The IP gateway IG/S is the interface between EIB / KNX installations and IP networks. Data can thus be exchanged between EIB devices and devices on the IP network.

The IP gateway can also be used as a line or backbone coupler and thereby use the LAN (10 Mbit) for the rapid exchange of telegrams between the lines/areas. Together with the iETS Software, EIB / KNX devices can be programmed from the LAN side via the IG/S.

The IP address of the IG/S can be fixed or received from a DHCP server. The power supply can be carried out via 230 V AC and/or 12 V DC. The IP gateway is a DIN rail mounted device for insertion in the distribution board. The connection to the ABB i-bus is established via the bus connection terminal.

### Technical data

**Power supply**
- Operating voltage: 230 V AC + 10 % /– 15 %, 45...65 Hz or 12 V DC (10...30 V DC)
- Power consumption: ca. 22 mA at 230 V, ca. 130 mA at 12 V

**Operating and display elements**
- Red LED and push button (5) for entering the physical address
- ON LED (7) Lights up green, if the power supply is available and the device is ready for operation (max. after 140s); Flashes green, if the device starts up (after connecting the power supply) the network connection must exist
- LAN/Link LED (8) Lights up yellow, if the connection is available with an Ethernet network Flashes yellow, in the event of data traffic

**Connections**
- LAN RJ45 socket for connection to an Ethernet network (10 BASE-T, IEEE 802.3)
- 230 V AC 1 screw terminal for L
  1 screw terminal for N
  1 screw terminal for PE
  Wire range:
  - finely stranded: 0.2 – 2.5 mm²
  - single-core: 0.2 – 4.0 mm²
- 12 V DC 1 screw terminal for + 12 V
  1 screw terminal for 0 V
  Wire range:
  - finely stranded: 0.2 – 2.5 mm²
  - single-core: 0.2 – 4.0 mm²
- EIB Bus connection terminal (black/red)

**Type of protection**
- IP 20, EN 60 529

**Ambient temperature range**
- Operation: 0 °C ... + 50 °C
- Storage: - 25 °C ... + 55 °C
- Transport: - 25 °C ... + 70 °C

**Design**
- Modular installation device, proM

**Housing, colour**
- Plastic housing, grey

**Installation**
- on 35 mm mounting rail, DIN EN 60715

**Dimensions**
- 90 x 108 x 64 mm (H x W x D)

**Mounting depth/width**
- 68 mm/6 modules at 18 mm

**Weight**
- 0.4 kg

**Mounting position**
- as required

**Certification**
- EIB- and KNX-certified

**CE norm**
- in accordance with EMC guideline and low voltage guideline
ABB i-bus® EIB / KNX
IP gateway, MDRC
IG/S 1.1, GH Q631 0067 R0001

<table>
<thead>
<tr>
<th>Application program</th>
<th>Number of communication objects</th>
<th>Max. number of group addresses</th>
<th>Max. number of associations</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP Gateway /1</td>
<td>9</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

Circuit diagram

1 230 V AC connection
2 12 V DC connection
3 Ethernet connection (LAN)
4 EIB connection
5 Programming LED
   with programming button
6 Nameplate
7 Operating LED (On)
8 Display LINK/Act

Note

The programming is carried out with ETS from version ETS2 V1.2a onwards.

When programming several devices, please note the programming sequence (see page 8).

The IP gateway is supplied with a downloaded application program. Only the group addresses and parameters therefore need to be loaded during commissioning. If required, the complete application program can be loaded however.
Selection in ETS2

- ABB
- System components
- Coupler

"General" tab

Physically addressed telegrams

Options: route (default setting) block

In the setting "route", all the telegrams from the EIB to the LAN and from the LAN to the EIB which are indicated in the line of the IG/S or should exit the line of the IG/S to the LAN are transmitted.

