



ESMX Point to Point Loop Designer


Quick Start Guide

The power behind **your** mission

Getting Started



Click ESMX Loop Designer in the Ribbon of the FQQ Home Menu.

 ESMX Loop Designer

File

FQQ

Quick Quote

IDNAC P2P

NAC P2P

MX Loop Designer

Home

Insert

Draw

Page Layout

Formulas

Data

Review

View

Automate

Help

Training Videos

FQQ It's Quick

FQQ Quick Picks

Import Drawing File

Labor Rates and Costs

Bill of Materials

Reset All Sheets

IDNAC Circuit Designer

NAC Circuit Designer

ESMX Loop Designer

Equipment Selection

Battery Report

Project Information

Save Tool Boxes

Open Tool Boxes

HELP AND SUPPORT

FQQ QUICK QUOTE TOOLS

CIRCUIT DESIGNERS

BATTERY CALCULATIONS

TOOL BOXES

INFORMATION

Version: 1-6-3-3

Brand: 5

User: Jason Crouch

ProjectNa...

✕

✓

fx

Example Project

Welcome to the FQQ Quick Quote Tool

✓

Project Name:

Example Project

!

Customer Name:

!

Project Location:

!

Project Phase:

✓


Prepared By:

Jason Crouch

!

Date:

Click Button to Clear this Form



ESMX Point to Point Loop Designer

ESMX Loop Designer Ribbon Controls

HOME

Detectors

Detectors with Isolators

Duct Detector

Modules

Call Points

Pull Stations

LP Sounder Bases

LP Sounder Beacon Bases

LP Wall Sounders

LP Wall Sounder Beacons

LP Wall Sounder WP

LP Wall Sounder Beacon WP

Wire Length

10

Unit of Measure

Meters

Wire Gauge

14 AWG

LED's on Concurrently

5

Wire Temperature

50°C (122°F)

MICC High Capacitance Cable

Yes

New Loop

Add 2nd Loop to Card

Loop Branch Return

Tap

End Tap

Copy Selection

Copy Loop

Readdress Loop

Delete Selection

Push Wire

Push Gauge

Reset Project

Designer View

Project View

Bill of Materials

D11

DETECTORS

PHOTO

0

PHOTO/HEAT

0

HEAT

0

PHOTO/HEAT/CO

0

DUCT

0

BASES

STANDARD

0

CONTINUITY

0

SOUNDER

0

SOUNDER BEACON

0

CALLS/PULLS

CP INDOOR

0

CP OUTDOOR

0

SINGLE

0

BREAKGLASS

0

PUSH PULL

0

MODULES

SIGNAL IAM

0

ISOLATOR

0

MULTI IO

0

RELAY

0

MONITOR

0

LP SOUNDERS

SOUNDER

0

SDR/BEACON

0

WP SDR

0

WP SDR/BEACON

0

Device + LED in Alarm

LEDs on in Alarm

Ohms per kilometer

Devices with Isolators

Max 4000 per Loop
1 DC Unit = 0.25mA

Max Capacitance
1 AC Unit = 2nF

Max 2000 m per Loop

< 80% of maximum allowed

80 -100% of maximum allowed

> 100% of maximum allowed

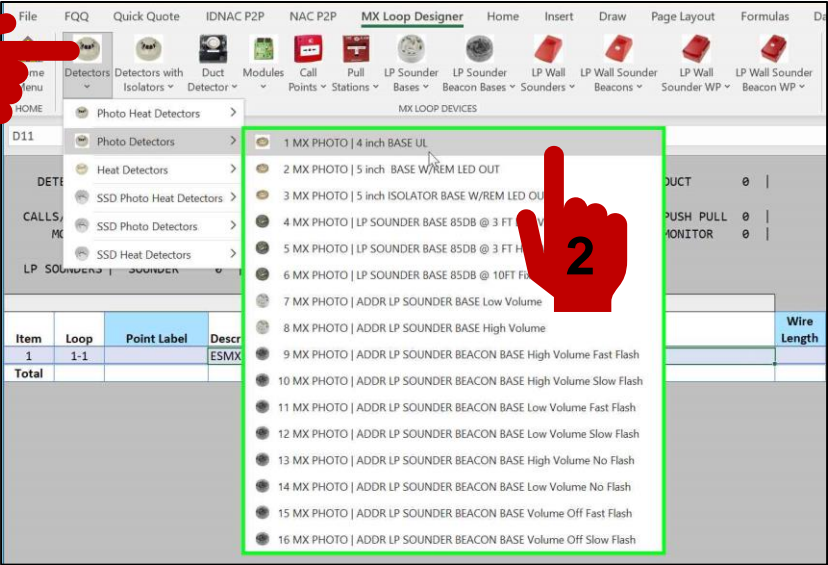
Select across these 4 columns to edit devices

Item	Loop	Point Label	Description and Setting	Wire Length	Wire Gauge	Address	Device mA	LEDs On	Cable Ω	Isolator Ω	Loop DC Units	Available AC Units	Total Wire	Amps	Volt Drop	Left Feed Volts at Device	Class A Amps	Class A Volt Drop	Volts at Dev Cls A
1	1-1		ESMX LOOP		14 AWG				9.25			420				40.000			
Total																			

ESMX Loop Designer Device Counts

ESMX Loop Designer Grid

Adding Devices



- 1) Select Device Type
- 2) Select Model
- 3) Enter Quantity
- 4) Click OK
- 5) Devices will be added

DETECTORS	PHOTO	5	PHOTO/HEAT	0	HEAT	0	PHOTO/HEAT/CO	0	DUCT	0
BASES	STANDARD	5	CONTINUITY	0	SOUNDER	0	SOUNDER BEACON	0		
CALLS/PULLS	CP INDOOR	0	CP OUTDOOR	0	SINGLE	0	BREAKGLASS	0	PUSH PULL	0
MODULES	SIGNAL IAM	0	ISOLATOR	0	MULTI IO	0	RELAY	0	MONITOR	0
LP SOUNDER	MINI IAM	0	DUAL IAM	0						
	SOUNDER	0	SDR/BEACON	0	WP SDR	0	WP SDR/BEACON	0		

Device + LED in Alarm

LEDs on in Alarm

Ohms per kilometer

Devices with Isolators

Max 4000 per Loop
1 DC Unit = 0.25mA

Max Capacitance
1 AC Unit = 2nF

Max 2000 m per Loop

Select across these 4 columns to edit devices

Item	Loop	Point Label	Description and Setting	Wire Length	Wire Gauge	Address	Device mA	LEDs On	Cable Ω	Isolator Ω	Loop DC Units	Available AC Units	Total Wire	Amps	Volt Drop	Volts at Device	Class A Amps	Class A Volt Drop	Volts at Dev Cls A
1	1-1		ESMX LOOP		14 AWG				9.25		65	410	50	0.016		40.000			
2	1-1		MX PHOTO 4 inch BASE UL	10	14 AWG	1	3.250	●	9.25					0.016	0.003	39.997			
3	1-1		MX PHOTO 4 inch BASE UL	10	14 AWG	2	3.250	●	9.25					0.013	0.002	39.995			
4	1-1		MX PHOTO 4 inch BASE UL	10	14 AWG	3	3.250	●	9.25					0.010	0.002	39.993			
5	1-1		MX PHOTO 4 inch BASE UL	10	14 AWG	4	3.250	●	9.25					0.007	0.001	39.992			
6	1-1		MX PHOTO 4 inch BASE UL	10	14 AWG	5	3.250	●	9.25					0.003	0.001	39.991			
Total																			

Editing Devices

File FQQ Quick Quote IDNAC P2P NAC P2P **MX Loop Designer** Home Insert Draw Page Layout Formulas Data Review

HOME Detectors Detectors with Isolators Duct Detector Modules Call Points Stations LP Sounder Bases LP Sounder Beacon Bases LP Wall LP Wall Sounder Beacons LP Wall Sounder WP LP Wall Sounder Beacon WP Wire Length Wire Gauge Wire Temperature

A14 Detectors

DETECTORS	PHOTO	5	PHOTO/HEAT	0	HEAT	0	PHOTO/HEAT/CO	0	DUCT	0
BASES	STANDARD	5	CONTINUITY	0	SOUNDER	0	SOUNDER BEACON	0		
CALLS/PULLS	CP INDOOR	2	CP OUTDOOR	0	SINGLE	0	BREAKGLASS	0	PUSH PULL	0
MODULES	SIGNAL IAM	0	ISOLATOR	0	MULTI IO	0	RELAY	3	MONITOR	0
LP SOUNDERS	MINI IAM	0	DUAL IAM	1	WP SDR	0	WP SDR/BEACON	0		

Select across these 4 columns to edit devices

Item	Loop	Point Label	Description and Setting	Wire Length	Wire Gauge	Address
1	1-1		ESMX LOOP		14 AWG	
2	1-1		MX PHOTO 4 inch BASE UL	10	14 AWG	1
3	1-1		MX PHOTO 4 inch BASE UL	10	14 AWG	2
4	1-1		MX PHOTO 4 inch BASE UL	10	14 AWG	3
5	1-1		MX PHOTO 4 inch BASE UL	10	14 AWG	4
6	1-1		MX PHOTO 4 inch BASE UL	10	14 AWG	5
7	1-1		INDOOR UL CP W ISOLATOR MX	10	14 AWG	6
8	1-1		INDOOR UL CP W ISOLATOR MX	10	14 AWG	7
9	1-1		MX RELAY IAM	10	14 AWG	8
10	1-1		MX RELAY IAM	10	14 AWG	9
11	1-1		MX RELAY IAM	10	14 AWG	10
12	1-1		MX DUAL INPUT IAM	10	14 AWG	11
13	1-1		ADDR WALL SOUNDER RED High Volume	10	14 AWG	12
14	1-1		ADDR WALL SOUNDER RED High Volume	10	14 AWG	13
15	1-1		ADDR WALL SOUNDER RED High Volume	10	14 AWG	14
Total						



File FQQ Quick Quote IDNAC P2P NAC P2P **MX Loop Designer** Home Insert Draw Page Layout Formulas Data Review

HOME Detectors Detectors with Isolators Duct Detector Modules Call Points Stations LP Sounder Bases LP Sounder Beacon Bases LP Wall LP Wall Sounder Beacons LP Wall Sounder WP LP Wall Sounder Beacon WP Wire Length Wire Gauge Wire Temperature

A14 Detectors

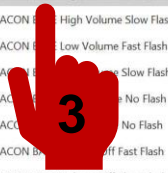
Photo Heat Detectors >
Photo Detectors >
Heat Detectors >
SSD Photo Heat Detectors >
SSD Photo Detectors >
SSD Heat Detectors >

1	1-1		1 MX HEAT 4 inch BASE UL			
2	1-1		2 MX HEAT 5 inch BASE W/REM LED OUT			
3	1-1		3 MX HEAT 5 inch ISOLATOR BASE W/REM LED OUT			
4	1-1		4 MX HEAT LP SOUNDER BASE 85DB @ 3 FT Low Volume 68dB			
5	1-1		5 MX HEAT LP SOUNDER BASE 85DB @ 3 FT High Volume 90dB			
6	1-1		6 MX HEAT LP SOUNDER BASE 85DB @ 10FT Fixed Volume			
7	1-1		7 MX HEAT ADDR LP SOUNDER BASE Low Volume			
8	1-1		8 MX HEAT ADDR LP SOUNDER BASE High Volume			
9	1-1		9 MX HEAT ADDR LP SOUNDER BEACON BASE High Volume Fast Flash			
10	1-1		10 MX HEAT ADDR LP SOUNDER BEACON BASE High Volume Slow Flash			
11	1-1		11 MX HEAT ADDR LP SOUNDER BEACON BASE Low Volume Fast Flash			
12	1-1		12 MX HEAT ADDR LP SOUNDER BEACON BASE Low Volume Slow Flash			
13	1-1		13 MX HEAT ADDR LP SOUNDER BEACON BASE No Flash			
14	1-1		14 MX HEAT ADDR LP SOUNDER BEACON BASE No Flash			
15	1-1		15 MX HEAT ADDR LP SOUNDER BEACON BASE No Flash			
16	1-1		16 MX HEAT ADDR LP SOUNDER BEACON BASE Volume Off Slow Flash			
17	1-1		ADDR WALL SOUNDER RED High Volume			
18	1-1		ADDR WALL SOUNDER RED High Volume			
Total						

