

AKM 38750/38920/38960

SF6 gas density monitors



Accurate SF6 monitoring provides exceptional reliability

- Improved protection of your SF6 gas filled equipment with electronic alarm and limit control
- Rugged design and corrosion resistant materials provide long, trouble free life
- Made to customer specifications with a wide variety of options

Product Summary

Description Provides mechanical local indication for monitoring SF6 gas density. Automatically compensates for gas pressure changes due to ambient temperature. Offers alarm and limit control with up to three factory set switches.

Application For use on high voltage and medium voltage gas insulated circuit breakers (live and dead tank), switchgear bushings and transformers. For gas density monitoring applications that require local indication and optional switches for alarm and limit control.



QUALITROL®
Defining Reliability

AKM 38750/38920/38960 SF6 gas density monitors

Accurate SF6 monitoring provides exceptional reliability

- Indication accuracy of $\pm 2\%$ of max scale value for fill pressure within full ambient temperature range
- Switching accuracy of $\pm 3\%$ for dependable limit control and alarm triggering within full ambient temperature range
- Each gas density monitor is individually tested and factory certified prior to shipping

Improved protection of your SF6 gas filled equipment with electronic alarm and limit control

- Up to 3 optional, factory-set switches allow for alarm and lockout functions
- The snap-action, SPST or SPDT switches are UL and CSA approved

Rugged design and corrosion resistant materials provide long, trouble free life

- Weatherproof according to IP54 (equivalent to NEMA 3S rating)
- Features stainless steel housing, bezel and anti-vibration plate
- Cast aluminum wiring enclosure with powder coat finish for added durability
- UV stabilized polycarbonate lens resists yellowing with age

Made to customer specifications with a wide variety of options

- Gas density monitor comes with 0, 1, 2 or 3 switches which are factory set based on your requirements
- Features a large 4" (102 mm) dial with several pressure ranges available up to 1 MPa max
- Terminal box is standard but many connection options can be configured as needed
- Several pressure ranges offered as standard with custom ranges and styles available from factory

Practical advantages of using Density Monitors/Density Switches

As a method to try to reduce the initial cost of a substation, it is sometimes suggested to only install pressure switches instead of Gas Density Monitors. However, it must be remembered that the insulating capacity of SF6 gas is not dependent on the pressure, but on the actual amount of gas - the density. Thus, the pressure switches will have important disadvantages. First, to avoid false alarms due to falling pressure when the temperature falls below 20°C, the contact will have to close at a very low pressure. That means that a gas leakage will not be detected before the gas compartment is virtually empty of SF6 gas, and will have to be taken out of operation immediately. Secondly, if temperatures exceed 20°C the pressure increase from the temperature will further counteract recording of any leakage and the pressure switch will not be activated until an even lower amount of SF6 is left in the gas compartment.

Furthermore, the use of Density Monitors reduces the need for regular routine checks of the readings by the instruments. Since Density Monitors are not affected by the pressure differences caused by temperature variations, there is no need for manual supervision other than when an alarm is given for low level of SF6 gas.

If the density monitors are equipped with transmitters for remote indication, it is fully possible to supervise the gas density in each gas compartment remotely. This can be accomplished through separate digital or analog indicators, or it may be done by connecting the transmitter signal to a PC or SCADA system for storing and analyzing data.

QUALITROL® Field Services

To further improve reliability, QUALITROL provides comprehensive education and on-site commissioning services, maintenance contracts and technical support to all customers worldwide. Emergency response is available on all products and services.

About QUALITROL®

QUALITROL Company LLC manufactures substation and transformer monitoring and protection devices used by electric utilities and manufacturing companies. It is the global leader in sales and installations of transformer asset protection equipment, fault recorders and fault locators. Established in 1945, QUALITROL Company produces thousands of different types of products on demand, each customized to customers' unique requirements.



TECHNICAL SPECIFICATIONS

Mechanical	Mounting	Vibration shock mounts are standard
	Tank connection	M30 x 2 mm with O-ring seal is standard, multiple other thread sizes available as option
	Cable connection	Terminal box with PG16 or M20 cable glands is standard – consult factory for additional options
	Pressure range	Vacuum to 145 psi (-0.1 to 1 Mpa) maximum
	Indication accuracy	±2% of max scale value for fill pressure within full temperature range
	Switching accuracy	±3% of max scale value for fill pressure within full temperature range
Dimensions	Gauge diameter	4.25" (108 mm)
	Dial face diameter	4" (101.6 mm)
Materials	Case	Stainless steel
	Bezel	Stainless steel
	Electronic enclosure	Cast aluminum with thermosetting powder coat finish
	Lens	UV stabilized polycarbonate
	Anti-vibration plate	Stainless steel
Environmental	Std. operating temperatures	-40°F to +158°F (-40°C to +70°C)
	Enclosure Class	Vented, meets IP54
	Vibration	50/60 Hz at 0.004" displacement and 10g shock
	Ambient humidity	5% to 95% non-condensing
Electrical	Number of switches	0, 1, 2 or 3
	Switch type	Snap action – SPST or SPDT (Underwriters Laboratories Inc. listed and CSA approved)
	Switch rating	3 Amps @ 250 VAC, resistive
		5 Amps @ 125 VAC, resistive
		½ Amps @ 125 VDC, resistive
		¼ Amps @ 250 VDC, resistive
Surge withstand capability	2500V common mode and transverse mode on all terminals per ANSI/IEEE C37.90	
Dielectric strength	2000 VAC between switch contacts and ground for 60 seconds without breakdown	



Don't see what you need?

