WELDON

A DIVISION OF AKRON BRASS

V-MUX®

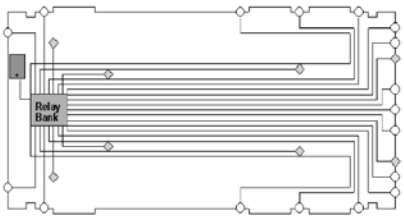
Multiplex System

TESTED... PROVEN... TRUSTED.

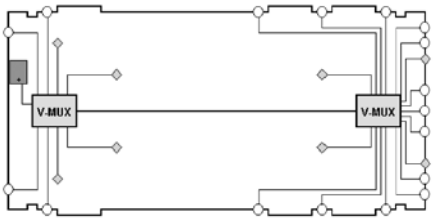
V-MUX Multiplex System

WHAT IS MULTIPLEXING?

Multiplexing is a means of transmitting multiple signals over one line.



Traditional Wiring



V-MUX Wiring

WHY MULTIPLEX WITH V-MUX?

V-MUX® integrates all systems and components; empowering the OEM to design their electrical systems using an intuitive suite of software tools.

The V-MUX advantage:

Fewer wires. Traditional electrical systems have hundreds of wires running along the frame and through the cab and body. This often makes it difficult to install new components or troubleshoot existing ones. V-MUX will reduce the number of wires, reducing your labor.

Fewer splices and connectors. Fewer wires also means fewer splices and connections. Poor splicing techniques and corroded connections are two of the most common problems with traditional vehicle wiring. V-Mux reduces splices by 75% and reduces connections by 25%.

No electromechanical relays. Traditional wiring systems need to use relays for logic and output control. Relays are mechanical devices that will eventually fail. V-MUX uses solid state devices that don't wear out.

Built-in diagnostics. The laborious job of tracing electrical faults with a trouble light and volt-ohm meter is simplified by the built-in diagnostics that comes standard with the V-MUX System.

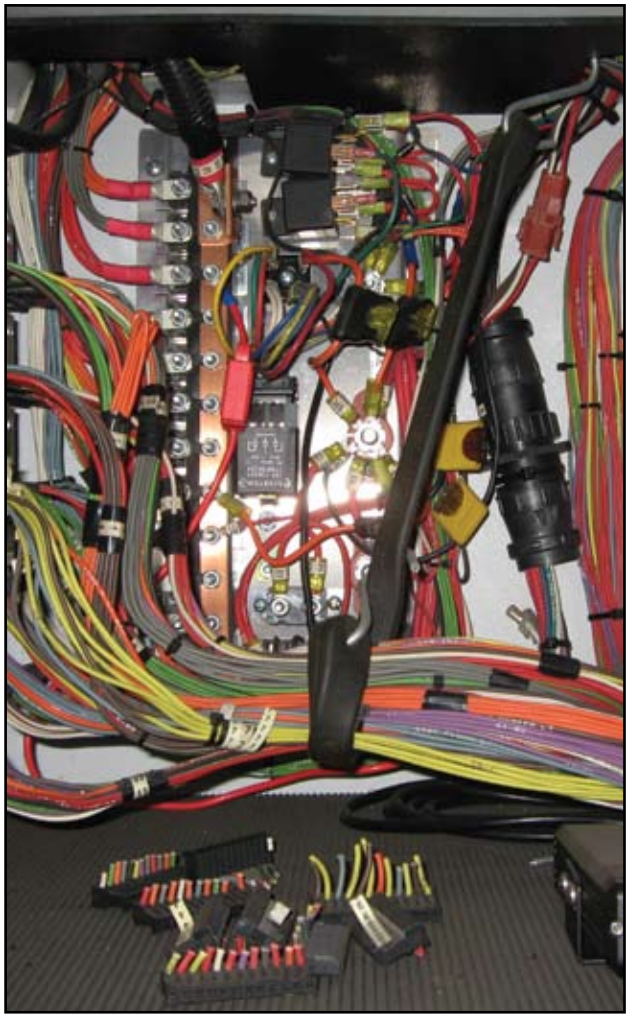
Dedicated factory support. The V-MUX system is supported by a world-wide, highly trained and specialized engineering group.

