

PARKING COUNTER SYSTEM

Component Purchase List · Max Supply Voltage: 5V DC · Cape Town, South Africa
Pricing in ZAR (inc VAT) — estimates based on Communica & Netram 2025 pricing. Verify before purchase.

⚠ **Important:** 7-Segment displays MUST be COMMON CATHODE (CC) — not Common Anode. | TCRT5000 = MH-Sensor-Series with 4-pin header (VCC/GND/D0/A0). | Call Communica (021 447 0949) to confirm CD40110BE stock before visiting.

Complete Component List

#	Component	Specification	Qty	Part No. (ref)	ProjectSection	Shop — Cape Town	Min(ZAR)	Max(ZAR)
1	[Sensors] IR Sensor Module TCRT5000 (MH-Sensor-Series) → Adjustable version with pot	5V DC VCC/GND/D0/A0 pins Built-in LM393	2	TCRT5000-ADJ	Part 1	Micro Robotics robotics.org.za or Netram netram.co.za	R 35	R 55
2	[Resistors] Resistor 330Ω ¼W → Buy pack of 20+	330Ω ¼W ±5% 22 AWG CF	18	CFR25J-330R	All parts	Comunica comunica.co.za	R 1	R 2
3	Resistor 1kΩ ¼W	1kΩ ¼W ±5%	2	CFR25J-1K0	Part 1	Comunica comunica.co.za	R 1	R 2
4	Resistor 10kΩ ¼W → Pull-down for buttons	10kΩ ¼W ±5%	3	CFR25J-10K	Parts 1 & 2	Comunica comunica.co.za	R 1	R 2
5	Resistor 430Ω ¼W → Or use 470Ω	430Ω ¼W ±5%	1	CFR25J-430R	Part 3	Comunica comunica.co.za	R 1	R 2
6	Resistor 22kΩ ¼W → NE555 timing	22kΩ ¼W ±5%	1	CFR25J-22K	Part 3	Comunica comunica.co.za	R 1	R 2
7	[Transistors] NPN Transistor 2N3904	TO-92, 40V, 200mA	3	2N3904	Parts 1 & 3	Comunica comunica.co.za	R 3	R 5
8	NPN Transistor BC548 → Alt. to 2N3904	TO-92, 30V, 100mA	2	BC548	Part 1	Comunica comunica.co.za	R 3	R 5
9	[LEDs] LED Red 5mm → Entry/Exit + PWM	5mm, 2V, 20mA	2	LED-RED-5MM	Parts 1 & 3	Comunica or Netram	R 2	R 3
10	LED Green 5mm → 00-09 indicator	5mm, 2.2V, 20mA	1	LED-GRN-5MM	Part 3	Comunica or Netram	R 2	R 3

#	Component	Specification	Qty	Part No. (ref)	ProjectSection	Shop — Cape Town	Min(ZAR)	Max(ZAR)
1 1	LED Yellow 5mm → 10–19 indicator	5mm, 2.1V, 20mA	1	LED-YLW-5MM	Part 3	Communica or Netram	R 2	R 3
1 2	LED 5mm (any colour) ×2 → Flashing full-capacity	5mm, any colour	2	LED-ANY-5MM	Part 3	Communica or Netram	R 2	R 3
1 3	[Switches] Tactile Push Button 6×6mm → UP/DOWN/RESET + 2 spare	6×6mm, 5V, momentary Pin 1&3 linked, 2&4 linked	5	PB-6X6	Parts 1 & 2	Communica or Netram	R 3	R 5
1 4	[Integrated Circuits] Decade Counter CD40110BE → Specialist IC — phone first!	CMOS DIP-16 3–15V, 7-seg BCD	2	CD40110BE	Part 2	Communica communica.co.za (call ahead) or RS Components za.rs-online.com	R 20	R 40
1 5	Hex Inverter 74LS04	TTL DIP-14, 5V 6 gates per IC	1	SN74LS04N	Part 3	Communica communica.co.za	R 12	R 22
1 6	Quad AND Gate 74LS08	TTL DIP-14, 5V 4 gates per IC	1	SN74LS08N	Part 3	Communica communica.co.za	R 12	R 22
1 7	Timer NE555 → Astable for flashing LED	DIP-8, 4.5–16V	1	NE555P	Part 3	Communica or Netram	R 5	R 10
1 8	[Relay] DPDT Relay — 5V coil → Confirm coil = 5V DC	DPDT, 5V coil, PCB 2×CO contacts	1	RL-DPDT-5V	Part 3	Communica communica.co.za	R 20	R 30
1 9	[Capacitors] Electrolytic Cap 20µF → NE555 timing; min 25V rating	20µF 25V radial	1	CAP-20UF-25V	Part 3	Communica communica.co.za	R 2	R 3
2 0	[Displays] 7-Segment Display CC 0.56" → MUST be COMMON CATHODE	Common Cathode (CC) 0.56", single digit, red	2	5611AH / CC	Part 2	Communica or Netram	R 12	R 25
2 1	[Breadboards] Full Breadboard 830 ties (MB-102) → Part1:×1, Part2 counter:×1, Part3:×1	830 tie-points 165×55mm	3	CMU BREADBOARD 16.5X5.5CM 830TP	Parts 1,2,3	Communica communica.co.za	R 45	R 65
2 2	Small Breadboard 400 ties → Part2 displays:×2, Part3:×2	400 tie-points ~83×55mm	4	BB-400	Parts 2 & 3	Communica or Netram	R 18	R 35

