

Pedestrian Countdown Guidance

When assessing a site for its suitability to have pedestrian countdown installed, a number of factors need to be taken into account.

This document is intended to provide general guidance on different sites and methods of control where Countdown may or may not be suitable. It is not intended to be prescriptive in saying what can and can't be done and is purely based on our own experiences and issues that have occurred during the Countdown trial and subsequent site selection for the rollout on the TLRN.

Initial Identification

When a site is identified as potentially benefitting from Countdown an initial assessment can be made as to whether it can be pursued. Generally speaking the majority of sites can be made to be altered to suit the installation of countdown.

Not Approved Under Current DfT Approval for PCATS

Near Sided (PUFFIN) facilities

Countdown is currently only approved for sites with far sided pedestrian signals which means sites utilising near sided (PUFFIN) technology cannot currently have countdown installed at it. To have countdown installed at such a site would require it to be converted to have far-sided pedestrian facilities.

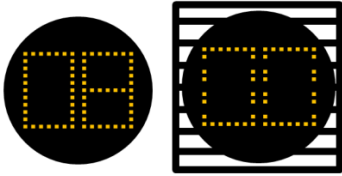
Toucan Facilities

Due to the countdown unit being positioned to the right of the green man and therefore in the same location as a "Toucan" green cycle there is currently no alternative place for the countdown unit to sit on a site with such facilities. It is therefore deemed unsuitable to install countdown at such sites.

Sites Not Recommended for PCATS Implementation

Louvres on Green Man (see-through issues)

The main issue where countdown may not be suitable is on sites that have existing "see-through" problems and require louvres installed in front of the green man, whether installed on staggered crossings or other, site specific configurations. After trials, it was not deemed appropriate to attach a standard green man louvre onto a countdown unit as shown in the diagram below. An alternative solution is currently being explored.



On Crossing Detection

Some sites use on-crossing detection on far-sided signal junctions to extend the blackout between stages if there are pedestrians still on the crossing. As countdown relies on a fixed blackout period, the use of both on-crossing detection and countdown is unsuitable. This can be rectified by removing the on crossing detection and having a fixed blackout.

PCATS PROM Requirement

Switched Sign

- Configured per Stream
- Not Timed
- On only with Lamps (On that phase)

This needs to be ticked in the spec and note that this will use a real phase so the phase drive card must have a spare phase for this to work. If it doesn't a new phase drive card will be required.

IO

- One per PCATS unit – or if it is a PEEK or MTC and you can't get hold of spare IO boards if it goes over then the units can be wired in series. This is not the preferred option and not to be done with Siemens controllers where IO boards are freely available.
- Inputs named as follows:
PHASE – PCATS – POLE – A\B
eg. For a single PCATS on Phase A on Pole 5 = APCATS5A
- For a second PCATS on Phase A on Pole 5 = APCATS5B
- Input to be inverted
- **Does** require DFM monitoring Active= 15min, Inactive=off

Split Pedestrian Phases

- On all round pedestrian stages, ideally all PCATS units should be on the same phase.
- On sites where the all round pedestrian stage runs with split phases it is not necessary to combine all of these onto one phase. It is essential that the countdown units, when counting down, all finish at exactly the same time. This means for a split phase all round pedestrian stage the green man, blackout and all red times must always match each other.

Special Conditioning

Detector Data

- The input for a PCATS unit is to be inverted (Open circuit active). This is to ensure the appropriate fail-safe condition.
- The PCATS input is to be set as a `CTD' Countdown Unit in the SFM specification and set as a Pedestrian push button in configuration.
- Where possible allocate PCATS detector inputs to the same DFM (Detector Fault Monitor) group.
- The DFM active time is to be set at 15 minutes default during configuration this for new PCATS units that have a self correcting function which, if possible, will self rectify faults within 15 minutes. If this is not the case the SF bit will be raised and fault sent out.

The DFM inactive facility is to be set to off as a default during configuration.

UTC (Urban Traffic Control) data

A PCATS failure reply bit ('SF') must be provided for fault reporting. This will reply when there is:

- A DFM active timeout for a PCATS detector input
- Failure of a PCATS countdown unit

A PCATS failure should **NOT** generate a fault via the following reply bits: DF/JD, CF or LF.

Special Conditioning and Special Instructions

- To facilitate the need for the PCATS units to only operate when the lamps for its associated stream is on please note the following;
- Lamps on stream/s = Power to PCATS unit
- Lamps off stream/s = No power PCATS unit

A non dimming drive kit will be required for all controllers with PCATS units to maintain the 230v at times when the voltage is dimmed to 160v.

UTC Bit

Faults will report back using the SF bit (Siemens only) where there is capacity. For PEEKS this is done in special conditioning and a JM bit will be activated and sent to UTC.

