

INSYS Smart Device Monitoring App

Combining Two Inputs

Introduction

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1 Introduction

General

The present publication refers to a combination of selected hardware and software components of INSYS icom GmbH as well as other manufacturers. All components have been combined with the target to realize certain results and effects for certain applications in the field of professional data transfer.

The exact descriptions of all used components, to which this publication refers, are described in the tables *Hardware*, *Accessories* and *Software* at the end of this publication.

The symbols and formatings used in this publication are explained in the correspondent section of the device manual.

Some configurations or preparations, which are precondition in this publication, are described in other publications. Therefore, always refer to the related device manuals. INSYS Smart Devices with web interface provide you with helpful information about the configuration possibilities, if you click on "display help text" in the header.

Target of this Publication

An exemplary configuration for a typical fault monitor application is presented here. If your application has similar requirements, you may modify the configuration on the basis of this Configuration Guide.

A machine is monitored by two redundant surveillance units. If one of the surveillance units reports an irregularity, an SMS is to be dispatched to an operator. If both surveillance units report irregularities, an alarm beacon is to be switched on in addition to the SMS to an operator.

The trip of a surveillance unit is signalled to the IMON by closing one of its inputs. The alarm beacon will be switched on by closing an output of the IMON.

The following describes how to configure the Monitoring App of an INSYS IMON fault monitor such that it fulfils above described task. It is prerequisite here that the fault monitor is ready for operation, i.e. a SIM card is inserted and it is configured accordingly.

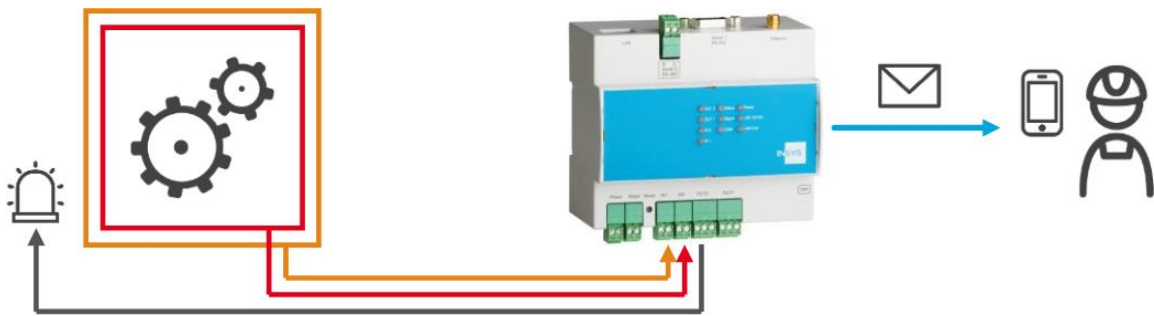


Figure 1: Combining two input – overview

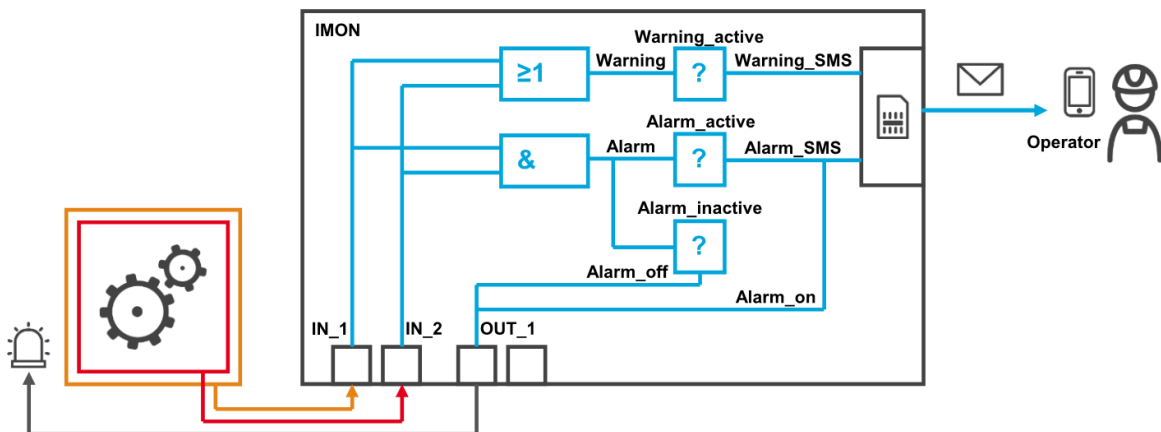


Figure 2: Combining two input – simplified diagram

2 Summary

Fault monitor configuration for the combination of two inputs

How to configure an INSYS fault monitor for the combination of two inputs for triggering a message dispatch or switching on an alarm beacon via an output. You will find detailed step by step instructions in the following section.

