REEICO

RAYA ENERGY ENGINEERING AND INSTRUMENTATION
C O M P A N Y

BEYOND RELIABILITY

REEICO

RAYA ENERGY ENGINEERING AND INSTRUMENTATION
COMPANY

About Us

REEICO has been known as a highly reliable High-Tech instrumentation manufacturing company in the MENA region by Oil and Gas experts.

REEICO started by manufacturing upstream products and services like MWD/LWD (Measurement While Drilling and Logging While Drilling) tools and Directional Drilling full package services, but now we have achieved delivering numerous mid-downstream instrumentations and sensors like a wide variety of Turbine-Compressor vibration monitoring sensors in world-class quality and standards.

We deliver reliability and confidence to our customers in both upstream and downstream industries. Sure we are not the first, but our goal is to keep continuity on the way to become the best in terms of reliability.

Piezoelectric sensors

REEICO PIEZOELECTRIC sensors are precision piezoelectric accelerometers and pressure sensors developed for accurate measurement of vibration, shock, and dynamic pressure in oil and gas industry applications.

Engineered for superior signal quality and long-term stability, these sensors provide high sensitivity, wide frequency response, and excellent repeatability under hazardous conditions.

The stainless-steel housing and hermetically sealed construction ensure outstanding resistance to corrosion, vibration, and contamination.

With fast dynamic response and reliable charge-type output, the PIEZOELECTRIC accelerometers and pressure sensors deliver precise data for process control, machinery protection, and predictive maintenance, meeting the demanding standards

The Type of protection is:

Ex ia IIC T6...510°C Ga

Signal Conditioner

The REEICO Signal Conditioner is a high-performance charge amplifier designed for accurate signal conditioning of piezoelectric accelerometers and pressure sensors.

It provides configurable high-pass and low-pass filters (0.5 Hz – 20 kHz) and optional integration for velocity output, ensuring precise control of dynamic measurement bandwidth

Featuring symmetric LC RFI filtering, adjustable sensitivity, and configurable voltage and current outputs, the REEICO Signal Conditioner ensures extremely stable, low-noise performance and long-term reliability for demanding applications in power-generation, process-control, and oil & gas environments fully compliant with relevant industrial standards.

The Type of protection is:

Ex ia IIC T6 To T4 Gb

High-Temperature and Low Noise Cable

The REEICO High-Temperature and Low Noise extension cables are designed for reliable signal transmission between REEICO piezoelectric sensors and signal conditioners.

High-Temperature employs mineral-insulated Inconel dual-core construction rated up to +650 °C, ideal for high-temperature and turbine installations.

The REEICO Low Noise Cable features a low-noise PTFE shielded cable with BOA metallic protection, ensuring stable performance up to +200 °C

Both models provide excellent mechanical strength, noise suppression, and corrosion resistance, fully compliant with demanding standards.

Sensor

PZX-A0-ST-TXX-AX-BXXXX-CXX-DXX-EXX

Order Code	PZX-A0		ST		TXX	AX	
PZX-A0-	PZR	Reeico					
	PZ1	Bently					
	PZ2	Meggitt					
	PZ3	B&K					
	PZ4	Reeico1					
Sensor Type			Accelerometer	CA			
			Pressure	CP			
			IEPE	IE			
Environment						Standard version	A1
						Exi	A2
output Type/ Sensitivity							
Cable Type							
Cable length							
Exit Type							

PZ2 - A0	TXX	
	T01	CA134
	T02	CA202
	T03	CA280
	T04	CP104

	BXXXX			CXX		DXX		EXX	
	Charge Output	10 pc/g	1010						
		100pc/g.	1100						
		50pc/bar	1150						
		190Pc/bar	1190						
	IEPE/Amplified Output	20 mV/g	2020						
		25 mV/g	2025						
		100mV/g	2100						
				Sensor-only	00				
				Integral cable	01				
				High temperature cable	02				
				Low noise cable	03				
						00	00		
						3m	03		
						5m	05		
								Top Exit	00
								Side Exit	01

Cable

PZX-B0-TXX-AXX-BXX-CXX

Order Code	PZX-B0		TXX	AXX	
PZ X - B0	PZR	Reeico			
	PZ1	Bently			
	PZ2	Meggitt			
	PZ3	B&K			
	PZ4	Reeico1			
Cable Type					
Cable Length				3 m	03
				5 m	05
				10 m	10
Connector Type					
Shield Type					