A long history of success. Since 1998, Weldon V-MUX multiplexing systems have been in service in the harshest operating conditions, from Alaska to the Arabian desert.

THE V-MUX® MULTIPLEXING SYSTEM

V-MUX is a complete electrical control system. The power distribution units (nodes) reduce wire harness bundles and electrical control hardware. Our software introduces advanced control features not available in traditional wiring systems. The combination of hardware and software make up the V-MUX system.

Traditional Wiring



V-MUX Wiring

"Over the past ten years, V-MUX customers have spent 30% less time installing their electrical systems."

Pete Luhrs
Director of Multiplexing
Weldon (A Division of Akron Brass)

Tested... Proven... Trusted.

V-MUX Multiplex System

WHAT WILL V-MUX® DO FOR ME?

- Provide Short and Open Circuit Detection
- Eliminate Electromechanical Relays
- On-Board Service Information
- On-Board Diagnostics
- Reduce Splices by 75%
- Reduce connections by 25%
- Increase Reliability and Minimize Downtime
- Simplify Troubleshooting and Repairs

THE V-MUX ADVANTAGE

- Peer-to-Peer System
  - Nodes Hold their Own Configurations
  - Nodes can Operate Independently for Improved Reliability
- Integrated Load Shedding and Sequencing
- Dimming Controls
- The OEM can Configure all of the Displays/Screens
- Easy to Use, Windows® Based Programs
- Training and Support Provided
- Reverse Polarity Protection
- Modules Operate from -40° to +85° C.
- RF Testing to 100V/meter
- Exceed Most SAE, NFPA, NMEA and RVIA Standards for Electronics
- 100% Solid-State Technology

WHAT IF I WANT TO MAKE UPGRADES OR CHANGES?

The SystemDesigner™ software allows the OEM to configure the vehicle. The OEM can e-mail or remote download the update to the vehicle.

