

SD Card Files And Their Formats

This file contains the formats of the individual files that are used on the SD cards. Not all the file formats are included in this file.

The document uses a psuedo C language to define the structure of the file.

File Directory Structure

All the files are kept in a directory of the SD card. The directory structure is as follows.

- **Root**
 - **KAEL**
 - **Device Type (EA01 thru EA05)**
 - **Year (YY)**
 - **Month (MM)**
 - **Day (DD)**
 - **Hour (HH)**
 - **T1 and T1_index files**
 - **meta files (conf, alr, ld, dp, ...)**

Data Types Used

Type Name	Byte Size
byte	1 bytes
float	4 bytes
UInt16	2 bytes
UInt32	4 bytes
UInt64	8 (bytes 7. ve 8. are 0)
UInt48	6 bytes

File Header

Most of the files use headers. The structure of the header is the same in all the files. The header is **50 bytes** in size.

```
struct Header {  
    //34bytes Data  
    UInt16 countryCode //869  
    UInt16 companyCode //7436  
    UInt32 productCode //88503  
    UInt16 barCodeCheck //9  
    UInt16 fileSystemVersion //(0x0100) (// 0x0101 //0x0201 // 0x0301 //0x0401 //0x0501)  
    UInt16 UserDefineDeviceNumberH  
    UInt16 UserDefineDeviceNumberL  
    UInt16 fileRecortTableType  
    UInt16 fileStartRecordTime.YearMonth  
    UInt16 fileStartRecordTime.dayHour  
    UInt16 fileStartRecordTime.minuteSecond  
    UInt16 fileLastRecordTime.YearMonth  
    UInt16 fileLastRecordTime.dayHour  
    UInt16 fileLastRecordTime.minuteSecond  
    UInt32 fileRecordNumber  
    //16bytes reserved // not used}
```

FileSystemVersion field

The file system version field changes as explained below.

Version 0

```
fileSystemVersion = 0x0100 //on all devices
```

Subsequent Versions (Version 1, etc)

```
for EA01 : fileSystemVersion = 0x0101
```

```
for EA02 : fileSystemVersion = 0x0201
```

```
for EA03 : fileSystemVersion = 0x0301
```

```
for EA04 : fileSystemVersion = 0x0401
```

```
for EA05 : fileSystemVersion = 0x0501
```

The Conf.dat File

The conf.dat file has different formats based on the Energy Analyzer devices (EA01-EA05).

For device EA01

```
struct ConfEA01File {
    Header header;
    ConfEA01Record[] records;
}
```

For the EA01 device the fileSystemVersion = 0x0100

For the EA01 device the fileSystemVersion = 0x0101

```
struct ConfEA01Record { //total 19 data in 34 bytes
```

```
    UInt16 ProcessTimeforConfigFile_yearMonth
    UInt16 ProcessTimeforConfigFile_dayHour
    UInt16 ProcessTimeforConfigFile_minuteSecond
    UInt16 LastRealTimeforConfigFile_yearMonth
    UInt16 LastRealTimeforConfigFile_dayHour
    UInt16 LastRealTimeforConfigFile_minuteSecond
    UInt16 UserDefineDeviceNumberH
    UInt16 UserDefineDeviceNumberL
    UInt32 Modbus_mbConfig
    UInt16 GlobalParameters_vtrfU16
    UInt16 GlobalParameters_ctrf
    byte   GlobalParameters_ConnectionType
    byte   GlobalParameters_verikayitzamani
    byte   GlobalParameters_demandTimeInterval
    byte   GlobalParameters_demandTimeSubInterval
    byte   ModbusmbSecurity_writeProtect
    byte   ModbusmbSecurity_readProtect
    UInt16 ModbusmbSecurity_writeCode
    UInt16 ModbusmbSecurity_readCode
}
```

For device EA02

```
struct ConfEA02File {
    Header header;
    ConfEA02Record[] records;
}
```

For the EA02 device the fileSystemVersion = 0x0100

```
struct ConfEA02Record { //total 183 data in 358 bytes + 128 bytes free. Each record 486 bytes
```

```
    UInt16 ProcessTimeforConfigFile_yearMonth
    UInt16 ProcessTimeforConfigFile_dayHour
    UInt16 ProcessTimeforConfigFile_minuteSecond
    UInt16 LastRealTimeforConfigFile_yearMonth
    UInt16 LastRealTimeforConfigFile_dayHour
    UInt16 LastRealTimeforConfigFile_minuteSecond
    UInt16 UserDefineDeviceNumberH
```

```

UInt16 UserDefineDeviceNumberL
UInt32 Modbus_mbConfig
UInt16 GlobalParameters_vtrfU16
UInt16 GlobalParameters_ctrf
byte  LobalParameters_ConnectionType
byte  GlobalParameters_verikayitzamani
byte  GlobalParameters_demandTimeInterval
byte  GlobalParameters_demandTimeSubInterval
byte  ModbusmbSecurity_writeProtect
byte  ModbusmbSecurity_readProtect
UInt16 ModbusmbSecurity_writeCode
UInt16 ModbusmbSecurity_readCode

// relay 0 configuration data
byte  GlobalParametersrelaysConfig0_Position
byte  GlobalParametersrelaysConfig0_AccessStatus
float //reserved data not used
UInt16 GP_RC0_alrConfig_Phase_overVoltageBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_overVoltageBit_returntime
byte  GP_RC0_alrConfig_Phase_overVoltageBit_perHysterysz
byte  GP_RC0_alrConfig_Phase_overVoltageBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Phase_underVoltageBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_underVoltageBit_returntime
byte  GP_RC0_alrConfig_Phase_underVoltageBit_perHysterysz
byte  GP_RC0_alrConfig_Phase_underVoltageBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Phase_overCurrentBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_overCurrentBit_returntime
byte  GP_RC0_alrConfig_Phase_overCurrentBit_perHysterysz
byte  GP_RC0_alrConfig_Phase_overCurrentBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Phase_underCurrentBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_underCurrentBit_returntime
byte  GP_RC0_alrConfig_Phase_underCurrentBit_perHysterysz
byte  GP_RC0_alrConfig_Phase_underCurrentBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Phase_overTHDVBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_overTHDVBit_returntime
byte  GP_RC0_alrConfig_Phase_overTHDVBit_perHysterysz
byte  GP_RC0_alrConfig_Phase_overTHDVBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Phase_overHDVBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_overHDVBit_returntime
byte  GP_RC0_alrConfig_Phase_overHDVBit_perHysterysz
byte  GP_RC0_alrConfig_Phase_overHDVBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Phase_overTHDCBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_overTHDCBit_returntime
byte  GP_RC0_alrConfig_Phase_overTHDCBit_perHysterysz
byte  GP_RC0_alrConfig_Phase_overTHDCBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Phase_overHDCBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_overHDCBit_returntime
byte  GP_RC0_alrConfig_Phase_overHDCBit_perHysterysz
byte  GP_RC0_alrConfig_Phase_overHDCBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Phase_missingPhaseBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_missingPhaseBit_returntime
byte  GP_RC0_alrConfig_Phase_missingPhaseBit_perHysterysz
byte  GP_RC0_alrConfig_Phase_missingPhaseBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Public_vUnbalanceAlarmBit_delaytime
UInt16 GP_RC0_alrConfig_Public_vUnbalanceAlarmBit_returntime
byte  GP_RC0_alrConfig_Public_vUnbalanceAlarmBit_perHysterysz
byte  GP_RC0_alrConfig_Public_vUnbalanceAlarmBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Public_cUnbalanceAlarmBit_delaytime
UInt16 GP_RC0_alrConfig_Public_cUnbalanceAlarmBit_returntime
byte  GP_RC0_alrConfig_Public_cUnbalanceAlarmBit_perHysterysz
byte  GP_RC0_alrConfig_Public_cUnbalanceAlarmBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Public_overNotrCurrent_delaytime
UInt16 GP_RC0_alrConfig_Public_overNotrCurrent_returntime
byte  GP_RC0_alrConfig_Public_overNotrCurrent_perHysterysz
byte  GP_RC0_alrConfig_Public_overNotrCurrent_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Public_oFreqAlarmBit_delaytime
UInt16 GP_RC0_alrConfig_Public_oFreqAlarmBit_returntime

```

```
byte GP_RC0_alrConfig_Public_oFreqAlarmBit_perHysterysz
byte GP_RC0_alrConfig_Public_oFreqAlarmBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Public_uFreqAlarmBit_delaytime
UInt16 GP_RC0_alrConfig_Public_uFreqAlarmBit_returntime
byte GP_RC0_alrConfig_Public_uFreqAlarmBit_perHysterysz
byte GP_RC0_alrConfig_uPublic_FreqAlarmBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Public_phaseOrderErrorBit_delaytime
UInt16 GP_RC0_alrConfig_Public_phaseOrderErrorBit_returntime
byte GP_RC0_alrConfig_Public_phaseOrderErrorBit_perHysterysz
byte GP_RC0_alrConfig_Public_phaseOrderErrorBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Public_phaseVoltageConnectionErrorBit_delaytime
UInt16 GP_RC0_alrConfig_Public_phaseVoltageConnectionErrorBit_returntime
byte GP_RC0_alrConfig_Public_phaseVoltageConnectionErrorBit_perHysterysz
byte GP_RC0_alrConfig_Public_phaseVoltageConnectionErrorBit_relayEnable
```

//relay 1 configuration data

```
byte GlobalParametersrelaysConfig1_Position
byte GlobalParametersrelaysConfig1_AccessStatus
float //reserved data not used
UInt16 GP_RC1_alrConfig_Phase_overVoltageBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overVoltageBit_returntime
byte GP_RC1_alrConfig_Phase_overVoltageBit_perHysterysz
byte GP_RC1_alrConfig_Phase_overVoltageBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Phase_underVoltageBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_underVoltageBit_returntime
byte GP_RC1_alrConfig_Phase_underVoltageBit_perHysterysz
byte GP_RC1_alrConfig_Phase_underVoltageBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Phase_overCurrentBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overCurrentBit_returntime
byte GP_RC1_alrConfig_Phase_overCurrentBit_perHysterysz
byte GP_RC1_alrConfig_Phase_overCurrentBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Phase_underCurrentBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_underCurrentBit_returntime
byte GP_RC1_alrConfig_Phase_underCurrentBit_perHysterysz
byte GP_RC1_alrConfig_Phase_underCurrentBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Phase_overTHDVBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overTHDVBit_returntime
byte GP_RC1_alrConfig_Phase_overTHDVBit_perHysterysz
byte GP_RC1_alrConfig_Phase_overTHDVBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Phase_overHDVBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overHDVBit_returntime
byte GP_RC1_alrConfig_Phase_overHDVBit_perHysterysz
byte GP_RC1_alrConfig_Phase_overHDVBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Phase_overTHDCBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overTHDCBit_returntime
byte GP_RC1_alrConfig_Phase_overTHDCBit_perHysterysz
byte GP_RC1_alrConfig_Phase_overTHDCBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Phase_overHDCBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overHDCBit_returntime
byte GP_RC1_alrConfig_Phase_overHDCBit_perHysterysz
byte GP_RC1_alrConfig_Phase_overHDCBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Phase_missinGPhaseBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_missinGPhaseBit_returntime
byte GP_RC1_alrConfig_Phase_missinGPhaseBit_perHysterysz
byte GP_RC1_alrConfig_Phase_missinGPhaseBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Public_vUnbalanceAlarmBit_delaytime
UInt16 GP_RC1_alrConfig_Public_vUnbalanceAlarmBit_returntime
byte GP_RC1_alrConfig_Public_vUnbalanceAlarmBit_perHysterysz
byte GP_RC1_alrConfig_Public_vUnbalanceAlarmBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Public_cUnbalanceAlarmBit_delaytime
UInt16 GP_RC1_alrConfig_Public_cUnbalanceAlarmBit_returntime
byte GP_RC1_alrConfig_Public_cUnbalanceAlarmBit_perHysterysz
byte GP_RC1_alrConfig_Public_cUnbalanceAlarmBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Public_overNotrCurrent_delaytime
UInt16 GP_RC1_alrConfig_Public_overNotrCurrent_returntime
```

```

byte GP_RC1_alrConfig_Public_overNotrCurrent_perHysterysz
byte GP_RC1_alrConfig_Public_overNotrCurrent_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Public_oFreqAlarmBit_delaytime
UInt16 GP_RC1_alrConfig_Public_oFreqAlarmBit_returntime
byte GP_RC1_alrConfig_Public_oFreqAlarmBit_perHysterysz
byte GP_RC1_alrConfig_Public_oFreqAlarmBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Public_uFreqAlarmBit_delaytime
UInt16 GP_RC1_alrConfig_Public_uFreqAlarmBit_returntime
byte GP_RC1_alrConfig_Public_uFreqAlarmBit_perHysterysz
byte GP_RC1_alrConfig_uPublic_FreqAlarmBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Public_phaseOrderErrorBit_delaytime
UInt16 GP_RC1_alrConfig_Public_phaseOrderErrorBitt_returntime
byte GP_RC1_alrConfig_Public_phaseOrderErrorBit_perHysterysz
byte GP_RC1_alrConfig_Public_phaseOrderErrorBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Public_phaseVoltageConnectionErrorBit_delaytime
UInt16 GP_RC1_alrConfig_Public_phaseVoltageConnectionErrorBit_returntime
byte GP_RC1_alrConfig_Public_phaseVoltageConnectionErrorBit_perHysterysz
byte GP_RC1_alrConfig_Public_phaseVoltageConnectionErrorBit_relayEnable

//128 bytes free reserved
}

```

For the EA02 device the fileSystemVersion = 0x0201

```

struct ConfEA02Record { //total 183 data in 486 bytes
    UInt16 ProcessTimeforConfigFile_yearMonth
    UInt16 ProcessTimeforConfigFile_dayHour
    UInt16 ProcessTimeforConfigFile_minuteSecond
    UInt16 LastRealTimeforConfigFile_yearMonth
    UInt16 LastRealTimeforConfigFile_dayHour
    UInt16 LastRealTimeforConfigFile_minuteSecond
    UInt16 UserDefineDeviceNumberH
    UInt16 UserDefineDeviceNumberL
    UInt32 Modbus_mbConfig
    UInt16 GlobalParameters_vtrfU16
    UInt16 GlobalParameters_ctrf
    byte LobalParameters_ConnectionType
    byte GlobalParameters_verikayitzamani
    byte GlobalParameters_demandTimeInterval
    byte GlobalParameters_demandTimeSubInterval
    byte ModbusmbSecurity_writeProtect
    byte ModbusmbSecurity_readProtect
    UInt16 ModbusmbSecurity_writeCode
    UInt16 ModbusmbSecurity_readCode

    // relay 0 configuration data
    byte GlobalParametersrelaysConfig0_Position
    byte GlobalParametersrelaysConfig0_AccessStatus
    double GP_RC0_alrConfig_Phase_overVoltageBit_value
    UInt16 GP_RC0_alrConfig_Phase_overVoltageBit_delaytime
    UInt16 GP_RC0_alrConfig_Phase_overVoltageBit_returntime
    byte GP_RC0_alrConfig_Phase_overVoltageBit_perHysterysz
    byte GP_RC0_alrConfig_Phase_overVoltageBit_relayEnable
    double GP_RC0_alrConfig_Phase_underVoltageBit_value
    UInt16 GP_RC0_alrConfig_Phase_underVoltageBit_delaytime
    UInt16 GP_RC0_alrConfig_Phase_underVoltageBit_returntime
    byte GP_RC0_alrConfig_Phase_underVoltageBit_perHysterysz
    byte GP_RC0_alrConfig_Phase_underVoltageBit_relayEnable
    double GP_RC0_alrConfig_Phase_overCurrentBit_value
    UInt16 GP_RC0_alrConfig_Phase_overCurrentBit_delaytime
    UInt16 GP_RC0_alrConfig_Phase_overCurrentBit_returntime
    byte GP_RC0_alrConfig_Phase_overCurrentBit_perHysterysz
    byte GP_RC0_alrConfig_Phase_overCurrentBit_relayEnable
    double GP_RC0_alrConfig_Phase_underCurrentBit_value
    UInt16 GP_RC0_alrConfig_Phase_underCurrentBit_delaytime
    UInt16 GP_RC0_alrConfig_Phase_underCurrentBit_returntime
    byte GP_RC0_alrConfig_Phase_underCurrentBit_perHysterysz
    byte GP_RC0_alrConfig_Phase_underCurrentBit_relayEnable
    double GP_RC0_alrConfig_Phase_overTHDVBBit_value
    UInt16 GP_RC0_alrConfig_Phase_overTHDVBBit_delaytime
    UInt16 GP_RC0_alrConfig_Phase_overTHDVBBit_returntime
    byte GP_RC0_alrConfig_Phase_overTHDVBBit_perHysterysz
    byte GP_RC0_alrConfig_Phase_overTHDVBBit_relayEnable
}

