

DIGITAL VEHICLE COUNTDOWN SYSTEM

Vehicle Actuated Countdowns Accommodating Real Time Traffic Demands



PPK Technology is the pioneer of digital vehicle countdown systems in Malaysia. Digital countdowns are a 2 or 3 digit numeric display mounted adjacent to a signal aspect. These countdowns provide the time in seconds for the red or green phase. PPK has installed digital countdowns in Malaysia since 1998 as it has been proven to improve vehicle throughput and acceleration and reduce inter-vehicle headway and the occurrence of red-light jumping. Additionally, it reduces road user anxiety and stress resulting in a lower probability of road related accidents.

• Types of countdowns

PPK Technology initially implemented semi vehicle actuated (semi-VA) countdowns which displays time according to the change in VA traffic data. These countdowns would display time which change every cycle according to the volume of vehicles on each vehicle phase. Subsequent to this, PPK implemented a fully-VA countdown capable of on demand and skip phase (ODSP) using the dash-countdown. The dash countdown displays time in the last 10 to 15 seconds of each phase. Quite recently, PPK has introduced the countdown system which is of ODSP without a dash display, using safe and intelligent jump down sequences. Our countdowns obtain the timing data from the MATC controller over wireless signals and only require an AC power connection. PPK also supplies non-VA countdowns which can be connected to any traffic controller. The types of countdowns are summarised below:

No.	Countdown type	Timing Operation	Remarks
1	Semi-VA Countdown (SVC)	Displays time according to vehicle volume (vehicle sensor compatible)	Incompatible with greenwave link, compatible with MITS
2	Dash-VA Countdown (DVC)	Displays last 10-15 seconds of each phase according to vehicle volume with skip phase feature	MITS and Greenwave link compatible
3	Skip Phase Jump Countdown (SPJ)	Displays time full green and red phase timing according to vehicle volume with skip phase and jump down features	MITS and Greenwave link compatible Can link to MITS
4	Non-VA Countdown (NVA)	Displays fixed time	Incompatible with greenwave link and MITS

• Key Features:

- * Large display window and long range viewing distance (up to 200 meters)
- * 3 different vehicle actuated countdowns to choose from
- * Displays 2 or 3 digit numeric using 7-segment LED's
- * 5 mm diameter super bright Red and Green LED lamps cluster board
- * Lamp and countdown conflict interlock for safety
- * Communicates to controller over RF wireless signal

• Benefits

- * Displays timing according to vehicle actuated data (vehicle volume)
- * Able to accommodate skip and on demand phasing under full VA conditions
- * Timing data provided by MATC controller using intelligent algorithms
- * Improves vehicle throughput
- * Reduces lag and headway
- * Added safety as it reduces occurrence of red light jumping
- * Reduced road user anxiety and stress

• Operational Specifications:

Item	Specifications
Digit height	510 mm
Digit width	93.98 mm
Segment width	38.1 mm
Wavelength	630 nm for red LED 525 nm for green LED
Luminous intensity	150 cd/m ² @ 10 cm distance from the surface
Power supply	230V AC
Internal power supply	5 Vdc (7A) – for CDC countdown card and red 7-segment LED's 12 Vdc (4A) – for 7-segment green LED's. Both using switching power supplies
Communication Countdown Mode	Uses RS485 communication with MATC controller (up to 1.2 km)
Wireless Countdown Mode	Uses Xbee band with MATC controller (up to 1 km near line of sight)
Cabinet size (2 digit)	(635) x (508) x (93.98) mm
Microprocessor	8 bit microcontroller
On board internal memory	64 Kbyte
Lamp conflict protection	Hardware and software based interlock available

• Mechanical and Electrical Specifications:

Item	Specifications
Cabinet format	Rear accessible
Cabinet material	1.5 mm thick epoxy coated oven baked (black) electrogalvanised (EG) plate
Access	Screw typed
Ventilation	Via bottom 3 meshed air vents
Weight	10 Kg
Incoming voltage and frequency	230V, Vac ±10% at 50Hz
Power consumption	7 segment LED display approximately 7-9 W
Operating Temperature	- 10°C to 75°C
Humidity Tolerance	85% Non-condensing
Degree of Protection	IP35 compliant
Electromagnetic Compatibility Standard	BS EN 50293 : 2012 compliant
Mechanical Standard	IEC 255-21-1; IEC 255-21-2 compliant
Environmental Standard	IEC 60068-2-2; IEC 60068-2-3; IEC 60068-2-30 compliant

PPK Technology products are available nationwide in Malaysia or overseas through selected agents. Products can be supplied, installed, configured and tested by PPK Technology or an approved contractor. For a complete list of products and services available and technical support staff, contact our office or visit our website.

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