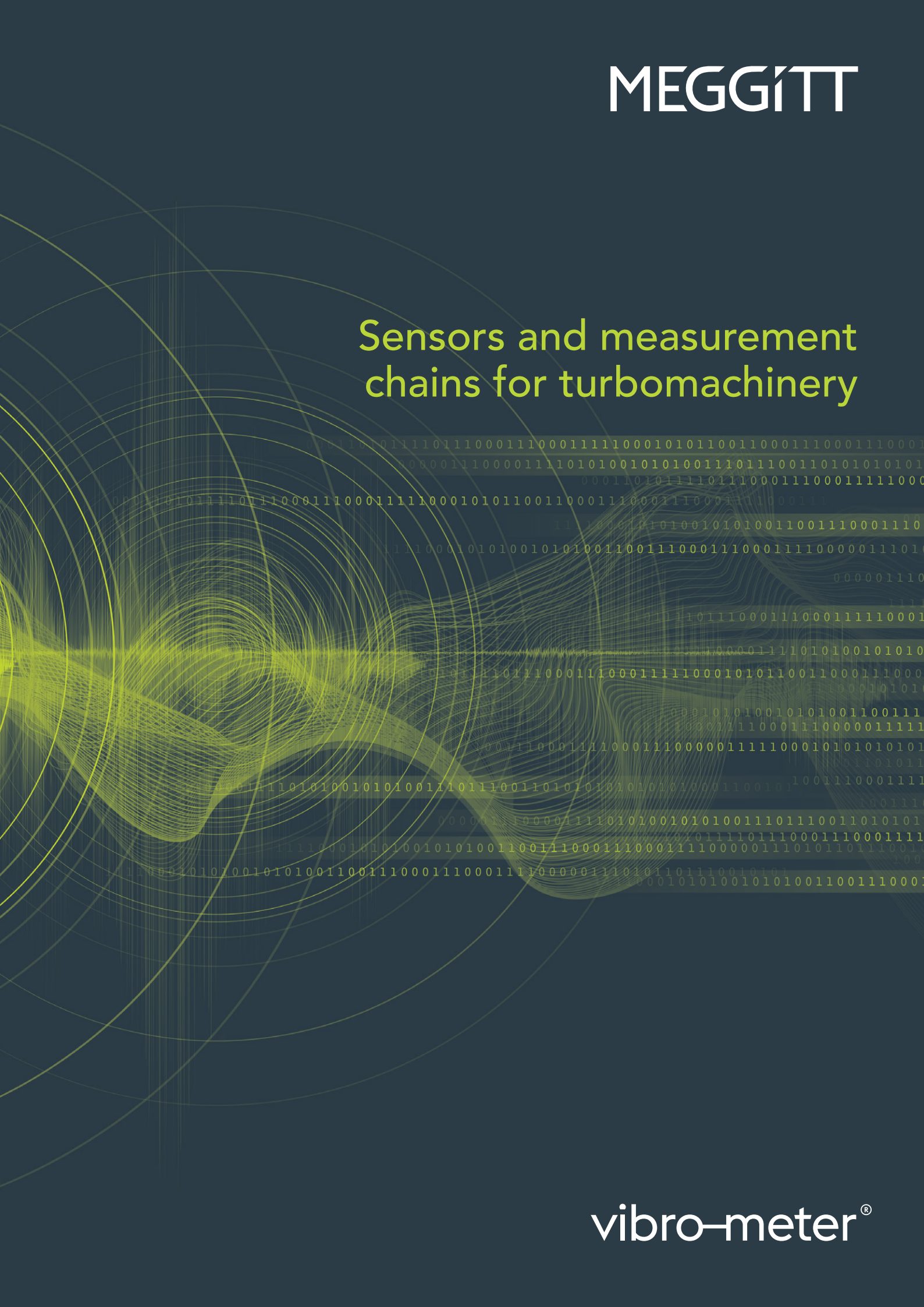
MEGGiTT

Sensors and measurement chains for turbomachinery



vibro–meter®

CONTENTS

vibro-meter® legacy

For 70 years, vibro-meter® products and expertise have enabled superior solutions for the sensing and monitoring of vibration, pressure and air-gap in critical plants and equipment.

Our sensors and measurement chains are used in various industries where the health of rotating machinery, especially large, critical machines is a major concern. They are installed on thousands of machines worldwide and help to monitor and protect these important assets every single day.

We make it our business to provide the best solutions for your measurement and monitoring requirements in order to project your investment. This allows you to reach higher levels of reliability, machine availability and output.

Today, our products are trusted by OEMs globally and have been qualified and adopted as standard-fit components on machinery used in Power Generation, Oil & Gas and other industrial applications.

QUALITY AND RELIABILITY

Meggitt SA is recognised for higher quality standards.

First certified to ISO 9000 in 1995, we have been regularly recertified since. Our latest ISO 9001:2015 quality management and ISO 14001:2015 environmental management certificates were awarded by AFNOR Certification. The ISO 14001:2015 is now complemented with our new certification ISO 45001:2018.

In addition, for specific vibro-meter® products:

- A large number are Ex certified so that they can be used in hazardous areas (potentially explosive atmospheres), for example, installed on gas turbines.
- A number are SIL safety certified so that they can be used in safety-related applications (functional safety contexts), for example, critical protection systems.

vibro–meter product portfolio

FROM SENSORS TO DECISIONS

Our comprehensive range of sensors and measurement chains can be used with our monitoring system hardware and software (or third-party systems) in order to provide complete solutions for the monitoring and protection of critical machines and processes. From standard environments to extreme conditions, our sensor catalogue includes the right choice for your application.

