GAS DENSITY MONITORS
HYBRID GAS DENSITY MONITOR

ELECTRONSYSTEM MD
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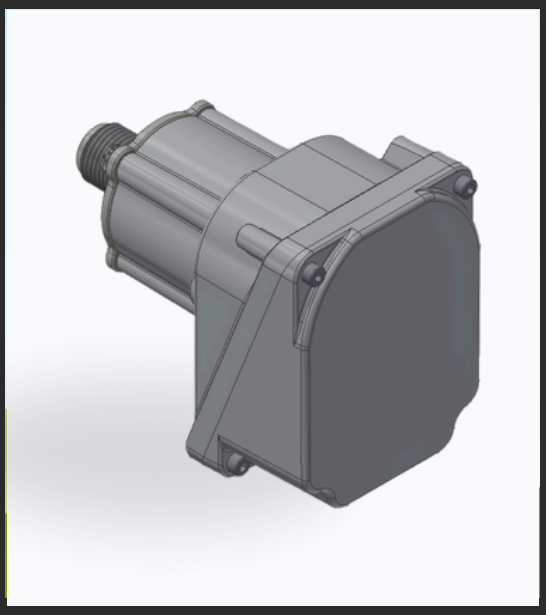


GDC AND GDHC PRODUCT LINE

For over 30 years, ELECTRONSYSTEM MD has reliably met the needs of switchgear manufacturers by providing high-quality Gas Density Controllers, all while staying within budget constraints. The innovative bellows design of the reference chamber, along with its high resolution and easy configurability for diverse applications, has facilitated the production of over 800,000 units and fostered long-term customer relationships.

We continuously invest in research and development to advance technological innovations, ensuring that our products remain at the industry's cutting edge.

With an emphasis on safety, reliability and customer satisfaction, **ELECTRONSYSTEM MD** goes beyond being a supplier; we are a partner in progress, empowering our clients to confidently reach their operational objectives.

Applications

- **HIGH VOLTAGE CIRCUIT BREAKERS**
- **CIRCUIT SWITCHERS**
- **GIS SUBSTATIONS**
- **GAS INSULATED HV**
- **BUSHING GIL SECTIONS**

MAIN FEATURES

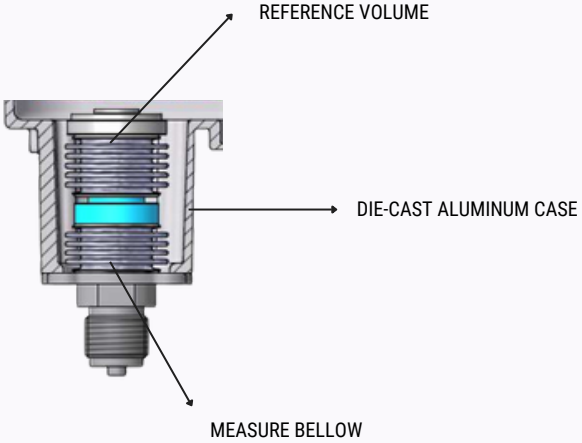
CONTACTS
These are fast-action microswitches, moving independently from the actuators of the GDC.

WIRING PLAN
At the customer's request, contacts can be normally open (NO), normally closed (NC), or switch-over.

TEMPERATURE COMPENSATION
The system includes temperature compensation features. It behaves as an ideal gas according to the equation PV = nRT. At extremely low temperatures and high-density levels, the gas may approach the dew point. It is possible to create mixture systems with partial condensation at these low temperatures, similar to the condensation of gas in the tank being monitored.

AMBIENT PRESSURE SENSIBILITY
The working principle and correct dimensioning of the bellows guarantee insensitivity to ambient pressure. The sensor can work both at sea level and at an altitude of 4000 meters, without any influence from weather conditions.

ADVANCED MULTIPLE-BELLOWS SYSTEM



Our innovative multiple-bellows system is carefully engineered to withstand sudden pressure fluctuations without compromising performance. This ensures reliable and consistent operation, even in dynamic environments. The design facilitates precise and repeatable control at predetermined density thresholds, providing exceptional stability and accuracy for demanding applications.

All components of the containment system in contact with the monitored fluid are constructed from stainless steel to ensure compatibility with highly reactive chemicals.

PRIMARY SENSOR

- METAL BELLOWS SIMILAR TO BELLOWS USED IN BOTTLES FOR VACUUM INSULATED CIRCUIT BREAKERS.
- THE MULTIPLE-BELLOWS SYSTEM ALLOWS WIDE MOVEMENT WITHOUT GOING BEYOND THE ELASTIC LIMIT.
- THE MULTIPLE-BELLOWS SYSTEM ENSURES INSENSITIVITY TO OVERPRESSURE TRANSIENTS AND GUARANTEES THE REPEATABILITY OF THE PRE-SET DENSITY THRESHOLD.

MECHANICAL HIGHLIGHTS AND ADVANTAGES

KEY POINTS:

- **Dual AISI316L stainless steel bellows** with a reference bellow in die-cast aluminum.
- **Auto self-diagnostic system** ensures reliability even with bellow leakage.
- Designed to **reduce solar radiation effects**; optional sun protection available.
- Precise volume compensation with advanced microswitches.
- Minimal temperature sensitivity and accurate SF6 liquid phase evaluation at low temperatures.
- **Shockproof** (up to 100g) with no bouncing contacts or need for silicone oil.
- Ceramic sensors with **<0.05% annual drift**, offering unmatched stability.
- Immediate and accurate gas density readings without delays from trapped air.
- **Fully compatible with SF6 mixtures, green gases, or dry air—no customization needed.**
- Digital communication ensures noise immunity and seamless operation.