```

```
double GP_RC0_alrConfig_Phase_overHDVBit_value
UInt16 GP_RC0_alrConfig_Phase_overHDVBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_overHDVBit_returntime
byte GP_RC0_alrConfig_Phase_overHDVBit_perHysterysz
byte GP_RC0_alrConfig_Phase_overHDVBit_relayEnable
double GP_RC0_alrConfig_Phase_overTHDCBit_value
UInt16 GP_RC0_alrConfig_Phase_overTHDCBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_overTHDCBit_returntime
byte GP_RC0_alrConfig_Phase_overTHDCBit_perHysterysz
byte GP_RC0_alrConfig_Phase_overTHDCBit_relayEnable
double GP_RC0_alrConfig_Phase_overHDCBit_value
UInt16 GP_RC0_alrConfig_Phase_overHDCBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_overHDCBit_returntime
byte GP_RC0_alrConfig_Phase_overHDCBit_perHysterysz
byte GP_RC0_alrConfig_Phase_overHDCBit_relayEnable
double GP_RC0_alrConfig_Phase_missingPhaseBit_value
UInt16 GP_RC0_alrConfig_Phase_missingPhaseBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_missingPhaseBit_returntime
byte GP_RC0_alrConfig_Phase_missingPhaseBit_perHysterysz
byte GP_RC0_alrConfig_Phase_missingPhaseBit_relayEnable
double GP_RC0_alrConfig_Public_vUnbalanceAlarmBit_value
UInt16 GP_RC0_alrConfig_Public_vUnbalanceAlarmBit_delaytime
UInt16 GP_RC0_alrConfig_Public_vUnbalanceAlarmBit_returntime
byte GP_RC0_alrConfig_Public_vUnbalanceAlarmBit_perHysterysz
byte GP_RC0_alrConfig_Public_vUnbalanceAlarmBit_relayEnable
double GP_RC0_alrConfig_Public_cUnbalanceAlarmBit_value
UInt16 GP_RC0_alrConfig_Public_cUnbalanceAlarmBit_delaytime
UInt16 GP_RC0_alrConfig_Public_cUnbalanceAlarmBit_returntime
byte GP_RC0_alrConfig_Public_cUnbalanceAlarmBit_perHysterysz
byte GP_RC0_alrConfig_Public_cUnbalanceAlarmBit_relayEnable
double GP_RC0_alrConfig_Public_overNotrCurrent_value
UInt16 GP_RC0_alrConfig_Public_overNotrCurrent_delaytime
UInt16 GP_RC0_alrConfig_Public_overNotrCurrent_returntime
byte GP_RC0_alrConfig_Public_overNotrCurrent_perHysterysz
byte GP_RC0_alrConfig_Public_overNotrCurrent_relayEnable
double GP_RC0_alrConfig_Public_oFreqAlarmBit_value
UInt16 GP_RC0_alrConfig_Public_oFreqAlarmBit_delaytime
UInt16 GP_RC0_alrConfig_Public_oFreqAlarmBit_returntime
byte GP_RC0_alrConfig_Public_oFreqAlarmBit_perHysterysz
byte GP_RC0_alrConfig_Public_oFreqAlarmBit_relayEnable
double GP_RC0_alrConfig_Public_uFreqAlarmBit_value
UInt16 GP_RC0_alrConfig_Public_uFreqAlarmBit_delaytime
UInt16 GP_RC0_alrConfig_Public_uFreqAlarmBit_returntime
byte GP_RC0_alrConfig_Public_uFreqAlarmBit_perHysterysz
byte GP_RC0_alrConfig_uPublic_FreqAlarmBit_relayEnable
double GP_RC0_alrConfig_Public_phaseOrderErrorBit_value
UInt16 GP_RC0_alrConfig_Public_phaseOrderErrorBit_delaytime
UInt16 GP_RC0_alrConfig_Public_phaseOrderErrorBitt_returntime
byte GP_RC0_alrConfig_Public_phaseOrderErrorBit_perHysterysz
byte GP_RC0_alrConfig_Public_phaseOrderErrorBit_relayEnable
double GP_RC0_alrConfig_Public_phaseVoltageConnectionErrorBit_value
UInt16 GP_RC0_alrConfig_Public_phaseVoltageConnectionErrorBit_delaytime
UInt16 GP_RC0_alrConfig_Public_phaseVoltageConnectionErrorBit_returntime
byte GP_RC0_alrConfig_Public_phaseVoltageConnectionErrorBit_perHysterysz
byte GP_RC0_alrConfig_Public_phaseVoltageConnectionErrorBit_relayEnable
```

//relay 1 configuration data

```
byte GlobalParametersrelaysConfig1_Position
byte GlobalParametersrelaysConfig1_AccessStatus
double GP_RC1_alrConfig_Phase_overVoltageBit_value
UInt16 GP_RC1_alrConfig_Phase_overVoltageBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overVoltageBit_returntime
byte GP_RC1_alrConfig_Phase_overVoltageBit_perHysterysz
byte GP_RC1_alrConfig_Phase_overVoltageBit_relayEnable
double GP_RC1_alrConfig_Phase_underVoltageBit_value
UInt16 GP_RC1_alrConfig_Phase_underVoltageBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_underVoltageBit_returntime
byte GP_RC1_alrConfig_Phase_underVoltageBit_perHysterysz
byte GP_RC1_alrConfig_Phase_underVoltageBit_relayEnable
double GP_RC1_alrConfig_Phase_overCurrentBit_value
UInt16 GP_RC1_alrConfig_Phase_overCurrentBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overCurrentBit_returntime
byte GP_RC1_alrConfig_Phase_overCurrentBit_perHysterysz
byte GP_RC1_alrConfig_Phase_overCurrentBit_relayEnable
double GP_RC1_alrConfig_Phase_underCurrentBit_value
UInt16 GP_RC1_alrConfig_Phase_underCurrentBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_underCurrentBit_returntime
byte GP_RC1_alrConfig_Phase_underCurrentBit_perHysterysz
byte GP_RC1_alrConfig_Phase_underCurrentBit_relayEnable
```

```

double GP_RC1_alrConfig_Phase_overTHDVBit_value
UInt16 GP_RC1_alrConfig_Phase_overTHDVBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overTHDVBit_returntime
byte GP_RC1_alrConfig_Phase_overTHDVBit_perHysterysz
byte GP_RC1_alrConfig_Phase_overTHDVBit_relayEnable
double GP_RC1_alrConfig_Phase_overHDVBit_value
UInt16 GP_RC1_alrConfig_Phase_overHDVBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overHDVBit_returntime
byte GP_RC1_alrConfig_Phase_overHDVBit_perHysterysz
byte GP_RC1_alrConfig_Phase_overHDVBit_relayEnable
double GP_RC1_alrConfig_Phase_overTHDCBit_value
UInt16 GP_RC1_alrConfig_Phase_overTHDCBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overTHDCBit_returntime
byte GP_RC1_alrConfig_Phase_overTHDCBit_perHysterysz
byte GP_RC1_alrConfig_Phase_overTHDCBit_relayEnable
double GP_RC1_alrConfig_Phase_overHDCBit_value
UInt16 GP_RC1_alrConfig_Phase_overHDCBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overHDCBit_returntime
byte GP_RC1_alrConfig_Phase_overHDCBit_perHysterysz
byte GP_RC1_alrConfig_Phase_overHDCBit_relayEnable
double GP_RC1_alrConfig_Phase_missinGPhaseBit_value
UInt16 GP_RC1_alrConfig_Phase_missinGPhaseBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_missinGPhaseBit_returntime
byte GP_RC1_alrConfig_Phase_missinGPhaseBit_perHysterysz
byte GP_RC1_alrConfig_Phase_missinGPhaseBit_relayEnable
double GP_RC1_alrConfig_Public_vUnbalanceAlarmBit_value
UInt16 GP_RC1_alrConfig_Public_vUnbalanceAlarmBit_delaytime
UInt16 GP_RC1_alrConfig_Public_vUnbalanceAlarmBit_returntime
byte GP_RC1_alrConfig_Public_vUnbalanceAlarmBit_perHysterysz
byte GP_RC1_alrConfig_Public_vUnbalanceAlarmBit_relayEnable
double GP_RC1_alrConfig_Public_cUnbalanceAlarmBit_value
UInt16 GP_RC1_alrConfig_Public_cUnbalanceAlarmBit_delaytime
UInt16 GP_RC1_alrConfig_Public_cUnbalanceAlarmBit_returntime
byte GP_RC1_alrConfig_Public_cUnbalanceAlarmBit_perHysterysz
byte GP_RC1_alrConfig_Public_cUnbalanceAlarmBit_relayEnable
double GP_RC1_alrConfig_Public_overNotrCurrent_value
UInt16 GP_RC1_alrConfig_Public_overNotrCurrent_delaytime
UInt16 GP_RC1_alrConfig_Public_overNotrCurrent_returntime
byte GP_RC1_alrConfig_Public_overNotrCurrent_perHysterysz
byte GP_RC1_alrConfig_Public_overNotrCurrent_relayEnable
double GP_RC1_alrConfig_Public_oFreqAlarmBit_value
UInt16 GP_RC1_alrConfig_Public_oFreqAlarmBit_delaytime
UInt16 GP_RC1_alrConfig_Public_oFreqAlarmBit_returntime
byte GP_RC1_alrConfig_Public_oFreqAlarmBit_perHysterysz
byte GP_RC1_alrConfig_Public_oFreqAlarmBit_relayEnable
double GP_RC1_alrConfig_Public_uFreqAlarmBit_value
UInt16 GP_RC1_alrConfig_Public_uFreqAlarmBit_delaytime
UInt16 GP_RC1_alrConfig_Public_uFreqAlarmBit_returntime
byte GP_RC1_alrConfig_Public_uFreqAlarmBit_perHysterysz
byte GP_RC1_alrConfig_uPublic_FreqAlarmBit_relayEnable
double GP_RC1_alrConfig_Public_phaseOrderErrorBit_value
UInt16 GP_RC1_alrConfig_Public_phaseOrderErrorBit_delaytime
UInt16 GP_RC1_alrConfig_Public_phaseOrderErrorBit_returntime
byte GP_RC1_alrConfig_Public_phaseOrderErrorBit_perHysterysz
byte GP_RC1_alrConfig_Public_phaseOrderErrorBit_relayEnable
double GP_RC1_alrConfig_Public_phaseVoltageConnectionErrorBit_value
UInt16 GP_RC1_alrConfig_Public_phaseVoltageConnectionErrorBit_delaytime
UInt16 GP_RC1_alrConfig_Public_phaseVoltageConnectionErrorBit_returntime
byte GP_RC1_alrConfig_Public_phaseVoltageConnectionErrorBit_perHysterysz
byte GP_RC1_alrConfig_Public_phaseVoltageConnectionErrorBit_relayEnable
}

```

For device EA03

```

struct ConfEA03File {
    Header header;
    ConfEA03Record[] records;
}

```

For the EA03 device the fileSystemVersion = 0x0100

```

struct ConfEA03Record { //total 202 data in 377 bytes + 128 bytes free. Each record 505 bytes
    UInt16 ProcessTimeforConfigFile_yearMonth
    UInt16 ProcessTimeforConfigFile_dayHour
    UInt16 ProcessTimeforConfigFile_minuteSecond
}

```

```

UInt16 LastRealTimeforConfigFile_yearMonth
UInt16 LastRealTimeforConfigFile_dayHour
UInt16 LastRealTimeforConfigFile_minuteSecond
UInt16 UserDefineDeviceNumberH
UInt16 UserDefineDeviceNumberL
UInt32 Modbus_mbConfig
UInt16 GlobalParameters_vtrfU16
UInt16 GlobalParameters_ctrf
byte LobalParameters_ConnectionType
byte GlobalParameters_verikayitzamani
byte GlobalParameters_demandTimeInterval
byte GlobalParameters_demandTimeSubInterval
byte ModbusmbSecurity_writeProtect
byte ModbusmbSecurity_readProtect
UInt16 ModbusmbSecurity_writeCode
UInt16 ModbusmbSecurity_readCode

// relay 0 configuration data
byte GlobalParametersrelaysConfig0_Position
byte GlobalParametersrelaysConfig0_AccessStatus
float //reserved data not used
UInt16 GP_RC0_alrConfig_Phase_overVoltageBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_overVoltageBit_returntime
byte GP_RC0_alrConfig_Phase_overVoltageBit_perHysterysz
byte GP_RC0_alrConfig_Phase_overVoltageBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Phase_underVoltageBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_underVoltageBit_returntime
byte GP_RC0_alrConfig_Phase_underVoltageBit_perHysterysz
byte GP_RC0_alrConfig_Phase_underVoltageBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Phase_overCurrentBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_overCurrentBit_returntime
byte GP_RC0_alrConfig_Phase_overCurrentBit_perHysterysz
byte GP_RC0_alrConfig_Phase_overCurrentBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Phase_underCurrentBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_underCurrentBit_returntime
byte GP_RC0_alrConfig_Phase_underCurrentBit_perHysterysz
byte GP_RC0_alrConfig_Phase_underCurrentBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Phase_overTHDVBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_overTHDVBit_returntime
byte GP_RC0_alrConfig_Phase_overTHDVBit_perHysterysz
byte GP_RC0_alrConfig_Phase_overTHDVBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Phase_overHDVBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_overHDVBit_returntime
byte GP_RC0_alrConfig_Phase_overHDVBit_perHysterysz
byte GP_RC0_alrConfig_Phase_overHDVBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Phase_overTHDCBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_overTHDCBit_returntime
byte GP_RC0_alrConfig_Phase_overTHDCBit_perHysterysz
byte GP_RC0_alrConfig_Phase_overTHDCBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Phase_overHDCBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_overHDCBit_returntime
byte GP_RC0_alrConfig_Phase_overHDCBit_perHysterysz
byte GP_RC0_alrConfig_Phase_overHDCBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Phase_missingPhaseBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_missingPhaseBit_returntime
byte GP_RC0_alrConfig_Phase_missingPhaseBit_perHysterysz
byte GP_RC0_alrConfig_Phase_missingPhaseBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Public_vUnbalanceAlarmBit_delaytime
UInt16 GP_RC0_alrConfig_Public_vUnbalanceAlarmBit_returntime
byte GP_RC0_alrConfig_Public_vUnbalanceAlarmBit_perHysterysz
byte GP_RC0_alrConfig_Public_vUnbalanceAlarmBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Public_cUnbalanceAlarmBit_delaytime
UInt16 GP_RC0_alrConfig_Public_cUnbalanceAlarmBit_returntime
byte GP_RC0_alrConfig_Public_cUnbalanceAlarmBit_perHysterysz
byte GP_RC0_alrConfig_Public_cUnbalanceAlarmBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Public_overNotrCurrent_delaytime
UInt16 GP_RC0_alrConfig_Public_overNotrCurrent_returntime
byte GP_RC0_alrConfig_Public_overNotrCurrent_perHysterysz

