

The Series 3200/MB Data Acquisition System is available with two remote multiplexer configurations: MX60 and MM120. In addition, the system will also accommodate inputs from existing Westronics RS24 Multiplexers. The system is capable of monitoring and processing for display, logging, and data manipulation of up to 840 inputs from remotely located current, voltage, RTD, and thermocouple sources.

Series 3200/MB Multipoint Recorder

- The recorder features a total data base of 999 points, 16 Group Alarm Status Indicators, wide roll chart and easy-to-replace color ribbon cartridge. Options include fluorescent chart illumination, contact outputs, and computer interface.

System Multiplexers - All inputs to the system are terminated at the MX60*, MM120*, or existing RS24 multiplexer(s) which can be located near the recorder or remotely (up to 1,000 meters) near a concentration of signals. These multiplexers can be installed in a standard 19-inch rack, or may be supplied in an optional NEMA-4 housing. System upgrades are as easy as adding new cards and wiring inputs. The design also allows for quick isolation of problems and trouble free maintenance.

The system can accommodate up to a total of 720 inputs from the MX60 or 840 inputs from MM120 Multiplexers. If the Series 3200/MB Recorder is to replace an installed Westronics M11E/MB System, the existing RS24 Multiplexers can be used (up to 384 inputs).

** For multiplexer specifications, request T11129 (MM120) and T11113 (MX60)*



Features

- Interfaces to existing RS24 Multiplexers used with Westronics M11E/MB Recorders
- Up to 10 programmable color traces and six color coded scales enhance chart visibility
- Monitor up to 840 inputs
- On-board capabilities to do mathematical calculations including arithmetic, group and moving averages, absolute differences, square root extractions, peak/valley and selectable time averages
- 6, 12 or 24 Form C, EMI hardened alarm contact outputs available
- Switch selectable 20mA, RS232C, RS485, or RS422 communication available

Modes of Operation . . .

The Series 3200/MB Data Acquisition System integrates the functions of a multipoint recorder, data logger, and a digital indicator into a single instrument. Two different modes of operation support these capabilities:

Trend Mode — Graphically trends points (trend by point, trend by group, or trend by alarm) on chart paper at the selected chart speed in addition to the other logging features.

Log Mode — Automatically prints Alarm status log and any pre-programmed Time-of-day or Interval Logs for monitoring.

PROGRAM Key . . .

The PROGRAM Key provides two separate programming modes Start Up and Options. These two modes provide the user with the functions required to configure the instrument for initial start-up operation and redefine existing parameters to meet specific applications.

Start-up Mode — This mode includes the following basic configuration parameters required for start up operation: Date/Time, Program Point Chart Speed, Chart Scales, Chart Calibration, and Learn.

Options Mode — This mode includes the following parameters required to enhance or redefine operating parameters:

Color Assignment - With Auto Assign Mode On, each point is assigned one of 10 colors. Turning Auto Assign Off, point colors are individually assigned.

Group Assignment - Assigns points of any of 16 groups.

Chart Zones - Establishes individual chart zones for each programmed chart scale.

User Tables - Defines custom linearization tables for input types not supported by standard software.

Alarm Check - Activates or disables alarm check function.

Rate Alarm Check - Activates or disables rate alarm check function.

Scan Interval - Defines how often inputs are measured.



The Control panel provides convenient access to all frequently used controls.

SYSGEN - Enables user to define the following system profile parameters:

- Database Control
- SIO Control
- Measure Control
- Chart Control
- Contact Control
- Display Control
- Thermocouple Control
- Access Control

Unit Identification - Enables programming custom unit ID.

Utilities - Enables self-check diagnostics and calibration of printer subsystem and other functions.

Interval Logs - Enables interval logs to be printed at programmed time intervals.

Alarm/TOD Logs - Allows a Log of Alarms and Time-of-Day (TOD) logs to be programmed to print automatically in either Trend or Log Mode.

Calibrate ADC - Provides menu driven prompts to calibrate ADC.

