Technical Data

Original Instructions

Allen-Bradley

1443 Series Accelerometers Specifications

Catalog Numbers 1443-ACC-GP series, 1443-ACC-VO series, 1443-ACC-IS series, 1443-ACC-AT series, 1443-ACC-LF-T, 1443-ACC-HF-T

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Summary of Changes

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Added new topic 'API-670 compliance'	10
Added Important for sensors manufactured earlier than October 2017	10
Added Hall-effect Speed Sensor information to quick reference section	13, 42
Sensitivity changed from (±10%) to (±5%) global change	14
Updated footnote for sensitivity tolerance	14
Updated all Sensor tables frequency ranges with new ranges	14
Exception for sensor compliance for six Accelerometers	16

Rockwell Automation® 1443 Series Accelerometers are general-purpose sensors that are used to measure vibration on industrial machinery. The 1443 Series family also includes sensors with these varied capabilities:

- Low frequency, as low as 0.1 Hz or 6 cpm
- High frequency, up to 20 kHz or 1200 kcpm
- Velocity output, internal integrator
- Hazardous area approved
- Dual accelerometer and temperature output

Typical Vibration Measurement Systems

Accelerometers are either permanently mounted or carried from point-to-point in a route-based measurement or analysis scheme. The entire measurement system, however, can take on various forms, depending on sensor type and the goal of the monitoring program. The following examples illustrate vibration measurement and monitor systems.

Figure 1 - Dynamix™ System and Permanently Installed Accelerometers

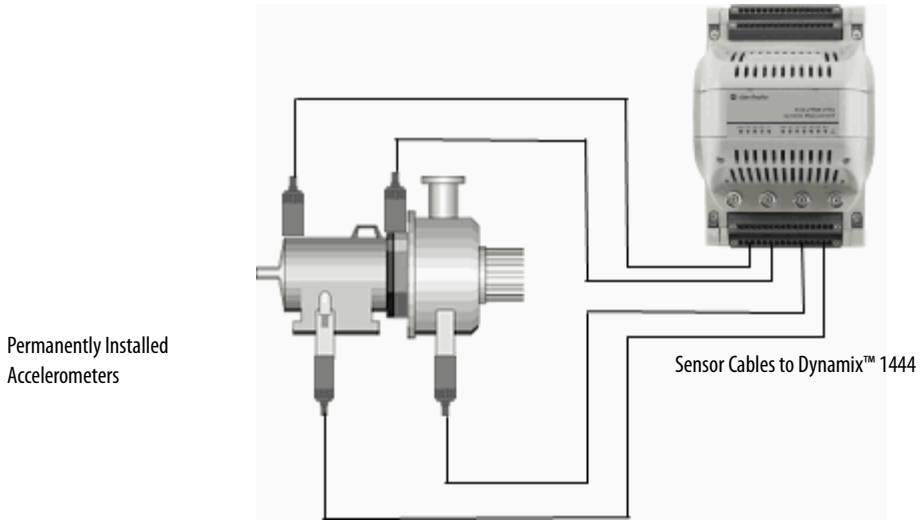


Figure 2 - Portable Data Collector and Permanently Installed Accelerometers

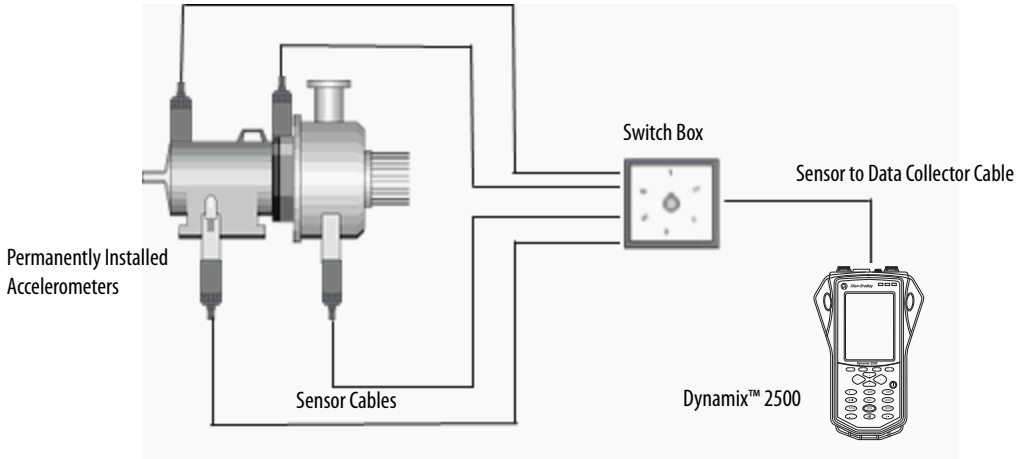
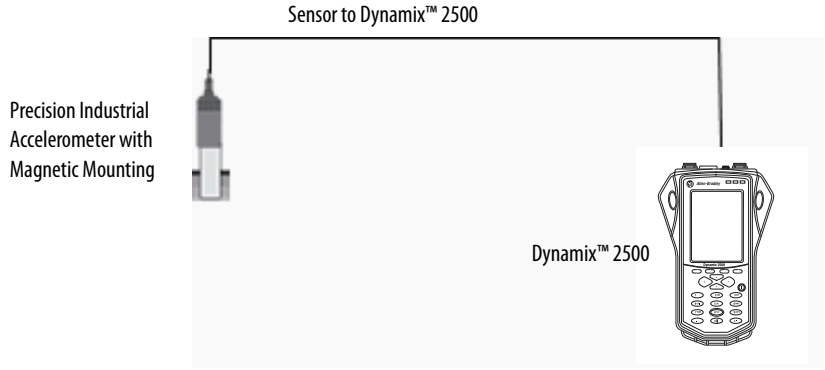


Figure 3 - Portable Data Collector and Accelerometer



IMPORTANT All specifications are at room temperature unless otherwise specified.

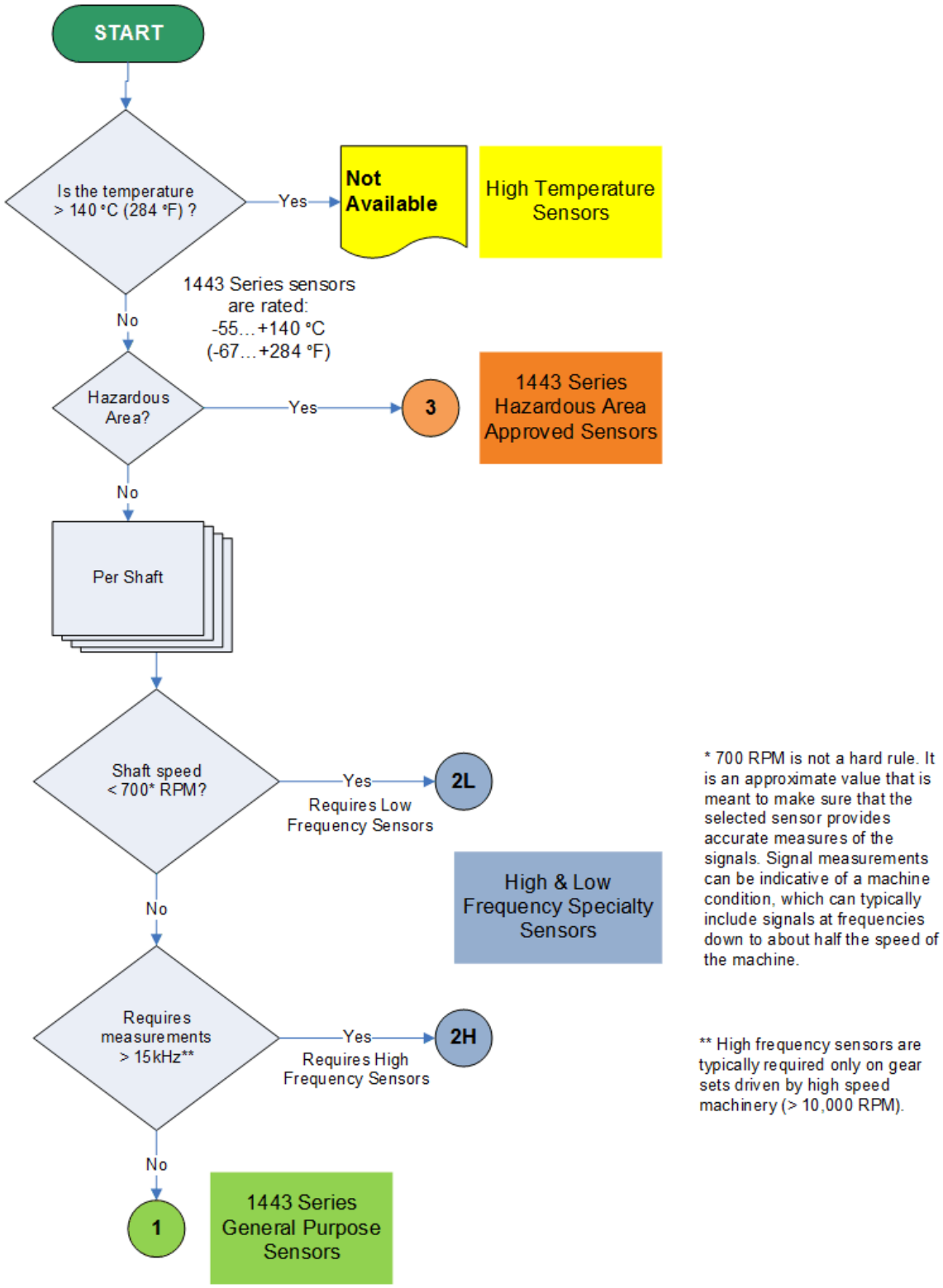
For certification information, see Declaration of Conformance at rok.auto/certifications.

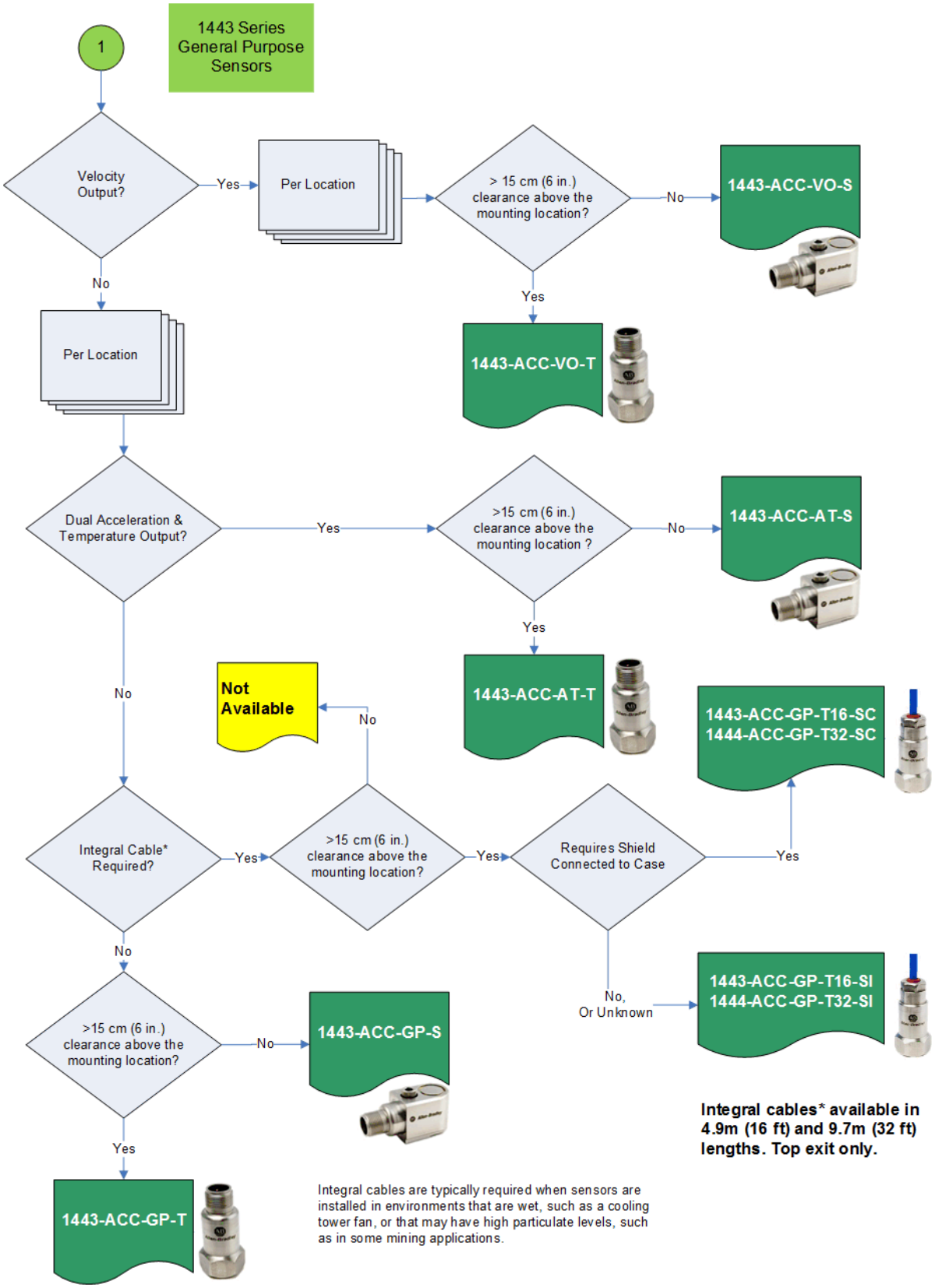
Optional versions have identical specifications and accessories as listed for standard model except where noted. Multiple options can be used.

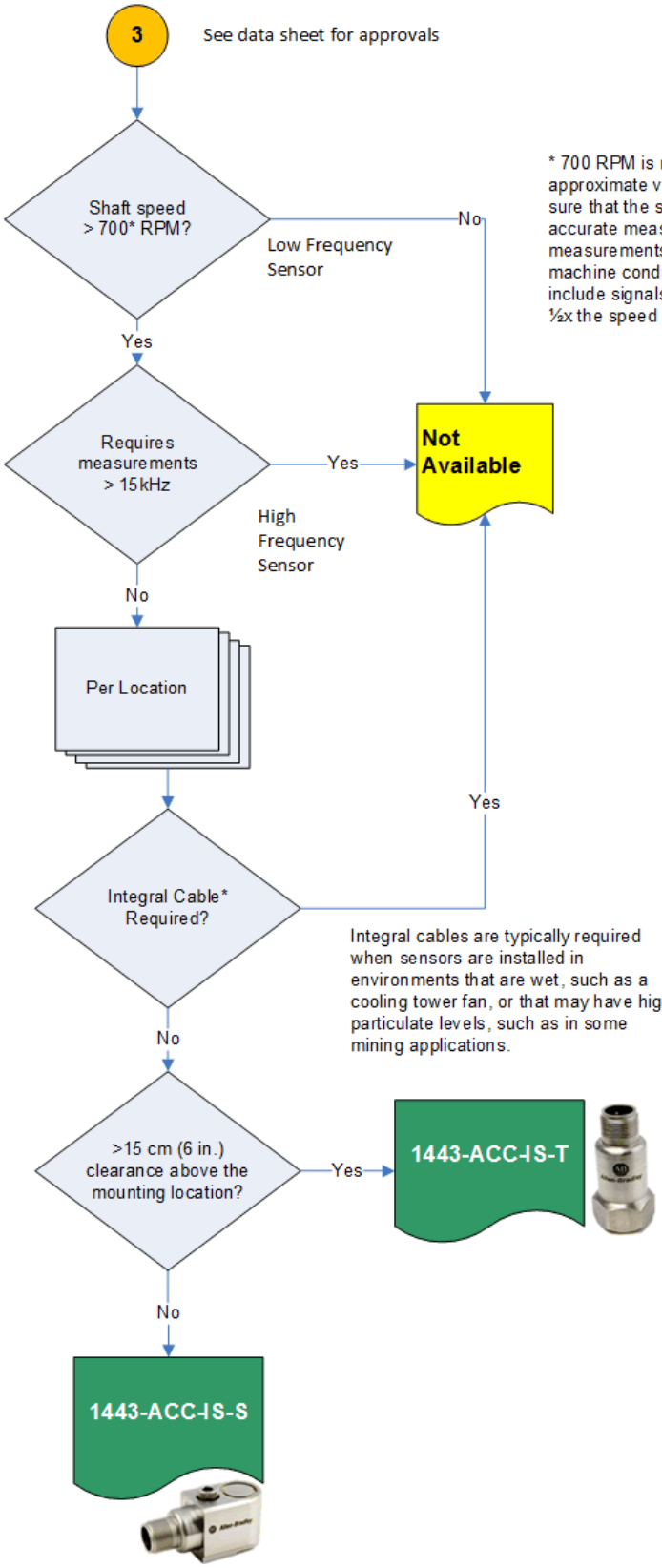
Sensor Selection Process

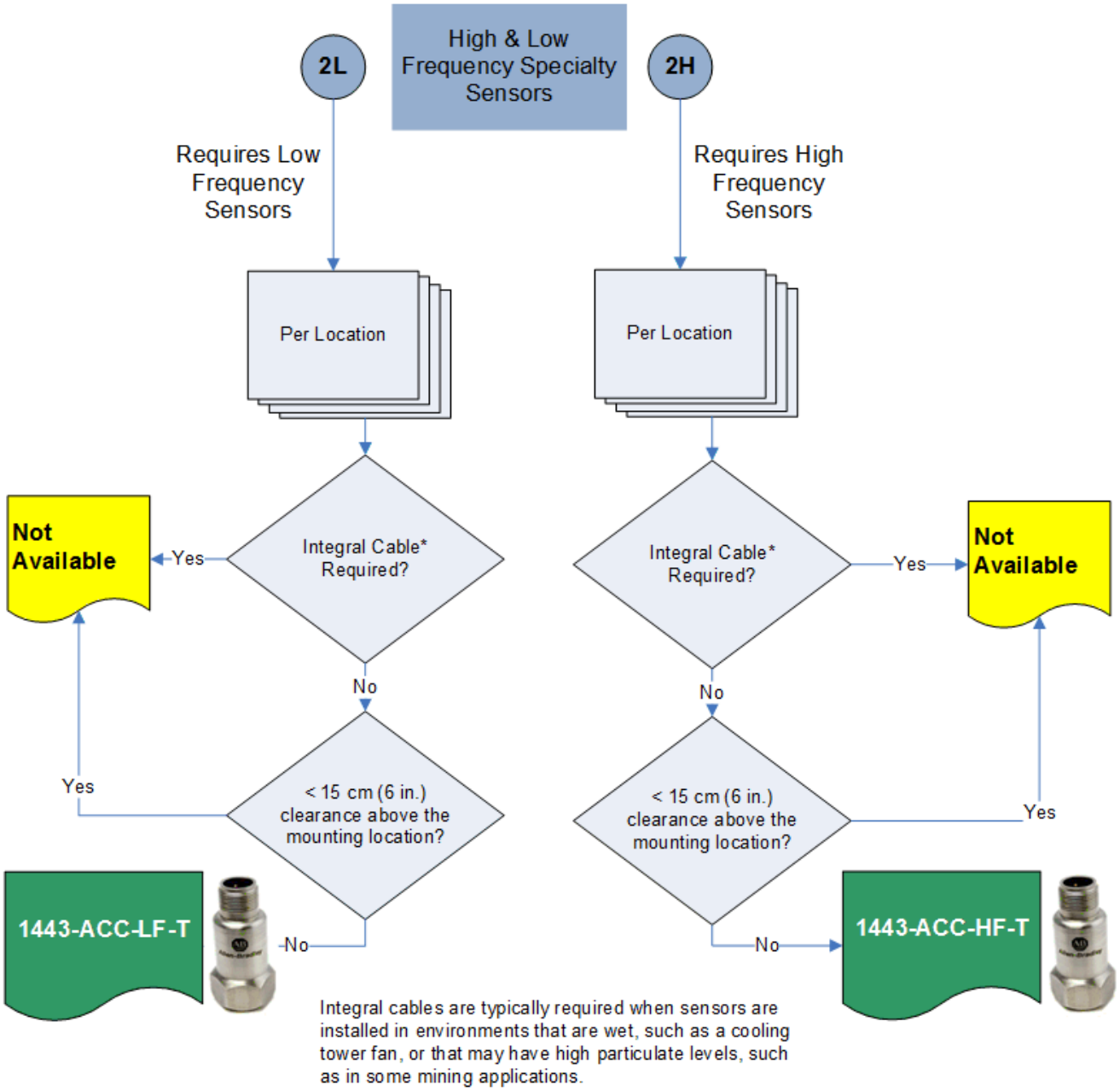
This flowchart illustrates the process that you can follow to select the appropriate sensor for your application.

Figure 4 - Sensor Selection Flowchart




1
1443 Series General Purpose Sensors
Velocity Output?
Yes
Per Location
> 15 cm (6 in.) clearance above the mounting location?
No
1443-ACC-VO-S
Yes
1443-ACC-VO-T
No
Per Location
Dual Acceleration & Temperature Output?
Yes
>15 cm (6 in.) clearance above the mounting location ?
No
1443-ACC-AT-S
Yes
1443-ACC-AT-T
No
Not Available
No
1443-ACC-GP-T16-SC
1444-ACC-GP-T32-SC
Integral Cable* Required?
Yes
>15 cm (6 in.) clearance above the mounting location?
Yes
Requires Shield Connected to Case
Yes
No
No,
Or Unknown
1443-ACC-GP-T16-SI
1444-ACC-GP-T32-SI
>15 cm (6 in.) clearance above the mounting location?
No
1443-ACC-GP-S
Yes
1443-ACC-GP-T
Integral cables* available in 4.9m (16 ft) and 9.7m (32 ft) lengths. Top exit only.
Integral cables are typically required when sensors are installed in environments that are wet, such as a cooling tower fan, or that may have high particulate levels, such as in some mining applications.


3
See data sheet for approvals
Shaft speed > 700* RPM?
No
Low Frequency Sensor
* 700 RPM is not a hard rule. It is an approximate value that is meant to make sure that the selected sensor provides accurate measures of the signals. Signal measurements can be indicative of a machine condition, which can typically include signals at frequencies down to about ½x the speed of the machine.
Yes
Requires measurements > 15kHz
Yes
Not Available
High Frequency Sensor
No
Per Location
Yes
Integral Cable* Required?
Integral cables are typically required when sensors are installed in environments that are wet, such as a cooling tower fan, or that may have high particulate levels, such as in some mining applications.
No
>15 cm (6 in.) clearance above the mounting location?
Yes
1443-ACC-IS-T
No
1443-ACC-IS-S


High & Low Frequency Specialty Sensors
2L
2H
Requires Low Frequency Sensors
Requires High Frequency Sensors
Per Location
Per Location
Integral Cable* Required?
Integral Cable* Required?
Not Available
Yes
Yes
Not Available
No
No
< 15 cm (6 in.) clearance above the mounting location?
< 15 cm (6 in.) clearance above the mounting location?
Yes
Yes
1443-ACC-LF-T
No
No
1443-ACC-HF-T
Integral cables are typically required when sensors are installed in environments that are wet, such as a cooling tower fan, or that may have high particulate levels, such as in some mining applications.

Shield Wire Isolation Sensor and Cable Selection

The 1443 Series include sensor and cable solutions that isolate the shield wire from the sensor or ground the shield wire to the sensor. For standard sensors, select either shield isolated or shield grounded cables. When a sensor with an integral cable is required, select a sensor with the shield wire isolated from the sensor or that has its shield wire grounded to the sensor.

When a shield to sensor isolated solution is required, which is the normal recommended method:

- If a sensor without an integral cable is required, use an accessory cable that has its shield wire isolated from the sensor connector. Select a cable with 'IBC' in its catalog number, for example, 1443-CBL-MS2IBC-32S.
- If a sensor with an integral cable is required, use a sensor with its shield wire isolated from the sensor. Select a sensor with 'SI' in its catalog number, for example, 1443-ACC-GP-T16-SI.