PZ2 - B0	TXX	
	T01	EC069
	T02	EC119

	BXX		CXX	
	CG 505 7/16''-27 UNS-2A/B	01		
			Without shield	00
			Flexible Stainless-Steel Tube	01
			PTFE	02

Conditioner

PZ2-C0-IPC-AX-BXX-CXXX-DXXX-EXX-FXXXXX-GX-HXX-IXX

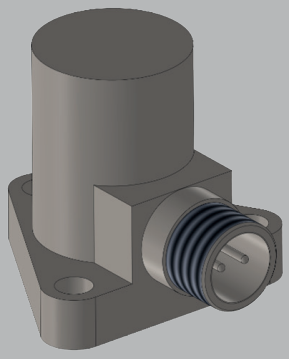
Order Code	PZx-C0		CT		AX		BXX			CXXX	DXXX	
PZX-C0	PZR	Reeico									number	
	PZ1	Bently										
	PZ2	Meggitt										
	PZ3	B&K										
	PZ4	Reeico1										
Conditioner Type (CT)			IPC704	IPC								
			IEPE	IE								
Environment					Standard	A1						
					Explosive Ex	A2						
TRANSFER UNIT							INPUT	Output				
							pC/g	µA/g	01			
							pC/g	mV/g	02			
							pC/g	µA/mm/s	03			
							pC/g	mV/mm/s	04			
							pC/g	µA/in/s	05			
							pC/g	mV/in/s	06			
							pC/bar	µA/mbar	07			
							pC/bar	mV/mbar	08			
							pC/psi	µA/psi	09			
							pC/psi	mV/psi	10			
INPUT SENSITIVITY										Sensor Sensitivity		
OUTPUT SENSITIVITY											Value per mechanical unit	
HP FILTER												
LP FILTER												
INSTALLATION												
INPUT CABLE FITTING												
OUTPUT CABLE FITTING												

	EXX	FXXXXX	Gx	HXX	IXX
	Value in Hz				
	0.5 Hz				
	1 Hz				
	2 Hz				
	5 Hz				
	10 Hz				
		Value in Hz			
		200 Hz			
		500 Hz			
		1000 Hz			
		5000 Hz			
		10000 Hz			
			Signal conditioner only 0		
			Signal conditioner with industrial housing 1		
			Signal conditioner mounted on mounting adaptor 2		
				NO HOLE 0	
				M16× 1.5 with plug 1	
				Cable gland M12 × 1.5 for cable Ø4-Ø8 mm 3	
				Cable gland M16 × 1.5 for cable Ø6-Ø11 mm 4	
				Adaptor M16 × 1.5 /PG9 with plug 8	
				Adaptor M16 × 1.5 /M20 ×1.5 with plug 10	
					NO HOLE 0
					M16× 1.5 with plug 1
					Cable gland M12 × 1.5 for cable Ø4-Ø8 mm 3
					Cable gland M16 × 1.5 for cable Ø6-Ø11 mm 4

REEICO Piezoelectric Accelerometer

Part number:

