

SIEMENS TRAFFIC CONTROLS,  
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BH17 7ER.

SYSTEM/PROJECT/PRODUCT:

VEHICLE CLASSIFIER BUILD METHOD

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FUNCTION: Mechanical Engineer

THIS DOCUMENT IS ELECTRONICALLY HELD AND APPROVED

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## **1 INTRODUCTION**

### **1.1 Purpose**

This document details the build method for Vehicle Classifier units.

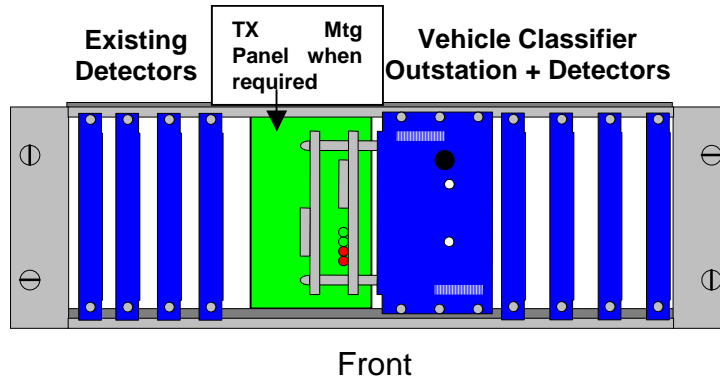
### **1.2 Scope**

This document defines the items required and the wiring connections for the assembly of:

- i. Vehicle Classifier Kit into an existing 3U rack.
- ii. Vehicle Classifier 19" rack.
- iii. Vehicle Classifier 11" rack.
- iv. Vehicle Classifier mounted in an ST700 MEC cabinet  
Together with the loop (VC) input connections

## 2 CONFIGURATIONS AND ITEMS REQUIRED

### 2.1 Vehicle Classifier fitted in existing 19" Detector rack



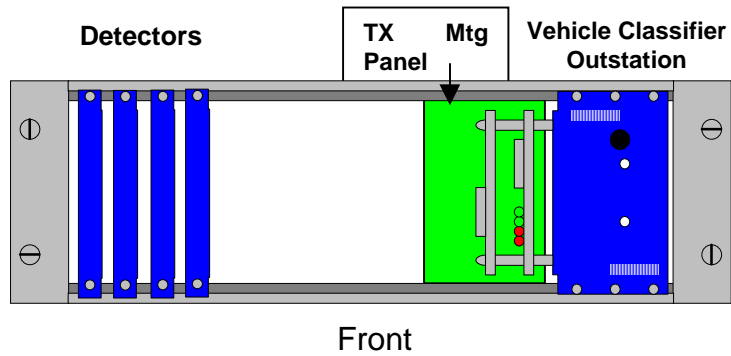
**NOTE:**

When fitting the Vehicle Classifier Kit to an existing rack, wherever possible mount the Detectors adjacent to the OMU. Fit Item 19 using Item 20 to the rear of the rack in convenient positions to provide cable support. Use Item 21 to tie the cables.

#### ITEMS REQUIRED

Item	Part Number	Description	Quantity
1	667/1/20690/000	Detector 11 inch detector rack kit	
2	667/1/20690/001	Detector 19 inch detector rack kit	
3			
4	667/1/32600/001	Basic GEMINI 2	1
5	667/1/28853/000	Freestanding I/O expansion kit	1
6	703/4/97035/027	Berg crimp	1
7			
8			
9	667/1/15990/003	Detector single backplane kit	4
10			
11			
12	667/1/27663/000	Siemens ST4S (4 Channel) Loop Detector	4
13			
14			
15	667/1/03887/000	Detector Cableform	1 per 2 B/Planes
16	667/1/15854/000	Detector Cable termination kit	
17			
18	667/1/04099/000	Terminal block kit	1
19	915/4/09480/000	Cable Acc Cradle	2
20	991/4/01524/089	Screw Rec CSK M2.5	2
21	915/4/97087/039	Cable tie 100mm long	6

## 2.2 19" Inch Rack Complete

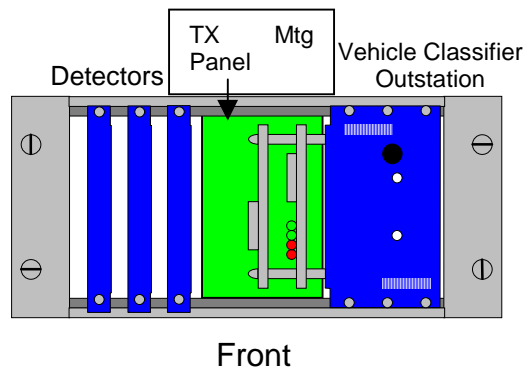


Fit Item 19 using Item 20 to the rear of the rack in convenient positions to provide cable support. Use Item 21 to tie the cables.