SENSING | **PROTECTION** | **MACHINERY PROTECTION & CONDITION MONITORING** | **ASSET MANAGEMENT**

Absolute vibration

Dynamic pressure

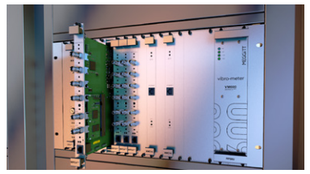
Air gap

Speed/Relative vibration

Sensors and measurement chains

SpeedSys300

Modular overspeed protection system



VM600Mk2

Rack-based monitoring systems

VibroSmart®

Distributed monitoring system

VibroSight®

Data analysis and visualisation

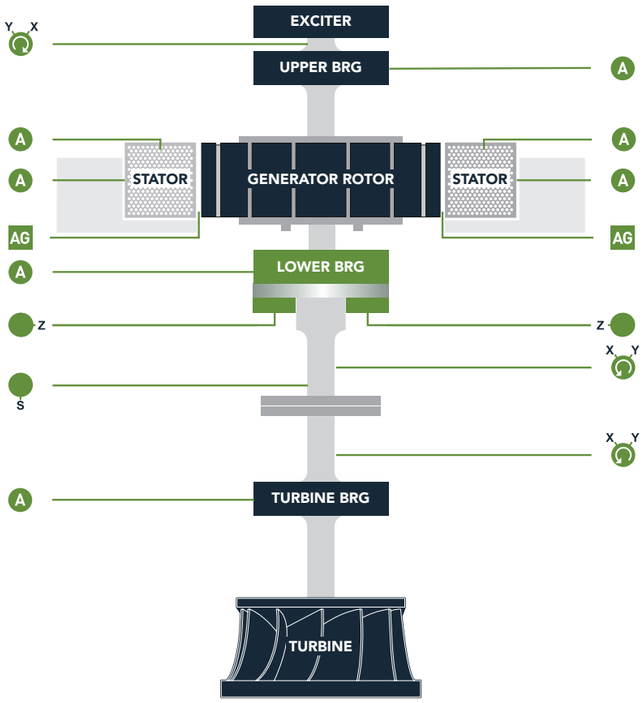
A WORLD LEADER IN SENSING AND MONITORING SOLUTIONS FOR THE ENERGY INDUSTRY

• Continuous product improvement • Complete turnkey solutions
• Support for industry standards (machinery monitoring, communications and cybersecurity)
• Services and support • Factory acceptance tests (FATs)

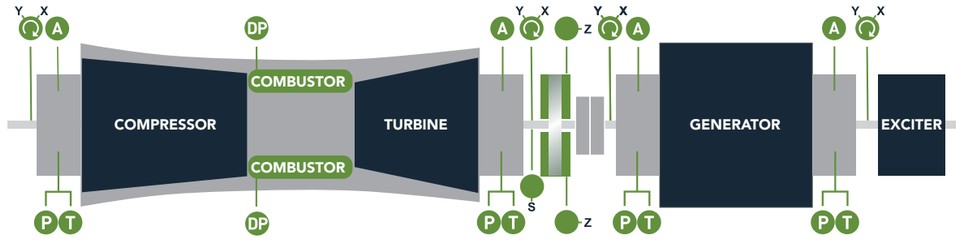
Sensors for critical applications

The vibro-meter® portfolio specialises in products and solutions for machinery protection and condition monitoring of critical rotating machinery.

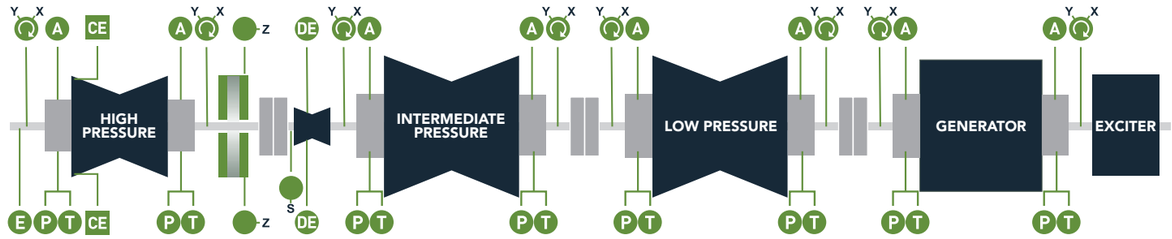
Hydro Turbine



Gas Turbine



Steam Turbine



AG Air gap

CE Case expansion

A Case (absolute) vibration

DP Dynamic pressure [combustor chamber]

E Eccentricity

P Lube oil pressure *

T Lube oil pressure temperature *

DE Rotor differential expansion

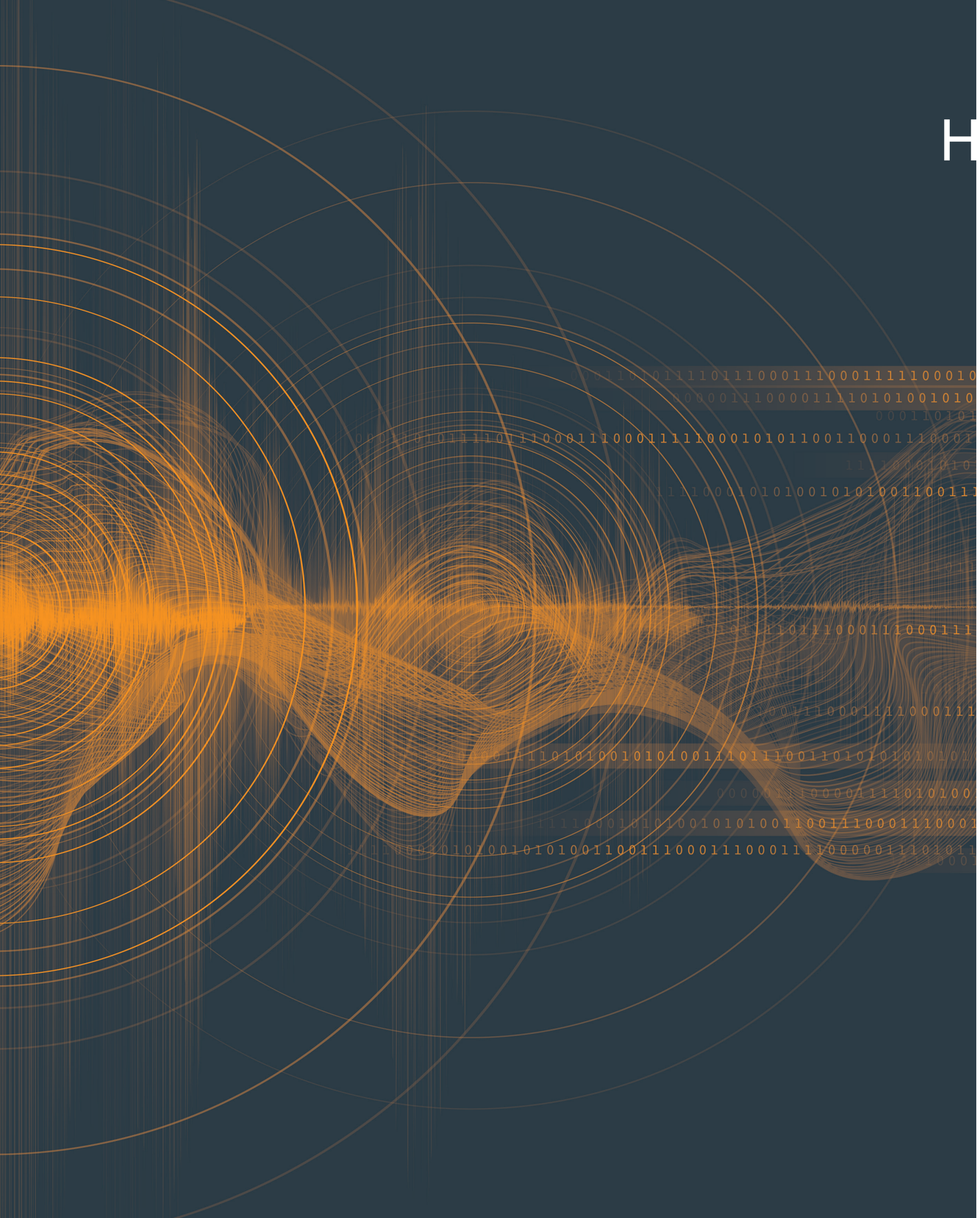
X Y Shaft relative vibration [x,y]