Edit Selection

Do you wish to edit selection

Yes No



DETECTORS	PHOTO	2	PHOTO/HEAT	0	HEAT	3	PHOTO/HEAT/CO	0	DUCT	0
BASES	STANDARD	2	CONTINUITY	0	SOUNDER	0	SOUNDER BEACON	3		
CALLS/PULLS	CP INDOOR	2	CP OUTDOOR	0	SINGLE	0	BREAKGLASS	0	PUSH PULL	0
MODULES	SIGNAL IAM	0	ISOLATOR	0	MULTI IO	0	RELAY	3	MONITOR	0
LP SOUNDERS	MINI IAM	0	DUAL IAM	1	WP SDR	0	WP SDR/BEACON	0		

Select across these 4 columns to edit devices

Item	Loop	Point Label	Description and Setting	Wire Length	Wire Gauge	Address	Device mA	LEDs On	Cable Ω	Isolator Ω	Loop DC Units	Available AC Units	Total Wire	Left Feed Amps	Left Feed Volt Drop	Left Feed Volts at Device	Right Feed Class A Amps	Right Feed Class A Volt Drop	Right Feed Volts at Dev Cls A
1	1-1		ESMX LOOP		14 AWG				9.25		279	389	140	0.070		40.000			
2	1-1		MX PHOTO 4 inch BASE UL	10	14 AWG	1	3.250		9.25					0.070	0.013	39.987			
3	1-1		MX PHOTO 4 inch BASE UL	10	14 AWG	2	3.250		9.25					0.067	0.012	39.975			
4	1-1		MX HEAT ADDR LP SOUNDER BEACON BASE High Volume Fast Flash	10	14 AWG	3, 4	12.050		9.25	0.25				0.063	0.262	39.713			
5	1-1		MX HEAT ADDR LP SOUNDER BEACON BASE High Volume Fast Flash	10	14 AWG	5, 15	12.050		9.25	0.25				0.051	0.259	39.454			
6	1-1		MX HEAT ADDR LP SOUNDER BEACON BASE High Volume Fast Flash	10	14 AWG	16, 17	12.050		9.25	0.25				0.039	0.257	39.196			
7	1-1		INDOOR UL CP W ISOLATOR MX	10	14 AWG		0.300		9.25	0.25				0.027	0.255	38.941			
8	1-1		INDOOR UL CP W ISOLATOR MX	10	14 AWG		0.300		9.25	0.25				0.027	0.255	38.686			
9	1-1		MX RELAY IAM	10	14 AWG		0.300		9.25					0.027	0.005	38.681			
10	1-1		MX RELAY IAM	10	14 AWG		0.300		9.25					0.026	0.005	38.677			
11	1-1		MX RELAY IAM	10	14 AWG		0.300		9.25					0.026	0.005	38.672			
12	1-1		MX DUAL INPUT IAM	10	14 AWG		0.300		9.25					0.026	0.005	38.667			
13	1-1		ADDR WALL SOUNDER RED High Volume	10	14 AWG		8.475		9.25	0.25				0.025	0.255	38.412			
14	1-1		ADDR WALL SOUNDER RED High Volume	10	14 AWG		8.475		9.25	0.25				0.017	0.253	38.159			
15	1-1		ADDR WALL SOUNDER RED High Volume	10	14 AWG	14	8.475		9.25	0.25				0.008	0.252	37.908			
Total																			



- 1) Select Devices to Edit. Must Select Columns A-D
- 2) Select Device
- 3) Select Model
- 4) Click Yes to Edit
- 5) Devices Changed
- 6) Address Updated as required

Adding a Loop Return

MX Loop Designer

File FQQ Quick Quote IDNAC P2P NAC P2P MX Loop Designer Home Insert Draw Page Layout Formulas Data Review View Automate Developer Help Table Design

Wire Length 10 Unit of Measure Meters
Wire Gauge 14 AWG LED's on Concurrently 5
Wire Temperature 50°C (122°F) MICC High Capacitance Cable Yes

Loop Return Length

Enter length of loop return
The below default is the correct left feed wire length

OK Cancel

140

Left Feed Right Feed

Volt Drop	Volts at Device	Class A Amps	Class A Volt Drop	Volts at Dev Cls A
0.255	38.412			
0.253	38.159			
0.252	37.908			

- 1) Select Loop End
- 2) Click Loop Return
- 3) Enter Loop Return Wire Length. FQQ will auto calculate a default value based on the left feed wire length
- 4) Click OK
- 5) Loop Return Added
- 6) Right Feed Calculations are now shown

DETECTORS	PHOTO	2	PHOTO/HEAT	0	HEAT	3	PHOTO/HEAT/CO	0	DUCT	0
BASES	STANDARD	2	CONTINUITY	0	SOUNDER	0	SOUNDER BEACON	3		
CALLS/PULLS	CP INDOOR	2	CP OUTDOOR	0	SINGLE	0	BREAKGLASS	0	PUSH PULL	0
MODULES	SIGNAL IAM	0	ISOLATOR	0	MULTI IO	0	RELAY	3	MONITOR	0
LP SOUNDERS	MINI IAM	0	DUAL IAM	1						
	SOUNDER	3	SDR/BEACON	0	WP SDR	0	WP SDR/BEACON	0		

Select across these 4 columns to edit devices

Item	Loop	Point Label	Description and Setting	Wire Length	Wire Gauge	Address
13	1-1		ADDR WALL SOUNDER RED High Volume	10	14 AWG	12
14	1-1		ADDR WALL SOUNDER RED High Volume	10	14 AWG	13
15	1-1		ADDR WALL SOUNDER RED High Volume	10	14 AWG	14
Total						

Device + LED in Alarm LEDs on in Alarm Ohms per kilometer Devices with Isolators Max 4000 per Loop 1 DC Unit = 0.25mA Max Capacitance 1 AC Unit = 2nF Max 2000 m per Loop

Left Feed	Right Feed
Amps Volt Drop Volts at Device	Class A Amps Class A Volt Drop Volts at Dev Cls A
0.070 0.013 39.987	0.003 0.001 37.731
0.067 0.012 39.975	0.007 0.001 37.731
0.063 0.262 39.713	0.019 0.253 37.732
0.051 0.259 39.454	0.031 0.256 37.986
0.039 0.257 39.196	0.043 0.258 38.242
0.027 0.255 38.941	0.043 0.258 38.499
0.027 0.255 38.686	0.043 0.258 38.757
0.027 0.255 38.431	0.044 0.008 39.015
0.026 0.254 38.677	0.044 0.008 39.023
0.026 0.254 38.422	0.044 0.008 39.032
0.026 0.005 38.667	0.044 0.008 39.040
0.025 0.255 38.412	0.053 0.260 39.048
0.017 0.253 38.159	0.061 0.261 39.308
0.008 0.252 37.908	0.070 0.431 39.569
	0.070 40.000

Adding a T-TAP / SPUR

File

FQQ

Quick Quote

IDNAC P2P

NAC P2P

MX Loop Designer

Home

Insert

Draw

Page Layout

Formulas

Data

Review

View

Automate

Developer

Help

Table Design

Home Menu

Detectors

Detectors with Isolators

Duct Detector

Modules

Call Points

Pull Stations

LP Sounder Bases

LP Sounder Beacon Bases

LP Wall Sounders

LP Wall Sounder Beacons

LP Wall Sounder WP

LP Wall Sounder Beacon WP

Wire Length

10

Unit of Measure

Meters

Wire Gauge

14 AWG

LED's on Concurrently

5

Wire Temperature

50°C (122°F)

MICC High Capacitance Cable

Yes

New Loop

Add 2nd Loop to Card

Loop Return

Branch

Tap

End Tap

Copy Selection

Copy Loop

Readdress Loop

Delete Selection

HOME

MX LOOP DEVICES

MX LOOP DESIGNER SETTINGS

ADD HARDWARE

CONTROLS AND

D15

✕

✓

fx

DETECTORS	PHOTO	2	PHOTO/HEAT	0	HEAT	3	PHOTO/HEAT/CO	0	DUCT	0
BASES	STANDARD	2	CONTINUITY	0	SOUNDER	0	SOUNDER BEACON	3		
CALLS/PULLS	CP INDOOR	2	CP OUTDOOR	0	SINGLE	0	BREAKGLASS	0	PUSH PULL	0
MODULES	SIGNAL IAM	0	ISOLATOR	0	MULTI IO	0	RELAY	3	MONITOR	0
LP SOUNDERS	MINI IAM	0	DUAL IAM	1						
	SOUNDER	3	SDR/BEACON	0	WP SDR	0	WP SDR/BEACON	0		

Device + LED in Alarm

LEDs on in Alarm

Ohms per kilometer

Devices with Isolators

Max 4000 per Loop
1 DC Unit = 0.25mA

Max Capacitance
1 AC Unit = 2nF

Max 2000 m per Loop

< 80% of maximum allowed

80 -100% of maximum allowed

> 100% of maximum allowed

Select across these 4 columns to edit devices

Item	Loop	Point Label	Description and Setting	Wire Length	Wire Gauge	Address	Device mA	LEDs On	Cable Ω	Isolator Ω	Loop DC Units	Available AC Units	Total Wire	Amps	Volt Drop	Volts at Device	Class A Amps	Class A Volt Drop	Volts at Dev Cls A
1	1-1		ESMX LOOP		14 AWG				9.25		279	389	140	0.070		40.000			
2	1-1		MX PHOTO 4 inch BASE UL	10	14 AWG	1	3.250		9.25					0.070	0.013	39.987			
3	1-1		MX PHOTO 4 inch BASE UL	10	14 AWG	2	3.250		9.25					0.067	0.012	39.975			
4	1-1		MX HEAT ADDR LP SOUNDER BEACON BASE High Volume Fast Flash	10	14 AWG	3, 4	12.050		9.25	0.25				0.063	0.262	39.713			
5	1-1		MX HEAT ADDR LP SOUNDER BEACON BASE High Volume Fast Flash	10	14 AWG	5, 15	12.050		9.25	0.25				0.051	0.259	39.454			
6	1-1		MX HEAT ADDR LP SOUNDER BEACON BASE High Volume Fast Flash	10	14 AWG	16, 17	12.050		9.25	0.25				0.039	0.257	39.196			
7	1-1		INDOOR UL CP W ISOLATOR MX	10	14 AWG	6	0.300		9.25	0.25				0.027	0.255	38.941			
8	1-1		INDOOR UL CP W ISOLATOR MX	10	14 AWG	7	0.300		9.25	0.25				0.027	0.255	38.686			
9	1-1		MX RELAY IAM	10	14 AWG	8	0.300		9.25					0.027	0.005	38.681			
10	1-1		MX RELAY IAM																
11	1-1		MX RELAY IAM																
12	1-1		MX DUAL INPUT IAM																
13	1-1		ADDR WALL SOUNDER RED High Volume																
14	1-1		ADDR WALL SOUNDER RED High Volume																
15	1-1		ADDR WALL SOUNDER RED High Volume																
Total																			