MULTIPLEXING FOR SPECIALTY VEHICLE MARKETS

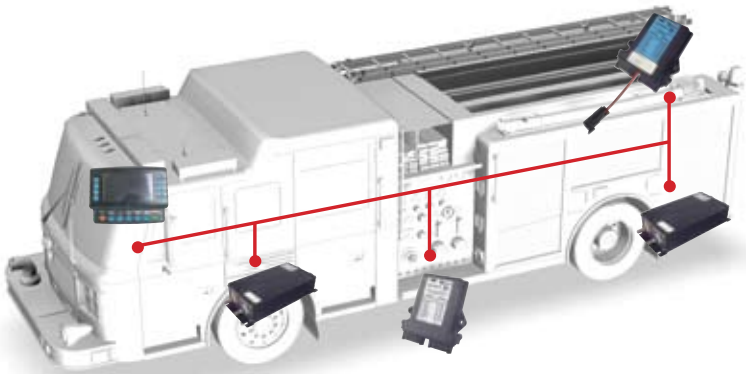
Ambulance

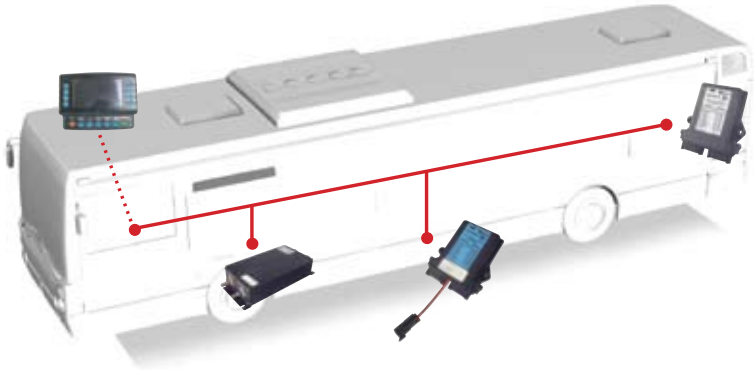
Fire Truck

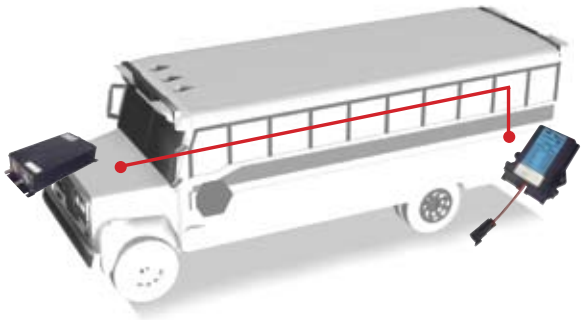
Transit Bus

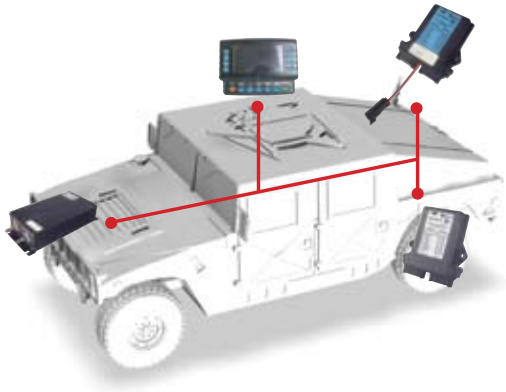
School Bus

Military









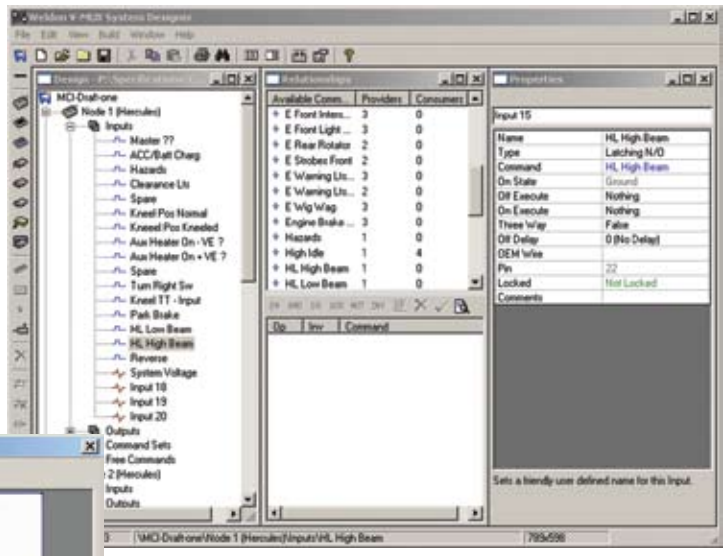
Tested... Proven... Trusted.

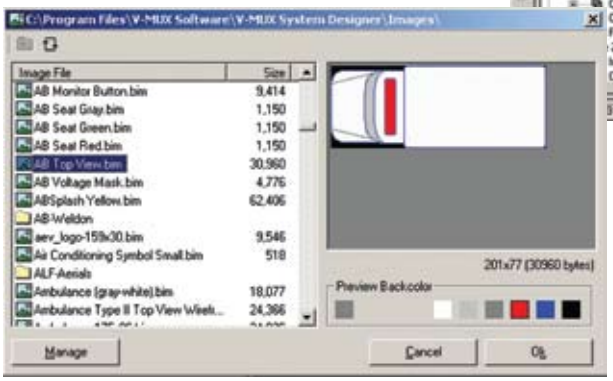
V-MUX Multiplex System

SystemDesigner™ Software

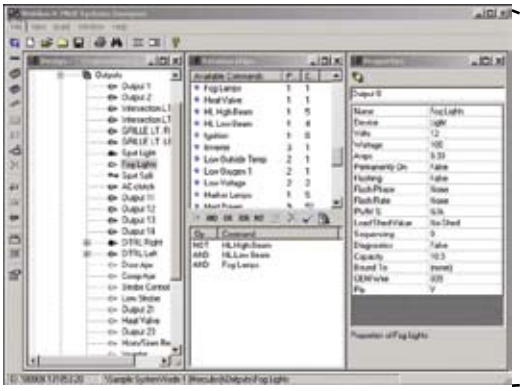
The V-MUX® SystemDesigner software is an all encompassing tool that allows you to configure your electrical system from the ground up. Whether it is assigning commands to inputs, then assigning those commands to turn on outputs, configuring the climate control, or designing attractive graphics for your application; SystemDesigner does it all!