S Speed/phase reference

Z Thrust/axial position

Thrust bearing

* Although Meggitt vibro-meter® do not provide temperature or pressure sensors, our Protection and Condition Monitoring System can integrate these readings.



High-temperature vibration sensors

The CA series of vibration sensors are high-temperature, piezoelectric-based accelerometers designed for the long-term measurement and monitoring of absolute vibration in the most severe of environments

An external IPC signal conditioner is required to convert the low-level charge signal (pC/g) output by a CA sensor into a current or voltage signal suitable for transmission to the monitoring system. This separation of electronics enables the sensor's high performance at higher temperatures.

CA ACCELEROMETER BASED SOLUTIONS ENABLE HIGH PERFORMANCE AT HIGHER TEMPERATURES

KEY FEATURES:

Available in standard versions and in Ex versions certified internationally for use in hazardous areas.

Suitable for high-temperature environments (up to 700°C) and safety-related applications using IEC 61508 SIL 2 and ISO 13849 Cat 1, PL c certified measurement chains.

Qualified by major OEMs for industrial vibration monitoring.

HIGH-TEMPERATURE VIBRATION SENSORS AND THEIR MEASUREMENT CHAINS

Sensor

CA134
- 10 pC/g
- up to 500 g
- −196 to 500 °C
- 0.5 to 6000 Hz

Cable

EC069 MI

EC112 MI

Extension cable

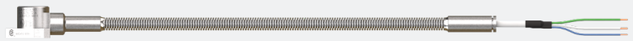
EC119 (390) Softline, armoured

EC153 Softline

CA202
- 100 pC/g
- up to 400 g
- −55 to 260 °C
- 0.5 to 5000 Hz

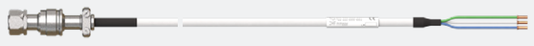
Integral softline with flexible leaktight protection

CA280
- 100 pC/g
- up to 500 g
- −60 to 260 °C
- 0.5 to 6000 Hz



Integral softline with flexible leaktight protection

EC119 (390) K205A, −54 to 200 °C with flexible leaktight protection



EC222 K221, −54 to 200 °C

CA306
- 50 pC/g
- up to 100 g
- −55 to 500 °C
- 5 to 3000 Hz

Integral softline with flexible leaktight protection

EC119 (390) K205A, −54 to 200 °C with flexible leaktight protection

EC222 K221, −54 to 200 °C

CA901
- 10 pC/g
- up to 200 g
- −196 to 700 °C
- 3 to 3700 Hz

Integral MI

EC119 (390) K205A, −54 to 200 °C with flexible leaktight protection

EC222 K221, −54 to 200 °C

EC119 (390) K205A, −54 to 200 °C with flexible leaktight protection

EC222 K221, −54 to 200 °C

Signal conditioner

IPC707
Signal conditioner

- Frequency range: 0.5 to 20000 Hz
- Configurable high-pass and low-pass filters
- Optional integrator to produce a velocity output
- Current or voltage output signal
- Available in standard and Ex versions
- Optional diagnostic circuitry (built-in self-test (BIST))
- Versions with diagnostics are SIL 2 certified
- DIN-rail mounting and removable screw-terminal connectors

ABA17x
Industrial housings

- Robust steel housing with protective coating
- Lockable hinged door with sealing gasket
- Device-mounting plate with DIN rails
- Cable-entry with openings and plugs
- Protection ratings: IP66, IK10, and NEMA types 4, 12 and 13
- Available in standard and Ex versions
- ABA171 for up to 2 signal conditioners, ABA172 for up to 4 and ABA173 for up to 8
- Wide range of cable fittings (stuffing glands)

Transmission cable

Current (2-wire) signal transmission:

K209 cable for standard environments

K210 cable for hazardous areas

Voltage (3-wire) signal transmission:

K309 cable for standard environments

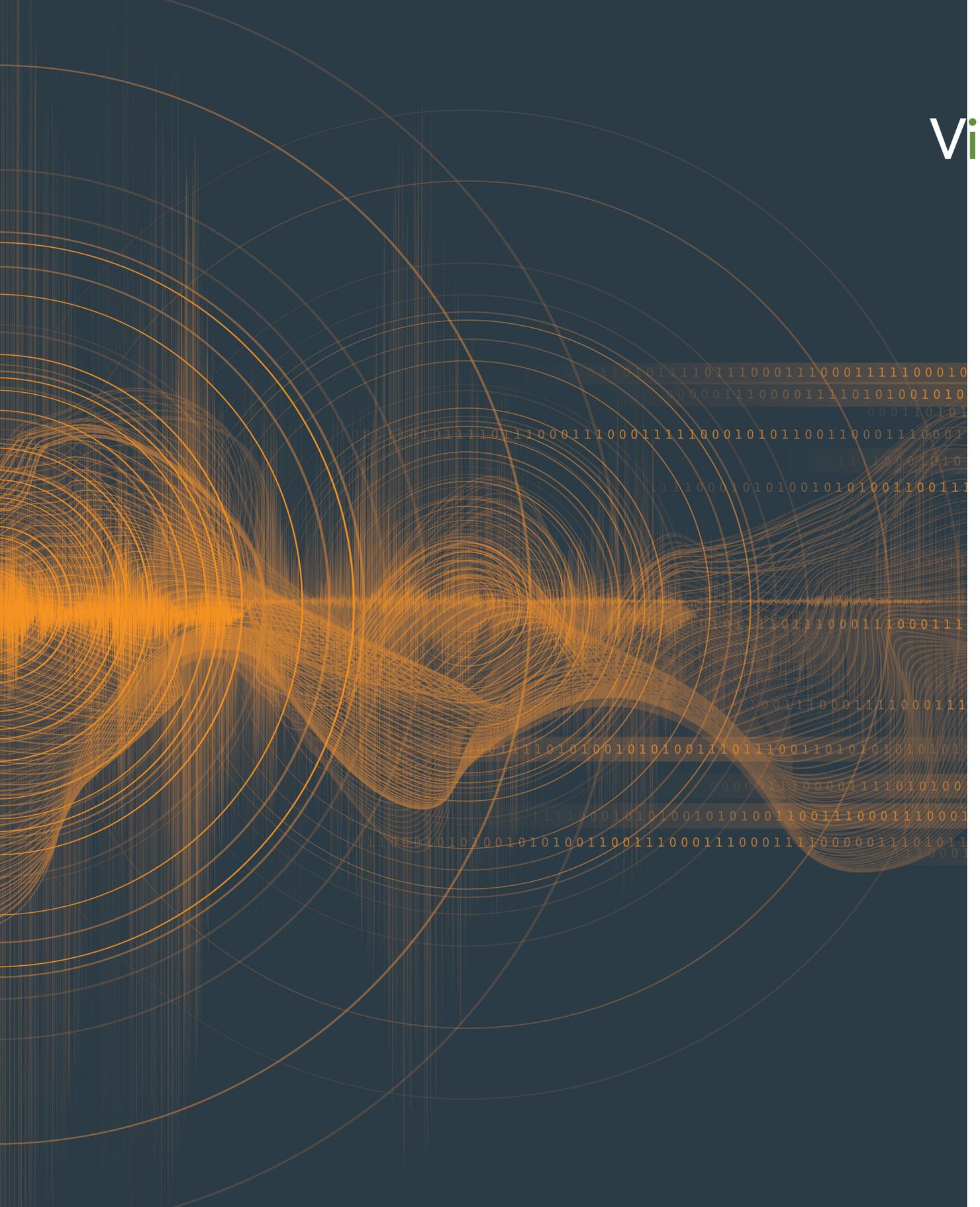
K310 cable for hazardous areas

Galvanic separation

GSI127
Galvanic separation unit

- 4 kVRMS galvanic separation
- Galvanically isolated power supply to sensor/measurement chain
- Current input with I to V conversion to support current signal transmission over longer distances – up to 1000 m
- Voltage input with V to V conversion to support voltage signal transmission
- Available in standard and Ex versions
- High rejection of frame voltage
- DIN-rail mounting and removable screw-terminal connectors

● Sensitivity ● Dynamic measurement range ● Operating temperature ● Frequency response
MI = mineral insulated



Vibration sensors with attached or integrated electronics

For applications that do not require the high-temperature capabilities of the CA series, these vibration sensors provide more cost-effective and easier to install solutions.

The CE series of sensors are piezoelectric-based accelerometers that come with either integrally attached electronics for higher temperature applications or integrated electronics for lower temperature applications. These sensors are suitable for the measurement and monitoring of vibration in harsh environments, such as gas or steam turbines, compressors, pumps and fans.

The SE120 is a high-sensitivity piezoresistive accelerometer suitable for the measurement and monitoring of vibration at lower frequencies in harsh environments, such as hydro turbines and fans.

CE-BASED SOLUTIONS PROVIDE HIGH PERFORMANCE AT HIGH TEMPERATURES

KEY FEATURES:

Available in standard versions and in Ex versions certified internationally for use in hazardous areas.

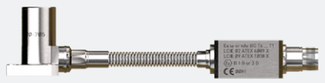
Attached or integrated electronics so installation is easier (no external signal conditioners and simpler cabling).

VIBRATION SENSORS WITH ATTACHED OR INTEGRATED ELECTRONICS AND THEIR MEASURMENT CHAINS

Sensor

CE134

- 5 µA/g
- up to 400 g
- –55 to 350 °C
- 5 to 10000 Hz



Integral softline armoured with attached electronics

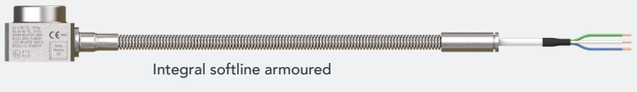
CE281

- 10 µA/g
- up to 200 g
- –55 to 260 °C
- 3 to 7000 Hz

Integral softline armoured with attached electronics

CE311

- 50 µA/g
- up to 40 g
- –40 to 125 °C
- 2 to 8000 Hz



Integral softline armoured

SE120

- 2 mA/g
- up to 4 g
- 0 to 75 °C
- 0.2 to 350 Hz

Integral softline

Cable

Extension cable

EC175 Softline, armoured, with threaded or bayonet connector

EE139 Softline, armoured, with threaded or bayonet connector

EE143 Softline, armoured, with threaded or bayonet connector

Junction box

JB116 and JB105

Junction box

- Mechanical and environmental protection (IP65 protection rating)
- Available in standard and Ex versions
- JB105 in aluminium for standard environments
- JB116 in polyester for hazardous areas
- Fully insulated and corrosion resistant
- Wide range of cable fittings (stuffing glands)