```



```

byte GP_RC0_alrConfig_Public_overNotrCurrent_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Public_oFreqAlarmBit_delaytime
UInt16 GP_RC0_alrConfig_Public_oFreqAlarmBit_returntime
byte GP_RC0_alrConfig_Public_oFreqAlarmBit_perHysterysz
byte GP_RC0_alrConfig_Public_oFreqAlarmBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Public_uFreqAlarmBit_delaytime
UInt16 GP_RC0_alrConfig_Public_uFreqAlarmBit_returntime
byte GP_RC0_alrConfig_Public_uFreqAlarmBit_perHysterysz
byte GP_RC0_alrConfig_uPublic_FreqAlarmBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Public_phaseOrderErrorBit_delaytime
UInt16 GP_RC0_alrConfig_Public_phaseOrderErrorBit_returntime
byte GP_RC0_alrConfig_Public_phaseOrderErrorBit_perHysterysz
byte GP_RC0_alrConfig_Public_phaseOrderErrorBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Public_phaseVoltageConnectionErrorBit_delaytime
UInt16 GP_RC0_alrConfig_Public_phaseVoltageConnectionErrorBit_returntime
byte GP_RC0_alrConfig_Public_phaseVoltageConnectionErrorBit_perHysterysz
byte GP_RC0_alrConfig_Public_phaseVoltageConnectionErrorBit_relayEnable

//relay 1 configuration data
byte GlobalParametersrelaysConfig1_Position
byte GlobalParametersrelaysConfig1_AccessStatus
float //reserved data not used
UInt16 GP_RC1_alrConfig_Phase_overVoltageBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overVoltageBit_returntime
byte GP_RC1_alrConfig_Phase_overVoltageBit_perHysterysz
byte GP_RC1_alrConfig_Phase_overVoltageBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Phase_underVoltageBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_underVoltageBit_returntime
byte GP_RC1_alrConfig_Phase_underVoltageBit_perHysterysz
byte GP_RC1_alrConfig_Phase_underVoltageBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Phase_overCurrentBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overCurrentBit_returntime
byte GP_RC1_alrConfig_Phase_overCurrentBit_perHysterysz
byte GP_RC1_alrConfig_Phase_overCurrentBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Phase_underCurrentBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_underCurrentBit_returntime
byte GP_RC1_alrConfig_Phase_underCurrentBit_perHysterysz
byte GP_RC1_alrConfig_Phase_underCurrentBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Phase_overTHDVBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overTHDVBit_returntime
byte GP_RC1_alrConfig_Phase_overTHDVBit_perHysterysz
byte GP_RC1_alrConfig_Phase_overTHDVBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Phase_overHDVBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overHDVBit_returntime
byte GP_RC1_alrConfig_Phase_overHDVBit_perHysterysz
byte GP_RC1_alrConfig_Phase_overHDVBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Phase_overTHDCBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overTHDCBit_returntime
byte GP_RC1_alrConfig_Phase_overTHDCBit_perHysterysz
byte GP_RC1_alrConfig_Phase_overTHDCBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Phase_overHDCBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overHDCBit_returntime
byte GP_RC1_alrConfig_Phase_overHDCBit_perHysterysz
byte GP_RC1_alrConfig_Phase_overHDCBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Phase_missinGPhaseBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_missinGPhaseBit_returntime
byte GP_RC1_alrConfig_Phase_missinGPhaseBit_perHysterysz
byte GP_RC1_alrConfig_Phase_missinGPhaseBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Public_vUnbalanceAlarmBit_delaytime
UInt16 GP_RC1_alrConfig_Public_vUnbalanceAlarmBit_returntime
byte GP_RC1_alrConfig_Public_vUnbalanceAlarmBit_perHysterysz
byte GP_RC1_alrConfig_Public_vUnbalanceAlarmBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Public_cUnbalanceAlarmBit_delaytime
UInt16 GP_RC1_alrConfig_Public_cUnbalanceAlarmBit_returntime
byte GP_RC1_alrConfig_Public_cUnbalanceAlarmBit_perHysterysz

```

```

byte GP_RC1_alrConfig_Public_cUnbalanceAlarmBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Public_overNotrCurrent_delaytime
UInt16 GP_RC1_alrConfig_Public_overNotrCurrent_returntime
byte GP_RC1_alrConfig_Public_overNotrCurrent_perHysterysz
byte GP_RC1_alrConfig_Public_overNotrCurrent_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Public_oFreqAlarmBit_delaytime
UInt16 GP_RC1_alrConfig_Public_oFreqAlarmBit_returntime
byte GP_RC1_alrConfig_Public_oFreqAlarmBit_perHysterysz
byte GP_RC1_alrConfig_Public_oFreqAlarmBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Public_uFreqAlarmBit_delaytime
UInt16 GP_RC1_alrConfig_Public_uFreqAlarmBit_returntime
byte GP_RC1_alrConfig_Public_uFreqAlarmBit_perHysterysz
byte GP_RC1_alrConfig_uPublic_FreqAlarmBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Public_phaseOrderErrorBit_delaytime
UInt16 GP_RC1_alrConfig_Public_phaseOrderErrorBitt_returntime
byte GP_RC1_alrConfig_Public_phaseOrderErrorBit_perHysterysz
byte GP_RC1_alrConfig_Public_phaseOrderErrorBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Public_phaseVoltageConnectionErrorBit_delaytime
UInt16 GP_RC1_alrConfig_Public_phaseVoltageConnectionErrorBit_returntime
byte GP_RC1_alrConfig_Public_phaseVoltageConnectionErrorBit_perHysterysz
byte GP_RC1_alrConfig_Public_phaseVoltageConnectionErrorBit_relayEnable

byte GP_Pulse_Out0_ActiveEnergy_forFile_type_pulserate
byte GP_Pulse_Out0_ActiveEnergy_par_pulseperiod
byte GP_Pulse_Out0_ActiveEnergy_par_pulsewidth

byte GP_Pulse_Out0_ReactiveEnergy_forFile_type_pulserate
byte GP_Pulse_Out0_ReactiveEnergy_par_pulseperiod
byte GP_Pulse_Out0_ReactiveEnergy_par_pulsewidth

byte GP_Pulse_Out0_ApparentEnergy_forFile_type_pulserate
byte GP_Pulse_Out0_ApparentEnergy_par_pulseperiod
byte GP_Pulse_Out0_ApparentEnergy_par_pulsewidth

byte GP_Pulse_Out1_ActiveEnergy_forFile_type_pulserate
byte GP_Pulse_Out1_ActiveEnergy_par_pulseperiod
byte GP_Pulse_Out1_ActiveEnergy_par_pulsewidth

byte GP_Pulse_Out1_ReactiveEnergy_forFile_type_pulserate
byte GP_Pulse_Out1_ReactiveEnergy_par_pulseperiod
byte GP_Pulse_Out1_ReactiveEnergy_par_pulsewidth

byte GP_Pulse_Out1_ApparentEnergy_forFile_type_pulserate
byte GP_Pulse_Out1_ApparentEnergy_par_pulseperiod
byte GP_Pulse_Out1_ApparentEnergy_par_pulsewidth

byte GP_forDisk_Conf_Pulse_In_Bits

//128 bytes free reserved
}

```

For the EA03 device the fileSystemVersion = 0x0301

```

struct ConfEA03Record { //total 202 data in 505 bytes
    UInt16 ProcessTimeforConfigFile_yearMonth
    UInt16 ProcessTimeforConfigFile_dayHour
    UInt16 ProcessTimeforConfigFile_minuteSecond
    UInt16 LastRealTimeforConfigFile_yearMonth
    UInt16 LastRealTimeforConfigFile_dayHour
    UInt16 LastRealTimeforConfigFile_minuteSecond
    UInt16 UserDefineDeviceNumberH
    UInt16 UserDefineDeviceNumberL
    UInt32 Modbus_mbConfig
    UInt16 GlobalParameters_vtrfU16
    UInt16 GlobalParameters_ctrf
    byte LobalParameters_ConnectionType
    byte GlobalParameters_verikayitzamani
    byte GlobalParameters_demandTimeInterval
    byte GlobalParameters_demandTimeSubInterval
    byte ModbusmbSecurity_writeProtect
    byte ModbusmbSecurity_readProtect
    UInt16 ModbusmbSecurity_writeCode

```

UInt16 ModbusmbSecurity_readCode

```
// relay 0 configuration data
byte GlobalParametersrelaysConfig0_Position
byte GlobalParametersrelaysConfig0_AccessStatus
double GP_RC0_alrConfig_Phase_overVoltageBit_value
UInt16 GP_RC0_alrConfig_Phase_overVoltageBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_overVoltageBit_returntime
byte GP_RC0_alrConfig_Phase_overVoltageBit_perHysterysz
byte GP_RC0_alrConfig_Phase_overVoltageBit_relayEnable
double GP_RC0_alrConfig_Phase_underVoltageBit_value
UInt16 GP_RC0_alrConfig_Phase_underVoltageBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_underVoltageBit_returntime
byte GP_RC0_alrConfig_Phase_underVoltageBit_perHysterysz
byte GP_RC0_alrConfig_Phase_underVoltageBit_relayEnable
double GP_RC0_alrConfig_Phase_overCurrentBit_value
UInt16 GP_RC0_alrConfig_Phase_overCurrentBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_overCurrentBit_returntime
byte GP_RC0_alrConfig_Phase_overCurrentBit_perHysterysz
byte GP_RC0_alrConfig_Phase_overCurrentBit_relayEnable
double GP_RC0_alrConfig_Phase_underCurrentBit_value
UInt16 GP_RC0_alrConfig_Phase_underCurrentBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_underCurrentBit_returntime
byte GP_RC0_alrConfig_Phase_underCurrentBit_perHysterysz
byte GP_RC0_alrConfig_Phase_underCurrentBit_relayEnable
double GP_RC0_alrConfig_Phase_overTHDVBBit_value
UInt16 GP_RC0_alrConfig_Phase_overTHDVBBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_overTHDVBBit_returntime
byte GP_RC0_alrConfig_Phase_overTHDVBBit_perHysterysz
byte GP_RC0_alrConfig_Phase_overTHDVBBit_relayEnable
double GP_RC0_alrConfig_Phase_overHDVBBit_value
UInt16 GP_RC0_alrConfig_Phase_overHDVBBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_overHDVBBit_returntime
byte GP_RC0_alrConfig_Phase_overHDVBBit_perHysterysz
byte GP_RC0_alrConfig_Phase_overHDVBBit_relayEnable
double GP_RC0_alrConfig_Phase_overTHDCBit_value
UInt16 GP_RC0_alrConfig_Phase_overTHDCBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_overTHDCBit_returntime
byte GP_RC0_alrConfig_Phase_overTHDCBit_perHysterysz
byte GP_RC0_alrConfig_Phase_overTHDCBit_relayEnable
double GP_RC0_alrConfig_Phase_overHDCBit_value
UInt16 GP_RC0_alrConfig_Phase_overHDCBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_overHDCBit_returntime
byte GP_RC0_alrConfig_Phase_overHDCBit_perHysterysz
byte GP_RC0_alrConfig_Phase_overHDCBit_relayEnable
double GP_RC0_alrConfig_Phase_missingPhaseBit_value
UInt16 GP_RC0_alrConfig_Phase_missingPhaseBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_missingPhaseBit_returntime
byte GP_RC0_alrConfig_Phase_missingPhaseBit_perHysterysz
byte GP_RC0_alrConfig_Phase_missingPhaseBit_relayEnable
double GP_RC0_alrConfig_Public_vUnbalanceAlarmBit_value
UInt16 GP_RC0_alrConfig_Public_vUnbalanceAlarmBit_delaytime
UInt16 GP_RC0_alrConfig_Public_vUnbalanceAlarmBit_returntime
byte GP_RC0_alrConfig_Public_vUnbalanceAlarmBit_perHysterysz
byte GP_RC0_alrConfig_Public_vUnbalanceAlarmBit_relayEnable
double GP_RC0_alrConfig_Public_cUnbalanceAlarmBit_value
UInt16 GP_RC0_alrConfig_Public_cUnbalanceAlarmBit_delaytime
UInt16 GP_RC0_alrConfig_Public_cUnbalanceAlarmBit_returntime
byte GP_RC0_alrConfig_Public_cUnbalanceAlarmBit_perHysterysz
byte GP_RC0_alrConfig_Public_cUnbalanceAlarmBit_relayEnable
double GP_RC0_alrConfig_Public_overNotrCurrent_value
UInt16 GP_RC0_alrConfig_Public_overNotrCurrent_delaytime
UInt16 GP_RC0_alrConfig_Public_overNotrCurrent_returntime
byte GP_RC0_alrConfig_Public_overNotrCurrent_perHysterysz
byte GP_RC0_alrConfig_Public_overNotrCurrent_relayEnable
double GP_RC0_alrConfig_Public_oFreqAlarmBit_value
UInt16 GP_RC0_alrConfig_Public_oFreqAlarmBit_delaytime
UInt16 GP_RC0_alrConfig_Public_oFreqAlarmBit_returntime
byte GP_RC0_alrConfig_Public_oFreqAlarmBit_perHysterysz
byte GP_RC0_alrConfig_Public_oFreqAlarmBit_relayEnable
double GP_RC0_alrConfig_Public_uFreqAlarmBit_value
UInt16 GP_RC0_alrConfig_Public_uFreqAlarmBit_delaytime
UInt16 GP_RC0_alrConfig_Public_uFreqAlarmBit_returntime
byte GP_RC0_alrConfig_Public_uFreqAlarmBit_perHysterysz
byte GP_RC0_alrConfig_uPublic_FreqAlarmBit_relayEnable
double GP_RC0_alrConfig_Public_phaseOrderErrorBit_value
UInt16 GP_RC0_alrConfig_Public_phaseOrderErrorBit_delaytime
UInt16 GP_RC0_alrConfig_Public_phaseOrderErrorBitt_returntime
byte GP_RC0_alrConfig_Public_phaseOrderErrorBit_perHysterysz
```

```
byte GP_RC0_alrConfig_Public_phaseOrderErrorBit_relayEnable
double GP_RC0_alrConfig_Public_phaseVoltageConnectionErrorBit_value
UInt16 GP_RC0_alrConfig_Public_phaseVoltageConnectionErrorBit_delaytime
UInt16 GP_RC0_alrConfig_Public_phaseVoltageConnectionErrorBit_returntime
byte GP_RC0_alrConfig_Public_phaseVoltageConnectionErrorBit_perHysteresysz
byte GP_RC0_alrConfig_Public_phaseVoltageConnectionErrorBit_relayEnable
```

```
//relay 1 configuration data
```

```
byte GlobalParametersrelaysConfig1_Position
byte GlobalParametersrelaysConfig1_AccessStatus
double GP_RC1_alrConfig_Phase_overVoltageBit_value
UInt16 GP_RC1_alrConfig_Phase_overVoltageBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overVoltageBit_returntime
byte GP_RC1_alrConfig_Phase_overVoltageBit_perHysteresysz
byte GP_RC1_alrConfig_Phase_overVoltageBit_relayEnable
double GP_RC1_alrConfig_Phase_underVoltageBit_value
UInt16 GP_RC1_alrConfig_Phase_underVoltageBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_underVoltageBit_returntime
byte GP_RC1_alrConfig_Phase_underVoltageBit_perHysteresysz
byte GP_RC1_alrConfig_Phase_underVoltageBit_relayEnable
double GP_RC1_alrConfig_Phase_overCurrentBit_value
UInt16 GP_RC1_alrConfig_Phase_overCurrentBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overCurrentBit_returntime
byte GP_RC1_alrConfig_Phase_overCurrentBit_perHysteresysz
byte GP_RC1_alrConfig_Phase_overCurrentBit_relayEnable
double GP_RC1_alrConfig_Phase_underCurrentBit_value
UInt16 GP_RC1_alrConfig_Phase_underCurrentBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_underCurrentBit_returntime
byte GP_RC1_alrConfig_Phase_underCurrentBit_perHysteresysz
byte GP_RC1_alrConfig_Phase_underCurrentBit_relayEnable
double GP_RC1_alrConfig_Phase_overTHDVBit_value
UInt16 GP_RC1_alrConfig_Phase_overTHDVBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overTHDVBit_returntime
byte GP_RC1_alrConfig_Phase_overTHDVBit_perHysteresysz
byte GP_RC1_alrConfig_Phase_overTHDVBit_relayEnable
double GP_RC1_alrConfig_Phase_overHDVBit_value
UInt16 GP_RC1_alrConfig_Phase_overHDVBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overHDVBit_returntime
byte GP_RC1_alrConfig_Phase_overHDVBit_perHysteresysz
byte GP_RC1_alrConfig_Phase_overHDVBit_relayEnable
double GP_RC1_alrConfig_Phase_overTHDCBit_value
UInt16 GP_RC1_alrConfig_Phase_overTHDCBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overTHDCBit_returntime
byte GP_RC1_alrConfig_Phase_overTHDCBit_perHysteresysz
byte GP_RC1_alrConfig_Phase_overTHDCBit_relayEnable
double GP_RC1_alrConfig_Phase_overHDCBit_value
UInt16 GP_RC1_alrConfig_Phase_overHDCBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overHDCBit_returntime
byte GP_RC1_alrConfig_Phase_overHDCBit_perHysteresysz
byte GP_RC1_alrConfig_Phase_overHDCBit_relayEnable
double GP_RC1_alrConfig_Phase_missinGPhaseBit_value
UInt16 GP_RC1_alrConfig_Phase_missinGPhaseBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_missinGPhaseBit_returntime
byte GP_RC1_alrConfig_Phase_missinGPhaseBit_perHysteresysz
byte GP_RC1_alrConfig_Phase_missinGPhaseBit_relayEnable
double GP_RC1_alrConfig_Public_vUnbalanceAlarmBit_value
UInt16 GP_RC1_alrConfig_Public_vUnbalanceAlarmBit_delaytime
UInt16 GP_RC1_alrConfig_Public_vUnbalanceAlarmBit_returntime
byte GP_RC1_alrConfig_Public_vUnbalanceAlarmBit_perHysteresysz
byte GP_RC1_alrConfig_Public_vUnbalanceAlarmBit_relayEnable
double GP_RC1_alrConfig_Public_cUnbalanceAlarmBit_value
UInt16 GP_RC1_alrConfig_Public_cUnbalanceAlarmBit_delaytime
UInt16 GP_RC1_alrConfig_Public_cUnbalanceAlarmBit_returntime
byte GP_RC1_alrConfig_Public_cUnbalanceAlarmBit_perHysteresysz
byte GP_RC1_alrConfig_Public_cUnbalanceAlarmBit_relayEnable
double GP_RC1_alrConfig_Public_overNotrCurrent_value
UInt16 GP_RC1_alrConfig_Public_overNotrCurrent_delaytime
UInt16 GP_RC1_alrConfig_Public_overNotrCurrent_returntime
byte GP_RC1_alrConfig_Public_overNotrCurrent_perHysteresysz
byte GP_RC1_alrConfig_Public_overNotrCurrent_relayEnable
double GP_RC1_alrConfig_Public_oFreqAlarmBit_value
UInt16 GP_RC1_alrConfig_Public_oFreqAlarmBit_delaytime
UInt16 GP_RC1_alrConfig_Public_oFreqAlarmBit_returntime
byte GP_RC1_alrConfig_Public_oFreqAlarmBit_perHysteresysz
byte GP_RC1_alrConfig_Public_oFreqAlarmBit_relayEnable
double GP_RC1_alrConfig_Public_uFreqAlarmBit_value
UInt16 GP_RC1_alrConfig_Public_uFreqAlarmBit_delaytime
UInt16 GP_RC1_alrConfig_Public_uFreqAlarmBit_returntime
byte GP_RC1_alrConfig_Public_uFreqAlarmBit_perHysteresysz
```

```

byte GP_RC1_alrConfig_uPublic_FreqAlarmBit_relayEnable
double GP_RC1_alrConfig_Public_phaseOrderErrorBit_value
UInt16 GP_RC1_alrConfig_Public_phaseOrderErrorBit_delaytime
UInt16 GP_RC1_alrConfig_Public_phaseOrderErrorBit_returntime
byte GP_RC1_alrConfig_Public_phaseOrderErrorBit_perHysterysz
byte GP_RC1_alrConfig_Public_phaseOrderErrorBit_relayEnable
double GP_RC1_alrConfig_Public_phaseVoltageConnectionErrorBit_value
UInt16 GP_RC1_alrConfig_Public_phaseVoltageConnectionErrorBit_delaytime
UInt16 GP_RC1_alrConfig_Public_phaseVoltageConnectionErrorBit_returntime
byte GP_RC1_alrConfig_Public_phaseVoltageConnectionErrorBit_perHysterysz
byte GP_RC1_alrConfig_Public_phaseVoltageConnectionErrorBit_relayEnable