Select across these 4 columns to edit devices

Item	Loop	Point Label	Description and Setting	Wire Length	Wire Gauge	Address
1	1-1		ESMX LOOP		14 AWG	
2	1-1		MX PHOTO 4 inch BASE UL	10	14 AWG	1
3	1-1		MX PHOTO 4 inch BASE UL	10	14 AWG	2
4	1-1		MX HEAT ADDR LP SOUNDER BEACON BASE High Volume Fast Flash	10	14 AWG	3, 4
5	1-1		MX HEAT ADDR LP SOUNDER BEACON BASE High Volume Fast Flash	10	14 AWG	5, 15
6	1-1		T-TAP/SPUR		14 AWG	
7	1-1		MX HEAT ADDR LP SOUNDER BEACON BASE High Volume Fast Flash	10	14 AWG	16, 17
8	1-1		INDOOR UL CP W ISOLATOR MX	10	14 AWG	6
9	1-1		INDOOR UL CP W ISOLATOR MX	10	14 AWG	7
10	1-1		MX RELAY IAM	10	14 AWG	8
11	1-1		MX RELAY IAM	10	14 AWG	9
12	1-1		MX RELAY IAM	10	14 AWG	10
13	1-1		MX DUAL INPUT IAM	10	14 AWG	11
14	1-1		ADDR WALL SOUNDER RED High Volume	10	14 AWG	12
15	1-1		ADDR WALL SOUNDER RED High Volume	10	14 AWG	13
16	1-1		ADDR WALL SOUNDER RED High Volume	10	14 AWG	14
Total						

- Select a device as an insertion point
- Select Tap
- T-TAP / SPUR inserted
- Note: Devices on T-TAP / SPUR are inserted

Adding Devices to a T-TAP / SPUR

MX Loop Designer

File FQQ Quick Quote IDNAC P2P NAC P2P MX Loop Designer Home Insert Draw Page Layout Formulas

Home Menu Detectors Detectors with Isolators Duct Modules Call Points Pull Stations LP Sounder Bases LP Sounder Beacon Bases LP Wall Sounders LP Wall Sounder Beacons LP Wall Sounder Beacon WP

D16

1 MX PULL STATION SINGLE ACTION
2 MX PULL STATION DOUBLE ACTION
3 MX PULL STATION DOUBLE ACTION PUSH

DETECTORS	PHOTO	2	HEAT	3	PHOTO/HEAT/CO	0	DUCT	0
BASES	STANDARD	2	CONTINUITY	0	SOUNDER	0	SOUNDER BEACON	3
CALLS/PULLS	CP INDOOR	2	CP OUTDOOR	0	SINGLE	0	BREAKGLASS	3
MODULES	SIGNAL IAM	0	ISOLATOR	0	MULTI IO	0	RELAY	3
LP SOUNDERS	MINI IAM	0	DUAL IAM	1	WP SDR	0	WP SDR/BEACON	0

Select across these 4 columns to edit devices

Item	Loop	Point Label	Description and Setting	Wire Length
1	1-1		ESMX LOOP	
2	1-1		MX PHOTO 4 inch BASE UL	10
3	1-1		MX PHOTO 4 inch BASE UL	10
4	1-1		MX HEAT ADDR LP SOUNDER BEACON BASE High Volume Fast Flash	10
5	1-1		MX HEAT ADDR LP SOUNDER BEACON BASE High Volume Fast Flash	10
6	1-1		T-TAP/SPUR	
7	1-1		MX HEAT ADDR LP SOUNDER BEACON BASE High Volume Fast Flash	10
8	1-1		INDOOR UL CP W ISOLATOR MX	10
9	1-1		INDOOR UL CP W ISOLATOR MX	10
10	1-1		MX RELAY IAM	10
11	1-1		MX RELAY IAM	10
12	1-1		MX RELAY IAM	10
13	1-1		MX DUAL INPUT IAM	10
14	1-1		ADDR WALL SOUNDER RED High Volume	10
15	1-1		ADDR WALL SOUNDER RED High Volume	10
16	1-1		ADDR WALL SOUNDER RED High Volume	10
17	1-1		MX LOOP RETURN	40
Total				

DETECTORS	PHOTO	2	PHOTO/HEAT	0	HEAT	3	PHOTO/HEAT/CO	0	DUCT	0
BASES	STANDARD	2	CONTINUITY	0	SOUNDER	0	SOUNDER BEACON	3		
CALLS/PULLS	CP INDOOR	2	CP OUTDOOR	0	SINGLE	0	BREAKGLASS	3	PUSH PULL	0
MODULES	SIGNAL IAM	0	ISOLATOR	0	MULTI IO	0	RELAY	3	MONITOR	0
LP SOUNDERS	MINI IAM	0	DUAL IAM	1	WP SDR	0	WP SDR/BEACON	0		

Select across these 4 columns to edit devices

Item	Loop	Point Label	Description and Setting	Wire Length
1	1-1		ESMX LOOP	
2	1-1		MX PHOTO 4 inch BASE UL	10
3	1-1		MX PHOTO 4 inch BASE UL	10
4	1-1		MX HEAT ADDR LP SOUNDER BEACON BASE High Volume Fast Flash	10
5	1-1		MX HEAT ADDR LP SOUNDER BEACON BASE High Volume Fast Flash	10
6	1-1		T-TAP/SPUR	
7	1-1		MX PULL STATION DOUBLE ACTION	10
8	1-1		MX PULL STATION DOUBLE ACTION	10
9	1-1		MX PULL STATION DOUBLE ACTION	10
10	1-1		MX HEAT ADDR LP SOUNDER BEACON BASE High Volume Fast Flash	10
11	1-1		INDOOR UL CP W ISOLATOR MX	10
12	1-1		INDOOR UL CP W ISOLATOR MX	10
13	1-1		MX RELAY IAM	10
14	1-1		MX RELAY IAM	10
15	1-1		MX RELAY IAM	10
16	1-1		MX DUAL INPUT IAM	10
17	1-1		ADDR WALL SOUNDER RED High Volume	10
18	1-1		ADDR WALL SOUNDER RED High Volume	10
19	1-1		ADDR WALL SOUNDER RED High Volume	10
20	1-1		MX LOOP RETURN	40
Total				

How Many

Enter Qty to Add

OK

Cancel

3

- 1) Select T-TAP / SPUR
- 2) Select Device
- 3) Enter Model
- 4) Enter Quantity
- 5) Click OK
- 6) Devices will be added

Ending a T-TAP / SPUR

File

FQQ

Quick Quote

IDNAC P2P

NAC P2P

MX Loop Designer

Home

Insert

Draw

Page Layout

Formulas

Data

Review

View

Automate

Developer

Help

Table Design

Home Menu

Detectors

Detectors with Isolators

Duct Detector

Modules

Call Points

Pull Stations

LP Sounder Bases

LP Sounder Beacon Bases

LP Wall Sounders

LP Wall Sounder Beacons

LP Wall Sounder WP

LP Wall Sounder Beacon WP

HOME

MX LOOP DEVICES

Wire Length

10

Unit of Measure

Meters

Wire Gauge

14 AWG

LED's on Concurrently

5

Wire Temperature

50°C (122°F)

MICC High Capacitance Cable

Yes

New Loop

Add 2nd Loop to Card

Loop Return

Branch

Tap

End Tap

Copy Selection

Copy Loop

Readdress Loop

Delete Selection

ADD HARDWARE

CONTROLS AND

D19

X

✓

fx

DETECTORS	PHOTO	2	PHOTO/HEAT	0	HEAT	3	PHOTO/HEAT/CO	0	DUCT	0
BASES	STANDARD	2	CONTINUITY	0	SOUNDER	0	SOUNDER BEACON	3		
CALLS/PULLS	CP INDOOR	2	CP OUTDOOR	0	SINGLE	0	BREAKGLASS	3	PUSH PULL	0
MODULES	SIGNAL IAM	0	ISOLATOR	0	MULTI IO	0	RELAY	3	MONITOR	0
LP SOUNDERS	MINI IAM	0	DUAL IAM	1						
	SOUNDER	3	SDR/BEACON	0	WP SDR	0	WP SDR/BEACON	0		

Device + LED in Alarm

LEDs on in Alarm

Ohms per kilometer

Devices with Isolators

Max 4000 per Loop

1 DC Unit = 0.25mA

Max Capacitance

1 AC Unit = 2nF

Max 2000 m per Loop

< 80% of maximum allowed

80 -100% of maximum allowed

> 100% of maximum allowed

Select across these 4 columns to edit devices

Item	Loop	Point Label	Description and Setting	Wire Length	Wire Gauge	Address	Device mA	LEDs On	Cable Ω	Isolator Ω	Loop DC Units	Available AC Units	Total Wire	Amps	Volt Drop	Volts at Device	Class A Amps	Class A Volt Drop	Volts at Dev Cls A
1	1-1		ESMX LOOP		14 AWG						311	379	210	0.078		40.000			
2	1-1		MX PHOTO 4 inch BASE UL	10	14 AWG	1	3.250		9.25					0.078	0.014	39.986	0.003	0.001	
3	1-1		MX PHOTO 4 inch BASE UL	10	14 AWG	2	3.250		9.25					0.074	0.014	39.972	0.007	0.001	
4	1-1		MX HEAT ADDR LP SOUNDER BEACON BASE High Volume Fast Flash	10	14 AWG	3, 4	12.050		9.25	0.25				0.071	0.263	39.709	0.019	0.253	
5	1-1		MX HEAT ADDR LP SOUNDER BEACON BASE High Volume Fast Flash																
6	1-1		T-TAP/SPUR																
7	1-1		MX PULL STATION DOUBLE ACTION																
8	1-1		MX PULL STATION DOUBLE ACTION																
9	1-1		MX PULL STATION DOUBLE ACTION																
10	1-1		MX HEAT ADDR LP SOUNDER BEACON BASE High Volume Fast Flash																
11	1-1		INDOOR UL CP W ISOLATOR MX																
12	1-1		INDOOR UL CP W ISOLATOR MX																
13	1-1		MX RELAY IAM																
14	1-1		MX RELAY IAM																
15	1-1		MX RELAY IAM																
16	1-1		MX DUAL INPUT IAM																
17	1-1		ADDR WALL SOUNDER RED High Volume																
18	1-1		ADDR WALL SOUNDER RED High Volume																
19	1-1		ADDR WALL SOUNDER RED High Volume																
20	1-1		MX LOOP RETURN																
Total																			

Select across these 4 columns to edit devices

Item	Loop	Point Label	Description and Setting	Wire Length	Wire Gauge	Address
1	1-1		ESMX LOOP		14 AWG	
2	1-1		MX PHOTO 4 inch BASE UL	10	14 AWG	1
3	1-1		MX PHOTO 4 inch BASE UL	10	14 AWG	2
4	1-1		MX HEAT ADDR LP SOUNDER BEACON BASE High Volume Fast Flash	10	14 AWG	3, 4
5	1-1		MX HEAT ADDR LP SOUNDER BEACON BASE High Volume Fast Flash	10	14 AWG	5, 15
6	1-1		T-TAP/SPUR		14 AWG	
7	1-1		MX PULL STATION DOUBLE ACTION	10	14 AWG	18
8	1-1		MX PULL STATION DOUBLE ACTION	10	14 AWG	19
9	1-1		MX PULL STATION DOUBLE ACTION	10	14 AWG	20
10	1-1		END		14 AWG	
11	1-1		MX HEAT ADDR LP SOUNDER BEACON BASE High Volume Fast Flash	10	14 AWG	16, 17
12	1-1		INDOOR UL CP W ISOLATOR MX	10	14 AWG	6
13	1-1		INDOOR UL CP W ISOLATOR MX	10	14 AWG	7
14	1-1		MX RELAY IAM	10	14 AWG	8
15	1-1		MX RELAY IAM	10	14 AWG	9
16	1-1		MX RELAY IAM	10	14 AWG	10
17	1-1		MX DUAL INPUT IAM	10	14 AWG	11
18	1-1		ADDR WALL SOUNDER RED High Volume	10	14 AWG	12
19	1-1		ADDR WALL SOUNDER RED High Volume	10	14 AWG	13
20	1-1		ADDR WALL SOUNDER RED High Volume	10	14 AWG	14
21	1-1		MX LOOP RETURN	40	14 AWG	
Total						