- Allows the OEM to configure the vehicle
- User friendly Windows® based software
- Self Reliant Programming in the hands of the OEM
- Archive all custom designs for future use





Configure your application with our SystemDesigner software.



Compile

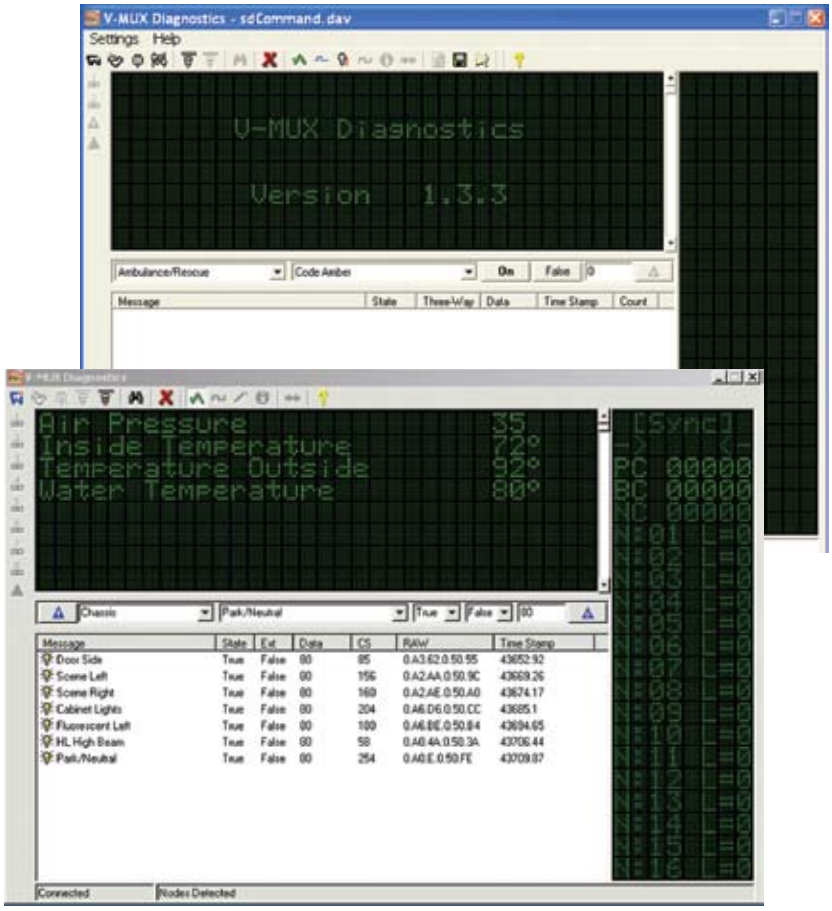
Then download the node

V-MUX® Diagnostic Software

The V-MUX Diagnostics Software will aide you in troubleshooting your vehicle. The software will run on all Windows® based systems. We utilize USB technology to interface between your PC and V-MUX.

V-MUX software utilities, drivers, manuals, and guides are supported 24/7 at www.weldoninc.com