```

```

byte GP_Pulse_Out0_ActiveEnergy_forFile_type_pulserate
byte GP_Pulse_Out0_ActiveEnergy_par_pulseperiod
byte GP_Pulse_Out0_ActiveEnergy_par_pulsewidth

```

```

byte GP_Pulse_Out0_ReactiveEnergy_forFile_type_pulserate
byte GP_Pulse_Out0_ReactiveEnergy_par_pulseperiod
byte GP_Pulse_Out0_ReactiveEnergy_par_pulsewidth

```

```

byte GP_Pulse_Out0_ApparentEnergy_forFile_type_pulserate
byte GP_Pulse_Out0_ApparentEnergy_par_pulseperiod
byte GP_Pulse_Out0_ApparentEnergy_par_pulsewidth

```

```

byte GP_Pulse_Out1_ActiveEnergy_forFile_type_pulserate
byte GP_Pulse_Out1_ActiveEnergy_par_pulseperiod
byte GP_Pulse_Out1_ActiveEnergy_par_pulsewidth

```

```

byte GP_Pulse_Out1_ReactiveEnergy_forFile_type_pulserate
byte GP_Pulse_Out1_ReactiveEnergy_par_pulseperiod
byte GP_Pulse_Out1_ReactiveEnergy_par_pulsewidth

```

```

byte GP_Pulse_Out1_ApparentEnergy_forFile_type_pulserate
byte GP_Pulse_Out1_ApparentEnergy_par_pulseperiod
byte GP_Pulse_Out1_ApparentEnergy_par_pulsewidth

```

```

byte GP_forDisk_Conf_Pulse_In_Bits
}

```

For device EA04

```

struct ConfEA04File {
    Header header;
    ConfEA04Record[] records;
}

```

For the EA04 device the fileSystemVersion = 0x0100

```

struct ConfEA04Record { //total 204 data in 379 bytes + 128 bytes free. Each record 507 bytes

```

```

    UInt16 ProcessTimeforConfigFile_yearMonth
    UInt16 ProcessTimeforConfigFile_dayHour
    UInt16 ProcessTimeforConfigFile_minuteSecond
    UInt16 LastRealTimeforConfigFile_yearMonth
    UInt16 LastRealTimeforConfigFile_dayHour
    UInt16 LastRealTimeforConfigFile_minuteSecond
    UInt16 UserDefineDeviceNumberH
    UInt16 UserDefineDeviceNumberL
    UInt32 Modbus_mbConfig
    UInt16 GlobalParameters_vtrfU16
    UInt16 GlobalParameters_ctrf
    byte LobalParameters_ConnectionType
    byte GlobalParameters_verikayitzamani
    byte GlobalParameters_demandTimeInterval
    byte GlobalParameters_demandTimeSubInterval
    byte ModbusmbSecurity_writeProtect
    byte ModbusmbSecurity_readProtect
    UInt16 ModbusmbSecurity_writeCode
    UInt16 ModbusmbSecurity_readCode

```

```

    // relay 0 configuration data

```

```

    byte GlobalParametersrelaysConfig0_Position
    byte GlobalParametersrelaysConfig0_AccessStatus
    float //reserved data not used
    UInt16 GP_RC0_alrConfig_Phase_overVoltageBit_delaytime
    UInt16 GP_RC0_alrConfig_Phase_overVoltageBit_returntime
    byte GP_RC0_alrConfig_Phase_overVoltageBit_perHysterysz
    byte GP_RC0_alrConfig_Phase_overVoltageBit_relayEnable

```

```

float //reserved data not used
UInt16 GP_RC0_alrConfig_Phase_underVoltageBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_underVoltageBit_returntime
byte GP_RC0_alrConfig_Phase_underVoltageBit_perHysterysz
byte GP_RC0_alrConfig_Phase_underVoltageBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Phase_overCurrentBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_overCurrentBit_returntime
byte GP_RC0_alrConfig_Phase_overCurrentBit_perHysterysz
byte GP_RC0_alrConfig_Phase_overCurrentBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Phase_underCurrentBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_underCurrentBit_returntime
byte GP_RC0_alrConfig_Phase_underCurrentBit_perHysterysz
byte GP_RC0_alrConfig_Phase_underCurrentBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Phase_overTHDVBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_overTHDVBit_returntime
byte GP_RC0_alrConfig_Phase_overTHDVBit_perHysterysz
byte GP_RC0_alrConfig_Phase_overTHDVBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Phase_overHDVBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_overHDVBit_returntime
byte GP_RC0_alrConfig_Phase_overHDVBit_perHysterysz
byte GP_RC0_alrConfig_Phase_overHDVBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Phase_overTHDCBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_overTHDCBit_returntime
byte GP_RC0_alrConfig_Phase_overTHDCBit_perHysterysz
byte GP_RC0_alrConfig_Phase_overTHDCBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Phase_overHDCBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_overHDCBit_returntime
byte GP_RC0_alrConfig_Phase_overHDCBit_perHysterysz
byte GP_RC0_alrConfig_Phase_overHDCBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Phase_missingPhaseBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_missingPhaseBit_returntime
byte GP_RC0_alrConfig_Phase_missingPhaseBit_perHysterysz
byte GP_RC0_alrConfig_Phase_missingPhaseBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Public_vUnbalanceAlarmBit_delaytime
UInt16 GP_RC0_alrConfig_Public_vUnbalanceAlarmBit_returntime
byte GP_RC0_alrConfig_Public_vUnbalanceAlarmBit_perHysterysz
byte GP_RC0_alrConfig_Public_vUnbalanceAlarmBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Public_cUnbalanceAlarmBit_delaytime
UInt16 GP_RC0_alrConfig_Public_cUnbalanceAlarmBit_returntime
byte GP_RC0_alrConfig_Public_cUnbalanceAlarmBit_perHysterysz
byte GP_RC0_alrConfig_Public_cUnbalanceAlarmBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Public_overNotrCurrent_delaytime
UInt16 GP_RC0_alrConfig_Public_overNotrCurrent_returntime
byte GP_RC0_alrConfig_Public_overNotrCurrent_perHysterysz
byte GP_RC0_alrConfig_Public_overNotrCurrent_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Public_oFreqAlarmBit_delaytime
UInt16 GP_RC0_alrConfig_Public_oFreqAlarmBit_returntime
byte GP_RC0_alrConfig_Public_oFreqAlarmBit_perHysterysz
byte GP_RC0_alrConfig_Public_oFreqAlarmBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Public_uFreqAlarmBit_delaytime
UInt16 GP_RC0_alrConfig_Public_uFreqAlarmBit_returntime
byte GP_RC0_alrConfig_Public_uFreqAlarmBit_perHysterysz
byte GP_RC0_alrConfig_uPublic_FreqAlarmBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Public_phaseOrderErrorBit_delaytime
UInt16 GP_RC0_alrConfig_Public_phaseOrderErrorBit_returntime
byte GP_RC0_alrConfig_Public_phaseOrderErrorBit_perHysterysz
byte GP_RC0_alrConfig_Public_phaseOrderErrorBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Public_phaseVoltageConnectionErrorBit_delaytime
UInt16 GP_RC0_alrConfig_Public_phaseVoltageConnectionErrorBit_returntime
byte GP_RC0_alrConfig_Public_phaseVoltageConnectionErrorBit_perHysterysz
byte GP_RC0_alrConfig_Public_phaseVoltageConnectionErrorBit_relayEnable

```

```

//relay 1 configuration data
byte GlobalParametersrelaysConfig1_Position
byte GlobalParametersrelaysConfig1_AccessStatus
float //reserved data not used
UInt16 GP_RC1_alrConfig_Phase_overVoltageBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overVoltageBit_returntime
byte GP_RC1_alrConfig_Phase_overVoltageBit_perHysterysz
byte GP_RC1_alrConfig_Phase_overVoltageBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Phase_underVoltageBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_underVoltageBit_returntime
byte GP_RC1_alrConfig_Phase_underVoltageBit_perHysterysz
byte GP_RC1_alrConfig_Phase_underVoltageBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Phase_overCurrentBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overCurrentBit_returntime
byte GP_RC1_alrConfig_Phase_overCurrentBit_perHysterysz
byte GP_RC1_alrConfig_Phase_overCurrentBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Phase_underCurrentBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_underCurrentBit_returntime
byte GP_RC1_alrConfig_Phase_underCurrentBit_perHysterysz
byte GP_RC1_alrConfig_Phase_underCurrentBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Phase_overTHDVBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overTHDVBit_returntime
byte GP_RC1_alrConfig_Phase_overTHDVBit_perHysterysz
byte GP_RC1_alrConfig_Phase_overTHDVBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Phase_overHDVBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overHDVBit_returntime
byte GP_RC1_alrConfig_Phase_overHDVBit_perHysterysz
byte GP_RC1_alrConfig_Phase_overHDVBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Phase_overTHDCBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overTHDCBit_returntime
byte GP_RC1_alrConfig_Phase_overTHDCBit_perHysterysz
byte GP_RC1_alrConfig_Phase_overTHDCBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Phase_overHDCBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overHDCBit_returntime
byte GP_RC1_alrConfig_Phase_overHDCBit_perHysterysz
byte GP_RC1_alrConfig_Phase_overHDCBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Phase_missinGPhaseBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_missinGPhaseBit_returntime
byte GP_RC1_alrConfig_Phase_missinGPhaseBit_perHysterysz
byte GP_RC1_alrConfig_Phase_missinGPhaseBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Public_vUnbalanceAlarmBit_delaytime
UInt16 GP_RC1_alrConfig_Public_vUnbalanceAlarmBit_returntime
byte GP_RC1_alrConfig_Public_vUnbalanceAlarmBit_perHysterysz
byte GP_RC1_alrConfig_Public_vUnbalanceAlarmBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Public_cUnbalanceAlarmBit_delaytime
UInt16 GP_RC1_alrConfig_Public_cUnbalanceAlarmBit_returntime
byte GP_RC1_alrConfig_Public_cUnbalanceAlarmBit_perHysterysz
byte GP_RC1_alrConfig_Public_cUnbalanceAlarmBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Public_overNotrCurrent_delaytime
UInt16 GP_RC1_alrConfig_Public_overNotrCurrent_returntime
byte GP_RC1_alrConfig_Public_overNotrCurrent_perHysterysz
byte GP_RC1_alrConfig_Public_overNotrCurrent_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Public_oFreqAlarmBit_delaytime
UInt16 GP_RC1_alrConfig_Public_oFreqAlarmBit_returntime
byte GP_RC1_alrConfig_Public_oFreqAlarmBit_perHysterysz
byte GP_RC1_alrConfig_Public_oFreqAlarmBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Public_uFreqAlarmBit_delaytime
UInt16 GP_RC1_alrConfig_Public_uFreqAlarmBit_returntime
byte GP_RC1_alrConfig_Public_uFreqAlarmBit_perHysterysz
byte GP_RC1_alrConfig_uPublic_FreqAlarmBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Public_phaseOrderErrorBit_delaytime
UInt16 GP_RC1_alrConfig_Public_phaseOrderErrorBitt_returntime
byte GP_RC1_alrConfig_Public_phaseOrderErrorBit_perHysterysz
byte GP_RC1_alrConfig_Public_phaseOrderErrorBit_relayEnable

```

```

float //reserved data not used
UInt16 GP_RC1_alrConfig_Public_phaseVoltageConnectionErrorBit_delaytime
UInt16 GP_RC1_alrConfig_Public_phaseVoltageConnectionErrorBit_returntime
byte GP_RC1_alrConfig_Public_phaseVoltageConnectionErrorBit_perHysterysz
byte GP_RC1_alrConfig_Public_phaseVoltageConnectionErrorBit_relayEnable

byte GP_Pulse_Out0_ActiveEnergy_forFile_type_pulserate
byte GP_Pulse_Out0_ActiveEnergy_par_pulseperiod
byte GP_Pulse_Out0_ActiveEnergy_par_pulsewidth

byte GP_Pulse_Out0_ReactiveEnergy_forFile_type_pulserate
byte GP_Pulse_Out0_ReactiveEnergy_par_pulseperiod
byte GP_Pulse_Out0_ReactiveEnergy_par_pulsewidth

byte GP_Pulse_Out0_ApparentEnergy_forFile_type_pulserate
byte GP_Pulse_Out0_ApparentEnergy_par_pulseperiod
byte GP_Pulse_Out0_ApparentEnergy_par_pulsewidth

byte GP_Pulse_Out1_ActiveEnergy_forFile_type_pulserate
byte GP_Pulse_Out1_ActiveEnergy_par_pulseperiod
byte GP_Pulse_Out1_ActiveEnergy_par_pulsewidth

byte GP_Pulse_Out1_ReactiveEnergy_forFile_type_pulserate
byte GP_Pulse_Out1_ReactiveEnergy_par_pulseperiod
byte GP_Pulse_Out1_ReactiveEnergy_par_pulsewidth

byte GP_Pulse_Out1_ApparentEnergy_forFile_type_pulserate
byte GP_Pulse_Out1_ApparentEnergy_par_pulseperiod
byte GP_Pulse_Out1_ApparentEnergy_par_pulsewidth

byte GP_forDisk_Conf_Pulse_In_Bits

byte SayacAnlikSinyaller0_counterEnable
byte SayacAnlikSinyaller1_counterEnable

//128 bytes free reserved
}

