

Data Sheet

Gas detection unit

Accessory

Warning module

Reliable and efficient gas detection for industrial refrigeration



The gas detection warning module is used for increasing safety of a centrally controlled gas detection system by managing the warning/ alarm devices and continuous monitoring the circuiting to the warning/alarm devices. Potential wire breaks or wire interruptions in the alarm device loop will be detected immediately and reported to the central control.

Communication with the controller takes place via the RS 485 fieldbus interface.

Warning modules can be installed close to the Controller (Controller Solution) or alternatively in the field.

Features:

- Testing of the warning/alarm device circuiting with intervals < 1 minute
- Flexible connection to local gas detection units by either Analog or RS485 fieldbus communications
- Located in Controller Solution or in the field
- Easy configuration via intuitive user-interface; helps simplify operator handling and minimize risk of operational setting errors
- Simple commissioning by standard parameter configuration
- Conformity to Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU, EN 50271 / IEC 615078, EN 61010-1, ANSI / UL 61010 1, CAN / CSA-C22.2 No. 61010-1

Portfolio overview

Figure 1: Gas detection Warning module



Table 1: Portfolio overview

Description	Values
Temperature range	-10 °C – 50 °C (14 °F – 122 °F)
Humidity range	15 – 95 % RH non-condensing
Used for product	GD Controller unit
Packing format	Single pack

Functions

The warning module is used for monitoring the circuiting to the warning/alarm devices on a centrally controlled gas detection system.

Wire breaks or wire interruptions in the alarm device loop will be reported to the central control.

Media

Refrigerants

The Danfoss Gas Detection Solution provides a high degree of flexibility when designing and building your gas detection system.

The portfolio ranges from basic to heavy duty models complemented by a range of accessories. The gas detection units (GDU) can detect a wide range of refrigerant gases including Ammonia (R717), CO₂ (R744), fluorinated refrigerants (HCFC and HFCs), and Propane (R290). They come with various sensor technologies to match the specific refrigerant, application, and safety requirements of the refrigeration system including electrochemical (EC), semiconductor (SC), Pellistor (P), and infrared sensors.

To provide a strong plug and play solution, all gas detection units come factory preconfigured to match refrigerant and typical PPM setting requirements. Depending on national regulations PPM settings may be subject to change.

New refrigerants

Danfoss products are continually evaluated for use with new refrigerants depending on market requirements.

When a refrigerant is approved for use by Danfoss, it is added to the relevant portfolio, and the R number of the refrigerant (e.g. R513A) will be added to the technical data of the code number. Therefore, products for specific refrigerants are best checked at store.danfoss.com/en/, or by contacting your local Danfoss representative.

Product specification

Electrical

Table 2: Electrical

Power supply	16 – 29 V DC, reverse-polarity protected
Power consumption (24 V DC) only MSB2 board	100 mA (2.4 VA)

Digital input

Table 3: Digital input

Signal input	Potential-free contact
Function	Acknowledge or test function

Analog output

Table 4: Analog output

Analog output signal	Proportional, overload and short-circuit proof, load ≤ 500 Ohm 4 – 20 mA = measuring range 3.0 < 4 mA = underrange >20 – 21.2 mA = overrange 2.0 mA = fault
----------------------	--

Digital output

Table 5: Digital output

Alarm relays (2)	250 V AC, 5 A, potential-free, changeover contact (SPDT)
------------------	--

Serial interface

Table 6: Serial interface

Fieldbus	RS 485/19200 Baud
Tool bus	2-wire/19200 Baud

Physical

Protection class	IP65
Wire connection:	
Fieldbus	Screw-type terminal min. 0.25 mm ² , max. 2.5 mm ²
Digital input, analog output	Screw-type terminal min. 0.25 mm ² , max. 1.3 mm ²
Power supply, relays	Screw-type terminal min. 0.25 mm ² , max. 2.5 mm ²