### ITEMS REQUIRED

Item	Part Number	Description	Quantity
1	667/1/20690/000	Detector 11 inch detector rack kit	
2	667/1/20690/001	Detector 19 inch detector rack kit	1
3			
4	667/1/32600/001	Basic GEMINI 2	1
5	667/1/28853/000	Freestanding I/O expansion kit	1
6	703/4/97035/027	Berg crimp	1
7			
8			
9	667/1/15990/003	Detector single backplane kit	4
10			
11			
12	667/1/27663/000	Siemens ST4S (4 Channel) Loop Detector	4
13	667/1/30626/000	24V TX mounting bracket kit	1
14	667/1/27853/001	24 Volts AC Detector supply kit Controller mounting 2.0 amp	1
15	667/1/03887/000	Detector Cableform	1 per 2 B/Planes
16	667/1/15854/000	Detector Cable termination kit	
17			
18	667/1/04099/000	Terminal block kit	1
19	915/4/09480/000	Cable Acc Cradle	2
20	991/4/01524/089	Screw Rec CSK M2.5	2
21	915/4/97087/039	Cable tie 100mm long	6

### 2.3 11" Inch Rack Complete



Fit Item 19 using Item 20 to the rear of the rack in convenient positions to provide cable support. Use Item 21 to tie the cables.

#### ITEMS REQUIRED

Item	Part Number	Description	Quantity
1	667/1/20690/000	Detector 11 inch detector rack kit	1
2	667/1/20690/001	Detector 19 inch detector rack kit	
3			
4	667/1/32600/001	Basic GEMINI 2	1
5	667/1/28853/000	Freestanding I/O expansion kit	1
6	703/4/97035/027	Berg crimp	1
7			
8			
9	667/1/15990/003	Detector single backplane kit	3
10			
11			
12	667/1/27663/000	Siemens ST4S (4 Channel) Loop Detector	3
13	667/1/30626/000	24V TX Mounting bkt kit	1
14	667/1/27853/001	24 Volts AC Detector supply kit Controller mounting 2.0 amp	1
15	667/1/03887/000	Detector Cableform	1 per 2 B/Planes
16	667/1/15854/000	Detector Cable termination kit	
17			
18	667/1/04099/000	Terminal block kit	1
19	915/4/09480/000	Cable Acc Cradle	2
20	991/4/01524/089	Screw Rec CSK M2.5	2
21	915/4/97087/039	Cable tie 100mm long	6

## 2.4 Vehicle Classifier Cabinet

Vehicle Classifier equipment mounted in an ST700 MEC cabinet

Item	Part Number	Description	Quantity
1			
2			
3	667/1/27854/000	ST700 Detector mounting kit	1
4	667/1/32600/001	Basic GEMINI 2	1
5	667/1/28853/000	Freestanding I/O expansion kit	1
6	703/4/97035/027	Berg crimp	1
7	667/1/27880/090	ST700 MEC	1
8			
9	667/1/15990/003	Detector single backplane kit	4
10			
11	667/2/30464/000	Mounting Bracket	1
12	667/1/27663/000	Siemens ST4S (4 Channel) Loop Detector	4
13			
14	667/1/27853/001	24 Volts AC Detector supply kit Controller mounting 2.0 amp	1
15	667/1/03887/000	Detector Cableform	1 per 2 B/Planes
16	667/1/15854/000	Detector Cable termination kit	
17			
18			
19	915/4/09480/000	Cable Acc Cradle	2
20	991/4/01524/089	Screw Rec CSK M2.5	2
21	915/4/97087/039	Cable tie 100mm long	6

### 3 WIRING

#### 3.1 General

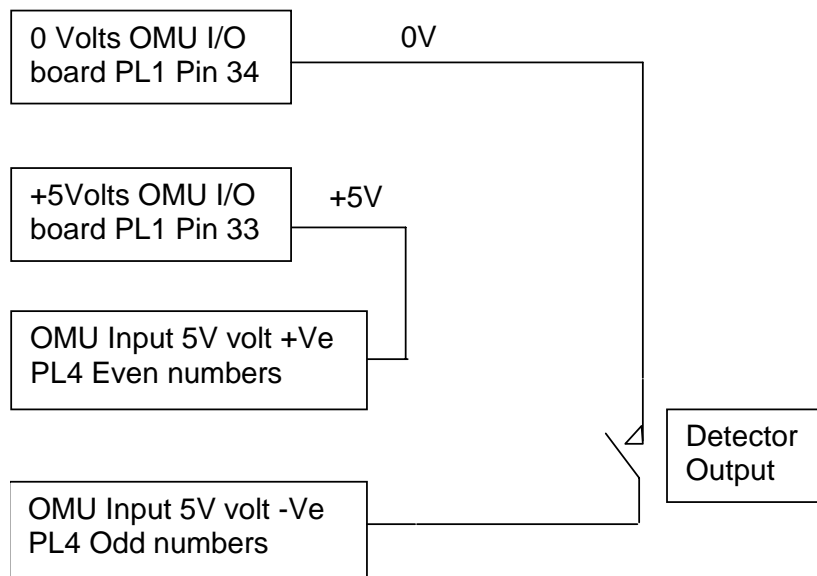
Power connections made using cableform 667/1/03887/000 unused wire ends **MUST BE TIED BACK AND INSULATED**.

