

INSTRUCTIONS FOR USE – EX604XYYY Series


Model(s)	<p>EX604XYYY X = One Letter from A to Z denoting revision level (with “M” reserved for customer Special Orders) YYY = Two or Three Numbers 00 to 999 which cable/connector type and sensitivity, filtering, or bias.</p>		
Markings	<table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>For Connector Version:</p> <p>PCB Depew, NY IECEX ETL 18.0017 X ITS 18 ATEX 203388 X Ex ic IIC T4 Gc -54°C ≤ Tamb ≤121°C Ex nA IIC T4 Gc -54°C ≤ Tamb ≤121°C ETL c/us Intertek Listed 5010230 Install per 68438</p> </td> <td style="width: 50%; vertical-align: top;"> <p>For Integral Cable Version:</p> <p>PBC Depew, NY IECEX ETL 18.0017 X ITS 18 ATEX 203388 X Ex ic IIC T4 Gc -54°C ≤ Tamb ≤121°C ETL c/us Intertek Listed 5010230 Install per 68438</p> </td> </tr> </table>	<p>For Connector Version:</p> <p>PCB Depew, NY IECEX ETL 18.0017 X ITS 18 ATEX 203388 X Ex ic IIC T4 Gc -54°C ≤ Tamb ≤121°C Ex nA IIC T4 Gc -54°C ≤ Tamb ≤121°C ETL c/us Intertek Listed 5010230 Install per 68438</p>	<p>For Integral Cable Version:</p> <p>PBC Depew, NY IECEX ETL 18.0017 X ITS 18 ATEX 203388 X Ex ic IIC T4 Gc -54°C ≤ Tamb ≤121°C ETL c/us Intertek Listed 5010230 Install per 68438</p>
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Putting Into Service	<p>Powering: All ICP® sensors require constant current excitation for proper operation. For this reason, use only PCB constant-current signal conditioners or other approved constant-current sources. The power supply consists of a current-regulated, 2-20 mA at 18 to 28 VDC source. This power is regulated by a current-limiting circuit, which provides the constant-current excitation required for proper operation of ICP® sensors.</p> <p>In general, battery-powered devices offer versatility for portable, low-noise measurements, whereas line-powered units provide the capability for continuous monitoring. Consult the Vibration Division’s product catalog for more information about signal conditioners.</p> <p>NOTE: <i>Under no circumstances should a voltage be supplied to an ICP® accelerometer without a current-regulating diode or equivalent electrical circuit. This may include ohmmeters, multi-meters and continuity testers.</i></p>		
Safe Use	<p>After completing the system setup, switch on the signal conditioner and allow 1 to 2 minutes for the system to stabilize. The meter (or LED) on the signal conditioner should be reading “green.” This indicates proper operation and you may begin taking measurements. If a faulty condition is indicated (red or yellow reading), first check all system connections, then check the functionality of the cable and signal conditioner. If the system still does not operate properly, consult a PCB factory representative.</p> <p>NOTE: <i>Always operate the accelerometer within the limitations listed on the enclosed Specification Sheet. Operating the device outside these parameters can cause temporary or permanent damage to the sensor.</i></p>		
Assembling	<p>The EX604XYYY Series have hermetically sealed stainless Steel housings, with a glass-sealed connector, and do not require any assembly. Only mounting to the machine being monitored using standard mounting accessories.</p>		
Dismantling	<p>Other than removal from the mounting, there is no disassembly of the sensor required to take it out of service.</p>		
Maintenance	<p>Routine maintenance, such as the cleaning of electrical connectors, housings, and mounting surfaces with solutions and techniques that will not harm the physical material of construction, is acceptable.</p>		