If physically addressed telegrams should not be processed by the IG/S, the option "block" can be selected. In this setting, it is not possible to send physically addressed telegrams (e.g. during programming) from the line below the IG/S to another line. In the same way, it is possible via the IG/S to prevent any devices being programmed in the line of the IG/S from the LAN (IETS). The IG/S itself can still be programmed in this setting.

Group telegrams from LAN to EIB

Options: filter route (default setting) block

The parameter "Group telegrams from LAN to EIB" defines whether telegrams with group addresses should be filtered, routed or blocked.

If the setting "filter" is selected, the telegrams with group addresses from the LAN to the EIB are filtered in accordance with the filter table.

Note:
The filter table must be generated by clicking on the button in the Project Design module prior to programming the IG/S.

In the setting "route", all group telegrams are routed without taking the filter table into account. This setting is only advisable for commissioning and diagnostics purposes. The option "route" should not be used during normal operation.

If no group telegrams should be sent from the LAN to the EIB, the option "block" must be selected. All the group telegrams from the LAN to the EIB are then blocked without taking the filter table into account.

Group telegrams from EIB to LAN

Options: filter route (default setting) block

The parameter "Group telegrams from EIB to LAN" defines whether telegrams with group addresses should be filtered, routed or blocked.

If the setting "filter" is selected, the telegrams with group addresses from the EIB to the LAN are filtered in accordance with the filter table.

Note:
The filter table must be generated by clicking on the button in the Project Design module prior to programming the IG/S.

In the setting "route", all group telegrams are routed without taking the filter table into account. This setting is only advisable for commissioning and diagnostics purposes. The option "route" should not be used during normal operation.

If no group telegrams should be sent from the EIB to the LAN, the option "block" must be selected. All the group telegrams from the EIB to the LAN are then blocked without taking the filter table into account.

Route telegrams according to

Options: priority (default setting) order of receipt

If a large number of telegrams are transmitted from the EIB to the LAN or from the LAN to the EIB, telegrams may have to be stored temporarily in the IG/S due to a high bus load.
If telegrams are written to a temporary storage device, it can be defined with this parameter whether the telegrams should be routed in the order they arrived ("order of receipt") or whether telegrams with a higher priority should be sent ("priority").

**“IP Address” tab**

The “IP Address” tab is used to set the IP parameters of the IG/S.

**Assign IP Address**

Options: automatically (default setting) manually

In the default setting ("automatically"), the IG/S expects to be assigned an IP address by a DHCP (dynamic host configuration protocol) server. This server assigns a free IP address to the device on request. If there is no DHCP server available in the network or if the IP address should always be identical, it can also be assigned manually.

If the IG/S is set to receive an IP address automatically, the device waits for 30 seconds to be assigned an IP address. If there is no allocation during this period, the IG/S assigns itself an IP address in the range 169.254.xxx.yyy via AutoIP.

**IP Address, Subnet Mask, Default Gateway**

If the option “manually” is selected for the parameter Assign IP Address, the IP Address, Subnet Mask and Default Gateway are activated and can be permanently assigned.

The Subnet Mask defines the class of the network. The Subnet Mask must be set according to the number and structure of the subnetworks. In the simplest case of a small LAN, the Subnet Mask must be set to 255.255.255.0. The parameter Default Gateway indicates the connection point (e.g. the IP address of a router) between networks through which the IP telegrams should be transferred. These gateways are only available in large networks. The setting 0.0.0.0 can be retained for small networks.

**Project ID**

Input: 0...255 (default value = 0)

The project ID is used to combine several IG/S devices into a group. In addition to the filter table for the telegrams, the IG/S devices evaluate this parameter in telegrams to establish whether the telegrams are intended for them or not. Several different EIB installations can thus be operated on one network without any interaction. If only one EIB installation is operated on the network, the default setting can be retained.

**“Status” tab**

The settings for the status signals of the IG/S are located in this tab.

**Send telegram on EIB fault**

Options: no (default setting) yes

If this parameter is set to “yes”, the communication object EIB fault also appears in the object window of the ETS program. If a group address has been assigned to this communication object, the IG/S sends an ON telegram as soon as the connection to the EIB is disrupted.