When a shield grounded sensor is required:

- If a sensor without an integral cable is required, use an accessory cable that has its shield wire that is grounded to the sensor connector. Select a cable with 'GBC' in its catalog number, for example, 1443-CBL-MS2GBC-16S.
- If a sensor with an integral cable is required, use a sensor with its shield wire that is grounded to sensor case. Select a sensor with 'SC' in its catalog number, for example, 1443-ACC-GP-T16-SC.

The recommended solution is to connect the shield at the measurement system and leave it isolated at the sensor end. Use IBC version cables or 'SI' version sensors when an integral cable sensor is required. However, when EMI problems are present or expected, then a shield case grounded solution can prove to be a better design.

When signal noise or interference is a problem or concern, you must understand the source of the problem to resolve it. Noise can be introduced into signals from accelerometers through these common phenomena:

- Electromagnetic Interference (EMI)

  EMI is the introduction of unwanted signals into an electronic device from electromagnetic fields that another electronic device generated. Televisions, radars, vehicles, variable-frequency drives (VFDs), and other electronic devices can produce high powered electromagnetic fields. EMI can be introduced into the measurement system via the signal wiring when that wiring acts as an antenna, which occurs when one end of the wire is ungrounded.

  When EMI occurs, it typically results in signals being introduced at discrete frequencies that are related to the signal source. The impact on measurements is dependent on the magnitude and specific frequency of the signal that is induced. This occurrence is relative to the measurement systems design signal magnitude and frequency range and the expected signals that are intended to be measured.
- Ground Loops

  In electronics, a ground loop is caused when a device has multiple paths for electricity to flow to ground. In a measurement system, this scenario commonly occurs when a signal wire is grounded at both ends, with each end having another potential (resistance) to ground.

  The key for accelerometer measurement systems is knowing if the machine case, or bearing housing, to which the sensor is attached, is grounded or not. While a new machine installation can be isolated, changes are possible over the life of the machine as wear occurs, maintenance is performed, and other changes are made.

Regardless the source, when present these signals or noise can result in significant error in measurements. The result can be random and inexplicable machine alarms and trips, erroneous condition assessment / diagnosis, and possible damage to the instrumentation. If the source of the noise is clear, and there is only one concern, then the corrective action is clear, depending on the source of the problem, try the following:

EMI

Ground the shield at both ends of the cable.

- If you tie the shield to the sensor case only, it creates a ground if the structure that the sensor is mounted on is grounded. If the bearing housing or the machine is isolated from ground, then when you connect the shield to the case of the sensor cannot ground the shield.
- If the ground potential through the sensor is different than ground potential through the instrumentation ground, then a ground loop is created. The ground loop that is created can be a worse condition than the EMI problem.
- In most cases, grounding the shield at both ends must be the last resort because ground loop problems can result. The ground loop problems can create more significant problems than the EMI issue. Make sure that the following common wiring solutions are considered:
  - Use high quality, well shielded, twisted wire cable.
  - Route cable runs to avoid obvious / strong sources of EMI such as radio transmission towers, generators, and transformers.
  - If cables are routed through a J-box, make sure that shields are properly connected.
  - When routing cables, make sure to cross AC power lines at right angles. Approach AC motors from a right angle to the motor shaft and do not route wiring alongside a motor.
  - At the monitor, connect the shield wires directly to ground - so do not ground it through the instrument.

Ground Loops

Isolate the shield at one end of the cable.

- In most cases, make sure that the shield is not connected to the sensor.
- A special cable or a custom made cable is required for accelerometers with two or three pin MIL-C-5015 connectors.
- For existing installations, do not assume that the shield is not tied to the sensor case. While not connected to the sensor case is normal practice in most locations, it doesn't mean that it is that way. Also, if the shield is connected to the sensor case, it’s possible that the structure the sensor is mounted on has changed in respect to the ground for other reasons.
- If continuous or intermittent EMI (RFI) sources are present, then when you isolate one end of the shield it creates an antenna that can result in EMI (RFI) noise problems. An EMI (RFI) issue can be a worse condition than the ground loop problem.

API-670 Compliance

All 1443 Series sensors are compliant to the American Petroleum Institute (API) Standard 670, 5th Edition, November 2014, with the following exceptions:

- Side exit sensors have an outside diameter greater than 25 mm (1 in.) as specified by API-670 paragraph 5.2.1.5.
- Calibration frequency is 80 Hz, in accordance with ISO standard 9001-2008, rather than 100 Hz as specified in API-670 Table 1 note f.
- Only the standard 16 ft cables are nominally 5 m (200 in.) as specified by API-670 paragraph 5.2.2.2.
- Cables do not ship with loose heat-shrink tubing for labeling, as specified by API-670 paragraph 5.2.2.3.

Perhaps the most important attribute of the sensor, per the standard, is its accuracy. The standard specifies accuracy requirements for accelerometers in the following table.

Table 1 - Machinery Protection System Accuracy Requirements

Accelerometers and Accelerometer Extension Cables(1)			
Temperature		**Accuracy Requirements as a Function of Temperature**	
Test Range	**Operating / Storage Range**	**Within Testing Range**	**Outside Testing Range but Within Operating Range**
20...30 °C (68...86 °F)	–55...+120 °C (–65...+250 °F)	Principal axis sensitivity(4): 100 mV/g ± 5% Amplitude linearity: 1% from 0.1...50 g peak(2) Frequency response(3): ±3 dB from 10 Hz to 10 kHz, referenced to the actual measured principal axis sensitivity(4)	Principal axis sensitivity(4): 100 mV/g ± 20%

(1) During the testing of the accelerometers, the parameter under test is the only parameter that is varied. All other parameters remain constant.

(2) Conditions of test at any one temperature within the testing range, at any single frequency that is not specified but is within the specified frequency range of the transducer.

(3) Frequency response testing conditions, at any one temperature within the testing range, at an excitation amplitude that is not specified but is within the specified amplitude range of the transducer.

(4) Principal axis sensitivity testing conditions (test range), at any one temperature within the testing range set at 100 Hz, at an excitation amplitude that is not specified but is within the specified amplitude range of the transducer. Operating range at any one temperature within the operating range, at 100 Hz, at an excitation amplitude that is not specified but is within the specified amplitude range of the transducer.

The 1443 Series sensor is ± 5% across the entire operating range of the sensor. This sensor range significantly exceeds the requirement of only testing within the temperature range. Among sensors advertised as API compliant, this provides a much more consistent and accurate measurement than most sensors compared to the requirement of just ±20%.

IMPORTANT Sensors manufactured earlier than October 2017 can have sensitivity variances of up to ± 10% across the operating range.

Sensor Quick Reference

General-purpose Accelerometers

General-purpose industrial accelerometers are recommended for permanent installation onto machinery or route-based vibration data collection in predictive maintenance and condition-monitoring applications.

Table 2 - General-purpose Accelerometers

Purpose	Cat. No	Features	Page
General-purpose Accelerometer	1443-ACC-GP-T	• 100 mV/g • 0.8…19 kHz • Top Exit	14
	1443-ACC-GP-S	• 100 mV/g • 0.2…15 kHz • Side Exit	16
General-purpose Accelerometer (with Integral Cable)	1443-ACC-GP-T16-SI	• Integral ~5 m (16 ft) Cable • 100 mV/g • 0.8…15 kHz • Top Exit	18
	1443-ACC-GP-T32-SI	• Integral ~10 m (32 ft) Cable • 100 mV/g • 0.8…15 kHz • Top Exit	20
	1443-ACC-GP-T16-SC	• Integral ~5 m (16 ft) Cable • Shield Case Grounded Cable(1) • 100 mV/g • 0.8…15 kHz • Top Exit	22
	1443-ACC-GP-T32-SC	• Integral ~10 m (32 ft) Cable • Shield Case Grounded Cable(1) • 100 mV/g • 0.8…15 kHz • Top Exit	24

(1) Sensors with the shield wire grounded to the case are non-standard. See Shield Wire Isolation Sensor and Cable Selection on page 8 before ordering.

Sensors with Integral Cables

Included in the list of 1443 Series general-purpose Accelerometers are variants of the sensor that include integral 4.8 m (16 ft) and 9.7 m (32 ft) cables. Sensors with an integrated cable are useful in wet or dirty (high particulate) areas.

Low Frequency Accelerometer

The accelerometer combines low-frequency response with high-output sensitivity to obtain the resolution characteristics and output signal levels necessary for low-frequency measurements and analysis.

Table 3 - Low Frequency Accelerometer

Purpose	Cat. No	Features	Page
Low Frequency Accelerometer	1443-ACC-LF-T	• 500 mV/g • 1.5…10 kHz (5%) • 0.1…15 kHz (3db) • Top Exit	26

High Frequency Accelerometer

When you test, monitor vibrations, and analyze the frequency of machinery where frequencies greater than approximately 15 kHz, the frequencies must be measured.

Table 4 - High Frequency Accelerometer

Purpose	Cat. No	Features	Page
High Frequency Accelerometer	1443-ACC-HF-T	• 50 mV/g • 0.8…20 kHz • Top exit	28

Specialty Accelerometers

These sensors are available for applications that require velocity output and temperature output from the sensor.

- Velocity Output
- Acceleration and Temperature

Table 5 - Specialty Accelerometers

Purpose	Cat. No	Features	Page
Velocity Output Accelerometer	1443-ACC-VO-T	Output is integrated to velocity 100 mV/ips 2…6 kHz Output ±50 in/s Top Exit	30
Velocity Output Accelerometer	1443-ACC-VO-S	Output is integrated to velocity 100 mV/ips 2…6 kHz Output ±50 in/s Side Exit	32
Combination Acceleration and Temperature	1443-ACC-AT-T	100 mV/g 0.8…15 kHz 10 mV/°C Top Exit	34
Combination Acceleration and Temperature	1443-ACC-AT-S	100 mV/g 0.8…15 kHz 10 mV/°C Side Exit	36

Intrinsically Safe Accelerometers

Intrinsically safe sensors meet additional requirements for hazardous environments. See specification tables for a list of certifications.

Table 6 - Intrinsically Safe Accelerometers

Purpose	Cat. No	Features	Page
Hazardous Area Accelerometer	1443-ACC-IS-T	• 100 mV/g • 0.8…15 kHz • Top Exit	38
	1443-ACC-IS-S	• 100 mV/g • 0.8…15 kHz • Side Exit	40

Hall-effect Speed Sensor

Catalog number EK-44395 is an Airpax Model H1512-005 hall-effect sensor that is designed to generate a steady pulse train in response to movement of a target surface.

The EK-44395 Hall-effect Speed Sensor outputs a TTL signal that is suitable for use as a direct speed input to the Dynamix™ 1444-DYN04-01RA monitor. See Table 21 on page 42.

Metric and Imperial Mounting

Sensor mounting accessories are included with the accelerometer, see Supplied Accessories in the specification tables. Options exist to mount the sensor on the machine end, in either in Metric or Imperial units, as denoted by the 'Mounting Thread' attribute in the following tables for each sensor.

Top exit sensors have a 1/4-28 UNF female thread on the sensor end. Two studs are included, both with one 1/4-28 UNF male end (for the sensor). The other end has either an M8 x 1.25 mm male thread or a 1/4-28 UNF male thread for mounting on the machine.

Side exit sensors have a through hole. Bolts are included with a machine mounting thread of either M6 x 1.00 mm male or 1/4-28 UNF male.

Sensors

1443-ACC-GP-T Accelerometer

General-purpose industrial accelerometers are recommended for permanent installation onto machinery or route-based vibration data collection in predictive maintenance and condition-monitoring applications.

Table 7 - 1443-ACC-GPT-T Accelerometer Specifications

Attribute	Value	
Performance		
Sensitivity (±5%)(1)	10.2 mV/(m/s^2)	100 mV/g
Measurement range	±785 m/s^2	±80 g
Frequency range (±5%)(2)	1.5…10 kHz	90…600,000 cpm
Frequency range (±3 dB)	0.4…15 kHz	24…900,000 cpm
Resonant frequency, typical	28 kHz	1680 kcpm
Broadband resolution (1…10,000 Hz), typical	2943 µm/s^2	300 µg
Non-linearity(3)	±1%	±1%
Transverse sensitivity	< 5%	< 5%
Environmental		
Overload limit (shock)	49,050 m/s^2 pk	5000 g pk
Temperature range	-55…+140 °C	-67…+284 °F
Enclosure Rating	IP66 to 68, depending upon the cable assembly used.	IP66 to 68, depending upon the cable assembly used.
Electrical		
Settling time (within 1% of bias)	< 2.0 s	< 2.0 s
Discharge time constant	≥ 0.5 s	≥ 0.5 s
Excitation voltage	18…28V DC	18…28V DC
Constant current excitation	2...20 mA	2...20 mA
Output impedance	<150 Ω	<150 Ω
Output bias voltage	10…12V DC	10…12V DC
Electrical isolation (case)	> 10^{10} Ω	> 10^{10} Ω
Electrical protection	500V	500V
Physical		
Size (hex x height)	19 x 36 mm	3/4 x 1.42 in.
Weight, approx.	48 g	1.7 oz
Mounting thread(4)	M8 x 1.25 mm male	1/4-28 UNF male
Mounting torque	8 N•m	6 ft•lb
Sensing element	Ceramic	
Sensing geometry	Shear	
Housing material	Stainless Steel	
Sealing	Welded hermetic	
Electrical connector	Two-pin-MIL-C-5015	
Electrical connector position	Top	
Supplied Accessories(5)	1443-STD-0-0	
	1443-STD-0-M8	
	Calibration Certificate	

(1) Sensitivity tolerance is across the operating temperature range. Sensor is compliant to API Standard 670, 5th Edition. Conversion factor 1 g = 9.81 m/s^2.
(2) 1 Hz = 60 cpm (cycles per minute).
(3) Zero-based, least-squares, straight-line method.
(4) 1/4-28 UNF has no equivalent in metric units.
(5) Calibration @80 Hz per ISO 9001-20083

Figure 5 - Sensitivity Change vs. Frequency for the Accelerometer (Same for All 1443 Series)

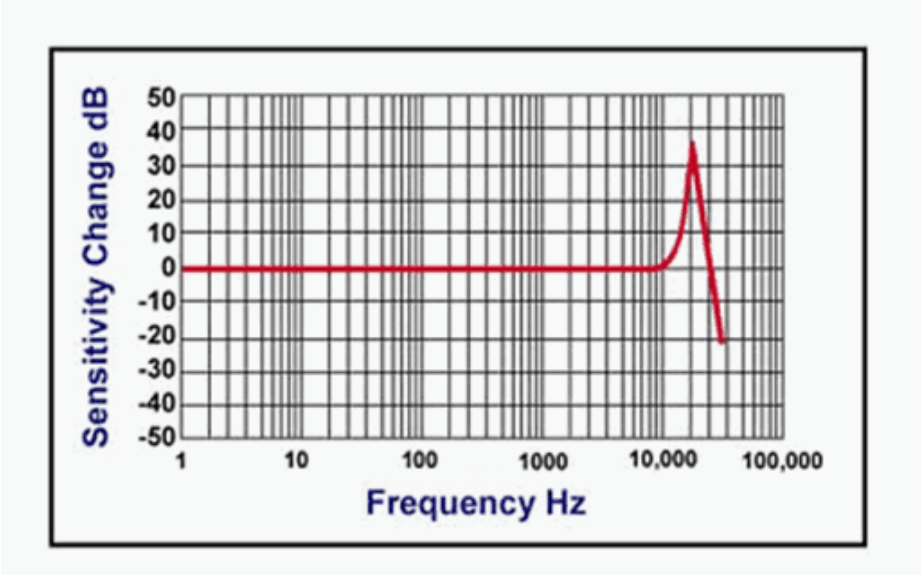
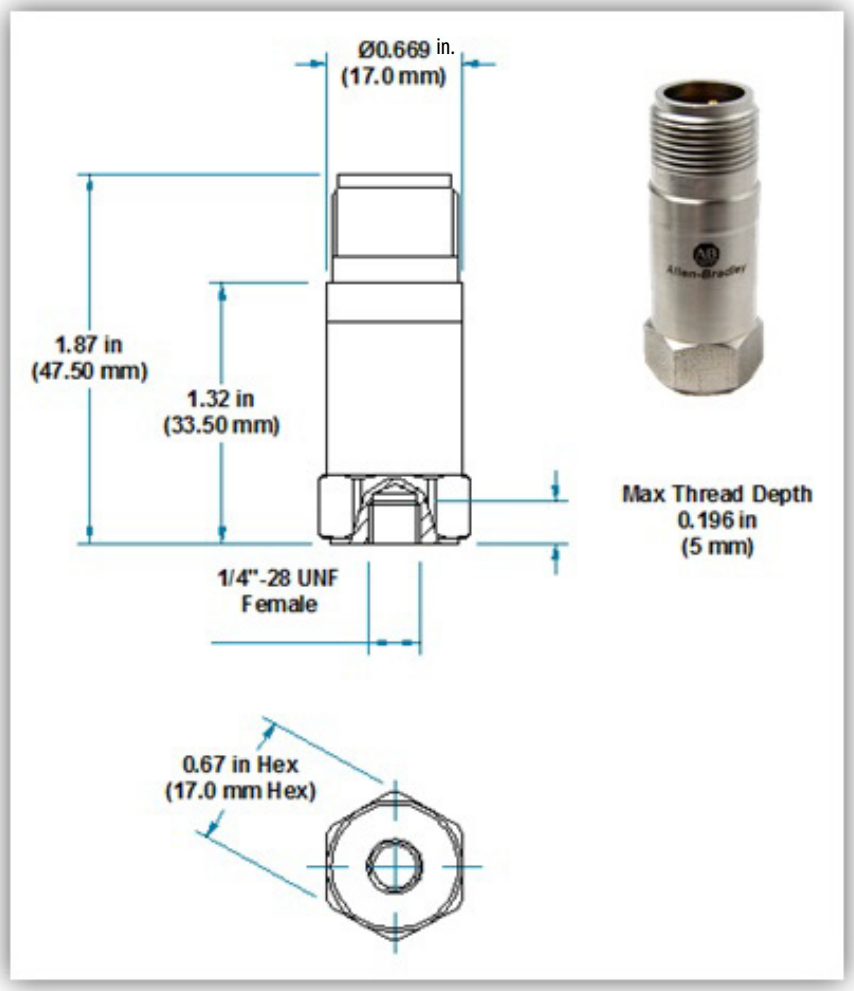


Figure 6 - 1443-ACC-GP-T Measurements



1443-ACC-GP-S Accelerometer

General-purpose industrial accelerometers are recommended for permanent installation onto machinery or route-based vibration data collection in predictive maintenance and condition-monitoring applications.

Table 8 - 1443-ACC-GP-S Accelerometer Specifications

Attribute	Value	
Performance		
Sensitivity (±5%)(1)	10.2 mV/(m/s^2)	100 mV/g
Measurement range	±785 m/s^2	±80 g
Frequency range (±5%)(2)	1.5…10 kHz	90…600,000 cpm
Frequency range (±3 dB)	0.4…15 kHz	24…900,000 cpm
Resonant frequency, typical	22 kHz	1500 kcpm
Broadband resolution (1…10,000 Hz), typical	491 µm/s^2	50 µg
Non-linearity(3)	±1%	±1%
Transverse sensitivity	< 5%	< 5%
Environmental		
Overload limit (shock)	49,050 m/s^2 pk	5000 g pk
Temperature range	-55…+140 °C	-67…+284 °F
Enclosure rating	IP66 to 68, depending upon the cable assembly used.	IP66 to 68, depending upon the cable assembly used.
Electrical		
Settling time (within 1% of bias)	< 2.0 s	< 2.0 s
Discharge time constant	≥ 0.5 s	≥ 0.5 s
Excitation voltage	18…28V DC	18…28V DC
Constant current excitation	2…20 mA	2…20 mA
Output impedance	<150 Ω	<150 Ω
Output bias voltage	10…12V DC	10…12V DC
Electrical isolation (case)	> 10^{10} Ω	> 10^{10} Ω
Electrical protection	500V	500V
Physical		
Size (hex x height)	25 x 30 x 35 mm	1 x 1.18 x 1.38 in.
Weight, approx.	170 g	6.0 oz
Mounting thread(4)	M6 x 1 mm male	1/4-28 UNF male
Mounting torque	8 N•m	6 ft•lb
Sensing element	Ceramic	
Sensing geometry	Compression	
Housing material	Stainless Steel	
Sealing	Welded hermetic	
Electrical connector	Two-pin-MIL-C-5015	
Electrical connector position	Side	
Supplied Accessories(5)	1443-BLT-125-0	
	1443-BLT-125-M6	
	ICS-3 3 pt calibration	

(1) Sensitivity tolerance is across the operating temperature range. Conversion factor 1 g = 9.81 m/s^2.
(2) 1 Hz = 60 cpm (cycles per minute).
(3) Zero-based, least-squares, straight-line method.
(4) 1/4-28 UNF has no equivalent in metric units.
(5) ICS-3 3 pt calibration 10 Hz, 100 Hz, 1 kHz.