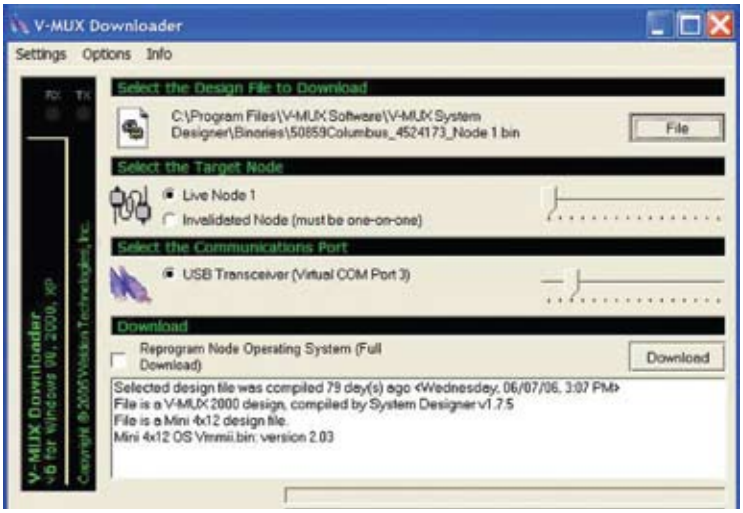
See page 12 for Field Service Kit



V-MUX Downloader Software

V-MUX's Download Software provides a solution for the dealer or end user to re-flash or update the vehicle.

- Download changes or program a replacement node
- User friendly Windows® based software
- Software runs on any Windows® system



Tested... Proven... Trusted.

V-MUX Multiplex System

Vista III,
Vista III Touch Screen

This full color display offers many features and has a wide operating temperature range. Control all of your lighting and HVAC. Features within our Vista III & Touch Screen include: Automatic Screen Switching in response to current conditions, Sleep Mode option to eliminate night glare, USB direct download capability for more convenient and faster downloads. Available in panel mount or 6" arm mount.

- Operates in 12V and 24V applications
- Virtual switches
- Display inside and outside temperature
- Automatic climate control
- 100% Configurable (OEM Level)
- Field re-programmable
- Peer to peer network
- On-board diagnostics
- On-board service information
- Colors change to indicate button status
- Video Ready for:
    - Backup camera
    - Thermal cameras
    - DVD
    - GPS

Order Nos.	Description
6231-0000-00	V-MUX VISTA III INTERFACE MODULE/DISPLAY
0N30-2392-00	V-MUX VISTA III TOUCH SCREEN (Available June 2009)

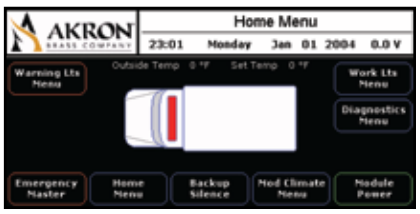
Technical Specifications:

Operating Voltage	9-32v (12 or 24V)
Operating Temperature	-40°C to +85°C
Electrical Protection	Load Dump, Jump Start, Reverse Polarity, ESD, EMI/RFI
Application Space	6MB Flash
Real-time Clock	Ten year retention
Matting Connector: Deutsch DT06-4S	1: Comm. Hi, 2: Comm. Lo, 3: Ground, 4: Power
Startup Time	< 3 seconds

Backup

Gauges

GPS



Vista III Touch Screen Shown with 6310 Series PODS

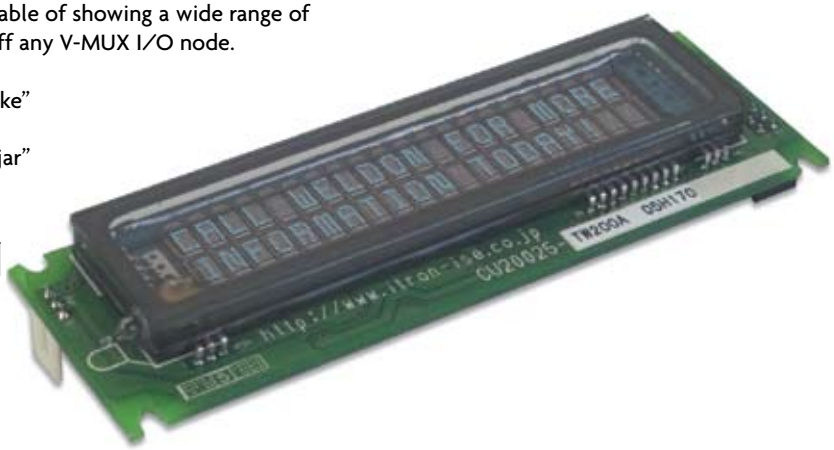
V-MUX VFD Display

Two-line, twenty character text display is capable of showing a wide range of data from the V-MUX System. Directly runs off any V-MUX I/O node.
Examples of text:

- Display on command “Set Park Brake”
- Display diagnostics codes
- Display warnings - “ice” or “door ajar”
- Programmable messaging

Order Nos.	Description
0U10-0715-00	V-MUX VFD DISPLAY

Call for specification details



6310 Series, PODS (Programmable On Demand Switches)

PODS are self contained, fully multiplexed switch modules. Program the controller and plug in each individual 3-Key or 4-Key Smart Switch Module. Use the 0L40-2020-00 cable assembly to daisy chain up to 16 modules. Create custom legends using the 0Q20-1736-00 die cut nylon sheet on your laser printer.

