



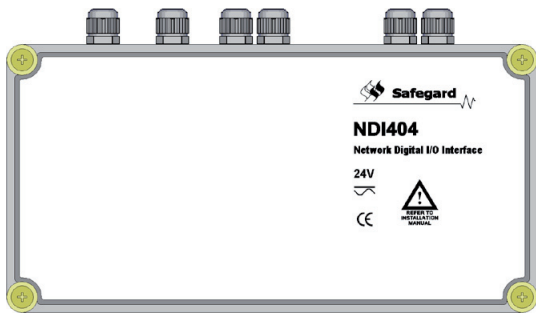
# Safeguard Systems

THE DAMPER SPECIALIST COMPANY



ALWAYS READ THIS DOCUMENT BEFORE INSTALLATION. PLEASE RETAIN FOR FUTURE REFERENCE.

This product forms part of a life safety system. Failure to correctly store, handle, install and maintain the product will directly put at risk the lives of the occupants and the fabric of the building.

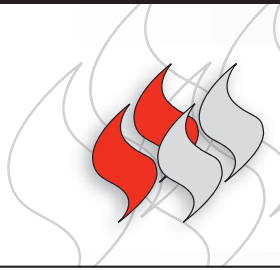


The Safeguard NDI404 module is a LonWorks® device that provides four digital inputs and four relay outputs.

This module is normally used to interface to local AHUs etc.

## Installation Instructions and Datasheet

# Network Digital Input Output Interface (24V)



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## Dimensions and Mounting

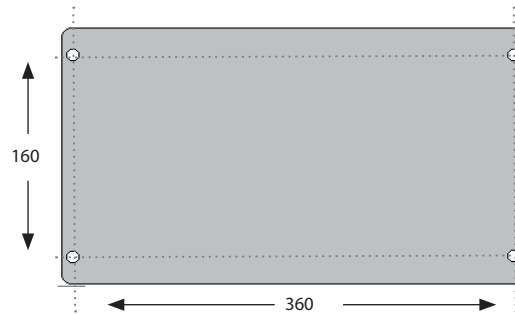
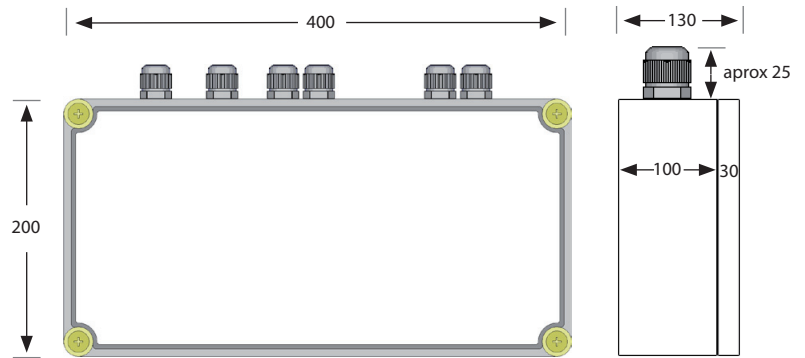
The compact and robust design of the NDI404 enclosure allows the unit to be mounted to a duct, block wall or stud wall.

Ensure the NDI404 is accessible for future maintenance purposes.

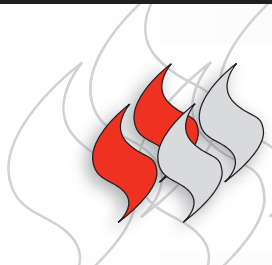
**Please note:**

- Unused cable entries should be sealed with blind washers.
- Do not drill the enclosure as this will affect its IP rating.

## Mounting Diagram



Four mounting holes Ø 6mm for mounting with suitable screws depending on whether mounting to a duct, block wall or stud wall.  
Dimensions in mm.



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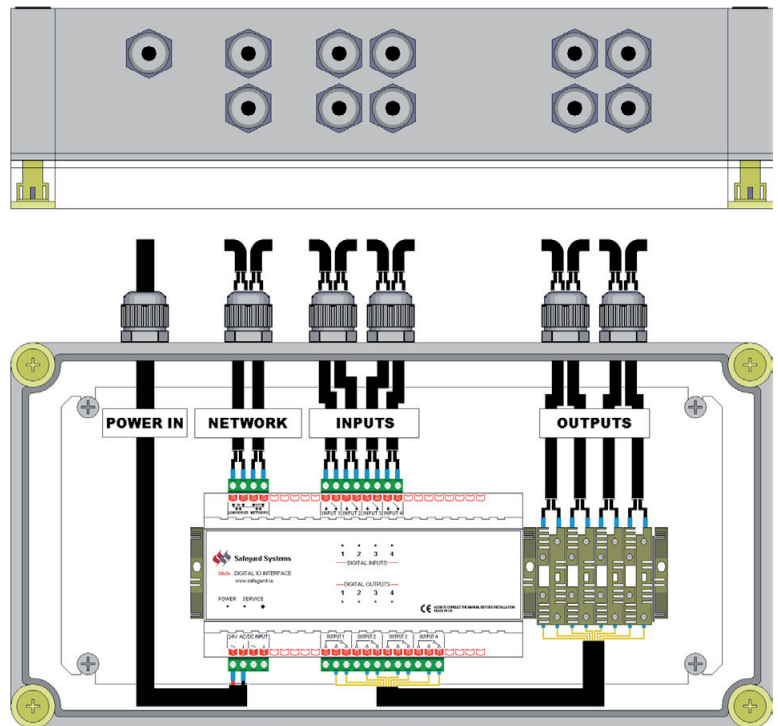
## Preparation

- Only trained and qualified personnel should be allowed to install, replace or service this equipment. Installation should be in accordance with the relevant local safety standards.
- The connectors can accommodate cable diameters up to 2.5mm<sup>2</sup>. It is recommended that all wires be crimped to ease installation and replacement of the product.

