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</table>
This manual describes the function and configuration of the Internet Gateway. The contents are subject to change without prior notice.

Exclusion of liability:
Although the contents of this document have been checked to ensure that they are consistent with the hardware and software, deviations cannot be completely excluded. In such cases liability cannot be accepted. Any necessary corrections will be incorporated in new versions of the manual. Please inform us of any suggested improvements.
General

1.1 About this manual

Thank you for choosing the Internet Gateway IN/S from ABB. This manual will now support you with the commissioning and operation of the IN/S.

The manual is directed at the commissioning engineer and user of the Internet Gateway. All the necessary steps for the initial commissioning stage are explained together with all the functions available to the user.

This manual is divided into the following sections:
- Description of the device technology (chapter 3)
- Installation (chapter 4)
- Commissioning (chapter 5)
- Operation (chapter 6)
- Planning and application (chapter 7)
- Maintenance (chapter 8)
The ABB Internet Gateway IN/S enables access to the electrical installation from any Internet access point. The installation can thus be conveniently operated and monitored remotely.

Live images can be transmitted with an additional module (VM/S) and a video camera.

The Internet Gateway can also alert you automatically via e-mail. These e-mail messages can be sent to suitable mobile devices, e.g., mobile phones.

Editors are available for the logic operation of inputs and outputs and for timer functions. These editors can be operated both simply and quickly via the Internet or Ethernet.
<table>
<thead>
<tr>
<th>System benefits</th>
<th>Easy access</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>An Internet access point is sufficient to access the Internet Gateway world-wide.</td>
</tr>
<tr>
<td>Simple configuration</td>
<td>A PC with a web browser (MS Internet Explorer® or Netscape Communicator®) is sufficient for the configuration of the device. The complete software is available on the device. It is not necessary to install any additional software.</td>
</tr>
<tr>
<td>Automatic notification</td>
<td>The IN/S can send configurable messages via e-mail.</td>
</tr>
<tr>
<td>Measured data acquisition</td>
<td>The 4 analog inputs of the IN/S are used to record measured values and low-level signals. The historical data memory for binary inputs and analog values enables the representation of waveforms.</td>
</tr>
<tr>
<td>Live video</td>
<td>The IN/S can transmit live images in connection with the video module VM/S. The picture memory can store up to 128 images.</td>
</tr>
<tr>
<td>Individual adjustment</td>
<td>Apart from the year timer (synchronisable over Internet) with 32 programs and other modules, it is also possible to create logical, mathematical and time-controlled functions in a macro editor that is simple to operate.</td>
</tr>
</tbody>
</table>
2 Scope of supply

The IN/S is supplied with the following accessories. Please check your delivery against the following list:

**IN/S 1.1 (ISDN modem)**
- IN/S 1.1 device with plug-in terminals
- RJ45 telephone connection cable, black
- Network connection cable (patch cable, grey)
- Network connection cable (crossover cable, red)
- Passwords and domoport registration documents

**IN/S 2.1 (analogue modem)**
- IN/S 1.1 device with plug-in terminals
- RJ45 to RJ11 telephone connection cable, black
- Network connection cable (patch cable, grey)
- Network connection cable (crossover cable, red)
- Passwords and domoport registration documents
## 3 Device technology

The device functions of the IN/S 1.1 and IN/S 2.1 are explained in this section. The only difference between the IN/S 1.1 and IN/S 2.1 is the type of telephone connection:

- IN/S 1.1 contains an ISDN modem for ISDN telephone connections
- IN/S 2.1 contains an analogue modem for analog telephone connections

The operation and configuration of the devices is identical.

### 3.1 Technical data

<table>
<thead>
<tr>
<th>Operating voltage:</th>
<th>12 – 24 V DC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power consumption:</td>
<td>Approx. 8 watt</td>
</tr>
<tr>
<td>Mechanical data:</td>
<td></td>
</tr>
<tr>
<td>Dimensions (H x W x D):</td>
<td>86 x 157 x 58 mm (9 modules wide)</td>
</tr>
<tr>
<td>Protection class:</td>
<td>IP 20</td>
</tr>
<tr>
<td>Wire range:</td>
<td>max. 2.5 mm²</td>
</tr>
<tr>
<td>Weight:</td>
<td>0.250 kg</td>
</tr>
<tr>
<td>Mounting:</td>
<td>DIN rail in accordance with EN 50022</td>
</tr>
</tbody>
</table>

**Inputs:**

- Binary inputs: 6 channels for potential-free contacts
  - Output voltage: max. DC 24 V, depending on the power supply voltage (12-24 V)
  - Output current: 10 mA, minimum 1 mA
  - Cable length: max. 50 meters, depending on installation topology and interference conditions; 10 m for inputs used as counters
  - Counters / frequency measurement: max. 25Hz

- Analog inputs: 4 channels, 0…5 V or 0…10 V or 0…20 mA
  - Input signals can be selected per channel
  - Input voltage: DC 0-10 V
  - Input current: DC 0-20 mA or DC 4-20 mA
  - Resolution: 10 Bit
  - Impedance voltage measurement: 150 kOhm
  - Impedance current measurement: 500 Ohm

