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# High Temperature

## High Temperature Accelerometers

Wilcoxon Research offers three options for applications above the normal operating range of industrial accelerometers, greater than 250°F (120°C). The FireFET® series, models 793-6 and 797-6, is designed for continuous operation up to 302°F (150°C). These sensors are typically used where extra temperature protection is needed, such as the dryer section of a paper machine.

If an installation is greater than 302°F, a special type of accelerometer system is necessary. The 376/CC701HT system consists of three parts: sensing accelerometer (376), charge converter (CC701HT) and connecting cable. Using this arrangement, the temperature-sensitive amplifier (charge converter) is removed from the sensor and placed within a separate component outside the intense heat. One end of the charge converter will be connected to the sensor via the supplied cable and the other will be available to connect to analysis or acquisition equipment. As with all "charge mode" sensors, care must be taken to secure the connecting cable when taking data. Movement of this cable may induce false signals (triboelectric effect).

## Wilcoxon High Temperature Accelerometers:

Model	Style	Sensitivity	Low Freq	High Freq	Accel Range	High Temp Limit
376	compression	25 pC/g	1.0 Hz	12,000 Hz	500 g peak	260° C
376/CC701HT	system	100 mV/g	1.0 Hz	15,000 Hz	50 g peak	260° C
793-6	compression	100 mV/g	1.0 Hz	12,000 Hz	50 g peak	150° C
797-6	shear	100 mV/g	1.0 Hz	11,000 Hz	50 g peak	150° C

Note: Frequency @ ±3dB.

## Model 376 High Temperature Accelerometer



### FEATURES:

- Industrial ruggedness
- Charge output
- Ground isolated
- 260°C operation

### DYNAMIC

Sensitivity, 25°C, nominal .....	25 pC/g
Acceleration Range .....	not applicable
Amplitude Nonlinearity, to 250 g .....	1%
Frequency Response:	
±5% .....	3 - 6,000 Hz
±10% .....	2 - 8,000 Hz
±3 dB .....	1 - 12,000 Hz
Resonance Frequency .....	30 kHz
Transverse Sensitivity, max. ....	7% of axial
Temperature Response .....	-50°C   +10%
	+260°C   +20%

### ELECTRICAL

Capacitance .....	500 pF
Resistance, min. ....	1,000 MΩ
Grounding .....	case isolated

### ENVIRONMENTAL

Temperature Range .....	-50 to 260°C
Vibration Limit .....	500 g peak
Shock Limit .....	5,000 g peak
Sealing .....	Welded
Base Strain Sensitivity .....	0.002 g/μstrain
Humidity Limit .....	100% relative

### PHYSICAL

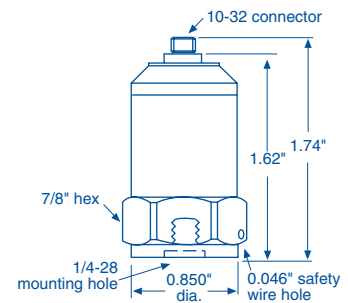
Sensing Element Design .....	PZT ceramic / compression
Weight .....	75 grams
Case Material .....	stainless steel
Mounting .....	1/4 - 28 tapped hole
Output Connector .....	10-32 coaxial
Mating Connector .....	R1
Recommended Cabling .....	J3

#### CONNECTOR PIN

SHELL  
PIN

#### FUNCTION

crystal, positive  
crystal, negative



### ACCESSORIES SUPPLIED:

SF6 mounting stud (International customers specify mounting requirements); Calibration data (level 3).



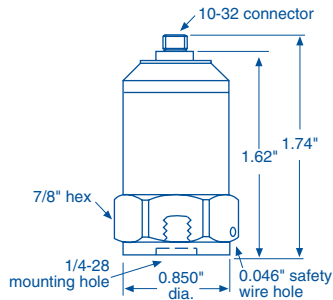


## Model 376 / CC701HT

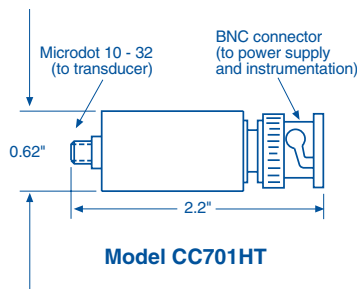
### Accelerometer / Charge Amplifier System

#### FEATURES:

- Industrial ruggedness
- Charge output
- Ground isolated
- 260°C operation



Model 376



Model CC701HT

#### DYNAMIC

Sensitivity, 25°C .....	100 mV/g, ±10%
Acceleration Range .....	50 g
Amplitude Linearity, to 50 g .....	1%
Frequency Response:	
±10% .....	2 - 10,000 Hz
±3 dB .....	1 - 15,000 Hz
Resonance Frequency .....	30 kHz
Transverse Sensitivity .....	7% of axial
Temperature Response .....	-50°C    -10%
	+260°C   +20%

#### ELECTRICAL

Power Requirement:	voltage source .....	18 - 30 VDC
	current regulating diode .....	2 - 10 mA
Electrical Noise, equiv. g:		
Broadband .....		0.001 g peak
Output Impedance .....		<100Ω
Bias Output Voltage .....		12 VDC
Grounding .....		case isolated

#### ENVIRONMENTAL

Temperature Range:		
376 .....		-50 to 260°C
CC701HT .....		-40 to 100°C
Vibration Limit .....		500 g peak
Shock Limit .....		5000 g peak
Base Strain .....		0.002 g/μstrain

#### PHYSICAL

Sensing Element Design .....	PZT ceramic / compression
Weight:	
376 .....	75 grams
CC701HT .....	40 grams
Case Material .....	316L stainless steel
Mounting .....	1/4-28 tapped hole
Mating Connector .....	BNC jack
Standard Cabling <sup>1</sup> .....	R1-1-J3-12

CONNECTOR PIN	FUNCTION
SHELL	common
PIN	power / signal

NOTES: <sup>1</sup> Other cable lengths are available.  
 ACCESSORIES SUPPLIED: SF6 mounting stud; Calibration data (level 3).