Figure 7 - Sensitivity Change vs. Frequency for the Accelerometer (Same for All 1443 Series)

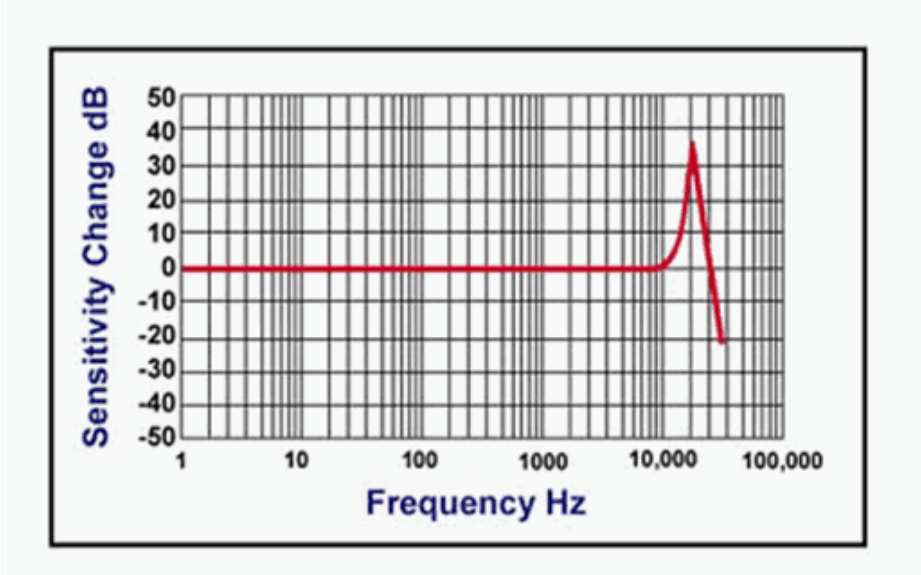
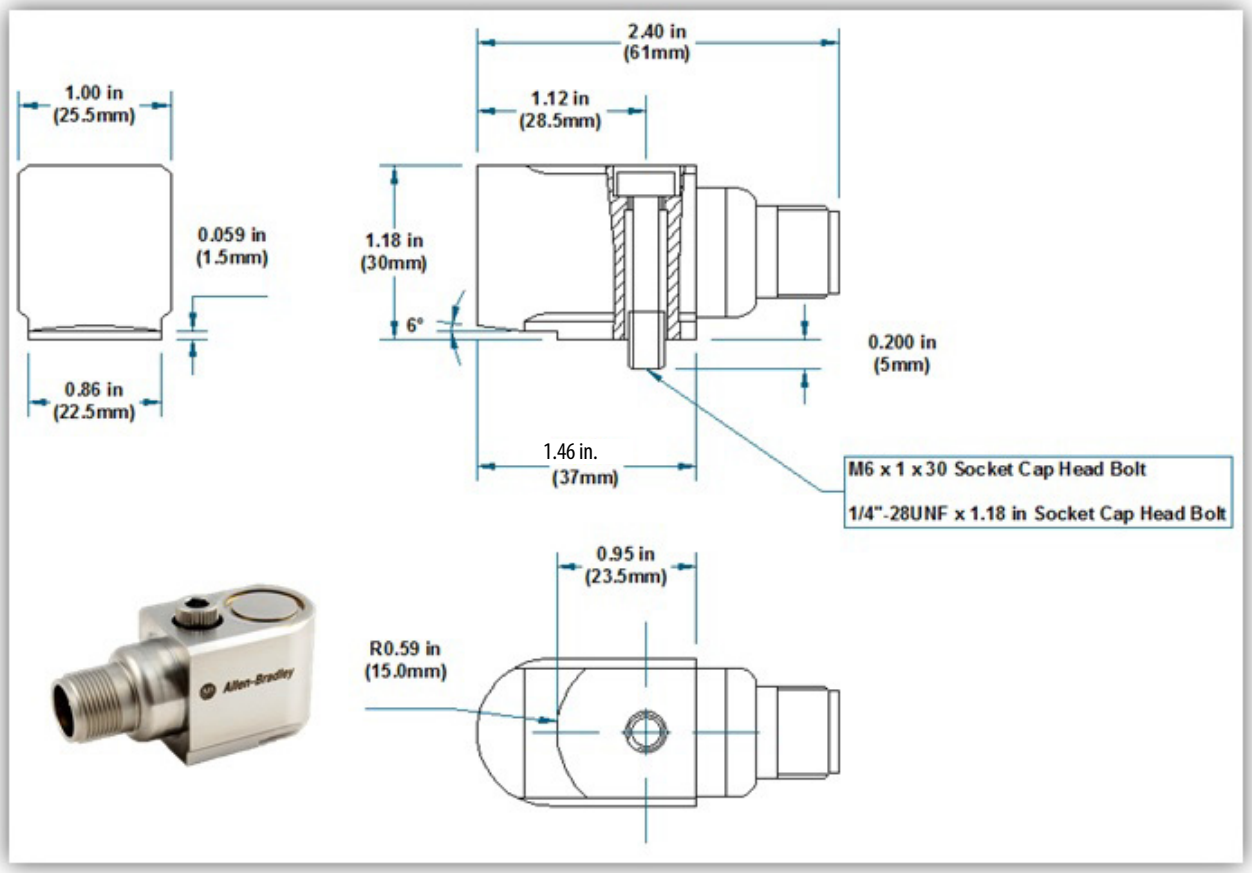


Figure 8 - 1443-ACC-GP-S Accelerometer



1443-ACC-GP-T16-SI Accelerometer

General-purpose industrial accelerometers are recommended for permanent installation onto machinery or route-based vibration data collection in predictive maintenance and condition-monitoring applications.

Table 9 - 1443-ACC-GP-T16-SI Accelerometer Specifications

Attribute	Value	
Performance		
Sensitivity (±5%)(1)	10.2 mV/(m/s^2)	100 mV/g
Measurement range	±785 m/s^2	±80 g
Frequency range (±5%)(2)	1.2…10 kHz	72…600,000 cpm
Frequency range (±3 dB)	0.4…15 kHz	24…900,000 cpm
Resonant frequency, typical	28 kHz	1680 kcpm
Broadband resolution (1…10,000 Hz), typical	2943 µm/s^2	300 µg
Non-linearity(3)	±1%	±1%
Transverse sensitivity	< 5%	< 5%
Environmental		
Overload limit (shock)	49,050 m/s^2 pk	5000 g pk
Temperature range	-55…+140 °C	-67…+284 °F
Enclosure rating	IP66 to 68, depending upon the cable assembly used.	IP66 to 68, depending upon the cable assembly used.
Electrical		
Settling time (within 1% of bias)	< 2.0 s	< 2.0 s
Discharge time constant	≥ 0.5 s	≥ 0.5 s
Excitation voltage	18…28V DC	18…28V DC
Constant current excitation	0.5…8 mA	0.5…8 mA
Output impedance	<150 Ω	<150 Ω
Output bias voltage	10…12V DC	10…12V DC
Electrical isolation (case)	> 10^{10} Ω	> 10^{10} Ω
Electrical protection	500V	500V
Physical		
Size (hex x height)	19 x 36 mm	3/4 x 1.42 in.
Weight, approx.	48 g	1.7 oz
Mounting thread(4)	M8 x 1.25 mm male	1/4-28 UNF male
Mounting torque	8 N•m	6 ft•lb
Sensing element	Ceramic	
Sensing geometry	Compression	
Housing material	Stainless Steel	
Sealing	Welded hermetic	
Electrical connector	Two-pin MIL-C-5015	
Electrical connector position	Top	
Cable Length	5 m	16 ft
Cable Type	Shielded Silicone	
Supplied Accessories(5)	1443-STD-0-0	
	1443-STD-0-M8	
	ICS-3 3 pt calibration	

(1) Sensitivity tolerance is across the operating temperature range. Sensor is compliant to API Standard 670, 5th Edition. Conversion factor 1 g = 9.81 m/s^2.
(2) 1 Hz = 60 cpm (cycles per minute).
(3) Zero-based, least-squares, straight-line method.

(4) 1/4-28 UNF has no equivalent in metric units.
(5) ICS-3 3 pt calibration 10 Hz, 100 Hz, 1 kHz.

Figure 9 - Sensitivity Change vs. Frequency for the Accelerometer (Same for All 1443 Series)

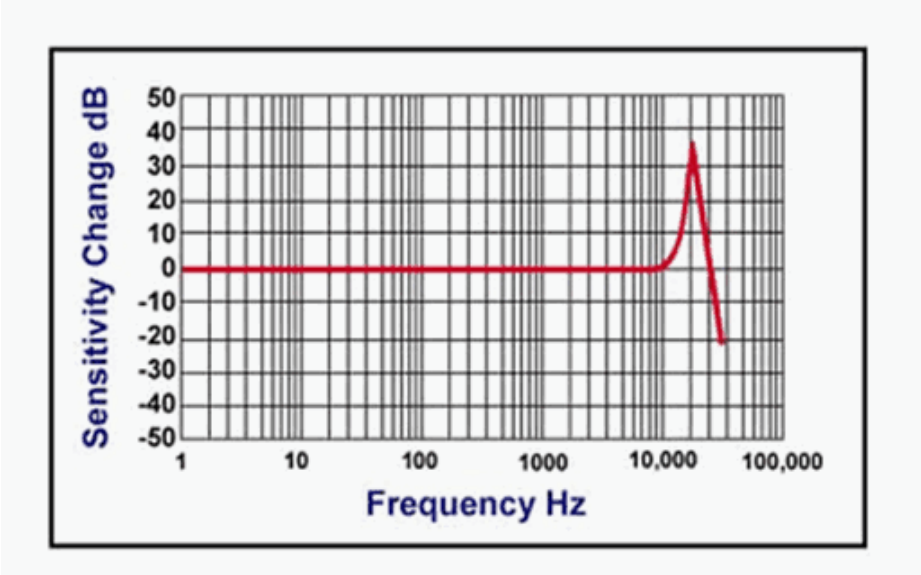
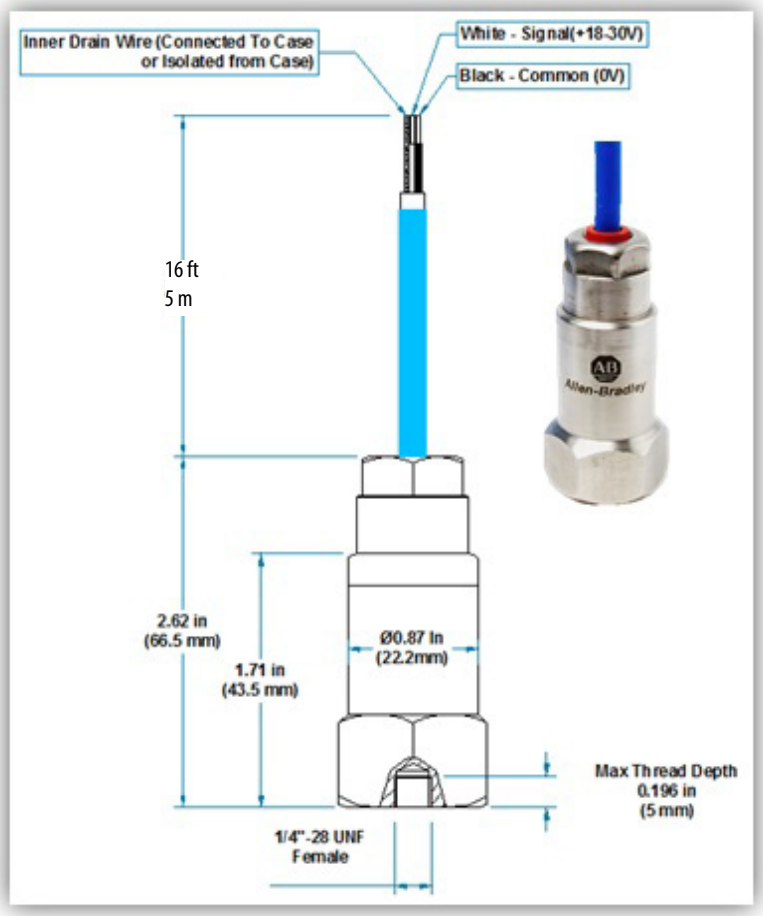


Figure 10 - 1443-ACC-GP-T16-SI Accelerometer



1443-ACC-GP-T32-SI Accelerometer

General-purpose industrial accelerometers are recommended for permanent installation onto machinery or route-based vibration data collection in predictive maintenance and condition-monitoring applications.

Table 10 - 1443-ACC-GP-T32-SI Accelerometer Specifications

Attribute	Value	
Performance		
Sensitivity (±5%)(1)	10.2 mV/(m/s^2)	100 mV/g
Measurement range	±785 m/s^2	±80 g
Frequency range (±5%)(2)	1.2…10 kHz	72…600,000 cpm
Frequency range (±3 dB)	0.4…15 kHz	24…900,000 cpm
Resonant frequency, typical	28 kHz	1680 kcpm
Broadband resolution (1…10,000 Hz), typical	2943 µm/s^2	300 µg
Non-linearity(3)	±1%	±1%
Transverse sensitivity	< 5%	< 5%
Environmental		
Overload limit (shock)	49,050 m/s^2 pk	5000 g pk
Temperature range	-55…+140 °C	-67…+284 °F
Enclosure rating	IP66 to 68, depending upon the cable assembly used.	IP66 to 68, depending upon the cable assembly used.
Electrical		
Settling time (within 1% of bias)	< 2.0 s	< 2.0 s
Discharge time constant	≥ 0.5 s	≥ 0.5 s
Excitation voltage	18…28V DC	18…28V DC
Constant current excitation	0.5…8 mA	0.5…8 mA
Output impedance	<150 Ω	<150 Ω
Output bias voltage	10…12V DC	10…12V DC
Electrical isolation (case)	> 10^{10} Ω	> 10^{10} Ω
Electrical protection	500V	500V
Physical		
Size (hex x height)	19 x 36 mm	3/4 x 1.42 in.
Weight, approx.	48 g	1.7 oz
Mounting thread(4)	M8 x 1.25 mm male	1/4-28 UNF male
Mounting torque	8 N•m	6 ft•lb
Sensing element	Ceramic	
Sensing geometry	Compression	
Housing material	Stainless Steel	
Sealing	Welded hermetic	
Electrical connector	Two-pin MIL-C-5015	
Electrical connector position	Top	
Cable Length	10 m	32 ft
Cable Type	Shielded Silicone	
Supplied Accessories(5)	1443-STD-0-0	
	1443-STD-0-M8	
	ICS-3 3 pt calibration	

(1) Sensitivity tolerance is across the operating temperature range. Sensor is compliant to API Standard 670, 5th Edition. Conversion factor 1 g = 9.81 m/s^2.
(2) 1 Hz = 60 cpm (cycles per minute).
(3) Zero-based, least-squares, straight-line method.
(4) 1/4-28 UNF has no equivalent in metric units.
(5) ICS-3 3 pt calibration 10 Hz, 100 Hz, 1 kHz.

Figure 11 - Sensitivity Change vs. Frequency for the Accelerometer (Same for All 1443 Series)

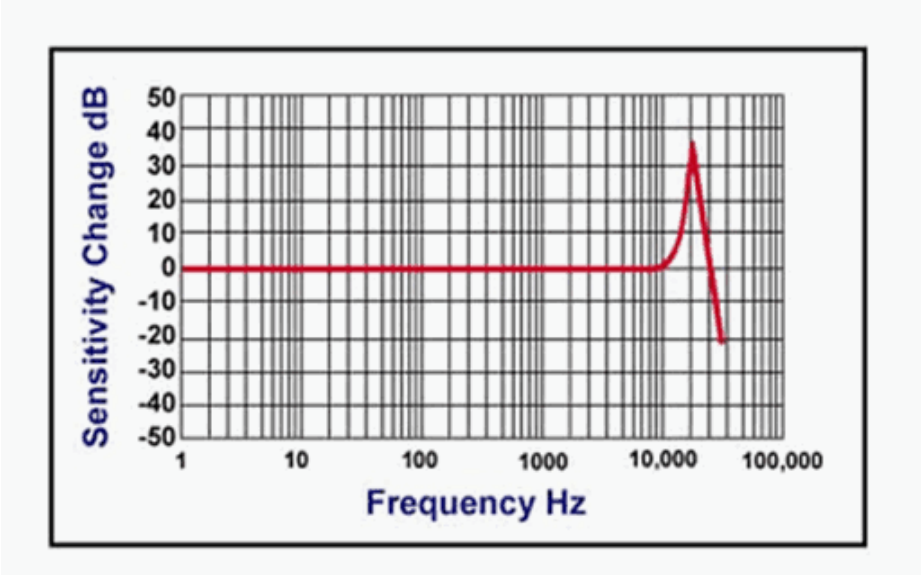
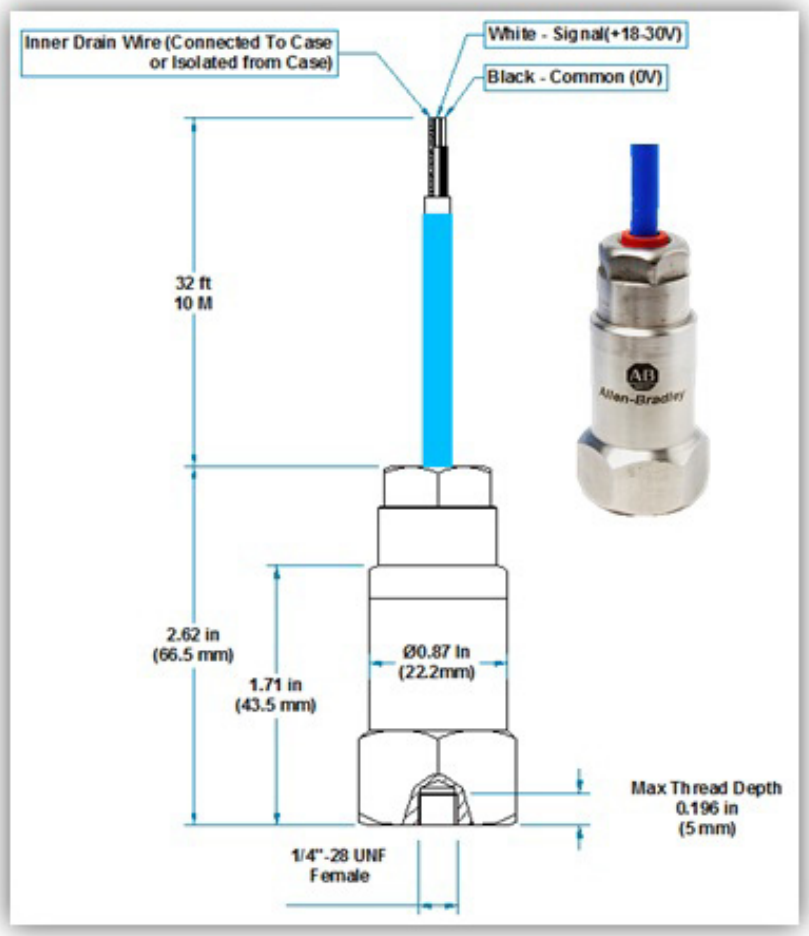


Figure 12 - 1443-ACC-GP-T32-SI Accelerometer



1443-ACC-GP-T16-SC Accelerometer

General-purpose industrial accelerometers are recommended for permanent installation onto machinery or route-based vibration data collection in predictive maintenance and condition-monitoring applications. Sensors with the shield wire that is grounded to the case are non-standard. See Shield Wire Isolation Sensor and Cable Selection on page 8 ordering.

Table 11 - 1443-ACC-GP-T16-SC Accelerometer Specifications

Attribute	Value	
Performance		
Sensitivity (±5%)(1)	10.2 mV/(m/s^2)	100 mV/g
Measurement range	±785 m/s^2	±80 g
Frequency range (±5%)(2)	1.2…10 kHz	72…600,000 cpm
Frequency range (±3 dB)	0.4…15 kHz	24…900,000 cpm
Resonant frequency, typical	28 kHz	1680 kcpm
Broadband resolution (1…10,000 Hz), typical	2943 µm/s^2	300 µg
Non-linearity(3)	±1%	±1%
Transverse sensitivity	< 5%	< 5%
Environmental		
Overload limit (shock)	49,050 m/s^2 pk	5000 g pk
Temperature range	-55…+140 °C	-67…+284 °F
Enclosure rating	IP66 to 68, depending upon the cable assembly used.	IP66 to 68, depending upon the cable assembly used.
Electrical		
Settling time (within 1% of bias)	< 2.0 s	< 2.0 s
Discharge time constant	≥ 0.5 s	≥ 0.5 s
Excitation voltage	18…28V DC	18…28V DC
Constant current excitation	0.5…8 mA	0.5…8 mA
Output impedance	<150 Ω	<150 Ω
Output bias voltage	10…12V DC	10…12V DC
Electrical isolation (case)	> 10^{10} Ω	> 10^{10} Ω
Electrical protection	500V	500V
Physical		
Size (hex x height)	19 x 36 mm	3/4 x 1.42 in.
Weight, approx.	48 g	1.7 oz
Mounting thread(4)	M8 x 1.25 mm male	1/4-28 UNF male
Mounting torque	8 N•m	6 ft•lb
Sensing element	Ceramic	
Sensing geometry	Compression	
Housing material	Stainless Steel	
Sealing	Welded hermetic	
Electrical connector	Two-pin MIL-C-5015	
Electrical connector position	Top	
Cable Length	5 m	16 ft
Cable Type	Shielded Silicone	
Cable Grounding	Shield Case Grounded	
Supplied Accessories(5)	1443-STD-0-0	
	1443-STD-0-M8	
	ICS-3 3 pt calibration	

(1) Sensitivity tolerance is across the operating temperature range. Conversion factor 1 g = 9.81 m/s^2.
(2) 1 Hz = 60 cpm (cycles per minute).
(3) Zero-based, least-squares, straight-line method.
(4) 1/4-28 UNF has no equivalent in metric units.
(5) ICS-3 3 pt calibration 10 Hz, 100 Hz, 1 kHz.

Figure 13 - Sensitivity Change vs. Frequency for the Accelerometer (Same for All 1443 Series)

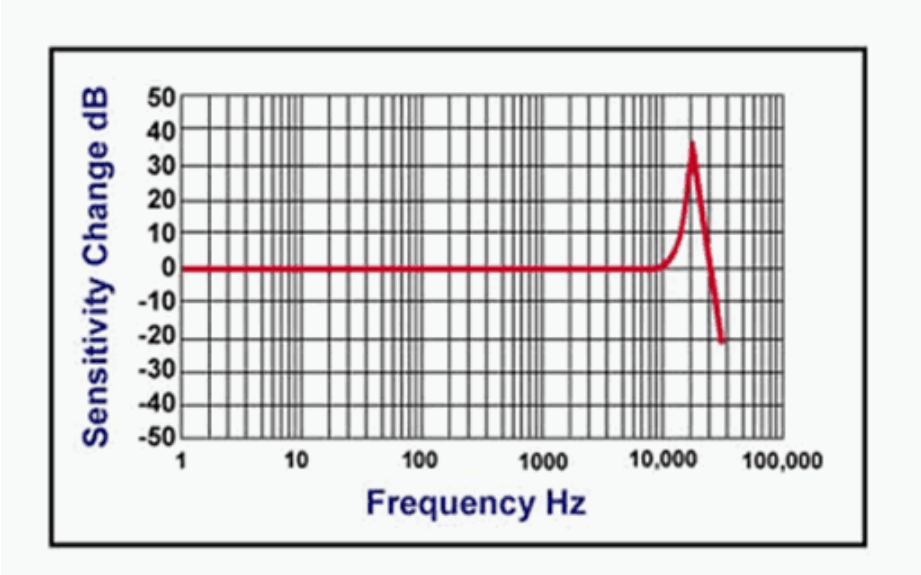
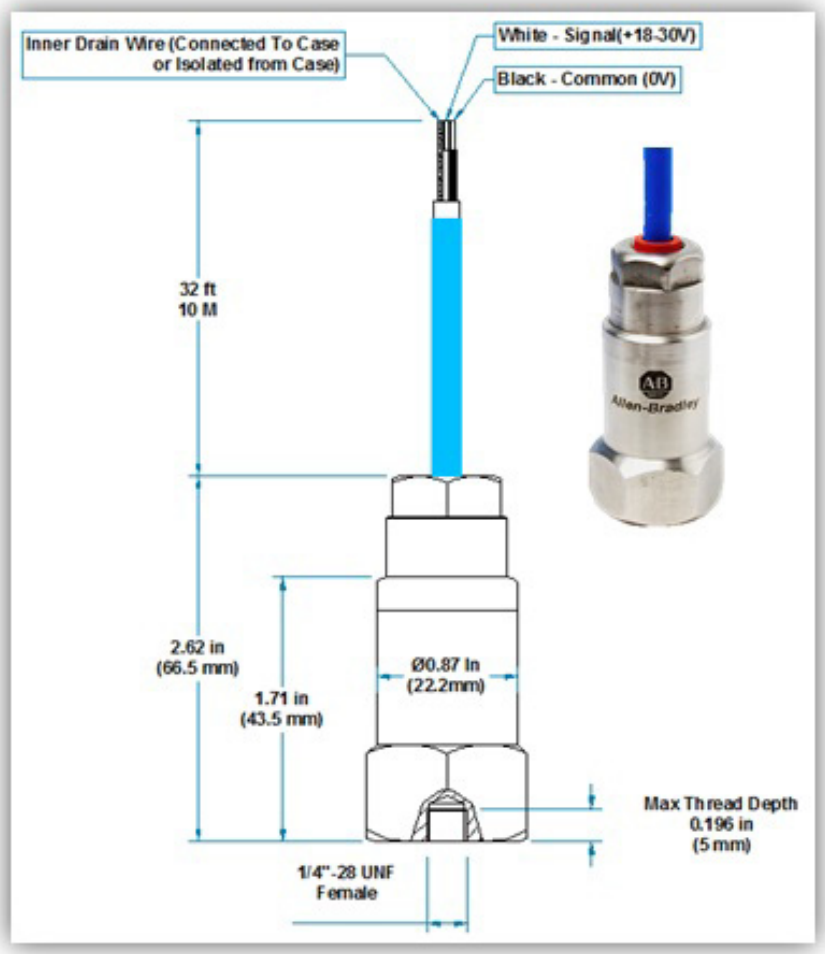


Figure 14 - 1443-ACC-GP-T16-SC Accelerometer



1443-ACC-GP-T32-SC Accelerometer

General-purpose industrial accelerometers are recommended for permanent installation onto machinery or route-based vibration data collection in predictive maintenance and condition-monitoring applications. Sensors with the shield wire that is grounded to the case are non-standard. See Shield Wire Isolation Sensor and Cable Selection on page 8 ordering.

