L&G ProfiBus

L&G ProfiBus communication protocol

Supported device types and versions

The protocol LGPROFIBUS implements a communication with Landis&Gyr devices on the basis of ProfiBus communication protocol.

This communication supports (is verified) these Landis&Gyr devices:

Table 1

Device	Version of software on device	Version of protocol
PRU10.64		

Communication line configuration

The card KMFB02 (Incos a.s. Žilina) is used as physical communication interface with the firmware IpeSoft s.r.o. Žilina (stored in EPROM). The communication runs on baud rate 93.75 kBd. A firmware in card provides all basic tasks for access to ProfiBus network. The card needs a driver KMFB02.SYS.

- Communication line category: **PROFIBUS**
- Line parameters (PROFIBUS tab):
    - Device ID – is ProfiBus Node Id, which is assigned to KMFB02 card. It must be an unused number in the range of 0 up to 32 and reserved for KMFB02 card in ProfiBus network.

Communication station configuration

- Communication protocol: **L&G Profibus**
- Station address is ProfiBus Node Id of device (PRU10) in the range of 0 up to 32.

Station protocol parameters

The parameters are configured in a dialog box – Communication station - configuration dialog box.

They influenced a behavior of the access to the communication medium. You can define the following parameters:

Table 2

Key word	Full name	Meaning	Unit	Default value
WT	WR_TIME	Delay before the message is sent.	ms	80
RT	RD_TIME	Delay which is inserted into the executing of transaction when there is exceeded their maximum count.	ms	100
MTR	MAX_TRANSACTION_NUMBER	Maximum transactions that are unfinished.	-	5
MWR	MAX_WR_RETRY	Maximum retries during one record.	-	5
MTT	MAX_TRANSACTION_TIME	Maximum waiting time for the response to end the transaction.	sec	6
MMT	MAX_MESSAGE_TIME	Maximum time to complete at least one of unfinished transactions. After this timeout elapses, a communication error occurs in station.	sec	10

The communication runs in the transaction way (Request/Response) for both data reading and writing. Data are read one point after another, always as a separate transaction.

String containing the protocol parameters is being defined as follows:

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

Example:

```
WT=90;RT=200;MTR=7;
```

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

I/O tag configuration

I/O tags: **Ai, Ao, Ci, Co, Di, Do, TiR, ToR, TxtI, TxtO**

I/O tag types correspond to the following „Profibus_Type“:

Table 3

D2000 type	Profibus_Type
Ci, Co	Unsigned16
Ai, Ao	FloatingPoint
TxtI, TxtO	Bit_String
TiR, ToR	TimeDiff32, TimeDiff48
Di, Do	Unsigned16

The address is a number in the range of 0 up to 65535.

Note:
You can use the software RefGen for easy configuration and servicing the addresses of I/O tags when changing software in PLC. L&G utility „pointrep“ enables to generate a file „*.adr”, which is an input for RefGen. RefGen uses the columns “ProfiBus_Type” (Table 3), “OV_Index” (the address) and “Access_Right” (input/output).

Literature

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Changes and modifications

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Document revisions

- Ver. 1.1 – February 8, 2000 – Updating the document

Related pages:

Communication protocols