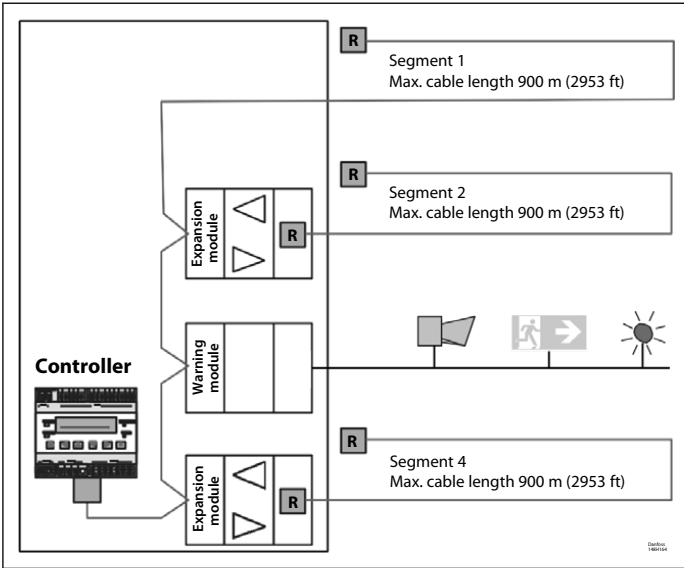
Environmental conditions

Table 7: Environmental conditions

Temperature range	-10 °C – 50 °C (14 °F – 122 °F)
Humidity range	15 – 95 % RH non-condensing
Storage temperature	-10 °C – 40 °C (14 °F – 104 °F)
Storage time	6 months

Installation/Connection

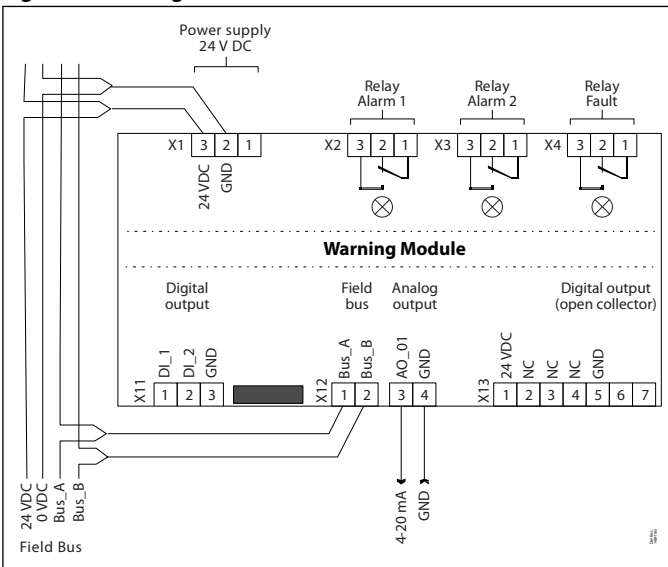
Figure 2: Warning module installation in controller solution



Expansion modules are installed close to the Controller (Controller Solution). See example above.

Wiring configuration

Figure 3: Warning module installation in controller solution



Ordering

Table 8: Ordering


Description	Code number
Warning module	148H6223

Certificates, declarations, and approvals

The list contains all certificates, declarations, and approvals for this product type. Individual code number may have some or all of these approvals, and certain local approvals may not appear on the list.

Some approvals may change over time. You can check the most current status at danfoss.com or contact your local Danfoss representative if you have any questions.

Table 9: Compliance

	Low Voltage Directive 2014/35/EU EMC Directive 2014/30/EU EN 50271/IEC 615078 EN 61010-1 ANSI/UL 61010 1 CAN/CSA-C22.2 No. 61010-1
---	---

Online support

Danfoss offers a wide range of support along with our products, including digital product information, software, mobile apps, and expert guidance. See the possibilities below.

The Danfoss Product Store



The Danfoss Product Store is your one-stop shop for everything product related—no matter where you are in the world or what area of the cooling industry you work in. Get quick access to essential information like product specs, code numbers, technical documentation, certifications, accessories, and more.

Start browsing at store.danfoss.com.

Find technical documentation



Find the technical documentation you need to get your project up and running. Get direct access to our official collection of data sheets, certificates and declarations, manuals and guides, 3D models and drawings, case stories, brochures, and much more.

Start searching now at www.danfoss.com/en/service-and-support/documentation.

Danfoss Learning



Danfoss Learning is a free online learning platform. It features courses and materials specifically designed to help engineers, installers, service technicians, and wholesalers better understand the products, applications, industry topics, and trends that will help you do your job better.

Create your Danfoss Learning account for free at www.danfoss.com/en/service-and-support/learning.

Get local information and support



Local Danfoss websites are the main sources for help and information about our company and products. Find product availability, get the latest regional news, or connect with a nearby expert—all in your own language.

Find your local Danfoss website here: www.danfoss.com/en/choose-region.

Spare Parts



Get access to the Danfoss spare parts and service kit catalog right from your smartphone. The app contains a wide range of components for air conditioning and refrigeration applications, such as valves, strainers, pressure switches, and sensors.

Download the Spare Parts app for free at www.danfoss.com/en/service-and-support/downloads.