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Agilent E8462A
256-Channel Armature Relay Multiplexer

Data Sheet

- **1-Slot, C-size, register based**
- **High-density, low-cost multiplexer**
- **Flexible reconfiguration**
- **Armature non-latching relay channels**
- **Contact protection for reliable operation**
- **Three different easy-to-use terminal blocks available as options**



Agilent E8462A

Description

The Agilent Technologies E8462A High-Density Relay Multiplexer is a **C-size, 1-slot, register-based** VXI module. This 256-channel multiplexer, using non-latching armature relays, offers a fast, reconfigurable, high point-count switching topology. This single-slot multiplexer extends the choices of multiplexers available to the system engineer.

The E8462A can be programmed into individual topologies; some common examples are shown in the table below. Many other combinations of these topologies are supported (in addition to those shown in the table). Two-wire, three-wire, and four-wire measurements can be configured.

Refer to the Agilent Technologies Website for instrument driver availability and downloading instructions, as well as for recent product updates, if applicable.

Common Multiplexer Configurations

One 256 x 1	Four 64 x 1
One 128 x 2	Two 32 x 4
One 64 x 3	Eight 32 x 1
•	•
•	•
•	•

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Accessories

A terminal block does not come with the module. Three different terminal blocks are available as options: one for crimp-and-insert connectors, one for ribbon cable connectors, and the other for fault-tolerant protection of DUT inputs, where each channel has a positive temperature coefficient resistor that behaves like a resettable fuse and will increase impedance when excessive current is flowing in a channel.

One 2.5-in. analog bus cable (E1400-61605) is included to connect the analog buses of multiple slot-adjacent E8462A modules or a slot-adjacent E1411B multimeter module. The analog bus cable, easily installed at the faceplate of the component card, lets you connect the E8462A with the E1411B DMM.

Product Specifications

Input

Note: These limits apply only if no connection is made to power mains.

Maximum Input

	With Opt. 012 Terminal Card	With Opt. 014 or Opt. 015 Terminal Card	Analog Bus
Maximum dc voltage:	*250 V	60 V	60 V
Maximum ACrms voltage:	*250 V	50 V	30 V
Maximum ACpeak voltage:	350 V	70.7 V	42 V
Maximum current per channel:			
Switching:	2 A @ 30 V	100 mA	n/a
Carry:	2 A	100 mA	n/a

*Limited to 15,000 hours of voltage stress above 80 V.

dc Performance

Typical thermal offset per channel:	
1-wire:	± 3 μV
2-wire:	± 1.5 μV
Typical closed channel resistance:	
1-wire:	<0.9Ω*

*With output protection resistor shorted; protection resistor adds 100 Ω.

ac Performance

Bandwidth, 50 Ω Source/Load

Configuration	**100 Ω Protection Resistor Shorted**
256 x 1:	6 MHz
128 x 1:	12.0 MHz
32 x 1:	30.0 MHz

Closed Channel Capacitance

Configuration	**To Chassis**	**To Open Channel**
256 x 1:	620 pF	410 pF
128 x 1:	340 pF	220 pF
32 x 1:	160 pF	100 pF
Open channel to either open channel or to chassis (capacitance):		30 pF

Hi-to-Low Capacitance (2-Wire-Mode)

Configuration	**Capacitance**
128 x 2:	410 pF
64 x 2:	230 pF
16 x 2:	100 pF

Crosstalk

Configuration	**10 kHz**	**100 kHz**	**1 MHz**	**10 MHz**
256 x 1 (1-wire):	70 dB	53 dB	33 dB	15 dB
128 x 1 (2-wire):	85 dB	65 dB	45 dB	30 dB
16 x 1 (2-wire):	85 dB	65 dB	45 dB	30 dB

General Characteristics

Relays:	Armature relays
Open/close time:	5 ms max.
Minimum relay life:	
1.0 V & 10 mA:	1 M operations
Rated full resistive load (60 VA):	100 K operations
Power up/down state:	All open
Minimum permissible load:	10 m Vdc, 10 μA

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General Specifications

VXI Characteristics

VXI device type:	Register based, A16/D16
Data transfer bus:	A16, slave only
Size:	C
Slots:	1
Connectors:	P1/P2
Shared memory:	None
VXI buses:	None

Instrument Drivers - See the Agilent Technologies Website (http://www.agilent.com/find/inst_drivers) for driver availability and downloading.

Command module firmware:	Downloadable
Command module firmware rev:	A.08
I-SCPI Win 3.1:	No
I-SCPI Series 700:	No
C-SCPI LynxOS:	No
C-SCPI Series 700:	No
Panel Drivers:	No
VXI*plug&play* Win Framework:	No
VXI*plug&play* Win 95/NT Framework:	Yes
VXI*plug&play* HP-UX Framework:	No

Module Current

	I_{PM} (A)	I_{DM} (A)
+5 V:	*1.0	*0.5
+12 V:	0.0	0.0
–12 V:	0.0	0.0
+24 V:	—	—
–24 V:	—	—
–5.2 V:	—	—
–2 V:	—	—

* Specified in worst case typical MUX configuration (eight 32x1). Add 30 mA per additional relay.