1) Select an insertion point

2) Select End Tap

3) End Tap inserted

4) Note: Devices after End Tap return to main loop

Example of a T-TAP / SPUR off a T-TAP / SPUR

DETECTORS	PHOTO	2	PHOTO/HEAT	0	HEAT	3	PHOTO/HEAT/CO	0	DUCT	0
BASES	STANDARD	2	CONTINUITY	0	SOUNDER	0	SOUNDER BEACON	3		
CALLS/PULLS	CP INDOOR	2	CP OUTDOOR	0	SINGLE	0	BREAKGLASS	3	PUSH PULL	0
MODULES	SIGNAL IAM	0	ISOLATOR	0	MULTI IO	0	RELAY	4	MONITOR	0
	MINI IAM	0	DUAL IAM	2						
LP SOUNDERS	SOUNDER	3	SDR/BEACON	0	WP SDR	0	WP SDR/BEACON	0		

Select across these 4 columns to edit devices

Item	Loop	Point Label	Description and Setting	Wire Length	Wire Gauge	Address
1	1-1		ESMX LOOP		14 AWG	
2	1-1		MX PHOTO 4 inch BASE UL	10	14 AWG	1
3	1-1		MX PHOTO 4 inch BASE UL	10	14 AWG	2
4	1-1	1	MX HEAT ADDR LP SOUNDER BEACON BASE High Volume Fast Flash	10	14 AWG	3, 4
5	1-1		MX HEAT ADDR LP SOUNDER BEACON BASE High Volume Fast Flash	10	14 AWG	5, 15
6	1-1		T-TAP/SPUR		14 AWG	
7	1-1		MX PULL STATION DOUBLE ACTION	10	14 AWG	18
8	1-1	2	MX PULL STATION DOUBLE ACTION	10	14 AWG	19
9	1-1		T-TAP/SPUR		14 AWG	
10	1-1		MX RELAY IAM	10	14 AWG	21
11	1-1		MX DUAL INPUT IAM	10	14 AWG	22
12	1-1		END		14 AWG	
13	1-1	2	MX PULL STATION DOUBLE ACTION	10	14 AWG	20
14	1-1		END		14 AWG	
15	1-1		MX HEAT ADDR LP SOUNDER BEACON BASE High Volume Fast Flash	10	14 AWG	16, 17
16	1-1		INDOOR UL CP W ISOLATOR MX	10	14 AWG	6
17	1-1		INDOOR UL CP W ISOLATOR MX	10	14 AWG	7
18	1-1		MX RELAY IAM	10	14 AWG	8
19	1-1		MX RELAY IAM	10	14 AWG	9
20	1-1	1	MX RELAY IAM	10	14 AWG	10
21	1-1		MX DUAL INPUT IAM	10	14 AWG	11
22	1-1		ADDR WALL SOUNDER RED High Volume	10	14 AWG	12
23	1-1		ADDR WALL SOUNDER RED High Volume	10	14 AWG	13
24	1-1		ADDR WALL SOUNDER RED High Volume	10	14 AWG	14
25	1-1		MX LOOP RETURN	40	14 AWG	
Total						

- 1) Devices connected to Main Loop
- 2) Devices connected to T-Tap / Spur 1
- 3) Devices connected to T-Tap / Spur 2

Example of Adding a Second Isolated Loop Card to the Main Loop Card

MX LOOP DESIGNER SETTINGS

Wire Length: 10 | Unit of Measure: Meters | Wire Gauge: 14 AWG | Wire Temperature: 50°C (122°F) | LED's on Concurrently: Yes | MICC High Capacitance Cable: Yes

ADD HARDWARE

2 Add 2nd Loop to Card

DETECTORS | PHOTO 2 | PHOTO/HEAT 0 | HEAT 4 | PHOTO/HEAT/CO 0 | DUCT 0 |
BASES | STANDARD 2 | CONTINUITY 0 | SOUNDER 0 | SOUNDER BEACON 4 |
CALLS/PULLS | CP INDOOR 4 | CP OUTDOOR 0 | SINGLE 0 | BREAKGLASS 3 | PUSH PULL 0 |
MODULES | SIGNAL IAM 0 | ISOLATOR 0 | MULTI IO 0 | RELAY 7 | MONITOR 0 |
LP SOUNDERS | MINI IAM 0 | DUAL IAM 3 | SDR/BEACON 0 | WP SDR 0 | WP SDR/BEACON 0 |

Select across these 4 columns to edit devices

Item	Loop	Point Label	Description and Setting	Wire Length	Wire Gauge	Address	Device mA	LEDs On	Cable Ω	Isolator Ω	Loop DC Units	Available AC Units	Total Wire	Left Feed			Right Feed		
														Amps	Volt Drop	Volts at Device	Class A Amps	Class A Volt Drop	Volts at Dev Cls A
22	1-1		ADDR WALL SOUNDER RED High Volume	10	14 AWG	12	8.475		9.25	0.25				0.025	0.255	38.407	0.061	0.261	39.168
23	1-1		ADDR WALL SOUNDER RED High Volume	10	14 AWG	13	8.475		9.25	0.25				0.017	0.253	38.153	0.070	0.263	39.429
24	1-1		ADDR WALL SOUNDER RED High Volume	10	14 AWG	14	8.475		9.25	0.25				0.008	0.252	37.902	0.078	0.308	39.692
25	1-1		MX LOOP RETURN	40	14 AWG				9.25								0.078		40.000
26	1-2		ESMX LOOP EXPANSION CARD		14 AWG				9.25					0.036		40.000			
27	1-2		MX HEAT ADDR LP SOUNDER BEACON BASE High Volume Fast Flash	10	14 AWG	23, 24	9.050		9.25	0.25				0.036	0.257	39.743	0.009	0.252	38.411
28	1-2		INDOOR UL CP W ISOLATOR MX	10	14 AWG	25	0.300		9.25	0.25				0.027	0.255	39.488	0.009	0.252	38.663
29	1-2		INDOOR UL CP W ISOLATOR MX	10	14 AWG	26	0.300		9.25	0.25				0.027	0.255	39.233	0.010	0.252	38.915
30	1-2		MX RELAY IAM	10	14 AWG	27	0.300		9.25					0.027	0.005	39.228	0.010	0.002	39.167
31	1-2		MX RELAY IAM	10	14 AWG	28	0.300		9.25					0.026	0.005	39.224	0.010	0.002	39.168
32	1-2		MX RELAY IAM	10	14 AWG	29	0.300		9.25					0.026	0.005	39.219	0.011	0.002	39.170
33	1-2		MX DUAL INPUT IAM	10	14 AWG	30	0.250		9.25					0.026	0.005	39.214	0.011	0.002	39.172
34	1-2		ADDR WALL SOUNDER RED High Volume	10	14 AWG	31	8.475		9.25	0.25				0.025	0.255	38.959	0.019	0.254	39.174
35	1-2		ADDR WALL SOUNDER RED High Volume	10	14 AWG	32	8.475		9.25	0.25				0.017	0.253	38.706	0.028	0.255	39.428
36	1-2		ADDR WALL SOUNDER RED High Volume	10	14 AWG	33	8.475		9.25	0.25				0.008	0.252	38.455	0.036	0.317	39.683
37	1-2		MX LOOP RETURN	100	14 AWG				9.25								0.036		40.000
Total																			

1 Select an insertion point

2 Select Add 2nd Loop to Card

3 2nd Loop Card added to Main Loop Card

4 Add Devices

5 Add a Loop Return for a Class A Circuit

6 Note: Loop Numbering Loop 1-2

- 1) Select an insertion point
- 2) Select Add 2nd Loop to Card
- 3) 2nd Loop Card added to Main Loop Card
- 4) Add Devices
- 5) Add a Loop Return for a Class A Circuit
- 6) Note: Loop Numbering Loop 1-2

Adding a New Loop

MX Loop Designer Settings:

- Wire Length: 10
- Unit of Measure: Meters
- Wire Gauge: 14 AWG
- LED's on Concurrently: 5
- Wire Temperature: 50°C (122°F)
- MICC High Capacitance Cable: Yes

MX LOOP DESIGNER SETTINGS:

- ADD HARDWARE: New Loop, Add 2nd Loop to Card, Loop Return, Branch, Tap, End Tap
- CONTROLS AND: Copy Selection, Copy Loop, Readdress Loop, Delete Select

Item	Loop	Point Label	Description and Setting	Wire Length	Wire Gauge	Address	Device mA	LEDs On	Cable Ω	Isolator Ω	Loop DC Units	Available AC Units	Total Wire	Amps	Volt Drop	Volts at Device	Class A Amps	Class A Volt Drop	Volts at Dev Cls A
31	1-2		MX RELAY IAM	10	14 AWG	28	0.300		9.25					0.026	0.005	39.224	0.010	0.002	39.168
32	1-2		MX RELAY IAM	10	14 AWG	29	0.300		9.25					0.026	0.005	39.219	0.011	0.002	39.170
33	1-2		MX DUAL INPUT IAM	10	14 AWG	30	0.250		9.25					0.026	0.005	39.214	0.011	0.002	39.172
34	1-2		ADDR WALL SOUNDER RED High Volume	10	14 AWG	31	8.475		9.25	0.25				0.025	0.255	38.959	0.019	0.254	39.174
35	1-2		ADDR WALL SOUNDER RED High Volume	10	14 AWG	32	8.475		9.25	0.25				0.017	0.253	38.706	0.028	0.255	39.428
36	1-2		ADDR WALL SOUNDER RED High Volume	10	14 AWG	33	8.475		9.25	0.25				0.008	0.252	38.455	0.036	0.317	39.683
37	1-2		MX LOOP RETURN	100	14 AWG				9.25								0.036		40.000
38	2-1		ESMX LOOP		14 AWG				9.25		157	397	140	0.039		40.000			
39	2-1		MX SSD PHOTO ADDR LP SOUNDER BEACON BASE High Volume Fast Flash	10	14 AWG	1, 2	12.050	●	9.25	0.25				0.039	0.257	39.743	0.012	0.252	39.420
40	2-1		MX PULL STATION SINGLE ACTION	10	14 AWG	3	5.600	●	9.25					0.027	0.005	39.738	0.018	0.003	39.672
41	2-1		MX PHOTO 4 inch BASE UL	10	14 AWG	4	3.250	●	9.25					0.022	0.004	39.734	0.021	0.004	39.675
42	2-1		MX HEAT ADDR LP SOUNDER BEACON BASE High Volume Fast Flash	10	14 AWG	5, 6	12.050	●	9.25	0.25				0.018	0.253	39.480	0.033	0.256	39.679
43	2-1		MX PULL STATION SINGLE ACTION	10	14 AWG	7	5.600	●	9.25					0.006	0.001	39.479	0.039	0.007	39.935
44	2-1		MX RELAY IAM	10	14 AWG	8	0.300		9.25					0.001	0.000	39.479	0.039	0.007	39.942
45	2-1		MX RELAY IAM	10	14 AWG	9	0.300		9.25					0.000	0.000	39.479	0.039	0.051	39.949
46	2-1		MX LOOP RETURN	70	14 AWG				9.25								0.039		40.000
Total																			

