Regard 3900 Series
Configuration Software

Instructions for Use

WARNING

Strictly follow the Instructions for Use. The user must fully understand and strictly observe the instructions. Use the product only for the purposes specified in the Intended Use section of this document.

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Contents

1 For your safety

1.1 Definitions of alert icons

Alert icons are used in this document to provide and highlight text that requires a greater awareness by the user. A definition of the meaning of each icon is as follows:

WARNING
Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION
Indicates a potentially hazardous situation which, if not avoided, could result in physical injury or damage to the product or environment. It may also be used to alert against unsafe practices.

NOTICE
Indicates additional information on how to use the product.

2 Description

The Dräger Regard 3900 series Configuration Software is a Microsoft Windows® based software program that is used to configure and calibrate Regard 3900, 3910 and 3920 controllers. The software allows the user to view and change the configuration of the controller, including the combination of internal control modules and the settings for the gas detection and warning devices. The software also allows zero point and span calibration.

2.1 Intended use

The Configuration Software is intended to be used with Regard 3900 series controllers to view and change the configuration settings, and to calibrate the controller. The Software can not be used to calibrate other devices.

3 Installing the software

3.1 Equipment required

- Regard 3900 Configuration Software
- Interface unit (RS-232)
- PC with the following minimum specification:
  - RAM: 128 MB
  - Screen resolution: at least 1024 x 768 pixels
  - Operating system: Windows 2000, XP, Vista or 7
  - A 9-pin serial plug (male DE-9)
  - A mouse or other pointing device

3.2 Installation procedure

CAUTION
Any transportable electronic media could be infected with a computer virus that may damage the PC and/or product. Use anti-virus software to scan all installation packages, programs and files before downloading, running or installing the file.

NOTICE
If the PC already has a previous version installed, uninstall that version before commencing the installation. Use the uninstall option in the PC start menu to uninstall the previous version.

1. Close down all running applications.
2. Load the installation disk into the CD drive of the PC.
3. Open the installation disk and double-click the installation file (e.g. *Config 3900-v7.exe*).
4. Follow the on-screen instructions as each window opens.
   - A Windows compatibility message may appear during the installation. Select the option to continue the installation if this occurs.
5. Select **Finish** when the final window confirms that installation is complete.
6. A Regard 3900 shortcut icon is added to the PC desktop.
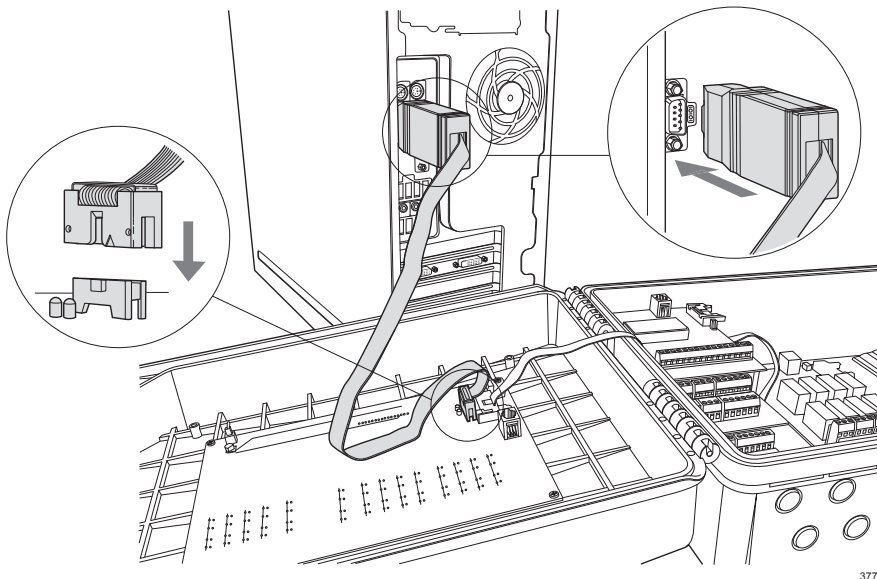

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4 Use

Refer to the Regard 3900 series Instructions for Use for a description of the configurable options and parameters.