Zone Mode - Establishes a zone to reduce trace clutter when assigned points have similar processed values.

Event Messages - With optional hardware, up to six 20-character messages can be printed for three contact inputs.

PRINT Key . . .

In the Trend or Log Mode, the PRINT key allows the user to access the following menu items for information to be burst printed on the chart:

ALL POINTS - Burst prints a four column All Points Log with header and title. Points in alarm printed in red.

ALARMS - Burst prints all points in alarm in red.

GROUP - Burst prints all points assigned to the selected Group (1-16) under title of "Log Group__" and time and date.

MESSAGE - Prints any one of six programmed 20-character Event messages or prints a unique message configured under PRINT key menu.

PROGRAM - Burst prints a table listing all configured parameters of each point in the database.

LOG PROFILE - Burst prints a log listing all programmable set-up parameters.

CANCEL - Cancels printing of any log currently in progress.

DISPLAY Key . . .

The DISPLAY Key enables the selection of any one of several menu functions to be displayed on the Vacuum Fluorescent display. Operating in either the Trend or Log Mode, the following menu functions can be selected:

POINT? - Point Number selected is displayed and updated at the programmed display rate.

TIME - Displays time and date in 24 hour format.

ALARMS - Sequentially scrolls through alarm points at display rate.

GROUP - All points programmed to the selected group will be sequentially scrolled at display rate.

LEGEND - Displays 20-character legend of selected point.

SETPOINTS - Configured alarm setpoints and Rate Alarm of selected point is displayed.

CHART SCALE - Current operating speed is displayed.

VERSION - Software number, base version, release number and date of release is displayed.

FUNCTION Key . . .

The FUNCTION Key enables the user to reconfigure certain programmed parameters. These parameters include: SELECT CHART SPEED, RESET A POINT, ACTIVATE A POINT, BYPASS A POINT and SELECT SCALE SET.

Options . . .

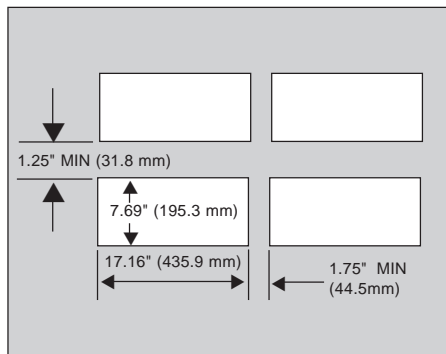
The Series 3200/MB Data Acquisition System is available with extensive list of options that will enhance operation to best meet your specific application requirements. Many of these options are available as field installable kits. These options include:

- Automatic Chart Reroll
- Relay Contact Outputs
 - One common with 6, 12, or 24 EMI-Hardened Contact Outputs
- Remote Package
 - Alarm Acknowledge
 - Alarm Reset
 - Chart On/Off (High/Off/On)
 - Event Markers
 - Scale Set Change
- Communication
 - RS232C with 25-pin Connector
 - RS422 with Terminal Block
 - RS485 with Terminal Block
 - 20mA Current Loop with 25-pin Connector
- 1/2 Door
- Fluorescent Lighting with or without Nonglare window
- Power Cord (117Vac only)
- Stainless steel tag
- Carrying handles (2)
- Seismic (IEEE 344) Package
- EMI/RFI
- Software V & V

Other Options Available . . .

- Remote Programmer Software
- Historian Translator Software

Panel Installation Dimensions . . .



Enhanced Math Package - The Enhanced Math Package for the Series 3200 Recorder will provide several additional math point types including *powers, roots, log, antilog, and re-scaling*. Logarithmic sensor inputs will be linearized for trending on the chart.

Totalization - This option, programmable from the Program Point menu (Start-up Mode), allows for the flow rate of a material to be totalized. This flow rate can be measured in units per second, minute, hour, or day. The user can specify the decimal fix and whether to print the totalized value on the chart when the total is reset. Totals can be reset manually, automatically, or through SI/O.