- 1) Select an insertion point
- 2) Select New Loop
- 3) New Loop Added
- 4) Add Devices
- 5) Add a Loop Return for a Class A Circuit
- 6) Note: Loop Numbering Loop 2-1

Example of Adding Branches for more than one Class B Circuit

File FQQ Quick Quote IDNAC P2P NAC P2P **MX Loop Designer** Home Insert Draw Page Layout Formulas Data Review View Automate Developer Help

Home Menu Detectors Detectors with Isolators Duct Modules Call Pull LP Sounder LP Sounder LP Wall LP Wall Sounder LP Wall LP Wall Sounder Beacon WP Beacon WP

Wire Length 10 Unit of Measure Meters Wire Gauge 14 AWG LED's on Concurrently 5 Wire Temperature 50°C (122°F) MICC High Capacitance Cable Yes

MX LOOP DESIGNER SETTINGS

ADD HARDWARE New Loop Add 2nd Loop Loop to Card Return Branch Tap End Tap Copy Selection Copy Loop Readdress Loop Select

MX LOOP DEVICES

DETECTORS | PHOTO 9 | PHOTO/HEAT 0 | HEAT 5 | PHOTO/HEAT/CO 0 | DUCT 0 | BASES | STANDARD 3 | CONTINUITY 0 | SOUNDER 0 | SOUNDER BEACON 11 | CALLS/PULLS | CP INDOOR 4 | CP OUTDOOR 0 | SINGLE 7 | BREAKGLASS 3 | PUSH PULL 0 | MODULES | SIGNAL IAM 0 | ISOLATOR 0 | MULTI IO 0 | RELAY 9 | MONITOR 0 | LP SOUNDERS | MINI IAM 0 | DUAL IAM 3 | SDR/BEACON 0 | WP SDR 0 | WP SDR/BEACON 0 |

Device + LED in Alarm LEDs on in Alarm Ohms per kilometer Devices with Isolators Max 4000 per Loop 1 DC Unit = 0.25mA Max Capacitance 1 AC Unit = 2nF Max 2000 m per Loop

Select across these 4 columns to edit devices

Item	Loop	Point Label	Description and Setting	Wire Length	Wire Gauge	Address	Device mA	LEDs On	Cable Ω	Isolator Ω	Loop DC Units	Available AC Units	Total Wire	Left Feed			Right Feed		
														Amps	Volt Drop	Volts at Device	Class A Amps	Class A Volt Drop	Volts at Dev Cls A
44	2-1		MX RELAY IAM	10	14 AWG	8	0.300		9.25					0.001	0.000	39.479	0.039	0.007	39.942
45	2-1		MX RELAY IAM	10	14 AWG	9	0.300		9.25					0.000	0.000	39.479	0.039	0.051	39.949
46	2-1		MX LOOP RETURN	70	14 AWG				9.25								0.039		40.000
47	3-1		ESMX LOOP		14 AWG				9.25		293	395	100	0.073		40.000			
48	3-1		BRANCH		14 AWG				9.25					0.060		40.000			
49	3-1		MX PHOTO ADDR LP SOUNDER BEACON BASE High Volume Fast Flash	10	14 AWG	1, 2	12.050	●	9.25	0.25				0.060	0.261	39.739			
50	3-1		MX PHOTO ADDR LP SOUNDER BEACON BASE High Volume Fast Flash	10	14 AWG	3, 4	12.050	●	9.25	0.25				0.048	0.259	39.480			
51	3-1		MX PHOTO ADDR LP SOUNDER BEACON BASE High Volume Fast Flash	10	14 AWG	5, 6	12.050	●	9.25	0.25				0.036	0.257	39.223			
52	3-1		MX PHOTO ADDR LP SOUNDER BEACON BASE High Volume Fast Flash	10	14 AWG	7, 8	12.050	●	9.25	0.25				0.024	0.254	38.969			
53	3-1		MX PHOTO ADDR LP SOUNDER BEACON BASE High Volume Fast Flash	10	14 AWG	9, 10	12.050	●	9.25	0.25				0.012	0.252	38.717			
54	3-1		BRANCH		14 AWG				9.25					0.013		40.000			
55	3-1		MX PULL STATION SINGLE ACTION	10	14 AWG	11	2.600		9.25					0.013	0.002	39.998			
56	3-1		MX PULL STATION SINGLE ACTION	10	14 AWG	12	2.600		9.25					0.010	0.002	39.996			
57	3-1		MX PULL STATION SINGLE ACTION	10	14 AWG	13	2.600		9.25					0.008	0.001	39.994			
58	3-1		MX PULL STATION SINGLE ACTION	10	14 AWG	14	2.600		9.25					0.005	0.001	39.993			
59	3-1		MX PULL STATION SINGLE ACTION	10	14 AWG	15	2.600		9.25					0.003	0.000	39.993			
Total																			

Legend: < 80% of maximum allowed (Green), 80 - 100% of maximum allowed (Yellow), > 100% of maximum allowed (Red)

- 1) Select an insertion point
- 2) Select Branch
- 3) Branch Added
- 4) Add Devices
- 5) Second Branch
- 6) Note: Loop Return is not added to the end of a branch



ESMX Loop Designer Settings

ESMX Loop Designer Settings

1	Wire Length	10	Unit of Measure	Meters	4
2	Wire Gauge	14 AWG	LED's on Concurrently	5	5
3	Wire Temperature	50°C (122°F)	MICC High Capacitance Cable	Yes	6

7 MX LOOP DESIGNER SETTINGS

1 Default Wire Length used when adding new devices.

2 Default Wire Gauge used when adding new devices.

3 Default Wire Temperature setting for project.

 75°C (167°F)

 50°C (122°F)

4 Unit of Measure for wiring distances.

 Feet, Resistance shown Ω / 1000ft.
Meters, Resistance shown Ω / km.

5 LEDs on Concurrently. This will determine the maximum number of LEDs turned on in Alarm per loop, as per the configuration software settings.

 5
 10
 20
 30

6 Select if MICC High Capacitance Cable is used.

 Yes, Reduces Available AC Units.
 No

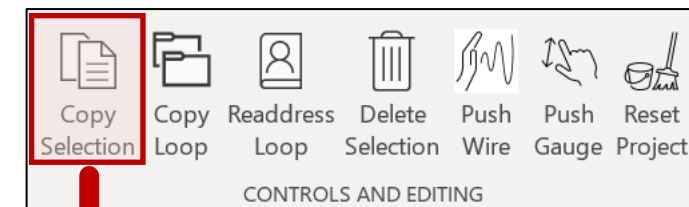
7 All Settings are saved as defaults when saving a project.



ESMX Loop Designer Controls and Editing

Controls and Editing – Copy Selection

- 1) Highlight Selection to Copy
- 2) Click Copy Selection
- 3) Select 1 to Insert or 2 to Add to End and Press OK
- 4) If 1 is Selected, Enter the Item No you wish to copy the selection below and press OK



DETECTORS

BASES

CALLS/PULLS

MODULES

LP SOUNDRERS

PHOTO

STANDARD

CP INDOOR

SIGNAL IAM

MINI IAM

SOUNDER

9

3

4

0

0

6

PHOTO/HEAT

CONTINUITY

CP OUTDOOR

ISOLATOR

DUAL IAM

SDR/BEACON

0

0

0

0

3

0

HEAT

SOUNDER

SINGLE

MULTI IO

WP SDR

5

0

7

0

0

PHOTO/HEAT/CO

SOUNDER BEACON

BREAKGLASS

RELAY

WP SDR/BEACON

0

11

3

9

0

DUCT

PUSH PULL

MONITOR

0

0

0

Device + LED in Alarm

LEDs on in Alarm

Ohms per kilometer

Devices with Isolators

Max 4000 per Loop
1 DC Unit = 0.25mA

Max Capacitance
1 AC Unit = 2nF

Max 2000 m per L

< 80% of maximum allowed

80 -100% of maximum allowed

> 100% of maximum allowed

Select across these 4 columns to edit devices

Item

Loop

Point Label

Description and Setting

Wire Length

Wire Gauge

Address

Device mA

LEDs On in Alarm

Cable Ohm Isolator

Loop DC Units

Available AC Units

Total Wire

Amps

Volt Drop

Volts at Device

Class A Amps

Class A Volt Drop

Volts at Dev Cls A

1

1-1

ESMX LOOP

2

1-1

MX PHOTO | 4 inch BASE UL

10

14 AWG

1

3.250

3

1-1

MX PHOTO | 4 inch BASE UL

10

14 AWG

2

3.250

4

1-1

MX HEAT | ADDR LP SOUNDER BEACON BASE | High Volume Fast Flash

10

14 AWG

3, 4

12.050

5

1-1

MX HEAT | ADDR LP SOUNDER BEACON BASE | High Volume Fast Flash

10

14 AWG

5, 15

12.050

6

1-1

T-TAP/SPUR

14 AWG

7

1-1

MX PULL STATION DOUBLE ACTION

10

14 AWG

16, 17

2.600

8

1-1

MX PULL STATION DOUBLE ACTION

10

14 AWG

16, 17

2.600

9

1-1

T-TAP/SPUR

14 AWG

10

1-1

MX RELAY IAM

10

14 AWG

16, 17

0.300

11

1-1

MX DUAL INPUT IAM

10

14 AWG

22

0.250

12

1-1

END

14 AWG

13

1-1

MX PULL STATION DOUBLE ACTION

10

14 AWG

20

2.600

14

1-1

END

14 AWG

15

1-1

MX HEAT | ADDR LP SOUNDER BEACON BASE | High Volume Fast Flash

10

14 AWG

16, 17

9.050

16

1-1

INDOOR UL CP W ISOLATOR MX

10

14 AWG

6

0.300

17

1-1

INDOOR UL CP W ISOLATOR MX

10

14 AWG

7

0.300

18

1-1

MX RELAY IAM

10

14 AWG

8

0.300

19

1-1

MX RELAY IAM

10

14 AWG

9

0.300

20

1-1

MX RELAY IAM

10

14 AWG

10

0.300

21

1-1

MX DUAL INPUT IAM

10

14 AWG

11

0.250

22

1-1

ADDR WALL SOUNDER RED | High Volume

10

14 AWG

12

8.475

23

1-1

ADDR WALL SOUNDER RED | High Volume

10

14 AWG

13

8.475

24

1-1

ADDR WALL SOUNDER RED | High Volume

10

14 AWG

14

8.475

25

1-1

MX LOOP RETURN

40

14 AWG

Copy Selection Mode

Select Copy Mode

1 - Insert

2 - Add to End

OK

Cancel

Copy Devices

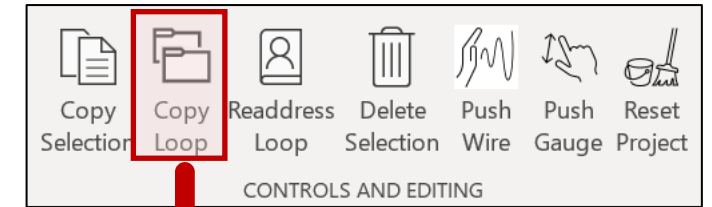
Please enter the Item No you wish to copy selection below 1 to 59

OK

Cancel

Controls and Editing – Copy Loop

- 1) Click Copy Loop
- 2) Enter the ESMX Loop Number to Copy
- 3) Press OK
- 4) Click Yes to Confirm
- 5) A New Loop will be copied to the end of the ESMX Loop Designer Grid
- 6) **NOTE: In the below Example Loop 4 will be created**