- Add device "IMON" with the type I/O
- Add element "IN_1" as input 1 of the IMON
- Add element "IN_2" as input 2 of the IMON
- Add element "OUT_1" as output 1 of the IMON
- Add element "Warning" as flag
- Add element "Alarm" as flag
- Add logic operation "IN_1 OR IN_2 = Warning"
- Add logic operation "IN_1 AND IN_2 = Alarm"
- Add recipient "Operator" with mobile phone number
- Add monitoring "Warning_active" (flag "Warning" = 1)
- Add monitoring "Alarm_active" (flag "Alarm" = 1)
- Add monitoring "Alarm_inactive" (flag "Alarm" = 0)
- Add action "Warning_SMS" as message to the "Operator"
- Add action "Alarm_SMS" as message to the "Operator"
- Add action "Alarm_on" as closing of output 1 of the IMON
- Add action "Alarm_off" as opening of output 1 of the IMON
- Add assignment "Warning_active" to "Warning_SMS"
- Add assignment "Alarm_active" to "Alarm_SMS"
- Add assignment "Alarm_active" to "Alarm_on"
- Add assignment "Alarm_inactive" to "Alarm_off"

3 Configuration

Provisions

It is recommended to commission the router as suggested in the Quick Installation Guide. Different settings of the router may result in necessary adjustments of the settings described in the following. Please prepare the following items before starting the configuration of the application:

- **Connection to the router**

- You have access to the Monitoring App of the router via your web browser.

- **Configurations in the router**

- The router is logged in to the cellular network (configuration via startup wizard or in "GSM / GPRS" or "UMTS" menu).

- The router can send SMS (the Service Center Number is specified in the "Messages" menu on the "Configuration" page).

Monitoring App Configuration

A functional Monitoring App requires to add the individual devices, elements, logic operations, recipients, monitorings and actions as well as the assignment of actions to monitorings.

Perform the following steps for this:

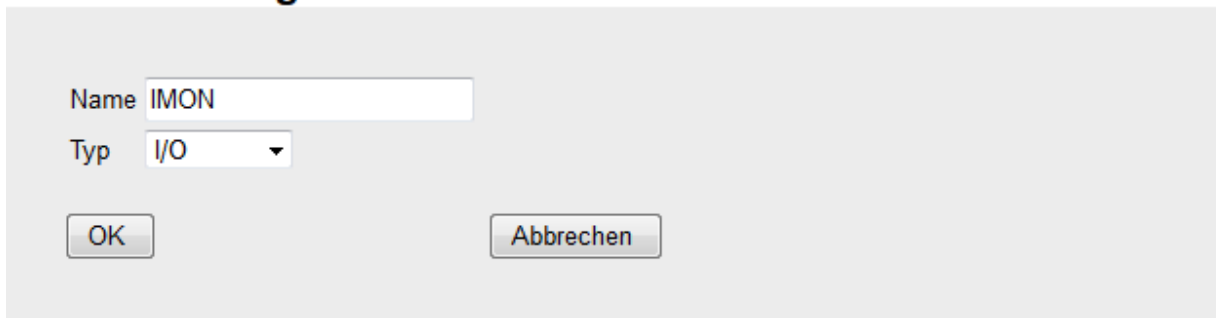
- Adding devices
- Adding elements
- Adding logic operations
- Adding recipients
- Adding monitorings
- Adding actions
- Adding assignments

■ Adding devices

How to add the necessary devices for the Monitoring App. It is necessary to add the inputs and outputs of the fault monitor as a device for this application.

1. Select in the menu the page → Setup application → Devices
2. Select the **Add device** button
 - ✓ The "Add device" page appears.
3. Enter "IMON" as name and select the type "I/O"

Gerät hinzufügen



The screenshot shows a dialog box titled "Gerät hinzufügen". It contains a text input field labeled "Name" with the value "IMON". Below it is a dropdown menu labeled "Typ" with the selected value "I/O". At the bottom of the dialog, there are two buttons: "OK" on the left and "Abbrechen" on the right.

4. Click on **OK**
 - ✓ You have added the devices that are necessary for the application with this.

Configuration

■ Adding elements

How to add the necessary elements for the Monitoring App. It is necessary to add the inputs 1 and 2 and the output 1 of the fault monitor as well as two flags as elements for this application.