How to order...

In order to determine the Series 3200/MB model configuration that you need, choose one item from each group (A through L) of the Model Selection Chart and write the selected number on the appropriate line in the Model Number Summary below. However, it is recommended that you consult with Westronics Sales Office before placing an order to ensure the configuration you have selected is best suited to your specific application requirements.

Model Selection Chart

A	1	Voltage, Current, RTD & T/C Inputs	Operating Software
	2	Voltage, Current, RTD, T/C & Logarithmic Inputs	
	3	Totalization, Voltage, Current, T/C, & Log. Inputs	
B	1	117Vac/60Hz	Power Input Selection
	2	117Vac/50Hz	
	3	230 Vac/50 Hz	
	4	230Vac/60Hz	
C	1	One Common Alarm (CA)	Relay Contact Output/Remote Package
	2	One CA + 6 EMI Hardened Contact Outputs (EMI-HCO)	
	3	One CA + 12 EMI-HCO	
	4	One CA + 6 EMI-HCO with Remote Package	
	5	One CA + 12 EMI-HCO with Remote Package	
	6	One CA + 24 EMI-HCO (Form A or B)	
	7	One CA + 24 EMI-HCO (Form A or B) with Remote Package	
D	0	None	Communication Interface
	1	RS232C/25-Pin "D" Connector	
	2	RS422/Terminal Block	
	3	RS485/Terminal Block	
E	0	Customer Data Base	Point Programming
	1	Factory Data Base	

F	1	Full Door	Option Group 1
	2	1/2 Door	
	3	Full Door W/Lock	
	4	1/2 Door W/Lock	
G	0	None	Option Group 2
	1	Fluorescent Lighting Nonglare Window with Fluorescent Lighting	
H	0	None	Option Group 3
	1	Power Cord, (117Vac only)	
I	0	None	Option Group 4
	1	Stainless Steel Tag (RTP)	
	2	Stainless Steel Name Plate	
	3	Carrying Handles (2)	
	4	Items 1 and 2	
	5	Items 2 and 3	
	6	Items 1 and 3	
J	0	None	Option Group 5
	1	Automatic Reroll	
K	0	None	Option Group 7
	1	Seismic (IEEE 344) Package	
L	0	None	Option Group 8
	X	Special	

NOTE:

For ordering information on the MX60 Multiplexer or the MM120 Multiplexer, refer to the following Technical Data Sheets: MX60-T11113 and /or MM120-T11129

Model Number Summary

3200/MB - _____ - _____ - _____ - _____
 A B C D E F G H I J K L

Specifications

OPERATING

Input Signals Voltage: $\pm 1\text{mV}$ to $\pm 10\text{Vdc}$ (50mV, 100 mV, 200mV, 1V, 5V, and 10V ranges)
 Current 4 to 20mA; 10 to 50mA standard
 Thermocouple: J, K, T, E, R, S, B, C, Nicrosil -Nisil and Nickel-Nickel Moly
 RTD: 10 ohm Cu, 100, 200, and 500 ohm Pt, and 120 ohm Ni
 Contact: N.O. or N.C. dry contacts
 User Programmable Linearizations

Accuracy Voltage: $\pm 0.05\%$ for 50mV to 10Vdc
 Current: $\pm 0.1\%$ for 1mA to 200mA including shunt resistance
 RTD: $\pm 0.5^\circ\text{C}$, 10 ohm Cu $\pm 1^\circ\text{C}$
 Thermocouple:

THERMOCOUPLE TYPE	MEASUREMENT ACCURACY	CONFORMANCE TO IPTS-68	COMPENSATION ACCURACY
J, K*, T*, E*, N, Ni-Ni Moly	$\pm 0.25^\circ\text{C}$	$\pm 0.25^\circ\text{C}$	$\pm 0.5^\circ\text{C}$
R, S, C	$\pm 2.25^\circ\text{C}$		
B	± 1 to $\pm 4^\circ\text{C}$	<i>(Accuracy depends on measured temperature)</i>	

*Accuracy Specifications for T, K, & E T/C's are for temperatures above -140°C .
 For accuracy specifications below -140°C , contact the factory.