Table 12 - 1443-ACC-GP-T32-SC Accelerometer Specifications

Attribute	Value	
Performance		
Sensitivity (±5%)(1)	10.2 mV/(m/s^2)	100 mV/g
Measurement range	±785 m/s^2	±80 g
Frequency range (±5%)(2)	1.2…10 kHz	72…600,000 cpm
Frequency range (±3 dB)	0.4…15 kHz	24…900,000 cpm
Resonant frequency, typical	28 kHz	1680 kcpm
Broadband resolution (1…10,000 Hz), typical	2943 µm/s^2	300 µg
Non-linearity(3)	±1%	±1%
Transverse sensitivity	< 5%	< 5%
Environmental		
Overload limit (shock)	49,050 m/s^2 pk	5000 g pk
Temperature range	-55…+140 °C	-67…+284 °F
Enclosure rating	IP66 to 68, depending upon the cable assembly used.	IP66 to 68, depending upon the cable assembly used.
Electrical		
Settling time (within 1% of bias)	< 2.0 s	< 2.0 s
Discharge time constant	≥ 0.5 s	≥ 0.5 s
Excitation voltage	18…28V DC	18…28V DC
Constant current excitation	0.5…8 mA	0.5…8 mA
Output impedance	<150 Ω	<150 Ω
Output bias voltage	10…12V DC	10…12V DC
Electrical isolation (case)	> 10^{10} Ω	> 10^{10} Ω
Electrical protection	500V	500V
Physical		
Size (hex x height)	19 x 36 mm	3/4 x 1.42 in.
Weight, approx.	48 g	1.7 oz
Mounting thread(4)	M8 x 1.25 mm male	1/4-28 UNF male
Mounting torque	8 N•m	6 ft•lb
Sensing element	Ceramic	
Sensing geometry	Compression	
Housing material	Stainless Steel	
Sealing	Welded hermetic	
Electrical connector	Two-pin MIL-C-5015	
Electrical connector position	Top	
Cable Length	10 m	32 ft
Cable Type	Shielded Silicone	
Cable Grounding	Shield Case Grounded	
Supplied Accessories(5)	1443-STD-0-0	
	1443-STD-0-M8	
	ICS-3 3 pt calibration	

(1) Sensitivity tolerance is across the operating temperature range. Conversion factor 1 g = 9.81 m/s^2.
(2) 1 Hz = 60 cpm (cycles per minute).
(3) Zero-based, least-squares, straight-line method.
(4) 1/4-28 UNF has no equivalent in metric units.
(5) ICS-3 3 pt calibration 10 Hz, 100 Hz, 1 kHz.

Figure 15 - Sensitivity Change vs. Frequency for the Accelerometer (Same for All 1443 Series)

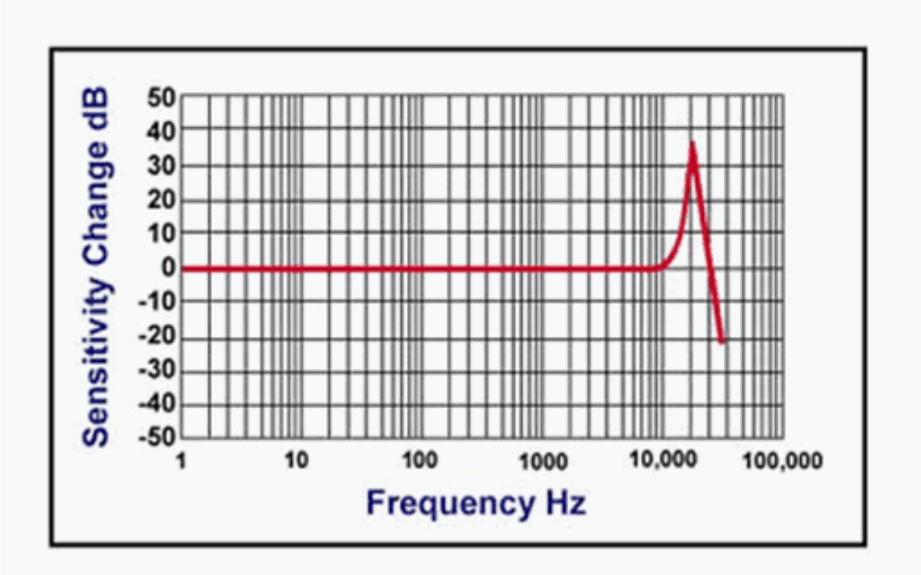
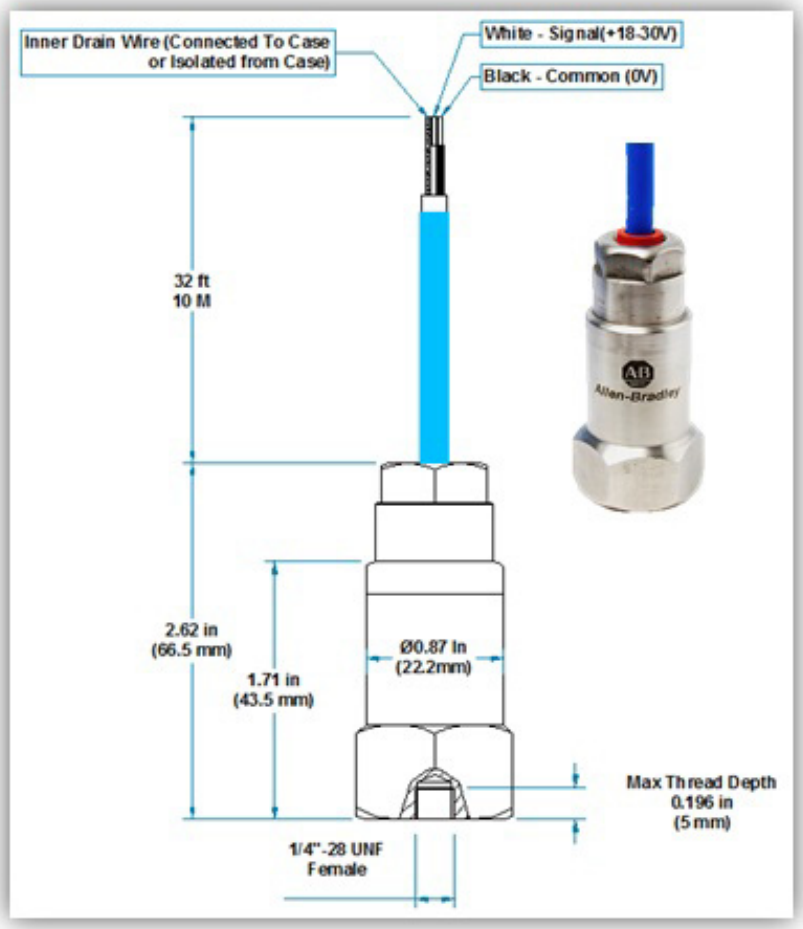


Figure 16 - 1443-ACC-GP-T32-SC Accelerometer



1443-ACC-LF-T Accelerometer

The accelerometer combines low-frequency response with high-output sensitivity to obtain the resolution characteristics and output signal levels necessary for low-frequency measurements and analysis.

Table 13 - 1443-ACC-LF-T Accelerometer Specifications

Attribute	Value	
Performance		
Sensitivity (±5%)(1)	51 mV/(m/s^2)	500 mV/g
Measurement range	±157 m/s^2	±16 g
Frequency range (±5%)(2)	1.2…10 kHz	72…600,000 cpm
Frequency range (±3 dB)	0.2…15 kHz	12…900,000 cpm
Resonant frequency, typical	25 kHz	1500 kcpm
Broadband resolution (1…10,000 Hz), typical	490 µm/s^2	50 µg
Non-linearity(3)	±1%	±1%
Transverse sensitivity	< 5%	< 5%
Environmental		
Overload limit (shock)	49,050 m/s^2 pk	5000 g pk
Temperature range	-55…+140 °C	-67…+284 °F
Enclosure rating	IP66 to 68, depending upon the cable assembly used.	IP66 to 68, depending upon the cable assembly used.
Electrical		
Settling time (within 1% of bias)	< 2.0 s	< 2.0 s
Discharge time constant	≥ 0.5 s	≥ 0.5 s
Excitation voltage	18…28V DC	18…28V DC
Constant current excitation	2…20 mA	2…20 mA
Output impedance	<100 Ω	<100 Ω
Output bias voltage	10…12V DC	10…12V DC
Electrical isolation (case)	> 10^8 Ω	> 10^8 Ω
Electrical protection	500V	500V
Physical		
Size (hex x height)	25 x 40 mm	1 x 1.6 in.
Weight, approx.	110 g	3.9 oz
Mounting thread(4)	M8 x 1.25 mm male	1/4-28 UNF male
Mounting torque	8 N•m	6 ft•lb
Sensing element	Ceramic	
Sensing geometry	Compression	
Housing material	Stainless Steel	
Sealing	Welded hermetic	
Electrical connector	Two-pin MIL-C-5015	
Electrical connector position	Top	
Supplied Accessories(5)	1443-STD-0-0	
	1443-STD-0-M8	
	ICS-3 3 pt calibration	

(1) Sensitivity tolerance is across the operating temperature range. Sensor is compliant to API Standard 670, 5th Edition. Conversion factor 1 g = 9.81 m/s^2.
(2) 1 Hz = 60 cpm (cycles per minute).
(3) Zero-based, least-squares, straight-line method.
(4) 1/4-28 UNF has no equivalent in metric units.
(5) ICS-3 3 pt calibration 10 Hz, 100 Hz, 1 kHz.

Figure 17 - Sensitivity Change vs. Frequency for the Accelerometer (Same for All 1443 Series)

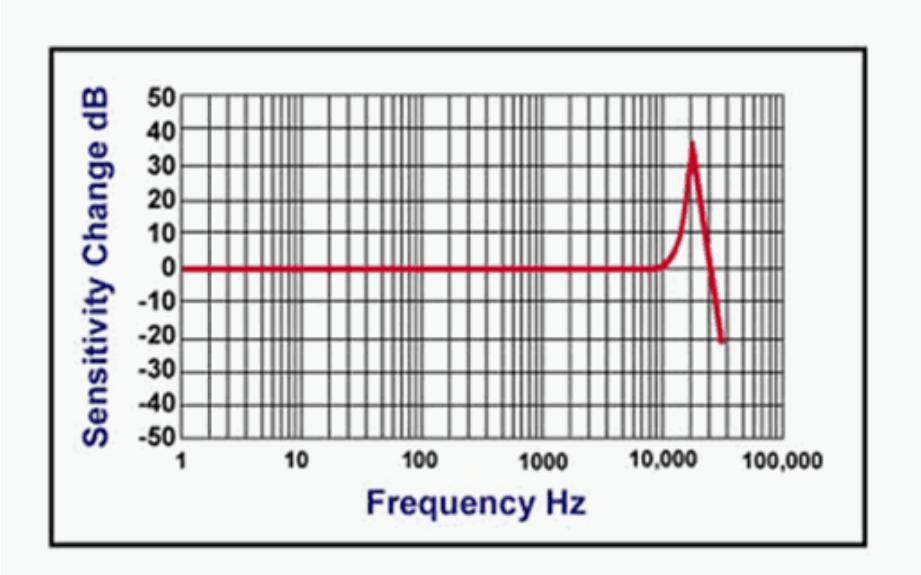
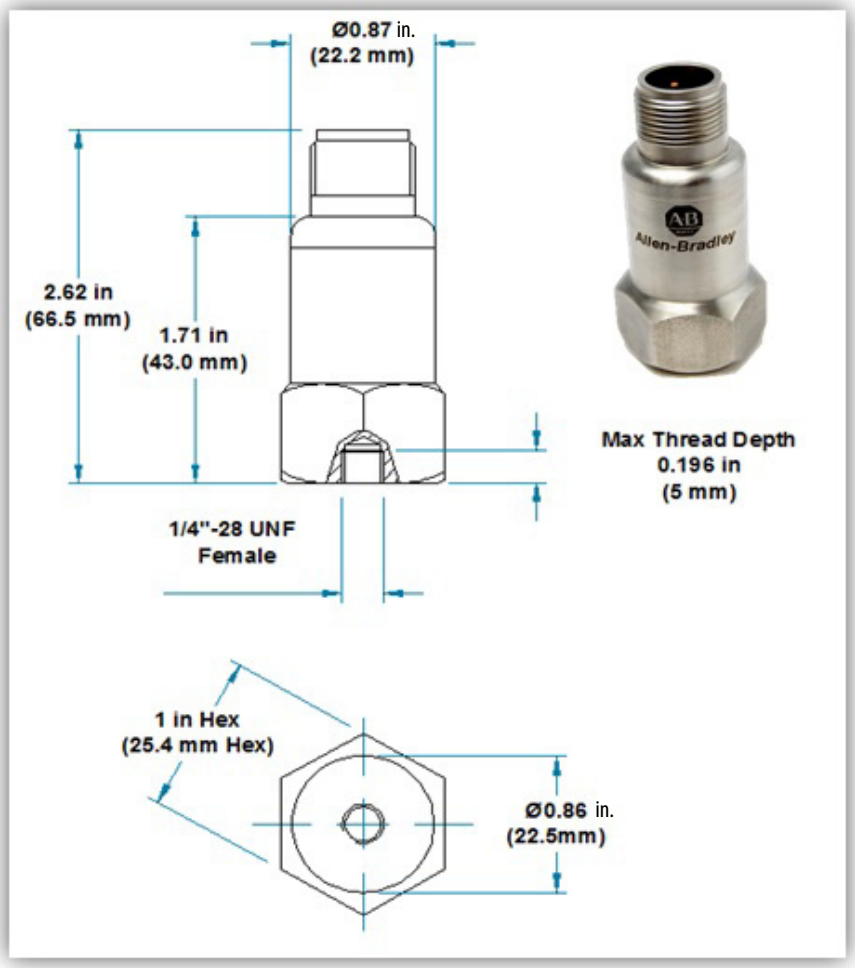


Figure 18 - 1443-ACC-LF-T Accelerometer



1443-ACC-HF-T Accelerometer

Table 14 - 1443-ACC-HF-T Accelerometer Specifications

Attribute	Value	
Performance		
Sensitivity (±5%)[1]	51 mV/(m/s^2)	50 mV/g
Measurement range	±1570 m/s^2	±160 g
Frequency range (±5%)[2]	2…14 kHz	120…840,000 cpm
Frequency range (±3 dB)	0.8…20 kHz	48…1,200,000 cpm
Resonant frequency, typical	28 kHz	1680 kcpm
Broadband resolution (1…10,000 Hz), typical	2943 µm/s^2	300 µg
Non-linearity[3]	±1%	±1%
Transverse sensitivity	< 5%	< 5%
Environmental		
Overload limit (shock)	49,050 m/s^2 pk	5000 g pk
Temperature range	-55…+140 °C	-67…+284 °F
Enclosure rating	IP66 to 68, depending upon the cable assembly used.	IP66 to 68, depending upon the cable assembly used.
Electrical		
Settling time (within 1% of bias)	< 2.0 s	< 2.0 s
Discharge time constant	≥ 0.5 s	≥ 0.5 s
Excitation voltage	18…28 V DC	18…28 V DC
Constant current excitation	0.5…8 mA	0.5…8 mA
Output impedance	<200 Ω	<200 Ω
Output bias voltage	10…12 V DC	10…12 V DC
Electrical isolation (case)	> 10^8 Ω	> 10^8 Ω
Electrical protection	500V	500V
Physical		
Size (hex x height)	19 x19 mm	3/4 x 0.75 in.
Weight, approx.	48 g	1.7 oz
Mounting thread[4]	M8 x 1.25 mm male	1/4-28 UNF male
Mounting torque	8 N•m	6 ft•lb
Sensing element	Ceramic	
Sensing geometry	Shear	
Housing material	Stainless Steel	
Sealing	Welded hermetic	
Electrical connector	Two-pin MIL-C-5015	
Electrical connector position	Top	
Supplied Accessories[5]	1443-STD-0-0	
	1443-STD-0-M8	
	ICS-3 3 pt calibration	

(1) Sensitivity tolerance is across the operating temperature range. Sensor is compliant to API Standard 670, 5th Edition. Conversion factor 1 g = 9.81 m/s^2.
(2) 1 Hz = 60 cpm (cycles per minute).
(3) Zero-based, least-squares, straight-line method.
(4) 1/4-28 UNF has no equivalent in metric units.
(5) ICS-3 3 pt calibration 10 Hz, 100 Hz, 1 kHz.

Figure 19 - Sensitivity Change vs. Frequency for the Accelerometer (Same for All 1443 Series)

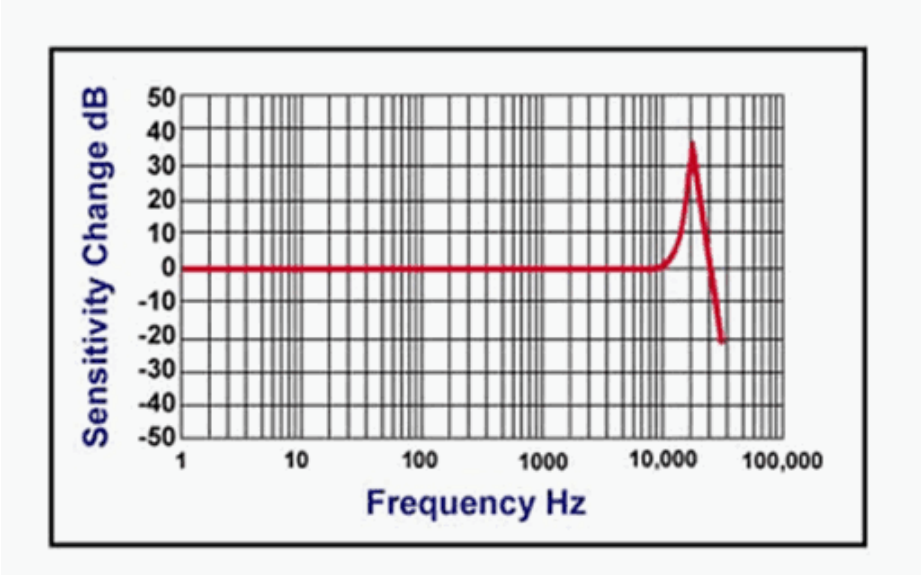
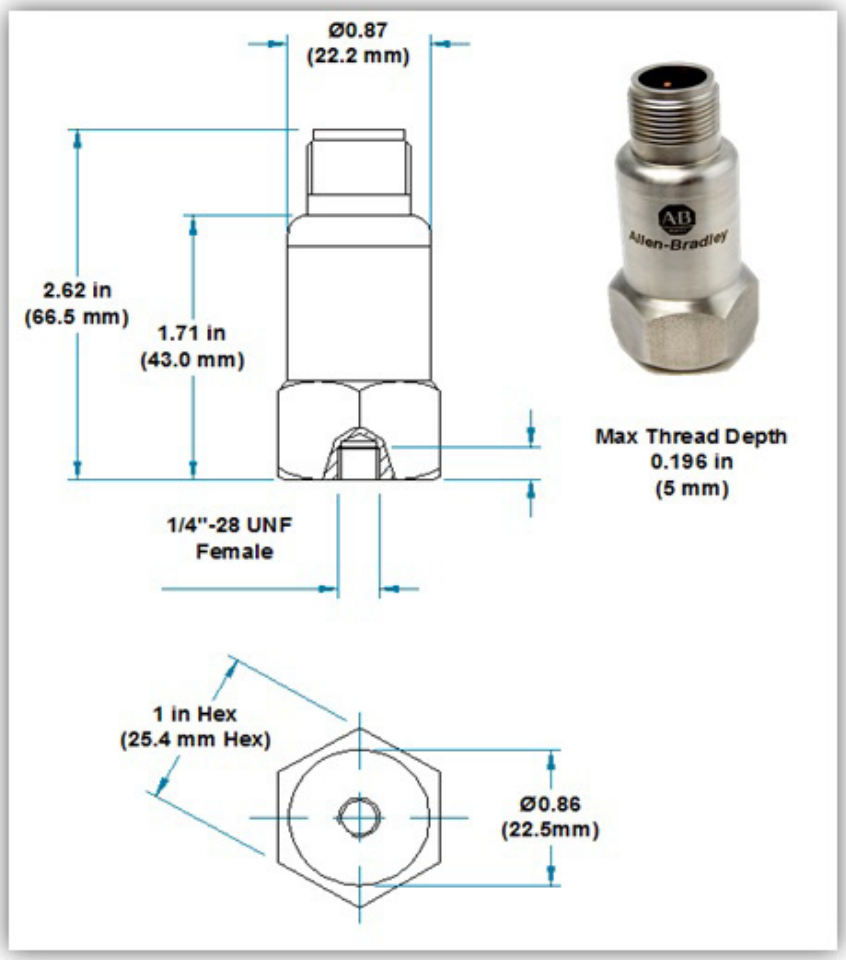


Figure 20 - 1443-ACC-HF-T Accelerometer



1443-ACC-V0-T Accelerometer

Table 15 - 1443-ACC-V0-T Accelerometer Specifications

Attribute	Value	
Performance		
Sensitivity (±5%)(1)	4 mV/(mm/s)	100 mV/(in/s)
Output	±1.27 m/s	±50 in/s
Measurement range Peak	±1000 mm/s	±39.4 in/s
Frequency range (±10%)(2)	3.5…4 kHz	210…240,000 cpm
Frequency range (±3 dB)	2…6 kHz	120…360,000 cpm
Resonant frequency, typical	22 kHz	1320 kcpm
Broadband resolution (1…10,000 Hz), typical	11.4 µm/s	450 µin./s
Non-linearity(3)	±1%	±1%
Transverse sensitivity	< 5%	< 5%
Environmental		
Overload limit (shock)	49,050 m/s^2 pk	5000 g pk
Temperature range	-55…+140 °C	-67…+284 °F
Enclosure rating	IP66 to 68, depending upon the cable assembly used.	IP66 to 68, depending upon the cable assembly used.
Electrical		
Settling time (within 1% of bias)	< 2.0 s	< 2.0 s
Discharge time constant	≥ 0.5 s	≥ 0.5 s
Excitation voltage	18…28 V DC	18…28 V DC
Constant current excitation	2…10 mA	2…10 mA
Output impedance	<200 Ω	<200 Ω
Output bias voltage	10…12 V DC	10…12 V DC
Electrical isolation (case)	> 10^8 Ω	> 10^8 Ω
Electrical protection	500V	500V
Physical		
Size (hex x height)	25 x 40 mm	1 x 1.6 in.
Weight, approx.	110 g	3.9 oz
Mounting thread(4)	M8 x 1.25 mm male	1/4-28 UNF male
Mounting torque	8 N•m	6 ft•lb
Sensing element	Ceramic	
Sensing geometry	Compression	
Housing material	Stainless Steel	
Sealing	Welded hermetic	
Electrical connector	Two-pin MIL-C-5015	
Electrical connector position	Top	
Supplied Accessories(5)	1443-STD-0-0	
	1443-STD-0-M8	
	ICS-3 3 pt calibration	

(1) Sensitivity tolerance is across the operating temperature range. Sensor is compliant to API Standard 670, 5th Edition. Conversion factor 1 g = 9.81 m/s^2.

(2) 1 Hz = 60 cpm (cycles per minute).

(3) Zero-based, least-squares, straight-line method.

(4) 1/4-28 UNF has no equivalent in metric units.

