

Summary

Site Name: Stonehenge - Auxiliary Building
 Control Panel: MX 4200 (*Advanced Electronics Ltd.*)

Loop	Devices	Quiescent	Alarm	Design
1	62	19 mA	176 mA	Loop Satisfactory
2	0	0 mA	0 mA	Loop Satisfactory
Total	62	19 mA	176 mA	Design Satisfactory

Calculations include the following assumptions:

Even distribution of devices along cable beyond 1st device.

As many devices are in alarm as possible.

There is an open circuit on cable at worst position.

Loop 1

Addressable Devices	Quantity	Quiescent	Alarm
Integrated Base Sounder 55-91dB (with Isolator)	16	3200 μ A	80 mA
Sounder Visual Indicator Base 55-91dB (with Isolator)	5	1500 μ A	40 mA
Visual Indicator Base (with Isolator)	3	900 μ A	9300 μ A
XP95 Heat Detector	8	2000 μ A	18 mA
XP95 Manual Call Point (with Isolator)	8	800 μ A	17 mA
XP95 Optical Smoke Detector	18	6120 μ A	78 mA
XP95 Sounder 100dB (Stand-alone)	4	4400 μ A	18 mA
Total	62	19 mA	176 mA

Calculate maximum cable run

Cable	1.5 mm ²	12.10 ohms/km/core
Total cable run	2697 m	
Cable run to first device	100 m	
Volt Drop	7.0 V	

Apollo Loop Calculator Configuration Data for: 40143 Stonehenge - Hub Building.ALC

Last revised on 31 August 2020

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Summary

Site Name: Stonehenge - Hub Building
Control Panel: MX 4200 (*Advanced Electronics Ltd.*)

Loop	Devices	Quiescent	Alarm	Design
1	32	8640 μ A	79 mA	Loop Satisfactory
2	0	0 mA	0 mA	Loop Satisfactory
Total	32	8640 μ A	79 mA	Design Satisfactory

Calculations include the following assumptions:

Even distribution of devices along cable beyond 1st device.

As many devices are in alarm as possible.

There is an open circuit on cable at worst position.

Loop 1

Addressable Devices	Quantity	Quiescent	Alarm
Integrated Base Sounder 55-91dB (with Isolator)	4	800 μ A	20 mA
Sounder Visual Indicator Base 55-91dB (with Isolator)	3	900 μ A	24 mA
Visual Indicator Base (with Isolator)	3	900 μ A	9300 μ A
XP95 Heat Detector	8	2000 μ A	18 mA
XP95 Manual Call Point (with Isolator)	3	300 μ A	6300 μ A
XP95 Optical Smoke Detector	11	3740 μ A	48 mA
Total	32	8640 μ A	79 mA

Calculate maximum cable run

Cable	1.5 mm ²	12.10 ohms/km/core
Total cable run	3000 m	
Cable run to first device	100 m	
Volt Drop	3.3 V	

Summary

Site Name: Stonehenge - Visitor Centre Building
 Control Panel: MX 4200 (*Advanced Electronics Ltd.*)

Loop	Devices	Quiescent	Alarm	Design
1	63	16 mA	163 mA	Loop Satisfactory
2	65	18 mA	218 mA	Loop Satisfactory
Total	128	34 mA	381 mA	Design Satisfactory

Calculations include the following assumptions:

Even distribution of devices along cable beyond 1st device.

As many devices are in alarm as possible.

There is an open circuit on cable at worst position.

Loop 1

Addressable Devices	Quantity	Quiescent	Alarm
Integrated Base Sounder 55-91dB (with Isolator)	17	3400 μ A	85 mA
Sounder Visual Indicator Base 55-91dB (with Isolator)	4	1200 μ A	32 mA
Visual Indicator Base (with Isolator)	5	1500 μ A	16 mA
XP95 Heat Detector	6	1500 μ A	14 mA
XP95 Manual Call Point (with Isolator)	9	900 μ A	19 mA
XP95 Optical Smoke Detector	21	7140 μ A	91 mA
XP95 Switch Monitor (with Isolator)	1	730 μ A	3400 μ A
Total	63	16 mA	163 mA

Calculate maximum cable run

Cable	1.5 mm ²	12.10 ohms/km/core
Total cable run	2917 m	
Cable run to first device	100 m	
Volt Drop	7.0 V	

Loop 2

Addressable Devices	Quantity	Quiescent	Alarm
Integrated Base Sounder 55-91dB (with Isolator)	11	2200 μ A	55 mA
Sounder Visual Indicator Base 55-91dB (with Isolator)	15	4500 μ A	120 mA
XP95 Heat Detector	5	1250 μ A	11 mA
XP95 Manual Call Point (with Isolator)	8	800 μ A	17 mA
XP95 Optical Smoke Detector	26	8840 μ A	113 mA
Sub-total	65	18 mA	206 mA