```

For the EA04 device the fileSystemVersion = 0x0401

```

struct ConfEA04Record { //total 204 data in 507 bytes
    UInt16 ProcessTimeforConfigFile_yearMonth
    UInt16 ProcessTimeforConfigFile_dayHour
    UInt16 ProcessTimeforConfigFile_minuteSecond
    UInt16 LastRealTimeforConfigFile_yearMonth
    UInt16 LastRealTimeforConfigFile_dayHour
    UInt16 LastRealTimeforConfigFile_minuteSecond
    UInt16 UserDefineDeviceNumberH
    UInt16 UserDefineDeviceNumberL
    UInt32 Modbus_mbConfig
    UInt16 GlobalParameters_vtrfU16
    UInt16 GlobalParameters_ctrf
    byte LobalParameters_ConnectionType
    byte GlobalParameters_verikayitzamani
    byte GlobalParameters_demandTimeInterval
    byte GlobalParameters_demandTimeSubInterval
    byte ModbusmbSecurity_writeProtect
    byte ModbusmbSecurity_readProtect
    UInt16 ModbusmbSecurity_writeCode
    UInt16 ModbusmbSecurity_readCode

    // relay 0 configuration data
    byte GlobalParametersrelaysConfig0_Position
    byte GlobalParametersrelaysConfig0_AccessStatus
    double GP_RC0_alrConfig_Phase_overVoltageBit_value
    UInt16 GP_RC0_alrConfig_Phase_overVoltageBit_delaytime
    UInt16 GP_RC0_alrConfig_Phase_overVoltageBit_returntime
    byte GP_RC0_alrConfig_Phase_overVoltageBit_perHysterysz
    byte GP_RC0_alrConfig_Phase_overVoltageBit_relayEnable
    double GP_RC0_alrConfig_Phase_underVoltageBit_value
    UInt16 GP_RC0_alrConfig_Phase_underVoltageBit_delaytime
    UInt16 GP_RC0_alrConfig_Phase_underVoltageBit_returntime
    byte GP_RC0_alrConfig_Phase_underVoltageBit_perHysterysz
    byte GP_RC0_alrConfig_Phase_underVoltageBit_relayEnable
}

```



```
double GP_RC0_alrConfig_Phase_overCurrentBit_value
UInt16 GP_RC0_alrConfig_Phase_overCurrentBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_overCurrentBit_returntime
byte GP_RC0_alrConfig_Phase_overCurrentBit_perHysterysz
byte GP_RC0_alrConfig_Phase_overCurrentBit_relayEnable
double GP_RC0_alrConfig_Phase_underCurrentBit_value
UInt16 GP_RC0_alrConfig_Phase_underCurrentBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_underCurrentBit_returntime
byte GP_RC0_alrConfig_Phase_underCurrentBit_perHysterysz
byte GP_RC0_alrConfig_Phase_underCurrentBit_relayEnable
double GP_RC0_alrConfig_Phase_overTHDVBit_value
UInt16 GP_RC0_alrConfig_Phase_overTHDVBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_overTHDVBit_returntime
byte GP_RC0_alrConfig_Phase_overTHDVBit_perHysterysz
byte GP_RC0_alrConfig_Phase_overTHDVBit_relayEnable
double GP_RC0_alrConfig_Phase_overHDVBit_value
UInt16 GP_RC0_alrConfig_Phase_overHDVBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_overHDVBit_returntime
byte GP_RC0_alrConfig_Phase_overHDVBit_perHysterysz
byte GP_RC0_alrConfig_Phase_overHDVBit_relayEnable
double GP_RC0_alrConfig_Phase_overTHDCBit_value
UInt16 GP_RC0_alrConfig_Phase_overTHDCBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_overTHDCBit_returntime
byte GP_RC0_alrConfig_Phase_overTHDCBit_perHysterysz
byte GP_RC0_alrConfig_Phase_overTHDCBit_relayEnable
double GP_RC0_alrConfig_Phase_overHDCBit_value
UInt16 GP_RC0_alrConfig_Phase_overHDCBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_overHDCBit_returntime
byte GP_RC0_alrConfig_Phase_overHDCBit_perHysterysz
byte GP_RC0_alrConfig_Phase_overHDCBit_relayEnable
double GP_RC0_alrConfig_Phase_missingPhaseBit_value
UInt16 GP_RC0_alrConfig_Phase_missingPhaseBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_missingPhaseBit_returntime
byte GP_RC0_alrConfig_Phase_missingPhaseBit_perHysterysz
byte GP_RC0_alrConfig_Phase_missingPhaseBit_relayEnable
double GP_RC0_alrConfig_Public_vUnbalanceAlarmBit_value
UInt16 GP_RC0_alrConfig_Public_vUnbalanceAlarmBit_delaytime
UInt16 GP_RC0_alrConfig_Public_vUnbalanceAlarmBit_returntime
byte GP_RC0_alrConfig_Public_vUnbalanceAlarmBit_perHysterysz
byte GP_RC0_alrConfig_Public_vUnbalanceAlarmBit_relayEnable
double GP_RC0_alrConfig_Public_cUnbalanceAlarmBit_value
UInt16 GP_RC0_alrConfig_Public_cUnbalanceAlarmBit_delaytime
UInt16 GP_RC0_alrConfig_Public_cUnbalanceAlarmBit_returntime
byte GP_RC0_alrConfig_Public_cUnbalanceAlarmBit_perHysterysz
byte GP_RC0_alrConfig_Public_cUnbalanceAlarmBit_relayEnable
double GP_RC0_alrConfig_Public_overNotrCurrent_value
UInt16 GP_RC0_alrConfig_Public_overNotrCurrent_delaytime
UInt16 GP_RC0_alrConfig_Public_overNotrCurrent_returntime
byte GP_RC0_alrConfig_Public_overNotrCurrent_perHysterysz
byte GP_RC0_alrConfig_Public_overNotrCurrent_relayEnable
double GP_RC0_alrConfig_Public_oFreqAlarmBit_value
UInt16 GP_RC0_alrConfig_Public_oFreqAlarmBit_delaytime
UInt16 GP_RC0_alrConfig_Public_oFreqAlarmBit_returntime
byte GP_RC0_alrConfig_Public_oFreqAlarmBit_perHysterysz
byte GP_RC0_alrConfig_Public_oFreqAlarmBit_relayEnable
double GP_RC0_alrConfig_Public_uFreqAlarmBit_value
UInt16 GP_RC0_alrConfig_Public_uFreqAlarmBit_delaytime
UInt16 GP_RC0_alrConfig_Public_uFreqAlarmBit_returntime
byte GP_RC0_alrConfig_Public_uFreqAlarmBit_perHysterysz
byte GP_RC0_alrConfig_uPublic_FreqAlarmBit_relayEnable
double GP_RC0_alrConfig_Public_phaseOrderErrorBit_value
UInt16 GP_RC0_alrConfig_Public_phaseOrderErrorBit_delaytime
UInt16 GP_RC0_alrConfig_Public_phaseOrderErrorBitt_returntime
byte GP_RC0_alrConfig_Public_phaseOrderErrorBit_perHysterysz
byte GP_RC0_alrConfig_Public_phaseOrderErrorBit_relayEnable
double GP_RC0_alrConfig_Public_phaseVoltageConnectionErrorBit_value
UInt16 GP_RC0_alrConfig_Public_phaseVoltageConnectionErrorBit_delaytime
UInt16 GP_RC0_alrConfig_Public_phaseVoltageConnectionErrorBit_returntime
byte GP_RC0_alrConfig_Public_phaseVoltageConnectionErrorBit_perHysterysz
byte GP_RC0_alrConfig_Public_phaseVoltageConnectionErrorBit_relayEnable
```

//relay 1 configuration data

```
byte GlobalParametersrelaysConfig1_Position
byte GlobalParametersrelaysConfig1_AccessStatus
double GP_RC1_alrConfig_Phase_overVoltageBit_value
UInt16 GP_RC1_alrConfig_Phase_overVoltageBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overVoltageBit_returntime
byte GP_RC1_alrConfig_Phase_overVoltageBit_perHysterysz
byte GP_RC1_alrConfig_Phase_overVoltageBit_relayEnable
```

double GP_RC1_alrConfig_Phase_underVoltageBit_value
UInt16 GP_RC1_alrConfig_Phase_underVoltageBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_underVoltageBit_returntime
byte GP_RC1_alrConfig_Phase_underVoltageBit_perHystersz
byte GP_RC1_alrConfig_Phase_underVoltageBit_relayEnable
double GP_RC1_alrConfig_Phase_overCurrentBit_value
UInt16 GP_RC1_alrConfig_Phase_overCurrentBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overCurrentBit_returntime
byte GP_RC1_alrConfig_Phase_overCurrentBit_perHystersz
byte GP_RC1_alrConfig_Phase_overCurrentBit_relayEnable
double GP_RC1_alrConfig_Phase_underCurrentBit_value
UInt16 GP_RC1_alrConfig_Phase_underCurrentBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_underCurrentBit_returntime
byte GP_RC1_alrConfig_Phase_underCurrentBit_perHystersz
byte GP_RC1_alrConfig_Phase_underCurrentBit_relayEnable
double GP_RC1_alrConfig_Phase_overTHDVBit_value
UInt16 GP_RC1_alrConfig_Phase_overTHDVBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overTHDVBit_returntime
byte GP_RC1_alrConfig_Phase_overTHDVBit_perHystersz
byte GP_RC1_alrConfig_Phase_overTHDVBit_relayEnable
double GP_RC1_alrConfig_Phase_overHDVBit_value
UInt16 GP_RC1_alrConfig_Phase_overHDVBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overHDVBit_returntime
byte GP_RC1_alrConfig_Phase_overHDVBit_perHystersz
byte GP_RC1_alrConfig_Phase_overHDVBit_relayEnable
double GP_RC1_alrConfig_Phase_overTHDCBit_value
UInt16 GP_RC1_alrConfig_Phase_overTHDCBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overTHDCBit_returntime
byte GP_RC1_alrConfig_Phase_overTHDCBit_perHystersz
byte GP_RC1_alrConfig_Phase_overTHDCBit_relayEnable
double GP_RC1_alrConfig_Phase_overHDCBit_value
UInt16 GP_RC1_alrConfig_Phase_overHDCBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overHDCBit_returntime
byte GP_RC1_alrConfig_Phase_overHDCBit_perHystersz
byte GP_RC1_alrConfig_Phase_overHDCBit_relayEnable
double GP_RC1_alrConfig_Phase_missinGPhaseBit_value
UInt16 GP_RC1_alrConfig_Phase_missinGPhaseBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_missinGPhaseBit_returntime
byte GP_RC1_alrConfig_Phase_missinGPhaseBit_perHystersz
byte GP_RC1_alrConfig_Phase_missinGPhaseBit_relayEnable
double GP_RC1_alrConfig_Public_vUnbalanceAlarmBit_value
UInt16 GP_RC1_alrConfig_Public_vUnbalanceAlarmBit_delaytime
UInt16 GP_RC1_alrConfig_Public_vUnbalanceAlarmBit_returntime
byte GP_RC1_alrConfig_Public_vUnbalanceAlarmBit_perHystersz
byte GP_RC1_alrConfig_Public_vUnbalanceAlarmBit_relayEnable
double GP_RC1_alrConfig_Public_cUnbalanceAlarmBit_value
UInt16 GP_RC1_alrConfig_Public_cUnbalanceAlarmBit_delaytime
UInt16 GP_RC1_alrConfig_Public_cUnbalanceAlarmBit_returntime
byte GP_RC1_alrConfig_Public_cUnbalanceAlarmBit_perHystersz
byte GP_RC1_alrConfig_Public_cUnbalanceAlarmBit_relayEnable
double GP_RC1_alrConfig_Public_overNotrCurrent_value
UInt16 GP_RC1_alrConfig_Public_overNotrCurrent_delaytime
UInt16 GP_RC1_alrConfig_Public_overNotrCurrent_returntime
byte GP_RC1_alrConfig_Public_overNotrCurrent_perHystersz
byte GP_RC1_alrConfig_Public_overNotrCurrent_relayEnable
double GP_RC1_alrConfig_Public_oFreqAlarmBit_value
UInt16 GP_RC1_alrConfig_Public_oFreqAlarmBit_delaytime
UInt16 GP_RC1_alrConfig_Public_oFreqAlarmBit_returntime
byte GP_RC1_alrConfig_Public_oFreqAlarmBit_perHystersz
byte GP_RC1_alrConfig_Public_oFreqAlarmBit_relayEnable
double GP_RC1_alrConfig_Public_uFreqAlarmBit_value
UInt16 GP_RC1_alrConfig_Public_uFreqAlarmBit_delaytime
UInt16 GP_RC1_alrConfig_Public_uFreqAlarmBit_returntime
byte GP_RC1_alrConfig_Public_uFreqAlarmBit_perHystersz
byte GP_RC1_alrConfig_Public_uFreqAlarmBit_relayEnable
double GP_RC1_alrConfig_Public_phaseOrderErrorBit_value
UInt16 GP_RC1_alrConfig_Public_phaseOrderErrorBit_delaytime
UInt16 GP_RC1_alrConfig_Public_phaseOrderErrorBit_returntime
byte GP_RC1_alrConfig_Public_phaseOrderErrorBit_perHystersz
byte GP_RC1_alrConfig_Public_phaseOrderErrorBit_relayEnable
double GP_RC1_alrConfig_Public_phaseVoltageConnectionErrorBit_value
UInt16 GP_RC1_alrConfig_Public_phaseVoltageConnectionErrorBit_delaytime
UInt16 GP_RC1_alrConfig_Public_phaseVoltageConnectionErrorBit_returntime
byte GP_RC1_alrConfig_Public_phaseVoltageConnectionErrorBit_perHystersz
byte GP_RC1_alrConfig_Public_phaseVoltageConnectionErrorBit_relayEnable

byte GP_Pulse_Out0_ActiveEnergy_forFile_type_pulserate
byte GP_Pulse_Out0_ActiveEnergy_par_pulseperiod
byte GP_Pulse_Out0_ActiveEnergy_par_pulsewidth

```

byte GP_Pulse_Out0_ReactiveEnergy_forFile_type_pulserate
byte GP_Pulse_Out0_ReactiveEnergy_par_pulseperiod
byte GP_Pulse_Out0_ReactiveEnergy_par_pulsewidth

byte GP_Pulse_Out0_ApparentEnergy_forFile_type_pulserate
byte GP_Pulse_Out0_ApparentEnergy_par_pulseperiod
byte GP_Pulse_Out0_ApparentEnergy_par_pulsewidth

byte GP_Pulse_Out1_ActiveEnergy_forFile_type_pulserate
byte GP_Pulse_Out1_ActiveEnergy_par_pulseperiod
byte GP_Pulse_Out1_ActiveEnergy_par_pulsewidth

byte GP_Pulse_Out1_ReactiveEnergy_forFile_type_pulserate
byte GP_Pulse_Out1_ReactiveEnergy_par_pulseperiod
byte GP_Pulse_Out1_ReactiveEnergy_par_pulsewidth

byte GP_Pulse_Out1_ApparentEnergy_forFile_type_pulserate
byte GP_Pulse_Out1_ApparentEnergy_par_pulseperiod
byte GP_Pulse_Out1_ApparentEnergy_par_pulsewidth

byte GP_forDisk_Conf_Pulse_In_Bits

byte SayacAnlikSinyaller0_counterEnable
byte SayacAnlikSinyaller1_counterEnable

```

```

}
```

For device EA05

```

struct ConfEA05File {
    Header header;
    ConfEA05Record[] records;
}

```

For the EA05 device the fileSystemVersion = 0x0100

```

struct ConfEA05Record { //total 186 data in 361 bytes + 128 bytes free. Each record 489 bytes
    UInt16 ProcessTimeforConfigFile_yearMonth
    UInt16 ProcessTimeforConfigFile_dayHour
    UInt16 ProcessTimeforConfigFile_minuteSecond
    UInt16 LastRealTimeforConfigFile_yearMonth
    UInt16 LastRealTimeforConfigFile_dayHour
    UInt16 LastRealTimeforConfigFile_minuteSecond
    UInt16 UserDefineDeviceNumberH
    UInt16 UserDefineDeviceNumberL
    UInt32 Modbus_mbConfig
    UInt16 GlobalParameters_vtrfU16
    UInt16 GlobalParameters_ctrf
    byte GlobalParameters_ConnectionType
    byte GlobalParameters_verikayitzamani
    byte GlobalParameters_demandTimeInterval
    byte GlobalParameters_demandTimeSubInterval
    byte ModbusmbSecurity_writeProtect
    byte ModbusmbSecurity_readProtect
    UInt16 ModbusmbSecurity_writeCode
    UInt16 ModbusmbSecurity_readCode

    // relay 0 configuration data
    byte GlobalParametersrelaysConfig0_Position
    byte GlobalParametersrelaysConfig0_AccessStatus
    float //reserved data not used
    UInt16 GP_RC0_alrConfig_Phase_overVoltageBit_delaytime
    UInt16 GP_RC0_alrConfig_Phase_overVoltageBit_returntime
    byte GP_RC0_alrConfig_Phase_overVoltageBit_perHysterysz
    byte GP_RC0_alrConfig_Phase_overVoltageBit_relayEnable
    float //reserved data not used
    UInt16 GP_RC0_alrConfig_Phase_underVoltageBit_delaytime
    UInt16 GP_RC0_alrConfig_Phase_underVoltageBit_returntime
    byte GP_RC0_alrConfig_Phase_underVoltageBit_perHysterysz
    byte GP_RC0_alrConfig_Phase_underVoltageBit_relayEnable
    float //reserved data not used
    UInt16 GP_RC0_alrConfig_Phase_overCurrentBit_delaytime
    UInt16 GP_RC0_alrConfig_Phase_overCurrentBit_returntime
    byte GP_RC0_alrConfig_Phase_overCurrentBit_perHysterysz
    byte GP_RC0_alrConfig_Phase_overCurrentBit_relayEnable
}