(5) ICS-3 3 pt calibration 10 Hz, 100 Hz, 1 kHz.

Figure 21 - Sensitivity Change vs. Frequency for the Accelerometer (Same for All 1443 Series)

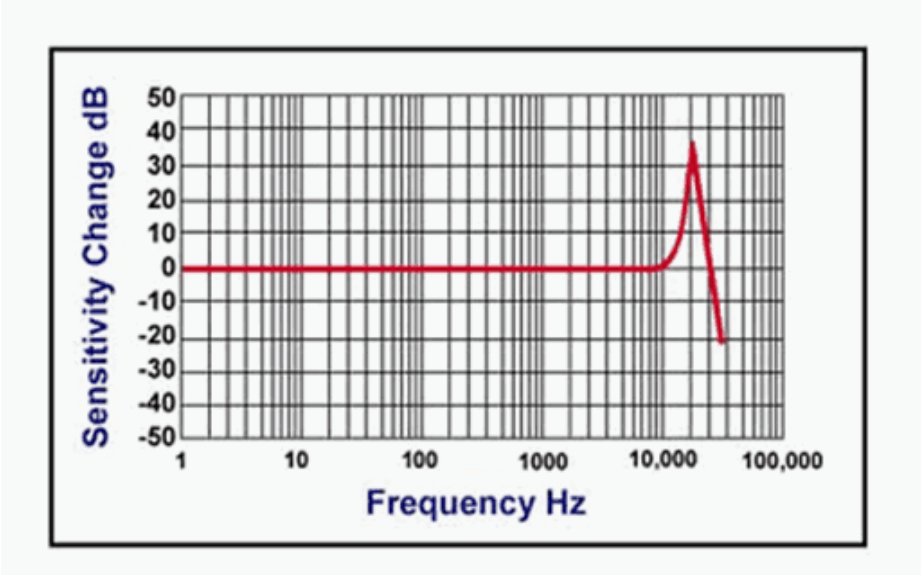
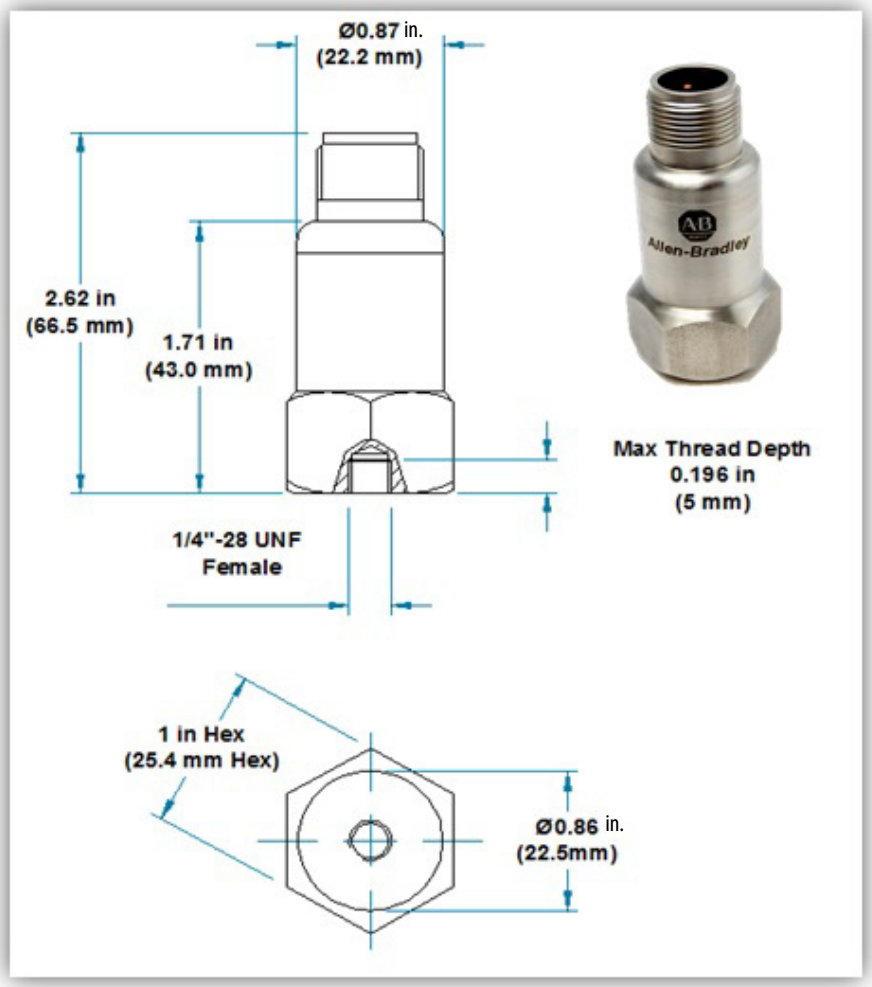


Figure 22 - 1443-ACC-VO-T Accelerometer



1443-ACC-V0-S Accelerometer

Table 16 - 1443-ACC-V0-S Accelerometer Specifications

Attribute	Value	
Performance		
Sensitivity (±5%)(1)	4 mV/(mm/s)	100 mV/(in/s)
Output	±1.27 m/s	±50 in/s
Measurement range Peak	±1000 mm/s	±39.4 in/s
Frequency range (±10%)(2)	3.5…4 kHz	210…240,000 cpm
Frequency range (±3 dB)	2…6 kHz	120…360,000 cpm
Resonant frequency, typical	22 kHz	1320 kcpm
Broadband resolution (1…10,000 Hz), typical	11.4 µm/s	450 µin./s
Non-linearity(3)	±1%	±1%
Transverse sensitivity	< 5%	< 5%
Environmental		
Overload limit (shock)	49,050 m/s^2 pk	5000 g pk
Temperature range	-55…+140 °C	-67…+284 °F
Enclosure rating	IP66 to 68, depending upon the cable assembly used.	IP66 to 68, depending upon the cable assembly used.
Electrical		
Settling time (within 1% of bias)	< 2.0 s	< 2.0 s
Discharge time constant	≥ 0.5 s	≥ 0.5 s
Excitation voltage	18…28 V DC	18…28 V DC
Constant current excitation	2...10 mA	2...10 mA
Output impedance	<200 Ω	<200 Ω
Output bias voltage	10…12 V DC	10…12 V DC
Electrical isolation (case)	> 10^8 Ω	> 10^8 Ω
Electrical protection	500V	500V
Physical		
Size (hex x height)	25 x 35 x 30 mm	1 x 1.4 x 1.2 in
Weight, approx.	170 g	6.0 oz
Mounting thread(4)	M6 x 1 mm male	1/4-28 UNF male
Mounting torque	8 N•m	6 ft•lb
Sensing element	Ceramic	
Sensing geometry	Compression	
Housing material	Stainless Steel	
Sealing	Welded hermetic	
Electrical connector	Two-pin MIL-C-5015	
Electrical connector position	Side	
Supplied Accessories(5)	1443-BLT-125-0	
	1443-BLT-125-M6	
	ICS-3 3 pt calibration	

(1) Sensitivity tolerance is across the operating temperature range. Conversion factor 1 g = 9.81 m/s^2.
(2) 1 Hz = 60 cpm (cycles per minute).
(3) Zero-based, least-squares, straight-line method.
(4) 1/4-28 UNF has no equivalent in metric units.
(5) ICS-3 3 pt calibration 10 Hz, 100 Hz, 1 kHz.

Figure 23 - Sensitivity Change vs. Frequency for the Accelerometer (Same for All 1443 Series)

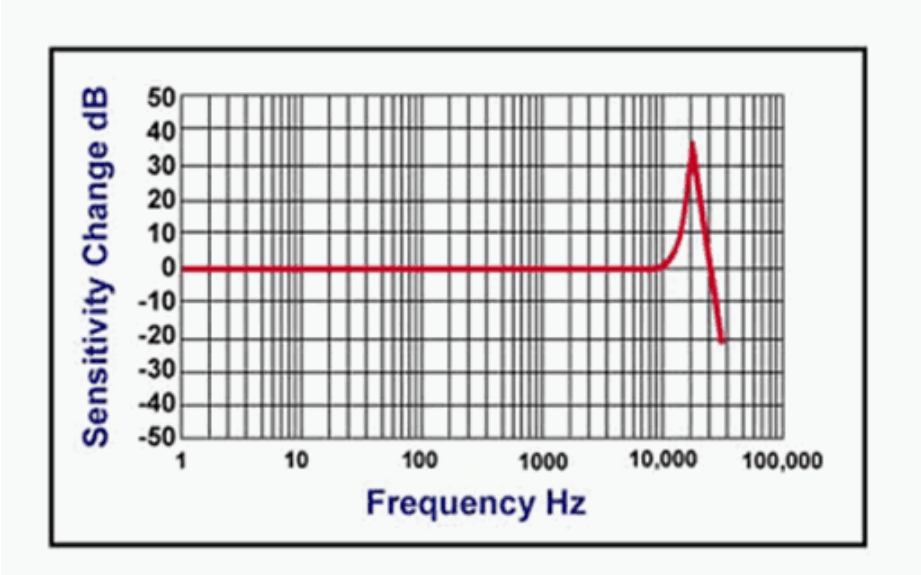
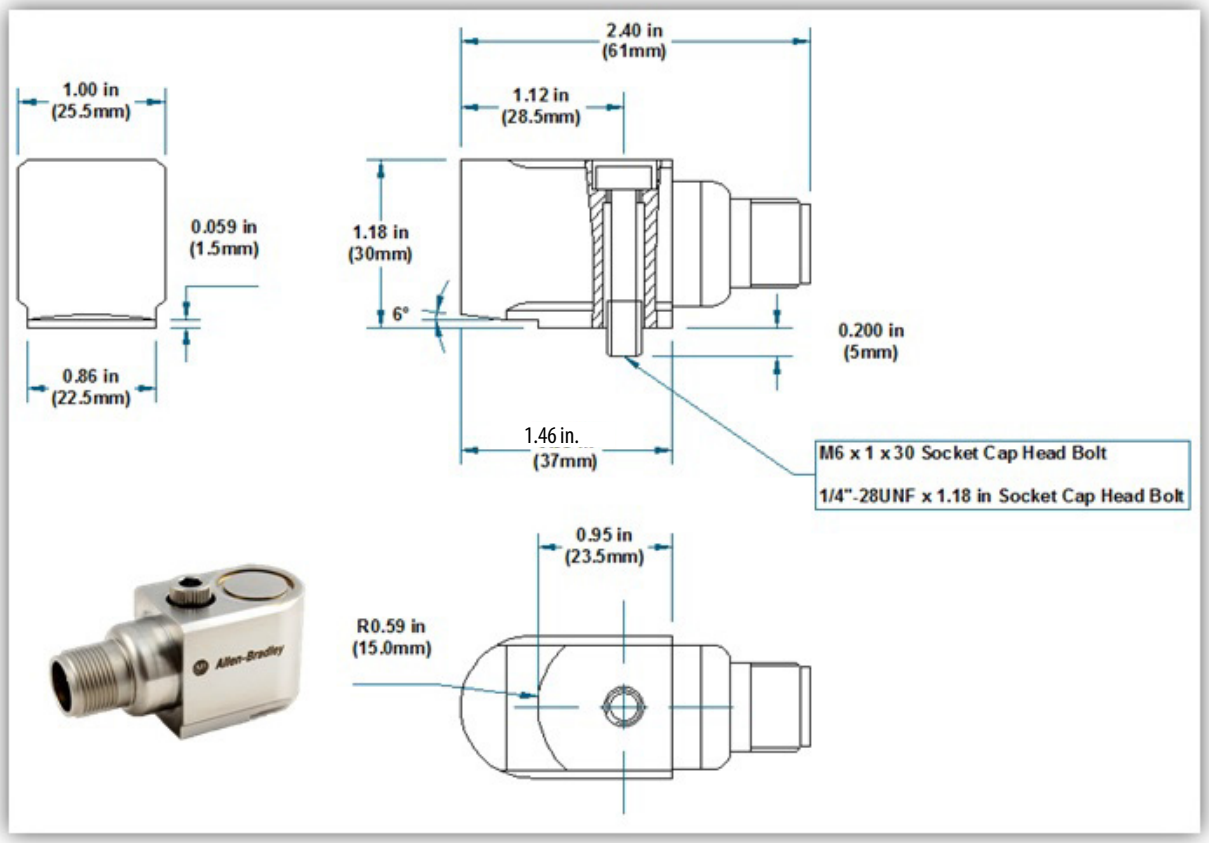


Figure 24 - 1443-ACC-VO-S Accelerometer



1443-ACC-AT-T Accelerometer

Table 17 - 1443-ACC-AT-T Accelerometer Specifications

Attribute	Value	
Performance		
Sensitivity (±5%)(1)	10.2 mV/(m/s^2)	100 mV/g
Sensitivity Temperature	10 mV/°C	5.56mV/°F
Measurement range	±785 m/s^2	±80 g
Frequency range (±5%)(2)	1.5…10 kHz	90…600,000 cpm
Frequency range (±3 dB)	0.4…15 kHz	24…900,000 cpm
Temperature range	0…100 °C	32…212 °F
Resonant frequency, typical	22 kHz	1320 kcpm
Broadband resolution (1…10,000 Hz), typical	2943 $\mu m/s^2$	300 µg
Non-linearity(3)	±1%	±1%
Transverse sensitivity	< 5%	< 5%
Environmental		
Overload limit (shock)	49,050 m/s^2 pk	5000 g pk
Temperature range	-55…+140 °C	-67…+284 °F
Enclosure rating	IP66 to 68, depending upon the cable assembly used.	IP66 to 68, depending upon the cable assembly used.
Electrical		
Settling time (within 1% of bias)	< 2.0 s	< 2.0 s
Discharge time constant	≥ 0.5 s	≥ 0.5 s
Excitation voltage	18…28V DC	18…28V DC
Constant current excitation	2…20 mA	2…20 mA
Output impedance	<150 Ω	<150 Ω
Output bias voltage	10…12V DC	10…12V DC
Electrical isolation (case)	> 10^{10} Ω	> 10^{10} Ω
Electrical protection	500V	500V
Physical		
Size (hex x height)	25 x 40 mm	1 x 1.6 in.
Weight, approx.	110 g	3.9 oz
Mounting thread(4)	M8 x 1.25 mm male	1/4-28 UNF male
Mounting torque	8 N•m	6 ft•lb
Sensing element	Ceramic	
Sensing geometry	Compression	
Housing material	Stainless Steel	
Sealing	Welded hermetic	
Electrical connector	Three-pin MIL-C-5015	
Electrical connector position	Top	
Supplied Accessories(5)	1443-STD-0-0	
	1443-STD-0-M8	
	ICS-3 3 pt calibration	

(1) Sensitivity tolerance is across the operating temperature range. Sensor is compliant to API Standard 670, 5th Edition. Conversion factor 1 g = 9.81 m/s^2.

(2) 1 Hz = 60 cpm (cycles per minute).

(3) Zero-based, least-squares, straight-line method.

(4) 1/4-28 UNF has no equivalent in metric units.

(5) ICS-3 3 pt calibration 10 Hz, 100 Hz, 1 kHz.

Figure 25 - Sensitivity Change vs. Frequency for the Accelerometer (Same for All 1443 Series)

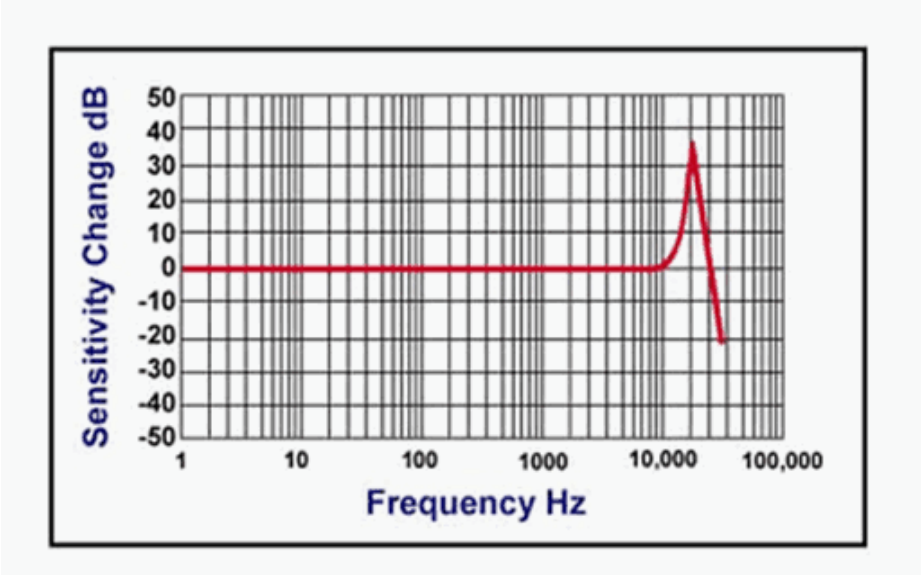
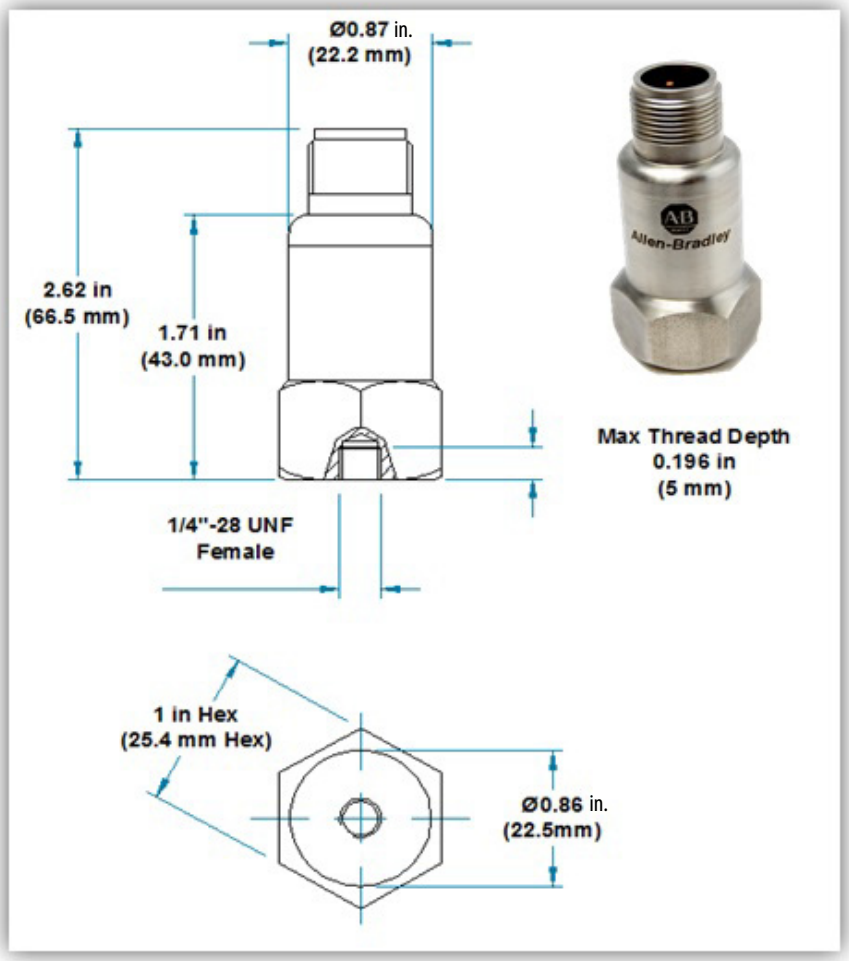


Figure 26 - 1443-ACC-AT-T Accelerometer



1443-ACC-AT-S Accelerometer

Table 18 - 1443-ACC-AT-S Accelerometer Specifications

Attribute	Value	
Performance		
Sensitivity (±5%)(1)	10.2 mV/(m/s^2)	100 mV/g
Sensitivity Temperature	10 mV/°C	5.56mV/°F
Measurement range	±785 m/s^2	±80 g
Frequency range (±5%)(2)	1.5…10 kHz	90…600,000 cpm
Frequency range (±3 dB)	0.4…15 kHz	24…900,000 cpm
Temperature range	0…100 °C	32…212 °F
Resonant frequency, typical	22 kHz	1320 kcpm
Broadband resolution (1…10,000 Hz), typical	2943 µm/s^2	300 µg
Non-linearity(3)	±1%	±1%
Transverse sensitivity	< 5%	< 5%
Environmental		
Overload limit (shock)	49,050 m/s^2 pk	5000 g pk
Temperature range	-55…+140 °C	-67…+284 °F
Enclosure rating	IP66 to 68, depending upon the cable assembly used.	IP66 to 68, depending upon the cable assembly used.
Electrical		
Settling time (within 1% of bias)	< 2.0 s	< 2.0 s
Discharge time constant	≥ 0.5 s	≥ 0.5 s
Excitation voltage	18…28V DC	18…28V DC
Constant current excitation	2…20 mA	2…20 mA
Output impedance	<150 Ω	<150 Ω
Output bias voltage	10…12V DC	10…12V DC
Electrical isolation (case)	> 10^{10} Ω	> 10^{10} Ω
Electrical protection	500V	500V
Physical		
Size (hex x height)	25 x 30 x 35mm	1 x 1.18 x 1.38 in
Weight, approx.	170 g	6.0 oz
Mounting thread(4)	M6 x 1 mm male	1/4-28 UNF male
Mounting torque	8 N•m	6 ft•lb
Sensing element	Ceramic	
Sensing geometry	Compression	
Housing material	Stainless Steel	
Sealing	Welded hermetic	
Electrical connector	Three-pin MIL-C-5015	
Electrical connector position	Side	
Supplied Accessories(5)	1443-BLT-125-0	
	1443-BLT-125-M6	
	ICS-3 3 pt calibration	

(1) Sensitivity tolerance is across the operating temperature range. Conversion factor 1 g = 9.81 m/s^2.
(2) 1 Hz = 60 cpm (cycles per minute).
(3) Zero-based, least-squares, straight-line method.
(4) 1/4-28 UNF has no equivalent in metric units.
(5) ICS-3 3 pt calibration 10 Hz, 100 Hz, 1 kHz.

