

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 $\leq 500 \text{ Ohm}$ 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 |

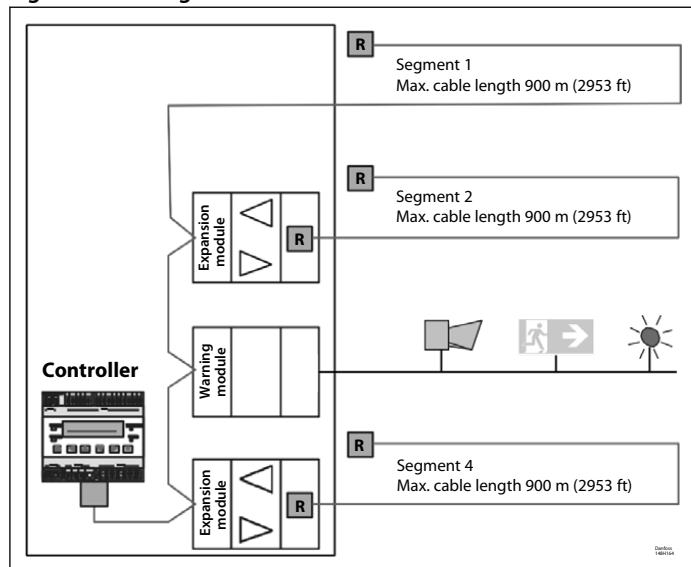
Environmental conditions

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

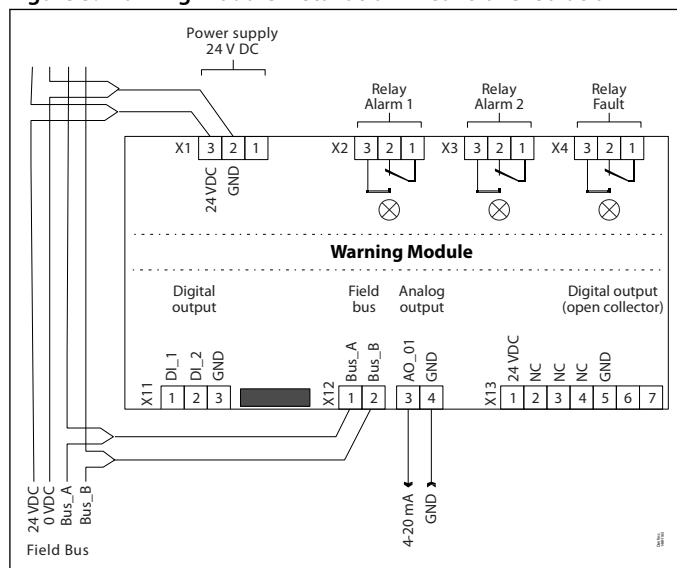
Figure 2: Warning module installation in controller solution



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 |
|---|---|

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