DETECTORS

BASES

CALLS/PULLS

MODULES

LP SOUNDER

PHOTO

STANDARD

CP INDOOR

SIGNAL IAM

MINI IAM

SOUNDER

9

3

4

0

0

6

PHOTO/HEAT

CONTINUITY

CP OUTDOOR

ISOLATOR

DUAL IAM

SDR/BEACON

0

0

0

0

3

0

HEAT

SOUNDER

SINGLE

MULTI IO

WP SDR

WP SDR/BEACON

5

0

7

0

0

0

PHOTO/HEAT/CO

SOUNDER BEACON

BREAKGLASS

RELAY

0

11

3

9

0

DUCT

PUSH PULL

MONITOR

0

0

0

Device + LED in Alarm

LEDs on in Alarm

Ohms per kilometer

Devices with Isolators

Max 4000 per Loop
1 DC Unit = 0.25mA

Max Capacitance
1 AC Unit = 2nF

Max 2000 m per Loop

< 80% of maximum allowed

80 -100% of maximum allowed

> 100% of maximum allowed

Select across these 4 columns to edit devices

Item

Loop

Point Label

Description and Setting

Wire Length

Wire Gauge

Address

Device mA

LEDs On

Cable Ohms

Isolator Ohms

Loop DC Units

Available AC Units

Total Wire

Left Feed

Right Feed

Amps

Volt Drop

Volts at Device

Class A Amps

Class A Volt Drop

Volts at Dev Cls A

1

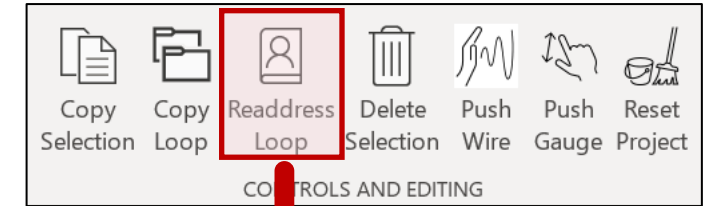
1-1

ESMX LOOP

14 AWG

Controls and Editing – Readdress Loop

- 1) Click Readdress Loop
- 2) Enter the ESMX Loop Number to Readdress
- 3) Press OK
- 4) Click Yes to Confirm
- 5) **NOTE: Before, Example based on Loop 1**
- 6) **NOTE: After, Devices have been readdressed sequentially**



DETECTORS	PHOTO	9	PHOTO/HEAT	0	HEAT	5	PHOTO/HEAT/CO	0	DUCT	0
BASES	STANDARD	3	CONTINUITY	0	SOUNDER	0	SOUNDER BEACON	11		
CALLS/PULLS	CP INDOOR	4	CP OUTDOOR	0	SINGLE	7	BREAKGLASS	3	PUSH PULL	0
MODULES	SIGNAL IAM	0	ISOLATOR	0	MULTI IO	0	RELAY	9	MONITOR	0
LP SOUNDER	MINI IAM	0	DUAL IAM	3						
	SOUNDER	6	SDR/BEACON	0	WP SDR	0	WP SDR/BEACON	0		

Select across these 4 columns to edit devices				Address	Wire Length	Wire Gauge	Address	Device mA	LEDs on in Alarm	Cable Ohms per kilometer	Isolator Ohms	Loop DC Units	Available AC Units	Total Wire	Left Feed Amps	Left Feed Volt Drop	Volts at Device	Class A Amps	Class A Volt Drop	Volts at Dev Cls A
1	1-1		ESMX LOOP			14 AWG									14	0.000	40.000			
2	1-1		MX PHOTO 4 inch BASE UL	1	10	14 AWG	1	3.250							178	0.000	39.986	0.003	0.001	37.838
3	1-1		MX PHOTO 4 inch BASE UL	2	10	14 AWG	2	3.250							172	0.000	39.972	0.007	0.001	37.838
4	1-1		MX HEAT ADDR LP SOUNDER BEACON BASE High Volume Fast Flash	3, 4	10	14 AWG	3, 4	12.050							160	0.000	39.708	0.019	0.253	37.840
5	1-1		MX HEAT ADDR LP SOUNDER BEACON BASE High Volume Fast Flash	5, 6	10	14 AWG	5, 15	12.050							148	0.000	39.447	0.031	0.250	38.093
6	1-1		T-TAP/SPUR			14 AWG									111	0.002	39.447	0.042	0.008	38.343
7	1-1		MX PULL STATION DOUBLE ACTION	7	10	14 AWG	18	5.600							106	0.001	39.445	0.011	0.002	38.341
8	1-1		MX PULL STATION DOUBLE ACTION	8	10	14 AWG	19	2.600							106	0.001	39.444	0.006	0.001	38.340
9	1-1		T-TAP/SPUR			14 AWG									103	0.000	39.444	0.003	0.000	38.340
10	1-1		MX RELAY IAM	9	10	14 AWG	21	0.300							100	0.000	39.444	0.001	0.000	38.340
11	1-1		MX DUAL INPUT IAM	10	10	14 AWG	22	0.250							100	0.000	39.444	0.000	0.000	38.340
12	1-1		END			14 AWG									100	0.000	39.444	0.000	0.000	38.340
13	1-1		MX PULL STATION DOUBLE ACTION	11	10	14 AWG	20	2.600							103	0.000	39.444	0.003	0.000	38.339
14	1-1		END			14 AWG									103	0.000	39.444	0.003	0.000	38.339
15	1-1		MX HEAT ADDR LP SOUNDER BEACON BASE High Volume Fast Flash	12, 13	10	14 AWG	16, 17	9.050		9.25	0.25				103	0.000	39.444	0.003	0.000	38.339
16	1-1		INDOOR UL CP W ISOLATOR MX	14	10	14 AWG	6	0.300		9.25	0.25				103	0.000	39.444	0.003	0.000	38.339
17	1-1		INDOOR UL CP W ISOLATOR MX	15	10	14 AWG	7	0.300		9.25	0.25				103	0.000	39.444	0.003	0.000	38.339
18	1-1		MX RELAY IAM	16	10	14 AWG	8	0.300		9.25					103	0.000	39.444	0.003	0.000	38.339
19	1-1		MX RELAY IAM	17	10	14 AWG	9	0.300		9.25					103	0.000	39.444	0.003	0.000	38.339
20	1-1		MX RELAY IAM	18	10	14 AWG	10	0.300		9.25					103	0.000	39.444	0.003	0.000	38.339
21	1-1		MX DUAL INPUT IAM	19	10	14 AWG	11	0.250		9.25					103	0.000	39.444	0.003	0.000	38.339
22	1-1		ADDR WALL SOUNDER RED High Volume	20	10	14 AWG	12	8.475		9.25	0.25				103	0.000	39.444	0.003	0.000	38.339
23	1-1		ADDR WALL SOUNDER RED High Volume	21	10	14 AWG	13	8.475		9.25	0.25				103	0.000	39.444	0.003	0.000	38.339
24	1-1		ADDR WALL SOUNDER RED High Volume	22	10	14 AWG	14	8.475		9.25	0.25				103	0.000	39.444	0.003	0.000	38.339
25	1-1		MX LOOP RETURN		40	14 AWG				9.25					103	0.000	39.444	0.003	0.000	38.339

Please Enter ESMX Loop No to Readdress 1 to 3

OK Cancel

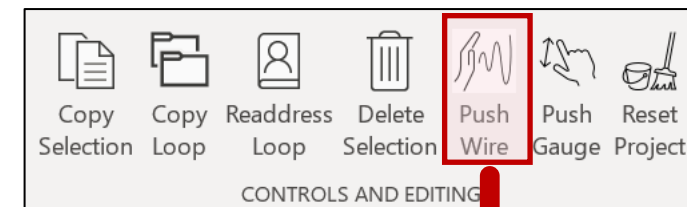
Loop Copy

Are you sure you wish to Readdress loop 1

Yes No

Controls and Editing – Push Wire

- 1) Click Push Wire
- 2) Enter Wire Length and Click OK
- 3) Enter Loop No or Enter 'ALL' to update all Circuits and Click OK
- 4) **NOTE: Before, Example based on Loop 1**
- 5) **NOTE: After, Wire Lengths have been updated to 20m**



DETECTORS	PHOTO	11	PHOTO/HEAT	0	HEAT	9	PHOTO/HEAT/CO	0	DUCT	0
BASES	STANDARD	5	CONTINUITY	0	SOUNDER	0	SOUNDER BEACON	15		
CALLS/PULLS	CP INDOOR	8	CP OUTDOOR	0	SINGLE	7	BREAKGLASS	3	PUSH PULL	0
MODULES	SIGNAL IAM	0	ISOLATOR	0	MULTI IO	0	RELAY	15	MONITOR	0
LP SOUNDER	MINI IAM	0	DUAL IAM	5						
	SOUNDER	12	SDR/BEACON	0	WP SDR	0	WP SDR/BEACON	0		

Item	Loop	Point Label	Description and Setting	Wire Length	Wire Length	Wire Gauge	Address	Device mA	LEDs On	Cable Ω	Isolator Ω	Loop DC Units	Available AC Units	Total Wire	Amps	Left Feed Volt Drop	Volts at Device	Class A Amps	Class A Volt Drop	Volts at Dev Cls A
1	1-1		ESMX LOOP			14 AWG														
2	1-1		MX PHOTO 4 inch BASE UL	20	10	14 AWG	1													
3	1-1		MX PHOTO 4 inch BASE UL	20	10	14 AWG	2													
4	1-1		MX HEAT ADDR LP SOUNDER BEACON BASE High Volume Fast	20	10	14 AWG	3, 4													
5	1-1		MX HEAT ADDR LP SOUNDER BEACON BASE High Volume Fast	20	10	14 AWG	5, 6													
6	1-1		T-TAP/SPUR			14 AWG														
7	1-1		MX PULL STATION DOUBLE ACTION	20	10	14 AWG	7													
8	1-1		MX PULL STATION DOUBLE ACTION	20	10	14 AWG	8													
9	1-1		T-TAP/SPUR			14 AWG														
10	1-1		MX RELAY IAM	20	10	14 AWG	9													
11	1-1		MX DUAL INPUT IAM	20	10	14 AWG	10	0.25		9.25										
12	1-1		END	20	10	14 AWG				9.25										
13	1-1		MX PULL STATION DOUBLE ACTION	20	10	14 AWG	11	2.0		9.25										
14	1-1		END	20	10	14 AWG				9.25										
15	1-1		MX HEAT ADDR LP SOUNDER BEACON BASE High Volume Fast	20	10	14 AWG	12, 13	9.05		9.25										
16	1-1		INDOOR UL CP W ISOLATOR MX	20	10	14 AWG	14	0.300		9.25										
17	1-1		INDOOR UL CP W ISOLATOR MX	20	10	14 AWG	15	0.300		9.25										
18	1-1		MX RELAY IAM	20	10	14 AWG	16	0.300		9.25										
19	1-1		MX RELAY IAM	20	10	14 AWG	17	0.300		9.25										
20	1-1		MX RELAY IAM	20	10	14 AWG	18	0.300		9.25										
21	1-1		MX DUAL INPUT IAM	20	10	14 AWG	19	0.250		9.25										
22	1-1		ADDR WALL SOUNDER RED High Volume	20	10	14 AWG	20	8.475		9.25	0.026				0.026	0.005	38.661	0.053	0.010	39.158
23	1-1		ADDR WALL SOUNDER RED High Volume	20	10	14 AWG	21	8.475		9.25	0.025				0.025	0.255	38.407	0.061	0.261	39.168
24	1-1		ADDR WALL SOUNDER RED High Volume	20	10	14 AWG	22	8.475		9.25	0.017				0.017	0.253	38.153	0.070	0.263	39.429
25	1-1		MX LOOP RETURN	20	40	14 AWG				9.25	0.008				0.008	0.252	37.902	0.078	0.308	39.692
																				40.000