**Outputs:**

- Switch outputs: 6 channels, via potential-free contacts
  - At 230 V AC
    - Up to 10 A per channel, cos phi = 1
    - Rated load: max. 1380 VA
    - Incandescent lamps: max. 1000 watt
    - Fluorescent lamps: max. 900 W uncompensated
    - Capacitive load: 230 V AC, max. 4µF
    - Service life: 50,000 switching operations at rated load
  - At 24 V DC
    - Up to 6 A

**LED display:**

- Binary inputs
- Switch outputs
- LAN
- LINK
- ON

- One yellow LED per input
- One yellow LED per output
- Yellow LED: LAN OK,
  - Yellow LED: Link active
  - 1 green LED: Device occupies telephone line
  - 1 green LED: Mains OK and device ready

**Network connection:**

- RJ45 socket: Ethernet 10/100 Mbit

**Telephone connection:**

- RJ45 socket: For ISDN connection (IN/S 1.1)
- For analog telephone connection (IN/S 2.1)

**USB connection:**

- 2 USB sockets (type A): For connection of the external video modules (VM/S 1.1)

**Time synchronisation:**

- Real Time Clock: Battery backup, synchronisation with domoport during an Internet connection

**Standards/norms:**

- CE
The IN/S requires an external supply voltage of 12...24 V DC.
3.4 Description of inputs and outputs

Analog inputs (terminals 1 to 8)
The device has 4 analog inputs. 2 terminals are available per input (terminal pairs 1-2, 3-4, 5-6, 7-8). It can be defined in the parameter settings for each analog input whether it should be set for input signals of 0…5 V, 0…10 V or 0…20 mA (see chapter 5.4). The measured values are digitalised in the device with a resolution of 10 bit.

Only a voltage or current that is within the permitted ranges may be applied to the analog inputs. The device may otherwise be damaged.

Technical data for the analogue inputs
- Input voltage: DC 0-10 V
- Input current: DC 0-20 mA or DC 4-20 mA
- Resolution: 10 Bit
- Impedance voltage measurement: 150 kOhm
- Impedance current measurement: 500 Ohm
- Common ground

Supply voltage input (terminals 9 and 10)
The supply voltage of the IN/S is connected to terminals 9 and 10. Direct voltages between 12 and 24 V DC are permitted. Once the supply voltage has been connected, a start routine is executed in the device. As soon as it is ready for operation (approx. 40 s after connection to the supply), the ON LED on the top of the housing lights up.

The supply voltage must lie between 12 V DC and 24 V DC. The device may otherwise be damaged.

Binary inputs (terminals 11 to 22)
6 binary inputs are available for the connection of potential-free contacts. A terminal pair (11 – 12, 13 – 14, … 21 – 22) is used each time, whereby the ‘–’ terminals all have a common connection to earth (root). The binary inputs can also process pulse frequencies up to 25 Hz. The current status of the inputs is indicated by 6 LEDs located on the top of the housing.

No external voltage may be applied at the digital inputs. This can lead to the device being damaged.
Internet Gateway
IN/S 1.1 and IN/S 2.1

Technical data for the binary inputs
- Output voltage: max. DC 24 V, depending on the power supply voltage (12 – 24 V)
- Output current: 10 mA, minimum 1 mA
- Cable length: max. 50 meters, depending on installation topology and interference conditions; 10 m for inputs used as counters
- Counters / frequency measurement: max. 25 Hz
- Common ground

Switch outputs (terminals 23 to 24)
It is possible to control 6 devices with the switch outputs of the IN/S. Each output can switch up to 10 A at 230 V AC. If 24 V direct voltage is switched, the maximum current may only reach 6 A. The current status of the outputs is indicated by 6 LEDs located on the top of the housing.

Miniature circuit-breakers should be used to fuse the switching circuits. A wide variety of circuit-breakers can be found in the ABB STÖTZ-KONTAKT product range.

You can configure the function and designation of the switch outputs individually. Further information and help can be found in chapter 6.4.

USB connections
The IN/S has two USB interfaces (Universal Serial Bus) for the connection of system components such as video modules or other extension modules. USB offers the benefit that the power supply of the extension units is fed internally via the interface without any additional wiring required. USB devices also have ‘plug and play’ capability. You can simply connect USB extension modules to the IN/S without needing to download or activate drivers beforehand. The function of these devices is therefore immediately at your disposal.

Connect the USB devices before switching on the IN/S so that they can be detected correctly. If you wish to connect a device at a later date, switch off the IN/S and then switch it back on again.

LAN connection
The network connection is carried out via an Ethernet RJ 45 interface for LAN networks. The network interface with a transmission rate of 10 or 100 Mbit/s is available as standard. The network activity is indicated by an LED each for LINK and LAN located on the top of the housing.

Connection to a telephone network ✆
IN/S 1.1
The IN/S is fitted with an ISDN modem and is linked to the S0 bus of the ISDN using the cable supplied. Please note that an MSN (Multiple Subscriber Number) must be assigned for the IN/S – as for all devices on the ISDN. If the MSN is then addressed, the IN/S reacts to this number. You will find instructions on the assignment of the MSN in the documentation for your telephone system. As soon as the device occupies a B channel of the ISDN, the ✆ LED on the top of the housing lights up.
4 Installation

Installing the IN/S
First install the Internet Gateway on a suitable DIN rail.