Figure 27 - Sensitivity Change vs. Frequency for the Accelerometer (Same for All 1443 Series)

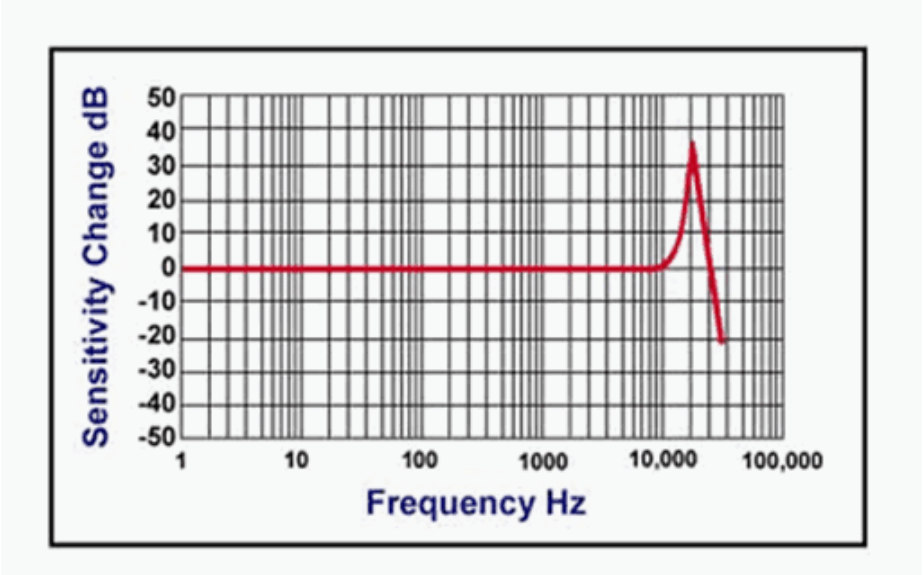
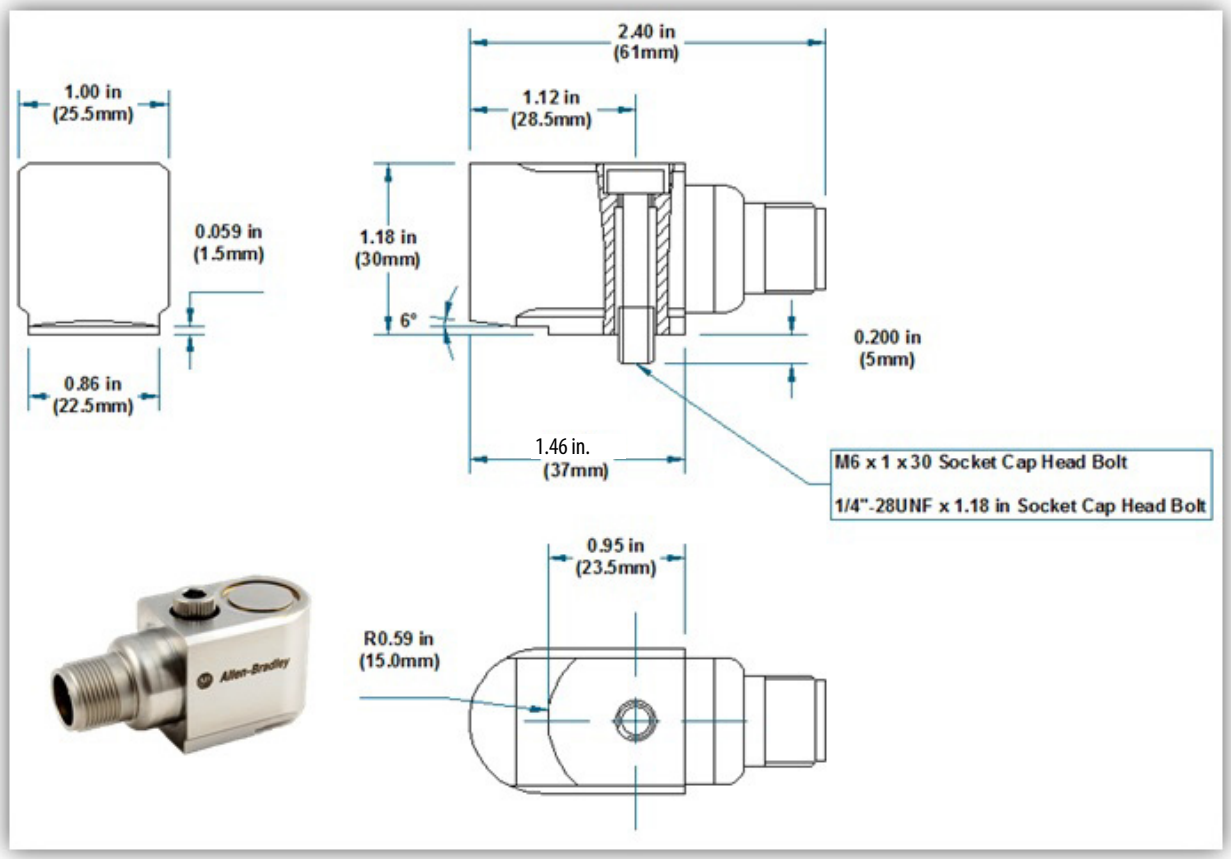


Figure 28 - 1443-ACC-AT-S Accelerometer



1443-ACC-IS-T Accelerometer

Table 19 - 1443-ACC-IS-T Accelerometer Specifications

Attribute	Value	
Performance		
Sensitivity (±5%)(1)	10.2 mV/(m/s^2)	100 mV/g
Measurement range	±785 m/s^2	±80 g
Frequency range (±5%)(2)	1.5…10 kHz	90…600,000 cpm
Frequency range (±3 dB)	0.4…15 kHz	24…900,000 cpm
Resonant frequency, typical	28 kHz	1680 kcpm
Broadband resolution (1…10,000 Hz), typical	2943 µm/s^2	300 µg
Non-linearity(3)	±1%	±1%
Transverse sensitivity	< 5%	< 5%
Environmental		
Overload limit (shock)	49,050 m/s^2 pk	5000 g pk
Temperature range	-55…+110 °C	-67…+230 °F
Enclosure rating	IP66 to 68, depending upon the cable assembly used.	IP66 to 68, depending upon the cable assembly used.
Electrical		
Settling time (within 1% of bias)	< 2.0 s	< 2.0 s
Discharge time constant	≥ 0.5 s	≥ 0.5 s
Excitation voltage	18…28V DC	18…28V DC
Constant current excitation	2…20 mA	2…20 mA
Output impedance	<150 Ω	<150 Ω
Output bias voltage	10…12V DC	10…12V DC
Electrical isolation (case)	> 10^{10} Ω	> 10^{10} Ω
Electrical protection	500V	500V
Physical		
Size (hex x height)	19 x36 mm	3/4 x 1.42 in.
Weight, approx.	48 g	1.7 oz
Mounting thread(4)	M8 x 1.25 mm male	1/4-28 UNF male
Mounting torque	8 N•m	6 ft•lb
Sensing element	Ceramic	
Sensing geometry	Compression	
Housing material	Stainless Steel	
Sealing	Welded hermetic	
Electrical connector	Two-pin MIL-C-5015	
Electrical connector position	Top	
Supplied Accessories(5)	1443-STD-0-0	
	1443-STD-0-M8	
	ICS-3 3 pt calibration	

(1) Sensitivity tolerance is across the operating temperature range. Sensor is compliant to API Standard 670, 5th Edition. Conversion factor 1 g = 9.81 m/s^2.
(2) 1 Hz = 60 cpm (cycles per minute).
(3) Zero-based, least-squares, straight-line method.
(4) 1/4-28 UNF has no equivalent in metric units.
(5) ICS-3 3 pt calibration 10 Hz, 100 Hz, 1 kHz.

Figure 29 - Sensitivity Change vs. Frequency for the Accelerometer (Same for All 1443 Series)

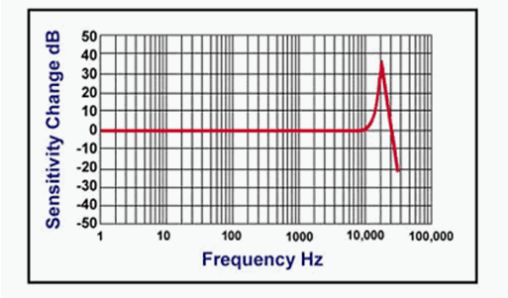
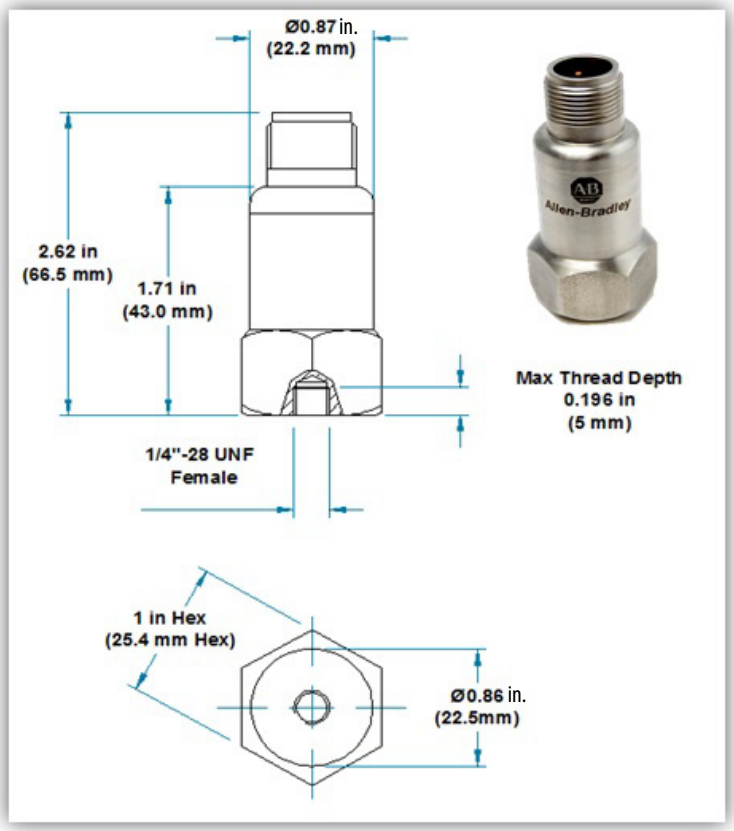


Figure 30 - 1443-ACC-IS-T Accelerometer



1443-ACC-IS-S Accelerometer

Table 20 - 1443--ACC-IS-S Accelerometer Specifications

Attribute	Value	
Performance		
Sensitivity (±5%)(1)	10.2 mV/(m/s^2)	100 mV/g
Measurement range	±785 m/s^2	±80 g
Frequency range (±5%)(2)	1.5…10 kHz	90…600,000 cpm
Frequency range (±3 dB)	0.84…15 kHz	24…900,000 cpm
Resonant frequency, typical	22 kHz	1500 kcpm
Broadband resolution (1…10,000 Hz), typical	491 µm/s^2	50 µg
Non-linearity(3)	±1%	±1%
Transverse sensitivity	< 5%	< 5%
Environmental		
Overload limit (shock)	49,050 m/s^2 pk	5000 g pk
Temperature range	-55…+110 °C	-67…+230 °F
Enclosure rating	IP66 to 68, depending upon the cable assembly used.	IP66 to 68, depending upon the cable assembly used.
Electrical		
Settling time (within 1% of bias)	< 2.0 s	< 2.0 s
Discharge time constant	≥ 0.5 s	≥ 0.5 s
Excitation voltage	18…28V DC	18…28V DC
Constant current excitation	…	2…20 mA
Output impedance	<150 Ω	<150 Ω
Output bias voltage	10…12V DC	10…12V DC
Electrical isolation (case)	> 10^{10} Ω	> 10^{10} Ω
Electrical protection	500V	500V
Physical		
Size (hex x height)	25 x 30 x 35 mm	1 x 1.18 x 1.38 in
Weight, approx.	170 g	6.0 oz
Mounting thread(4)	M6 x 1 mm male	1/4-28 UNF male
Mounting torque	8 N•m	6 ft•lb
Sensing element	Ceramic	
Sensing geometry	Compression	
Housing material	Stainless Steel	
Sealing	Welded hermetic	
Electrical connector	Two-pin MIL-C-5015	
Electrical connector position	Side	
Supplied Accessories(5)	1443-BLT-125-0	
	1443-BLT-125-M6	
	ICS-3 3 pt calibration	

(1) Sensitivity tolerance is across the operating temperature range. Conversion factor 1 g = 9.81 m/s^2.
(2) 1 Hz = 60 cpm (cycles per minute).
(3) Zero-based, least-squares, straight-line method.
(4) 1/4-28 UNF has no equivalent in metric units.
(5) ICS-3 3 pt calibration 10 Hz, 100 Hz, 1 kHz.

Figure 31 - Sensitivity Change vs. Frequency for the Accelerometer (Same for All 1443 Series)

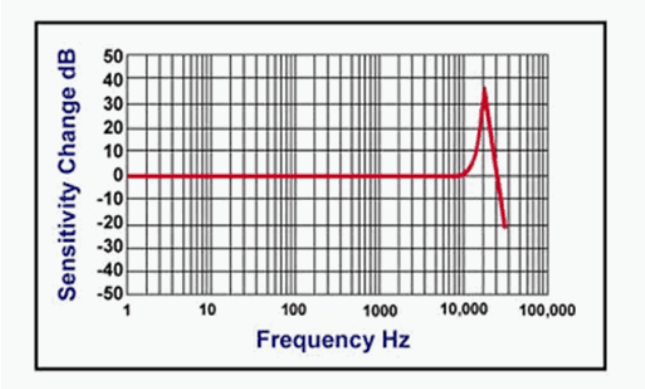
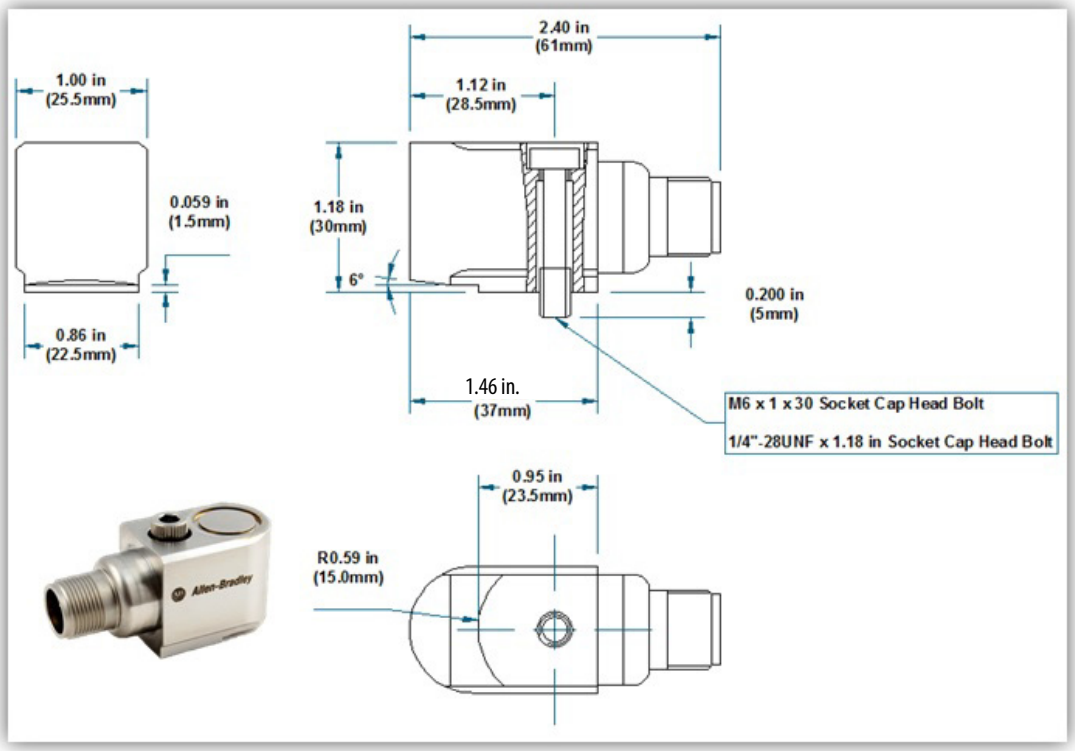


Figure 32 - 1443-ACC-IS-S Accelerometer



Hall-effect Speed Sensor

The EK-44395 Hall-effect Speed Sensor outputs a TTL signal that is suitable for use as a direct speed input to the Dynamix™ 1444-DYN04-01RA monitor.
The sensor can be used with any 3-wire accelerometer cable, which is listed inTable 26 on page 51.

Table 21 - EK-44395 Hall-effect Speed Sensor Specifications

Attribute	Value
Frequency range	Near 0…15 kHz
Power supply voltage	4.5…24V DC
Reverse voltage protection	Up to -30V DC
Temperature range	-40…+125 °C (-40…+257 °F)
TTL compatible logic	50% ± 30% duty cycle
Housing material	300 series stainless steel
Target air gap	01.27…0.508 mm (0.005…0.20 in.) With 20 diametric pitch gear
	01.27…1.143 mm (0.005…0.45 in.) With 12 diametric pitch gear
	01.27…1.524 mm (0.005…0.60 in.) With 28 diametric pitch gear

Sensor Certifications and Approvals

Table 22 - Sensor Certifications

Certification[1] (When Product Is Marked)	1443-ACC-IS-S and 1443-ACC-IS-T
Entity Parameters	Ui = Vmax = 28V, Ii=Imax=93 mA, PI=0.65 W, CI=1.0 nF, Li=zero
Temperature, ambient, max.	Hazardous Area - North America-55 °C…+110 °C (-67…+230 °F) Hazardous Area - ATEX-55 °C…+110 °C (-67…+230 °F) Hazardous Area - IECEx-55 °C…+110 °C (-67…+230 °F)
Temperature Codes	For Div 1,2 Groups A-G T4 (-55…+110 °C) (-67…+230 °F) T6 (-55…+60 °C) (-67…+140 °F) For Zone 20, Dust group IIIC T130 °C (-55…+110 °C) (-67…+230 °F) T80 °C (-55…+60 °C) (-67…+140 °F) For Class I Zone 0 gas group IIC T4 (-55…+110 °C) (-67…+230 °F) ATEX and IECEx: For Ex ia IIC T4 (-55…+110 °C) (-67…+230 °F) T6 (-55…+60 °C) (-67…+140 °F) For Ex ia IIIC T130 °C (-55…+110 °C) (-67…+230 °F) T80 °C (-55…+60 °C) (-67…+140 °F)
Cable Assemblies For use with 1443-ACC-IS-S and 1443-ACC-IS-T	1443-CBL-MS2IBC 1443 -CBL-MS2IBC-50A - tighten to 4 N•m (2.95 lb•ft) , temperature range: -40…+100 °C (-40…+212 °F) 1443-CBL-MS2IBC - rated IP66 1443-CBL-MS2GBC - push on connection, temperature range: -50…+110 °C (-58…+230 °F) 1443-CBL-MS2GBC - rated IP68 1443-CBL must conform with Rockwell Automation® Environmental Specification 970-20-01
Wiring Category[2]	2 - on shielded signal ports

Table 22 - Sensor Certifications (Continued)

Ex	European Union 94/9/EC ATEX Directive, compliant with: EN 60079-0:2010+A11:2013; General Requirements EN 60079-11:2012 Explosive Atmospheres, Protection `i' Ex I M1 Ex ia I Ma -55 °C<Ta<+110 °C (-67…+230 °F) Ex II 1 G Ex ia IIC T4 Ga -55 °C <Ta<+110 °C (-67…+230 °F) Ex II 1 G Ex ia IIC T6 Ga -55 °C <Ta<+60 °C (-67…+140 °F) Ex II 1 D Ex ia IIIC T130°C IP65 Da -55 °C <Ta<+110 °C (-67…+230 °F) Ex II 1 D Ex ia IIIC T80°C IP65 Da -55 °C <Ta<+60 °C (-67…+140 °F) Baseefa15ATEX0101X Baseefa15ATEX0100
IECEx	IECEx System, compliant with: IEC 60079-0:2011 Edition 6; General Requirements IEC 60079-11:2011 Edition 6; Explosive Atmospheres, Protection `i' Ex ia I Ma -55 °C<Ta<+110 °C (-67…+230 °F) Ex ia IIC T4 Ga -55 °C<Ta<+110 °C (-67…+230 °F) Ex ia IIC T6 Ga -55 °C<Ta<+60 °C (-67…+140 °F) Ex ia IIIC T130°C IP65 Da -55 °C <Ta<+110 °C (-67…+230 °F) Ex ia IIIC T80°C IP65 Da -55 °C <Ta<+60 °C (-67…+140 °F) IECEx BAS 15.0073X IECEx BAS 15.0072
c-SGS-us	SGS Certified Process Control Equipment for Class I, Zone 0 Hazardous Locations, which are certified for US and Canada. See SGS File USTC/15/FAI/01350 AEx, ia, IIC, T4, Ga, -55°C…+110 °C (-67…+230 °F)
c-SGS-us	SGS Certified Process Control Equipment for Zone 20 Hazardous Locations, which are certified for US and Canada. See SGS File USTC/15/FAI/01350 AEx, ia, IIIC, T130°C, IP65, Da, -55 °C…+110 °C AEx, ia, IIIC, T80°C, IP65, Da, -55 °C…+60 °C
c-SGS-us	SGS Certified Process Control Equipment for Class I, II, III Division 1, 2 Group A-G Hazardous Locations, which are certified for US and Canada. See SGS File USTC/15/FAI/01350 T4, -55 °C…+110 °C, IP65 T6, -55 °C…+60 °C

(1) See the Product Certification link at www.ab.com for Declarations of Conformity, Certificates, and other certification details.

(2) Use this conductor category information to plan conductor routing. See Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.

Accessories

This section describes the accessories that are available for the sensors.

Cables

These cables are available for the two-pin sensors.

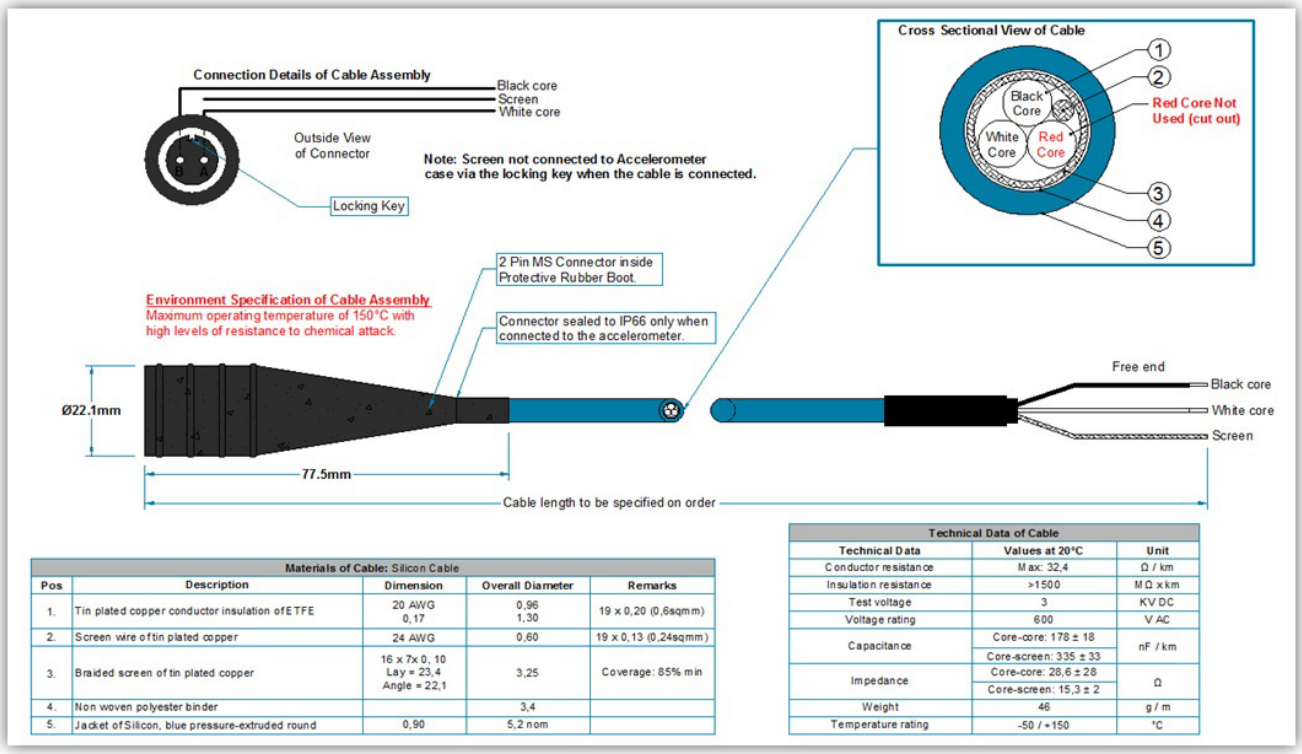
Table 23 - Cables for Two-pin Sensors

Catalog Number	Description
1443-CBL-MS2IBC-16S	16 ft of silicone twisted shielded pair cable w/ molded 2-pin mil connector and terminated to blunt cut, shield isolated from the connector
1443-CBL-MS2IBC-32S	32 ft of silicone twisted shielded pair cable w/ molded 2-pin mil connector and terminated to blunt cut, shield isolated from the connector
1443-CBL-MS2IBC-64S	64 ft of silicone twisted shielded pair cable w/ molded 2-pin mil connector and terminated to blunt cut, shield isolated from the connector
1443-CBL-MS2GBC-16S	16 ft of silicone twisted shielded pair cable w/ molded 2-pin mil connector and terminated to blunt cut, shield grounded to the connector(1)
1443-CBL-MS2GBC-32S	32 ft of silicone twisted shielded pair cable w/ molded 2-pin mil connector and terminated to blunt cut, shield grounded to the connector(1)
1443-CBL-MS2GBC-64S	64 ft of silicone twisted shielded pair cable w/ molded 2-pin mil connector and terminated to blunt cut, shield grounded to the connector(1)
1443 -CBL-MS2IBC-50A	50 ft of stainless steel armored jacket over polyurethane twisted shielded pair cable w/ 2-pin mil (AM) connector and terminated to blunt cut, shield isolated from the connector

(1) Cables with the shield that is grounded to the connector are non-standard. See Shield Wire Isolation Sensor and Cable Selection on page 8 before ordering.

