

IEC 62056-21:2002 File I/O

IEC62056-21:2002 File I/O communication protocol

[Supported device types and versions](#)
[Communication line configuration](#)
[Communication line protocol parameters](#)
[Communication station configuration](#)
[Station protocol parameters](#)
[I/O tag configuration](#)
[I/O address](#)
[Literature](#)
[Changes and modifications](#)
[Document revisions](#)

Supported device types and versions

This protocol analyzes the files containing data about measurement according to international standard IEC 62056.

Communication line configuration

- Communication line category **File I/O** (communication by files).

Communication line configuration parameters File I/O:

- Input file** - complete path to the file or directory with data.

In case of analyzing the particular file, its size is tested with a period 1 sec. If file does not increase during two consecutive periods, it is processed.

If directory is entered (in case of a platform Win32 with reverse solidus (\) at the end), all files that match the mask are processed (see [station protocol parameters](#)).

- Archive directory** -path to the directory, where the processed files are archived. If directory is not set, the processed files will be cancelled.

Communication line protocol parameters

Dialog window [communication line configuration](#) - tab **Protocol parameters**, select the protocol "IEC62056-21:2002 File I/O".

Table 1

Parameter	Description	Unit	Default value
Profile	Analyzed profile.	-	P.01
Gorlitz PRM62 Module	Files from device Gorlitz PRM62 are analyzed.	YES /NO	NO
Archive Subdirectory Time Mask	Mask for generation of subdirectories in main archive directory according to time of file processing or time stamp of file (the Input file is the entered directory).	-	rrrrmmdd
Formatted Codes (Annex C)	Numerical addresses of I/O tags are used according to specification of standard IEC62056-21, Annex C. If numerical addresses are used, the station addresss is then acquired from the value of object with address <i>D000</i> , time stamp is acquired from the value of object with address <i>C001</i> .	YES /NO	NO
External Command File 1, 2	Complete path to periodically called external command file (.cmd). It is used only if non-empty value has been configured. It is possible to configure two independently executed command files with different periods.	-	-
External Command File Period 1,2	Call period of the external command file 1 or 2.	mi:ss	1:00
Call External Command File 1,2 Synchronously	Call external command file 1 or 2 synchronously.	YES /NO	YES
Ext. Command File After Activation	Complete path to the external command file wich is launched at change of redundancy status to HS. It is called only once and always synchronously. It is used only if non-empty value has been configured.	-	-
Debug Files Flow	Show debug information about processed files.	YES /NO	YES
Debug Files Content	Show debug information with the content of processed files.	YES /NO	YES
Debug Values	Show debug information with measured values of the measure points.	YES /NO	YES

Files Checking Period	Period of input directory content check (if the input file is a directory).	mi:ss	1:00
Unknown Files Backup Directory	File, where unknown files are saved (if the input file is directory). If it is not written, the files will be cancelled. The unknown files are the files inconvenient to mask (see station protocol parameters) or the station with required device number was not found.	-	-
Future Data Filter	Time data filter. If the time stamp of acquired values is different from current time more than stated number of hours in future, they are ignored. Enter 0 (zero) to ignore time filter.	hours	24
History Data Filter	Time data filter. If the time stamp of acquired values is different from current time more than stated number of hours in past, they are ignored. Enter 0 (zero) to ignore time filter.	days	31
Abnormal Timestamp Data Dir	Directory where the files with ignored data by time filter will be saved (Future Data Filter and History Data Filter).	-	-
After Processing Timeout	Timeout, it is inserted after the file was analyzed.	ss.mss	0.100
Additional Error Logfile	Error file to write information about errors during processing (unknown file in directory, too old or too new values). Empty value means that this error file will not be created.	-	-

Communication station configuration

- Communication protocol "**IEC62056-21:2002 File I/O**".
- **Station address** - the station address is ignored if the [input file](#) is the particular file. If the directory is entered, the device number (electrometer) must be entered to assign the processed file to particular station. If the station with this number does not exist, the file is considered to be unknown (see communication line protocol parameter [Unknown files backup directory](#)).