Connecting inputs/outputs
Use the supplied plug-in terminals to wire the inputs and outputs. Note the description of the outputs given under chapter 3.4.
Tip: The switch outputs should be fused by miniature circuit-breakers.
A wide variety can be found in the ABB STOTZ-KONTAKT product range.
Do not plug the terminals of the inputs and outputs into the IN/S at this point. Complete the installation and initial commissioning (chapter 5) first.

Linking the additional module VM/S (option)
If you wish to use an additional module for video transfer, install this as far right as possible next to the IN/S. Then link the IN/S and VM/S via the supplied USB cable (IN/S: USB 1 connection, VM/S: USB connection, see wiring diagram in chapter 3.3).

Establishing communication links
Next establish the communication links of the device i.e. the connection to the telephone network and/or the local network (LAN).

Power supply
Use the plug-in terminals to connect the supply voltage (12…24 V DC). If all the connections have been carried out correctly, you can switch on the supply voltage of the device.
To put the IN/S into operation, you need:

* either

**Variant 1**
- PC with Ethernet adapter (10/100 Mbit/s)
- Internet browser (MS Internet Explorer® from version 5.0 onwards or Netscape Communicator® from version 4.7x onwards)

* or

**Variant 2**
- PC with modem (ISDN or analog)
- Internet browser (MS Internet Explorer® from version 5.0 onwards or Netscape Communicator® from version 4.7x onwards)
- Internet access via an Internet Service Provider

We recommend that you use variant 1. If you wish to implement variant 2, please read the description in the appendix in chapter 9.2. The following descriptions refer to variant 1.

To configure the IN/S during the commissioning phase, you must access the software of the IN/S. We therefore recommend the following procedure:

1. Use the network interface (connection: LAN) of the IN/S for a point-to-point connection to a computer with a network adapter via a crossover cable (red cable included with supply).
2. Switch on the IN/S.
3. Prepare the configuration PC as follows:
   (Further explanations about the flow diagram can be found in appendix 9.1).
1. Does the configuration PC already have an IP address? yes

So that the PC can communicate with the IN/S, its IP address must be located in the same physical and logical network segment. The first three number blocks of the IP address must match. Set the IP address of your computer.

2. Assign the IP address 192.168.0.1 to the commissioning PC.

3. Ensure that there is no dial-up link (modem) or proxy server in use.

4. Ensure that JavaScript is activated in your Internet browser.

5. Enter 'http://192.168.0.222' in the command line of your browser and then press the Return key.

Do you see the start page of the IN/S? no

Is the IN/S switched on and is the green ON LED lit? yes

6. Enter your user name and password.*

Enjoy using the IN/S!

Start

* An envelope containing the user name and password of the administration account for the initial commissioning is included with supply.
If you have administrator rights, you can carry out the following settings under the Configuration menu of the IN/S.

1. Click on Configuration in the start window of the IN/S
2. Another dialog window appears
3. Click on Basic settings
4. The Device data tab appears

The first item on this page is used to set the User interface i.e. all the pages displayed by the IN/S. You can choose between the English and German version here.

Under Identification, you can first enter the telephone number of the device, including the dialling code and telephone number (for ISDN: complete MSN). You can also enter a Device name.
The IP address and network mask must be entered in order to operate the IN/S on the Network or to access from a PC with a crossover cable. A Standard gateway (000.000.000.000) does not need to be entered for an IN/S – PC connection using a crossover cable. A value is required only for operation within a network.

The Date and time of the device must be set so that the time-dependent functions can be carried out correctly. If you select the option Fetch date and time from domoport.com with a tick in the checkbox, the device automatically receives the current time when it connects to domoport.

5.3.1.2 Internet

In order to be able to connect the IN/S with the Internet, the device must dial in via an Internet Service Provider (ISP). You can use the preselected provider (msn) or the same provider that you use for your PC when you connect to the ISP via a modem. You can set up your Internet Service Provider (ISP) in the Internet tab and enter your user account. To do so, you must be registered with an Internet Service Provider and know your user name. First enter the Phone number for dialling in to your ISP.

If you are operating the IN/S together with a telephone system (extension system), it might be necessary to add a dial prefix number, (e.g. 0) in addition to the telephone number of the ISP.

The pre-configured ISP (msn) is suitable for operation in Germany. Please enter a ISP of your country if outside Germany. Further information about ISPs can be obtained from a PC retailer.
With the entry fields *User name* and *Password*, the IN/S can be registered as an authorised user for the ISP. You can also preselect a *Timeout (Auto hangup)* after which the dial-up attempt is aborted. The default value is 5 minutes.

The next two lines are used to indicate the Domain Name Service (DNS) server. If you wish to use other servers than the default DNS in your network, ask your network administrator for the addresses of the DNS server.

If you would like the IN/S to send e-mail messages, you must carry out the following settings.

The URL (uniform record locator) of the SMTP (simple mail transfer program) server (e.g. smtp.provider.com) and the address of the sender can be entered in the *E-mail* tab. As several ISPs specify POP (point of presence) *authentication required* for sending e-mails, this option can be activated with a tick in the checkbox provided. If the option has been activated, the URL of the POP server (e.g. pop3.provider.com), the relevant *User name* and *Password* must be entered.
After the initial connection with the device and basic settings, you should next assign parameters to the inputs and outputs which you have already wired onto the plug-in terminals.