#	Component	Specification	Qty	Part No. (ref)	ProjectSection	Shop — Cape Town	Min(ZAR)	Max(ZAR)
2 3	[Jumper Wires] Jumper Wire Cables 10cm Male-to-Male (M-M) → Exactly 30×10cm M-M. Buy CMU JUMPER CABLES(65) pack — R27 inc VAT covers all 30 needed.	10cm, M-M solid pin, 22AWG assorted colour	30 pcs	JW-M2M-10CM	All parts	Communica communica.co.za or Netram	R 20	R 30
2 4	Breadboard Jumper Kit 140pcs (pre-cut solid wire kit) → SKU: HKD BREADBOARD JUMPER KIT (140). 4 boxes for full project coverage.	140 solid wires 14 lengths: 2–125mm 22AWG, 9 colours Box: 165×55×10mm	4	HKD BREADBOARD JUMPER KIT (140)	All parts	Communica communica.co.za	R 30	R 50
2 5	[Power] 5V–6V Power Supply or Battery → USB power bank or AA pack	5V DC, min 1A 4×AA holder or USB bank	1	PWR-5V-1A	All	Communica or Netram	R 60	R 120
2 6	USB Micro Cable (A to Micro-B) → Power supply cables	1m, USB-A to Micro-B	2	USB-MICRO-1M	All	Communica or Netram	R 25	R 45
2 7	Dual USB Charger (2-port)	5V, 2A, 2-port USB	1	USB-CHG-2P	All	Communica or Netram	R 70	R 120
2 8	[Enclosures] ABS Project Box — MAIN (Parts 2 & 3 display panel) → Front cutouts: 2× display windows, 5× button holes, 5× LED holes, 1× USB entry	ABS plastic ~200×160×80mm Screw lid	1	Hammond 1593 series or Gainta G106B	Parts 2 & 3	Communica communica.co.za Enclosures → ABS	R 70	R 120
2 9	ABS Sensor Box — IR Sensors (Part 1, 1 per sensor) → Weatherproof if at outdoor car park entrance	ABS, ~80×50×30mm IP54+ if outdoor	1 – 2	Hammond 1551 series or similar	Part 1	Communica communica.co.za Enclosures → ABS	R 25	R 45
3 0	Cable Glands PG7 → Clean cable entry, prevents wire strain	PG7, nylon, 4–8mm cable diameter	4	PG7-GLAND	All	Communica communica.co.za	R 4	R 8

Budget Summary (Estimated — ZAR inc VAT)

Category	Min Total (ZAR)	Max Total (ZAR)	Notes
Components(all ICs, resistors,transistors , LEDs etc.)	R 660	R 1650	Sensors, ICs, transistors, resistors, LEDs, relay, cap, displays
Breadboards & Jumper Wires	R 280	R 670	3× full BB + 4× small BB + 4× jumper kits + 30× M-M cables

Category	Min Total (ZAR)	Max Total (ZAR)	Notes
Power & USB	R 220	R 610	Power supply/battery, 2× USB micro cables, dual USB charger
Enclosures	R 155	R 430	Main ABS box + 1–2 sensor boxes + PG7 cable glands
TOTAL ESTIMATE	≈ R 900	≈ R 1 400	Wide range reflects IC stock variation (CD40110BE) and enclosure choice. Shop at Communica first to minimise cost.

Recommended Shops — Cape Town

Shop	Address	Contact	Best For
Communica ★ MAIN SHOP	36 Marine Drive Paarden Eiland Cape Town 7405	021 447 0949 communica.co.za	ICs (CD40110BE, 74LS04, 74LS08, NE555), all resistors, transistors, relay, capacitors, LEDs, breadboards, jumper kits, push buttons, enclosures, cable glands — BEST ALL-ROUND for this project
Netram Technologies	19 Edison Way, Unit 123 Millennium Business Park Century City 7441	021 300 3116 netram.co.za	TCRT5000 IR modules, Arduino/maker components, breadboards, LEDs, jumper wires, USB cables, power supplies
Micro Robotics	Online + Stellenbosch branch (free inter-branch shipping)	robotics.org.za	TCRT5000 Adjustable modules (SKU: TCRT5000-ADJ), NE555, assorted prototyping parts — order online
RS Components	Online only Fast SA delivery (1–2 days)	za.rs-online.com	CD40110BE backup stock if Communica is out. Specialist semiconductor supplier.

Shopping Tips

1. Visit Communica first (36 Marine Drive, Paarden Eiland) — they stock 90%+ of this list. Call 021 447 0949 before going to confirm CD40110BE and 74LS-series availability.
2. Jumper Kit: Ask for 'HKD BREADBOARD JUMPER KIT (140)' — buy 4 boxes. These pre-cut solid wire kits are ideal for breadboard wiring. Also buy a 65-pack of flexible M-M cables (10cm) for sensor connections.
3. TCRT5000 IR modules: buy at Netram (Century City) or order from robotics.org.za — choose the Adjustable version with the sensitivity potentiometer.
4. **7-Segment displays: always double-check the label — ask for COMMON CATHODE (CC). Common Anode (CA) looks identical but will NOT work with this circuit.**
5. CD40110BE: if Communica is out of stock, check za.rs-online.com — they deliver nationally in 1–2 business days.
6. Enclosures: ask at Communica for the Hammond 1593 range (main box) and Hammond 1551 range (sensor boxes). A step drill bit cuts ABS cleanly for display windows and button holes.
7. Power: a 4×AA battery holder (~6V) works on the breadboard prototype. For permanent installation use a quality 5V 1A USB adapter and USB micro cable.