Before configuring the controller, ensure that all input, relay and output modules are correctly numbered as described in the Regard 3900 series Instructions for Use.
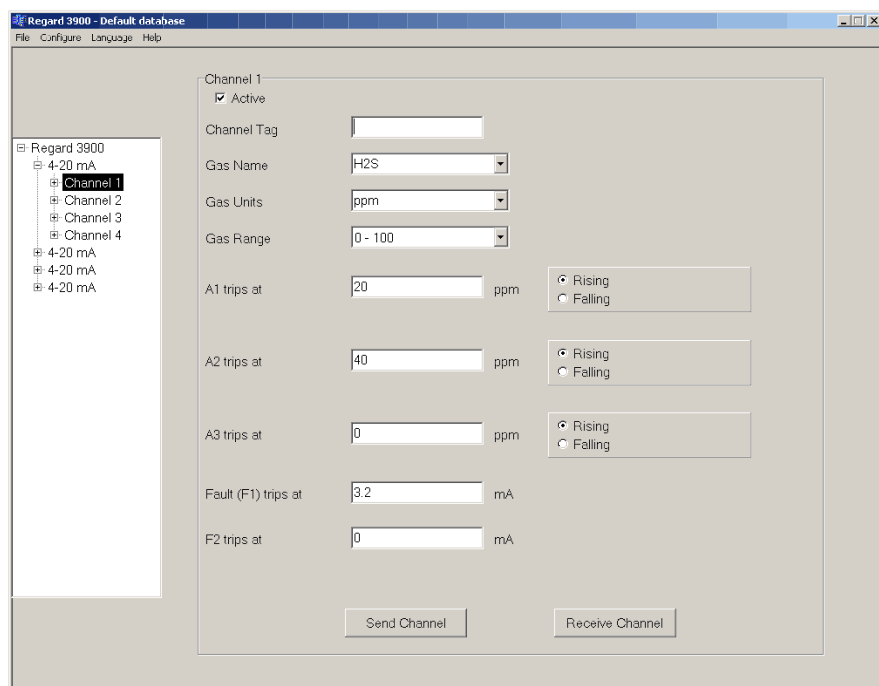
4.1 Connecting the controller and opening the software

1. Connect the interface unit (RS-232). Use SK4 on the display board and a male DE-9 serial plug on the PC.

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2. Double-click the Regard 3900 shortcut icon. The program opens with the default configuration (it does not auto-read from the connected Regard 3900 series controller).
   ○ The panel on the left of the window shows the menu structure for input (4–20 mA) and relay modules.
   ○ The panel on the right of the window shows module, channel or relay information (see Section 4.3 on Page 7).

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4.2 Toolbar menus

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4.2.1 File

Open – Opens a file browsing window. Use the window to select a Regard configuration file (*.gds).

Save / Save As – Opens a file browsing window. Use the window to select a destination and file name. The file is saved with the .gds file extension.

Print – Prints the configuration (even if cancel is selected).

Print Setup – Opens a setup window. Use the window to select printing options without printing.

Exit – Closes the program. Prompts to save if the are any changes.
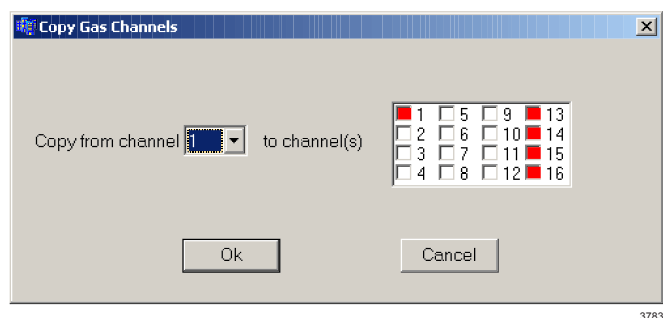
4.2.2 Configure

Send PC configuration to Regard 3900 – Sends the entire configuration from the PC to the connected Regard controller.