Serviceing	Due to the sophisticated nature of the sensors and associated instrumentation provided by PCB Piezotronics, user servicing or repair is not recommended and, if attempted, may void the factory warranty. However, routine calibration of sensors and associated instrumentation is recommended as this helps build confidence in measurement accuracy and acquired data over time.
Repair	In the event that equipment becomes damaged or ceases to operate, arrangements should be made to return the equipment to PCB Piezotronics for repair. User servicing or repair is not recommended and, if attempted, may void the factory warranty.
Installation	Overview: Sensor must be mounted in order to be put into service. When choosing a mounting method, consider closely both the advantages and disadvantages of each technique. Characteristics like location, ruggedness, amplitude range, accessibility, temperature, and portability are extremely critical. However, the most important and often overlooked consideration is the effect the mounting technique has on the high-frequency performance of the accelerometer. Mounting methods include: Stud mount, adhesive mount, magnetic mount, or probe tip mount. Cabling: Care and attention to cable installation and cable condition is essential as the reliability and accuracy of any measurement system is no better than that of its weakest link. Due to the nature of vibration measurements, all sensor cables will ultimately fatigue and fail. Good installation practice will extend the life of a cable, however, it is highly recommended to keep spare cables on hand to enable continuation of the test in the event of a cable failure.
Adjustment	The sensor is a sealed device and no user adjustments are possible. However, routine calibration of sensors by the manufacturer is recommended as this helps build confidence in measurement accuracy and acquired data.
Danger Areas (for pressure-relief devices)	N/A – not a pressure relief device.
Training Instructions	Industrial sensors to be installed in Hazardous Locations must have this done by trained professionals according to EN/IEC 60079-14 requirements.
Details on Safety of Protection Category	Ex ic is “intrinsic safety”, which limits the energy of sparks and surface temperatures to safe levels. Ex nA is “Non-Sparking”, which ensures that there is no risk of arcing and sparking or hot surfaces during normal operation with a minimum IP protection of IP54. (Only applies to connector version).
Entity Parameters and Limits (Values)	Temperature Range: -54°C to +121°C Connector Version: Vmax = 28V, Imax = 180mA, Pi = 1.26W, Ci = 63nF, Li = 0μH for X, Y, and Z axis Integral Cable Version: Vmax = 28V, Imax = 180mA, Pi = 1.26W, Ci = 83nF, Li = 100μH for X, Y, and Z axis
Special Conditions of Use	<u>Version Ex ic:</u> The apparatus must only be connected to a certified associated intrinsically safe equipment. This combination must be compatible regarding intrinsic safety rules (see electrical parameters). The apparatus shall be connected according to drawing 68438 (page 1/2) The Integral Cable version has a maximum cable length of 327’ according to the drawing 68438 (page 1/2) Device complies with the requirements of the dielectric test per clause 6.3.13 of standard IEC 60079-11. <u>Version Ex nA:</u> The apparatus must be only connect to an equipment whose electrical parameters are compatible with the electrical parameters. The apparatus shall be connected according to drawing 68438 (page 2/2). The connected cable and the connector must provide a minimum ingress protection of IP54, when assessed according to IEC 60079-0 and IEC 60079-15. Unused connector must be fitted with an appropriately rated blanking cover.

	<p>All sealing devices including cable glands, blanking elements, thread adapters, stopping plugs and connectors shall be suitably certified when the equipment is installed in accordance with type of protection Ex nA. This connection shall maintain a minimum degree of protection of IP54 and have been submitted to all relevant type tests of IEC 60079-0. The sealing device shall have a rated service temperature in excess of -54°C to +121°C and be suitably sized for the cabling which is carried. Installation shall take into account any applicable special conditions for safe use or schedule of limitations and all relevant installation requirements of EN 60079-14.</p> <p>When the equipment is installed in accordance with method of protection Ex nA, the connection between the provided socket and installed plug must be made in a manner that cannot be separated without the use of a tool.</p> <p>When the equipment is installed in accordance with type of protection Ex nA, the equipment shall be provided with transient protection which limits the input voltage to 39.2V (140% of the peak rated voltage value) at the supply terminals to the equipment.</p>
Essential Characteristics of tools fitted to the system (if any).	N/A – No tools are fitted to the system.
Drawings and Diagrams	61725, 68432, 68433, 68434, 68436, 68437, 68438, 68445, 68446, 68447, 68448, 68449, 72232
Other	<p>ITS 18 ATEX 203388 X and ITS IECEx 18.0017 X</p> <p>For ATEX protection “ic” – EN 60079-0 + A11:2013 and EN 60079-11:2012</p> <p>For ATEX protection “nA” – EN 60079-0 + A11:2013 and EN 60079-15:2010</p> <p>For IECEx protection “ic” – IEC 60079-0 Ed. 6 and IEC 60079-11 Ed. 6</p> <p>For IECEx protection “nA” – IEC 60079-0 Ed. 6 and IEC 60079-15 Ed. 4</p> <p>ETL c/us Intertek Listed – 5010230</p>

Note: Literature (such as the manual or marketing materials) describing the equipment or protective system must not contradict the instructions with regard to safety aspects.

Note: IMI Sensors is a Division of PCB Piezotronics. This Division is wholly contained in the PCB Piezotronics manufacturing facility at 3425 Walden Avenue, Depew, New York. Same address, same manufacturing facility. Some of the documentation contained in the Technical File associated with this application is labeled IMI Sensors, A PCB Piezotronics Div. and some is labeled simply PCB Piezotronics. PCB Piezotronics labeled drawing are higher-level drawings, which are used across multiple divisions, while IMI labeled drawing are specific to IMI models. There will be a mixture of IMI and PCB drawing to support this application, and in reality, they are the same entity however with an associated trade name (IMI) that is recognized by our customer base.

 3425 Walden Ave Depew, New York 14043	<p>DIN 49927 Nº 61725 Rev. B 09/20/2019</p>	<p>Nº 3 of 3</p>
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