1. Click on **Configuration** in the start window of the IN/S
2. A further selection window appears
3. Click on **Inputs/Outputs**
4. The menu **Configuration of physical device connectors** appears

Follow the order of the page and first configure the digital inputs according to the wiring layout.

**Digital inputs**
You can decide for each digital input whether it should be displayed on the homepage of the device. The checkbox **Show** is available for this. If the checkbox is marked with a tick, the input is displayed. You can further assign a unique **Identifier** for each input. Depending on the function of the input, you should select the **Use** of the input from one of the options in the pull-down menu. If you have configured an input as a counter, you can display a **Button** for resetting the counter. Finally, it is possible to select a **Unit** for display on the homepage.
ABB Intelligent Installation Systems

**Internet Gateway**
**IN/S 1.1 and IN/S 2.1**

If you have carried out your settings, they must be stored on the IN/S. To do so, click on the Save button at the bottom of the page.

**Digital outputs**
It can also be selected for each digital output whether it should be displayed on the homepage of the device (Show) and how it should be labelled (Identifier). If a button should be available for the output for toggling, the option Button must be set to Show.

**Analog inputs**
Apart from the selection of the display (Show) and the designation, it is also possible to define the Type (voltage 0…5 V or 0…10 V or current 0/4…20 mA) for each analog input. This should always take place before the terminals have been plugged in. The Unit for each output can be indicated to provide information about the measurements. The Factor and Offset of the input are used to scale the measured variable. The integrated calculator is available for the convenient calculation of the offset and factor. To carry out a calculation, click on the button to the right of the corresponding analog input.

<table>
<thead>
<tr>
<th>No.</th>
<th>Show</th>
<th>Identifier</th>
<th>Type</th>
<th>Unit</th>
<th>Factor</th>
<th>Offset</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>☑</td>
<td>Temperature</td>
<td>Voltage 0-10 V</td>
<td>°C</td>
<td>1.0</td>
<td>-50</td>
</tr>
</tbody>
</table>

**Variables**
You can specify up to 32 device variables in the IN/S. Under the Variables tab, it is possible to define each variable more precisely using the Show, Identifier and Use options as well as the selection of the corresponding button.

**Layout**
If you wish to modify the order in which the inputs and outputs are displayed or the titles on the homepage, a small editor program is available on the Order sheet. Click on the Save button after making any modifications to store the data on the IN/S.
5.5 User accounts

32 local user accounts can be defined on each IN/S for LAN (local area network) access in order to regulate access to the device.

Under Access levels, you determine first for all the accounts which concrete operator rights should be linked with one of three authorisation levels. Specify the unique name and password which a user needs to gain access and select which access level is indicated.

<table>
<thead>
<tr>
<th>Users</th>
<th>Access levels</th>
<th>Help</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Diagram 5.5.1 Rights of the user groups

Accessible function areas

Important note: User accounts with administrator rights (access level 3) have inherent access right to all function sections including the configuration pages!
You can assign the following authorisation levels to the user: **Administrator**, **Operator** or **Viewer**. A user account with administrator rights (level 3) receives full access to the device including all the functions for both the basic configuration and the setup of the user accounts. The same device areas can be enabled in principle for the operator and the viewer – with the exception of the basic configuration. There is however a basic difference in the access rights: only operators (level 2) have the option of active intervention in the device functions, carrying out switching operations on the homepage or modifying timer programs. Enabled areas can indeed be retrieved in their current state by users with viewer rights (level 1) but not switched or modified. A visible limitation in this case is the omission of all the function buttons in the user interface.

The accounts for Internet access to the device are managed by you as shared user accounts for the domoport Internet Service Provider. There is no direct connection to the local user accounts for LAN access. If a user gains access to the device via an Internet connection, the authorisation level that has been configured on the web is however transferred and reproduced in the enabled areas which have been configured here.
Once the user accounts have been set up, you should modify the default password of the user account 'Admin' so that no-one with knowledge of this password can access the device.

### 5.6 Cascaded devices

Due to its gateway function, the Internet Gateway is able to allow access for up to 32 LAN networked devices externally via a single Internet connection. You set up web access to the device with telephone/Internet access via domoport and define that cascaded devices that are networked via the Ethernet can pass through the gateway. It is not necessary to configure the user accounts on the series-connected devices as the rights of the current user (administrator, operator or viewer) are passed on between the devices when accessing via the Internet.

With the checkbox **Int.** on the **Cascading** page, you define in this case whether a further Internet Gateway is available under the given IP address (tick) or whether a third-party product with its own web server should be made available (tick removed). Access to third-party products in the LAN such as webcams or other devices with their own web server can be implemented using the gateway function of the IN/S.
5.7 System functions

Parts of the IN/S can be reset to the initial values using the system functions. You can therefore delete settings without having to retrieve all the sections individually.

5.7.1 Initial values

You can select the sections which you would like to reset by entering a tick in the corresponding checkboxes on the Initial values page. A click on the Reset button restores all the selected sections to their original state.

It is possible to carry out a restart on this page. This function is mainly used for a remote restart (e.g. via domoport). If you click on the button Carry out restart, the current connection with the IN/S is interrupted and the RAM of the device is deleted (camera images, historical data). You must retrieve the start page of the IN/S again in the browser after the restart (ON LED lights up again).