Push Wire Length

Enter Length of Wire 1 - 2000 Meters

OK

Cancel

20

Circuit Number

Please Enter ESMX Loop No to update wire length or enter ALL to update all circuits

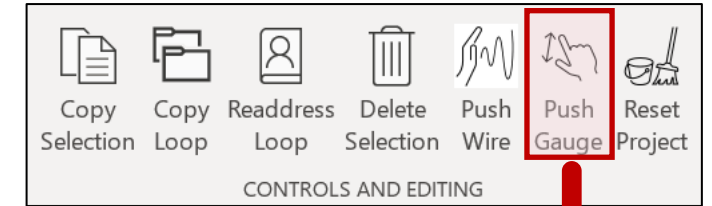
OK

Cancel

1

Controls and Editing – Push Gauge

- 1) Click Push Gauge
- 2) Enter No of Required Wire Gauge and Click OK
- 3) Enter Loop No or Enter 'ALL' to update all Circuits and Click OK
- 4) **NOTE: Before, Example based on Loop 1**
- 5) **NOTE: After, Wire Gauges have been updated to 16 AWG**



DETECTORS	PHOTO	11	PHOTO/HEAT	0	HEAT	9	PHOTO/HEAT/CO	0	DUCT	0
BASES	STANDARD	5	CONTINUITY	0	SOUNDER	0	SOUNDER BEACON	15		
CALLS/PULLS	CP INDOOR	8	CP OUTDOOR	0	SINGLE	7	BREAKGLASS	3	PUSH PULL	0
MODULES	SIGNAL IAM	0	ISOLATOR	0	MULTI IO	0	RELAY	15	MONITOR	0
LP SOUNDER	MINI IAM	0	DUAL IAM	5						
	SOUNDER	12	SDR/BEACON	0	WP SDR	0	WP SDR/BEACON	0		
1	1-1		ESMX LOOP	16 AWG		14 AWG				
2	1-1		MX PHOTO 4 inch BASE UL	16 AWG	10	14 AWG	1			
3	1-1		MX PHOTO 4 inch BASE UL	16 AWG	10	14 AWG	2			
4	1-1		MX HEAT ADDR LP SOUNDER BEACON BASE High Volume Fast Flash	16 AWG	10	14 AWG	3, 4			
5	1-1		MX HEAT ADDR LP SOUNDER BEACON BASE High Volume Fast Flash	16 AWG	10	14 AWG	5, 6			
6	1-1		T-TAP/SPUR	16 AWG		14 AWG				
7	1-1		MX PULL STATION DOUBLE ACTION	16 AWG	10	14 AWG	7			
8	1-1		MX PULL STATION DOUBLE ACTION	16 AWG	10	14 AWG	8			
9	1-1		T-TAP/SPUR	16 AWG		14 AWG				
10	1-1		MX RELAY IAM	16 AWG	10	14 AWG	9			
11	1-1		MX DUAL INPUT IAM	16 AWG	10	14 AWG	10			
12	1-1		END	16 AWG	10	14 AWG				
13	1-1		MX PULL STATION DOUBLE ACTION	16 AWG	10	14 AWG	11			
14	1-1		END	16 AWG	10	14 AWG				
15	1-1		MX HEAT ADDR LP SOUNDER BEACON BASE High Volume Fast Flash	16 AWG	10	14 AWG	12, 13	9.0	9.25	0.25
16	1-1		INDOOR UL CP W ISOLATOR MX	16 AWG	10	14 AWG	14	0.300	9.25	0.25
17	1-1		INDOOR UL CP W ISOLATOR MX	16 AWG	10	14 AWG	15	0.300	9.25	0.25
18	1-1		MX RELAY IAM	16 AWG	10	14 AWG	16	0.300	9.25	
19	1-1		MX RELAY IAM	16 AWG	10	14 AWG	17	0.300	9.25	
20	1-1		MX RELAY IAM	16 AWG	10	14 AWG	18	0.300	9.25	
21	1-1		MX DUAL INPUT IAM	16 AWG	10	14 AWG	19	0.250	9.25	
22	1-1		ADDR WALL SOUNDER RED High Volume	16 AWG	10	14 AWG	20	8.475	9.25	0.25
23	1-1		ADDR WALL SOUNDER RED High Volume	16 AWG	10	14 AWG	21	8.475	9.25	0.25
24	1-1		ADDR WALL SOUNDER RED High Volume	16 AWG	10	14 AWG	22	8.475	9.25	0.25
25	1-1		MX LOOP RETURN	16 AWG	40	14 AWG			9.25	

Push Wire Length

Select Wire Gauge

1 - 18 AWG
2 - 16 AWG
3 - 14 AWG
4 - 12 AWG
5 - 1.5mm2
6 - 2.5mm2

2

Circuit Number

Please Enter ESMX Loop No to update or enter ALL to update all circuits

1

5

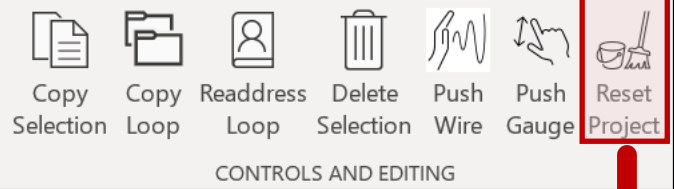
4

2

3

Controls and Editing – Reset Project

- 1) Click Reset Project
- 2) Click Yes to Confirm you wish to Reset the Project
- 3) Project is Reset



DETECTORS	PHOTO	11	PHOTO/HEAT	0	HEAT	9	PHOTO/HEAT/CO	0	DUCT	0
BASES	STANDARD	5	CONTINUITY	0	SOUNDER	0	SOUNDER BEACON	15		
CALLS/PULLS	CP INDOOR	8	CP OUTDOOR	0	SINGLE	7	BREAKGLASS	3	PUSH PULL	0
MODULES	SIGNAL IAM	0	ISOLATOR	0	MULTI IO	0	RELAY	15	MONITOR	0
LP SOUNDER	MINI IAM	0	DUAL IAM	5	WP SDR	0	WP SDR/BEACON	0		

Select across these 4 columns to edit devices

Item	Loop	Point Label	Description and Setting	Wire Length
1	1-1		ESMX LOOP	
2	1-1		MX PHOTO 4 inch BASE UL	20
3	1-1		MX PHOTO 4 inch BASE UL	20
4	1-1		MX HEAT ADDR LP SOUNDER BEACON BASE High Volume Fast Flash	20
5	1-1		MX HEAT ADDR LP SOUNDER BEACON BASE High Volume Fast Flash	20

Reset ESMX Loop Designer

Are you sure you wish to reset the ESMX Loop Designer?

Yes No

< 80% of maximum allowed
80 -100% of maximum allowed
> 100% of maximum allowed

Left Feed				Right Feed			
Amps	Volt Drop	Volts at Device	Class A Amps	Class A Volt Drop	Volts at Dev	Class A Amps	Class A Volt Drop
0.044	0.046	39.954	0.003	0.002	37.621		
0.075	0.044	39.910	0.007	0.004	37.622		
0.072	0.292	39.617	0.019	0.261	37.626		
0.060	0.285	39.332	0.031	0.250	37.887		

DETECTORS	PHOTO	0	PHOTO/HEAT	0	HEAT	0	PHOTO/HEAT/CO	0	DUCT	0
BASES	STANDARD	0	CONTINUITY	0	SOUNDER	0	SOUNDER BEACON	0		
CALLS/PULLS	CP INDOOR	0	CP OUTDOOR	0	SINGLE	0	BREAKGLASS	0	PUSH PULL	0
MODULES	SIGNAL IAM	0	ISOLATOR	0	MULTI IO	0	RELAY	0	MONITOR	0
LP SOUNDER	MINI IAM	0	DUAL IAM	0	WP SDR	0	WP SDR/BEACON	0		

Select across these 4 columns to edit devices

Item	Loop	Point Label	Description and Setting	Wire Length	Wire Gauge	Address	Device mA	LEDs On	Cable Ω	Isolator Ω	Loop DC Units	Available AC Units	Total Wire
1	1-1		ESMX LOOP		16 AWG				14.76			420	
Total													

Device + LED in Alarm
LEDs on in Alarm
Ohms per kilometer
Devices with Isolators
Max 4000 per Loop
1 DC Unit = 0.25mA
Max Capacitance
1 AC Unit = 2nF
Max 2000 m per Loop

< 80% of maximum allowed
80 -100% of maximum allowed
> 100% of maximum allowed

Left Feed				Right Feed			
Amps	Volt Drop	Volts at Device	Class A Amps	Class A Volt Drop	Volts at Dev	Class A Amps	Class A Volt Drop
		40.000					



ESMX Loop Designer

Cell Fill Color Codes

ESMX Loop Designer Cell Fill Color Codes

GREEN = GOOD
CIRCUIT VALUE OK



**AMBER = CAUTION
CIRCUIT VALUE BETWEEN
80% - 100% OF MAX**



RED = STOP
IF ANY CELLS ARE RED
CIRCUIT IS DEAD.



DETECTORS	PHOTO	300	PHOTO/HEAT	0	HEAT	50	PHOTO/HEAT/CO	0	DUCT	0
BASES	STANDARD	250	CONTINUITY	0	SOUNDER	100	SOUNDER BEACON	0		
CALLS/PULLS	CP INDOOR	0	CP OUTDOOR	0	SINGLE	0	BREAKGLASS	0	PUSH PULL	0
MODULES	SIGNAL IAM	0	ISOLATOR	0	MULTI IO	0	RELAY	0	MONITOR	0
LP SOUNDERS	MINI IAM	0	DUAL IAM	0	WP SDR	0	WP SDR/BEACON	0		

Select across these 4 columns to edit devices

Item	Loop	Point Label	Description and Setting	Wire Length	Wire Gauge	Address	Device mA	LEDs On	Cable per kilometer	Isolators	Loop DC Units	Available AC Units	Total Wire	Amps	Volt Drop	Volts at Device	Class A Amps	Class A Volt Drop	Volts at Dev C/A
1	1-1		ESMX LOOP		16 AWG				14.76		4910	245	1000	1.228		40.000			
2	1-1		MX PHOTO LP SOUNDER BASE 85DB @ 10FT Fixed Volume	10	14 AWG	1	27.250		9.25					1.228	0.227	39.773	0.027	0.005	23.016
3	1-1		MX PHOTO LP SOUNDER BASE 85DB @ 10FT Fixed Volume	10	14 AWG	2	27.250		9.25					1.200	0.222	39.551	0.055	0.01	23.021
4	1-1		MX PHOTO LP SOUNDER BASE 85DB @ 10FT Fixed Volume	10	14 AWG	3	27.250		9.25					1.173	0.217	39.334	0.082	0.015	23.031
5	1-1		MX PHOTO LP SOUNDER BASE 85DB @ 10FT Fixed Volume	10	14 AWG	4	27.250		9.25					1.146	0.212	39.122	0.109	0.02	23.046
6	1-1		MX PHOTO LP SOUNDER BASE 85DB @ 10FT Fixed Volume	10	14 AWG	5	27.250		9.25					1.119	0.207	38.915	0.136	0.025	23.066
7	1-1		MX PHOTO LP SOUNDER BASE 85DB @ 10FT Fixed Volume	10	14 AWG	6	24.250		9.25					1.091	0.202	38.713	0.161	0.03	23.092
8	1-1		MX PHOTO LP SOUNDER BASE 85DB @ 10FT Fixed Volume	10	14 AWG	7	24.250		9.25					1.067	0.197	38.515	0.185	0.034	23.121
9	1-1													1.043	0.193	38.322	0.209	0.039	23.155
10	1-1													1.019	0.188	38.134	0.233	0.043	23.194
11	1-1													0.994	0.184	37.950	0.258	0.048	23.237
12	1-1													0.970	0.179	37.771	0.282	0.052	23.285
13	1-1													0.946	0.175	37.596	0.306	0.057	23.337
14	1-1													0.922	0.171	37.425	0.330	0.061	23.394
15	1-1													0.897	0.166	37.259	0.355	0.066	23.455
16	1-1													0.873	0.162	37.097	0.379	0.070	23.520
17	1-1													0.849	0.157	36.940	0.403	0.075	23.590
18	1-1													0.825	0.153	36.788	0.427	0.079	23.665
19	1-1													0.800	0.148	36.640	0.452	0.084	23.744
20	1-1		MX PHOTO LP SOUNDER BASE 85DB @ 10FT Fixed Volume	10	14 AWG	19	24.250		9.25					0.776	0.144	36.496	0.476	0.088	23.828
21	1-1		MX PHOTO LP SOUNDER BASE 85DB @ 10FT Fixed Volume	10	14 AWG	20	24.250		9.25					0.752	0.139	36.357	0.500	0.093	23.916
22	1-1		MX PHOTO LP SOUNDER BASE 85DB @ 10FT Fixed Volume	10	14 AWG	21	24.250		9.25					0.728	0.135	36.222	0.524	0.097	24.008
23	1-1		MX PHOTO LP SOUNDER BASE 85DB @ 10FT Fixed Volume	10	14 AWG	22	24.250		9.25					0.703	0.130	36.092	0.549	0.101	24.105



