

AQUAMETA CR420-0.5VFA

Hydrostatic Diesel Level Sensor



The CR420-0.5VFA pressure transducer is a cost effective and robust solution designed for continuous Diesel (Fuel Oil) level measurement where a 4-20mA output is required. It may be used with other liquids that are compatible with its wetting materials which are Acetyl, Viton, FEP and Aluminum Oxide. Different choice of seals is available for other applications. The CR420-0.5VFA is suitable for pressure application of 0.5 bar (5.1m H₂O). A 1 bar option is available. The sensor includes temperature and barometric pressure compensation.

Transducer Construction

This state of the art pressure sensor uses a flush Aluminum Oxide Ceramic diaphragm in conjunction with on-board signal conditioning to measure pressures. Pressure and temperature calibration is done electronically with the internal application-specific integrated circuit (ASIC). When pressures and temperatures change, the electronics provide an offset and span correction. It also includes aging detection and compensation. This new method guarantees good precision and long term stability.

The sensor is encapsulated in a Acetyl body that is filled with an epoxy.

The sensor cable is molded into the transducer eliminating problems associated with threaded

plugs. This design ensures a very high level of reliability.

Features

- 4-20mA output
- 9 to 30V
- Temperature compensated
- Barometric pressure compensation via vented cable
- High linearity and low hysteresis values
- EMI Certified
- Excellent resistance to corrosion and abrasion
- Automated offset and span correction
- Age compensation

Output Signals

The CR420 transducer uses a two wire 4-20mA output signal. The signal is linear with pressure. The sensor will operate with a supply voltage that can range from 9V to 30V DC. The Aquameta Junction Box may be used to extend the transducer cable with any other cable. The vented junction box has a Gortex covered opening that allows venting to atmosphere to take place whilst restricting the ingress of moisture.

Applications

Level measurement in above and underground tanks.

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Technical Data CR420-0.5 and 1.0 VFA

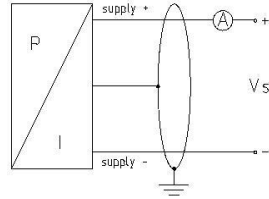
Input pressure range			
Nominal pressure gauge	[bar]	0.5	1
Level	[mH ₂ O]	5	10
Overpressure	[bar]	1	2
Burst pressure ≤	[bar]	2	4

Output signal / Supply	
Standard	2-wire: 4... 20 mA/Vs = 9 ... 30V _{dc}
Performance	
Accuracy	≤ ± 0.5% FSO
Permissible load	R _{max} = [(V _s - 9)/0.02A]Ω
Influence effects	supply: 0.05 % FSO/10V load: 0.05 % FSO /kΩ
Long term stability [%FS/year]	≤ ± 0.3 @ 25 [°C]
Response time	≤ 5ms
Thermal Effects(Offset and Span)	
Thermal error	≤ 0.007mA/10 [°C]
Permissible temperatures	
Permissible temperatures	medium: -25/+65[°C] storage: -40/+135[°C]
Electrical protection	
Short-circuit protection	Permanent
Reverse polarity protection	No damage – no function
Norms compliance	Radiated electromagnetic field IEC/EN 61000-4-3(2006) Electrical fast transition burst IEC/EN 61000-4-4(2004) RF conducted disturbances IEC/EN 61000-4-6(2006)
RoHS compliance	RoHS
Electrical connection	
Cable with sheath material	FEP (0 ... 65°C) black
Standard cable length	2m - Custom cable lengths available
Materials(media wetted)	
Housing	Acetyl Black
Seals	Viton
Diaphragm	Ceramic AL ₂ O ₃ 96%
Miscellaneous	
Current consumption	Max. 20.4mA
Weight	± 135g (without cable)
Ingress protection	IP 68
Country of origin	Australia
Warranty	1 Year

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Wiring diagram 2-wire-system (current)



Pin configuration

Supply +	Red
Supply -	Black
Shield	Ground wire bare

