

7FCS Double Inverted Magnetron Quick-Start Cleanable Cold Cathode Passive Sensor

Part Number: 2-2146-053



Operating Specifications	
Operating Range	1*10 ⁻¹¹ to 1*10 ⁻² Torr
for MX200, MC300	1*10 ⁻¹¹ to 1*10 ⁻² Pa
	1*10 ⁻¹¹ to 1*10 ⁻² mbar
Analog Output	Controller dependent
Supply Voltage	Controller dependent
Mounting Orientation	Any
Calibration Medium	Dry air or nitrogen
Overpressure	150 PSI
Analog Output Resolution	Controller-dependent
Operating Temperature	0° to +50° C
Storage Temperature	-20° to +70° C
Bakeout Temperature	200° C
Response Time	≤10 ms
Starting (Dormant) Time	≤5 s (see description)
Accuracy	1*10 ⁻⁹ to 1*10 ⁻² Torr ±0.2 decade

Ordering Information	
7FCS Sensor CF40 (DN40 CF-F)	2-2146-053

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Related Products	
Description	Part Number
MX200 Vacuum Controller RS-232/RS-485/USB	2-7900-034
MX200 Vacuum Controller EthernetIP/USB	2-7900-037
MC300 Vacuum Controller	2-4502-X0X
(Legacy) MM200 Vacuum Controller	2-7900-20



MX200 EthernetIP/USB



MC300

Visit our website at www.televac.com for a full list of compatible instruments.

Materials Exposed to Vacuum
Stainless Steel
Ceramic
Copper
Tungsten
Glass
Aluminum

- Applications and Industries**
- Research and development
 - Particle accelerators and national labs
 - Thin film deposition

Description

The 7FCS Cold Cathode Passive Sensor has a measurement range from 1*10⁻¹¹ to 1*10⁻² Torr. It indirectly measures absolute pressure by ionizing gas in the presence of a magnetic field. Unlike hot filament sensors, the 7FCS is resistant to inrushes of gas. The design of this sensor allows for easy disassembly enabling quick cleaning and extended use.

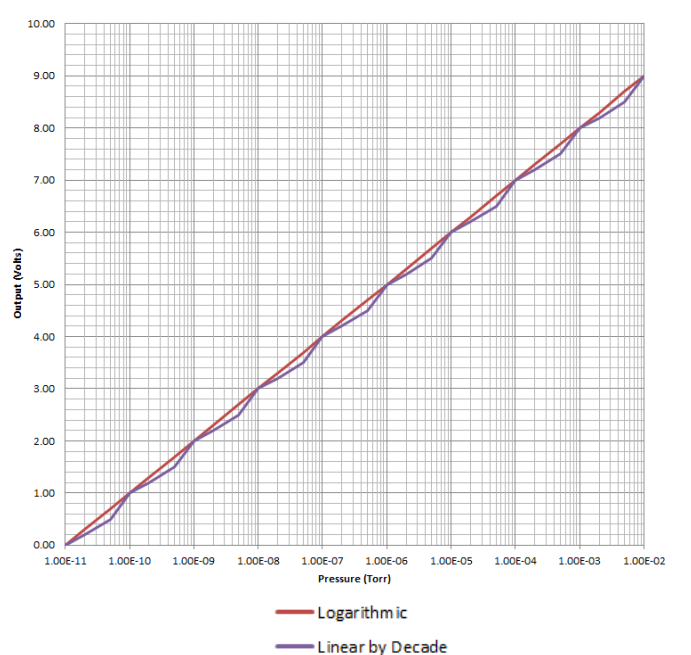
In addition, the 7FCS sensor is specially designed for turn on at ultra high vacuum (UHV). If your application requires ignition in the 10⁻⁸ Torr range or higher, turn on will occur in less than five seconds. The 7FCS utilizes Double Inverted Magnetron sensor technology combined with a thermionic emitter, which turns on automatically with the cold cathode for five seconds.

The 7FCS can be operated by the Televac® MX200 or MC300 rack mountable controllers. These controllers automatically operate the cold cathode to provide a full range vacuum measurement solution when the 7FCS is used in conjunction with rough vacuum sensors like the 2A or 4A.