A system update overwrites all the user data on the device (all the settings, macros, users and passwords...). The device is in the supplied state again after a system update and only the administrator account and password is present on the device.

The direct online check for available updates can be triggered on the Update page. If the search is successful, detailed information about the update is displayed. By pressing the Carry out update button again, you trigger the download and update procedures which lead to a reset with automatic restart (see 5.7.2) of the device on completion.
5.8 Initial configuration for remote access

In the initial state, you receive the IN/S with several, preconfigured settings. You must carry out further settings depending on how you use the IN/S. The following overview shows you which settings are required for which application.

<table>
<thead>
<tr>
<th>Application</th>
<th>Required configuration</th>
<th>See</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telephone connection only (ISDN or analog)</td>
<td>ISP, domoport</td>
<td>5.3.1.2 and 5.8.2</td>
</tr>
<tr>
<td>LAN only</td>
<td>IP address</td>
<td>5.8.1</td>
</tr>
<tr>
<td>Telephone connection and LAN</td>
<td>ISP, IP address, domoport and LAN</td>
<td>5.8.1, 5.3.1.2 and 5.8.2</td>
</tr>
</tbody>
</table>

ISP = Internet Service Provider

5.8.1 Assignment of the IP address

The IP (Internet Protocol) address is the unique address of the IN/S within the local network (LAN).

The following IP address is set for the IN/S in the default state:
- IP address: 192.168.0.222
- Network mask: 255.255.255.0

You can access the device directly via these preset options in order to modify the settings or to configure the IN/S. The PC which you use to access the IN/S and the IN/S itself must be located in the same physical and logical network segment.

The first three number blocks of the IP address must therefore match. The last number block can vary in the range between 1 and 254.

Example:
- IP address of PC: 192.168.0.1
- IP address of IN/S: 192.168.0.222

! If the preset IP has already been allocated in your network, you cannot access the IN/S with this IP address.

Modify the IP address of the IN/S via a point-to-point connection with the crossover cable (included with supply, red cable). Retrieve the Configuration menu item and click on Basic settings. You can set the IP address in the Network settings.

5.8.2 Initial domoport registration

You thus register your IN/S with the domoport Internet Service Provider:

1. Open the portal page www.domoport.com with your browser. Click on Register now! in the login window. Domoport opens the page Registration of a domoport main user account with IN/S device data

2. Device data:
   - Enter the serial number (SN), PIN and telephone number of the IN/S and select a suitable device name (e.g. Holiday home).
   - The serial number (SN) is located directly on the IN/S housing.
   - The PIN is in the security field on the domoport registration form.
The registration form was supplied together with your IN/S. The SN and PIN are only required for the initial registration of the device; afterwards you select a user name and password of your choice for dial-up.

3. Registration:
   Enter a suitable main user name (e.g. Robert Smith) and a password.

! The main user name is also the name of the main user account. The main user name cannot be modified at a later date.

4. Click on Register. domoport opens the Registration page where you can enter your personal contact details.

5. domoport checks your entry and stores your data. You have thus registered your IN/S with the domport Internet Service Provider. You can now access your domoport main user account with the help of your main user name and password.
6 Function and operation

The operation of the Internet Gateway is only carried out via a browser (e.g. MS Internet Explorer® or Netscape Communicator®). You have several options for accessing the IN/S:

1. Via a point-to-point connection with a PC (see 6.4.1)
2. Via a network (e.g. LAN) in which you address the IN/S via an IP address (see 6.4.2)
3. Via an Internet connection with the service provider www.domoport.com (see 6.4.3)

6.1 Operating elements

As operation is carried out via a browser, there are no operating elements on the Internet Gateway.

6.2 Display elements

Several LED displays are visible on the IN/S. They have the following meaning:

- **LAN**: Flashes or lights up if the device detects activity on the network (e.g. during data exchange)
- **LINK**: Lights up if the device detects a connection to a network
- **✆**: Lights up if the device has established a telephone connection
- **ON**: Lights up if the power supply is present and the device is ready for operation (approx. 40 s after connecting the supply voltage)

### LED for binary inputs

If the device detects the status ‘logical 1’ at one of the input terminals of the binary inputs (E…J), the LED of the respective input (E…J) lights up.

```
Digital IN
E F G H I J
```

### LED for switch outputs

If a switch output (K…P) is operated by the device, the corresponding LED is also switched on (K…P).

```
Digital OUT
K L M N O P
```
6.3 User interfaces of the IN/S

The IN/S has an integrated web server. This means that all the pages that can be retrieved by the user are stored on the IN/S. The user therefore always sees the same user interface (pages), regardless of whether he is accessing the IN/S locally with a PC or is connected to the device via the Internet.

The menu items on the left-hand side of the window are dependent on the user rights. The Configuration menu for example is only displayed for users with adminstrator rights.

The following chapters describe the menu items which are available for each user group:

6.3.1 Menu items for the viewer
6.3.2 Menu items for the user
6.3.3 Menu items for the administrator
6.3.1 Display in the browser window

The operation of the device is always carried out via a browser, both when accessing the IN/S via the Internet (via the service provider www.domoport.com) and via the LAN.

6.3.1.1 LAN access

For LAN access a login is required. To do so, you must enter a user name and password that is known to the device. New users and passwords can only be assigned by a user with administrator rights.