Receive configuration from Regard 3900 – Receives the entire configuration from the connected Regard controller to the PC.

Compare system configuration to program – Compares the PC configuration to the controller configuration. Differences toggle: blue-bold text indicates controller configuration; black-bold text indicates PC configuration.

New configuration – Opens a window that allows the combination of input (4–20 mA) and relay modules to be selected. Choose from the dropdown lists to select the required combination.

Copy gas channels – Opens a window that allows copying any configured channel to another channel or channels. Select the copy from channel using the dropdown list, and then tick the required to channel(s) in the panel on the right. Channels which cannot be copied-to are filled red.

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Add new board – Opens a window that allows additional input (4–20 mA) and relay modules to be added to the configuration. Greyed out modules cannot be added or altered in this window.

4.2.3 Language
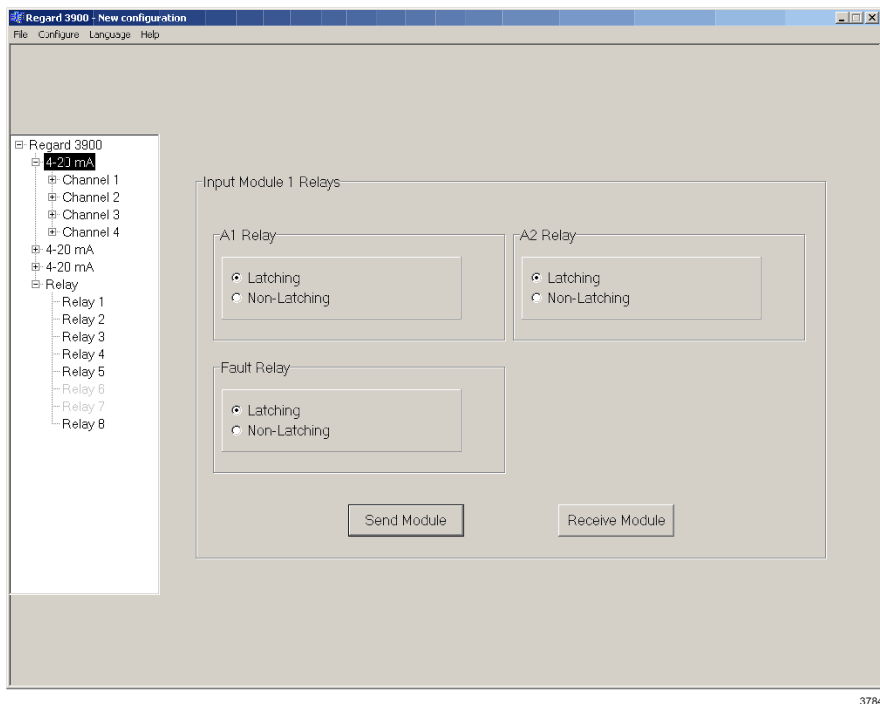
Selects the on-screen language.

4.2.4 Help

Modules – Shows the module and interface unit (RS-232) version information.

Program – Shows the Regard 3900 configuration software version.

4.3 Viewing and configuring control modules, channels and relays

4.3.1 Input module

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Use the input (4–20 mA) module window to view or configure the input module relays (latching or non-latching), and to send or receive the input module configuration.

If a Regard 3900 series controller is used for flammable gas detection to protect against risk of explosion, at least one gas alarm relay should be set latching. (See EN 60079-29-1:2007 Explosive atmospheres – Gas detectors – Performance requirements of detectors for flammable gases.)

Send module – Sends the entire input module configuration from the PC to the connected Regard controller.