Cooling/Slot

Watts/slot:	30 W max., 10 W typ.
ΔP mm H_2O:	0.1
Air Flow liter/s:	3.0

Ordering Information

Description	Product No.
256-Channel Armature Relay Multiplexer*	E8462A*
Crimp and Insert Connector Terminal Block**	E8462A 012**
Fault Tolerant Terminal Block	E8462A 014***
Ribbon Cable Connector Terminal Block	E8462A 015***
Service Manual	E8462A 0B3

Notes:
* Standard unit does not include terminal block. One of the terminal block options must be ordered.
** Crimp-and-Insert Contacts are not included. See the Interconnect and Wiring section for information on ordering Crimp-and-Insert Contacts.
*** Ribbon cables and mating connectors are not included. See ordering details below:

Recommended 3M Mating Socket and Cable

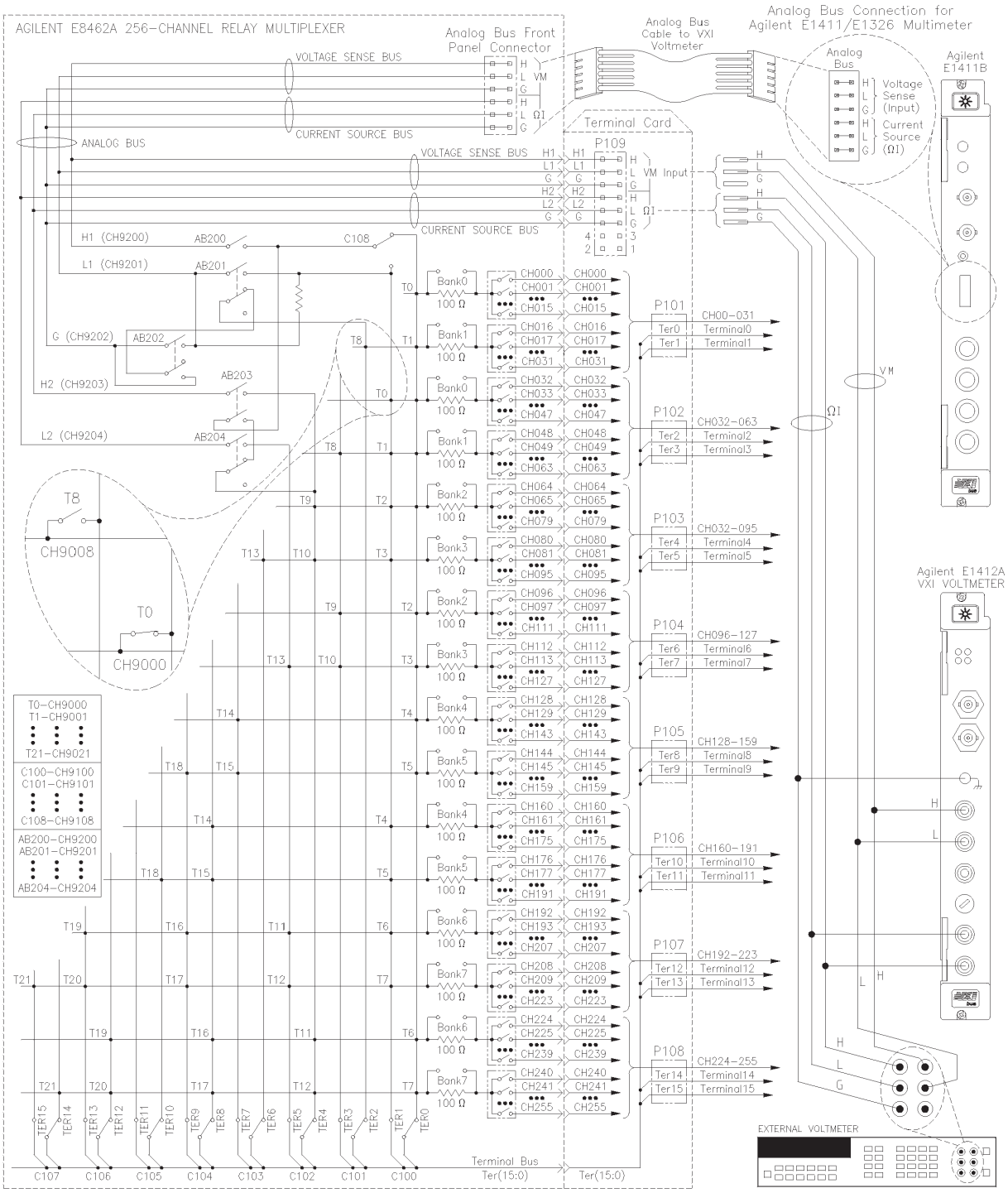
Part Description	Qty Required per Terminal Card	3M Part Number
Socket (without strain relief)	8 sockets either with or without strain relief	3414-6600
Socket * (with strain relief)	8 sockets either with or without strain relief	3414-6606
Metal strain relief *(low profile)	8 *	3448-2034
Flat cable (34 conductor)	Length as needed	3365/34

* Required only for socket with strain relief.

Manufacturer Ordering Information

3M Electronic Products Division
6801 River Place Blvd.
Austin, TX 78726-9000
Phone 800-225-5373

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Agilent E8462A Simplified Schematic

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