```

```

float //reserved data not used
UInt16 GP_RC0_alrConfig_Phase_underCurrentBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_underCurrentBit_returntime
byte GP_RC0_alrConfig_Phase_underCurrentBit_perHysterysz
byte GP_RC0_alrConfig_Phase_underCurrentBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Phase_overTHDVBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_overTHDVBit_returntime
byte GP_RC0_alrConfig_Phase_overTHDVBit_perHysterysz
byte GP_RC0_alrConfig_Phase_overTHDVBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Phase_overHDVBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_overHDVBit_returntime
byte GP_RC0_alrConfig_Phase_overHDVBit_perHysterysz
byte GP_RC0_alrConfig_Phase_overHDVBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Phase_overTHDCBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_overTHDCBit_returntime
byte GP_RC0_alrConfig_Phase_overTHDCBit_perHysterysz
byte GP_RC0_alrConfig_Phase_overTHDCBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Phase_overHDCBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_overHDCBit_returntime
byte GP_RC0_alrConfig_Phase_overHDCBit_perHysterysz
byte GP_RC0_alrConfig_Phase_overHDCBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Phase_missingPhaseBit_delaytime
UInt16 GP_RC0_alrConfig_Phase_missingPhaseBit_returntime
byte GP_RC0_alrConfig_Phase_missingPhaseBit_perHysterysz
byte GP_RC0_alrConfig_Phase_missingPhaseBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Public_vUnbalanceAlarmBit_delaytime
UInt16 GP_RC0_alrConfig_Public_vUnbalanceAlarmBit_returntime
byte GP_RC0_alrConfig_Public_vUnbalanceAlarmBit_perHysterysz
byte GP_RC0_alrConfig_Public_vUnbalanceAlarmBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Public_cUnbalanceAlarmBit_delaytime
UInt16 GP_RC0_alrConfig_Public_cUnbalanceAlarmBit_returntime
byte GP_RC0_alrConfig_Public_cUnbalanceAlarmBit_perHysterysz
byte GP_RC0_alrConfig_Public_cUnbalanceAlarmBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Public_overNotrCurrent_delaytime
UInt16 GP_RC0_alrConfig_Public_overNotrCurrent_returntime
byte GP_RC0_alrConfig_Public_overNotrCurrent_perHysterysz
byte GP_RC0_alrConfig_Public_overNotrCurrent_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Public_oFreqAlarmBit_delaytime
UInt16 GP_RC0_alrConfig_Public_oFreqAlarmBit_returntime
byte GP_RC0_alrConfig_Public_oFreqAlarmBit_perHysterysz
byte GP_RC0_alrConfig_Public_oFreqAlarmBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Public_uFreqAlarmBit_delaytime
UInt16 GP_RC0_alrConfig_Public_uFreqAlarmBit_returntime
byte GP_RC0_alrConfig_Public_uFreqAlarmBit_perHysterysz
byte GP_RC0_alrConfig_uPublic_FreqAlarmBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Public_phaseOrderErrorBit_delaytime
UInt16 GP_RC0_alrConfig_Public_phaseOrderErrorBit_returntime
byte GP_RC0_alrConfig_Public_phaseOrderErrorBit_perHysterysz
byte GP_RC0_alrConfig_Public_phaseOrderErrorBit_relayEnable
float //reserved data not used
UInt16 GP_RC0_alrConfig_Public_phaseVoltageConnectionErrorBit_delaytime
UInt16 GP_RC0_alrConfig_Public_phaseVoltageConnectionErrorBit_returntime
byte GP_RC0_alrConfig_Public_phaseVoltageConnectionErrorBit_perHysterysz
byte GP_RC0_alrConfig_Public_phaseVoltageConnectionErrorBit_relayEnable

//relay 1 configuration data
byte GlobalParametersrelaysConfig1_Position
byte GlobalParametersrelaysConfig1_AccessStatus
float //reserved data not used
UInt16 GP_RC1_alrConfig_Phase_overVoltageBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overVoltageBit_returntime
byte GP_RC1_alrConfig_Phase_overVoltageBit_perHysterysz
byte GP_RC1_alrConfig_Phase_overVoltageBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Phase_underVoltageBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_underVoltageBit_returntime
byte GP_RC1_alrConfig_Phase_underVoltageBit_perHysterysz
byte GP_RC1_alrConfig_Phase_underVoltageBit_relayEnable

```

```

float //reserved data not used
UInt16 GP_RC1_alrConfig_Phase_overCurrentBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overCurrentBit_returntime
byte GP_RC1_alrConfig_Phase_overCurrentBit_perHysterysz
byte GP_RC1_alrConfig_Phase_overCurrentBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Phase_underCurrentBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_underCurrentBit_returntime
byte GP_RC1_alrConfig_Phase_underCurrentBit_perHysterysz
byte GP_RC1_alrConfig_Phase_underCurrentBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Phase_overTHDVBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overTHDVBit_returntime
byte GP_RC1_alrConfig_Phase_overTHDVBit_perHysterysz
byte GP_RC1_alrConfig_Phase_overTHDVBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Phase_overHDVBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overHDVBit_returntime
byte GP_RC1_alrConfig_Phase_overHDVBit_perHysterysz
byte GP_RC1_alrConfig_Phase_overHDVBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Phase_overTHDCBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overTHDCBit_returntime
byte GP_RC1_alrConfig_Phase_overTHDCBit_perHysterysz
byte GP_RC1_alrConfig_Phase_overTHDCBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Phase_overHDCBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overHDCBit_returntime
byte GP_RC1_alrConfig_Phase_overHDCBit_perHysterysz
byte GP_RC1_alrConfig_Phase_overHDCBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Phase_missinGPhaseBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_missinGPhaseBit_returntime
byte GP_RC1_alrConfig_Phase_missinGPhaseBit_perHysterysz
byte GP_RC1_alrConfig_Phase_missinGPhaseBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Public_vUnbalanceAlarmBit_delaytime
UInt16 GP_RC1_alrConfig_Public_vUnbalanceAlarmBit_returntime
byte GP_RC1_alrConfig_Public_vUnbalanceAlarmBit_perHysterysz
byte GP_RC1_alrConfig_Public_vUnbalanceAlarmBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Public_cUnbalanceAlarmBit_delaytime
UInt16 GP_RC1_alrConfig_Public_cUnbalanceAlarmBit_returntime
byte GP_RC1_alrConfig_Public_cUnbalanceAlarmBit_perHysterysz
byte GP_RC1_alrConfig_Public_cUnbalanceAlarmBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Public_overNotrCurrent_delaytime
UInt16 GP_RC1_alrConfig_Public_overNotrCurrent_returntime
byte GP_RC1_alrConfig_Public_overNotrCurrent_perHysterysz
byte GP_RC1_alrConfig_Public_overNotrCurrent_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Public_oFreqAlarmBit_delaytime
UInt16 GP_RC1_alrConfig_Public_oFreqAlarmBit_returntime
byte GP_RC1_alrConfig_Public_oFreqAlarmBit_perHysterysz
byte GP_RC1_alrConfig_Public_oFreqAlarmBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Public_uFreqAlarmBit_delaytime
UInt16 GP_RC1_alrConfig_Public_uFreqAlarmBit_returntime
byte GP_RC1_alrConfig_Public_uFreqAlarmBit_perHysterysz
byte GP_RC1_alrConfig_uPublic_FreqAlarmBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Public_phaseOrderErrorBit_delaytime
UInt16 GP_RC1_alrConfig_Public_phaseOrderErrorBitt_returntime
byte GP_RC1_alrConfig_Public_phaseOrderErrorBit_perHysterysz
byte GP_RC1_alrConfig_Public_phaseOrderErrorBit_relayEnable
float //reserved data not used
UInt16 GP_RC1_alrConfig_Public_phaseVoltageConnectionErrorBit_delaytime
UInt16 GP_RC1_alrConfig_Public_phaseVoltageConnectionErrorBit_returntime
byte GP_RC1_alrConfig_Public_phaseVoltageConnectionErrorBit_perHysterysz
byte GP_RC1_alrConfig_Public_phaseVoltageConnectionErrorBit_relayEnable

byte GP_forDisk_Conf_Pulse_In_Bits
byte t1t2t3CounterEnableBit0
byte t1t2t3CounterEnableBit1

```

```
//128 bytes free reserved
```

```
}
```

For the EA05 device the fileSystemVersion = 0x0501

```
struct ConfEA05Record { //total 186 data in 489 bytes
    UInt16 ProcessTimeforConfigFile_yearMonth
    UInt16 ProcessTimeforConfigFile_dayHour
    UInt16 ProcessTimeforConfigFile_minuteSecond
    UInt16 LastRealTimeforConfigFile_yearMonth
    UInt16 LastRealTimeforConfigFile_dayHour
    UInt16 LastRealTimeforConfigFile_minuteSecond
    UInt16 UserDefineDeviceNumberH
    UInt16 UserDefineDeviceNumberL
    UInt32 Modbus_mbConfig
    UInt16 GlobalParameters_vtrfU16
    UInt16 GlobalParameters_ctrf
    byte GlobalParameters_ConnectionType
    byte GlobalParameters_verikayitzamani
    byte GlobalParameters_demandTimeInterval
    byte GlobalParameters_demandTimeSubInterval
    byte ModbusmbSecurity_writeProtect
    byte ModbusmbSecurity_readProtect
    UInt16 ModbusmbSecurity_writeCode
    UInt16 ModbusmbSecurity_readCode

    // relay 0 configuration data
    byte GlobalParametersrelaysConfig0_Position
    byte GlobalParametersrelaysConfig0_AccessStatus
    double GP_RC0_alrConfig_Phase_overVoltageBit_value
    UInt16 GP_RC0_alrConfig_Phase_overVoltageBit_delaytime
    UInt16 GP_RC0_alrConfig_Phase_overVoltageBit_returntime
    byte GP_RC0_alrConfig_Phase_overVoltageBit_perHysterysz
    byte GP_RC0_alrConfig_Phase_overVoltageBit_relayEnable
    double GP_RC0_alrConfig_Phase_underVoltageBit_value
    UInt16 GP_RC0_alrConfig_Phase_underVoltageBit_delaytime
    UInt16 GP_RC0_alrConfig_Phase_underVoltageBit_returntime
    byte GP_RC0_alrConfig_Phase_underVoltageBit_perHysterysz
    byte GP_RC0_alrConfig_Phase_underVoltageBit_relayEnable
    double GP_RC0_alrConfig_Phase_overCurrentBit_value
    UInt16 GP_RC0_alrConfig_Phase_overCurrentBit_delaytime
    UInt16 GP_RC0_alrConfig_Phase_overCurrentBit_returntime
    byte GP_RC0_alrConfig_Phase_overCurrentBit_perHysterysz
    byte GP_RC0_alrConfig_Phase_overCurrentBit_relayEnable
    double GP_RC0_alrConfig_Phase_underCurrentBit_value
    UInt16 GP_RC0_alrConfig_Phase_underCurrentBit_delaytime
    UInt16 GP_RC0_alrConfig_Phase_underCurrentBit_returntime
    byte GP_RC0_alrConfig_Phase_underCurrentBit_perHysterysz
    byte GP_RC0_alrConfig_Phase_underCurrentBit_relayEnable
    double GP_RC0_alrConfig_Phase_overTHDVBit_value
    UInt16 GP_RC0_alrConfig_Phase_overTHDVBit_delaytime
    UInt16 GP_RC0_alrConfig_Phase_overTHDVBit_returntime
    byte GP_RC0_alrConfig_Phase_overTHDVBit_perHysterysz
    byte GP_RC0_alrConfig_Phase_overTHDVBit_relayEnable
    double GP_RC0_alrConfig_Phase_overHDVBit_value
    UInt16 GP_RC0_alrConfig_Phase_overHDVBit_delaytime
    UInt16 GP_RC0_alrConfig_Phase_overHDVBit_returntime
    byte GP_RC0_alrConfig_Phase_overHDVBit_perHysterysz
    byte GP_RC0_alrConfig_Phase_overHDVBit_relayEnable
    double GP_RC0_alrConfig_Phase_overTHDCBit_value
    UInt16 GP_RC0_alrConfig_Phase_overTHDCBit_delaytime
    UInt16 GP_RC0_alrConfig_Phase_overTHDCBit_returntime
    byte GP_RC0_alrConfig_Phase_overTHDCBit_perHysterysz
    byte GP_RC0_alrConfig_Phase_overTHDCBit_relayEnable
    double GP_RC0_alrConfig_Phase_overHDCBit_value
    UInt16 GP_RC0_alrConfig_Phase_overHDCBit_delaytime
    UInt16 GP_RC0_alrConfig_Phase_overHDCBit_returntime
    byte GP_RC0_alrConfig_Phase_overHDCBit_perHysterysz
    byte GP_RC0_alrConfig_Phase_overHDCBit_relayEnable
    double GP_RC0_alrConfig_Phase_missingPhaseBit_value
    UInt16 GP_RC0_alrConfig_Phase_missingPhaseBit_delaytime
    UInt16 GP_RC0_alrConfig_Phase_missingPhaseBit_returntime
    byte GP_RC0_alrConfig_Phase_missingPhaseBit_perHysterysz
    byte GP_RC0_alrConfig_Phase_missingPhaseBit_relayEnable
    double GP_RC0_alrConfig_Public_vUnbalanceAlarmBit_value
    UInt16 GP_RC0_alrConfig_Public_vUnbalanceAlarmBit_delaytime
    UInt16 GP_RC0_alrConfig_Public_vUnbalanceAlarmBit_returntime
    byte GP_RC0_alrConfig_Public_vUnbalanceAlarmBit_perHysterysz
    byte GP_RC0_alrConfig_Public_vUnbalanceAlarmBit_relayEnable
    double GP_RC0_alrConfig_Public_cUnbalanceAlarmBit_value
    UInt16 GP_RC0_alrConfig_Public_cUnbalanceAlarmBit_delaytime
```

```

UInt16 GP_RC0_alrConfig_Public_cUnbalanceAlarmBit_returntime
byte GP_RC0_alrConfig_Public_cUnbalanceAlarmBit_perHysterysz
byte GP_RC0_alrConfig_Public_cUnbalanceAlarmBit_relayEnable
double GP_RC0_alrConfig_Public_overNotrCurrent_value
UInt16 GP_RC0_alrConfig_Public_overNotrCurrent_delaytime
UInt16 GP_RC0_alrConfig_Public_overNotrCurrent_returntime
byte GP_RC0_alrConfig_Public_overNotrCurrent_perHysterysz
byte GP_RC0_alrConfig_Public_overNotrCurrent_relayEnable
double GP_RC0_alrConfig_Public_ofreqAlarmBit_value
UInt16 GP_RC0_alrConfig_Public_ofreqAlarmBit_delaytime
UInt16 GP_RC0_alrConfig_Public_ofreqAlarmBit_returntime
byte GP_RC0_alrConfig_Public_ofreqAlarmBit_perHysterysz
byte GP_RC0_alrConfig_Public_ofreqAlarmBit_relayEnable
double GP_RC0_alrConfig_Public_uFreqAlarmBit_value
UInt16 GP_RC0_alrConfig_Public_uFreqAlarmBit_delaytime
UInt16 GP_RC0_alrConfig_Public_uFreqAlarmBit_returntime
byte GP_RC0_alrConfig_Public_uFreqAlarmBit_perHysterysz
byte GP_RC0_alrConfig_uPublic_FreqAlarmBit_relayEnable
double GP_RC0_alrConfig_Public_phaseOrderErrorBit_value
UInt16 GP_RC0_alrConfig_Public_phaseOrderErrorBit_delaytime
UInt16 GP_RC0_alrConfig_Public_phaseOrderErrorBitt_returntime
byte GP_RC0_alrConfig_Public_phaseOrderErrorBit_perHysterysz
byte GP_RC0_alrConfig_Public_phaseOrderErrorBit_relayEnable
double GP_RC0_alrConfig_Public_phaseVoltageConnectionErrorBit_value
UInt16 GP_RC0_alrConfig_Public_phaseVoltageConnectionErrorBit_delaytime
UInt16 GP_RC0_alrConfig_Public_phaseVoltageConnectionErrorBit_returntime
byte GP_RC0_alrConfig_Public_phaseVoltageConnectionErrorBit_perHysterysz
byte GP_RC0_alrConfig_Public_phaseVoltageConnectionErrorBit_relayEnable