Order Nos.	Description
6310-0000-12	V-MUX PROGRAMMABLE SWITCH CONTROLLER, 12V PODS
6310-0000-24	V-MUX PROGRAMMABLE SWITCH CONTROLLER, 24 V PODS
6311-0300-00	3-KEY SMART SWITCH MODULE
6311-0400-00	4-KEY SMART SWITCH MODULE
0Q20-1736-00	LEGEND SHEET, 88 PER SHEET
0L40-2088-00	CONTROLLER CABLE ASSEMBLY FOR PODS 10 FEET
0L40-2020-00	MODULE TO MODULE CABLE ASSEMBLY 10 INCHES

6300 Series, Blue Touch Switch Panels

The Blue Touch Switch Panels can be used with a V-MUX system or with non multiplexed electrical systems. Create custom legends using the 0Q20-1736-00 die cut nylon sheet on your laser printer.

Order Nos.	Description
6300-0400-00	V-MUX PANEL, FOUR POSITION
6300-0800-00	V-MUX PANEL, EIGHT POSITION
0Q20-1736-00	LEGEND SHEET, 88 PER SHEET

Tested... Proven... Trusted.

V-MUX Multiplex System

6000 Series, Input/Output Node

The "Hercules" node is capable of carrying up to 120 amps of load at high temperatures. For years, this module has been the work horse of thousands of V-MUX systems. Newly designed power studs with molded flanges prevent rotation when terminals are overtightened, and provide added protection against water intrusion. All of the Inputs and Outputs are configurable by the OEM.

- Operates in 12V and 24V applications
- Sealed Enclosure
- Sealed Deutsch Connectors
- Corrosion Proof
- High Capacity
- A & B Communication Ports
- LED Status Indicators
- Field Re-Programmable
- 16 Digital Inputs
- 3 Analog Inputs
- 24 Positive Outputs
- 2 Ground Outputs
- Control the (0U10-0715-00) VF Display

Order Nos.	Description
6000-0000-04	V-MUX HERCULES NODE

6030 Series Input/Output Node

The 8x16 node has 6 Digital and 2 Analog inputs; each input is programmable. The node contains 16 outputs, 14 of which are high side 10.5 amp channels and two are low side 4 amps channels.

- Operates in 12V and 24V Applications
- Sealed Enclosure
- Sealed Deutsch Connectors
- A & B Communications Ports
- LED Status Indicators
- Field Re-Programmable
- 6 Digital Inputs (VBatt or Ground)
- 2 Analog Inputs (Can also be used as VBatt switch)
- 14 Positive Outputs
- 2 Ground Outputs

Order Nos.	Description
6030-0000-00	V-MUX 8X16 NODE

6010 Series, Input / Output Mini Node

The 6010 "mini" Node has four independently programmable switch inputs, one analog input and twelve 7.5 amp output channels.

- Sealed Deutsch Enclosure and Connectors
- Corrosion Proof
- Compact Size
- A & B Communication Ports
- LED Status Indicators
- Field Re-Programmable
- 4 Digital Inputs
- 12 Positive Outputs
- Control the (OU10-0715-00) VF Display

Order Nos.	Description
6010-0000-00	V-MUX MINI NODE

6020 Series, Input Node

The Input Node has 16 independently programmable switch inputs. Each input can be used for door interlocks, dash switches and switch-type sensors. This Input Node can interface with the VFD Display (OU10-0615-00)

- Operates in 12V and 24V applications
- Sealed Deutsch Enclosure and Connectors
- Corrosion Proof
- Compact Size
- A & B Communication Ports
- LED Status Indicators
- Field Re-Programmable
- 16 Digital Inputs
- Control the (OU10-0715-00) VF Display

Order Nos.	Description
6020-0000-00	V-MUX INPUT MODULE, 16 INPUT

Occupant Restraint Indicator

The Occupant Restraint module will indicate where restraints of occupied seats are properly fastened.