1. Select in the menu the page → Setup application → Elements
2. Select the **Add Element** button
 - ✓ The "Add element" page appears.
3. Enter "IN_1" as name and select "IO", "IMON" and "Input" under Device
4. Enter "1" as number for input 1 of the fault monitor

Element hinzufügen



The screenshot shows a dialog box titled "Element hinzufügen". It contains the following fields and controls:

- Name: IN_1
- Gerät: IO (dropdown menu)
- IMON (dropdown menu)
- Eingang (dropdown menu)
- Nummer: 1
- Buttons: OK and Abbrechen

5. Click on **OK**
6. Select the **Add element** button again and add the elements "IN_2" (input 2), "OUT_1" (output 1), "Warning" (flag) and "Alarm" (flag) one after another
 - ✓ The elements appear in the respective list one after another.

Elemente

Element hinzufügen

aktiv			Name	Gerät / Quelle
<input checked="" type="checkbox"/>			IN_1 (IO)	Eingang 1
<input checked="" type="checkbox"/>			IN_2 (IO)	Eingang 2
<input checked="" type="checkbox"/>			OUT_1 (IO)	Ausgang 1
<input checked="" type="checkbox"/>			Warning (Merker)	
<input checked="" type="checkbox"/>			Alarm (Merker)	

- ✓ You have added the elements that are necessary for the application with this.

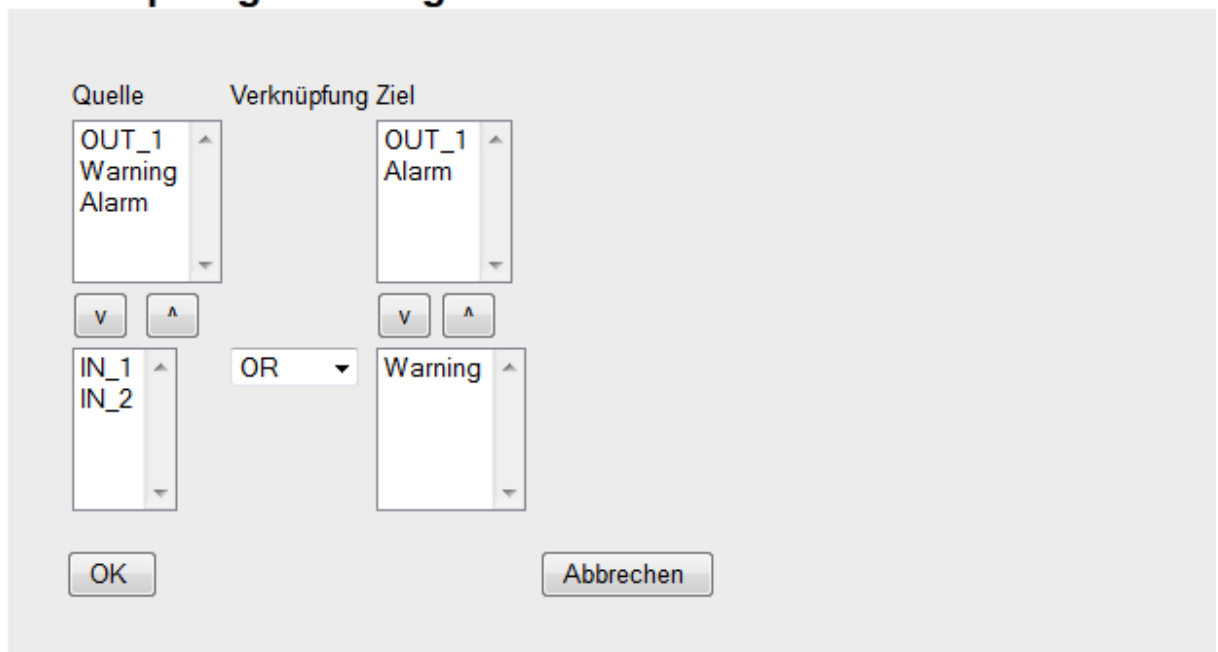
Configuration

■ Adding logic operations

How to add the necessary logic operations for the Monitoring App. It is necessary to add the inputs 1 and 2 firstly as OR operation and secondly as AND operation with output to the respective flag for this application.

1. Select in the menu the page → Setup application → Logic operations
2. Select the **Add logic operation** button
 - ✓ The "Add logic operation" page appears.
3. Highlight "IN_1" and "IN_2" under Source and select the arrow down button
4. Select "OR" under Operator
5. Highlight "Warning" under Target and select the arrow down button





Verknüpfung hinzufügen



6. Click on **OK**
7. Select the **Add logic operation** button again and add an AND operation of the elements "IN_1" and "IN_2" with output to the flag "Alarm"
 - ✓ The logic operations appear in the respective list one after another.