**Send telegram on LAN fault**

Options: no (default setting) yes

If this parameter is set to “yes”, the communication object LAN fault also appears in the object window of the ETS program. If a group address has been assigned to this communication object, the IG/S sends an ON telegram as soon as the connection to the LAN is disrupted.
Send telegram on 230 V AC fault
Options: no (default setting) yes

If this parameter is set to “yes”, the communication object 230 V AC fault also appears in the object window of the ETS program. If a group address has been assigned to this communication object, the IG/S sends an ON telegram as soon as the 230 V AC power supply is disrupted.

Send telegram on 12 V DC fault
Options: no (default setting) yes

If this parameter is set to “yes”, the communication object 12 V DC fault also appears in the object window of the ETS program. If a group address has been assigned to this communication object, the IG/S sends an ON telegram as soon as the 12 V DC power supply is disrupted.

Acknowledge faults
Options: no (default setting) yes

If this parameter is set to “yes”, the communication object Fault acknowledgement also appears in the object window of the ETS program. All fault messages that occur (see above) only remain active until the IG/S receives an ON telegram at the Fault acknowledgement object. The fault messages that are no longer active are then reset.

Send status byte on error
Options: no (default setting) yes

If this parameter is set to “yes”, the IG/S sends the status byte via the communication object Status IP Gateway as soon as an error has occurred. This error can be one of the following errors or a combination of several errors:

<table>
<thead>
<tr>
<th>Bit in status byte</th>
<th>Value on error</th>
<th>Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>230 V fault</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>12 V fault</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
<td>LAN fault</td>
</tr>
<tr>
<td>3</td>
<td>8</td>
<td>EIB fault</td>
</tr>
<tr>
<td>4</td>
<td>16</td>
<td>DHCP set but no IP address received from the server</td>
</tr>
<tr>
<td>5</td>
<td>32</td>
<td>NTP activated but no time telegrams received from the NTP server</td>
</tr>
<tr>
<td>6</td>
<td>64</td>
<td>Queue overflow in IP direction</td>
</tr>
<tr>
<td>7</td>
<td>128</td>
<td>Queue overflow in EIB direction</td>
</tr>
</tbody>
</table>

Send “Status IP Gateway” telegram cyclically
Options: no (default setting) yes

In the default setting (no), the status of the IP gateway is not sent cyclically. If the option “yes” is selected, an additional object Status IP Gateway appears in the object view of the ETS program. The additional parameter Send interval is also visible in the parameter window (see below).

Telegram value: “0”: = Status OK, no fault
“1”: = one (or several) fault(s)

If cyclical sending has been selected, a ‘0’ is sent cyclically when the status is OK. If a fault occurs, a ‘1’ (=fault) is sent once and the cyclical sending is interrupted. A ‘0’ is only sent cyclically again once the fault has been rectified.

If the following faults occur, the status is set to ‘1’:
- LAN fault
- EIB fault
Send interval
Options: 5 s, 10 s, 30 s, 1 min, 5 min, 10 min, 30 min, 1 h, 6 h 12 h, 24 h

The parameter Send interval is only visible if the parameter Send “Status IP Gateway” telegram cyclically has been set to “yes”. The most suitable option for the application can be selected from the list of possible intervals.

“Time” tab
Parameters for setting the time response of the IG/S on the EIB are located in the “Time” tab.

IP Gateway is Time Master
Options: no (default setting) yes

If the option “yes” is selected, the IG/S is a time generator on the EIB and sends time and date telegrams itself. Further parameters are activated in this setting. If “yes” is selected, the IP address of the LAN time generator must be entered.

IP Address LAN Time Master
Input: IP address in the format aaa.bbb.ccc.ddd

If the IP gateway has been parameterised as a time generator on the EIB, the IP address of a time generator from which the IP gateway can obtain the time must be entered in the LAN. This time generator must support the NTP (network time protocol) and send the time accordingly. The IG/S then reads the time from the LAN time generator and routes it as a telegram on the EIB.