- Low profile, compact size
- Supports commercial and custom cab seating layouts; up to 12 seats
- Dimming feature adjusts indicator intensity to synchronize with dash lights
- Built-in audible alarm
- Use in conjunction with Vehicle Data Recorder (VDR)

Order Nos.	Description
6204-0000-00	Occupant Restraint Indicator

Vehicle Data Recorder (VDR)

The Vehicle Data Recorder collects essential data and can easily be interfaced with V-MUX Multiplex System. Reviewing the information is made easy with an intuitive computer application. The VDR is NFPA 1901-2009 compliant.

- Recorded Data Includes: Vehicle Speed, Acceleration, Deceleration, Engine Speed, Engine Throttle Position, ABS Event, Seat Occupied Status, Seat Belt Status, Master Optical Warning Switch, Park Brake, Service Brake, Time, Date and Engine Hours.
- Password Protected by the Customer
- Six (6) Seat Position Inputs for Occupied and Belts Buckled. Additional Six (6) Seat Expansion Module Available (p/n 6020-0000-00)
- Easily Interfaces with Traditional Wiring, V-MUX™ or other Multiplexing Systems
- Data is Extracted Via USB
- Use in Conjunction with the Occupant Restraint Indicator or V-MUX™ Multiplex System

Order Nos.	Description
6444-0000-00	Vehicle Data Recorder (VDR)

Tested... Proven... Trusted.

V-MUX Multiplex System

6400 Series, Gateway Module

Don't Cut Into That Multiplexed Chassis! Use our gateway to interface with your multiplexed chassis. The Gateway captures data from engines, transmissions or other devices that are using the CAN protocol.

- Operates in 12V and 24V applications
- LED status indicators
- Interface with Proprietary Electrical Systems
- Read and Report Data from Engines or other Devices
- Compatible with J1939, RVCAN and other Protocols
- Field Re-Programmable
- Peer-to-Peer Network
- Sealed Deutsch Enclosure and Connectors

Order Nos.	Description
6400-0000-00	V-MUX GATEWAY MODULE

0N70 Climate Control Module

Use this module with Vista III display node for fully automated climate control system.

- Dedicated node specifically for climate control.
- Control two fans, AC Compressor, condenser, evaporator switches and other interlocks.
- Use this module with a Vista III display node for a fully automated climate control system.

Order Nos.	Description
0N70-1519-03	Climate Controller Fahrenheit
0N70-1519-04	Climate Controller Celsius

0R13 Series, Temperature Sensor

This sensor is used to report interior or exterior temperature. This data can be displayed, reported or used for A/C, heat, ice warning or other automatic functions.

Order Nos.	Description
0R13-0614-00	V-MUX TEMPERATURE SENSOR

0R00 Hall Effect Current Sensor

Easily integrate battery charge/discharge readings into the V-MUX system with this stand alone unit. (The shunt interface module is not needed for this sensor.)

Order Nos.	Description
0R00-2306-00	V-MUX HALL EFFECT CURRENT SENSOR

6111 & 6131 Series, Field Service Kit - Includes Remote Diagnostics

The V-MUX® Diagnostics kit will aide you in troubleshooting your vehicle, downloading changes or programming a replacement node. The software will run on Windows 2000, XP and Windows Vista. Software updates can be obtained on our website. For assistance with remote diagnostics, download the manual from the website at www.v-mux.com.