ESMX Loop Designer Project Menu

Project – Project View

- 1) Click Project View

2) Switches to Project View Sheet

3) Enter Circuit No to view Loop Information

4) Click to Print Project View – This will enable Print Preview first.
- NOTE: This sheet has been formatted for landscape printing which can be used in Project Submittals and/or Project Handover Documentation

Designer View

Project View

Bill of Materials

PROJECT

Circuit Number

1

Project Name

Example Project

Customer Name

Project Location

Click here to Print Project View

Project Phase

Prepared By

Date

Jason Crouch

11/10/2023

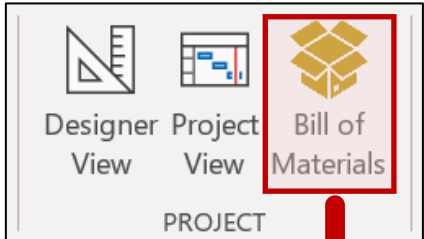
										Left Feed Calculations			Right Feed Calculations		
Item	Point Label	Loop	Address	Devices and Setting	Wired To	Wire Length	Wire Gauge	Device mA		Amps	Volt Drop	Volts at Device	Amps	Volt Drop	Volts at Device
1		1-1		MX LOOP			14 AWG			0.088		40.000			
2		1-1	1	MX HEAT 4 inch BASE UL	MX LOOP	20	14 AWG	3		0.088	0.036	39.964	0.003	0.001	37.940
3		1-1	2	MX HEAT 4 inch BASE UL	1	20	14 AWG	3		0.085	0.034	39.930	0.007	0.003	37.942
4		1-1	5, 12	MX PHOTO ADDR LP SOUNDER BEACON BASE High Volume Fast Flash	2	20	14 AWG	12		0.082	0.283	39.647	0.019	0.257	37.944
5		1-1	20	MX PULL STATION DOUBLE ACTION	5, 12	20	14 AWG	6		0.070	0.028	39.619	0.024	0.010	38.202
6		1-1	21	MX PULL STATION DOUBLE ACTION	20	20	14 AWG	6		0.064	0.026	39.593	0.030	0.012	38.211
7		1-1	22	DUCT DETECTOR SMOKE SNSOR SAMPLE TUBE 6 to 30 INCHES	21	20	14 AWG	0		0.058	0.024	39.570	0.030	0.012	38.223
8		1-1	23	MX RELAY IAM	22	20	14 AWG	0		0.058	0.023	39.546	0.030	0.012	38.236
9		1-1	24	MX DUAL INPUT IAM	23	20	14 AWG	0		0.058	0.023	39.523	0.031	0.012	38.248
10		1-1	25	MX DUAL INPUT IAM	24	20	14 AWG	0		0.058	0.023	39.500	0.031	0.012	38.260
11		1-1	26	ADDR WALL A/V RED High Volume Fast Flash	25	20	14 AWG	13		0.057	0.273	39.227	0.044	0.268	38.272
12		1-1	27	ADDR WALL A/V RED High Volume Fast Flash	26	20	14 AWG	13		0.044	0.268	38.959	0.057	0.273	38.540
13		1-1	16	MX PHOTO 4 inch BASE UL	27	20	14 AWG	0		0.031	0.013	38.946	0.057	0.023	38.813
14		1-1	17	MX PHOTO 4 inch BASE UL	16	20	14 AWG	0		0.031	0.013	38.934	0.057	0.023	38.836
15		1-1	6	MX PULL STATION DOUBLE ACTION	17	20	14 AWG	3		0.031	0.012	38.921	0.060	0.024	38.859
16		1-1	30	ADDR WALL A/V RED High Volume Fast Flash	6	20	14 AWG	13		0.028	0.261	38.660	0.073	0.279	38.883
17		1-1	8	MX PULL STATION DOUBLE ACTION	30	20	14 AWG	3		0.015	0.006	38.654	0.076	0.030	39.163
18		1-1	9	MX DUAL INPUT IAM	8	20	14 AWG	0		0.013	0.005	38.649	0.076	0.031	39.193
19		1-1	3	MX HEAT 4 inch BASE UL	9	20	14 AWG	0		0.012	0.005	38.644	0.076	0.031	39.224
20		1-1	4, 7	MX PHOTO ADDR LP SOUNDER BEACON BASE High Volume Fast Flash	3	20	14 AWG	9		0.012	0.255	38.389	0.085	0.284	39.254
21		1-1	13	MX PULL STATION DOUBLE ACTION	4, 7	20	14 AWG	3		0.003	0.001	38.387	0.088	0.035	39.538
22		1-1	10	MX DUAL INPUT IAM	13	20	14 AWG	0		0.001	0.000	38.387	0.088	0.035	39.574
23		1-1	11	MX RELAY IAM	10	20	14 AWG	0		0.000	0.000	38.387	0.088	0.391	39.609
24		1-1		MX LOOP RETURN	11	220	14 AWG						0.088		40.000

Project – Bill of Materials

- 1) Click Project View

2) Switches to Bill of Materials Sheet

3) Click Button to Create a CSV File which can be uploaded to the File Import Product Selector in Selection Navigator



User Defined Custom items marked with ★ will not be included in Selection Navigator CSV files

Description	Partcode	Quantity
4 inch Standard Base	4098-5261	5
Duct sensor housing only (order sensor separately)	4098-5214	1
Sampling tube for 6 in. to 30 in. (152 mm to 762 mm) duct width	STS-2.5	1
Relay IAM with DIP Switch	4090-5259	2
Addressable Pullstation Double Action Break Glass with DIP Switch	4099-5215	5
MX Gen6 Photo	4098-5256	5
MX Gen6 Heat	4098-5257	3
MX Sounder Beacon Base High Volume Fast Flash	4098-5220	2
MX Wall Mount Loop Powered Sounder Beacon Red	4906-5214	3

Project – Designer View

- 1) Click Designer View
- 2) Returns to ESMX Loop Designer Sheet

Designer View

Select across these 4 columns to edit devices														2000			Left Feed			Right Feed		
Item	Loop	Point Label	Description and Setting	Wire Length	Wire Gauge	Address	Device mA	LEDs On	Cable Ω	Isolator Ω	Loop DC Units	Available AC Units	Total Wire	Amps	Volt Drop	Volts at Device	Class A Amps	Class A Volt Drop	Volts at Dev Cls			
1	1-1		MX LOOP		14 AWG				10.07		353	330	660	0.088		40.000						
2	1-1		MX HEAT 4 inch BASE UL	20	14 AWG	1	3.250	●	10.07					0.088	0.036	39.964	0.003	0.001	37.940			
3	1-1		MX HEAT 4 inch BASE UL	20	14 AWG	2	3.250	●	10.07					0.085	0.034	39.930	0.007	0.003	37.942			
4	1-1		MX PHOTO ADDR LP SOUNDER BEACON BASE High Volume Fast Flash	20	14 AWG	5, 12	12.050	●	10.07	0.25				0.082	0.283	39.647	0.019	0.257	37.944			
5	1-1		MX PULL STATION DOUBLE ACTION	20	14 AWG	20	5.600	●	10.07					0.070	0.028	39.619	0.024	0.010	38.202			
6	1-1		MX PULL STATION DOUBLE ACTION	20	14 AWG	21	5.600	●	10.07					0.064	0.026	39.593	0.030	0.012	38.211			
7	1-1		DUCT DETECTOR SMOKE SNSOR SAMPLE TUBE 6 to 30 INCHES	20	14 AWG	22	0.250		10.07					0.058	0.024	39.570	0.030	0.012	38.223			
8	1-1		MX RELAY IAM	20	14 AWG	23	0.300		10.07					0.058	0.023	39.546	0.030	0.012	38.236			
9	1-1		MX DUAL INPUT IAM	20	14 AWG	24	0.250		10.07					0.058	0.023	39.523	0.031	0.012	38.248			
10	1-1		MX DUAL INPUT IAM	20	14 AWG	25	0.250		10.07					0.058	0.023	39.500	0.031	0.012	38.260			
11	1-1		ADDR WALL A/V RED High Volume Fast Flash	20	14 AWG	26	13.000		10.07	0.25				0.057	0.273	39.227	0.044	0.268	38.272			
12	1-1		ADDR WALL A/V RED High Volume Fast Flash	20	14 AWG	27	13.000		10.07	0.25				0.044	0.268	38.959	0.057	0.273	38.540			
13	1-1		MX PHOTO 4 inch BASE UL	20	14 AWG	16	0.250		10.07					0.031	0.013	38.946	0.057	0.023	38.813			
14	1-1		MX PHOTO 4 inch BASE UL	20	14 AWG	17	0.250		10.07					0.031	0.013	38.934	0.057	0.023	38.836			
15	1-1		MX PULL STATION DOUBLE ACTION	20	14 AWG	6	2.600		10.07					0.031	0.012	38.921	0.060	0.024	38.859			
16	1-1		ADDR WALL A/V RED High Volume Fast Flash	20	14 AWG	30	13.000		10.07	0.25				0.028	0.261	38.660	0.073	0.279	38.883			
17	1-1		MX PULL STATION DOUBLE ACTION	20	14 AWG	8	2.600		10.07					0.015	0.006	38.654	0.076	0.030	39.163			
18	1-1		MX DUAL INPUT IAM	20	14 AWG	9	0.250		10.07					0.013	0.005	38.649	0.076	0.031	39.193			
19	1-1		MX HEAT 4 inch BASE UL	20	14 AWG	3	0.250		10.07					0.012	0.005	38.644	0.076	0.031	39.224			
20	1-1		MX PHOTO ADDR LP SOUNDER BEACON BASE High Volume Fast Flash	20	14 AWG	4, 7	9.050		10.07	0.25				0.012	0.255	38.389	0.085	0.284	39.254			
21	1-1		MX PULL STATION DOUBLE ACTION	20	14 AWG	13	2.600		10.07					0.003	0.001	38.387	0.088	0.035	39.538			
22	1-1		MX DUAL INPUT IAM	20	14 AWG	10	0.250		10.07					0.001	0.000	38.387	0.088	0.035	39.574			
23	1-1		MX RELAY IAM	20	14 AWG	11	0.300		10.07					0.000	0.000	38.387	0.088	0.391	39.609			
24	1-1		MX LOOP RETURN	220	14 AWG				10.07								0.088		40.000			



Thank You