Benefits

- Quick ignition at ultra-high vacuum (UHV)
- Minimal stray magnetic field
- Easily cleaned for extended sensor lifetime
- Supported by various controllers
- Excellent customer service and support
- Rapid turn-around for calibration and service

Analog Output Behavior (MX200)



Ratings and Compliance

- RoHS compliant



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Additional Documentation

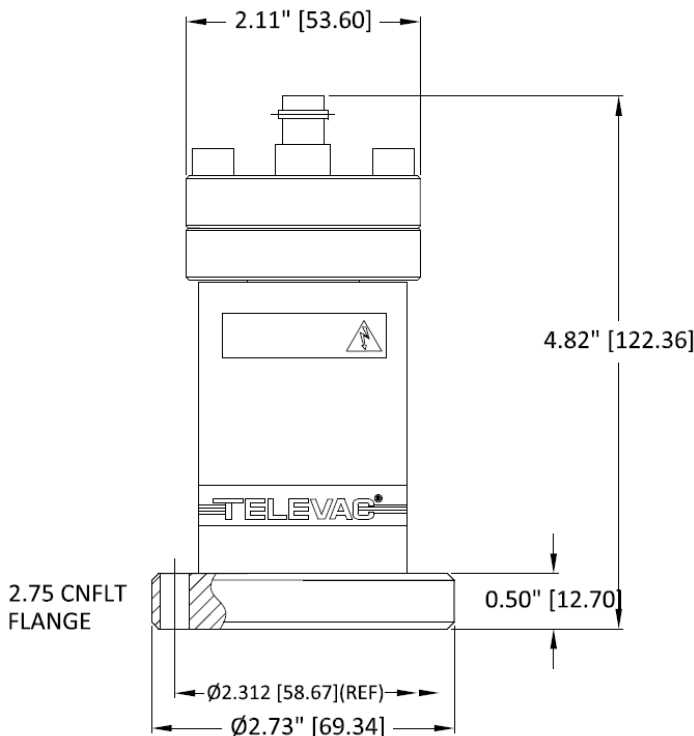
- [Televac® Tolerances](#)
- [AN 3004 - Cleaning the 7FC and 7FCS Cold Cathode Vacuum Sensors](#)
- [AN 3010 - Torr Scientific/Torr Decimal/mTorr/Micron Conversions](#)
- [AN 3015 - Televac® Recommended Practices for Vacuum Calibration](#)
- [AN 3020 - Vacuum Terminology Reference](#)

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Physical Characteristics

Electrical Connections	SHV5
Weight	944 g (2.08 lbs) (CF40)
Dimensions	See dimensional drawings

Dimensional Drawings



Company Information

Specialty manufacturing services that promise precision - For more than 85 years, Televac® has specialized exclusively in tilt and vacuum measurement products. Today, our precise manufacturing processes produce the most accurate and advanced products on the market, ensuring perfection every time. A true specialty service provider, we are willing and eager to put our experience and capabilities to good use, helping OEMs and end users achieve even the most complex designs.

High performance products designed and manufactured in the USA - Televac® is a global provider and U.S. manufacturer and designer of high-performance vacuum measurement products. Built to last, our products are made with state-of-the-art sensing technology, proven processes, and an intrinsic passion for the trade. Offering simple integration and quality and safety benchmarks, our customers benefit not just from standard-setting reliability, but from our commitment to competitive pricing and performance.

A partnership that prioritizes uptime, lead time, and service - Televac® guarantees customer satisfaction and our 'not too big, not too small' operation is what enables us to offer a true partnership experience. Our dedicated representatives and engineers offer exceptionally responsive service and some of the fastest lead times in the industry, knowing that uptime is the key to your success. With any-time-access to our leadership team and solutions that enhance your products, you will feel the Fredericks difference.

Vacuum measurement tools built for the toughest jobs - Televac®'s world-class vacuum sensors, gauges, and control instrumentation are engineered for the most demanding applications and environments. Our Televac® and ETI vacuum brands feature cold-cathode technology, thermocouple and convection gauges, and precision-manufactured hot ionization gauges. Dedicated solely to vacuum gauging and calibration services, we provide industrial heating, national laboratories, cryogenics, and industrial gas applications, among many others, with fast lead times and industry-leading performance. Covering the entire practical vacuum range, our products deliver rapid response vacuum readings and superior sensitivity.

[Read more about us!](#)

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