Other Devices

Remote LED	3	0 mA	12 mA
Total	n/a	18 mA	218 mA

Calculate maximum cable run

Cable	1.5 mm ²	<i>12.10 ohms/km/core</i>
Total cable run	2061 m	
Cable run to first device	100 m	
Volt Drop	7.0 V	

40143 Stonehenge - Auxiliary Building

Project:	Stonehenge - Auxiliary Building
Street:	
City:	
Region:	Wiltshire

DRAWING REF:		DATE:	13th May 2013
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Equipment	Quiescent Load			Alarm Load		
	I(A)	x	TOTAL	I(A)	x	TOTAL
Mx-4400/Mx-4200	0.083	1.000	0.083	0.178	1.000	0.178
Auxiliary Supply Output		1.000			1.000	
Network Card	0.061	F/T	0.061	0.061	F/T	0.061
Repeater Panel	0.188			0.188		
Loop Driver (L1)	0.042	Yes	0.042	0.042	Yes	0.042
Sensor/Loop Current (L1)	0.019	1.250	0.024	0.176	1.250	0.220
Loop Driver (L2)	0.042	No		0.042		
Sensor/Loop Current (L2)		1.250			1.250	
Loop Driver (L3)	0.042	No		0.042		
Sensor/Loop Current (L3)		1.250			1.250	
Loop Driver (L4)	0.042	No		0.042		
Sensor/Loop Current (L4)		1.250			1.250	
Sounder Output A					1.000	
Sounder Output b					1.000	
Sounder Output C					1.000	
Sounder Output D					1.000	

TOTAL	Quiescent Load	0.210	Alarm Load	0.501
Standby Capacity (Hrs)	24	5.034	x0.5Hrs	0.251

TOTAL LOAD (Quiescent + Alarm) A/Hrs	5.285
x1.2 (Battery Derating Factor) A/Hrs	6.341

Project:	Stonehenge - Hub Building
Street:	
City:	
Region:	Wiltshire

DRAWING REF:		DATE:	13th May 2013
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Equipment	Quiescent Load			Alarm Load		
	I(A)	x	TOTAL	I(A)	x	TOTAL
Mx-4400/Mx-4200	0.083	1.000	0.083	0.178	1.000	0.178
Auxiliary Supply Output		1.000			1.000	
Network Card		No			No	
Repeater Panel						
Loop Driver (L1)	0.042	Yes	0.042	0.042	Yes	0.042
Sensor/Loop Current (L1)	0.009	1.250	0.011	0.079	1.250	0.099
Loop Driver (L2)	0.042	No		0.042		
Sensor/Loop Current (L2)		1.250			1.250	
Loop Driver (L3)	0.042	No		0.042		
Sensor/Loop Current (L3)		1.250			1.250	
Loop Driver (L4)	0.042	No		0.042		
Sensor/Loop Current (L4)		1.250			1.250	
Sounder Output A					1.000	
Sounder Output b					1.000	
Sounder Output C					1.000	
Sounder Output D					1.000	

TOTAL	Quiescent Load	0.136	Alarm Load	0.319
Standby Capacity (Hrs)	24	3.270	x0.5Hrs	0.159

TOTAL LOAD (Quiescent + Alarm) A/Hrs	3.429
x1.2 (Battery Derating Factor) A/Hrs	4.115

40143 Stonehenge - Visitors Centre Building

Project:	Stonehenge - Visitors Centre
Street:	
City:	
Region:	Wiltshire

DRAWING REF:		DATE:	13th May 2013
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Equipment	Quiescent Load			Alarm Load		
	I(A)	x	TOTAL	I(A)	x	TOTAL
Mx-4400/Mx-4200	0.083	1.000	0.083	0.178	1.000	0.178
Auxiliary Supply Output		1.000			1.000	
Network Card	0.061	F/T	0.061	0.061	F/T	0.061
Repeater Panel	0.188			0.188		
Loop Driver (L1)	0.042	Yes	0.042	0.042	Yes	0.042
Sensor/Loop Current (L1)	0.016	1.250	0.020	0.163	1.250	0.204
Loop Driver (L2)	0.042	Yes	0.042	0.042	Yes	0.042
Sensor/Loop Current (L2)	0.018	1.250	0.023	0.218	1.250	0.273
Loop Driver (L3)	0.042	No		0.042		
Sensor/Loop Current (L3)		1.250			1.250	
Loop Driver (L4)	0.042	No		0.042		
Sensor/Loop Current (L4)		1.250			1.250	
Sounder Output A					1.000	
Sounder Output b					1.000	
Sounder Output C					1.000	
Sounder Output D					1.000	

TOTAL	Quiescent Load	0.271	Alarm Load	0.799
Standby Capacity (Hrs)	24	6.492	x0.5Hrs	0.400

TOTAL LOAD (Quiescent + Alarm) A/Hrs	6.892
x1.2 (Battery Derating Factor) A/Hrs	8.270