Transmission cable

Current (2-wire) signal transmission:

K209 cable for standard environments

K210 cable for hazardous areas

Galvanic separation

GSI127

Galvanic separation unit

- 4 kVRMS galvanic separation
- Galvanically isolated power supply to sensor/measurement chain
- Current input with I to V conversion to support current signal transmission over longer distances – up to 1000 m
- Voltage input with V to V conversion to support voltage signal transmission
- Available in standard and Ex versions
- High rejection of frame voltage
- DIN-rail mounting and removable screw-terminal connectors

● Sensitivity ● Dynamic measurement range ● Operating temperature ● Frequency response

Vibration sensors with velocity output

For vibration monitoring of low speed rotating machinery.

Designed for the long-term measurement and monitoring of of absolute vibration at low frequency, such as hydro turbines or fan applications.

CV OR VE VELOCITY SENSORS ENABLE HIGH PERFORMANCE AT LOW FREQUENCIES.

KEY FEATURES:

Velocity sensor designed according to the moving coil principle provide a high signal to noise ratio in the low frequency range.

CV's type available in EX version certified for use in hazadouse aeras up to 200°C.

VIBRATION SENSORS WITH VELOCITY OUTPUT AND THEIR MEASUREMENT CHAINS

Sensor

VE210

- 50 µA / mm/s or 50 mV / mm/s
- up to 100 mm/s
- –25 to 80 °C
- 0.5 to 400 Hz

Cable

EC439 RADOX® with or without protection for current (2-wire) signals

EC440 RADOX® with or without protection for voltage (3-wire) signals

CV213 and CV214

- 20 mV / mm/s
- up to 1000 mm/s
- –29 to 204 °C (CV213) –29 to 121 °C (CV214)
- 10 to 1000 Hz

ED120 with or without protection (up to 204°C)

ED121 without protection (up to 121°C)

CV211

- Typical 23 mV/mm/s (2 mm pp)
- –55 to 105 °C
- 10 to 100 Hz

SIL1 CAPABLE

Junction box

Mechanical and environmental protection (IP65 protection rating)

Available in standard and Ex versions

JB105 in aluminium for standard environments

JB116 in polyester for hazardous areas

Fully insulated and corrosion resistant

Wide range of cable fittings (stuffing glands)

Transmission cable

Current (2-wire) signal transmission:

K209 cable for standard environments

K210 cable for hazardous areas

Voltage (3-wire) signal transmission: (VE210 Only)

K309 cable for standard environments

K310 cable for hazardous areas

Galvanic separation

GSI127

Galvanic separation unit

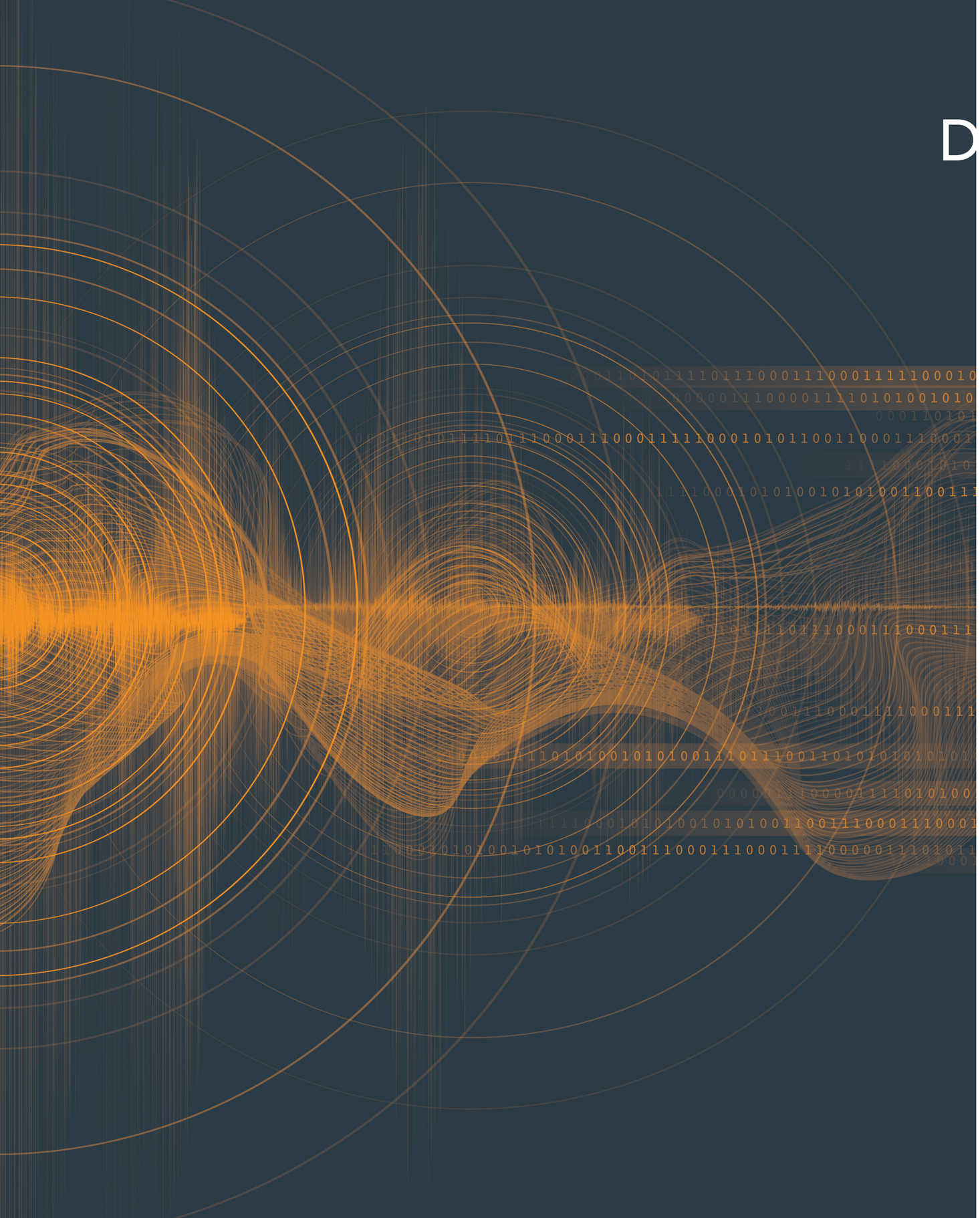
- 4 kVRMS galvanic separation
- Galvanically isolated power supply to sensor/measurement chain
- Current input with I to V conversion to support current signal transmission over longer distances – up to 1000 m
- Voltage input with V to V conversion to support voltage signal transmission
- Available in standard and Ex versions
- High rejection of frame voltage
- DIN-rail mounting and removable screw-terminal connectors