Station protocol parameters

Dialog window [station configuration](#) - tab **Protocol parameters**.

They influence some optional protocol parameters. The following station protocol parameters can be entered:

Table 2

Parameter	Description	Unit	Default value
Maximum File Timeout	If the input file is a particular file, after this timeout passes without a file being processed, then the station value is transferred to communication error.	min	45
Filename Mask	Mask for the name testing of the processed files. The following digit placeholder can be used: {N} - electrometer number, beware of number of figure, e.g.{NNNNNNNN}, {yy} or {yyyy} - year, {mm} - month, {dd} - day, {hh} - hour, {mi} - minute, {ss} - second. Example of mask: "Meter_{NNNNNNNN}{yy}{mm}{dd}{hh}{mi}.abl". Time stamp gained from the file name (if it is possible) is used at file saving to archive directory (see communication line protocol parameters Archive subdirectory time mask). If the electrometer number is gained, it is used for searching the proper station. In case of not using the mask, the parameter should be empty. The station addresss is then acquired from the value of object 0.0.0, C.1.0 or ZNR1 (ZNR1 in the past only in case of Gorlitz PRM62 Module , currently also for other types of energy meters).	-	-
External Command File	Complete path to periodically called external command file (.cmd). The command file is called before accessing the input file. It is used only if non-empty value has been configured.	-	-
External Command File Period	Call period of the external command file.	mi:ss	1:00
Call Ext. Command File Synchronously	Call external command file synchronously.	YES /NO	YES
Old Values As New Values	All values from communication (even old ones) go to the system as new values.	YES /NO	NO
PRM62 Status To Flags	The parameter is only used when analyzing files from the Gorlitz PRM62 (see the Gorlitz PRM62 Module line parameter). When enabled, attributes Invalid (invalid value), ShortPeriod (data for the whole measurement period are not available to electrometer), and TimeSet (time has been set during the measurement period) are mapped into flags FA, FB, FC .	YES /NO	NO

I/O tag configuration

Supported value types of I/O tags: **Ai, Ci, TxtI**.

I/O address

Address of I/O tag corresponds to standard IEC 62056-61:2002 Object Identification system (OBIS), "Annex A - Code presentation".

Shortened address format is supported: **C.D[E][*F]**

where is

- **C** - Value group C (number within the range of 0..99 or symbols 'C', 'F', 'L' or 'P').
- **D** - Value group D (number within the range of 0..99 or symbols 'C', 'F', 'L' or 'P').
- **E** - Value group E (number within the range of 0..255).
- **F** - Value group F (number within the range of 0..255).

A special I/O tag with address "**\$SW**" acquires the value of profile status word.

File example

```
[HEADER]
PROT = 0
ZNR1 = 00359487
TIME = 10:02:05
DATE = 22.10.04

[PDATA]
/EMH4\@01QJKB0660L0C1
0.0.0(00359487)
0.0.1(00359487)
0.9.1(100208)
0.9.2(041022)
F.F(00000000)
P.01(041022094500)(00000000)(15)(4)(1.5)(MW)(2.5)(MW)(3.5)(Mvar)(4.5)(Mvar)
(00.000)(00.000)(00.000)(00.000)
(00.000)(00.000)(00.000)(00.000)
!
```

where is:

P.01 - profile
(041022094500) - the time stamp of the first row with values
(00000000) - the profile status word
(15) - period of measurement in minutes
(4) - number of channels
(1.5) - first channel, 1 = Value Group C = Reactive power+, 5 = Value Group D = Last average 1
(MW) - unit of the first channel
etc.

Next rows contain the values of measurement.

Literature

- International Standard IEC 62056-21, Direct Data Local Exchange, First edition 2002-05.
- International Standard IEC 62056-61, Object Identification System (OBIS), Second edition 2006-11.
- Energie-Info, OBIS-Kennzahlen-System, Stand: 03. November 2006, www.vdew.net.

Changes and modifications

-

Document revisions

- Ver. 1.0 - October 27th, 2008 - document creation



Related pages:

[Communication protocols](#)

flags