Receive module – Receives the entire input module configuration from the connected Regard controller to the PC.

4.3.2 Input module channel

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Use the input (4–20 mA) module channel window to view or configure the channel, and to send or receive the channel configuration.

Active – Select or deselect the tick box to activate/deactivate the channel.

> ⚠️ **WARNING**
> Deactivating an input module channel (by clearing the Active tick box) after it has been allocated to an alarm could prevent the alarm from activating as required. Do not deactivate an input module channel after it has been allocated to a single or voting alarm.

Channel tag – Type in a unique channel identification name/number if required (maximum of sixteen characters).

Gas name – Choose from the dropdown list, or type in a custom gas name (maximum of six characters).

Gas Units – Choose from the dropdown list, or type in custom units (maximum of four characters).

Gas range – Choose from the dropdown list to select the measuring range (no custom ranges are allowed). When a measuring range is selected, the A1 and A2 trip levels are automatically set to 20 % and 40 % of the range.

A1 / A2 / A3 trips at – Enter an alarm trip level between 4 % and 100 % of the measuring range (setting A3 to zero switches off the A3 alarm).

The table below shows the resolution (step increment) and decimal places for alarm trip levels. When a value below 1.0 is entered, a zero must be placed before the decimal point or an error message will be received.

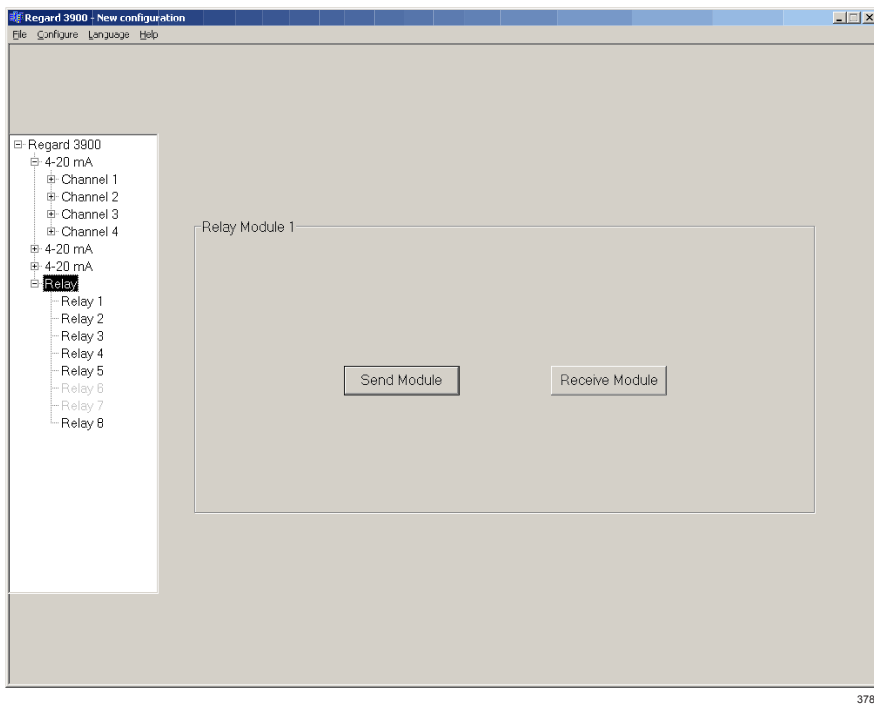| Range	Resolution	Decimal places
0–1 to 0–9	0.01	2
0–10 to 0–75	0.1	1
0–100 to 0–500	1	0
0–1000 to 0–2000	5	0
0–3000 to 0–5000	10	0
0–9999	25	0

Rising or Falling – Set each alarm to activate for rising or falling gas levels.

Fault (F1) / F2 trips at – Enter a fault alarm trip level between 1 mA and 3.8 mA (setting F2 to zero switches off the F2 alarm).

Send channel – Sends the channel configuration from the PC to the connected Regard controller.