TSG series

Transmitter

- Provide a 4 to 20 mA signal proportional to casing vibration.
- Ranges selectable 10 to 30 mm/sec.
- Frequency 10 to 1000 Hz
- Input from a velocity or any IEPE acceleration
- 1 or 2 channels

● Sensitivity ● Dynamic measurement range ● Operating temperature ● Frequency response



Dynamic pressure sensors for combustion monitoring

The CP series of dynamic pressure sensors are high-temperature, piezoelectric-based pressure sensors designed for the long-term measurement and monitoring of combustion – combustor pulsations and combustion dynamics – in gas turbines.

An external IPC signal conditioner is required to convert the low-level charge signal (pC/g) output by a CP sensor into a current or voltage signal suitable for transmission to the monitoring system. This separation of electronics enables the sensor's high performance at higher temperatures.

CP SENSORS USE PATENTED ACCELERATION-COMPENSATED DESIGNS TO ENABLE THE HIGHEST TEMPERATURES AND PRESSURE SENSITIVITIES IN THE INDUSTRY

KEY FEATURES:

Available in Ex versions certified internationally for use in hazardous areas.

Suitable for high-temperature environments (up to 700°C) and safety-related applications using IEC 61508 SIL 2 and ISO 13849 Cat 1, PL c certified measurement chains.

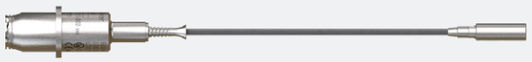
Enables/supports high-temperature lean combustion monitoring – the key to reducing NOx and other emissions.

DYNAMIC PRESSURE SENSORS FOR COMBUSTION MONITORING AND THEIR MEASUREMENT CHAINS

Sensor

CP103

- 232 pC/bar
- up to 20 bar
- up to 250 bar
- −54 to 650 °C
- 2 to 10000 Hz



Integral MI with or without protection (overbraid), terminated with a vibro-meter® high-temperature or LEMO connector

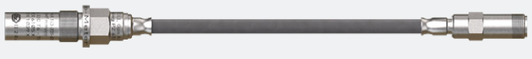
CP211

- 25 pC/bar
- up to 250 bar
- up to 350 bar
- −54 to 650 °C
- 2 to 15000 Hz

Integral MI, terminated with a vibro-meter® high-temperature or LEMO connector

CP235

- 750 pC/bar
- up to 5 bar
- up to 100 bar
- −55 to 520 °C
- 2 to 10000 Hz



Integral MI with protection (overbraid), terminated with a vibro-meter® high-temperature connector

CP700

- 229 pC/bar
- up to 20 bar
- up to 100 bar
- −55 to 700 °C
- 10 to 10000 Hz

Integral MI with protection (overbraid), terminated with a vibro-meter® high-temperature connector

Cable

Extension cable

EC119 (390) Softline, armoured

EC153 Softline

EC222 Softline

Signal conditioner

IPC707

Signal conditioner

- Frequency range: 0.5 to 20000 Hz
- Configurable high-pass and low-pass filters
- Current or voltage output signal
- Available in standard and Ex versions
- Optional diagnostic circuitry (built-in self-test (BIST))
- Versions with diagnostics are SIL 2 certified
- DIN-rail mounting and removable screw-terminal connectors

ABA17x

Industrial housings

- Robust steel housing with protective coating
- Lockable hinged door with sealing gasket
- Device-mounting plate with DIN rails
- Cable-entry with openings and plugs
- Protection ratings: IP66, IK10, and NEMA types 4, 12 and 13
- Available in standard and Ex versions
- ABA171 for up to 2 signal conditioners, ABA172 for up to 4 and ABA173 for up to 8
- Wide range of cable fittings (stuffing glands)

Transmission cable

Current (2-wire) signal transmission:

K209 cable for standard environments

K210 cable for hazardous areas

Voltage (3-wire) signal transmission:

K309 cable for standard environments

K310 cable for hazardous areas

Galvanic separation

GSI127

Galvanic separation unit

- 4 kVRMS galvanic separation
- Galvanically isolated power supply to sensor/measurement chain
- Current input with I to V conversion to support current signal transmission over longer distances – up to 1000 m
- Voltage input with V to V conversion to support voltage signal transmission
- Available in standard and Ex versions
- High rejection of frame voltage
- DIN-rail mounting and removable screw-terminal connectors

● Sensitivity ● Dynamic measurement range ● Overload capacity ● Operating temperature ● Frequency response

MI = mineral insulated

Proximity sensors for relative vibration and other measurements

The TQ series of proximity sensors are rugged sensors that use the eddy-current principle in order to allow the contactless measurement of relative vibration, position and other measurements in harsh environments.

A TQ-based measurement chain consists of a proximity sensor, an optional extension cable and an IQS signal conditioner, configured for the particular application. The signal conditioner is required to perform all required signal processing and provide a current or voltage signal suitable for transmission to the monitoring system.

TQ-based measurement chains are ideally suited to the measurement and monitoring of relative vibration and axial position for rotating machine shafts, such as those found in steam, gas and hydraulic turbines, as well as in generators, turbo-compressors and pumps. They can also measure rotational speed and/or provide phase reference (1/REV pulse) signals.