After a successful login, the device homepage appears (see 6.3.1).

6.3.1.2 Internet access

When accessing an IN/S device via the Internet, it is necessary to carry out a registration on the domoport homepage. If this was successful, all the IN/S devices (if several are available) which have been assigned to the user are displayed. If the user selects an IN/S for connection, the device is called up and the user is linked with the device. The device homepage then likewise opens. Details about connection to the IN/S via the domoport can be found in chapter 6.4.
The device homepage offers the user with viewer rights an overview of the current states of the inputs and outputs of the device.

Apart from the status of the physical inputs and outputs, the current value of the variables can also be displayed.

The arrangement of the elements on the device homepage can be adapted individually. Diagram 6.3.1.3 indicates for example only 3 inputs and 2 outputs instead of the possible 6 inputs and 6 outputs.
6.3.1.4 Video

If the user selects the menu item Video, the current video images of a selectable video source is displayed (if available). The Video source, the Picture size and the Update image rate can be selected.

Apart from the current camera picture, an image can also be retrieved from memory (Picture store).
6.3.1.5 History

If the user wishes to reproduce the history of inputs or outputs, he can choose preselected values for display under the menu item History (Set-up tab). The time range can also be specified. The current graph is displayed when the menu item is selected. To update the graph, click on the button Show graph.

6.3.1.6 Log off

By clicking on the menu item Log off, the user can end the connection with the IN/S. This menu item should always be selected to exit.

6.3.2 Operation in the browser window

If a user should also operate the device, he needs the rights of the 'user' level. This user can carry out all the actions that the viewer can perform (6.3.1). He is however also able to operate the device and carry out settings. The administrator can however limit or extend the rights of the user. If the functions described here are not available to you, contact the administrator of the device.

As all the pages are stored on the IN/S, changes in the settings that have been carried out in the browser window are always transferred to the IN/S. To do so, always use the command button ‘Save’ on the corresponding page (e.g. timer).
In contrast to the viewer, the user can also give commands to the IN/S on the homepage (see Diagram 6.3.2.1). He is able for example to reset a counter which is described by an analog input (Reset button) or toggle a switch output (Switch button).

If a state arises which requires a message to be sent, it is indicated on the homepage of the IN/S that a Message chain is active.

This message chain can be stopped by clicking on the Reset button. The chain is then no longer displayed on the homepage.
With the Timer function, 32 timer programs are available for the automatic triggering of recurring switching operations. An active timer program can switch digital outputs and programmable variables on or off. You can select the objects that should be set by a switching program by clicking with the mouse in the list field under Assign switch objects. You can select several entries by pressing and holding down the Ctrl key.

You can define separately for each activated program on which weekdays it is carried out and when the assigned switch objects should be switched on (specified ON time) and/or switched off (specified OFF time). The set periods are permanently compared with the current device time; if they match, an ON/OFF switching operation is carried out in the relevant program exactly on the active day. If you define an ON or OFF time prior to the current device time, it is not carried out until the next day.

Exception days, which must be defined on the page with the same name in the functional range of the timer, have particular significance. You can define Bank Holidays here or periods that cover several days, such as factory shutdown, which require special treatment. The exception days apply for all 32 timer programs.
In the Programs window of the E-Mailer menu item, there are 32 message programs available for the automatic transmission of freely selectable text messages of up to 200 characters in length. The Trigger object for sending the message can be the activation of a digital input on the device within an active program or one of the programmable variables. You can send up to 3 attachments with an e-mail:

- Current status of all the values of the device homepage (as a text file)
- The historical data recorded up to the transmission (as a text file)
- The last recorded camera picture (in .jpg format)

Up to 32 message receivers can be set up on the Receivers configuration page. All the configured receivers appear on the Programs page in the list field under Assign message receivers and can be allocated to the respective program via a mouse click. You can select several receivers for a message by pressing and holding down the Ctrl key.

The Message chain has the task of informing several receivers at staggered intervals. It is composed of all the receivers that have been set in the option Use in message chain (on the Receivers page). The text of the trigger message program is sent to all the receivers involved in the chain one after the other in configurable intervals, if the message chain has been selected as a receiver when configuring the program.
For this purpose, an existing chain is displayed as its own receiver entry in the list field Assign message receivers. If a message chain is active, this is indicated on the device homepage. Any user with operator rights can stop the message chain by clicking on the Reset button.

The sending of text messages to mobile devices is achieved by using a special service from telephone service providers. A text message to the number 01 72/1 23 45 67 in the german D2 network for example is generated via e-mail to the address 01721234567@d2-message.de which must be set up as a message receiver on the Receivers page.

Please note that the receipt of e-mail messages as text messages on mobile phones must in most cases be explicitly enabled by the receiver and incurs additional costs. The receipt of file attachments is not a good idea and currently only possible on a few mobile devices.

6.3.2.4 Selecting a device

This menu item is only displayed if feedthrough from the IN/S to another IN/S or another device has been parameterised.

The function Select device enables the connection (feedthrough) to another device on the LAN via the IN/S. In this operating mode, the IN/S functions as a gateway and passes the data from and to the other device.