Receive channel – Receives the channel configuration from the connected Regard controller to the PC.

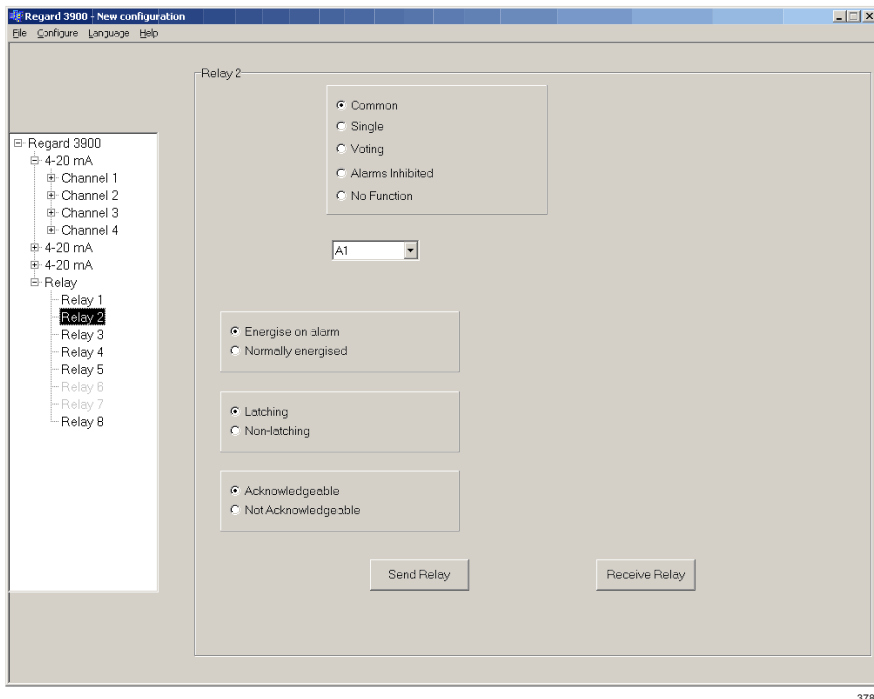### 4.3.3 Relay module

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Use the relay module window to send or receive the relay module configuration.

Send module – Sends the entire relay module configuration from the PC to the connected Regard controller.

Receive module – Receives the entire relay module configuration from the connected Regard controller to the PC.

4.3.4 Relay module relay

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Use the relay module relay window to view or configure the relay module relays, and to send or receive the relay configuration.

Relay 1 and Relay 9 are preset system-fault relays, which cannot be configured. For each other relay select the function from the list. No further configuration is required when **Alarms inhibited** or **No function** is selected. Additional configuration options for **Common**, **Single** or **Voting** relays are described on Pages 10 and 11.

Send relay – Sends the relay configuration from the PC to the connected Regard controller.

Receive relay – Receives the relay configuration from the connected Regard controller to the PC.

Common

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- ● Choose from the dropdown list to select the alarm or fault required.
- ● Also select:
  - ○ Energize on alarm or normally energized.
  - ○ Latching or non-latching.
  - ○ Acknowledgeable or non-acknowledgeable.

Single

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- ● Choose from the dropdown list to select the alarm or fault required.
- ● Select the channel from the channel list. Unavailable channels are greyed out, and an on-screen message warns the user against selecting inactive channels.
- ● Also select:
  - ○ Energize on alarm or normally energized.
  - ○ Latching or non-latching.
  - ○ Acknowledgeable or non-acknowledgeable.

Voting

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- Choose from the dropdown lists to select:
  - The alarm or fault required.
  - The number of channels required to satisfy the vote.
  - The total number of channels in the voting group.
- Select the channels from the channel list. Unavailable channels are greyed out, and an on-screen message warns the user against selecting inactive channels.