Verknüpfungen

Verknüpfung hinzufügen

aktiv			Quelle		Ziel
<input checked="" type="checkbox"/>			IN_2 IN_1	OR	Warning
<input checked="" type="checkbox"/>			IN_2 IN_1	AND	Alarm

- ✓ You have added the logic operations that are necessary for the application with this.

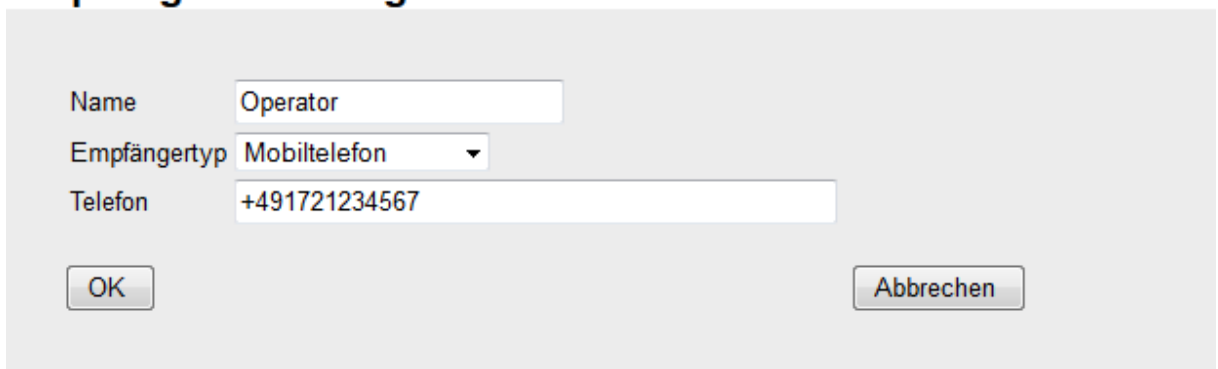
Configuration

■ Adding recipients

How to add the necessary recipients for the Monitoring App. It is necessary to add the mobile phone number of the operator to transmit the warning or alarm SMS for this application.

1. Select in the menu the page → Setup application → Recipients
2. Select the **Add recipient** button
 - ✓ The “Add recipient” page appears.
3. Enter “Operator” as name
4. Select the recipient type “Mobile phone”
5. Enter the mobile phone number

Empfänger hinzufügen



Name

Empfängertyp

Telefon

6. Click on **OK**
 - ✓ You have added the recipients that are necessary for the application with this.

■ Adding monitoring operations

How to add the monitoring operations for the Monitoring App. It is necessary to monitor the Warning and Alarm flags for this application.

1. Select in the menu the page → Monitoring
2. Select the **Add monitoring** button
 - ✓ The "Add monitoring" page appears.
3. Enter "Warning_active" as name and select "Element", "Warning" and "changes to 1" under Source

Überwachung hinzufügen

4. Click on **OK**
5. Select the **Add monitoring** button again and add the monitorings "Alarm_active" (Alarm changes to 1) and "Alarm_inactive" (Alarm changes to 0) one after another
 - ✓ The monitorings appear in the respective list one after another.

Überwachungen

Überwachung hinzufügen

aktiv		Name	Überwachung
<input checked="" type="checkbox"/>		Warning_active	Warning Wechselt auf 1
<input checked="" type="checkbox"/>		Alarm_active	Alarm Wechselt auf 1
<input checked="" type="checkbox"/>		Alarm_inactive	Alarm Wechselt auf 0

- ✓ You have added the monitoring operations that are necessary for the application with this.

Configuration

■ Adding actions

How to add the actions for the Monitoring App. It is necessary to send a warning and an alarm SMS as well as close and open output 1 for this application.

1. Select in the menu the page → Actions → Definitions
2. Select the **Add action** button
 - ✓ The "Add action" page appears.
3. Enter "Warning_SMS" as name and select "Message" under Target
4. Highlight "Operator" under Recipient and select the **>>** button
5. Enter the SMS text under Message

Aktion hinzufügen

The screenshot shows the 'Aktion hinzufügen' (Add Action) configuration interface. It features the following elements:

- Name:** A text input field containing 'Warning_SMS'.
- Ziel:** A dropdown menu set to 'Nachricht'.
- Empfänger (ausgewählt):** A recipient selection area with two columns: 'Absender' and 'Operator'. The 'Operator' column is selected, and a '>>' button is visible between the columns.
- Nachricht:** A large text area containing the message 'Warnung ausgelöst!'.
- Buttons:** 'OK' and 'Abbrechen' buttons are located at the bottom of the form.