By clicking on Select device in the toolbar on the left-hand side of the window, a submenu (pop-up) opens which displays all the devices that are configured for feedthrough. After clicking on one of the devices in the pop-up window, the linked device is accessed and the window contents are replaced by the contents of the new device. If you wish to connect to another IN/S, you can also switch back to the previous IN/S. You achieve this by clicking on the additional entry Dial-up device while feedthrough is active in the submenu Select device. Chapter 5.6 provides information about how to set up the devices for access via the IN/S.
6.3.3 Administration in the browser window

Beyond the layout and operation, users with administrator rights can carry out further functions which are reserved for administrators (see Diagram 6.3.3).

The initial configuration of the IN/S must be carried out by a user with administrator rights. A detailed description of this initial configuration can be found in chapter 5 “Commissioning”.

The administrator is also able to create macros.
6.3.3.1 Macros

The term ‘macro’ stands for a closed, freely definable sequence in which simple queries and the setting of device values can be linked with time conditions, value comparisons, arithmetic functions and many more.

The Macros menu item offers a two-step concept:

● You first select a memory location from the 16 available, allocate an appropriate identifier and an optional short description and save the settings.

● You then switch from this prepared memory location to the script editor via the Edit button.

● The script editor is the interface for creating scripts. When a macro memory location is deleted, the associated script is also deleted. The identifier and short description of the macro are reset to the default values.
The script editor is the user interface for the configuration of the actual macro functions. On a basic grid with a chessboard layout, you select a field for each individual step, in which explicit functions are retrieved or simply the outputs of one function should be routed to the next. Each individual processing step is represented by a graphical symbol. The macro that is finally created appears as a chain of several symbols which resembles a simple electrical circuit diagram.

Diagram 6.3.3.1 indicates a macro in the upper section which switches on switch output no. 6 as soon as binary inputs 1 and 2 accept the state ‘1’.

Information about the selected object is shown in the right upper corner which is marked with a blue frame. In Diagram 6.3.3.1, switch output no. 5 (Digital Out 05) is linked with the OR gate.

To insert an element in the field of the chessboard, first select the field (e.g. D 07). The selected field is always shown with a blue frame. Then choose an element from the list on the right-hand side by clicking with the mouse. This element is then inserted in the field which you previously marked.

Further help for creating scripts can be obtained from the descriptions of the individual functions in the script editor itself. As soon as you touch a functional block on the right-hand side of the script editor with the mouse, a relevant description appears in the field above the function blocks, as shown in Diagram 6.3.3.1 (Set digital output...).
6.4 Access options

The following possibilities are available for accessing the IN/S:

6.4.1 Point-to-point connection with a PC

The point-to-point connection with a PC is suitable for the initial configuration (see chapter 5) or for local access:
- Take the crossover cable (red cable included with supply).
- Link the network connection of the PC to the LAN connection of the IN/S using the crossover cable.

Ensure that the PC has been configured according to the description in chapter 5.2
- Open a browser on the PC.
- Call up the start page of the IN/S by entering the IP address:
  http:\192.168.0.222 (default setting)
- The start page of the IN/S opens.
- Enter your user name and password.
- The homepage of the IN/S opens.

6.4.2 Network (LAN) connection with a PC

You can also operate the IN/S in a PC network and access the IN/S from a PC on the network:
- Take the patch cable (grey cable included with supply).
- Link the LAN connection of the IN/S with a free network connection (hub, network box) using the patch cable.

Ensure that the PC has been configured according to the description in chapter 5.2
- Open a browser on the PC.
- Call up the start page of the IN/S by entering the IP address:
  http:\192.168.0.222 (default setting) or ask the network administrator for the address of the IN/S.
- The start page of the IN/S opens.
- Enter your user name and password.
- The homepage of the IN/S opens.
6.4.3 Access via domoport

If you wish to access the IN/S remotely, the homepage www.domoport.de or www.domoport.com is available. A prerequisite for access via domoport is a valid user name and password. This data must be stored in domoport. The initial domoport registration is described in chapter 5.8.2. Proceed as follows to use domoport:

- Open a browser on any device with Internet access.
- Open the homepage www.domoport.de or www.domoport.com
- The domoport start page opens.
- Enter your user name and password and click on Log on.
- Click on Select device.
- Select an IN/S from the list.
- Click on Connect.

Connection with the IN/S is established and the familiar homepage of the IN/S is displayed. This process can take up to 1 minute with the IN/S 2.1.

6.4.3.1 WAP Access

For mobile devices domoport offers a WAP (wireless application protocol) access. To access the domoport WAP pages, use the address http://www.domoport.com/wap. Proceed as follows to use WAP on domoport:

- Open the page http://www.domoport.com/wap
- Type in your user name
- Click ok
- Type in your password
- Click ok
- Select the language
- Select a IN/S from the list
- Click on Connect
- After connection to your IN/S the WAP homepage opens
The Internet Gateway IN/S can be used in all situations that require an uncomplicated and cost-effective solution for remote monitoring and control. The Internet Gateway covers a wide variety of applications ranging from the residential sector, to small commercial buildings, right up to technical building management.

The following selection gives you an idea of the functional areas that the Internet Gateway can be used in:

- Electrical installations and systems
- Heating, ventilation and air-conditioning
- Wind and solar power installations
- Co-generation systems, fuel cell installations
- Security systems
- IT systems
- Sanitary systems
- Data acquisition from company branches

An interesting application is the use of the IN/S in company branches. The data from these branches can be recorded by the IN/S and evaluated at a central location.
7.2 Operation of the IN/S

The IN/S can be operated with a power supply unit without any further devices. It is then connected to either the LAN, the telephone network or both.