## FireFET® Model 793-6

High Temperature, Internally Amplified Accelerometer



### FEATURES:

- High temperature operation
- Rugged design
- Corrosion resistant
- Hermetically sealed
- Ground isolated
- ESD protection
- Miswiring protection
- 150°C operation

### DYNAMIC

Sensitivity, ±10%, 25°C .....	100 mV/g
Acceleration Range .....	50 g peak
Amplitude Nonlinearity .....	1%
Frequency Response:	
±5% .....	4 - 5,000 Hz
±10% .....	3 - 7,000 Hz
±3dB .....	1 - 12,000 Hz
Resonance Frequency .....	20 kHz
Transverse Sensitivity, max .....	5% of axial
Temperature Response .....	-50°C     -5%
	+0°C     +2%
	+150°C   -5%

### ELECTRICAL

Power Requirement:	voltage source .....	18 - 30 VDC
	current regulating diode .....	2 - 4 mA
Electrical Noise, equiv. g, (µg/√Hz):		
Broadband	2.5 Hz to 25 kHz .....	0.3 mg
		25°C   150°C
Spectral at	10 Hz .....	10    30
	100 Hz .....	3    10
	1,000 Hz .....	2    6
Output Impedance, max. ....		100 Ω
Bias Output Voltage:		
at 25°C .....		12 VDC
at 150°C .....		11 VDC
Grounding .....		case isolated, internally shielded

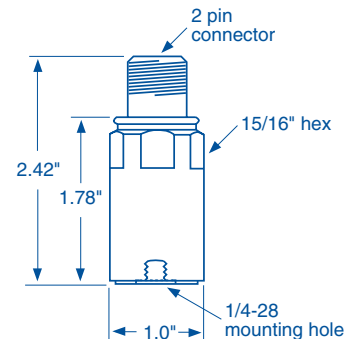
### ENVIRONMENTAL

Temperature Range (mounting surface) .....	-50 to 150°C
Vibration Limit .....	500 g peak
Shock Limit .....	2,500 g peak
Electromagnetic Sensitivity, equiv. g .....	15 µg/gauss
Sealing .....	Hermetic
Base Strain Sensitivity .....	0.0005 g/µstrain

### PHYSICAL

Sensing Element Design .....	PZT ceramic / compression
Weight .....	135 grams
Case Material .....	316L stainless steel
Mounting .....	1/4 - 28 tapped hole
Output Connector .....	2 pin, MIL-C-5015 style
Mating Connector .....	R6 type
Recommended cabling .....	J9T2A

CONNECTOR PIN	FUNCTION
SHELL	ground
A	power/ signal
B	common



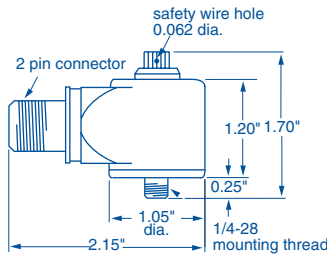
**ACCESSORIES SUPPLIED:** SF6 mounting stud (International customers specify mounting requirements); Calibration data (level 3).





**FEATURES:**

- Rugged design
- Corrosion resistant
- Hermetic seal
- Ground isolated
- ESD protection
- Miswiring protection
- Mounts in any orientation
- 150°C operation



## FireFET® Model 797-6

### High Temperature, Center Mount Accelerometer

**DYNAMIC**

Sensitivity, ±10%, 25°C .....	100 mV/g
Acceleration Range .....	50 g peak
Amplitude Nonlinearity .....	1%
Frequency Response:	
±5% .....	4 - 5,000 Hz
±10% .....	3 - 7,000 Hz
±3 dB .....	1.0 - 11,000 Hz
Resonance Frequency .....	20 kHz
Transverse Sensitivity, max .....	5% of axial
Temperature Response .....	-50°C      -5%
	+0°C      +2%
	+150°C   -5%

**ELECTRICAL**

Power Requirement:	voltage source .....	18 - 30 VDC
	current regulating diode .....	2 - 4 mA
Electrical Noise, equiv. g, (µg/√Hz):		
Broadband	2.5 Hz to 25 kHz .....	0.3 mg
		25°C    150°C
Spectral at	10 Hz .....	10    30
	100 Hz .....	3    10
	1,000 Hz .....	2    6
Output Impedance, max. ....		100 Ω
Bias Output Voltage:		
at 25°C .....		12 VDC
at 150°C .....		11 VDC
Grounding .....		case isolated, internally shielded

**ENVIRONMENTAL**

Temperature Range .....	-50 to 150°C
Vibration Limit .....	500 g peak
Shock Limit .....	2,500 g peak
Electromagnetic Sensitivity, equiv. g .....	5 µg/gauss
Sealing .....	Hermetic
Base Strain Sensitivity .....	0.001 g/µstrain

**PHYSICAL**

Sensing Element Design .....	PZT ceramic / shear
Weight .....	145 grams
Case Material .....	316L stainless steel
Mounting .....	1/4-28 captive socket head screw
Output Connector .....	2 pin, MIL-C-5015 style
Mating Connector .....	R6 type
Recommended Cabling .....	J9T2A

CONNECTOR PIN	FUNCTION
SHELL	ground
A	power/ signal
B	common

**ACCESSORIES SUPPLIED:** 1/4-28 captive screw (International customers specify mounting requirements); Calibration data (level 3).



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