```

//relay 1 configuration data

```

byte GlobalParametersrelaysConfig1_Position
byte GlobalParametersrelaysConfig1_AccessStatus
double GP_RC1_alrConfig_Phase_overVoltageBit_value
UInt16 GP_RC1_alrConfig_Phase_overVoltageBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overVoltageBit_returntime
byte GP_RC1_alrConfig_Phase_overVoltageBit_perHysterysz
byte GP_RC1_alrConfig_Phase_overVoltageBit_relayEnable
double GP_RC1_alrConfig_Phase_underVoltageBit_value
UInt16 GP_RC1_alrConfig_Phase_underVoltageBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_underVoltageBit_returntime
byte GP_RC1_alrConfig_Phase_underVoltageBit_perHysterysz
byte GP_RC1_alrConfig_Phase_underVoltageBit_relayEnable
double GP_RC1_alrConfig_Phase_overCurrentBit_value
UInt16 GP_RC1_alrConfig_Phase_overCurrentBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overCurrentBit_returntime
byte GP_RC1_alrConfig_Phase_overCurrentBit_perHysterysz
byte GP_RC1_alrConfig_Phase_overCurrentBit_relayEnable
double GP_RC1_alrConfig_Phase_underCurrentBit_value
UInt16 GP_RC1_alrConfig_Phase_underCurrentBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_underCurrentBit_returntime
byte GP_RC1_alrConfig_Phase_underCurrentBit_perHysterysz
byte GP_RC1_alrConfig_Phase_underCurrentBit_relayEnable
double GP_RC1_alrConfig_Phase_overTHDVBit_value
UInt16 GP_RC1_alrConfig_Phase_overTHDVBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overTHDVBit_returntime
byte GP_RC1_alrConfig_Phase_overTHDVBit_perHysterysz
byte GP_RC1_alrConfig_Phase_overTHDVBit_relayEnable
double GP_RC1_alrConfig_Phase_overHDVBit_value
UInt16 GP_RC1_alrConfig_Phase_overHDVBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overHDVBit_returntime
byte GP_RC1_alrConfig_Phase_overHDVBit_perHysterysz
byte GP_RC1_alrConfig_Phase_overHDVBit_relayEnable
double GP_RC1_alrConfig_Phase_overTHDCBit_value
UInt16 GP_RC1_alrConfig_Phase_overTHDCBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overTHDCBit_returntime
byte GP_RC1_alrConfig_Phase_overTHDCBit_perHysterysz
byte GP_RC1_alrConfig_Phase_overTHDCBit_relayEnable
double GP_RC1_alrConfig_Phase_overHDCBit_value
UInt16 GP_RC1_alrConfig_Phase_overHDCBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_overHDCBit_returntime
byte GP_RC1_alrConfig_Phase_overHDCBit_perHysterysz
byte GP_RC1_alrConfig_Phase_overHDCBit_relayEnable
double GP_RC1_alrConfig_Phase_missinGPhaseBit_value
UInt16 GP_RC1_alrConfig_Phase_missinGPhaseBit_delaytime
UInt16 GP_RC1_alrConfig_Phase_missinGPhaseBit_returntime
byte GP_RC1_alrConfig_Phase_missinGPhaseBit_perHysterysz
byte GP_RC1_alrConfig_Phase_missinGPhaseBit_relayEnable

```

```

double GP_RC1_alrConfig_Public_vUnbalanceAlarmBit_value
UInt16 GP_RC1_alrConfig_Public_vUnbalanceAlarmBit_delaytime
UInt16 GP_RC1_alrConfig_Public_vUnbalanceAlarmBit_returntime
byte GP_RC1_alrConfig_Public_vUnbalanceAlarmBit_perHysterysz
byte GP_RC1_alrConfig_Public_vUnbalanceAlarmBit_relayEnable
double GP_RC1_alrConfig_Public_cUnbalanceAlarmBit_value
UInt16 GP_RC1_alrConfig_Public_cUnbalanceAlarmBit_delaytime
UInt16 GP_RC1_alrConfig_Public_cUnbalanceAlarmBit_returntime
byte GP_RC1_alrConfig_Public_cUnbalanceAlarmBit_perHysterysz
byte GP_RC1_alrConfig_Public_cUnbalanceAlarmBit_relayEnable
double GP_RC1_alrConfig_Public_overNotrCurrent_value
UInt16 GP_RC1_alrConfig_Public_overNotrCurrent_delaytime
UInt16 GP_RC1_alrConfig_Public_overNotrCurrent_returntime
byte GP_RC1_alrConfig_Public_overNotrCurrent_perHysterysz
byte GP_RC1_alrConfig_Public_overNotrCurrent_relayEnable
double GP_RC1_alrConfig_Public_oFreqAlarmBit_value
UInt16 GP_RC1_alrConfig_Public_oFreqAlarmBit_delaytime
UInt16 GP_RC1_alrConfig_Public_oFreqAlarmBit_returntime
byte GP_RC1_alrConfig_Public_oFreqAlarmBit_perHysterysz
byte GP_RC1_alrConfig_Public_oFreqAlarmBit_relayEnable
double GP_RC1_alrConfig_Public_uFreqAlarmBit_value
UInt16 GP_RC1_alrConfig_Public_uFreqAlarmBit_delaytime
UInt16 GP_RC1_alrConfig_Public_uFreqAlarmBit_returntime
byte GP_RC1_alrConfig_Public_uFreqAlarmBit_perHysterysz
byte GP_RC1_alrConfig_uPublic_FreqAlarmBit_relayEnable
double GP_RC1_alrConfig_Public_phaseOrderErrorBit_value
UInt16 GP_RC1_alrConfig_Public_phaseOrderErrorBit_delaytime
UInt16 GP_RC1_alrConfig_Public_phaseOrderErrorBitt_returntime
byte GP_RC1_alrConfig_Public_phaseOrderErrorBit_perHysterysz
byte GP_RC1_alrConfig_Public_phaseOrderErrorBit_relayEnable
double GP_RC1_alrConfig_Public_phaseVoltageConnectionErrorBit_value
UInt16 GP_RC1_alrConfig_Public_phaseVoltageConnectionErrorBit_delaytime
UInt16 GP_RC1_alrConfig_Public_phaseVoltageConnectionErrorBit_returntime
byte GP_RC1_alrConfig_Public_phaseVoltageConnectionErrorBit_perHysterysz
byte GP_RC1_alrConfig_Public_phaseVoltageConnectionErrorBit_relayEnable

byte GP_forDisk_Conf_Pulse_In_Bits
byte t1t2t3CounterEnableBit0
byte t1t2t3CounterEnableBit1
}

```

The ConfA01.dat File

This is only defined for the EA05 device.

```

struct ConfA01File {
    Header header;
    ConfA01Record[] records;
}

```

For the EA05 device the fileSystemVersion = 0x0100

For the EA05 device the fileSystemVersion = 0x0501

```

struct ConfA01Record { //total 81 data in 312 bytes
    UInt16 ProcessTimeforConfigFile_yearMonth
    UInt16 ProcessTimeforConfigFile_dayHour
    UInt16 ProcessTimeforConfigFile_minuteSecond
    byte Type
    byte Current_type
    float GP_analogNo0_analogConfigPhase0_Overvalue
    float GP_analogNo0_analogConfigPhase0_Undervalue
    float GP_analogNo0_analogConfigPhase1_Overvalue
    float GP_analogNo0_analogConfigPhase1_Undervalue
    float GP_analogNo0_analogConfigPhase2_Overvalue
    float GP_analogNo0_analogConfigPhase2_Undervalue
    float GP_analogNo0_analogConfigPhase3_Overvalue
    float GP_analogNo0_analogConfigPhase3_Undervalue
    float GP_analogNo0_analogConfigPhase4_Overvalue
    float GP_analogNo0_analogConfigPhase4_Undervalue
    float GP_analogNo0_analogConfigPhase5_Overvalue
    float GP_analogNo0_analogConfigPhase5_Undervalue
    float GP_analogNo0_analogConfigPhase6_Overvalue
    float GP_analogNo0_analogConfigPhase6_Undervalue
    float GP_analogNo0_analogConfigPhase7_Overvalue
}

```



```

float GP_analogNo0_analogConfigPhase7_Undervalue
float GP_analogNo0_analogConfigPhase8_Overvalue
float GP_analogNo0_analogConfigPhase8_Undervalue
float GP_analogNo0_analogConfigPhase9_Overvalue
float GP_analogNo0_analogConfigPhase9_Undervalue
float GP_analogNo0_analogConfigPhase10_Overvalue
float GP_analogNo0_analogConfigPhase10_Undervalue
float GP_analogNo0_analogConfigPhase11_Overvalue
float GP_analogNo0_analogConfigPhase11_Undervalue
float GP_analogNo0_analogConfigPhase12_Overvalue
float GP_analogNo0_analogConfigPhase12_Undervalue
float GP_analogNo0_analogConfigPhase13_Overvalue
float GP_analogNo0_analogConfigPhase13_Undervalue
float GP_analogNo0_analogConfigPhase14_Overvalue
float GP_analogNo0_analogConfigPhase14_Undervalue
float GP_analogNo0_analogConfigPhase15_Overvalue
float GP_analogNo0_analogConfigPhase15_Undervalue
float GP_analogNo0_analogConfigPhase16_Overvalue
float GP_analogNo0_analogConfigPhase16_Undervalue
float GP_analogNo0_analogConfigPhase17_Overvalue
float GP_analogNo0_analogConfigPhase17_Undervalue
float GP_analogNo0_analogConfigPhase18_Overvalue
float GP_analogNo0_analogConfigPhase18_Undervalue
float GP_analogNo0_analogConfigPhase19_Overvalue
float GP_analogNo0_analogConfigPhase19_Undervalue
float GP_analogNo0_analogConfigPhase20_Overvalue
float GP_analogNo0_analogConfigPhase20_Undervalue
float GP_analogNo0_analogConfigPhase21_Overvalue
float GP_analogNo0_analogConfigPhase21_Undervalue
float GP_analogNo0_analogConfigPhase22_Overvalue
float GP_analogNo0_analogConfigPhase22_Undervalue
float GP_analogNo0_analogConfigPhase23_Overvalue
float GP_analogNo0_analogConfigPhase23_Undervalue
float GP_analogNo0_analogConfigPhase24_Overvalue
float GP_analogNo0_analogConfigPhase24_Undervalue
float GP_analogNo0_analogConfigPhase25_Overvalue
float GP_analogNo0_analogConfigPhase25_Undervalue
float GP_analogNo0_analogConfigPhase26_Overvalue
float GP_analogNo0_analogConfigPhase26_Undervalue
float GP_analogNo0_analogConfigPhase27_Overvalue
float GP_analogNo0_analogConfigPhase27_Undervalue
float GP_analogNo0_analogConfigPhase28_Overvalue
float GP_analogNo0_analogConfigPhase28_Undervalue
float GP_analogNo0_analogConfigPhase29_Overvalue
float GP_analogNo0_analogConfigPhase29_Undervalue
float GP_analogNo0_analogConfigPhase30_Overvalue
float GP_analogNo0_analogConfigPhase30_Undervalue
float GP_analogNo0_analogConfigPhase31_Overvalue
float GP_analogNo0_analogConfigPhase31_Undervalue
float GP_analogNo0_analogConfigPhase32_Overvalue
float GP_analogNo0_analogConfigPhase32_Undervalue
float GP_analogNo0_analogConfigPhase33_Overvalue
float GP_analogNo0_analogConfigPhase33_Undervalue
float GP_analogNo0_analogConfigPhase34_Overvalue
float GP_analogNo0_analogConfigPhase34_Undervalue
float GP_analogNo0_analogConfigPhase35_Overvalue
float GP_analogNo0_analogConfigPhase35_Undervalue
float GP_analogNo0_analogConfigPhase36_Overvalue
float GP_analogNo0_analogConfigPhase36_Undervalue
float GP_analogNo0_analogConfigPhase37_Overvalue
float GP_analogNo0_analogConfigPhase37_Undervalue
}

```

The ConfA02.dat File

This is only defined for the EA05 device.

```

struct ConfA02File {
    Header header;
    ConfA02Record[] records;
}

```

For the EA05 device the fileSystemVersion = 0x0100

For the EA05 device the fileSystemVersion = 0x0501


```

float GP_analogNo1_analogConfigPhase36_Undervalue
float GP_analogNo1_analogConfigPhase37_Overvalue
float GP_analogNo1_analogConfigPhase37_Undervalue
}

```

The LD.dat file (Last Demand)

```

struct LDFile {
    Header header;
    LDRecord[] records;
}

```

For the EA05 device the fileSystemVersion = 0x0100

For the EA05 device the fileSystemVersion = 0x0501

```

struct LDRecord { //total 41 data in 158 bytes
    UInt16 ProcessTime_yearMonth
    UInt16 ProcessTime_dayHour
    UInt16 ProcessTime_minuteSecond

    float PH1_lastDemands_VoltageDemandCol
    float PH1_lastDemands_CurrentDemandCol
    float PH1_lastDemands_pActivePowerDemandCol
    float PH1_lastDemands_nActivePowerDemandCol
    float PH1_lastDemands_pReActivePowerDemandCol
    float PH1_lastDemands_nReActivePowerDemandCol
    float PH1_lastDemands_AppearedPowerDemandCol
    float PH1_lastDemands_vTHDdemandCol
    float PH1_lastDemands_cTHDdemandCol

    float PH2_lastDemands_VoltageDemandCol
    float PH2_lastDemands_CurrentDemandCol
    float PH2_lastDemands_pActivePowerDemandCol
    float PH2_lastDemands_nActivePowerDemandCol
    float PH2_lastDemands_pReActivePowerDemandCol
    float PH2_lastDemands_nReActivePowerDemandCol
    float PH2_lastDemands_AppearedPowerDemandCol
    float PH2_lastDemands_vTHDdemandCol
    float PH2_lastDemands_cTHDdemandCol

    float PH3_lastDemands_VoltageDemandCol
    float PH3_lastDemands_CurrentDemandCol
    float PH3_lastDemands_pActivePowerDemandCol
    float PH3_lastDemands_nActivePowerDemandCol
    float PH3_lastDemands_pReActivePowerDemandCol
    float PH3_lastDemands_nReActivePowerDemandCol
    float PH3_lastDemands_AppearedPowerDemandCol
    float PH3_lastDemands_vTHDdemandCol
    float PH3_lastDemands_cTHDdemandCol

    float PublicDemand_lastDemands_VoltageL1L2DemandCol
    float PublicDemand_lastDemands_VoltageL2L3DemandCol
    float PublicDemand_lastDemands_VoltageL3L1DemandCol
    float PublicDemand_lastDemands_NotrCurrentDemandCol
    float PublicDemand_lastDemands_totalpActivePowerDemandCol
    float PublicDemand_lastDemands_totalnActivePowerDemandCol
    float PublicDemand_lastDemands_totalPReactivePowerDemandCol
    float PublicDemand_lastDemands_totalNReactivePowerDemandCol
    float PublicDemand_lastDemands_pSumReActivePowerDemandCol
    float PublicDemand_lastDemands_nSumReActivePowerDemandCol
    float PublicDemand_lastDemands_SumAppearedPowerDemandCol
}

```

The alr.dat file (Alarm)

The structure is the same for all the versions.

```

struct ALRFile {
    Header header;
    ALRRecord[] records;
}

struct ALRRecord { //10 datas in 16 bytes
    byte Year
    byte Month
    byte Day
    byte Hour
    byte Minute
    byte Second
    float Alarm_value
    float Alarm_set_value
    byte Alarm_info
    byte Alarm_order
}
    
```

The **AlarmInfo** field is divided into bit fields. Those are given below.

