RS-232 DATA ACQUISITION MODULE

232SDA12

PRODUCT FEATURES

- Automatic Baud Rate Detection
- 11 Channels of 12-bit A/D
- 0.610mV A/D Resolution (with 2.5VDC Reference)
- 3 Digital AInputs (-30 to +30 VDC)
- 3 Digital Outputs (0 to 5 VDC)

The 232SDA12 provides a low-cost, easy to use solution for serial port data acquisition. It offers 11 channels of 12-bit A/D inputs, 3 digital outputs, and 3 digital inputs. With these features, the module can be used to sense a variety of external conditions and to control a variety of devices. The module comes with a demo program in QuickBasic. A data logging utility is included to provide a simple way to import data into other programs (such as Excel). These programs are Widows compatible (95, 98, NT, 2K, XP, and Vista). RS-485 and 10-bit A/D versions are available (232SDA10, 485SDA10, and 485SDA12).

Operation

• A manual is contained on the CD ROM which ships with the module.

•There are only three commands required to control the 232SDA12: Read A/D, Read Digital I/O, and Set Output State. Bit error detection is also possible. Refer to the manual for information concerning these commands.

•A/D Converter: The module has 11 channels of 12-bit A/D inputs. The full-scale voltage can be set anywhere from 2.5 VDC to 5.0 VDC. A 5 VDC reference is available to provide a 0 to 5 VDC range without any external components. The A/D converter has a conversion time of approximately 10 microseconds. However, the sampling rate is limited by the serial communications. The actual sampling rage for a single channel is approximately 120 samples per second at 9600 baud. This rate drops to 25 samples per second when sampling all of the channels. The A/D inputs are made via a DB-25 female connector. •

Digital I/O Lines: The 232SDA12 has 3 digital inputs and 3 digital outputs. The digital outputs are CMOS/TTL compatible. The digital inputs are CMOS/TTL compatible and can handle voltages from -30 to +30 VDC. A DB-25 female connector is used.

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•Communications: Connect the unit to your PC. The baud rates between 1200 and 9600 are automatically detected. Format is 8 data bits, 1 stop bit, and no parity. The 232SDA12 is a DCE device. Refer to the product manual for more information.

ORDERING INFORMATION

MODEL NUMBER	PC PORTS
232SDA12	RS-232 Data Acquisition Module

ACCESSORIES

232PS - 12VDC@100mA Power Supply, Wall transformer

232CAM - 6 ft PC-AT Computer to Modem Cable

USA, Canada: check with your local distributor for product availability and options.
Certified for major North American carriers. Contact B+B SmartWorx for latest approvals.

RS-232 DATA ACUISITION MODULE

232SDA12

SPECIFICATIONS

ANALOG TO DIGITAL CONVERTER	
Resolution:	12 Bit
Channels:	11
Reference Range:	5.0 VDC Max (1.221 mV per Bit)
	2.5 VDC Min (0.610 mV per Bit)
A/D Ref Input (negative):	0 to 2.5 VDC
A/D Ref Input (positive):	2.5 to 5.0 VDC
Input Voltage Range:	Negative 0.3 to Postitive 5.3 VDC
Total Adjusted Error:	Plus or minus 1.0 LSB Max.
Note: A/D input must be driven from a source impedance less than 1 k ohm	
DIGITAL OUTPUTS	
Channels:	3
Low Voltage:	0.6 VDC @ 8.7 milliamps
High Voltage:	4.3 VDC @ -5.4 milliamps
COMMUNICATIONS	
Standard:	RS-232 (unit is DCE)
Data Rate:	1200 to 9600 baud (automatic detection)
Format:	8 data bits, 1 stop bit, no parity
Connector:	DB-25 Female
5 VOLT REFERENCE	
Output Voltage:	4.975 VDC to 5.025 VDC (5.0 VDC typical)
Accurancy:	Plus or minus 0.5%
Max Output Level:	5 mA
DIGITAL INPUTS	
Channels:	3
Voltage:	Minus 30 to Positive 30 VDC
Low Voltage:	Minus 30 to Positive 1 VDC
High Volatage:	Positive 2 to Positive 30 VDC
Leakage Current:	1 micro amp maximum
POWER SUPPLY	
Input Voltage:	7 to 18 VCD
Current:	5 milliamps (does not include external devices)

I/O CONNECTOR PIN-OUT

PIN	FUNCTION
1	Ground
2	+ 12 VDC Output (see note)
3	Digital Input Number 0
4	Digital Input Number 1
5	Digital Input Number 2
6	Digital Ground
7	Analog Ground
8	A/D Input Number 0
9	A/D Input Number 1
10	A/D Input Number 2
11	A/D Input Number 3
12	A/D Input Number 4
13	A/D Input Number 5
14	Digitat Output Number 0
15	Digital Output Number 1
16	Digital Output Number 2
17	+5 VDC Output
18	A/D Reference Input (+)
19	A/D Reference Input (-)
20	No Connection
21	A/D Input Number 6
22	A/D Input Number 7
23	A/D Input Number 8
24	A/D Input Number 9
25	A/D Input Number 10
Note: Actual output is equal to power supply input minus 0.7 VDC	

RS-232 CONNECTOR PIN-OUT

PIN	SIGNAL	DIRECTION	NOTES
2	Transmit Data (TD)	Input	Connection is required
3	Receive Data (RD)	Output	Connection is required
4	Request to Send (RTS)	Input	May be used to power unit if kept high
5	Clear to Send (CTS)		Internally looped back to RTS
6	Data Set Ready (DSR)		Internally looped back to DTR
7	Signal Ground (SG)		Connection is required
8	Data Carrier Detect (DCD)		Internally looped back to DTR
20	Data Terminal Ready (DTR)		May be used to power unit if kept high