TIP Before selecting a `GBC' version cable, see Shield Wire Isolation Sensor and Cable Selection on page 8.

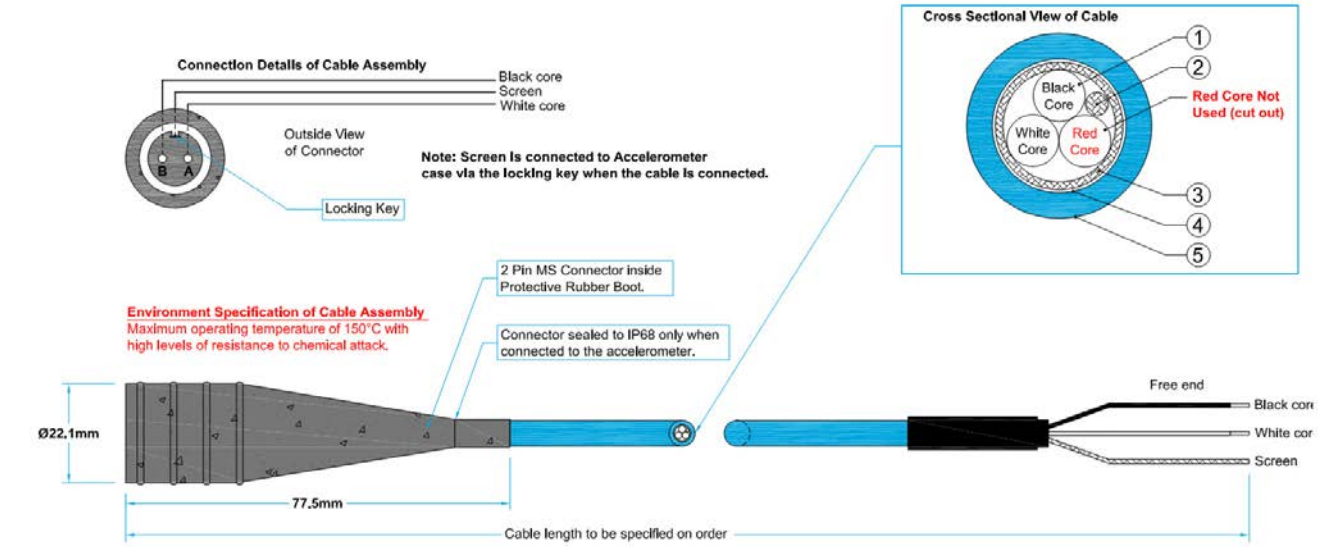
Figure 33 - 1443-CBL-MS2IBC



Materials of Cable: Silicon Cable				
Pos	Description	Dimension	Overall Diameter	Remarks
1.	Tin plated copper conductor insulation of ETFE	20 AWG 0,17	0,96 1,30	19 x 0,20 (0,6sqmm)
2.	Screen wire of tin plated copper	24 AWG	0,60	19 x 0,13 (0,24sqmm)
3.	Braided screen of tin plated copper	16 x 7x 0, 10 Lay = 23,4 Angle = 22,1	3,25	Coverage: 85% min
4.	Non woven polyester binder		3,4	
5.	Jacket of Silicon, blue pressure-extruded round	0,90	5,2 nom	

Technical Data of Cable		
Technical Data	Values at 20°C	Unit
Conductor resistance	Max: 32,4	Ω / km
Insulation resistance	>1500	MΩ x km
Test voltage	3	KV DC
Voltage rating	600	V AC
Capacitance	Core-core: 178 ± 18	nF / km
	Core-screen: 335 ± 33	
Impedance	Core-core: 28,6 ± 28	Ω
	Core-screen: 15,3 ± 2	
Weight	46	g / m
Temperature rating	-50 / +150	°C

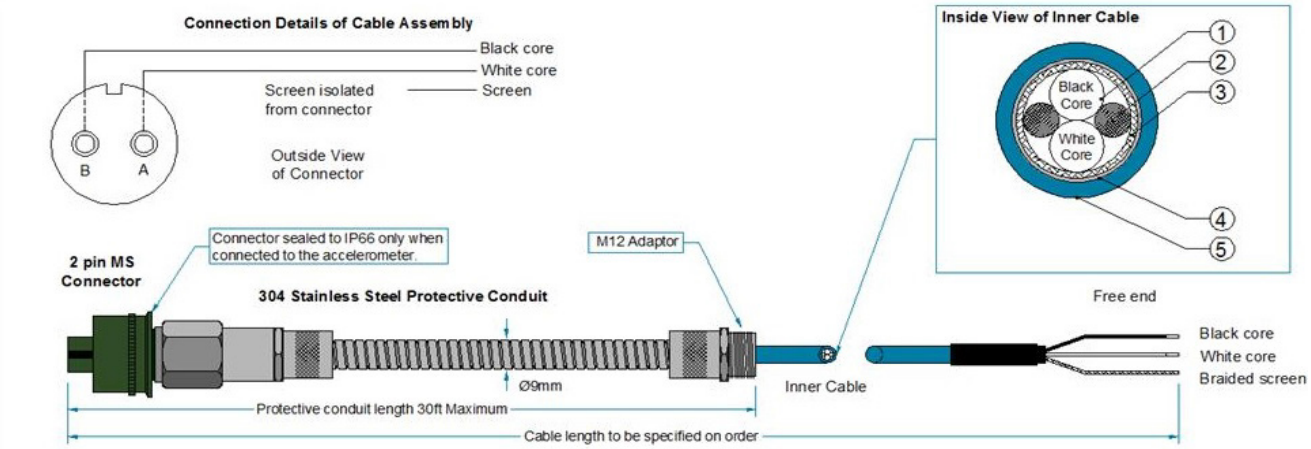
Figure 34 - 1443-CBL-MS2GBC



Materials of Cable: C01-018 Silicon Cable				
Pos	Description	Dimension	Overall Diameter	Remarks
1.	Tin plated copper conductor insulation of ETFE	20 AWG 0,17	0,96 1,30	19 x 0,20 (0,6sqmm)
2.	Screen wire of tin plated copper	24 AWG	0,60	19 x 0,13 (0,24sqmm)
3.	Braided screen of tin plated copper	16 x 7x 0, 10 Lay = 23,4 Angle = 22,1	3,25	Coverage: 85% min
4.	Non woven polyester binder		3,4	
5.	Jacket of Silicon, blue pressure-extruded round	0,90	5,2 nom	

Technical Data of Cable		
Technical Data	Values at 20°C	Unit
Conductor resistance	Max: 32,4	Ω / km
Insulation resistance	>1500	MΩ x km
Test voltage	3	KV DC
Voltage rating	600	V AC
Capacitance	Core-core: 178 ± 18	nF / km
	Core-screen: 335 ± 33	
Impedance	Core-core: 28,6 ± 28	Ω
	Core-screen: 15,3 ± 2	
Weight	46	g / m
Temperature rating	-50 / +150	°C

Figure 35 - 1443 -MS2IBC-50A



Environment Specification of Cable Assembly
Maximum operating temperature of 150°C with high levels of resistance to chemical attack.

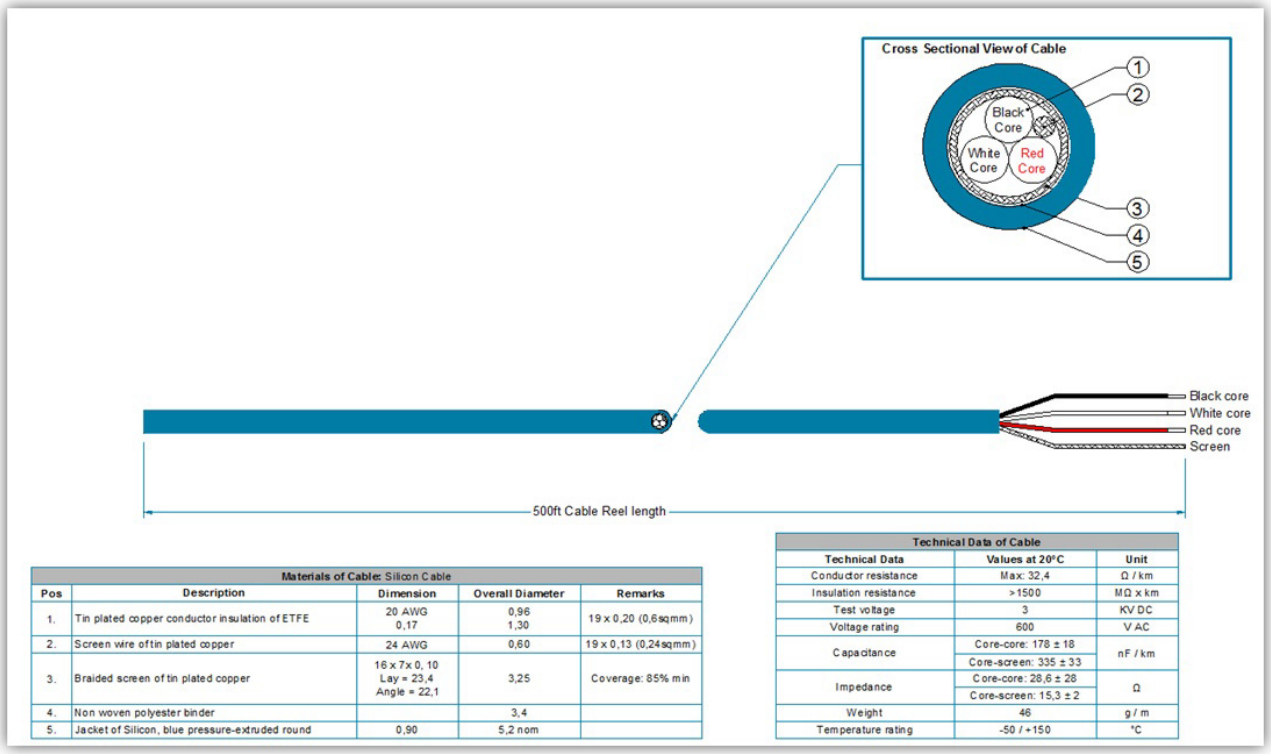
Materials of Cable: FR Polyurethane Cable				
Pos	Description	Dimension	Overall Diameter	Remarks
1.	Tin plated copper conductor insulation of ETFE	24 AWG	0,60 1,14	19 x 0,13
2.	Solid LT filler		0,6	
3.	Braided screen of tin plated copper	0,10mm	2,8	Optimised: 90% min
4.	Non woven polyester binder		3,0	
5.	Jacket of FR Polyurethane cable, Blue Pressure-extruded round	0,60mm	4,2 4,0	Nominal OD Minimum OD

Technical Data of Cable		
Technical Data	Values at 20°C	Unit
Conductor Resistance	86,0	Ω / km
Insulation Resistance	>1500	MΩ x km
Test Voltage	3	KV DC
Voltage Rating	600	V AC
Capacitance	Core-core: 88	nF / km
	Core-screen: 158	
Impedance	Core-core: 56	Ω
	Core-screen: 31	
Inductance	0,715	µH / m
Radiation Tolerance	2x 10 E5	Gy
Weight	24,5	g / m
Temperature Rating	-40 / +100	°C

Table 24 - Cables for Three-pin Sensors

Catalog Number	Description
1443-CBL-BC3BC-500	Bulk spool of 500 ft of silicone twisted shielded 3-conductor cable
1443-CBL-MS3IBC-16S	16 ft of silicone twisted shielded 3-conductor cable w/ molded 3-pin mil connector and terminated to blunt cut, shield isolated from the connector
1443-CBL-MS3IBC-64S	64 ft of silicone twisted shielded 3-conductor cable w/ molded 3-pin mil connector and terminated to blunt cut, shield isolated from the connector
1443-CBL-MS3IBC-112S	112 ft of silicone twisted shielded 3-conductor cable w/ molded 3-pin mil connector and terminated to blunt cut, shield isolated from the connector

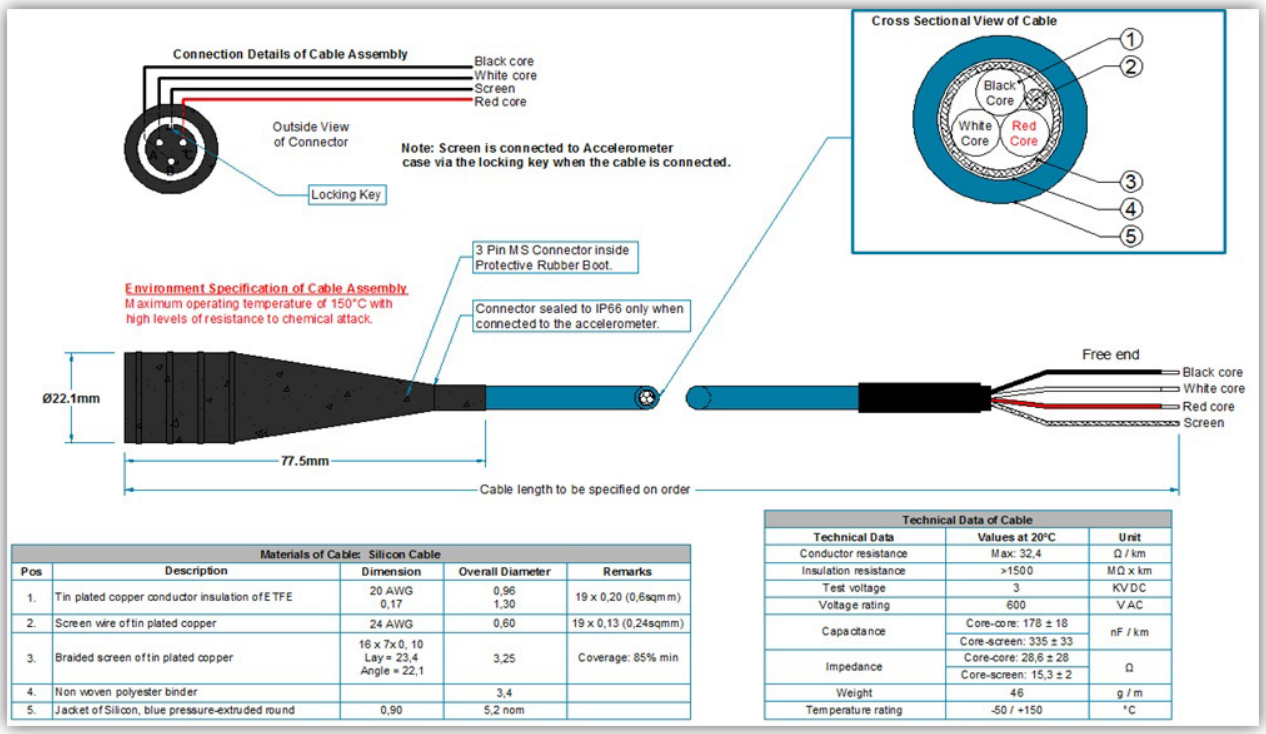
Figure 36 - 1443-CBL-BC3BC-500



Materials of Cable: Silicon Cable				
Pos	Description	Dimension	Overall Diameter	Remarks
1.	Tin plated copper conductor insulation of ETFE	20 AWG 0,17	0,96 1,30	19 x 0,20 (0,6sqmm)
2.	Screen wire of tin plated copper	24 AWG	0,60	19 x 0,13 (0,24sqmm)
3.	Braided screen of tin plated copper	16 x 7x 0, 10 Lay = 23,4 Angle = 22,1	3,25	Coverage: 85% min
4.	Non woven polyester binder		3,4	
5.	Jacket of Silicon, blue pressure-extruded round	0,90	5,2 nom	

Technical Data of Cable		
Technical Data	Values at 20°C	Unit
Conductor resistance	Max: 32,4	Ω / km
Insulation resistance	>1500	MΩ x km
Test voltage	3	KV DC
Voltage rating	600	V AC
Capacitance	Core-core: 178 ± 18	nF / km
	Core-screen: 335 ± 33	
Impedance	Core-core: 28,6 ± 28	Ω
	Core-screen: 15,3 ± 2	
Weight	46	g / m
Temperature rating	-50 / +150	°C

Figure 37 - 1443-CBL-MS3IBC (All Lengths)



Materials of Cable: Silicon Cable				
Pos	Description	Dimension	Overall Diameter	Remarks
1.	Tin plated copper conductor insulation of ETFE	20 AWG 0,17	0,96 1,30	19 x 0,20 (0,6sqmm)
2.	Screen wire of tin plated copper	24 AWG	0,60	19 x 0,13 (0,24sqmm)
3.	Braided screen of tin plated copper	16 x 7x 0, 10 Lay = 23,4 Angle = 22,1	3,25	Coverage: 85% min
4.	Non woven polyester binder		3,4	
5.	Jacket of Silicon, blue pressure-extruded round	0,90	5,2 nom	

Technical Data of Cable		
Technical Data	Values at 20°C	Unit
Conductor resistance	Max: 32,4	Ω / km
Insulation resistance	>1500	MΩ x km
Test voltage	3	KV DC
Voltage rating	600	V AC
Capacitance	Core-core: 178 ± 18	nF / km
	Core-screen: 335 ± 33	
Impedance	Core-core: 28,6 ± 28	Ω
	Core-screen: 15,3 ± 2	
Weight	46	g / m
Temperature rating	-50 / +150	°C

Table 25 - Adapter Cables

Catalog Number	Description
1443-CBL-MSILM-6	Coiled data collector sensor cable, Two-pin ms to lemo, top
1443-CBL-MSILM-50	50 ft, data collector balancing cable, Two-pin ms to lemo, top
1443-CBL-LMBNC-1	1 foot, lemo to BNC adapter

Figure 38 - 1443-CBL-MSILM-6

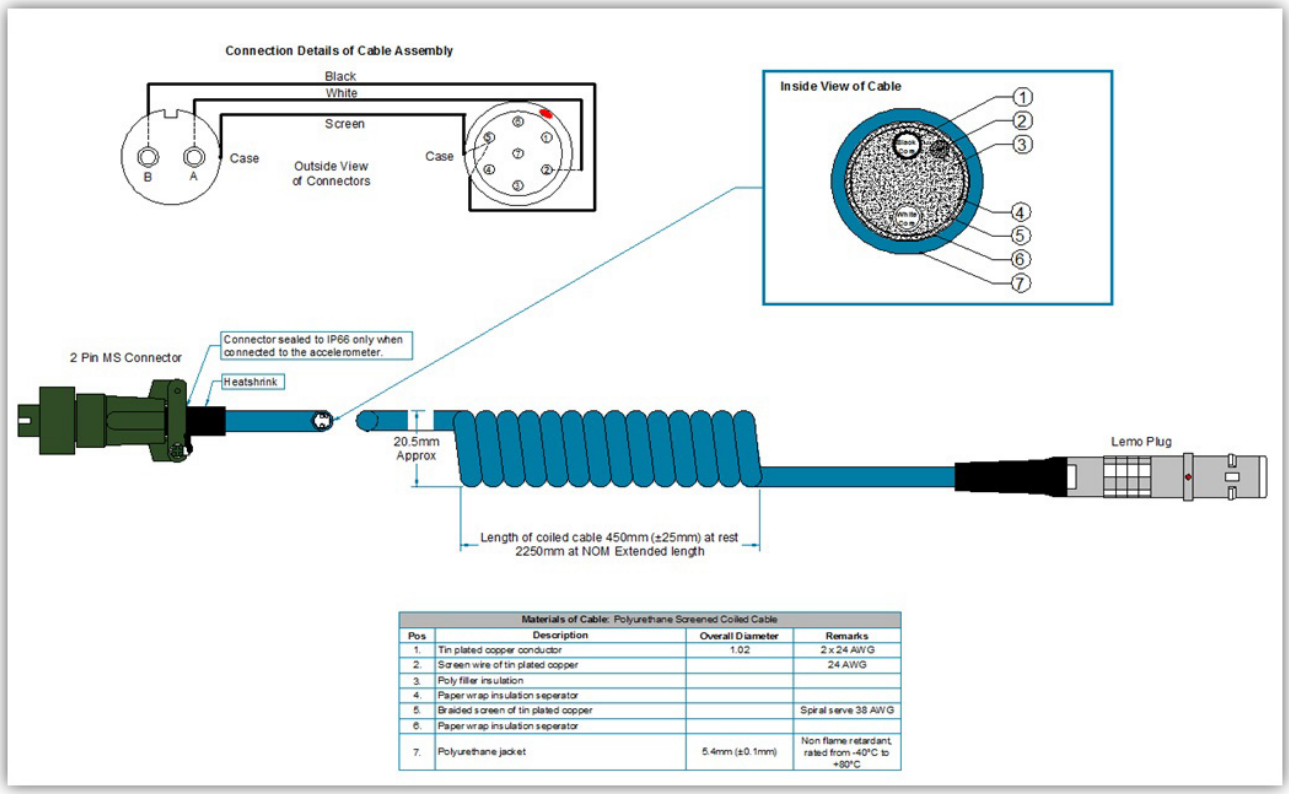
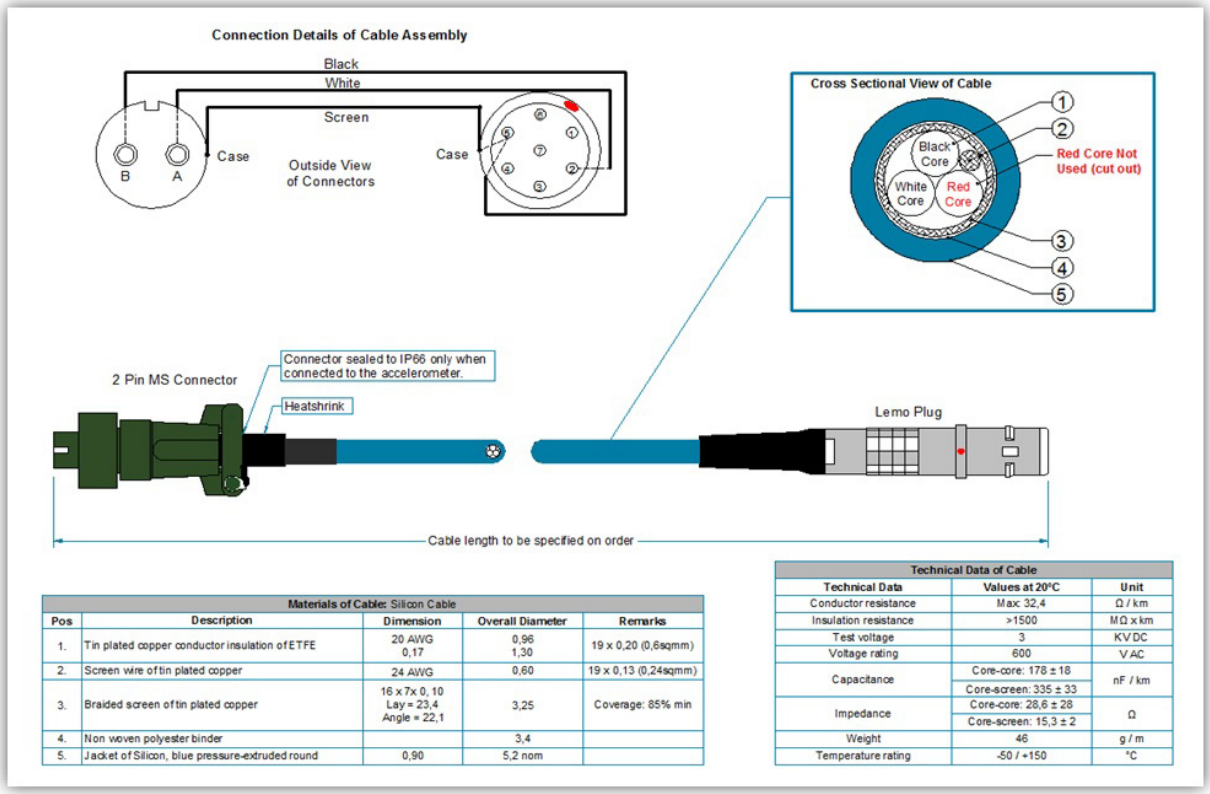


