Through Hole Resistor, 6K8, 3W, ± 1%
1	R37	47K	SMD1206, 250 mW, ± 1%

Sub-totals:

## 10 Integrated Circuits

Quantity	References	Value	Description
1	U1	UZO 3PH MOD	Residual Current device 3P+N 63A 30mA
1	U2	7805	5V Fixed 1A Positive Power Supply Regulator.
3	U3-U5	ACS755XCB-050	Fully Integrated, Hall Effect-Based Linear Current Sensor with High Voltage Isolation and a Low-Resistance Current Conductor.
1	U6	IA0512S	Isolated Board Mount DC/DC Converter, 2 Output, 1 W, 12 V, 42 mA, -12 V 42 mA

3	U7-U9	LM6132A	Dual Low Power 10 MHz Rail-to-Rail I/O Operational Amplifier
1	U10	ATMEGA8	8 KBytes Flash, 1088 Bytes SRAM, 512 Bytes EEPROM, ADC, Analog Comparator, TWI, SPI, 3 Ports, 3 Timers, 1 USART

Sub-totals:

## 1 Transistors

Quantity	References	Value	Description
1	Q1	BC337	Silicon NPN Low Power High Frequency Bipolar Transistor (625mW, 150eC)

Sub-totals:

## 23 Diodes

Quantity	References	Value	Description
2	D1,D19	1N4007	Si; 1.00kV 1.00A 3.00us
13	D2-D5,D8-D12,D20-D23	BAT54S	Small Signal Schottky Diode, Dual Series, 30 V, 200 mA, 1 V, 600 mA,
2	D6-D7	1N4148	Small Signal Diode, Single, 100 V, 200 mA, 1 V

6	D13-D18	LED-RED	LED 3MMI (Red)
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Sub-totals:

### 30 Miscellaneous

<u>Quantity</u>	<u>References</u>	<u>Value</u>	<u>Description</u>
3	FU1-FU3	0.1A	Fuse 5x20mm
3	L1-L3	220	Panel lamp with LEDs 230VAC 22mm IP65 red
1	LCD1	MC21605C6W- SPR-V2	16x2 Alphanumeric LCD
1	RL1	G6E-134P	RELAY, SIGNAL, SPDT, 3A, 250VAC,
3	RV1-RV3	12K	Through Hole Resistor, 12 kohm, MF25 Series, 250 mW, $\pm 1\%$ , Axial Leaded, 250 V
4	RV5-RV7,RV10	10k	Trimmer Potentiometer, 10 kohm, 1 Turns, Through Hole
2	RV8-RV9	12K	Rotary Potentiometer, 10 kohm, 1 Turns, Linear, 50 mW, $\pm 20\%$ , PTV09A Series
2	SW1,SW5	1MD1T1B5M1QE	Toggle Switch, On-Off, DPDT, Non Illuminated, Panel
2	SW2,SW8	R13-24A-05-BB	Pushbutton Switch, Off-(On), SPST,
3	TR1-TR3	TRAN-2P2S	Isolation Transformer, EI 42 x 14.8, 5 VA, 12V, 417 mA, 1 x 230V, PCB MOUNTED
6	X1-X6	TBLOCK-M4	PCB Mount Barrier Terminal Block, 12.7 mm, 1 Row, 4 Ways, 20 AWG, 8 AWG, 50 A

Sub-totals: