Velocity REMOTE ANNUNCIATOR

Installation Manual

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Introduction

About the Velocity Remote Annunciator

The Velocity MMP remote annunciator can be used to monitor, operate and program Velocity fire alarm control panels (FACPs) from anywhere within the networked system.

The remote annunciator features a 4.3" colour touch screen display that provides easy-to understand system messages. The annunciator is ergonomically designed with a LED, button and menu setup that perfectly replicates a Velocity MMP Control Panel. This will make the annunciator feel familiar to use for those who are trained/experienced in using the Velocity system.

It can operate as part of a networked system of up to 64 panel's peer-to-peer, with powerful programming options that allow configurable control over whether messages from specific panels are transmitted around the network or remain local.

The 32-bit microcontroller (MCU) at the heart of Velocity, rapidly processes logical decisions based on the status of the smoke detection and other initiating devices to control the system outputs. The Windows based software configuration tool Velocity Connect is used to configure the system's operation based on the customer specified operating requirements, and reduce commissioning/installation times.

The Velocity system continuously checks all software and hardware for proper operation. It checks all control panel electronic hardware, system memory components, and the system program. A hardware watchdog circuit is provided to ensure that System programs are functioning properly. If a problem develops with the program or processor, the watchdog circuit places the System into a trouble condition and resets it.

The velocity remote annunciator is available in black to match virtually any décor, or red for applications where the annunciator must stand out. The annunciator enclosure can be surface or flush mounted.

Overall Features

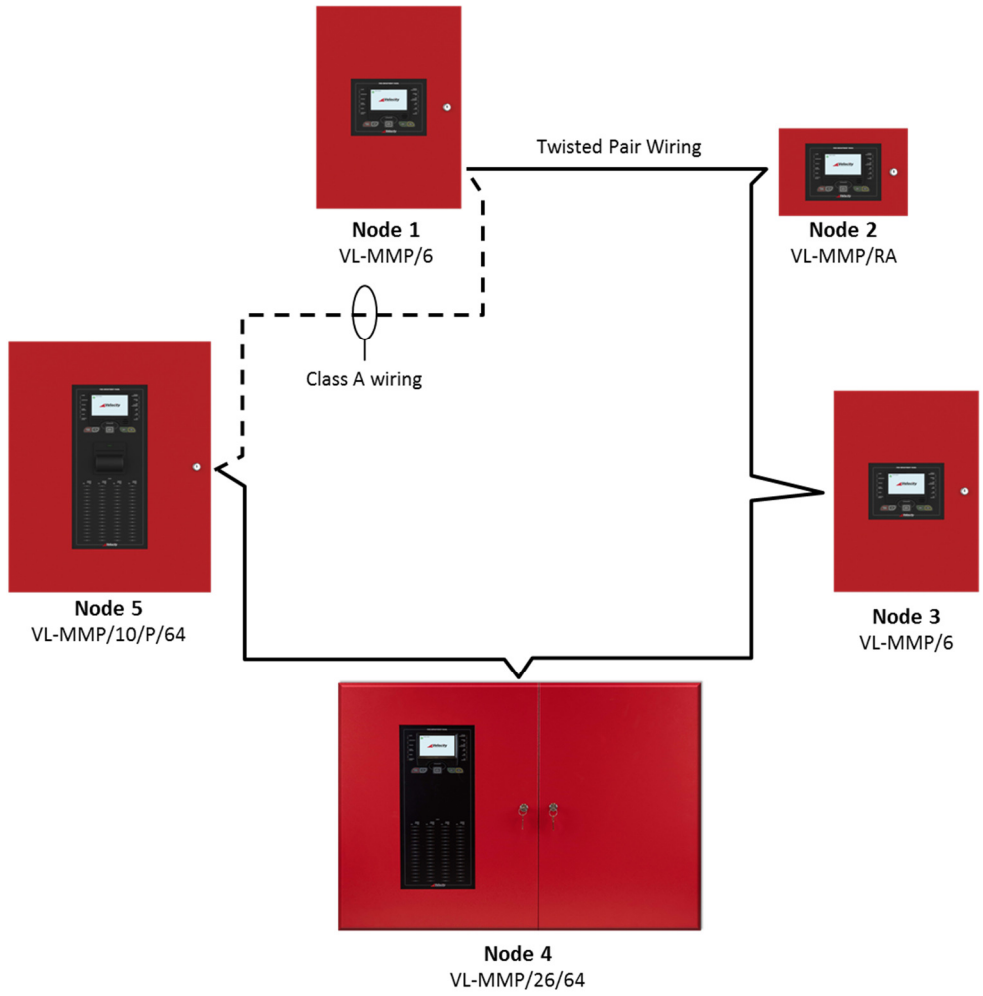
- 4.3" colour touch screen display.
- 8032 Event Log.
- Up to 64 panel peer-to-peer network.
- Available in Black or Red colour.
- 13 status LED indicators.
- 5 function button controls.
- Fully functioning annunciator provides the ability to program a networked velocity MMP control panel from the front screen.
- Accommodates wiring lengths up to 1000 metres from the control panel for added design and install flexibility.
- Network can we wired in either a bus or a ring topology if a redundant path is required.
- 8 password protected access accounts available (1 admin level, 7 user level).
- Uncluttered and intuitive interface allows alarms, supervisory, and trouble events to be easily viewed.

Document Conventions

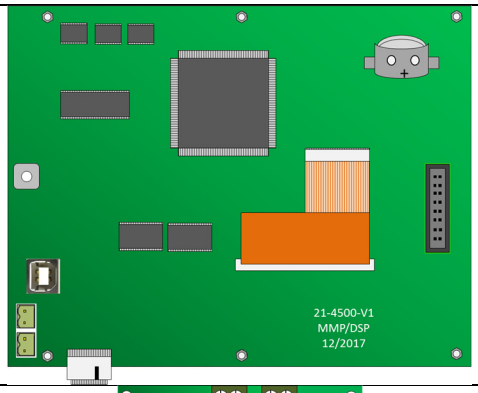
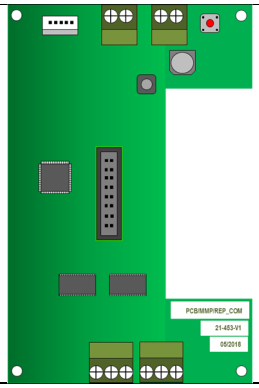
Circuits and Zones

Circuit = this refers to an actual electrical interface, initiating (detection), indicating (signal), or relay.
Zone = this is a logical concept for a fire alarm protected area, and will consist of at least one circuit.
The terms zone and circuit are used interchangeably throughout this manual.
On the Velocity, circuits can be either conventional or addressable inputs or outputs. Both hardwired conventional inputs and outputs, and addressable inputs and outputs may be grouped together to form logical zones.

Typical Velocity Network Fire Alarm Wiring



System Components

	Display PCB (MMP/DSP)	• 4.3” colour touch screen display • 32-bit microcontroller (MCU) • USB connection to PC software • 2 key switch inputs
	Termination PCB (MMP/REP_COM)	• CPU reset button • RS485 IN & OUT terminals • 28VDC IN & OUT terminals

Panel Installation and Dimensions

Enclosure Dimensions

See table 1 for full dimensions.

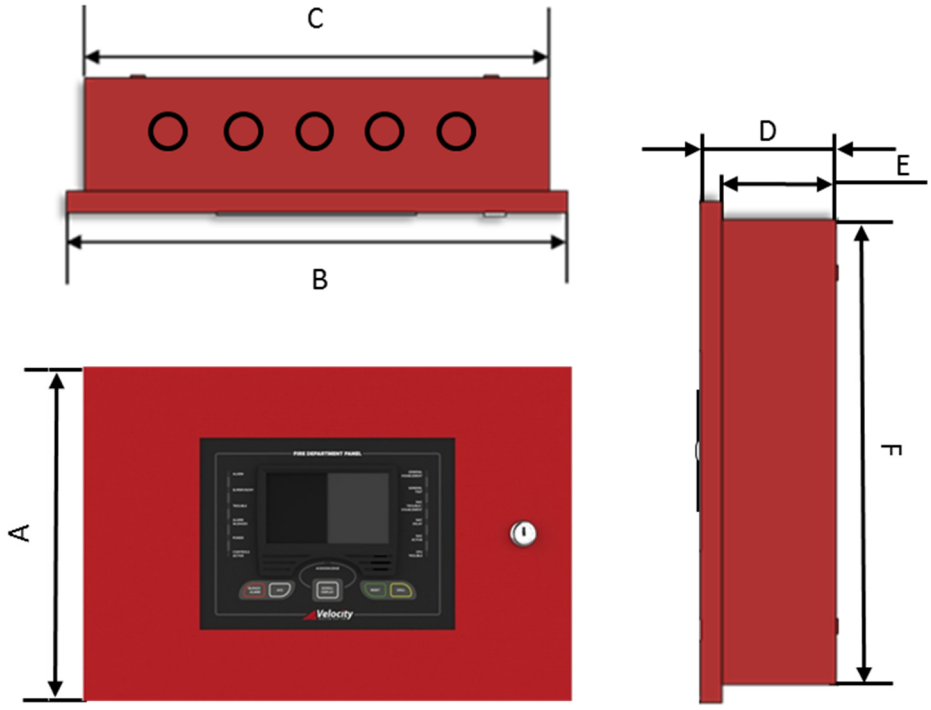


Table 1

Panel	A	B	C	D	E	F	Top Knock outs	Side Knock outs	Bottom Knock outs	Max Battery Size
VL-MMP/RA	230mm	340mm	307mm	96mm	70mm	200mm	5	0	0	N/A

Panel Construction Details

All components are manufactured from Zintec.

All parts 0.9 mm.

The paint colour for the main box and door is RAL3020 Red Leatherette (Red Version) or RAL9005 Black Leatherette (Black version). The internals are RAL9005 Black Leatherette.

The annunciator cabinet can be semi flushed into a wall or surface mounted.

Locating the Fire Alarm Control Panel

The annunciator panel should be installed per NFPA 70 and NFPA 72 recommendations: -

The panel should be close to the main entrance of the building, so that it can be viewed by any fire-fighting personnel entering the building.

- It should be fitted to a sturdy wall that will not flex unnecessarily.
- It should ideally be mounted at eye level, for it to be viewed without need of a ladder.
- It should be installed in a dry, weatherproof place, preferably NOT in direct sunlight.
- It should be easily accessible, so that the responsible person can perform their regular fire alarm checks.

The panel must be in a clean, dry position, which is not subject to excessive shock or vibration and at least 2 meters away from pager systems or any other radio transmitting equipment. The operating temperature range is 0°C (32°F) to 49°C (120°F); maximum humidity is 95%.

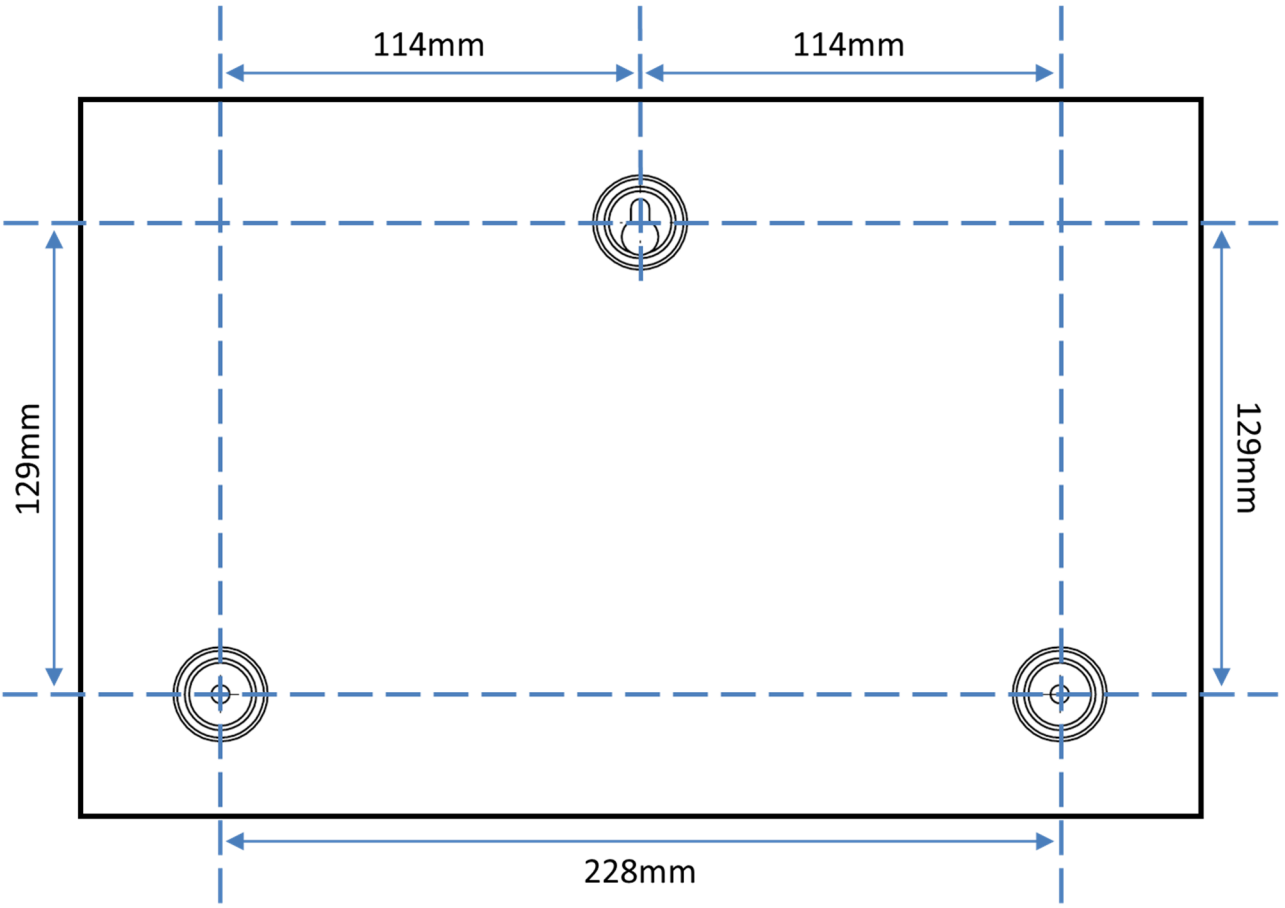
Mounting the Enclosure

Fix the enclosure to the wall using all the mounting points provided:
MMP/RA: 3 x Mounting Points. See Fig 1
Check the build and condition of the wall to decide a suitable screw fixing. The mounting holes are designed for No 8 roundhead or countersunk woodscrews (or similar). Remove any debris from the enclosure. Take care not to damage the panel during installation.

ATTENTION: DO NOT DRILL ANY ENTRY HOLES INTO THE PSU SECTION OF THE ENCLOSURE WHICH IS LOCATED ON THE LEFT-HAND SIDE OF THE CONTROL PANEL CABINET.

Mounting Hole Dimensions

Fig 1



Planning Cable Entry

The Knock-out cable entries can be easily removed by Tapping with a suitable screwdriver or chisel from outside the control panel box. Alternatively, the entry can be drilled out, using a 20mm hole cutter. Care should be taken if using a drill. Consider removing the PCBs to prevent damaging them.
The annunciator comes with many cable entry holes. If another entry hole is required, it is strongly recommended that the panel door is removed to avoid accidental damage. Also, the PCB's should be removed and stored in a safe place. This would also help while fixing the back box to the wall.

ATTENTION: DO NOT DRILL ANY ENTRY HOLES INTO THE DOOR SECTION OF THE ENCLOSURE.

Cable Grounding

The remote annunciator has no internal earth bars. It is recommended that network wiring is connected to ground at an MMP Control panel (only one side of the network wiring should be grounded).

DC Power Wiring

The VL-MMP/RA needs to be powered by a 28VDC external UL listed power supply.

Recommendations

The DC supply to the remote annunciator should be fixed wiring, using Fire resisting 3-core cable (Between 1 mm² and 2.5mm²), or equivalent. The AC supply to the PSU should be fed from an isolating double pole switch fused spur, and fused at 5A. This should be secure from unauthorized operation and be marked 'FIRE ALARM: DO NOT SWITCH OFF'. The supply must be exclusive to the Fire Panel.

Connecting the DC Power

The incoming DC power cable should be kept separate from the RS485 network cables to help minimise interference.

ATTENTION: MAKE SURE ANY SPARE ENTRY HOLES THAT HAVE BEEN OPENED, BUT NOT USED ARE COVERED WITH SUITABLE GROMMETS OR BLANKING SCREWS.

It is advisable to apply power to the panel before connecting any network cables, to check for correct operation, and to familiarise yourself with the annunciator panels controls.

If a knockout is removed, fill the hole with a suitable cable gland. If any knockout is removed, but subsequently not used, it should be covered up.

Figure 2: Termination PCB Layout

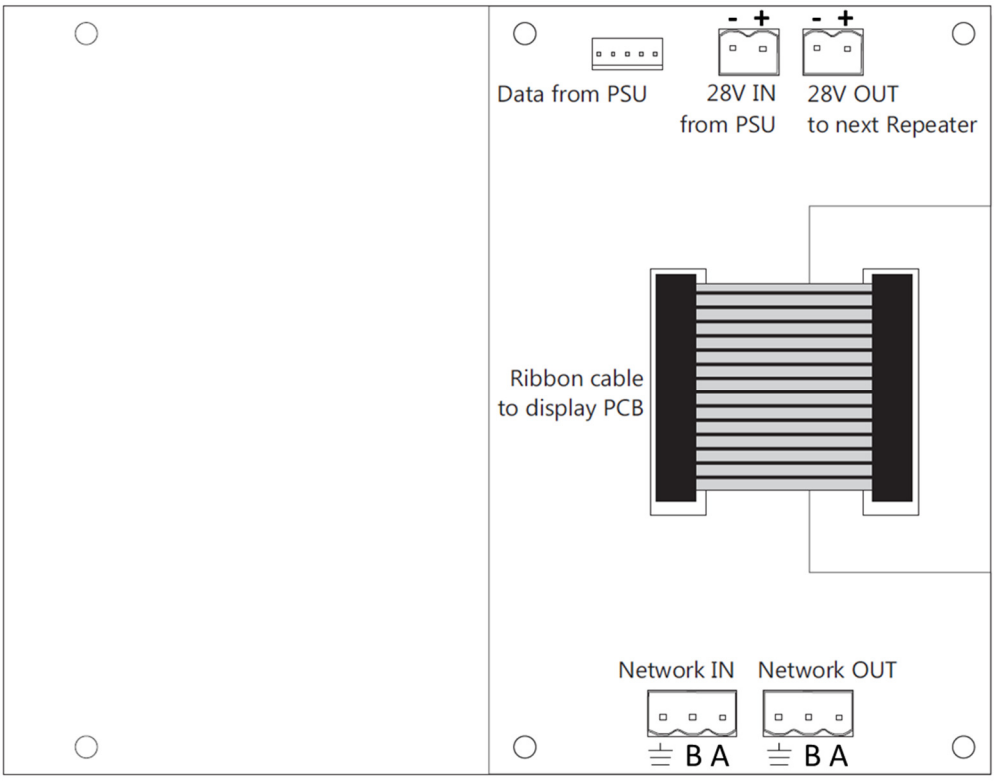


Figure 3: 28V DC wiring

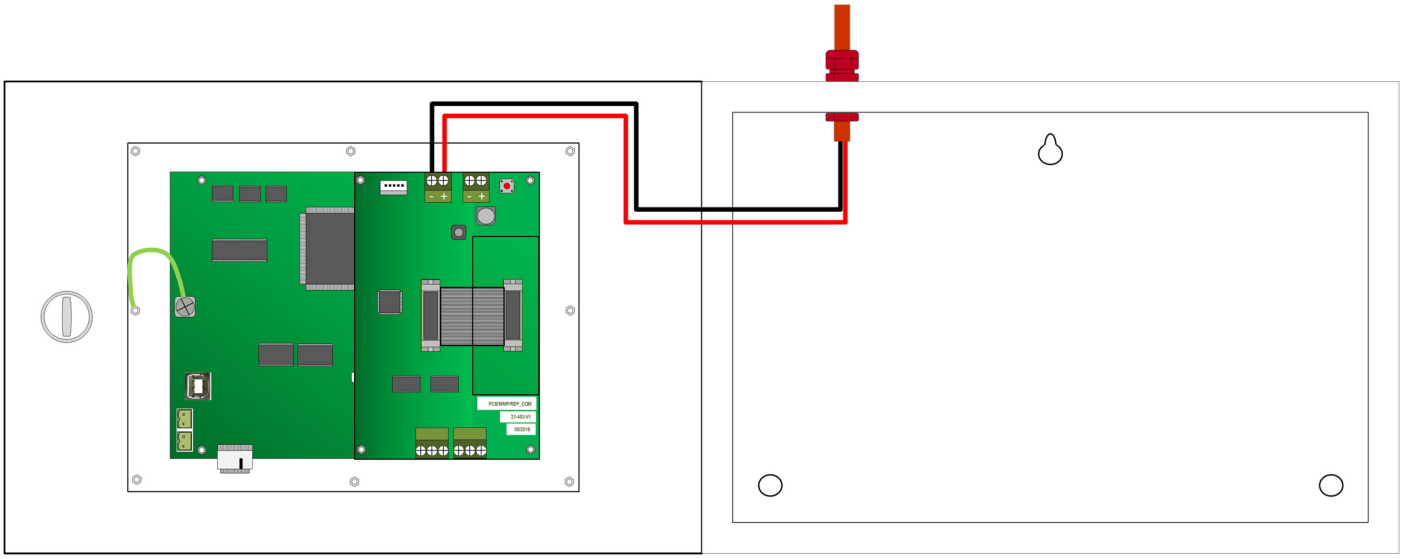
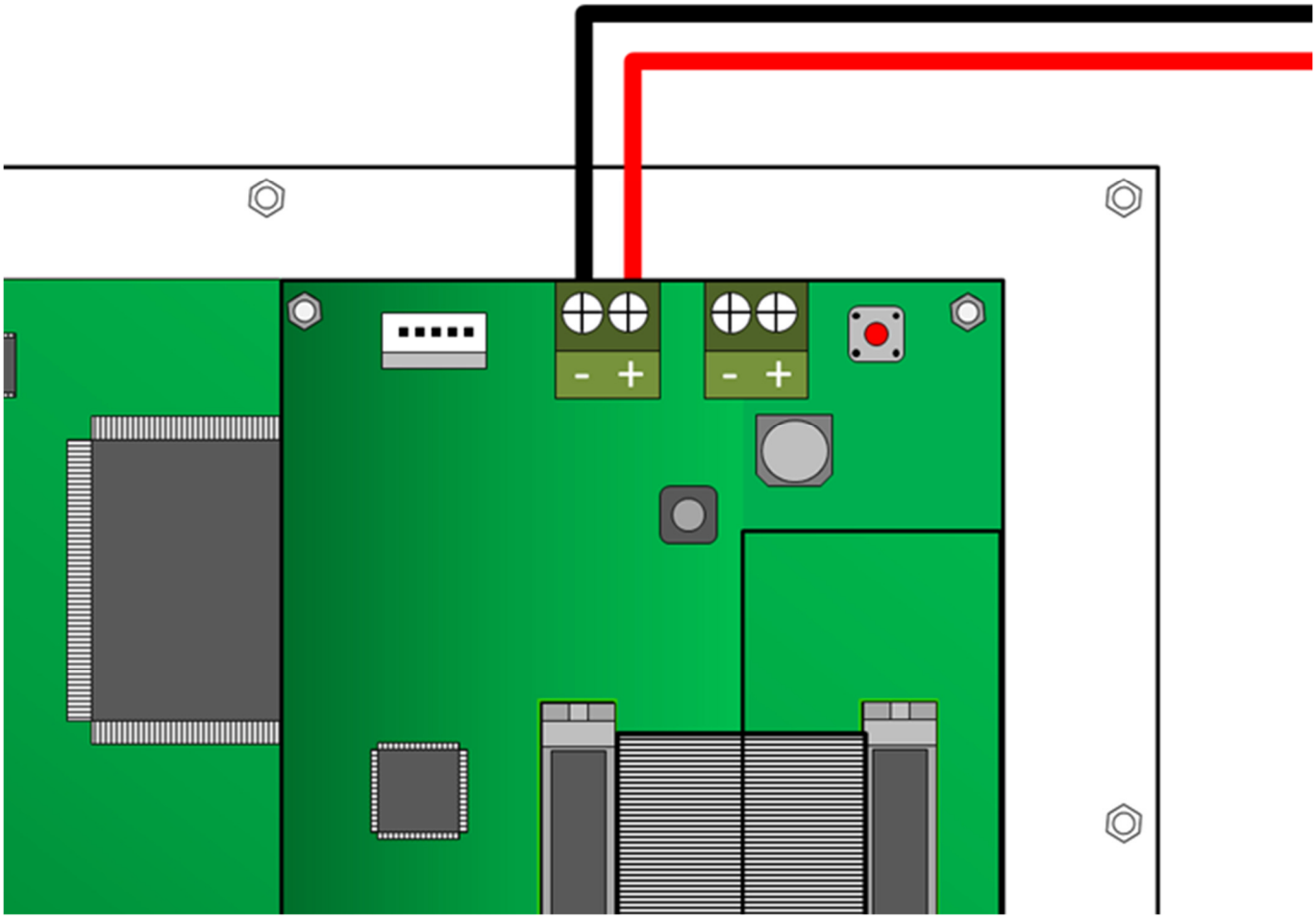


Figure 4: 28V DC terminal wiring

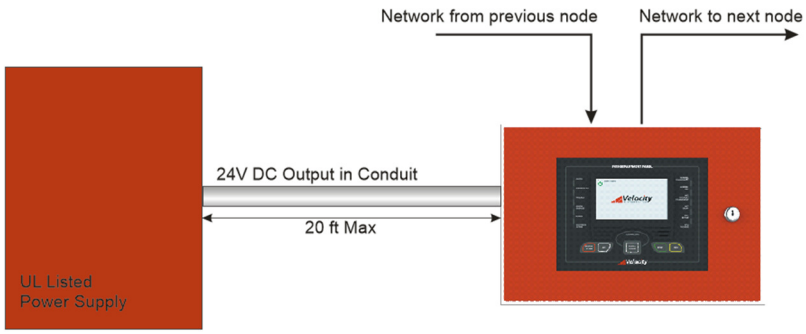


ATTENTION: CHECK POLARITY IS CORRECT BEFORE TURNING THE POWER ON.

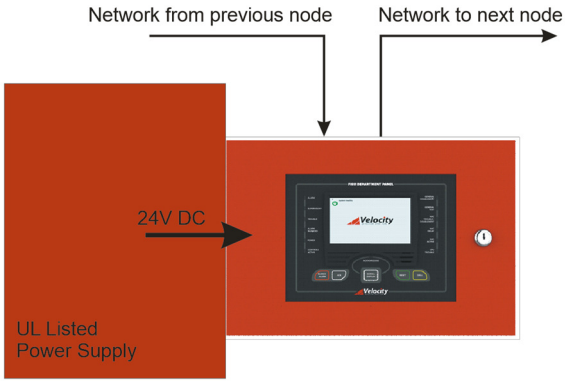
POWER CONNECTION FOR CLASS X / CLASS A NETWORK

For a Class X network, the repeater panel must be powered from a UL 864 Listed 24V Power Supply, with power cables installed in conduit (Maximum distance 20 ft from the repeater). Or the PSU can be directly adjacent to the repeater panel.

24V DC in Conduit

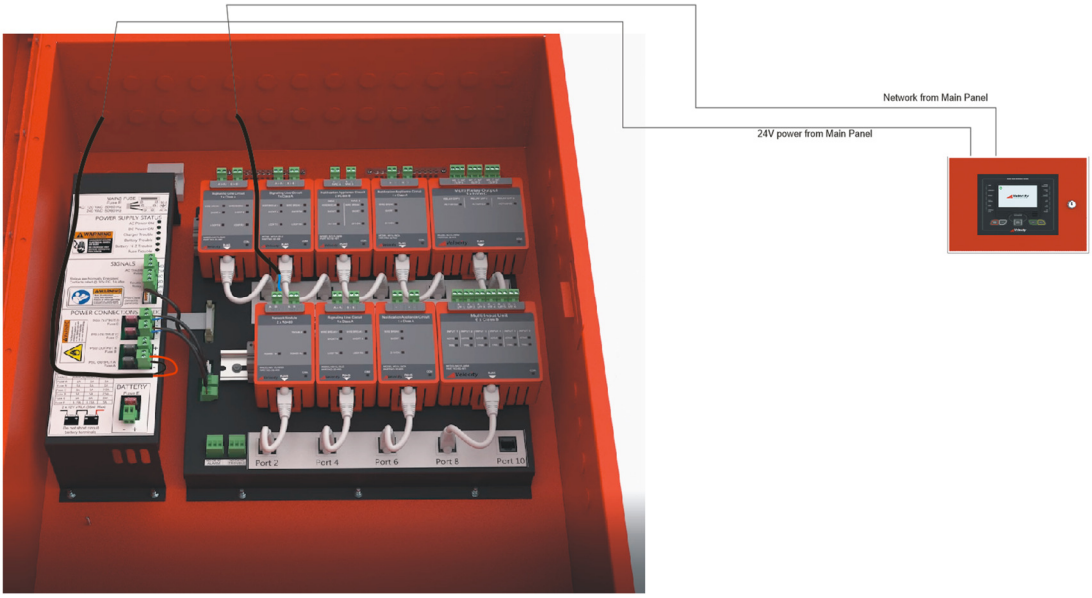


PSU Adjacent to Repeater



POWER CONNECTION FOR CLASS B NETWORK

For a Class B network, the repeater panel could be either powered as for a Class X network (described above), or it can be powered from one of the spare outputs of the Velocity MMP panel



Power From panel to repeater is fused @ 2A. It is non supervised and not current limited.

If the power to the RDA fails, the panel will lose comms with it and report a trouble.

Initial Power Up

It is recommended to initially power up the annunciator with no networked panels connected to confirm that the base panel is functioning as expected. To do this:-

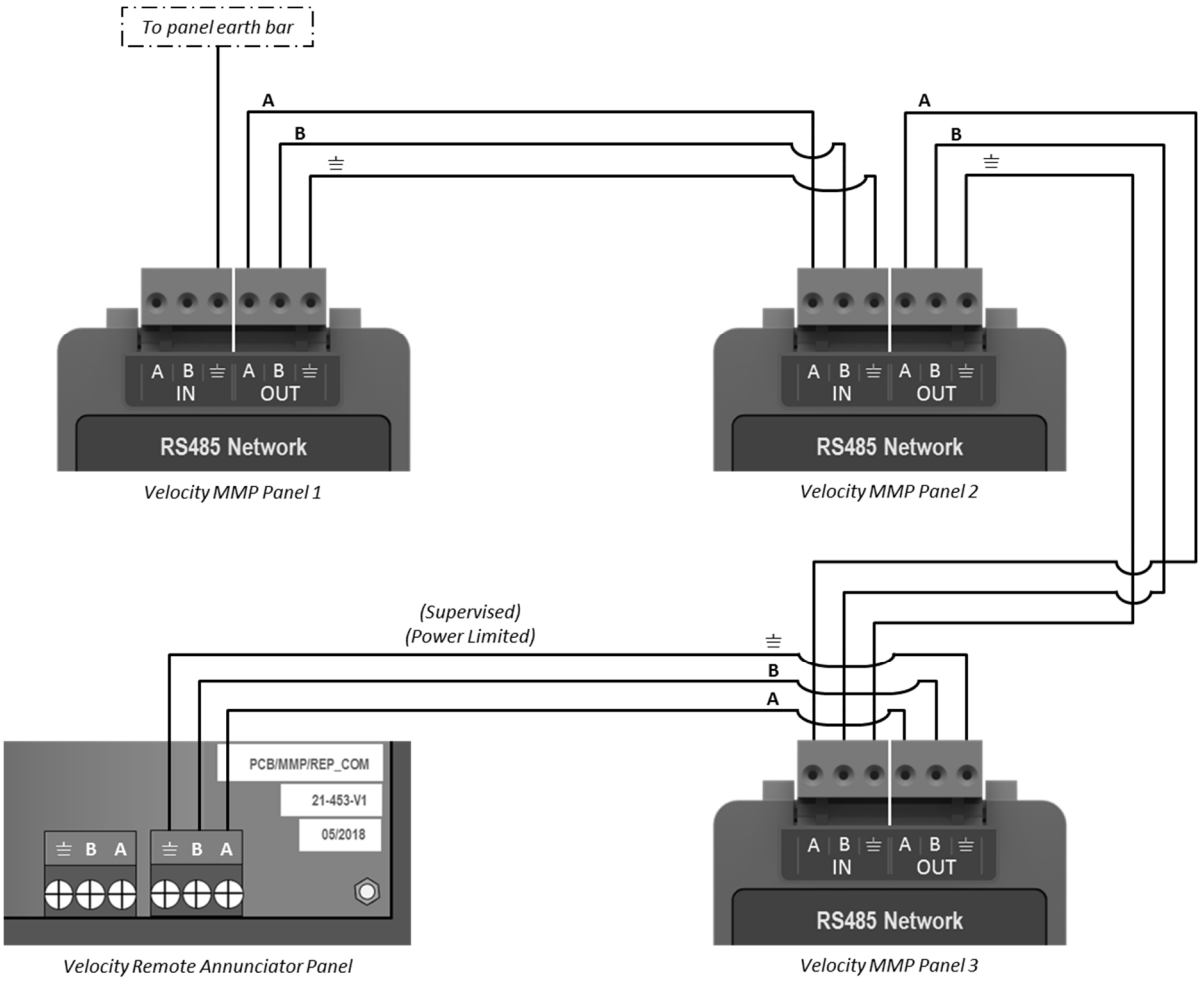
1. Check that the DC cable is connected correctly.
2. Close the panel door
3. Turn on the DC power. The following will be observed:-
    a. Power, Trouble and CPU trouble LEDs will light for around 6 seconds
    b. Trouble and CPU trouble LEDs will turn off. Power LED will blink a few times
    c. LCD will show touch for calibration. Press the screen within 3 seconds to perform a screen calibration. (The screen is calibrated at the factory, so this step is not usually required)
    d. The LCD shows the velocity logo for a few seconds, while it checks to see what modules are fitted. (Note: the usual "System Healthy" banner is not shown during the module check.)
    e. The panel has passed its power on test. It can now be turned off and the network cables can be fitted.

Field Wiring

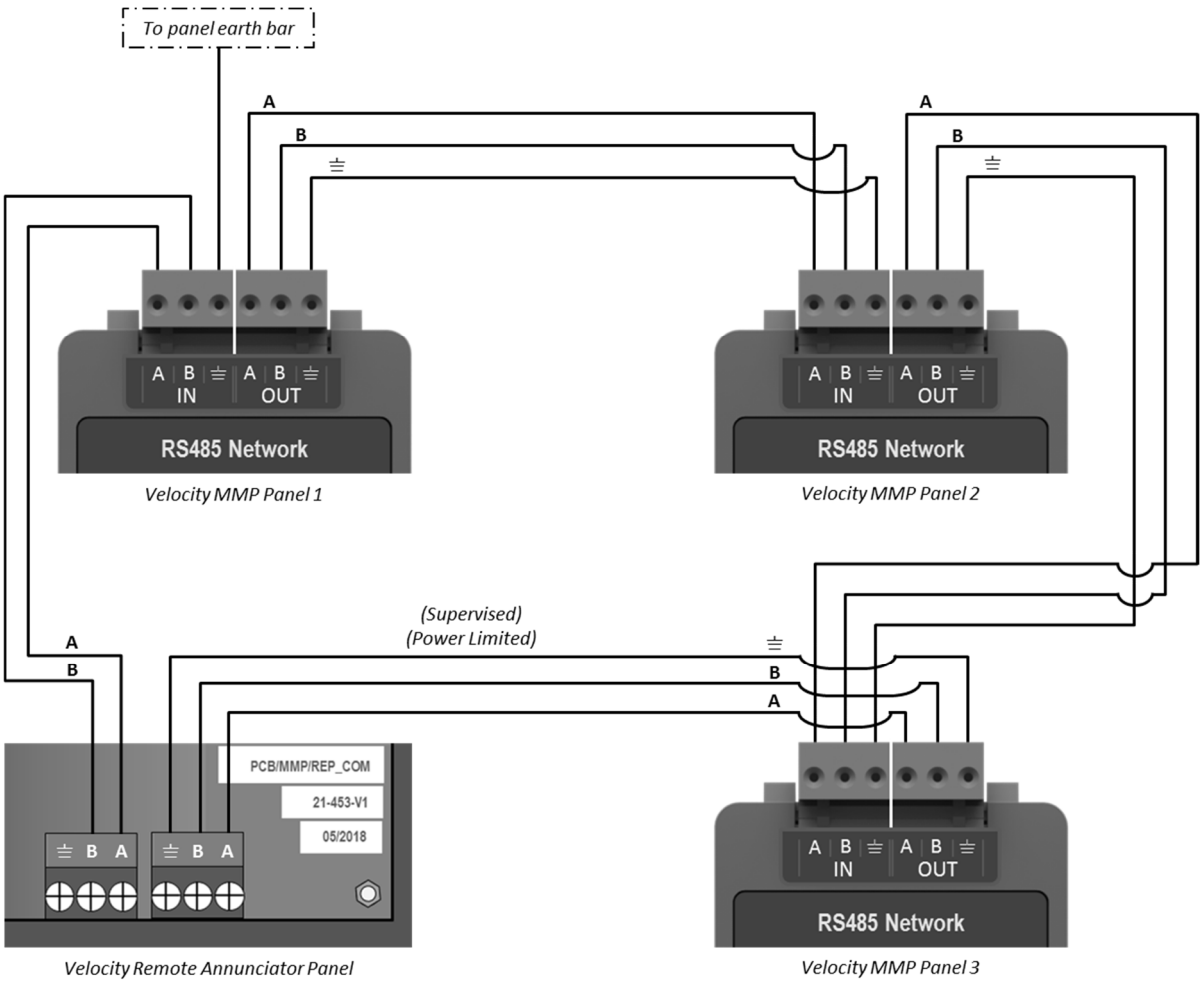
***NOTE:** The terminal blocks are removable to make wiring easier.*

RS485 Network Wiring Overview

Bus Topology



Ring Topology



NOTE: *It is recommended to install the network in a ring topology for protection against open circuit and short circuit faults.*

Wiring Recommendations for Network Wiring

The Velocity network can support up to 64 panels.

RECOMMENDED CABLE: *Belden type UL*

Network Specifications

RS485 Network	
Maximum Network Size	64 Nodes
Maximum Distance Between Nodes	1KM (with screened data cable)
Communication Protocol	RS485
Network Wiring Typologies	Bus (Class B) or Ring (Class X)

FAULT FINDING

See troubleshooting section in Velocity MMP operation manual (Doc: GLT-261-7-2)

Appendix A: SPECIFICATIONS

Code	
Description	UL Remote Annunciator Panel
Standard	UL864 10th Edition (Pending)
Main Supply	
Operating Voltage	28VDC
Quiescent Current	88mA
Maximum Current	109mA
Network	
Communication Protocol	RS485
Maximum Network Size	64 Nodes
Maximum Distance Between Nodes	1KM (using 1 screened data cable) 100m (using a standard fireproof cable)
Network Wiring Typologies	Bus / Class B Ring / Class X (recommended)
Software	
Maximum Event Log	8032 Events
Software Programming	Touchscreen LCD
Display	
LCD	4.3” Resistive touch screen. 480 x 272 pixel resolution
LED Indications	2 Red (1 x Alarm, 1 x NAC Active), 1 Green (Power), 10 Yellow (1 x Supervisory, 1 x Trouble, 1 x Alarm Silenced, 1 x Controls Active, 1 x General Disablement, 1 x General Test, 1 x NAC Trouble/Disablement, 1 x NAC Delay, 1 x CPU Trouble, 1 x Acknowledge).
Button Controls	Silence Alarm, Ack, Scroll, Reset, Drill
Enclosure	
Dimensions H x W x D (mm)	230mm x 340mm x 96mm
Weight	2.3kg
Cable Entries	5
Terminal Wiring Size	28-12 AWG
Environmental	
Operating Temperature	0°C (32°F) to 49°C (120°F)
Relative Humidity	93% Non-condensing