## Installation

1. Disconnect the local supply before commencing any work on the NDI404.
2. Wire the NDI404 in accordance with the wiring diagram shown across.
3. It is recommended that the network cables are not run alongside any high voltage or high frequency sources. Also, network cables must not be mixed on an individual network as they have very different electrical characteristics and could render the system unreliable.
4. Once wiring is complete, apply power to the NDI404. The green power LED should illuminate to indicate the presence of power.
5. The NDI404 is now ready to be configured using a standard LonWorks tool such as LonMaker or the Safeguard system.

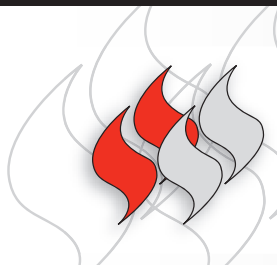
## Wiring Diagram (NDI404 in enclosure without lid fitted)



## LED Behaviour

Wink function: Service LED flashes for 5s.

Active inputs and outputs (failsafe) are indicated by their respective LEDs.



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## Inputs

- The volt free input connectors are numbered 35 - 42.
- Wire the first input as shown across and repeat for subsequent inputs.
- Please note that the input channels are not optically isolated and are independent of one another; therefore, use of a common ground between inputs should be avoided.
- The input cable diameter should be 1mm<sup>2</sup> or 1.5mm<sup>2</sup>
- Limit cable runs to 100m and avoid running input cables near sources of mains or noisy environments.

## Outputs

- The relay output terminals are numbered 401 - 408.
- Wire the first output as shown across and repeat for subsequent outputs.
- It is the user's responsibility to ensure the switched equipment is adequately protected.
- As a precautionary measure, a standard 1AT fuse is used to protect each output irrespective of it switching 24 V or mains. The value of this fuse may have to be modified in accordance with the user's requirements. The user is responsible for the replacement policies of any fuses whose value deviates from the standard 1 AT fuse supplied.
- The non-fused terminals 401, 403, 405 and 407 should be regarded as the output terminals to the switched equipment.
- The fused terminals 402, 404, 406 and 408 should be regarded as the input terminals from the switched equipment. The two terminal wires from each output should be tie wrapped together to prevent slippage.

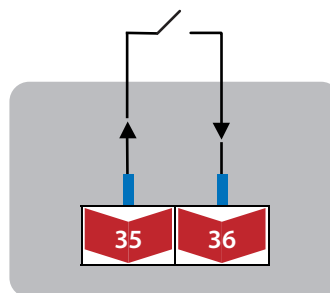
## Maintenance

Mains terminal fuse replacement: 250mAT 250 VAC

Output terminal fuse replacement: 1AT 250 VAC

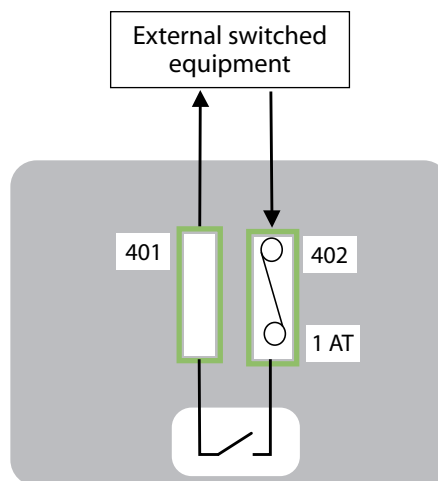
Suggested replacement: Bussman S504 series.

## Input Wiring



INPUT	CONNECTOR NUMBER
INPUT 1	35, 36
INPUT 2	37, 38
INPUT 3	39, 40
INPUT 4	41, 42

## Output Wiring



OUTPUT	FEED (FUSED) TERMINAL	RETURN TERMINAL
Output 1	402	401
Output 2	404	403
Output 3	406	405
Output 4	408	407



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## Specification

### LonWorks

Neuron chip	FT 3150 V13, 10 MHz
Transceiver type	TP/FT-10
Service functions	Service pin, service LED and neuron ID self-adhesive tag

### Supply

Input voltage	(24 ± 2.4) V AC, 50 Hz (24 ± 2.4) V DC
Maximum power consumption	10 W

### Inputs

Contact type	Non-isolated dry contacts
Sense current	15 mA at 12 V DC

### Outputs

Contact type	SPCO mechanical relay contacts
Maximum switched load	1 A at 230 V AC 1 A at 30 V DC

### Environmental

Operating temperature	-5 °C to 50 °C
Storage temperature	-20 °C to 50 °C
Humidity	80 % RH to 31 °C decreasing linearly to 50 % RH at 40 °C
Maximum altitude	2000 m

### Conformance

EMC	EN 55011: 1999 + A2: 2002 EN 61000-6-1: 2001
LVD	EN 61010-1: 2001

### Enclosure

Material	Polycarbonate
IP rating	IP 54
Flammability	UL 746C 5V
Dimensions (excl glands)	400 mm x 200 mm x 130 mm (L x W x D)
Dimensions (incl glands)	400 mm x 225 mm x 130 mm (L x W x D)

CE Complies with European standards

**WARNING: The responsible body shall be made aware that, if the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.**

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