TQ-BASED SOLUTIONS ENABLE COMPREHENSIVE MEASUREMENTS INCLUDING RADIAL VIBRATION, AXIAL POSITION, ROTATIONAL SPEED AND PHASE REFERENCE (1/REV PULSE)

KEY FEATURES:

Available in standard versions and in Ex versions certified internationally for use in hazardous areas.

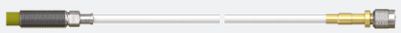
Broad family of sensors with different measurement ranges (sensitivities), mounting options (standard or reverse) and pressure capabilities (up to 100 bar).

Suitable for safety-related applications using IEC 61508 SIL 2 and ISO 13849 Cat 1, PL c certified measurement chains and conforms to API 670 5th edition.

PROXIMITY SENSOR MEASUREMENT CHAINS

Sensor

TQ401
- 8 mV/µm or 2.5 µA/µm (2 mm)
- Standard
- –40 to 180°C
- Ø 5 mm

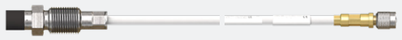


Integral coaxial cable with or without protection

TQ902
- 8 mV/µm or 2.5 µA/µm (2 mm)
- 4 mV/µm or 1.25 µA/µm (4 mm)
- Standard
- –40 to 180°C
- Ø 8 mm

Integral coaxial cable with or without protection

TQ912
- 8 mV/µm or 2.5 µA/µm (2 mm)
- 4 mV/µm or 1.25 µA/µm (4 mm)
- Reverse
- –40 to 180°C
- Ø 8 mm



Integral coaxial cable with or without protection

TQ922
- 8 mV/µm or 2.5 µA/µm (2 mm)
- 4 mV/µm or 1.25 µA/µm (4mm)
- Standard
- –25 to 140°C
- Ø 12.7 mm
- Up to 100 bar

Integral coaxial cable with or without protection

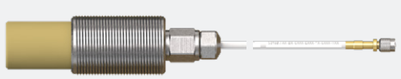
TQ932
- 8 mV/µm or 2.5 µA/µm (2 mm)
- 4 mV/µm or 1.25 µA/µm (4mm)
- Reverse
- –25 to 140°C
- Ø 12.7 mm
- Up to 100 bar

Integral coaxial cable with or without protection

TQ403
- 1.33 mV/µm or 0.417 µA/µm (12 mm)
- Standard
- –40 to 180°C
- Ø 18 mm

Integral coaxial cable with or without protection

TQ423
- 1.33 mV/µm or 0.417 µA/µm (12 mm)
- Standard
- –25 to 140°C
- Ø 25 mm
- Up to 100 bar



Integral coaxial cable with or without protection

PA15x probe adaptors designed to work with any TQ912 sensor (reverse mount)
- 2 or 4 mm
- Ø 8.2 mm

PA15x

Extension cable

JB118 junction box or IP172 interconnection protection (for mechanical and environmental protection of connections)

EA90x Extension cable (EA901, EA902 or EA903)

KS107 Flexible conduit

SG1xx Cable feedthroughs (SG101, SG102 and SG164)

EA90x Extension cable (EA901, EA902 or EA903)

Signal conditioner

IQS900

Signal conditioner

- Frequency range: DC to 20000 Hz
- Current (2-wire) or voltage (3-wire) output signal
- Available in standard and Ex versions
- Optional diagnostic circuitry (built-in self-test (BIST))
- Versions with diagnostics are SIL 2 certified
- TQ9xx, EA90x and IQS900 are fully API 670 5th edition compliant
- Raw output signal and Test input functionality
- DIN-rail mounting and removable screw-terminal connectors

ABA17x

Industrial housings

- Robust steel housing with protective coating
- Lockable hinged door with sealing gasket
- Device-mounting plate with DIN rails
- Cable-entry with openings and plugs
- Protection ratings: IP66, IK10, and NEMA types 4, 12 and 13
- Available in standard and Ex versions
- ABA171 for up to 2 signal conditioners, ABA172 for up to 4 and ABA173 for up to 8
- Wide range of cable fittings (stuffing glands

Transmission cable

Current (2-wire) signal transmission:

K209 cable for standard environments

K210 cable for hazardous areas

Voltage (3-wire) signal transmission:

K309 cable for standard environments

K310 cable for hazardous areas

Galvanic separation

GSI127

Galvanic separation unit

- 4 kVRMS galvanic separation
- Galvanically isolated power supply to sensor/measurement chain
- Current input with I to V conversion to support current signal transmission over longer distances – up to 1000 m
- Voltage input with V to V conversion to support voltage signal transmission
- Available in standard and Ex versions
- High rejection of frame voltage
- DIN-rail mounting and removable screw-terminal connectors

● Sensitivity and (dynamic measurement range) ● Mounting ● Operating temperature ● Tip diameter ● Pressure capability (at sensor tip)

Air gap monitoring system

Electric field (capacitance) technology for the contactless measurement of air gap in hydroelectric generators, and other large alternators and motors.

LS12x / ILS73x air-gap measurement systems provide three voltage output signals (pole profile, rotor profile and minimum gap) and one current output signal (pole profile, rotor profile or minimum gap) for signal transmission over longer distances.

The minimum gap provides the minimum air gap value for all poles of the rotor – without any post-processing – and is typically connected directly to a monitoring system for simple and reliable protection.

KEY FEATURES:

Easy, fast and reliable installation with enhanced filtering of noise and spikes (induced by high excitation currents).

Minimum gap signal for direct protection.

Accurate and precise results over the full measurement and temperature ranges.

Housing expansion probes

Eddy-current technology for the contactless measurement of absolute housing expansion on medium to large thermal machines such as gas and steam turbines.

KEY FEATURES:

Integrated electronics with a 4-20 mA output signal.

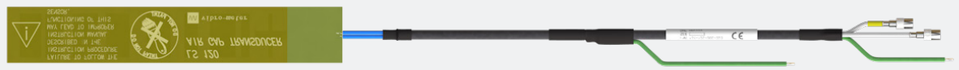
IP54 protection rating (splash proof).