Note 1 If more than one backplane, the power linking between backplanes to be made using the Red, Black, Pink and White from Detector Cableform 667/1/03887/000.

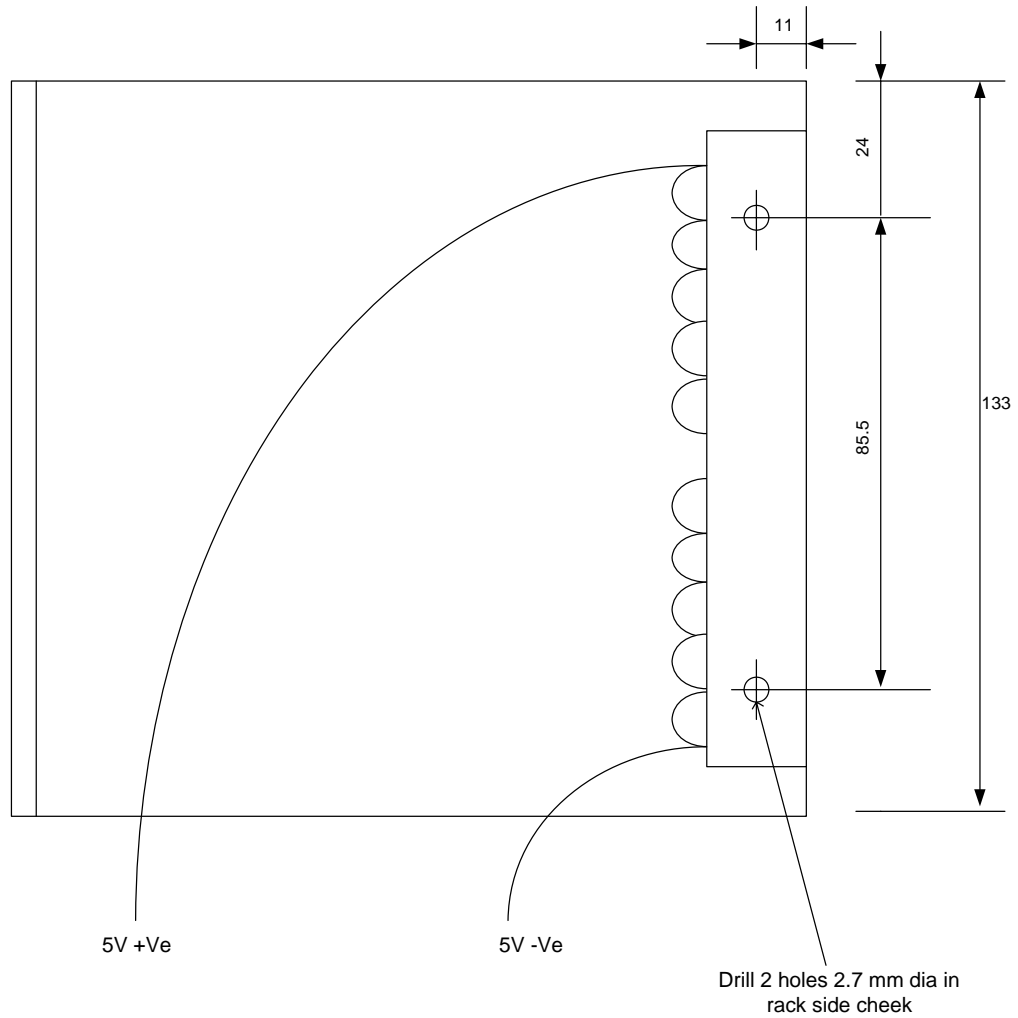
Link TB18 to TB18 with 120mm White 16/0.2 cable (998/4/20075/506).

Note 2 Detector markings on backplane indicate the detector's non detect state.

A Terminal block will need to be fitted to allow commoning of 0 volts and 5 volts required for detectors to operate OMU I/O. See below.







