Configuration Dialog Box (D2000/Communication with I/O Devices/Communication Stations)

Communication station - configuration dialog box

The editing of all objects in the process D2000 CNF is being performed in the configuration dialog box, a specific part of which is common for all editable objects and another part depends on the type of edited object.

The configuration dialog box of communication stations consists of several parts (tabs), which contain similar parameters. Other tabs depend on the category of particular communication stations.

General properties
Groups
Parameters
Time parameters
Address
Protocol parameters

General properties

Description

A text string describing the communication station. Maximum: 128 character.
There is possibility to use the Dictionary (to open it, press **CTRL+L**).

Value type

Selection of an object value type. For communication station it is **St-Station**.

Parameters

Communication protocol

The communication protocol specifies the type of station communication protocol. The set of protocols is still being extended by the new types. The documentation of individual protocols can be found here. The list of available protocols depends on the category of the line, which is the parent of the station.

Line mode

The selection of one of four modes of the communication line. For lines of Serial, "Serial Line Redundant", "Serial System&Line Redundant" and "Moxa IP Serial Library" categories, there is possible to define several sets (up to 4) of communication parameters. The value of **Line mode** parameter determines, which of the sets will be used for communication with this station.

Enable simulation

If communication station is in the simulation mode, values of all I/O Tags related to the given station are simulated. The simulation of real (Ai, Ao) and integer (Ci, Co) values is performed by means of values lying on the sinusoid within the range of 0...100. In case of binary values (Di, Do), TRUE/FALSE values are alternated randomly.

Invalidate I/O tags when station is off

If the parameter is checked, the values of I/O tags, the parent of which is the station, will be **Invalid** when the station is off (the state StOFF). Otherwise, the values of I/O tags are the last values before switching off the station.

Communication control

The communication may be controlled in several ways. Check the **Manual** option to enable the controlling the station via the dialog box in process D2000 HI. The disabled communication option allows to enable (disable) the communication in Manual mode. The **Control object** option enables to select the object that controls the communication in case that the station is in the automatic mode. The control object must be of Boolean type.

Control object value	Station behaviour
TRUE	Delay of requests for communication. The requests for output are postponed.
FALSE	Normal communication without any limits.

OnError behaviour

A behaviour of station after an error is determined by the **Time filter** and **Delay after error** spin buttons (set in milliseconds). If the station does not communicate, it will pass from NORMAL state to COMM_ERR (soft error). If the communication is not restored even after expiration of time corresponding to the value of **Time filter** option, the station is passed to HARD_ERR (hard error). The **Delay after error** parameter determines how long after passing to HARD_ERR there will be no communication with the station.

Protocol parameter

The parameters, dependent on the protocol, determine its behaviour during communication with this station. The parameters should be entered into the input field in the form:

PRM1=value;**PRM2**=value etc.

PRM1, PRM2 - names of parameters

More information about protocol parameters...

Time parameters

Polling parameters

The communication process obtains new values by a periodic polling of stations.

- **Period** [Hours:Minutes:Seconds] - definition of the period which determines the acquisition of new values of station I/O Tags. The period exactly determines the time of sending the request. The period is defined by Hours:Minutes:Seconds and Offset in seconds. For example the period 0:1:0 with the offset 5 seconds will cause the polling in every fifth second of each minute.
- **Delay** [Hours:Minutes:Seconds] - after executing a request, the time of the next request is calculated as the sum of the current time and **Delay** parameter.

The settings of Delay 0:0:0 is forbidden for any other priority than the lower one (0), because there is a possibility that other stations never can use the communication.

Synchronization period

Some communication protocols allow to set the real time into a device. To enable the real-time setting, check the **Enable** option and enter the period in the form of Hours:Minutes:Seconds, which determines the time of the next station synchronization (it works similarly to **Delay** parameter for polling). If the communication protocol does not support the time synchronization of station, the request is ignored.

Polling priority

A priority is assigned to each station. It solves the potential conflicts of the access to communication medium (line) - **Polling priority** option. For station, there is possible to define one of the five priority levels:

- 0 - minimum priority
- 1
- 2
- 3
- 4 - maximum priority

Use computer time

When using the protocols that support sending the values with the timestamps, the timestamps are to be replaced by the current time of the D2000 system (time of the computer with the running process D2000 KOM).

Use monotonic UTC time +

The parameter is implemented only for some of communication protocols that support timestamps:

- *Paufex DIRAS*, *Paufex DIRAS-B*, LoRaWAN, M-Bus Rev. 4.8, MODBUS Client, Telegyr 809 Server
- the protocols of the *IEC104* (IEC 870-5-104, IEC 870-5-104 Server, IEC 870-5-104 Sinaut) and *IEC101* classes (IEC 870-5-101 unbalanced primary, IEC 870-5-101 unbalanced secondary)
- IEC 61850, IEC 60870-6 ICCP/TASE.2

If the checkbox is checked, then:

- When sending the values with the timestamps, the timestamps do not contain the local time but UTC time increased by defined hours (the spin button placed right from the checkbox).
- When receiving the value with the timestamp, there is an assumption, that the time is UTC time increased by the defined hours. So, at first the hours are subtracted from the UTC time and then converted to the local time.

Ignore values older than ...

This parameter activates the filter that checks the time stamp of I/O tags new values on this station. The new value is ignored if the time stamp is older by defined number of days and hours than the current real-time of communication station. The log about this is saved into the application directory, subdirectory **TRACE**, file *DISCARDED_VALUES_SELF_KOM.log* (for SELF.KOM) or *DISCARDED_VALUES_*name*_KOM.log* (for *name*.KOM).

Ignore values newer than ...

This parameter activates the filter that checks the time stamp of I/O tags new values on this station. The new value is ignored if the time stamp is newer by defined number of days and hours (i.e. it is in the future) than the current time of communication station. The log about this is saved into the application directory, subdirectory **TRACE**, file *DISCARDED_VALUES_SELF_KOM.log* (for SELF.KOM) or *DISCARDED_VALUES_*name*_KOM.log* (for *name*.KOM).

Address

Address

The settings of communication station address. The form of station address depends on the type of the used protocol. More information about the communication protocols can be found in the detailed description of protocols.

Protocol parameters

The tab contains the full list of communication parameters. They influence and set the behaviour of communication for given station (except for the station address, see Address).

Tab is visible only if communication protocol contains some parameters.

The list contains the following information:

- Parameter name
- Value
- Technical units and permitted range
- Default value

The editing is allowed only in column *Value.* It enables to set the requested value of parameter. The changed values (they are different from the default value) are highlighted by red color. Click on the "Def" button if you want to return the setting of values of one or more selected parameters on default one. The "Def" button is placed below the list of protocol parameters together with the info button.

More information on parameters of asynchronous communication protocols is here and information on parameters of communication line is here. They influence the behaviour of communication on all stations of given line.

> ⓘ **Related pages:**
>
> Communication stations
> Values of communication stations