PZ2-A0-CA-T01-A2-B1010-C00-D00-E01

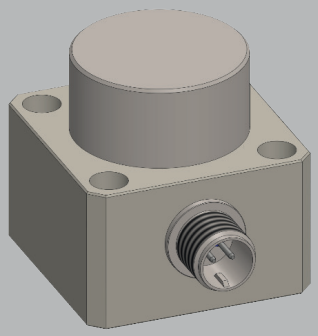


TECHNICAL CHARACTERISTICS		
Operating	Sensitivity	10Pc/g ± 5%
	Temperature Range	-54 to 500 ◦C
	Dynamic measurement range	0.001 to 500 g peak
	Overload capacity	Up to 1000 g peak
	Linearity	±1% over dynamic measurement range
	Transverse sensitivity	<5%
	Resonant frequency	>14 KHz nominal
	Frequency response	±5% (0.5 to 3500 Hz) <10% (3500 to 6000 Hz)
Environmental	Temperature range	Continuous operation (-54 to 500 ◦C) Short-term survival (-70 to 520 ◦C)
	Shock acceleration	<2000 g peak (half sine, 1 ms duration)
	Base strain sensitivity	$<7\times10^{-4}$ g/με
Physical	Case material	Special high-temperature nickel alloy and stainless steel
	Dimensions	See Mechanical drawings
	Weight	Sensor head: 120g
		MI Cable: 140g/m
	Mounting	Three M4 × 16 Allen screws and three M4 spring-lock washers with a nominal tightening torque of 4 N•m (3 lb-ft).
Connector	Sensor only version	High-temperature, rugged circular, threaded coupling, 2-pin connector.7/16"-27UNS-2B
Cable assemblies	PZ2-B0-T01-AXX-B01-C00	High-temperature cable assembly with high-temperature connector and mineral-insulated (MI) cable up to 650 ◦C
	PZ2-B0-T02-AXX-B01-C01	Cable assembly with connector to flying leads, and low-noise, shielded, twisted pair cable with sealed flexible protection (leaktight)

REEICO Piezoelectric Accelerometer

Part number:

PZ2-A0-CA-T02-A2-B1100-C01-DXX-E01

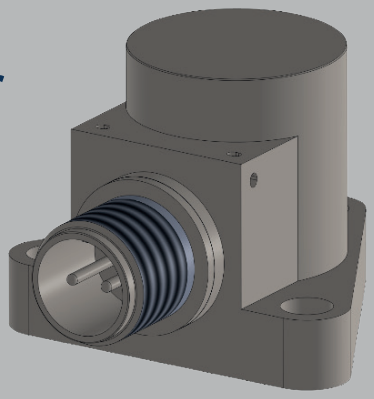


TECHNICAL CHARACTERISTICS		
Operating	Sensitivity	100Pc/g±5%
	Temperature Range	-55 to 260 ◦C
	Dynamic measurement range	0. 01 to 400 g peak
	Overload capacity	Up to 500 g peak
	Linearity	±1% (0.01 to 20 g(peak))
		±2% (20 to400 g(peak))
	Transverse sensitivity	≤3%
	Resonant frequency	>22 KHz nominal
	Frequency response	±5% (0.5 to 6000 Hz) +10% (Typical deviation at 8 KHz)
Environmental	Temperature range	Continuous operation for sensor (-55 to +260 ◦C) Continuous operation for integral cable (-55 to +200 ◦C) Short-term survival for sensor (-70 to 280 ◦C) Short-term survival integral cable (-62 to 250 ◦C)
	Shock acceleration	≤1000 g peak (half sine,1 ms duration)
	Base strain sensitivity	0.15×10-3 g/με at 250 με peak-peak
Physical	Case material	AISI 316L stainless steel
	Dimensions	See Mechanical drawings
	Weight	Sensor head: 250g
		MI Cable: 135g/m
	Mounting	Four M6 × 35 Allen screws and four M4 spring-lock washers with a nominal tightening torque of 15 N•m (11.1 lb-ft).
Connector	Terminated with flying leads	

REEICO Piezoelectric Accelerometer

Part number:

PZ2-A0-CA-T03-A2-B1100-C01-DXX-E01

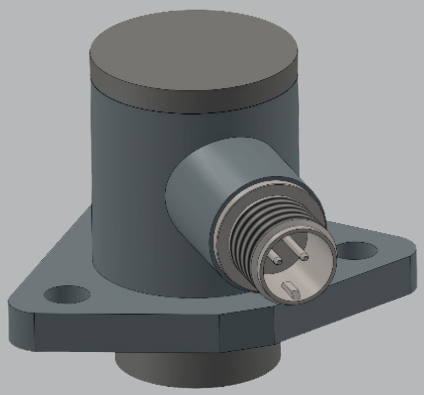


TECHNICAL CHARACTERISTICS		
Operating	Sensitivity	100Pc/g±5%
	Temperature Range	-60 to 260 ◦C
	Dynamic measurement range	0. 01 to 500 g peak
	Overload capacity	Up to 500 g peak
	Linearity	±1% (0.01 to 100 g(peak))
		±2% (100 to500 g(peak))
	Transverse sensitivity	<3%
	Resonant frequency	>20 KHz nominal
	Frequency response	±5% (0.5 to 6000 Hz)
Environmental	Temperature range	Continuous operation for sensor (-60 to +260 ◦C) Short-term survival for sensor (-70 to 290 ◦C)
	Shock acceleration	<1000 g peak (half sine,1 ms duration)
	Base strain sensitivity	0.8×10-3 g/με
Physical	Case material	AISI 316 stainless steel
	Dimensions	See Mechanical drawings
	Weight	Sensor head: 75g
		MI Cable: 135g/m
	Mounting	Three M4 × 16 Allen screws and three M4 spring-lock washers with a nominal tightening torque of 4 N•m (3 lb-ft).
Connector	Sensor only version	High-temperature, rugged circular, 2-pin connector (7/16"-27 UNS-2B)
	Integral cable version	Terminated with flying leads

