

HISTORY OF THE 3236-5 FIRMWARE FOR THE 2ND GENERATION BAM 1020 PARTICULATE MONITOR

The BAM 1020 has had many upgrades and improvements to its operating firmware since its inception. Below is a complete listing of the important changes for each version. Minor bug fixes and similar updates may not be detailed or may be omitted completely. This history is not intended to be exhaustive but rather to highlight the items of note in each update.

3236-5 FIRMWARE		
VERSION	DESCRIPTION	RELEASE
3.4.2	<ul style="list-style-type: none"> This firmware is only installed in PM 2.5 FEM units. Added error log with subcategories (option 9) to the CSV download menu (option 6). Added Bayern-Hessen (BH) protocol support. Added Report Processor support. New Data pointer command. 	01-02-09
3.4.6 ALSO INCLUDES: 3.4.3 3.4.4 3.4.5	3.4.6: <ul style="list-style-type: none"> Introduced a warning screen that sampling operations would be interrupted when accessing the Error Recall, Data Recall and Transfer Module screens. 3.4.5: <ul style="list-style-type: none"> Increased the range of the AT values stored in the 5-Minute Flow file from -30 to +50 to -100 to +100. 3.4.4: <ul style="list-style-type: none"> Expanded the BX-596 pressure sensor calibration range from 600 - 800 to 535 - 815. Changed pressure sensor lower failure limit from 520 to 530. Disabled Modbus exception errors to the printer port when the 80350 report processor is not present. 3.4.3: <ul style="list-style-type: none"> Fixed a problem calculating the Julian day during transition to a new year. Added option to select 00:00 - 23:00 or 01:00 - 24:00 range for daily reports. Refer to document BAM-1020-9950 R3.4.3 for more detail. 	05-18-09



<p>3.6.3</p> <p>ALSO INCLUDES:</p> <p>3.6.0</p> <p>3.6.1</p> <p>3.6.2</p>	<p>3.6.3</p> <ul style="list-style-type: none"> Enhanced BH protocol and Query command. <p>3.6.2</p> <ul style="list-style-type: none"> Support was added for a BX-596-1 extended range sensor. <p>3.6.1</p> <ul style="list-style-type: none"> Fixed minor bug in Telemetry Reset. Expanded Top of Hour detection window to one minute for improved compatibility with DR DAS software. <p>3.6.0</p> <ul style="list-style-type: none"> Fixed bug that sometimes repeated data in error. 	<p>07-01-10</p>
<p>3.6.8</p> <p>ALSO INCLUDES:</p> <p>3.6.4</p> <p>3.6.5</p>	<p>3.6.8</p> <ul style="list-style-type: none"> Fixes bug that sometimes reported a false tape break. Improvements to Smart Heater operation. <p>3.6.5</p> <ul style="list-style-type: none"> Changed beta count failure timeout from 10 to 60 seconds. Allow the report processor to set the master time clock. <p>Requires report processor firmware 80353-03 R2.1.1.</p> <ul style="list-style-type: none"> The CSV report menu timeout reduced from 60 to 10 seconds. <p>3.6.4</p> <ul style="list-style-type: none"> Improved tape movement operations. 	<p>02-06-12</p>
<p>3.7.1</p> <p>ALSO INCLUDES:</p> <p>3.7.0</p>	<p>3.7.1</p> <ul style="list-style-type: none"> Added support for the BX-596+ sensor. Updated labeling on the ALIGN/NOZZLE screen. Fixed minor serial menu and display issues. <p>3.7.0</p> <ul style="list-style-type: none"> Added Span Check operation (OFF, 1HR, 24HR). Added the set/get Serial Number command (SS). The Span Check and Serial Number are added to the Settings report. <p>Requires report processor firmware 80353-01 R1.3.0 or 80353-03 R2.3.1 and greater.</p>	<p>11-16-12</p>