### 3.2 OMU I/O PCB Connections

Common to +5 volts	Cable
PL 4 Pin 2 Red	667/1/26585/000
PL 4 Pin 4 Yellow	
PL 4 Pin 6 Blue	
PL 4 Pin 8 Slate	
PL 4 Pin 10 Black	
PL 4 Pin 12 2 <sup>nd</sup> Red	
PL 4 Pin 14 2 <sup>nd</sup> Yellow	
PL 4 Pin 16 2 <sup>nd</sup> Blue	
PL 3 Pin 2 Red	667/1/26585/000
PL 3 Pin 4 Yellow	
PL 3 Pin 6 Blue	
PL 3 Pin 8 Slate	
PL 3 Pin 10 Black	
PL 3 Pin 12 2 <sup>nd</sup> Red	
PL 3 Pin 14 2 <sup>nd</sup> Yellow	
PL 3 Pin 16 2 <sup>nd</sup> Blue	

### 3.3 Backplane 1

<b>DETECTOR RACK POWER CONNECTIONS</b>			
Signal	Wire Colour	Supply Terminals	Backplane No.1 Terminals
	RED	N/C	N/C
	BLACK	N/C	N/C
SCREEN	PINK		22
COMMON	WHITE	OMU 0 volts common point (PL1 Pin 34)	18
24 v ac1	BLUE / SLATE		23
24 v ac2	BLUE / WHITE		24

<b>LOOP INPUTS</b>		
Loop No.	Designation	Backplane Terminals
1	VC 1	1 & 2
2	VC 2	3 & 4
3	VC 3	5 & 6
4	VC 4	7 & 8

<b>DETECTOR OUTPUTS</b>			
Detector No.	Backplane Terminals	Vehicle Classifier I/O Cable Wires	
1	10	PL 4 Pin 1	Brown
2	12	PL 4 Pin 3	Orange
3	14	PL 4 Pin 5	Green
4	16	PL 4 Pin 7	Violet

### 3.4 Backplane 2

<b>DETECTOR RACK POWER CONNECTIONS</b>			
Signal	Wire Colour	Backplane No.1 Terminals	Backplane No.2 Terminals
	RED	N/C	N/C
	BLACK	N/C	N/C
SCREEN	PINK	22	22
COMMON	WHITE	18	18
24 v ac1	BLUE / SLATE	23	23
24 v ac2	BLUE / WHITE	24	24

<b>LOOP INPUTS</b>		
Loop No.	Designation	Backplane Terminals
1	VC 5	1 & 2
2	VC 6	3 & 4
3	VC 7	5 & 6
4	VC 8	7 & 8

<b>DETECTOR OUTPUTS</b>			
Detector No.	Backplane Terminals	Vehicle Classifier I/O Cable Wires	
1	10	PL 4 Pin 9	White
2	12	PL 4 Pin 11 2 <sup>nd</sup>	Brown
3	14	PL 4 Pin 13 2 <sup>nd</sup>	Orange
4	16	PL 4 Pin 15 2 <sup>nd</sup>	Green

### 3.5 Backplane 3

<b>DETECTOR RACK POWER CONNECTIONS</b>			
Signal	Wire Colour	Backplane No.2 Terminals	Backplane No.3 Terminals
	RED	N/C	N/C
	BLACK	N/C	N/C
SCREEN	PINK	22	22
COMMON	WHITE	18	18
24 v ac1	BLUE / SLATE	23	23
24 v ac2	BLUE / WHITE	24	24

<b>LOOP INPUTS</b>		
Loop No.	Designation	Backplane Terminals
1	VC 9	1 & 2
2	VC 10	3 & 4
3	VC 11	5 & 6
4	VC 12	7 & 8

<b>DETECTOR OUTPUTS</b>			
Detector No.	Backplane Terminals	Vehicle Classifier I/O Cable Wires	
1	10	PL 3 Pin 1	Brown
2	12	PL 3 Pin 3	Orange
3	14	PL 3 Pin 5	Green
4	16	PL 3 Pin 7	Violet

### 3.6 Backplane 4

<b>DETECTOR RACK POWER CONNECTIONS</b>			
Signal	Wire Colour	Backplane No.3 Terminals	Backplane No.4 Terminals
	RED	N/C	N/C
	BLACK	N/C	N/C
SCREEN	PINK	22	22
COMMON	WHITE	18	18
24 v ac1	BLUE / SLATE	23	23
24 v ac2	BLUE / WHITE	24	24

<b>LOOP INPUTS</b>		
Loop No.	Designation	Backplane Terminals
1	VC 13	1 & 2
2	VC 14	3 & 4
3	VC 15	5 & 6
4	VC 16	7 & 8

<b>DETECTOR OUTPUTS</b>			
Detector No.	Backplane Terminals	Vehicle Classifier I/O Cable Wires	
1	10	PL 3 Pin 9	White
2	12	PL 3 Pin 11 2 <sup>nd</sup>	Brown
3	14	PL 3 Pin 13 2 <sup>nd</sup>	Orange
4	16	PL 3 Pin 15 2 <sup>nd</sup>	Green