Input Impedance >10 megohms for T/C and 50mV, 100mV, 200mV, 1V and 5V ranges; 110K ohms for 10V range
Input Capacity Up to 720 direct inputs (any mix of T/C's, RTD's, mV, V, or current)
Scan Rate Up to 20 points/second (nominal)
Common Mode Voltage 300 V peak-to-peak maximum
Common Mode Noise Rejection >120 dB at 50/60 Hz with 1K ohm source imbalance at 300 V peak-to-peak CMV
Normal Mode Noise Rejection >60 dB at 50/60 Hz

PRINTER AND CHART

Writing System Impact dot matrix with color ribbon cartridge
Number of Printer Colors Ten: Green, red, blue, black, violet, orange, olive, brown, dark blue, and dark green
Chart Speed Programmable from 0.5"/hr. to 60"/hr in 0.25" increments and 5 to 1500mm/hr in 5mm increments
 Normal and alarm chart speeds are separately programmable
Chart Paper 75 ft. of roll paper

POWER

Power Requirements 117Vac $\pm 10\%$, 50/60 Hz;
 230Vac $\pm 10\%$, 50/60 Hz
Power Consumption 100 VA

ENVIRONMENTAL

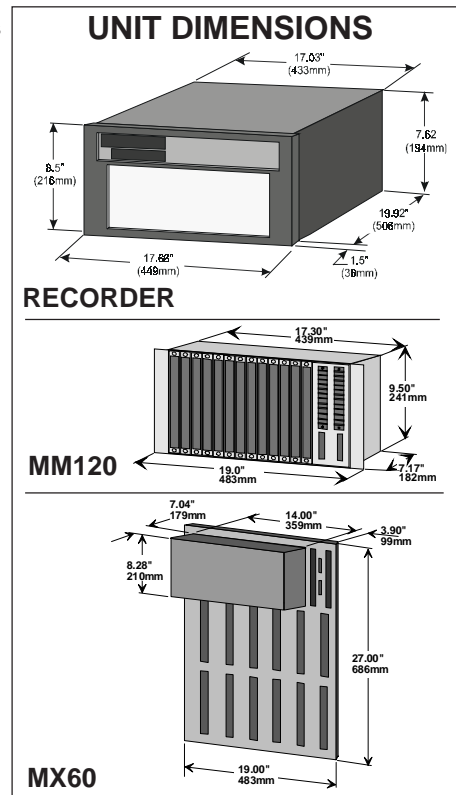
Operating Temperature Recorder: 32° to 122°F (0° to 50°C)
 Multiplexers: -13° to 158°F (-25° to 70°C)
Operating Humidity Recorder: 10 to 90% RH, noncondensing
 Multiplexers: 0 to 95% RH noncondensing
Storage Temperature Recorders: -4° to 158°F (-20° to 70°C)
 Multiplexers: -58° to 212°F (-50° to 100°C)
Storage Humidity Recorder: 0 to 100% RH, noncondensing
 Multiplexers: 0 to 100% RH, noncondensing

WEIGHT

Recorder Approximately 55 lbs. (25 kg.)

OUTPUT

Alarm Contact Alarms 6, 12 or 24 Form C with the following contact ratings:
 EMI Hardened: 3A at 117Vac or 26Vdc,
 0.4A at 250Vdc for resistive loads
Communication Interface Switch selectable 20mA, RS232C,
 RS422 (modified), RS485, or custom



Westronics implementation of new developments and product improvements may result in specification changes in this document.

9303 W. Sam Houston Pkwy. S.
 Houston, Texas 77099
 Phone: 713-272-0404 • Fax: 713-272-2273

[HTTP://www.thermo.com](http://www.thermo.com) email: sales@thermoflowsystems.com