ℹ **NOTICE**

If an input or relay module has been renumbered, incorrect channels may be available. If this occurs, select **Common** and then reselect **Voting** to activate and grey out the correct channels.
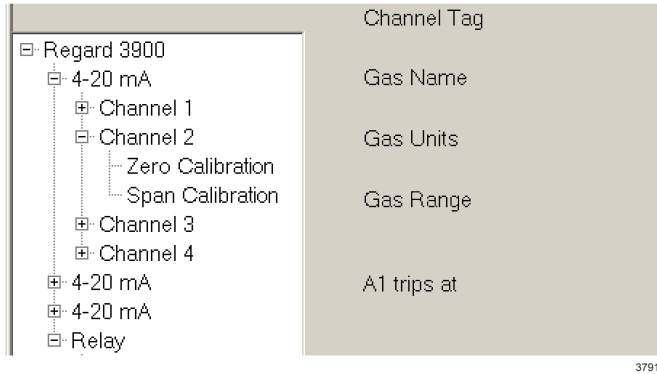
Create a common alarm for a group of N channels by configuring the relay as voting 1 out of N, and specifying the relevant channels in the voting group.

- Also select:
  - Energize on alarm or normally energized.
  - Latching or non-latching.
  - Acknowledgeable or non-acknowledgeable.

4.4   Calibrating the controller

Calibrate the controller for all channels during initial installation and then when required during maintenance or repair of the controller or gas detection system.

● Refer also to the remote sensor transmitter operating manual for transmitter calibration instructions.
● Clicking **Send channel** is not required after calibrating zero or span.
● The figure right shows the zero and span calibration menus for Channel 2.

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4.4.1   Zero calibration

Before calibrating the channel, it is mandatory to calibrate the transmitter to ensure that the transmitter output signal is 4 mA for a zero gas reading.
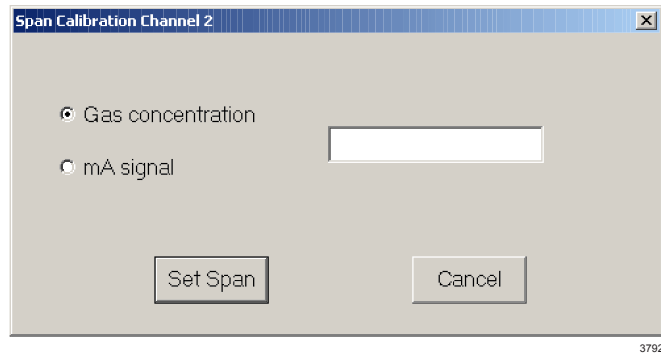
1. Click **Zero calibration** for the relevant channel.
2. Click **Set zero**.
3. A success or failure message will appear at the end of the calibration. If a failure message appears, refer to the troubleshooting information in the Regard 3900 series Instructions for Use.

4.4.2   Span calibration

Calibrate the span by either applying calibration gas to the remote sensor transmitter, or by controlling the transmitter output using the transmitter controls to simulate a gas signal.

Applying a calibration gas

1. Use a calibration adaptor to apply calibration gas to the transmitter. Use a concentration between 40% and 90% of the measuring range, at the flow rate in the transmitter operating manual.
2. Allow the controller display screen reading to settle for 2 to 3 minutes.
3. Click **Span calibration** for the relevant channel.
4. Select **Gas concentration** and then type in the concentration of the calibration gas using the selected gas units.
5. Click **Set span.**
6. A success or failure message will appear at the end of the calibration. If a failure message appears, refer to the troubleshooting information in the Regard 3900 series Instructions for Use.

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Controlling the transmitter output

1. Set the signal output of the transmitter between 10 mA and 20 mA.
2. Click **Span calibration** for the relevant channel.
3. Select **mA signal** and then type in the transmitter signal.
4. Click **Set span**.
5. A success or failure message will appear at the end of the calibration. If a failure message appears, refer to the troubleshooting information in the Regard 3900 series Instructions for Use.

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