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<p>3.11.0</p> <p>ALSO INCLUDES: 3.9.0 3.9.1 3.9.2</p> <p>SKIPPED: 3.8.X 3.9.1 3.10.X</p>	<p>3.11.0</p> <ul style="list-style-type: none"> • Changed the 'Force Maint' text to 'Maintenance'. • Set the status to 'M' in data file when 'Maintenance' is ON. • Added the <Esc>MN serial command to get/set the 'Maintenance' setting. • Combined 3236-2 firmware for PM2.5 monitoring into this single firmware. The 3236-2 firmware will no longer be used. • Added 'Inlet Type' setting to select PM10 or PM2.5 operation. <p>3.9.2</p> <ul style="list-style-type: none"> • Values reported by the BH protocol are now in ug/m3 or mg/m3 based on the Conc Unit setting. <p>3.9.0</p> <ul style="list-style-type: none"> • Added CONCENTRATION ERROR setting to choose FULL SCALE VALUE, MIN SCALE VALUE, or "ERROR" TEXT to indicate a concentration error condition. 	<p>11-07-16</p>
<p>3.12.1</p> <p>ALSO INCLUDES: 3.12.0</p>	<p>3.12.1</p> <ul style="list-style-type: none"> • Added partial sample calculations when sample is stopped by flow out of regulation by 10% for more than 1-minute. <p>3.12.0</p> <ul style="list-style-type: none"> • Flow format changed from xx.x to xx.xx. • Added 'TSP' selection to Inlet Type list. • Added support for China HJ 653 specification. • Removed 'Split DELTAP' from SETUP/INTERFACE screen. • Changed QUERY string 'CONC' label to 'CONC_A' and added the 'CONC_S' field. <p>Must use report processor firmware 80353-03 R2.7.0 or greater.</p>	<p>11-27-17</p>
<p>3.13.1</p> <p>ALSO INCLUDES: 3.13.0</p>	<p>3.13.1</p> <ul style="list-style-type: none"> • Fixed early cycle mode analog output using previous hour result instead of current hour. • Modified Qtot to report in Actual Conditions, regardless of reporting concentration in Standard or Actual. <p>3.13.0</p> <ul style="list-style-type: none"> • Added support for 16-bit concentration types. • Added LEAK test mode. • Added DYNAMIC RANGE setting. • Added 30-minute Auto Restart to Self-Test and Tape Tension screens. • Removed FRI and FRh. They have been superseded by 5% out-of-regulation and Flow Failure. <p>Must use report processor firmware 80353-03 R2.8.0 or greater.</p>	<p>07-24-18</p>



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<p>3.14.2</p> <p>ALSO INCLUDES: 3.14.0 3.14.1</p>	<p>3.14.2</p> <ul style="list-style-type: none"> Added support for the lower range of the BX-597 sensor. Added Filter Pressure to the Report Processor 5-minute flow report. <p>3.14.1</p> <p>Changes to be EN 16450:2017 (TUV/EU) compliant.</p> <ul style="list-style-type: none"> Added Filter Pressure to the 5-Minute Flow file. Added Log BP and Log Membrane settings. Added Log BP and Log Membrane to the Report Setup screen. Added LOG BP and LOG MEMBRANE to the Settings report. Changes to the Heater Setup screen: Delta-T heater control removed. Data log Delta-T replaced with Log Filter-T. HEATER MODE is moved from the Calibrate Setup. LOW POWER is moved from the Advance Menu Heater Setup. The CSV report Filter-RH changed to FRH(%). The CSV report Filter-T changed to FT(C). Changes to the Filter-RH Test screen: 'RH' changed to 'FILTER-RH'. The RH Calibration screen changed to FILTER-RH CALIBRATION. HJ 653 BP(kPa) stored value changed from BAM sample average to MET sample average. Daily Concentration Report changes: The 0-command added for the Daily Concentration report. The 2-command reports All Daily Concentration. The 3-command reports New Daily Concentration. Added support for changing memory pointer to select desired number of days for the Daily Concentration report. <p>Must use report processor firmware 80353-03 R2.9.0 or greater.</p>	<p>02-25-19</p>
<p>3.14.3</p>	<ul style="list-style-type: none"> Fixed bug in Recall Data screen not displaying Concentration correctly. Fixed bug in Setup Sample screen where pressing the SAVE button would inadvertently clear the Data Log file. Fixed bug in Setup Report screen where pressing the SAVE button would inadvertently clear the Data Log file. <p>Must use report processor firmware 80353-03 R2.9.0 or greater.</p>	<p>04-23-19</p>
<p>3.14.4</p>	<ul style="list-style-type: none"> Improved Flow Failure alarm operation. <p>Must use report processor firmware 80353-03 R2.9.0 or greater.</p>	<p>08-11-21</p>



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