ELECTRONIC HIGHLIGHTS AND ADVANTAGES

- The **ceramic primary element** provides exceptional stability with minimal drift, ensuring an accuracy of less than 0.05% per year. It offers a high level of immunity to noise, guaranteeing reliable performance. Widely used in the automotive industry for its robustness and dependability, the ceramic layer incorporates embedded pressure and temperature sensors.

- Independent calculations are carried out by a **microcontroller**, regardless of the gas type being measured. This allows for immediate and precise gas density readings, eliminating the need for extended waiting times, even when air is trapped in the sensor.

- **No modifications are necessary when measuring gases other than SF6**. The system is fully compatible with gas mixtures, green gases, or dry air, without requiring any special customization.

- The **electronic output** could be either 4-20 mA or digital Modbus RTU RS485.

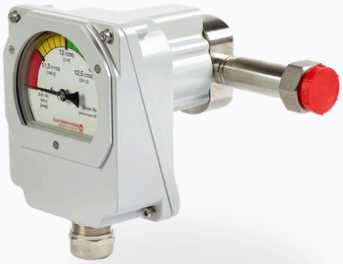
DIFFERENT VERSIONS AND OPTIONS AVAILABLE

GAS DENSITY CONTROLLER

GAS DENSITY HYBRID CONTROLLER (4-20mA or RS485)

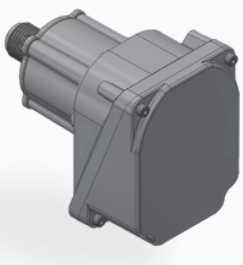
LARGE DIAL UP TO ∅ 82

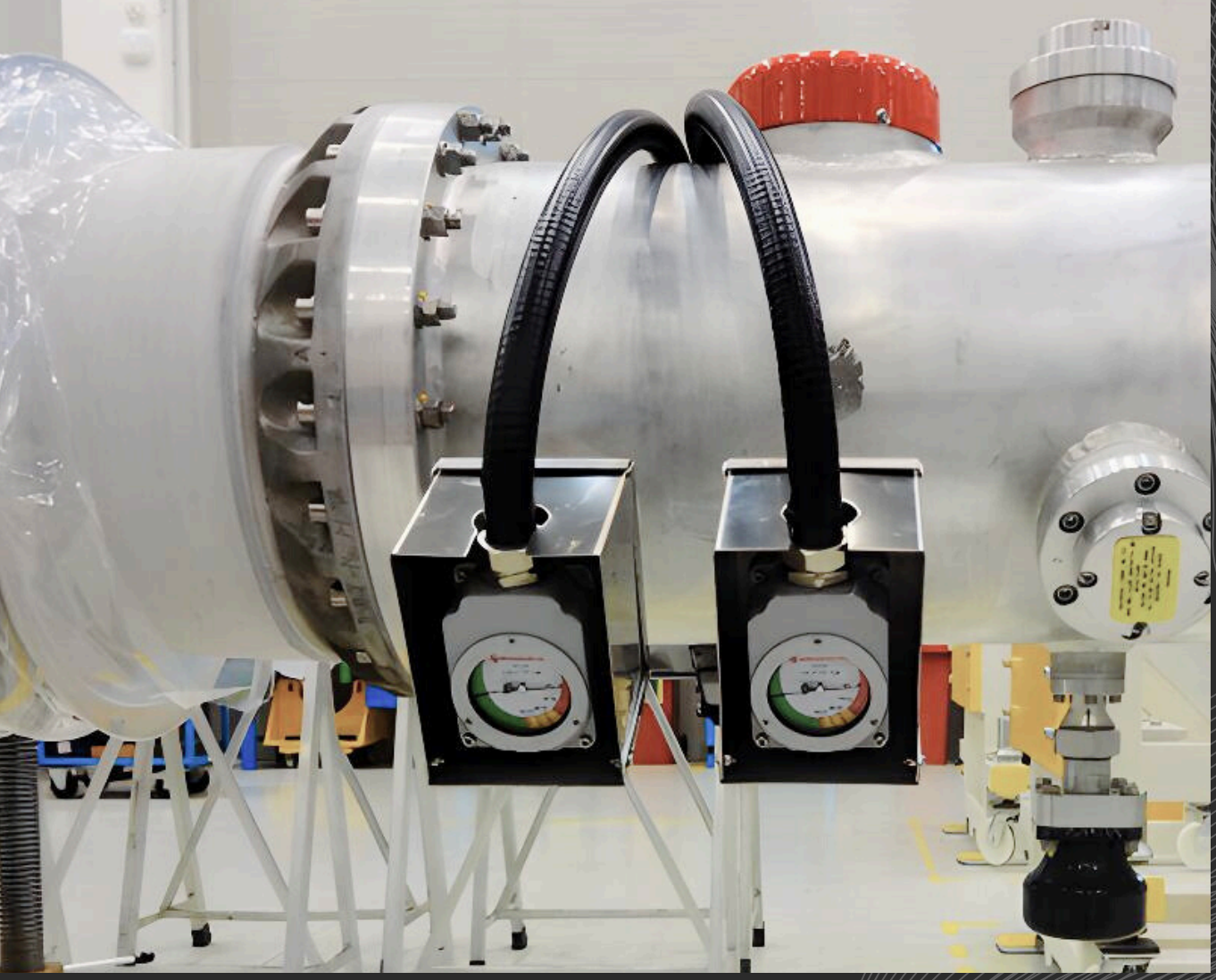
CUSTOMIZED AND ORIENTED GAS PORT



INTEGRATED OR STAND-ALONE TESTING VALVE

NO DIAL



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