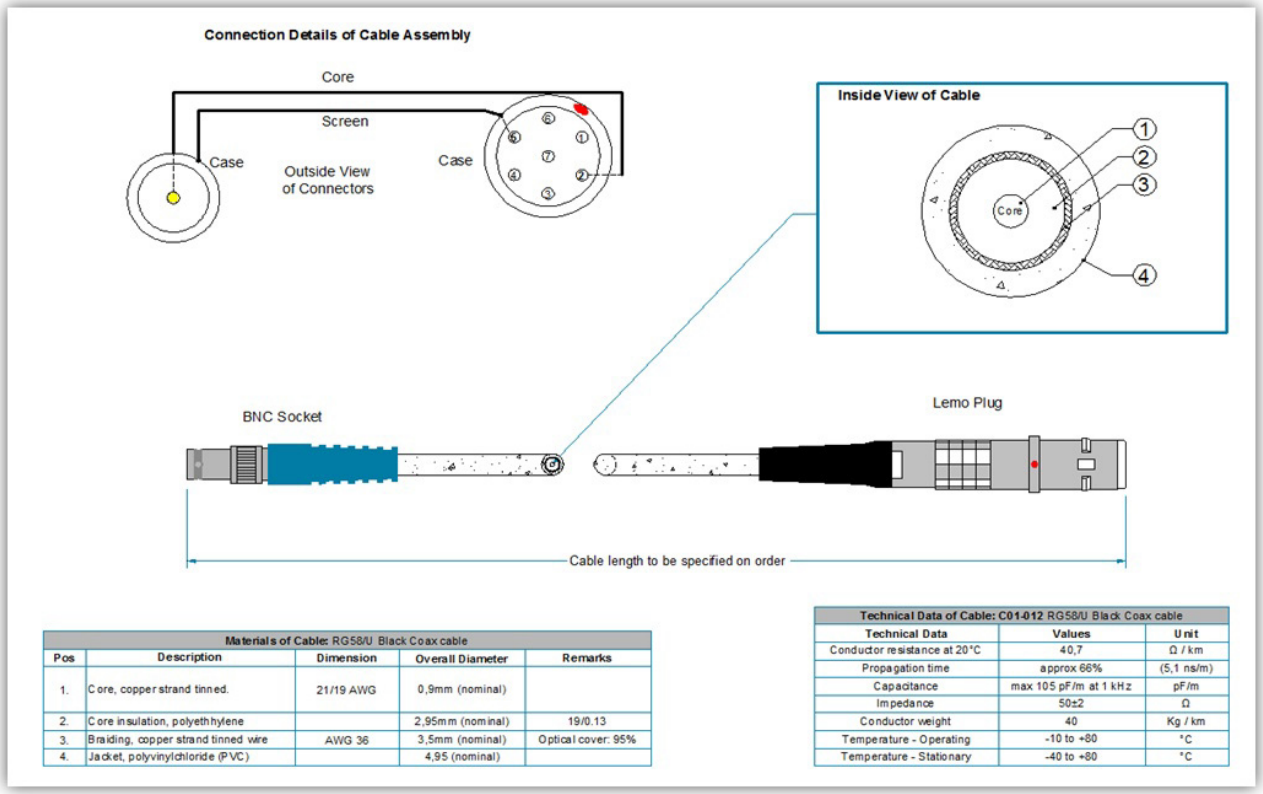
Figure 39 - 1443-CBL-MSILM-50



Materials of Cable: Silicon Cable				
Pos	Description	Dimension	Overall Diameter	Remarks
1.	Tin plated copper conductor insulation of ETFE	20 AWG 0,17	0,96 1,30	19 x 0,20 (0,6sqmm)
2.	Screen wire of tin plated copper	24 AWG	0,60	19 x 0,13 (0,24sqmm)
3.	Braided screen of tin plated copper	16 x 7x 0, 10 Lay = 23,4 Angle = 22,1	3,25	Coverage: 85% min
4.	Non woven polyester binder		3,4	
5.	Jacket of Silicon, blue pressure-extruded round	0,90	5,2 nom	

Technical Data of Cable		
Technical Data	Values at 20°C	Unit
Conductor resistance	Max 32,4	Ω / km
Insulation resistance	>1500	MΩ x km
Test voltage	3	KV DC
Voltage rating	600	V AC
Capacitance	Core-core: 178 ± 18	nF / km
	Core-screen: 335 ± 33	
Impedance	Core-core: 28,6 ± 28	Ω
	Core-screen: 15,3 ± 2	
Weight	46	g / m
Temperature rating	-50 / +150	°C

Figure 40 - 1443-CBL-LMBNC-1



Materials of Cable: RG58/U Black Coax cable				
Pos	Description	Dimension	Overall Diameter	Remarks
1.	Core, copper strand tinned.	21/19 AWG	0,9mm (nominal)	
2.	Core insulation, polyethhylene		2,95mm (nominal)	19/0.13
3.	Braiding, copper strand tinned wire	AWG 36	3,5mm (nominal)	Optical cover: 95%
4.	Jacket, polyvinylchloride (PVC)		4,95 (nominal)	

Technical Data of Cable: C01-012 RG58/U Black Coax cable		
Technical Data	Values	Unit
Conductor resistance at 20°C	40,7	Ω / km
Propagation time	approx 66%	(5,1 ns/m)
Capacitance	max 105 pF/m at 1 kHz	pF/m
Impedance	50±2	Ω
Conductor weight	40	Kg / km
Temperature - Operating	-10 to +80	°C
Temperature - Stationary	-40 to +80	°C

Connectors

Table 26 - Connectors

Catalog Number	Description
1443-CON-MS2-SP	Qty 5: silicon boot, splash proof, push on: Two-pin ms, top exit
1443-CON-MS3-SP	Qty 5: silicon boot, splash proof, push on: Three-pin ms, top exit

Figure 41 - 1443-CON-MS2-SP & 1443-CON-MS3-SP

Mounting Accessories

Table 27 - Mounting Accessories

Catalog Number	Description
1443-MAG-075C-14(1)	3/4″ diameter curved-surface magnet (14 lb pull, 1/4-28)
1443-MAG-075F-15(1)	3/4″ diameter flat-surface magnet (15 lb pull, 1/4-28)
1443-MAG-100C-35(1)	1" diameter curved-surface magnet (35 lb pull, 1/4-28)
1443-MAG-100F-35(1)	1" diameter flat-surface magnet (35 lb pull, 1/4-28)
1443-MAG-150C-55(1)	1"-1/2″ diameter curved-surface magnet (55 lb pull, 1/4-28)
1443-MAG-150F-50(1)	1"-1/2″ diameter flat-surface magnet (50 lb pull, 1/4-28)
1443-STD-0-0	Mounting Stud - 1/4-28 to 1/4-28
1443-STD-0-M8	Mounting Stud - 1/4-28 to M8
1443-BLT-125-M6	Through bolt - M6
1443-BLT-125-0	Through bolt - 1/4-28
1443-PRB-40	Probe tip 4" length, 1/2″ hex tapered to point (1/4-28)
1443-PRB-90	Probe tip 9" length with 1/4-28 stud, aluminum
1443-PAD-075-0	Mounting pad 1/4-28

(1) Magnet material: Neodymium-Iron-Boron (NdFeB)

Figure 42 - 1443-MAG (Representative of All Sizes)—Left: Curved Surface, Right: Flat Surface

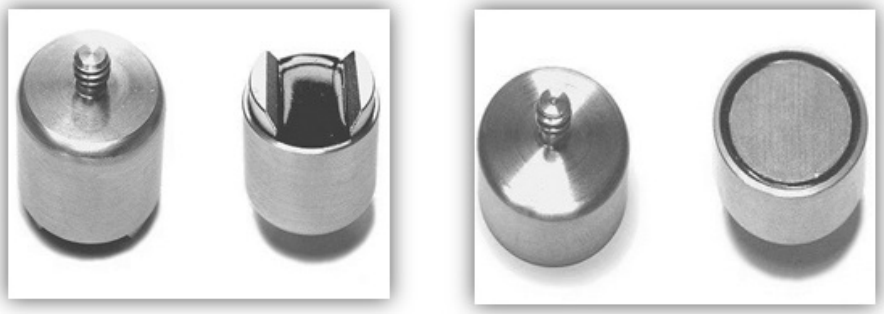


Figure 43 - 1443-STD-0-0

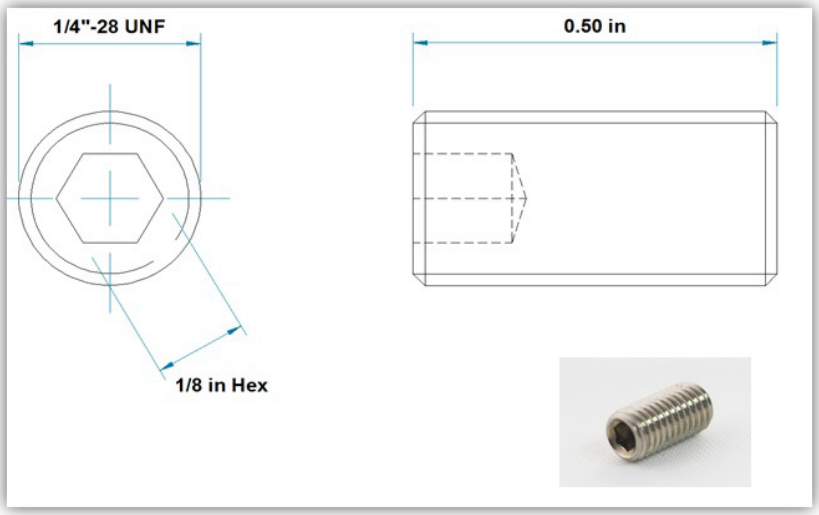
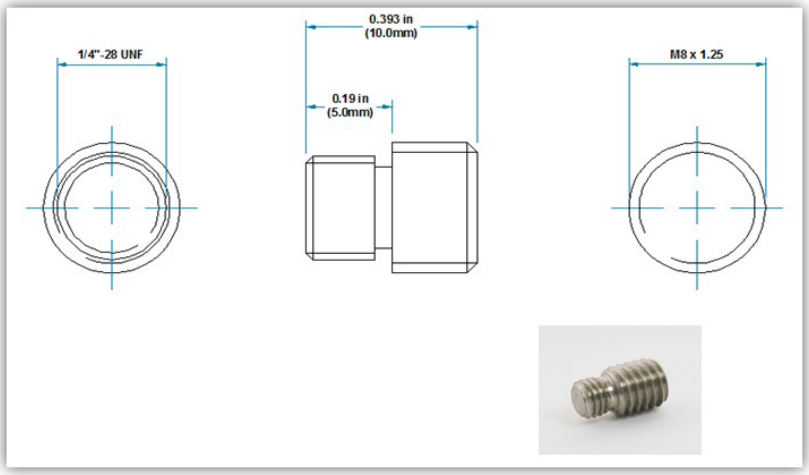


Figure 44 - 1443-STD-0-M8



TIP Through bolt cannot be used with EK 9000 Series side exit sensors.

Figure 45 - 1443-BLT-125-0

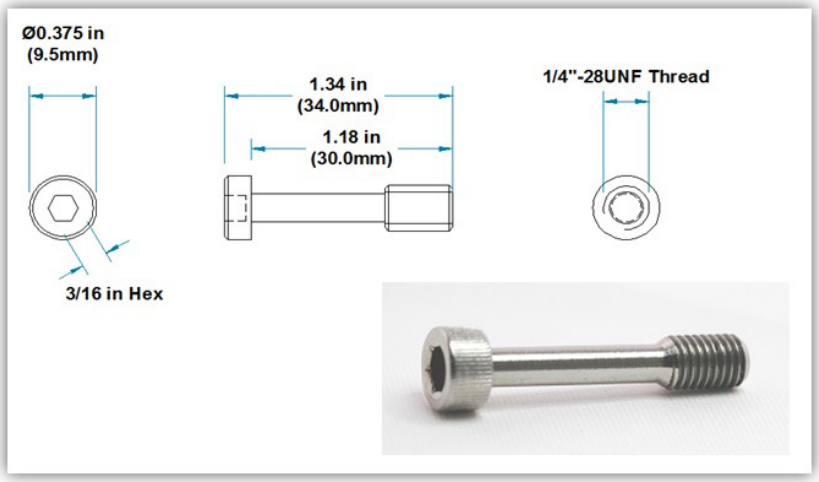


Figure 46 - 1443-BLT-125-M6

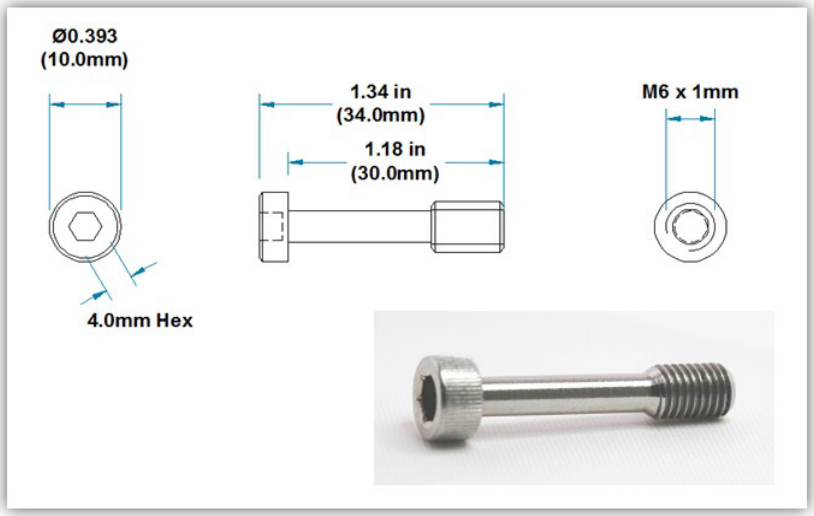


Figure 47 - 1443-PRB-40 / 1443-PRB-90

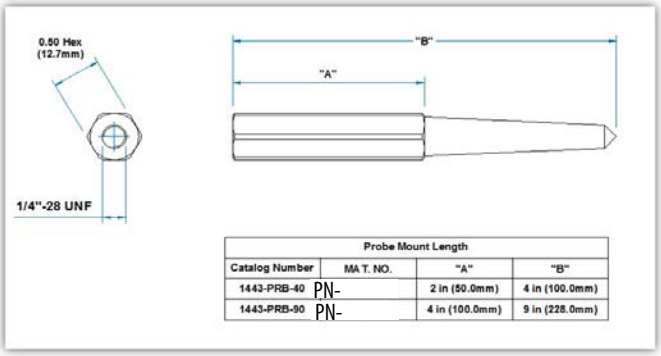
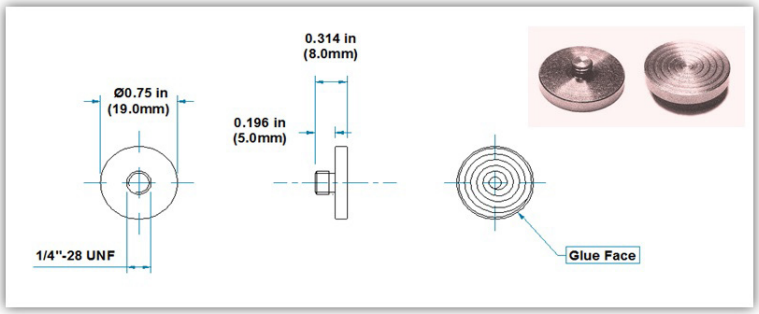


Figure 48 - 1443-PAD



Spot-face Tool Kits

Table 28 - Accessory Spot-face Tool Kit

Catalog Number	Description
1443-SFT-125-0	Spot-face tool kit for sensor mounting, 1.25" diameter, 1/4-28 pilot, two drill Bits, three taps, tap wrench, hex key, case
1443-SFT-125-M6	Spot-face tool kit for sensor mounting, M6 pilot, two drill Bits, three taps, tap wrench, hex key, case
1443-SFT-125-M8	Spot-face tool kit for sensor mounting, M8 pilot, two drill Bits, three taps, tap wrench, hex key, case

Figure 49 - 1443-SFT-125 (Representative for All)

Data Collector Sensor Kit

Table 29 - Data Collector Sensor Kit

Catalog Number	Description
1443-KIT-DATACLTR0	Includes one 1443-ACC-GP-T Accelerometer, one 1443-CBL-MSILM-6 coiled cable, one 1443-MAG-075F-15 magnet mount

EK 9000 Series Compatibility

1443 Series cables and accessories are compatible with EK 9000 Series sensors except for the side exist sensor through bolts. Through bolts 1443-BLT-125-M6 and 1443-BLT-125-0 cannot be used with EK 9000 Series sensors.

- For cables, make sure to choose the same type of cable, two pin or three pin, shield isolated (all EK 9000 Series cables are shield isolated) cable.
- For mounting accessories, make sure to match the thread size.

See the Sensor Cross-reference - 1443 Series (New) to 9000 Series (Old) on page 56, to identify equivalent 1443 Series sensors.

Sensor Cross-reference - 1443 Series (New) to 9000 Series (Old)

The EK Series sensor line is marked Rockwell Automation®. They are legacy products from Entek. The current sensors are sourced from PCB/IMI in the U.S. Earlier versions of the same sensors were sourced from Wilcoxon Research or were manufactured by IRD.

The 1443 Series are Allen-Bradley® branded products that are sourced from Hansford Sensors in the UK.

This project simplifies the offering from about 58 EK catalogs, including 26 sensors, to a total of 47 catalogs and just 14 sensors.

TIP The 1443 Series exclude specialty high temperature sensors or proportional output (4-20 mA) "process" sensors. These capabilities are no longer offered.

Table 30 - Sensor Cross-reference - 1443 Series (New) to 9000 Series (Old)

Sensor Class	Catalog Number	Replaces
General-purpose	1443-ACC-GP-T	EK-43781I
		EK-43784I
		EK-43792I
	1443-ACC-GP-S	EK-47086I
		EK-47090I
	1443-ACC-GP-T16-SI	EK-43782I
		EK-46255I
	1443-ACC-GP-T32-SI	EK-43782I
		EK-46255I
	1443-ACC-GP-T16-SC	New
		New
	1443-ACC-GP-T32-SC	New
		New
Low Frequency	1443-ACC-LF-T	EK-43794I
		EK-43795I
		EK-43797I
		EK-43798I
High Frequency	1443-ACC-HF-T	EK-43799I
		EK-43800I
Velocity	1443-ACC-VO-T	EK-43808I
	1443-ACC-VO-S	EK-43809I
Hazardous Area	1443-ACC-IS-T	EK-43786I
		EK-43787
	1443-ACC-IS-S	EK-43790I
		EK-43791I
		EK-48965
Accel and Temp	1443-ACC-AT-T	New
	1443-ACC-AT-S	EK-43811I

Table 30 - Sensor Cross-reference - 1443 Series (New) to 9000 Series (Old) (Continued)

Sensor Class	Catalog Number	Replaces
Cable	1443-CBL-MS2IBC-16S	EK-46800I
		EK-44134
	1443-CBL-MS2IBC-32S	EK-46801I
		EK-44135
	1443-CBL-MS2IBC-64S	EK-46802I
		EK-44136
	1443-CBL-MS3IBC-112S	EK-46806I
	1443-CBL-MSGBC-16S	New
	1443-CBL-MSGBC-32S	New
	1443-CBL-MSGBC-64S	New
	1443 -CBL-MSIBC-50A	New
	1443-CBL-BCBC-500	New
	1443-CBL-MSILM-6	EK-36960-C-006
		EK-36960-S-005
		EK-47787
	1443-CBL-MSILM-50	EK-36960-S-050
	1443-CBL-LMBNC-1	EK-46252
		EK-47021
Connector	1443-CON-MS2-SP	EK-44144
	1443-CON-MS3-SP	New
Tool	1443-SFT-125-0	EK-42053
	1443-SFT-125-M6	New
	1443-SFT-125-M8	New
Kit	1443-KIT-DATACLTR0	EK-45148

Table 30 - Sensor Cross-reference - 1443 Series (New) to 9000 Series (Old) (Continued)

Sensor Class	Catalog Number	Replaces
Mounting	1443-MAG-075C-14	EK-46670
		EK-44162
		EK-42118
	1443-MAG-075F-15	EK-42120
	1443-MAG-100C-35	EK-41717
	1443-MAG-100F-35	EK-42121
	1443-MAG-150C-55	EK-41529
		EK-42119
		EK-04332
	1443-MAG-150F-50	EK-24746
		EK-42123
	1443-STD-0-0	EK-44151
		EK-44152
		EK-44153
	1443-STD-0-M8	EK-44154
		EK-44155
	1443-BLT-125-M6	New
	1443-BLT-125-0	New
	1443-PRB-40	EK-41530
	1443-PRB-90	EK-01103
		EK-41915
	1443-PAD-075-0	EK-44156

You cannot replace all EK sensors with a 1443 Series sensor. The sensors that are listed in this table are no longer offered.

Table 31 - Discontinued EK Sensors

Catalog Number	Description
EK-46496	9150HTA High Temperature Accelerometer
EK-48958	9842V Process Accelerometer
EK-48964	9842VCRT Hazardous Process Accelerometer
EK-43805I	9100T High Temperature Accelerometer
EK-43807I	9150HT High Temperature Accelerometer

Additional Resources

These documents contain additional information concerning related products from Rockwell Automation®.

Resource	Description
Dynamix™ 1443 Series Sensors Product Information, publication 1443-PC001	Included with hazardous area rated sensors, provides basic environmental, ratings, and mounting information.
Dynamix™ 1443 Series Sensors User Manual, publication 1443-UM001	Provides complete information for mounting and cabling 1443 Series sensors.
Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1	Provides general guidelines for installing a Rockwell Automation® industrial system.
Product Certifications website, http://www.ab.com	Provides declarations of conformity, certificates, and other certification details.

You can view or download publications at http://www.rockwellautomation.com/literature/. To order paper copies of technical documentation, contact your local Allen-Bradley distributor or Rockwell Automation® sales representative.

Rockwell Automation Support

Use the following resources to access support information.

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Direct Dial Codes	Find the Direct Dial Code for your product. Use the code to route your call directly to a technical support engineer.	www.rockwellautomation.com/global/support/direct-dial.page
Literature Library	Installation Instructions, Manuals, Brochures, and Technical Data.	www.rockwellautomation.com/literature
Product Compatibility and Download Center (PCDC)	Get help determining how products interact, check features and capabilities, and find associated firmware.	www.rockwellautomation.com/global/support/pcdc.page

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