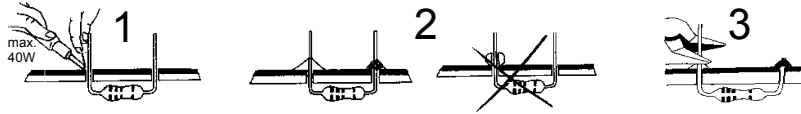
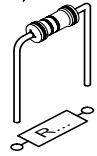


Soldering - Solderen - Soudage - Lötten - Soldadura - Lötning - Juottaminen - Saldatura - Solda



**START 1**

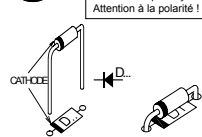


**Resistor - Weerstand - Résistance - Widerstand - Resistencia - Motstand - Vastus - Resistenze**

◇ R1 ... R3 : 470	(Yellow, Purple, Brown) - (Geel, Paars, Bruin) - (Jaune, Violet, Brun) - (Gelb, Violet, Braun) - (Gul, Lila, Brun) - (Keltainen, Purppura, Ruskea) - (Amarillo, Morado, Marrón) - (Amarelo, Violeta, Castanho) - (Giallo, Viola, Marrone) - (Gul, Violet, Brun)
◇ R4 ... R6 : 10K	(Brown, Black, Orange) - (Bruin, Zwart, Oranje) - (Brun, noir, Orange) - (Braun, Schwarz, Orange) - (Brun, Svart, Orange) - (Ruskea, Musta, Oranssi) - (Marrón, Negro, Naranja) - (Castanho, Preto, Laranja) - (Marrone, Nero, Aranciato)
◇ R7, R8 : 100K	(Brown, Black, Yellow) - (Bruin, zwart, Geel) - (Brun, noir, Jaune) - (Braun, Schwarz, Gelb) - (Brun, Svart, Gul) - (Ruskea, Musta, Keltainen) - (Marrón, Negro, Amarillo) - (Castanho, Preto, Amarelo) - (Marrone, Nero, Giallo)
◇ R9, R10 : 220K	(Red, Red, Yellow) - (Rood, Rood, Geel) - (Rouge, Rouge, Jaune) - (Rot, Rot, Gelb) - (Röd, Röd, Gul) - (Punainen, Punainen, Keltainen) - (Rojo, Rojo, Amarillo) - (Encarnado, Encarnado, Amarelo) - (Rosso, Rosso, Giallo)
◇ R11 : 39K	(Orange, White, Orange) - (Oranje, Wit, oranje) - (Orange, Blanc, orange) - (Orange, Weiss, Orange) - (Orange, Vit, Orange) - (Oranssi, Valkoinen, oranssi) - (Naranja, Blanco, Naranja) - (Laranja, Branco, Laranja) - (Aranciato, Bianco, Aranciato)
◇ R12 : 1M	(Brown, Black, Green) - (Bruin, Zwart, Groen) - (Brun, Noir, Vert) - (Braun, Schwarz, Grün) - (Brun, Svart, Grön) - (Ruskea, Musta, Vihreä) - (Marrón, Negro, Verde) - (Castanho, Preto, Verde) - (Marrone, Nero, Verde)
◇ R13 : 10	(Brown, Black, Black) - (Bruin, zwart, zwart) - (Brun, Noir, Noir) - (Braun, Schwarz, Schwarz) - (Brun, Svart, Svart) - (Ruskea, Musta, Musta) - (Marrón, Negro, Negro) - (Castanho, Preto, Preto) - (Marrone, Nero, Nero)
◇ R14, R15 : 330	(Orange, Orange, Brown) - (Oranje, Oranje, Bruin) - (Orange, Orange, Brun) - (Orange, Orange, Braun) - (Orange, Orange, Brun) - (Oranssi, Oranssi, Ruskea) - (Naranja, Naranja, Marrón) - (Laranja, Laranja, Castanho) - (Aranciato, Marrone)
◇ R16 : 4K7	(Yellow, Purple, Red) - (Geel, Paars, Rood) - (Jaune, Violet, Rouge) - (Gelb, Violet, Rot) - (Gul, Lila, Röd) - (Keltainen, Purppura, Punainen) - (Amarillo, Morado, Rojo) - (Amarelo, Violeta, Encarnado) - (Giallo, Viola, Rosso)
◇ R17 : 1K	(Brown, Black, Red) - (Bruin, Zwart, Rood) - (Brun, Noir, Rouge) - (Braun, Schwarz, Rot) - (Brun, Svart, Röd) - (Ruskea, Musta, Punainen) - (Marrón, Negro, Rojo) - (Castanho, Preto, Encarnado) - (Marrone, Nero, Rosso)
◇ R18 : 47K	(Yellow, Purple, Orange) - (Geel, Paars, Oranje) - (Jaune, Violet, Orange) - (Gelb, Violet, Orange) - (Gul, Lila, Orange) - (Keltainen, Purppura, Oranssi) - (Amarillo, Morado, Naranja) - (Amarelo, Violeta, Laranja) - (Giallo, Viola, Aranciato)

