
Pressure Scanning A/D Converter HP E1414A

Technical Specifications

- Interface to PSI 8400 Pressure Acquisition System
- Supports PSI scanners
- Up to 512 channels of electronic pressure scanning
- Scan rates of 20 kHz random or 50 kHz interleaved
- Full autozeroing and autocalibration using PSI 8400



Description

The HP E1414A Pressure Scanning A/D Converter is a **C-size, 1-slot, register-based VXI module**. It performs data-acquisition measurements where pressure data is integrated into the VXI data path, scanning rates are up to 50 kHz, and measurement accuracy is up to .05% FS.

This system provides for control of channel scanning and A/D conversion of the pressure-scanner output over the VXI backplane. Up to 512 channels of scanned pressure can be supported on one to four analog buses. The pressure scanners can be calibrated automatically (SCPI or C-SCPI Driver required) using the Pressure Calibrator Units in the PSI 8400 mainframe (see Specifications). The HP E1414A module supports the following PSI scanners: ESP Remote Scanners, HD Rackmount Scanners, BP Rugged Scanners, D Rackmount Scanners. Thus, a single communication path over the VXI backplane greatly simplifies interfacing and programming efforts.

Refer to the HP Website directory for instrument driver availability and downloading instructions.

Storage

The 64 K FIFO RAM acts as an effective buffer for storing readings until the controller is ready for data transfer. In addition, the Current Value Table RAM always contains the most recent measured value of each channel in the scan list.

Programming

The HP E1414A may be programmed using any one of several languages supported by the HP Foundation Systems. Register-level programming is not supported due to the complexity of the automatic closed-loop calibration routine.

Specifications

Maximum Reading Rate

Sequential mode:	20 k rdgs/s divided by the number of channels in the scan
Parallel mode:	50 k rdgs/s divided by the number of channels in the scan
Parallel addressing mode:	(requires use of all four analog buses) 50 k readings/s divided by the number of channels in the scan
Pressure range:	(determined by PSI scanners) ± 10 -in W.C. to 600 psid
Measurement resolution:	16 bit (including sign)
Measurement accuracy:	(determined by PSI scanners and calibrators) $\pm 0.05\%$ FS 5-500 psid, $\pm 0.1\%$ FS 10-in W.C. to 2.5 psid
Memory:	> 64 kSa
Reading storage:	
RAM:	dual mode
FIFO RAM:	> 64,000 readings
Current value table:	512 readings

VXI Characteristics

VXI device type:	Register-based
Size:	C
Slots:	1
Connectors:	P1/2
Shared memory:	n/a
VXI busses:	TTL Trigger Bus (T)
C-size compatibility:	Yes

Instrument Drivers

Refer to HP's Website (http://www.hp.com/go/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:	Yes
C-SCPI Series 700:	Yes
HP VEE Drivers:	No
VXIplug&play Win Framework:	No
VXIplug&play Win95/NT Framework:	Yes
VXIplug&play HP-UX Framework:	No (not available at time of publication)

Module Current

	I_{PM}	I_{DM}
+5 V:	4.6	0.02
+12 V:	1	0
-12 V:	1	0
+24 V:	0.07	0.01
-24 V:	0.1	0
-5.2 V:	0.06	0
-2 V:	0	0

Cooling/Slot

Watts/slot:	9.0
ΔP mm H₂O:	0.08
Air Flow liter/s:	0.80

Ordering Information

Description	Product No.
Pressure scanning A/D; 16-bit, 100 kHz	HP E1414A
Service manual	HP E1414A 0B3
3 yr. retn. to HP to 1 yr. OnSite warr.	HP E1414A W01
Flash ROM upgrade kit for E1414A	HP E1414G

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