QUALITROL regularly creates models with special customer requirements. Contact your local sales representative or QUALITROL Application Engineer to review your special requirements.

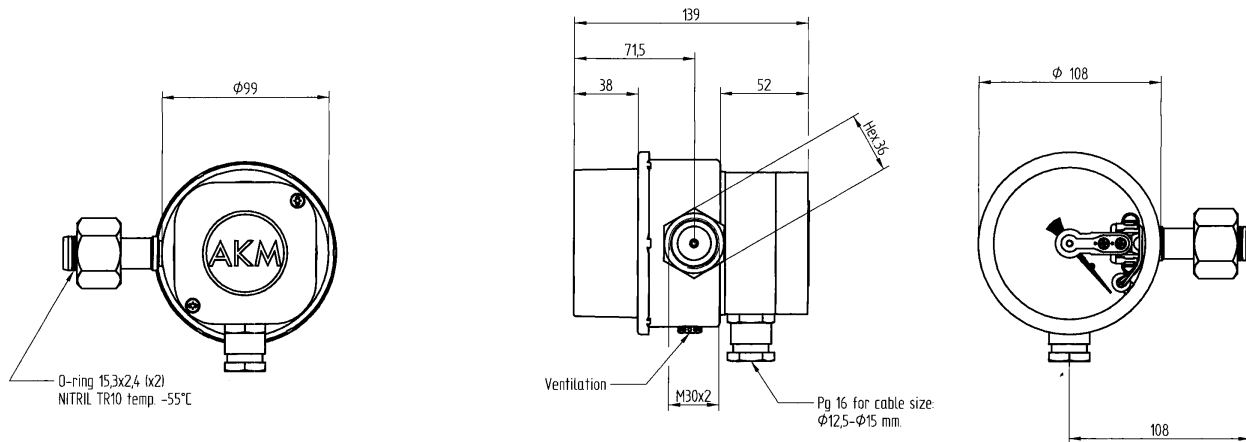
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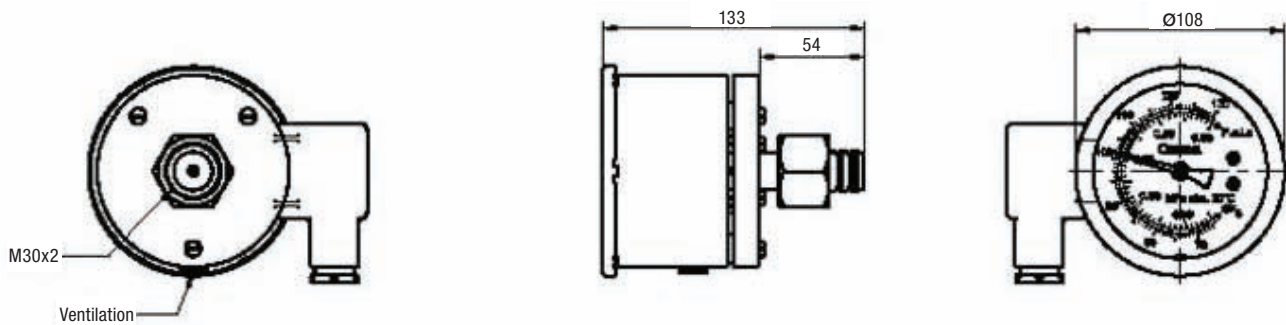


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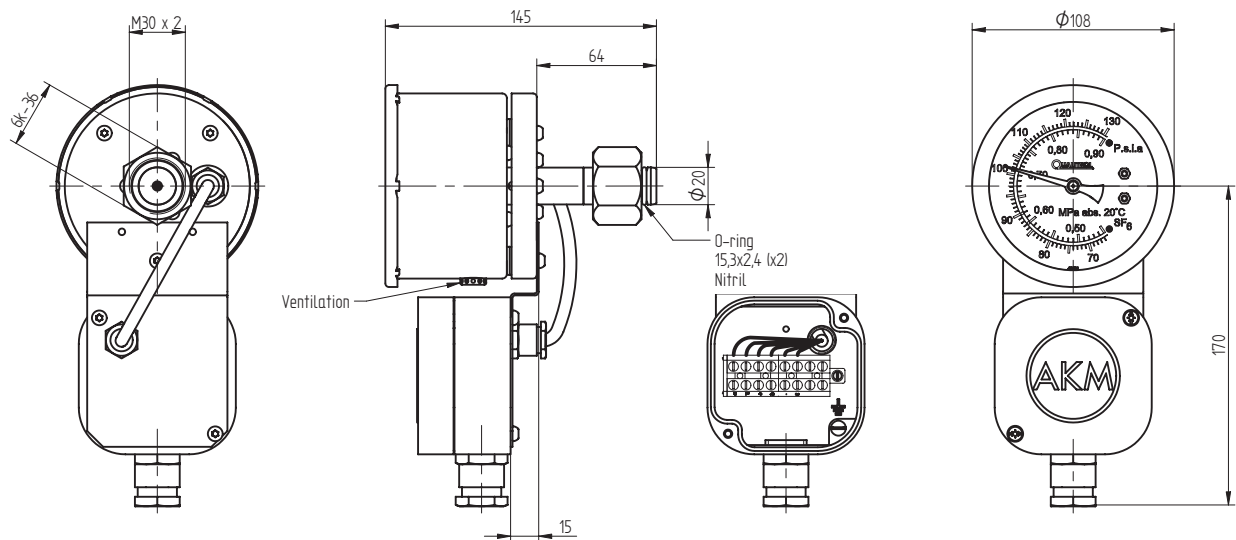
Drawing of 38750



Drawing of 38920



Drawing of 38960



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