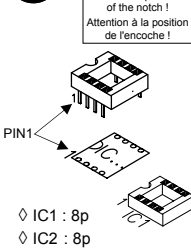


**2** Diodes



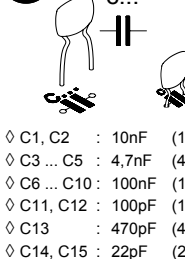
- ◇ D1 : 1N4148
- ◇ D2 : 1N4148
- ◇ D3 : 1N4148
- ◇ D4 : 1N4007
- ◇ D5 : 1N4007

**3** IC sockets



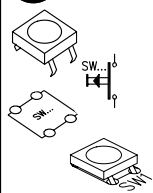
- ◇ IC1 : 8p
- ◇ IC2 : 8p

**4** Ceramic capacitors



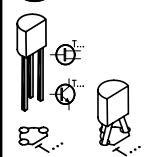
- ◇ C1, C2 : 10nF (103)
- ◇ C3 ... C5 : 4,7nF (472)
- ◇ C6 ... C10 : 100nF (104)
- ◇ C11, C12 : 100pF (101)
- ◇ C13 : 470pF (471)
- ◇ C14, C15 : 22pF (22)

**5** Push button



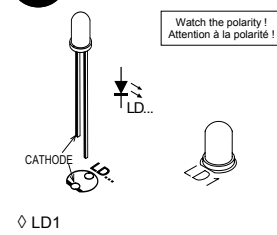
- ◇ SW1

**6** Transistor



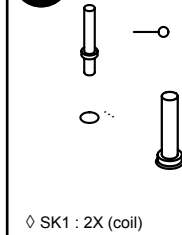
- ◇ T1 : BC547B
- ◇ T2 : BC547B
- ◇ T3 : BC557B

**7** LED



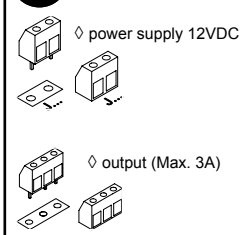
- ◇ LD1

**8** PCB tabs



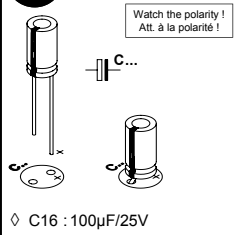
- ◇ SK1 : 2X (coil)

**9** Terminal blocks



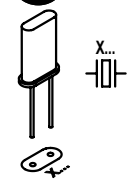
- ◇ power supply 12VDC
- ◇ output (Max. 3A)

**10** Electrolytic capacitor



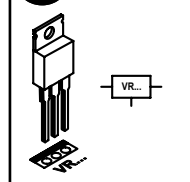
- ◇ C16 : 100µF/25V

**11** Crystal



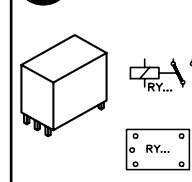
- ◇ X1 : 20MHz

**12** voltage regulator



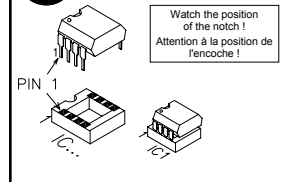
- ◇ VR1 : 7805

**13** Relay



- ◇ RY1

**14** IC's



- ◇ IC1 : LM358
- ◇ IC2 : VMK179 (programmed PIC12F629)

