Cabling

There is one CAT5 cable going to each Turnstile group (Bank).

If there are only two or three turnstiles in a group it means that some wires in each cable are not used. This is done for several reasons

1.   Allows for spare capacity on each cable.

2.   Allows for breakage of wires within the cable, the spares can be utilized.

3.   Makes cabling easier.

4.   Wires are not trailing across between Turnstile Banks – very liable to breakage and external electrical interference.

5.   If a cable is damaged in the future only one Bank of Turnstiles is affected until a repair can be effected.

Cable termination

Turnstile End

It is assumed that there is some sort of switch at the Turnstile end with the usual connections or a volt free relay.
A pair of wires are connected to each turnstile – one is +5V from the PC, the other is grounded within the PC.
The turnstile switch or volt free relay shorts the two together and it is the shorting and un-shorting that the programme detects.

If some weird circuitry is in use then it is suggested that it is changed to comply with the above as it will mean serious problems.

The CAT5 cable has four pairs

Blue / Blue-White
Orange / Orange-White
Green / Green-White
Brown / Brown-White

The Solid Colours are used as the signal and the /-white ones are used for ground.

The connection at each Turnstile is:

Turnstile Monitoring (GateWatch)

Solid colour wire to NO connection (or signal output)
/-White wire to COMMON (or ground output)

It is imperative that a pair of wires is used at each turnstile as there can be interference, because each pair is a twisted pair.
It is not good practice to use one wire from one pair and another wire from another pair.

The spare wires should be insulated from each other and other metal parts, but should not be cut back in case they are needed in the future.
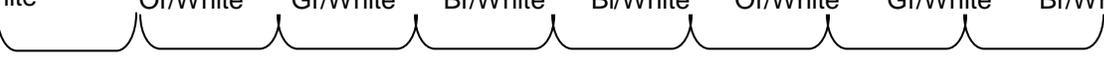The cables are all taken back to the Main Control Room where they are terminated in a box containing strips of Krone connectors or enough suitable connectors to accommodate the number of turnstiles. Below is a table showing the connections that should be made.
Notice that all the /-white wires for each block are interlinked with a link going to a spare connector. This is because the Commons for each block go to the Computer as a single wire for each block.
The box should be big enough to accommodate all the connectors and leave enough room for one 50way ribbon cable to enter and pass up one side of the strips – a good three-four inches.
Also a hole for the cables will be required
The 50way cable goes to the Computer via a 50way connector. Do not worry about this as it will be made by us when we install the computer.

Krone Box Connections at the Computer end of cables

T1	T2	T3	T4	T5	T6	T7	T8		
Blue	Orange	Green	Brown	Blue	Orange	Green	Brown	N/C	N/C
Bl/White	Or/White	Gr/White	Br/White	Bl/White	Or/White	Gr/White	Br/White	N/C	N/C

All the /White Wires are linked together   **note extra link**

T9	T10	T11	T12	T13	T14	T15	T16		
Blue	Orange	Green	Brown	Blue	Orange	Green	Brown	N/C	N/C
Bl/White	Or/White	Gr/White	Br/White	Bl/White	Or/White	Gr/White	Br/White	N/C	N/C

All the /White Wires are linked together   **note extra link**

T17	T18	T19	T20	T21					
Blue	Orange	Green	Brown	Blue	Orange	Green	Brown	N/C	N/C
Bl/White	Or/White	Gr/White	Br/White	Bl/White	Or/White	Gr/White	Br/White	N/C	N/C

All the /White Wires are linked together   **note extra link**

Turnstile Monitoring (GateWatch)

This is only a guide to show the connections to be made at the computer end assuming that the turnstiles are in groups of 4. The turnstiles should be grouped into banks with a CAT5 cable for each bank which means that some wires may not be used.

Although all the wires go to the Krone box not all the wires are used. This will make it easier if a spare has to be utilized either now or in the future.

Only one connection box should be used otherwise one of the 50way cables might have to go between the boxes, which would not be a good idea.

List of Wants:

A suitable picture/ outline drawing for GateWatch PC
A picture that can be made into a BMP picture

Stand Names
The names to appear on the screen for each stand – less than 16 characters

Stand Capacities
This is vital for correct operation on the Programme and also a Police requirement so that an accurate count of People and space left in each stand can be displayed.

Actual Split of Stands (Home and Away Supporters)
If, say, the East Stand can be split in different ways. This means that some Turnstiles can be assigned to East Stand and some to East A Stand.
Is the split going to change from game to game?
If there are different splits for different types of games then Gatewatch can be programmed so that the operator can choose the correct Stadium Setup on start-up.
The data is alterable by yourselves, so need not be decided now. There may be extra if you want me to add alternate settings.

Ground Capacity
This is vital for the correct operation of the Programme and also a Police requirement so that an accurate count of people and space left in the stadium can be displayed.
It is the sum of the **Stand Capacities** plus the **Starting Crowd**

Starting Crowd
The actual Ground Capacity includes some people who are in the stadium but not part of the spectators, Ground personnel, Security personnel, Staff, Police, etc. This number needs to be put in as the Start Crowd figure for the Stadium so that the Number of people in the stadium is correct and includes everyone. This has no effect on Stand Capacity and stand counts.

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