REEICO Piezoelectric Dynamic Pressure Transducer

Part number:

PZ2-A0-CP-T04-A2-B1190-C00-D00-E01



TECHNICAL CHARACTERISTICS		
Operating	Sensitivity	190Pc/bar nominal
	Dynamic measurement range	0.000 05 bar to 20 bar nominal
	Overload capacity	Up to 100 bar
	Linearity	±1% over dynamic measurement range
	Acceleration sensitivity	≤0.1pC/g(≤0.0005 bar/g)
	Resonant frequency	>30 KHz
	Frequency response	±5% (2 to 6000 Hz) (Lower cut-off frequency is determined by the electronics used)
	Internal insulation resist	Min. 109Ω
	Capacitance	85 pF nominal pole/pole 30 pF nominal pole/ground
Environmental	Temperature range	-196◦C to 350 ◦C
	Shock acceleration	<2000 g peak (half sine 1 ms) along sensitive axis
	Dimensions	See Mechanical drawings
	Weight	Sensor :150g
	Mounting	Three Allen screws M5 Fastening torque 10 Nm
Connector	Sensor only version	High-temperature, rugged circular, threaded coupling, 2-pin connector.7/16”-27UNS-2B

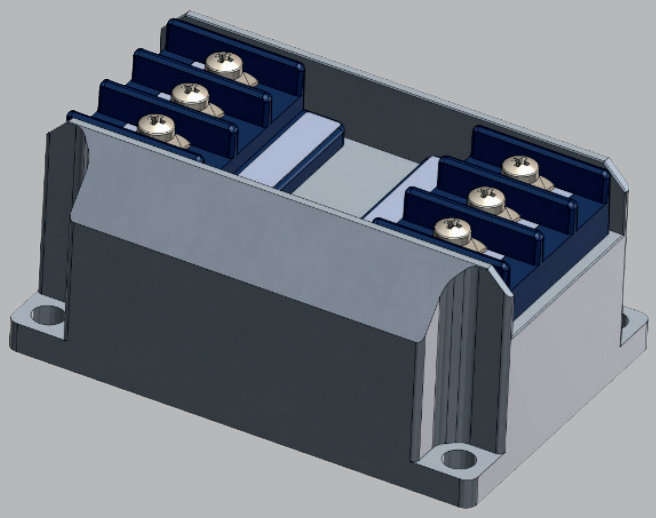
REEICO Signal Conditioner

Part number:

PZ2-C0-IPC-A2-BXX-CXXX-DXXX-EXX-FXXXXX-GX-HXX-IX

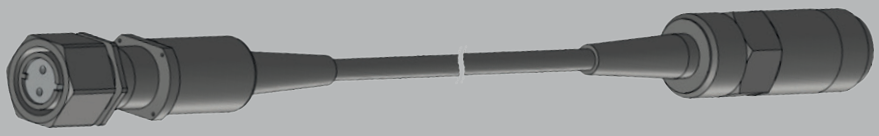
- For PZR-A0-CA piezoelectric accelerometers and PZR-A0-CP dynamic pressure sensors
- Adjustable High-pass and Low-pass filters
- Optional integrator to produce a velocity output
- Optional 2-wire current or 3-wire voltage transmission

The sensor is certified for application in classified area as: **Ex ia IIC Tx Ga**