Additional Equipment

Parts that maybe required for the installation to be determined on a site by site basis:

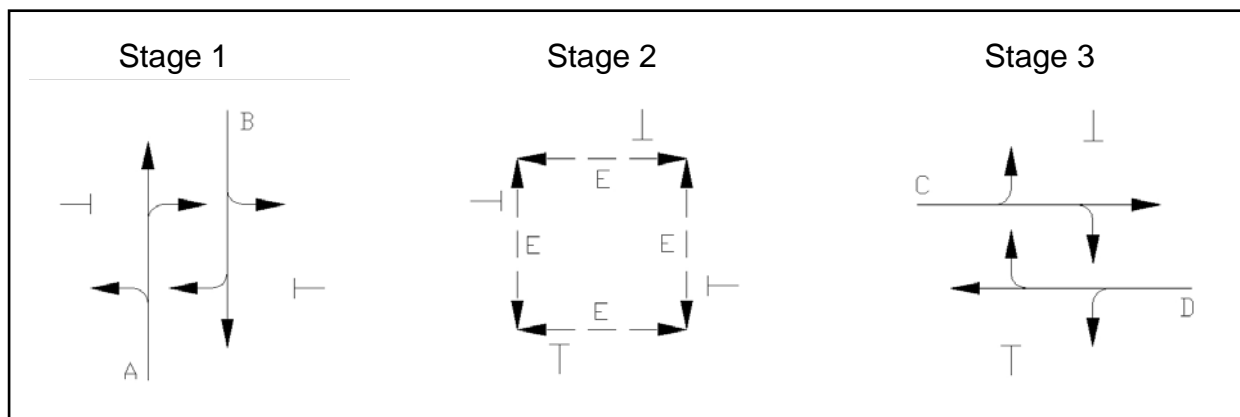
Part	Description
I/O Board	Standard I/O card for ST400/800/900
I/O Wiring Loom	16-way wiring loom for ST400\ST800/900
PSU	To be supplied by signals company – Mark Cracknell to send out specs to signal companies
Phase Drive Card	PEEK TSC3 Lamp Switch Card – for PEEKS
PCATS Unit	PCATS units now come complete with PEEK elite box sign housing and a side mounting kit when ordered.
Non-Dim Kit	Siemens non-dim kit required for ALL sites
Pole Cap Extension Kit	To extend short pole cap assembly to FULL height if required.

Changes to signal timings

The following changes to signal timings will be made at all 8 sites where Pedestrian Countdown is to be trialled:

- The green man time will be reduced to 6 seconds. This is irrespective of crossing length and will be the same at all PCATS sites. This time is still in line with DfT guidance.
- All intergreen times will remain the same as what is currently running on site. For the pedestrian to traffic intergreen, the proportions between the black out and the all red will change.
- The all red will be three seconds long and the remaining intergreen time will be blackout.

Below is an example of the timing changes for PCATS



Existing Timings

Phase	Min	Black Out	All Red	Crossing Length
A	7			
B	7			
C	7			
D	7			
E	9	9	6	17.48m
F	4			
G	1			
H	3			

Proposed Timings

Phase	Min	Black Out	All Red	Crossing Length
A	7			
B	7			
C	7			
D	7			
E	6	12	3	17.48m
F	4			
G	1			
H	3			

Points to note:

- In both the existing and the PCATS timings, the total intergreen time (blackout + all red) remains constant (15 seconds)
- By reducing the green man, three seconds green time has been saved at this site. This time can be reallocated to traffic stages

SQA 64 Pedestrian Timings for Junctions and Countdown

Road Width (metres)	Clearance		Starting Amber	Total clearance
	Blackout	All red*		
<u>Standard</u>				
up to 7.2	3	3	2	8
7.2 - 8.4	4	3	2	9
8.4 - 9.6	4	4	2	10
9.6 – 10.8	5	4	2	11
10.8 – 12.0	5	5	2	12
12.0 – 13.2	6	5	2	13
13.2 – 14.4	6	6	2	14
14.4 – 15.6	7	6	2	15
15.6 – 16.8	7	7	2	16
16.8 – 18.0	8	7	2	17
18.0 – 19.2	8	8	2	18
19.2 – 20.4	9	8	2	19
<u>Countdown</u>				
Upto 7.2	3	3	2	8
7.2 – 8.4	4	3	2	9
8.4 – 9.6	5	3	2	10
9.6 - 10.8	6	3	2	11
10.8 – 12.0	7	3	2	12
12.0 – 13.2	8	3	2	13
13.2 – 14.4	9	3	2	14
14.4 – 15.6	10	3	2	15
15.6 – 16.8	11	3	2	16
16.8 – 18.0	12	3	2	17
18.0 – 19.2	13	3	2	18
19.2 – 20.4	14	3	2	19

* The 'All Red' may be increased if warranted by site conditions.