After entering the IP address of the LAN time generator, the communication objects Time and Date are also displayed in the object window of ETS.

Send time telegram every
Options: 1 min, 10 min, 30 min, 1h, 8 h, 12 h, 24 h

This parameter indicates at which interval the IG/S should send the time telegram on the EIB if it is operating as a time generator. The entry field is only activated if the parameter IP Gateway is Time Master is set to “yes”.

Send date telegram every
Options: 8 h, 12 h, 24 h

This parameter indicates at which interval the IG/S should send the date telegram on the EIB if it is operating as a time generator. The entry field is only activated if the parameter IP Gateway is Time Master is set to “yes”.

Time zone
Options: – 12 International Date Line (Western) ... + 12 NZST New Zealand Standard Time

The time zone can be selected here according to the location of the IP gateway. The default setting “+ 01: (default value) CEWT Central European Wintertime” is suitable for European states.

Daylight saving time
Options: automatically manually none

With this parameter, you can select whether the daylight saving time should be converted automatically (recommended) or entered manually. If you select “manually”, the following parameters are available.

Begin (day, month, time) (of daylight saving time)

Select the day, month and time for converting to summertime.)
End (day, month, time)
(of daylight saving time)
Select the day, month and time for reverting back to wintertime.

Delta (hours)
(of daylight saving time)
Select here the time difference in hours between wintertime and summertime.

Programming with the iETS
In addition to the standard version of the Engineering Tool Software ETS, there is the so-called internet ETS (iETS). The iETS enables the programming of EIB devices from a PC which is only connected to the LAN network. This PC then operates as a client of a server (service provider). To be able to program an EIB device, the iETS must be used on the client. The server makes the interface connection to the EIB available.

During the initial assignment or modification of the physical address of the IP gateway, the following sequence should be observed during programming:

1. Match the physical address of the RS 232 interface to the topology of the line of the IG/S. (e.g. RS232: 1.1.255, IG/S as line coupler: 1.1.0)
2. Assign the physical address of IG/S no. 1 in the line of the RS 232 interface (e.g. here 1.1.0).
3. Program the physical address of the remote IG/S device (linked with IG/S no. 1 via the LAN).
4. Program the parameters (or application) of the remote IG/S.
5. Program the EIB devices in the line of the remote IG/S.
6. Finally program the parameters (or application) of IG/S no. 1.

When modifying the parameters of the IG/S, it is possible to start with step 4.
## Communication objects

<table>
<thead>
<tr>
<th>No.</th>
<th>Type</th>
<th>Object name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1 bit, EIS1</td>
<td>EIB fault</td>
<td>Send telegram</td>
</tr>
<tr>
<td>1</td>
<td>1 bit, EIS1</td>
<td>LAN fault</td>
<td>Send telegram</td>
</tr>
<tr>
<td>2</td>
<td>1 bit, EIS1</td>
<td>230 V AC fault</td>
<td>Send telegram</td>
</tr>
<tr>
<td>3</td>
<td>1 bit, EIS1</td>
<td>12 V DC fault</td>
<td>Send telegram</td>
</tr>
<tr>
<td>4</td>
<td>1 bit, EIS1</td>
<td>Fault acknowledge</td>
<td>Receive telegram</td>
</tr>
<tr>
<td>5</td>
<td>1 bit, EIS1</td>
<td>Status IP Gateway</td>
<td>Send telegram</td>
</tr>
<tr>
<td>6</td>
<td>1 byte, EIS6</td>
<td>Status byte IP Gateway</td>
<td>Send telegram</td>
</tr>
<tr>
<td>7</td>
<td>3 byte, EIS3</td>
<td>Time</td>
<td>Send telegram</td>
</tr>
<tr>
<td>8</td>
<td>3 byte, EIS4</td>
<td>Date</td>
<td>Send telegram</td>
</tr>
</tbody>
</table>