6. Click on **OK**
7. Select the **Add action** button again and add the action "Alarm_SMS"
8. Select the **Add action** button again and enter "Alarm_on" as name and select "Element" as well as "OUT_1" and "close" under Target

Aktion hinzufügen

9. Click on **OK**
10. Select the **Add action** button again and add the action "Alarm_off" (opening output 1)
 - ✓ The actions appear in the respective list one after another.

Definition Aktionen

Aktion hinzufügen

aktiv		Name	Aktion
<input checked="" type="checkbox"/>		Warning_SMS	Nachricht an Operator Warnung ausgelöst!
<input checked="" type="checkbox"/>		Alarm_SMS	Nachricht an Operator Alarm ausgelöst!
<input checked="" type="checkbox"/>		Alarm_on	OUT_1 schließen
<input checked="" type="checkbox"/>		Alarm_off	OUT_1 öffnen

- ✓ You have added the actions that are necessary for the application with this.

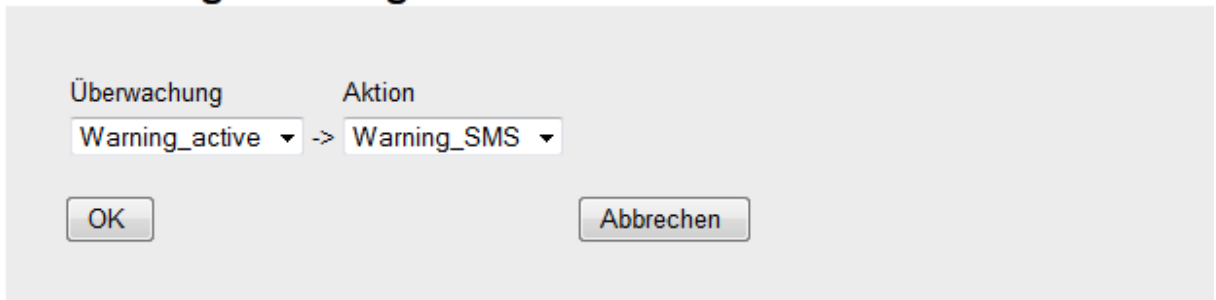
Configuration

■ Adding assignments

How to add the assignments for the Monitoring App. It is necessary to assign the respective actions to the monitorings for this application.

1. Select in the menu the page → Actions → Assignments
2. Select the **Add assignment** button
 - ✓ The "Add assignment" page appears.
3. Select "Warning_active" as Monitoring and "Warning_SMS" as Action

Zuordnung hinzufügen



4. Click on **OK**
5. Select the **Add assignment** button again and add the assignments "Alarm_active" to "Alarm_SMS", "Alarm_active" to "Alarm_on" and "Alarm_inactive" to "Alarm_off" one after another
 - ✓ The assignments appear in the respective list one after another.

Zuordnungen

Zuordnung hinzufügen

aktiv		Überwachung	Aktion
<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/> Warning_active	Warning_SMS
<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/> Alarm_active	Alarm_SMS
<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/> Alarm_active	Alarm_on
<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/> Alarm_inactive	Alarm_off

- ✓ You have added the assignments that are necessary for the application with this.

4 Test

Testing the application

The Monitoring App is active directly after configuration. You can check the correct function directly by closing one or both inputs of the fault monitor.

The current status of the defined elements (inputs and outputs as well as flags) is indicated directly on the status page of the web interface of the Monitoring App (consider update interval). Both inputs are closed and thus both flags are active in the following figure. This will also close output 1 and both SMS are dispatched to the phone number of the configured contact. A SIM card must be inserted and the fault monitor must be configured accordingly (PIN, SCN) for dispatching the SMS.

Status

Aktualisierung alle <input type="text" value="5"/> Sekunden <input type="button" value="OK"/>		
IMON		
IO	IN_1	1
	IN_2	0
	OUT_1	0
Interne Merker		
	Warning	1
	Alarm	0

5 Used Components

Please observe: The power supply units required to operate devices are not listed here in detail. Take care for a provision at the site, if they are not part of the scope of delivery.

Hardware

Description	Manufacturer	Type	Version
Fault monitor	INSYS	IMON-G100 IMON-G200 IMON-U300	Firmware 2.12.4 Monitoring 2.2.0

Table 1: Used hardware

Software

Description	Manufacturer	Type	Version
Operating system	Microsoft	Windows 7	Ultimate SP1
Browser	Mozilla	Firefox	39

Table 2: Used software

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