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: • 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