TECHNICAL CHARACTERISTICS		
General	Temperature	Operation: -30 to +85 ◦C
		Storage: -40 to +85 ◦C
	Protection rating	IP40
	Vibration	2 g peak between 10 and 500 Hz
	Shock acceleration	15 g peak (half-sine, 11 ms duration)
	Power supply	18 to 30 VDC
	Current	25 mA (max)
Input characteristics	Input sensitivity	Accelerometer:10 to 200 pC/g
		Dynamic pressure transducer:10 to 1000 pC/g
	Input Charge amplifier	Symmetrical
	RFI filter	Symmetrical LC network
	Input Resistance	≥50 KΩ (sensor and cable)
	Input Capacitance	≤10 nF (sensor and cable)
output characteristics	RFI filter	Symmetrical LC network
	2-Wire current transmission	Dynamic signal: Max. ±5 mA peak
		Standing current: 12 mA ±0.5 mA
		Electrical connection: +24V=”+”,COM=”-”
		Output sensitivity: see ordering information
		Max. dynamic range: 5mA peak/output sensitivity
	3-Wire voltage transmission	Dynamic signal: Max. ±5 V peak
		Standing Voltage: 7.5 V±0.2 V
		Output sensitivity: see ordering information
		Output impedance: 750Ω (3-wire configuration)
		Max. dynamic range: 5V peak/output sensitivity
Filter characteristics	High-pass filter	Cut-off frequencies (at -3dB):0.5,1,2,5 or 10 Hz
		Slope: 24 dB/octave (4th order)
	Low-pass filter	Cut-off frequencies (at -1 dB): 200,500,1000,2000,5000,10000 or 20000 Hz
		Slope: 12 dB/octave (2nd order)
Physical characteristics	Enclosure	Injection moulded aluminium,anodized
	Mounting	Two or four M4 screws
	Weight	Standard version :170 g
		Ex version :250 g
	Electrical connection (input, output)	Three screw terminals-wire section 2.5mm2 (max.)

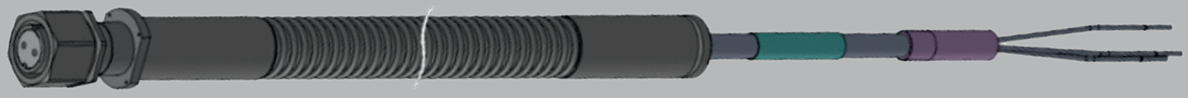
REEICO Cable Assemblies



Part number: PZ2-B0-T01-AXX-B01-C00

- **Extension cable for accelerometers**
- **High Temperature rugged connector**
- **Twin cores mineral insulated cable**
- **Stainless steel outer sheath**
- **Temperature range: -54 ◦C to +650 ◦C**

TECHNICAL CHARACTERISTICS		
Physical	Conductors	2×Ø0.5 mm Inconel 600 cores
	Insulation	Magnesium oxide(MgO)
	Outer sheath	Inconel 600
	Cable diameter	Ø 3.2 mm
	Bending radius	Min 50 mm
	Operating temperature	-54 ◦C to +650 ◦C
Electrical	Voltage rating	600 V RMS
	Test Voltage	2000 V RMS
	Insulation resistance	≥1013Ω/m at +23 ◦C
	Resistance (cores)	≤ 0.5 Ω/m
	Capacitance	Core/Core: 200 pF/m
		Core/shield: 300 pF/m
High Temperature Connectors	Thread	7/16”-27 UNS-2B and 2A wire-locked



Part number: PZ2-B0-T02-AXX-B01-C01

- **Low noise cable for accelerometer and piezoelectric transducers**
- **7/16''-27 rugged connector**
- **Shielded cable flexible sealed BOA tube**
- **Temperature range: -54 ◦C to +200 ◦C**

TECHNICAL CHARACTERISTICS		
Physical	Conductors	2×Ø0.45 mm2 Stranded silverplated copper cores
	Shield	Silver coated copper braid
	Outer sheath	White PTFE tape
	Cable diameter	40 g/m
	Weight	40 g/m
	Bending radius	Min 50 mm
	Operating temperature	-54 ◦C to +200 ◦C continuous -62 ◦C to +250 ◦C short time
Electrical	Voltage rating	600 V RMS
	Test Voltage	2000 V RMS
	Insulation resistance	≥1012Ω/m at +23 ◦C
	Resistance (cores)	≤ 40 Ω/Km
	Capacitance	Core/Core: 100 pF/m
		Core/shield: 200 pF/m
Cable Protection	construction	Flexible leaktight protection tube
	Material	Stainless steel
High Temperature Connectors	Thread	7/16''-27 UNS-2B and 2A wire-locked
	Connector material	Stainless steel

BEYOND RELIABILITY

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