AIR GAP MONITORING SYSTEM

Sensor

LS120

- 5 to 30 mm (linear)
- −15 to 125 °C



Integral coaxial cable

LS121

- 20 to 60 mm (linear)
- −15 to 125 °C

Integral coaxial cable

Cable

Signal conditioner

ILS73x

Signal conditioner

ILS730 for LS120
ILS731 for LS121

- Three voltage output signals: pole profile, rotor profile and minimum gap
- One current output signal: pole profile, rotor profile or minimum gap (factory configurable)
- Aluminium enclosure
- DIN-rail mounting and screw-terminal connectors

Transmission cable

Voltage and current signal transmission

Kxxx multiwire transmission cable

HOUSING EXPANSION PROBES

Sensor

AE119

- 0 to 50 mm (50 mm version)
- 0 to 100 mm (100 mm version)
- 0 to 80 °C

Cable

EH140 RADOX® with or without protection, straight or right-angle connector

● Dynamic measurement range ● Operating temperature

Sensors for other applications

General-purpose vibration sensors

The CE6xx, CVS100 and PV6xx are general-purpose piezoelectric vibration sensors designed for the cost-effective measurement and monitoring of vibration in balance of plant (BOP) equipment such as compressors, gearboxes, motors, pumps and fans, as well as larger machinery such as hydro turbines.

The CE620 and CE687 are piezoelectric accelerometers that provide voltage (IEPE) and current (4 to 20 mA) outputs respectively, while the PV660 and PV685 are piezoelectric velocity sensors that also provide voltage and current outputs respectively.

The CVS100 series of vibration switches allow cost-effective vibration monitoring for stand-alone machines and BOP equipment, such as fans, pumps, centrifuges, mills, gears, etc., on whose operation important installations or processes depend.

GENERAL PURPOSE VIBRATION SENSORS

Vibration sensors with 4 to 20 mA output

Sensor

CE687
- 4 to 20 mA proportional to 0 to 1, 2, 5, 10 or 20 g (current output)
- Up to 50 g
- –25 to 90 °C
- 2 to 1000 Hz

PV685
- 4 to 20 mA proportional to 0 to 10, 20, 50, 100 mm/s (current output)
- Up to 50 g
- –25 to 90 °C
- 2 to 1000 Hz

Cable

EC318 RADOX® cable with or without protection
EC319 RADOX® cable with or without protection, splashproof

Piezoelectric vibration sensors

CE620 piezoelectric accelerometer
- 100 mV/g or 500 mV/g (voltage output)
- Up to 80 g (100 mV/g version)
- Up to 16 g (500 mV/g version)
- –55 to 120°C (100 mV/g version)
- –55 to 90°C (500 mV/g version)
- 1 to 9000 Hz (100 mV/g version)
- 0.4 to 1600 Hz (500 mV/g version)

PV660 piezoelectric velocity sensor
- 4 mV/mm/s (voltage output)
- Up to 80 g
- –25 to 140 °C
- 5 to 4000 Hz

EC318 RADOX® cable with or without protection
EC319 RADOX® cable with or without protection, splashproof

Vibration switch

CVS100 series
- 2 to 50 mm/s RMS
- –20 to 70 °C
- 10 to 1000 Hz

Direct alarm and/or trip relay output
Raw output and/or 4-20 mA for further signal processing

● Sensitivity ● Dynamic masurement range ● Operating temperature ● Frequency response

Sensors for other applications

General-purpose proximity probes

The WW and RE series of proximity transducers are used in combination with transmitter or converter for direct 4-20 mA current measurement of shaft vibration or relative displacement. Measurements are made according to the eddy-current principle.

The proximity transducer WW is used in combination with Transmitter TWW101 M1 for non-contact measurements of displacements.

The proximity transducers RE022, RE030 measure with the assistance of the transmitter RE101/R102 non-contacting the relative position of an object.

The large measurement range makes it ideal for steam turbines differential expansion monitoring.

GENERAL PURPOSE PROXIMITY PROBES

Sensor	Cable	Transmitter
WW007(V)/WW009 ● 0.5 to 5.5 mm ● –20 to 180 °C 	**WWVxxxxx** ● length 4 or 9 m	 **TSWxxx** for shaft vibration **TWWxxx** for shaft position **TIWxxx** for speed and/or reference signals
WW030 ● 2 to 14 mm ● –20 to 145 °C 		 **TWWxxx**
RE022/RE030 ● 22/30 mm ● –20 to 200 °C 		 **RE101/RE102** Typically for shaft relative expansion

Transmitters

TSW series

Transmitter

Provide a 4.20 mA signal proportional to shaft vibration.

Ranges selectable 50 to 500 µm.

Various Frequency ranges available

Raw signal for sensor adjustment

TIW series

Transmitter

Provides a TTL output of the detected pulses max 15 kHz

Provides a 4.20 mA output for the selected speed range

2 Ranges available, defined upon ordering. Max to 20.000 rpm

Raw signal for sensor adjustment

TWW series

Transmitter

Provide a 4.20 mA signal proportional to shaft position.

Ranges depending on specified sensor

Frequency DC to 2 Hz

RE series

Transmitter

Provides dual 4.20 mA signal or 4.20 mA and 4 mV/µm signal depending on version.

Additionally 0,5 to 4,5 V DC output for transducer transfer function.

Ranges depending on specified sensor 22 or 30 mm

Frequency DC to 2 Hz

● Measurement range ● Operating temperature

About Meggitt and vibro-meter®

Meggitt PLC is a global engineering group, headquartered in the UK, specialising in the design and manufacture of high-performance components and systems for aerospace and energy markets.

The Meggitt facility in Fribourg, Switzerland, operates as the legal entity Meggitt SA, vibro-meter® is a portfolio of Meggitt that applies our core sensing and monitoring technologies to power generation, oil & gas and other industrial markets.

Meggitt SA produces a wide range of vibration, dynamic pressure, proximity, air-gap and other sensors capable of operation in extreme environments, electronic monitoring and protection systems, and innovative software for aerospace and land-based turbomachinery.

The vibro-meter® portfolio has been at the forefront of sensing and monitoring for more than 70 years and help keep machinery and equipment working safely, reliably and efficiently. This includes the sensors and other products in this brochure produced for Meggitt vibro-meter®.

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