

L&G Toccata

L&G Toccata protocol

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Supported device types and versions

This protocol supports the following Landis&Gyr devices:

Table 1

| Device type | The version of the software in the device | Protocol version |
|--------------------|---|------------------|
| PRU1.64, RWP80 | | TOCCATA1 V.0 |
| PRU1.64, RWP80 | | TOCCATA1 V.1 |
| PRU10.64, PRV2.128 | | TOCCATA2 V.0 |
| RWP80 | AZA v. 07.10 | TOCCATA1 V.2 |

Communication line configuration

- Communication line category: [Serial](#), [SerialOverUDP Device Redundant](#), [TCP-IP/TCP](#).
- Baud rate and transmission parameters according to a type of communication.
- 2400 Bd, 8 data bits, no parity, 1 stop bit in direct connection point-point (TOCCATA1 V.0 and V1).
- 9600 Bd, 8 data bits, no parity, 1 stop bit in direct connection point-point (TOCCATA2 V.0).
- If devices communicate via the communication concentrators (KPX, radio modems), the transmission parameters depend on the particular case.

Communication station configuration

- Communication protocol: **L&G TOCCATA**
- The station address is in the range of 0 up to 255 in decimal format. It is used only when communicating via communication concentrators. In the case of direct communication, the address is ignored.

Station protocol parameters

You can define the following parameters:

Table 2

| Keyword | Full name | Meaning | Unit | Implicit value |
|---------|---------------------|--|------|----------------|
| RC | Retry Count | The number of request retries if the communication error occurs. | - | 1 |
| RT | Retry Timeout | The delay between repeating the request if the communication error occurs. | ms | 1000 millisec. |
| WFT | Wait First Timeout | The first waiting before reading the response after the request is sent. | ms | 300 millisec. |
| WT | Wait Timeout | The delay between response readings until the response is completed. | ms | 300 millisec. |
| MWR | Max Wait Retry | The number of response reading retries until the response is completed. | - | 12 |
| WBR | Wait Before Request | The delay that is used before each request. | ms | 0 |

| | | | | |
|-------|-------------------|--|------------|------------|
| KPX | KPX Route | The communication via the communication concentrator. The station address is used. | YES /NO | NO |
| MPI | Maximum PA Items | The maximum number of PA data in one data block. You must always define an even number. If communicating via concentrator, the maximum number is 10, otherwise, it is 24. | - | 10 |
| LE | Log Events | It allows saving the text messages to TRACE.LOG from the device. This file is in the current working directory of the communication process. | YES /NO | NO |
| KLRD | KL Read Delay | The time period to obtain the values of KL data. KL data are read when starting the communication process and again after elapsing of the KLRD period. | min | 30 minutes |
| SACK | Send ACK | Sending ACK message (DLE-ACK) after the D2000 KOM receives the proper packet. A direct connection requires to set YES. Connection via concentrator (KPX=YES) requires to set NO (speeding up of communication). | YES /NO | YES |
| SENAC | Send Enhanced ACK | Sending enhanced ACK message with station address (DLE-ACK-CR-LF-StationAddress-CR-LF) after the D2000 KOM receives the proper packet. | YES /NO | NO |
| PRUV | PRU Version | TOCCATA protocol: <ul style="list-style-type: none"> • value 0: TOCCATA1 V.0 • value 1: TOCCATA1 V.1 • value 2: TOCCATA2 V.0 • value 3: TOCCATA1 V.2 | 0, 1, 2, 3 | 0 |
| PAF | PA First | At starting the communication, it gives priority to reading the PA instead of KL parameters. KL parameters will be read after PA ones are received from all stations. | YES /NO | NO |
| FD | Full Debug | Activation of the debug information about received values. | YES /NO | NO |

A string containing the protocol parameters is defined as follows:

```
Key_word=value;Key_word=value; ...
```

Example:

```
RC=1;RT=500;KPX=YES;
```

If there is used a keyword with an invalid value in the initialization string, there will be used corresponding default value according to the table 1.

I/O tag configuration

I/O tags: **AI, AO, CI, CO, DI, DO, TIR, TOR, TIA, TOA.**

In the configuration you must define the following parameters:

- point type PA or KL
- address (for KL it is a physical address in the device)
- size of the data block of a given point (for PA it is always 0)

Literature

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Changes and modifications

- March 1999 - Completing the protocol TOCCATA2 V.0.
- April 1999 - Debugging the TOCCATA2 V.0.
- April 2002 - Added the version TOCCATA1 V.2.
- May 7, 2002 - change of behavior of KL points, size 2 bytes, types TiR and ToR - canceled the internal multiplication of received value *60, it is supposed that the input value is in seconds.

Document revisions

- Ver. 1.2 – February 8, 2000 – Update for version 4.07 and 4.10
- Ver. 1.3 – May 22, 2000 – Added parameter of protocol WFT.
- Ver. 1.4 – July 21, 2000 – Added parameter of protocol SACK.
- Ver. 1.5 - November 26, 2001 - Added parameter of protocol PAF.
- Ver. 1.6 - April 5, 2002 - Added version TOCCATA1 V.2.



Related pages:

[Communication protocols](#)