Kit Includes:
- Carrying case
- One-on-one cables for nodes
- Deutsch wire removal tool, 14-16 gauge wire (blue)
- Deutsch wire removal tool, 18-20 gauge wire (red)
- Cable, RS232 9 pin serial PC to transceiver
- Cable, RS485 transceiver to V-MUX
- Cable, troubleshoot Hercules outputs, (red)
- Cable, troubleshoot mini node outputs (black)
- Downloader manual, PDF
- Diagnostics manual, PDF

Order Nos.	Description
6111-0000-00	V-MUX TRANSCEIVER, USB
6131-0000-00	V-MUX KIT, DIAGNOSTICS, USB/DOWNLOADER

6500 Series, Backup Camera Kits

The Vista III can be programmed to automatically switch to the camera image when in the back up mode.
The camera can also be used to monitor interior and exterior activity. Rear view or flush mount side view available

Order Nos	Description	Housing Color
6500-0000-00	V-MUX CAMERA, COLOR VIDEO OUT, REAR VIEW MOUNT	WHITE
6500-0000-01	V-MUX CAMERA, COLOR VIDEO OUT, REAR VIEW MOUNT	BLACK
6501-0000-00	V-MUX CAMERA, BK& WH VIDEO OUT, LEFT MOUNT	WHITE
6502-0000-00	V-MUX CAMERA, BK & WH VIDEO OUT RIGHT MOUNT	WHITE
6503-0000-00	V-MUX CAMERA, BK& WH VIDEO OUT, LEFT MOUNT	CHROME
6504-0000-00	V-MUX CAMERA, BK & WH VIDEO OUT RIGHT MOUNT	CHROME
6505-0000-00	V-MUX CAMERA, BK& WH VIDEO OUT, LEFT MOUNT	PRIMER
6506-0000-00	V-MUX CAMERA, BK & WH VIDEO OUT RIGHT MOUNT	PRIMER
0L40-2032-00	25 ft shielded cable	

GPS Navigation Unit

GPS Navigation Unit

- WAAS enabled – allowing position accuracy of better than 3 meters 95% of the time
- Easy Installation – hideaway under seat or dash with included mounting hardware
- Announces streets by name to help keep your eyes on the road
- External antenna, wire harness, RF remote control included
- Preloaded maps – City Navigator® North American NT
- SD card slot available to load custom points of interest, additional map data, and future software updates
- Unit dimensions: 1.06"H x 4.75"W x 4.63"L
- Weight: 6 ounces
- Operating Voltage: 9.5V to 25 V; 0.12 Amp draw (max 1.0) at 13V

Order Nos.	Description
6550-0000-00	GPS Navigation Unit
6550-0001-00	GPS Navigation Unit with Vista III Touch Screen Interface

Tested... Proven... Trusted.

NOTES:

WELDON

A DIVISION OF AKRON BRASS

Weldon Technologies is a designer, manufacturer and marketer of customized electrical control solutions and state-of-the-art lighting devices for specialty vehicle markets. Weldon is committed to exceeding its customers' expectations through a program of engineering development, applied technology and exceptional response to market demand for their products and services.

Founded in 1967 and located in Columbus, Ohio, Weldon has expanded their initial offering of FMVSS 108 certified lighting products into a wide range of safety and control systems for bus, fire/EMS, military, and aerospace.

In June 2005, Weldon Technologies was acquired by Akron Brass Company, a worldwide producer of high performance fire fighting equipment headquartered in Wooster, Ohio.

Today, Weldon Technologies has the excellent reputation for the development and manufacture of quality products. They utilize a modern facility housing manufacturing, warehousing and lab facilities, and employ an aggressive, professional and talented staff. Weldon has the management and research capability to maintain its position of leadership in its industry.

Weldon is an **ISO 9001:2000 Certified Company**

Tested... Proven... Trusted.

"We committed to the V-MUX solution because it is one of the most functional, flexible and popular multiplex electrical systems on the market."

Dean Mayhew
Shop Supervisor
Fort Worth, TX

"The Vista III display provides us with total control at our fingertips. This intuitive display is capable of controlling a variety of functions; including climate control, backup cameras, lighting and more."

Captain Buddy Caldwell
Fleet Manager
Charlotte, NC

WELDON
A DIVISION OF AKRON BRASS

3656 Paragon Drive
Columbus, Ohio 43228
PH: 614.529.7230 | Fax: 614.527.3547
Toll Free: 800.989.2718
www.weldoninc.com

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AB-002-08