Signals are exchanged with the installation via the inputs and outputs of the IN/S.

7.3 IN/S in connection with the Video Module VM/S

If live video images should be transmitted from an installation, the video module VM/S can be connected to the IN/S. A camera is also required which supplies a PAL/NTSC signal with 1 Vss at 75 ohm. This camera is connected to the video module.

7.4 Cascading of devices

If several IN/S devices are required in a building or an installation, they can be cascaded.

It is then sufficient to link one device with a telephone connection. This device can then address the other devices via the local network (LAN) and make the feedthrough available to these devices (see also chapter 5.6).
The Internet Gateway has a battery for the clock function in the event of mains failure.

Only the following battery types should be used as replacements:
CR2025 (170 mAh/3 V)
CR2032 (230 mAh/3 V)

Please proceed as follows when replacing the batteries:
1. Remove the power supply and all other connections from the device.
2. Carefully lever the retaining clip on the left-hand side of the device using a flat screwdriver out of the socket on the housing cover.
3. Lift the housing cover from left to right. Pay attention to the cable connection to the housing cover.
4. Lay the cover on the right-hand side next to the device.

The cable connection to the housing cover may not be removed!

5. The battery is located on the left-hand side of the base of the CPU board. Remove the battery by pressing the battery out of the holder from the rear with a screwdriver.

Pay attention to the components on the boards.

6. Insert the new battery. Ensure that the polarity is correct: 
   The + pole of the battery must point downwards,
   the – pole must point upwards to the board on which the battery holder is mounted.

7. Close the housing following the opposite procedure to point 3. The housing is properly closed if the clips in the base of the housing audibly lock into place in the housing cover.

After starting the IN/S, you must now reset the clock (see chapter 5.3.1).
9 Appendix

9.1 Explanations for the configuration of the commissioning PC

The steps for configuring the commissioning PC from chapter 5.2 are explained in more detail in the following section. The settings vary depending on the operating system used (WIN 98, WIN2000, WIN XP,...). The explanations have been created using the WINDOWS 98 operating system.

1. Does the configuration PC already have an IP address?
The IP (internet protocol) address is the unique identifier of a device in a network (similar to a house number).

You can set this address in the control panel of the operating system (Start/Settings/Control Panel). Then click on the ‘Network’ icon (double-click).

The following window appears:

Select the TCP/IP components from the list of network components and click on ‘Properties’.
The next window indicates the IP address of the PC:

2. Give the configuration PC the IP address 192.168.0.1

![TCP/IP Properties window](image)

Select ‘Specify an IP address’ and enter the IP address and subnet mask as displayed in the diagram.
Click on OK.
Some operating systems require a restart of the system. If this is the case, please carry out a restart.

3. Ensure that neither a dial-up connection (modem) nor a proxy server are used.

Switch on the option ‘Never dial a connection’ in the configuration of your browser and switch off the option ‘Use a proxy server’. Proceed as follows for Internet Explorer®:
Start MS Internet Explorer®.
Select from the menu bar ‘Tools/Internet Options’.
The following pop-up window appears:

![Internet Options window](image)

If you have not installed a dial-up adapter network, you cannot select a dial-up connection. In this case, the option ‘Never dial a connection’ is automatically activated.
Click on ‘Connections’ in the pop-up window followed by ‘LAN Settings’. The following window appears:
Ensure that the option ‘Use a proxy server’ is not selected (as shown in the diagram above).

If you would however like to use a proxy server, you can bypass the proxy server for the address of the IN/S. This setting can be found under the ‘Advanced’ button.

4. Ensure that Java script is activated in your Internet browser.

Set the option ‘Use Java script’ in the configuration of your browser. In the case of Internet Explorer, these settings can likewise be found under the ‘Internet Options’. Click on the ‘Advanced’ tab. Search for the entry for Java settings in the list box (the exact designation depends on the version of the browser) and activate the Java script:

Depending on the version of your browser, the settings may be located under Java VM (instead of Microsoft VM). If you do not find these settings, Java script is generally activated.
5. Enter `http://192.168.0.222` in the command line of your browser and press the Return key.

The basis for the configuration of the IN/S via the Internet is the initial domoport registration (see chapter 5.8.2).

You must then enter a user name and administrator password to be able to configure the IN/S.

- Open a browser on any device with Internet access
- Open the homepage `www.domport.de` or `www.domoport.com`
- The domoport start page opens
- Enter your user name and password (users must have administrator rights)
- Click on ‘Select device’
- Select an IN/S device from the list

9.2 Configuration link via the Internet

The basis for the configuration of the IN/S via the Internet is the initial domoport registration (see chapter 5.8.2).

You must then enter a user name and administrator password to be able to configure the IN/S.
ABB Intelligent Installation Systems

Internet Gateway
IN/S 1.1 and IN/S 2.1

- Click on ‘Connect’
- Connection with the IN/S is established and the homepage of the IN/S appears
- Click on the menu item ‘Configuration’ and carry out the configuration of the device (see chapter 5.3 to 5.9)

To finish, click on ‘Log off’.

Ordering information

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