

Data sheet

Danfoss Gas Sensor (DGS)



Environmental requirements increasingly demand improved protection and responsibility of End Users applying refrigerants in their systems/plants. This has been supported by Governments with new laws and local regulations to ensure correct handling and responsibility.

Danfoss introduce our new commercial range of Gas Leak Detector (Type DGS).

Utilising either Semi-Conductor (SC) or Infrared (IR) technologies, DGS gives quick and immediate response in detecting a wide range of different gases typically applied in Refrigeration & Air Conditioning systems.

Introduction

DGS sensors can be used in stand-alone or integrated systems, where continuous real-time, automatic monitoring with Danfoss ADAP-KOOL® Refrigeration Control & Monitoring System and/or Building Management Systems is applied.

DGS supports our Customers in complying to environmental F-Gas Regulations and/or Health & Safety requirements, on new or existing systems in:

- Supermarkets
- Process refrigeration plants
- Refrigerated storage and warehousing
- Special applications areas/zones

Typical Refrigerant gas applications include:

- Halocarbons: HFC's, HCFC's, CFCs.
- Carbon Dioxide (CO₂/R744)
- Hydrocarbons (e.g. R290, R600a)
- Other special application gases to customer request

Technical Data

Power Supply	12/24v AC/DC $\pm 20\%$
Power Consumption	EC: 60mA / SC:153mA / IR: 136mA
Power Monitoring	Green LED indication
Visual Alarm	RED LED indication
Audible Alarm	Sounder, enabled/disabled
Fault Monitoring	Red LED ON ~ Green LED OFF
Fault State	0 - 0.5v (1-5v), 0 - 1v(2-10v), 0 - 2mA (4-20mA)
Analogue Outputs	0-5v, 1-5v, 0-10v, 2-10v, 4-20mA
Digital Outputs	1-Relay 1-Amp / 24v D.C. / 120v A.C. Selectable Delay: 0, 1min., 5min., 10min.
IP Enclosure rating	IP 41 or IP 66 (see selection chart)
Standard Compliance	WEEE RoHS EuP

Sensor Information	Semi-Conductor with filter (multigas) SC Halocarbons	Semi-Conductor (multigas) SC Hydrocarbons	Infrared IR CO2
Typical Measurement Range	0 - 1,000 ppm	0 - 1,000 ppm	0 - 10,000 ppm 0 - 20,000 ppm 0 - 50,000 ppm
Relay Factory Default Setting	50% of Range	50% of Range	50% of Range
Temperature Range IP41	-20°C to +50°C (-4°F to 122°F)	-20°C to +50°C (-4°F to 122°F)	-20°C to +50°C (-4°F to 122°F)
IP 66	-40°C to +50°C (-40°F to +122°F)	-40°C to +50°C (-40°F to +122°F)	-40°C to +50°C (-40°F to +122°F)
Humidity Range non-condensing	0 to 95%	0 to 95%	0 to 95%
Typical Sensor Life	5-years	5-years	5-years
Alarm Threshold T50	76 sec (filtered)	50 sec (filtered)	50 sec
T90	215 sec (filtered)	90 sec (filtered)	120 sec
Recovery Time	600 sec.	200 sec	235 sec
Linearity	Linear over calibrated range		
Calibration Requirements	- Standards generally require annual test and calibration - See Danfoss Manual for Instructions - Note: Semi-Conductor sensors are non-selective, but calibrated to a specific gas.		

Ordering

Danfoss DGS - IP41 Enclosure Versions				Danfoss DGS - IP66 Enclosure Versions			
Refrigerant	Product Description	Code no.		Refrigerant	Product Description	Code no.	
R404A, R507	DGS-SC Gas Detector (IP41) Std. default R404A/R507 (min. -20C)	080Z2098		R404A, R507	DGS-SC Gas Detector (IP66) Std. default R404A/R507 (min. -40C)	080Z2099	
R134a	DGS-SC Gas Detector (IP41) std. default R134a (min. -20C)	080Z2092		R134a	DGS-SC Gas Detector (IP66) std. default R134a (min. -40C)	080Z2089	
R407A	DGS-SC Gas Detector (IP41) std. default R407A (min. -20C)	080Z2093		R407A	DGS-SC Gas Detector (IP66) std. default R407A (min. -40C)	080Z2094	
R410	DGS-SC Gas Detector (IP41) std. default R410 (min. -20C)	Contact Danfoss		R410	DGS-SC Gas Detector (IP66) std. default R410 (min. -40C)	Contact Danfoss	
R22	DGS-SC Gas Detector (IP41) std. default R22 (min. -20C)	080Z2090		R22	DGS-SC Gas Detector (IP66) std. default R22 (min. -40C)	080Z2091	
CO ₂ (R744)	DGS-IR-CO2 Gas Detector (IP41) for CO2 std. (min.-20C)	080Z2095		CO ₂ (R744)	DGS-IR-CO2 Gas Detector (IP66) for CO2 (min.-40C)	080Z2096	

Note: DGS is also available for alternative refrigerant gases on request. Please contact your local Danfoss Sales Office for details