Alarm Info Field							
Alarm name				Alarm inout	Data type	Phase order	
Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Determined by phase order value <ul style="list-style-type: none"> • when phase order is 0 <ul style="list-style-type: none"> • 0000 - vUnbalance • 0001 - cUnbalance • 0010 - Over Notr Current • 0011 - oFreq Alarm Bit • 0100 - uFreq Alarm Bit • 0101 - Phase Order Error • 0110 - Phase Voltage Connectin Error • when phase order is not 0 <ul style="list-style-type: none"> • 0000 - Over Voltage • 0001 - Under Voltage • 0010 - Over Current • 0011 - Under Current • 0100 - Over THDV • 0101 - Over HDV • 0110 - Over THDC • 0111 - Over HDC • 1000 - Missing Phase 				<ul style="list-style-type: none"> • 0 - The alarm has happened a while ago. • 1 - The alarm happend now. 	<ul style="list-style-type: none"> • 0 - Alarm value and alarm set value is a byte. • 1 - Alarm value and alarm set value is a float. 	<ul style="list-style-type: none"> • 00 - this is a public alarm • 01 - this is a phase 1 alarm • 10 - this is a phase 2 alarm • 11 - this is a phase 3 alarm 	

The dp.dat file (Demand Peak)

The structure is the same for all the versions.

```

struct DPFile {
    Header header;
    DPRecord[] records;
}

struct DPRecord { //8 datas in 11 bytes
    byte Year
    byte Month
    byte Day
    byte Hour
    byte Minute
    byte Second
    float Floatvalue
    byte DemandInfo
}
    
```

The **DemandInfo** field is divided into bit fields. Those are given below.

Demand Info Field							
Phase demand name				Data type		Phase order	
Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Determined by phase order value <ul style="list-style-type: none"> • when phase order is 0 <ul style="list-style-type: none"> • 0000 - Voltage L1L2 Demand Peak • 0001 - Voltage L2L3 Demand Peak • 0010 - Voltage L3L1 Demand Peak • 0011 - Notr Current Demand Peak • 0100 - Total pActive Power Demand Peak • 0101 - Total nActive Power Demand Peak • 0110 - Total pReactive Power Demand Peak • 0111 - Total nReactive Power Demand Peak • 1000 - pSumReactive Power Demand Peak • 1001 - nSumReactive Power Demand Peak • 1010 - SumAppeared Power Demand Peak • when phase order is not 0 <ul style="list-style-type: none"> • 0000 - Voltage Demand Peak • 0001 - Current Demand Peak • 0010 - pActive Power Demand Peak • 0011 - nActive Power Demand Peak • 0100 - pReactive Power Demand Peak • 0101 - nReactive Power Demand Peak • 0110 - Appeared Power Demand Peak • 0111 - vTHD Demand Peak • 1000 - cTHD Demand Peak 				<ul style="list-style-type: none"> • 00 - max value • 01 - min value • 10 - peak value 		<ul style="list-style-type: none"> • 00- public alarm happened • 01 - phase 1 • 10 - phase 2 • 11 - phase 3 	

Timed Data File - t1.dat

For EA01 device

The structure is the same for all the versions for the EA01 device.

```
struct T1EA01File {
    Header header;
    T1EA01Record[] records;
}

struct T1EA01Record { //85 datas 406Bytes
    UInt16 LastRealTime_yearMonth
    UInt16 LastRealTime_dayHour
    UInt16 LastRealTime_minuteSecond
    float vtrf;
    UInt16 ctrf;
    float frequency;
    UInt16 systemPhasesAndCurrentsBitInfo;
    float phase1DisplayVoltage;
    float phase2DisplayVoltage;
    float phase3DisplayVoltage;
    float displayPPVoltage1;
    float displayPPVoltage2;
    float displayPPVoltage3;
    float voltajUnbalance;
    float phase1DisplayCurrent;
    float phase2DisplayCurrent;
    float phase3DisplayCurrent;
    float displayPPCurrent1;
    float displayPPCurrent2;
    float displayPPCurrent3;
    float currentUnbalanceDisplayValue;
    float notcurrentsum;
    UInt16 deviceWorkingInformationBits;
    float displayActivePower1;
    float displayActivePower2;
    float displayActivePower3;
    float displayReactivePower1;
    float displayReactivePower2;
    float displayReactivePower3;
    float displayApparentPower1;
    float displayApparentPower2;
    float displayApparentPower3;
    float Phase1cosfi;
    float Phase2cosfi;
    float Phase3cosfi;
    float vectorelSumCosfiValue;
    float displayPowerfactor1;
    float displayPowerfactor2;
    float displayPowerfactor3;
    float vectorelSumPowerFactor;
    float totalActivePower;
    float totalImportReactivepower;
    float totalExportReactivepower;
    float vectorelSumReactivepower;
    float vectorelSumApparedPower;
    UInt32 timeOfEnerjiCounter(second);
    UInt48 toplamImportActiveEnergy;(watt/sec)
    UInt48 toplamImportReactiveInductiveEnergy;(VAR/sec)
    UInt48 toplamImportReactiveCapacitiveEnergy;(VAR/sec)
    UInt48 phase1ImportActiveEnergy;(watt/sec)
    UInt48 phase2ImportActiveEnergy;(watt/sec)
    UInt48 phase3ImportActiveEnergy;(watt/sec)
    UInt48 phase1ImportReactiveInduktiveEnergy;(VAR/sec)
    UInt48 phase2ImportReactiveInduktiveEnergy;(VAR/sec)
    UInt48 phase3ImportReactiveInduktiveEnergy;(VAR/sec)
    UInt48 phase1ImportReactiveCapacitiveEnergy;(VAR/sec)
    UInt48 phase2ImportReactiveCapacitiveEnergy;(VAR/sec)
    UInt48 phase3ImportReactiveCapacitiveEnergy;(VAR/sec)
    UInt48 VectoralSumImportActiveEnergy;(watt/sec)
    UInt48 VectoralSumImportReactiveInductiveEnergy;(VAR/sec)
    UInt48 VectoralSumImportReactiveCapacitiveEnergy;(VAR/sec)

    UInt48 toplamExportActiveEnergy;(watt/sec)
    UInt48 toplamExportReactiveInductiveEnergy;(VAR/sec)
    UInt48 toplamExportReactiveCapacitiveEnergy;(VAR/sec)
```

```

UInt48 phase1ExportActiveEnergy;(watt/sec)
UInt48 phase2ExportActiveEnergy;(watt/sec)
UInt48 phase3ExportActiveEnergy;(watt/sec)
UInt48 phase1ExportReactiveInductiveEnergy;(VAr/sec)
UInt48 phase2ExportReactiveInductiveEnergy;(VAr/sec)
UInt48 phase3ExportReactiveInductiveEnergy;(VAr/sec)
UInt48 phase1ExportReactiveCapacitiveEnergy;(VAr/sec)
UInt48 phase2ExportReactiveCapacitiveEnergy;(VAr/sec)
UInt48 phase3ExportReactiveCapacitiveEnergy;(VAr/sec)
UInt48 VectoralSumExportActiveEnergy;(watt/sec)
UInt48 VectoralSumExportReactiveInductiveEnergy;(VAr/sec)
UInt48 VectoralSumExportCapacitiveEnergy;(VAr/sec)
UInt48 totalVASEcAppearedEnerji;(VA/sec)
UInt48 Phase1ApparentEnergy;(VA/sec)
UInt48 Phase2GorunenEnergy;(VA/sec)
UInt48 Phase3GorunenEnergy;(VA/sec)
UInt48 unlockedImportActiveEnergy;(watt/sec)
UInt48 unlockedExportActiveEnergy;(watt/sec)
UInt48 unlockedVectoralPositiveReactiveEnergy;(VAr/sec)
UInt48 unlockedVectoralNegativeReactiveEnergy;(VAr/sec)
UInt48 unlockedVectoralApparentEnergy;(VA/sec)
}

```

For EA02 device

The structure is the same for all the versions for the EA02 device.

```

struct T1EA02File {
    Header header;
    T1EA02Record[] records;
}

struct T1EA02Record { //101 datas in 434 bytes
    UInt16 LastRealTime_yearMonth
    UInt16 LastRealTime_dayHour
    UInt16 LastRealTime_minuteSecond
    float vtrf;
    UInt16 ctrf;
    float frequency;
    UInt16 systemPhasesAndCurrentsBitInfo;
    float phase1DisplayVoltage;
    float phase2DisplayVoltage;
    float phase3DisplayVoltage;
    float displayPPVoltage1;
    float displayPPVoltage2;
    float displayPPVoltage3;
    float voltajUnbalance;
    float phase1DisplayCurrent;
    float phase2DisplayCurrent;
    float phase3DisplayCurrent;
    float displayPPCurrent1;
    float displayPPCurrent2;
    float displayPPCurrent3;
    float currentUnbalanceDisplayValue;
    float notrcurrentsum;
    UInt16 deviceWorkingInformationBits;
    float displayActivePower1;
    float displayActivePower2;
    float displayActivePower3;
    float displayReaktivePower1;
    float displayReaktivePower2;
    float displayReaktivePower3;
    float displayApparentPower1;
    float displayApparentPower2;
    float displayApparentPower3;
    float Phase1cosfi;
    float Phase2cosfi;
    float Phase3cosfi;
    float vectorelSumCosfiValue;
    float displayPowerfactor1;
    float displayPowerfactor2;
    float displayPowerfactor3;
    float vectorelSumPowerFactor;
    float totalActivePower;
    float totalImportReactivepower;
    float totalExportReactivepower;
    float vectorelSumReactivepower;
    float vectorelSumAppearedPower;
    UInt32 timeOfEnerjiCounter(second);
}

```

```

UInt48 toplamImportActiveEnergy;(watt/sec)
UInt48 toplamImportReactiveInductiveEnergy;(VAr/sec)
UInt48 toplamImportReactiveCapacitiveEnergy;(VAr/sec)
UInt48 phase1ImportActiveEnergy;(watt/sec)
UInt48 phase2ImportActiveEnergy;(watt/sec)
UInt48 phase3ImportActiveEnergy;(watt/sec)
UInt48 phase1ImportReactiveInduktiveEnergy;(VAr/sec)
UInt48 phase2ImportReactiveInduktiveEnergy;(VAr/sec)
UInt48 phase3ImportReactiveInduktiveEnergy;(VAr/sec)
UInt48 phase1ImportReactiveCapacitiveEnergy;(VAr/sec)
UInt48 phase2ImportReactiveCapacitiveEnergy;(VAr/sec)
UInt48 phase3ImportReactiveCapacitiveEnergy;(VAr/sec)
UInt48 VectoralSumImportActiveEnergy;(watt/sec)
UInt48 VectoralSumImportReactiveInductiveEnergy;(VAr/sec)
UInt48 VectoralSumImportReactiveCapacitiveEnergy;(VAr/sec)

```

```

UInt48 toplamExportActiveEnergy;(watt/sec)
UInt48 toplamExportReactiveInductiveEnergy;(VAr/sec)
UInt48 toplamExportReactiveCapacitiveEnergy;(VAr/sec)
UInt48 phase1ExportActiveEnergy;(watt/sec)
UInt48 phase2ExportActiveEnergy;(watt/sec)
UInt48 phase3ExportActiveEnergy;(watt/sec)
UInt48 phase1ExportReactiveInductiveEnergy;(VAr/sec)
UInt48 phase2ExportReactiveInductiveEnergy;(VAr/sec)
UInt48 phase3ExportReactiveInductiveEnergy;(VAr/sec)
UInt48 phase1ExportReactiveCapacitiveEnergy;(VAr/sec)
UInt48 phase2ExportReactiveCapacitiveEnergy;(VAr/sec)
UInt48 phase3ExportReactiveCapacitiveEnergy;(VAr/sec)
UInt48 VectoralSumExportActiveEnergy;(watt/sec)
UInt48 VectoralSumExportReactiveInductiveEnergy;(VAr/sec)
UInt48 VectoralSumExportCapacitiveEnergy;(VAr/sec)
UInt48 totalVASEcAppearedEnerji;(VA/sec)
UInt48 Phase1ApparentEnergy;(VA/sec)
UInt48 Phase2GorunenEnergy;(VA/sec)
UInt48 Phase3GorunenEnergy;(VA/sec)
UInt48 unlockedImportActiveEnergy;(watt/sec)
UInt48 unlockedExportActiveEnergy;(watt/sec)
UInt48 unlockedVectoralPositiveReactiveEnergy;(VAr/sec)
UInt48 unlockedVectoralNegativeReactiveEnergy;(VAr/sec)
UInt48 unlockedVectoralApparentEnergy;(VA/sec)

```

```

byte relayPositions;
byte relayAccesses;
byte relayAlarms;
byte relayRealTimePositions;
UInt16 publicAlarmsalarmRelay0EnableBits;
UInt16 phaseAlarmsalarmRelay0EnableBits;
UInt16 publicAlarmsAlarmBitsforRelay0;
UInt16 phase0Alarms_alarmbitsforRelay0;
UInt16 phase1Alarms_alarmbitsforRelay0;
UInt16 phase2Alarms_alarmbitsforRelay0;
UInt16 publicAlarmsalarmRelay1EnableBits;
UInt16 phaseAlarmsalarmRelay1EnableBits;
UInt16 publicAlarmsAlarmBitsforRelay1;
UInt16 phase0Alarms_alarmbitsforRelay1;
UInt16 phase1Alarms_alarmbitsforRelay1;
UInt16 phase2Alarms_alarmbitsforRelay1;
}

```

For EA03 device

The structure is the same for all the versions for the EA03 device.

```

struct T1EA03File {
    Header header;
    T1EA03Record[] records;
}

```

```

struct T1EA03Record { //103 datas in 436 bytes
    UInt16 LastRealTime_yearMonth
    UInt16 LastRealTime_dayHour
    UInt16 LastRealTime_minuteSecond
    float vtrf;
    UInt16 ctrf;
    float frequency;
    UInt16 systemPhasesAndCurrentsBitInfo;
}

```



```

float phase1DisplayVoltage;
float phase2DisplayVoltage;
float phase3DisplayVoltage;
float displayPPVoltage1;
float displayPPVoltage2;
float displayPPVoltage3;
float voltajUnbalance;
float phase1DisplayCurrent;
float phase2DisplayCurrent;
float phase3DisplayCurrent;
float displayPPCurrent1;
float displayPPCurrent2;
float displayPPCurrent3;
float currentUnbalanceDisplayValue;
float notcurrentsum;
UInt16 deviceWorkingInformationBits;
float displayActivePower1;
float displayActivePower2;
float displayActivePower3;
float displayReaktivePower1;
float displayReaktivePower2;
float displayReaktivePower3;
float displayApparentPower1;
float displayApparentPower2;
float displayApparentPower3;
float Phase1cosfi;
float Phase2cosfi;
float Phase3cosfi;
float vectorelSumCosfiValue;
float displayPowerfactor1;
float displayPowerfactor2;
float displayPowerfactor3;
float vectorelSumPowerFactor;
float totalActivePower;
float totalImportReactivepower;
float totalExportReactivepower;
float vectorelSumReactivepower;
float vectorelSumAppearedPower;
UInt32 timeOfEnerjiCounter(second);
UInt48 toplamImportActiveEnergy;(watt/sec)
UInt48 toplamImportReactiveInductiveEnergy;(VAr/sec)
UInt48 toplamImportReactiveCapacitiveEnergy;(VAr/sec)
UInt48 phase1ImportActiveEnergy;(watt/sec)
UInt48 phase2ImportActiveEnergy;(watt/sec)
UInt48 phase3ImportActiveEnergy;(watt/sec)
UInt48 phase1ImportReactiveInduktiveEnergy;(VAr/sec)
UInt48 phase2ImportReactiveInduktiveEnergy;(VAr/sec)
UInt48 phase3ImportReactiveInduktiveEnergy;(VAr/sec)
UInt48 phase1ImportReactiveCapacitiveEnergy;(VAr/sec)
UInt48 phase2ImportReactiveCapacitiveEnergy;(VAr/sec)
UInt48 phase3ImportReactiveCapacitiveEnergy;(VAr/sec)
UInt48 VectoralSumImportActiveEnergy;(watt/sec)
UInt48 VectoralSumImportReactiveInductiveEnergy;(VAr/sec)
UInt48 VectoralSumImportReactiveCapacitiveEnergy;(VAr/sec)

UInt48 toplamExportActiveEnergy;(watt/sec)
UInt48 toplamExportReactiveInductiveEnergy;(VAr/sec)
UInt48 toplamExportReactiveCapacitiveEnergy;(VAr/sec)
UInt48 phase1ExportActiveEnergy;(watt/sec)
UInt48 phase2ExportActiveEnergy;(watt/sec)
UInt48 phase3ExportActiveEnergy;(watt/sec)
UInt48 phase1ExportReactiveInductiveEnergy;(VAr/sec)
UInt48 phase2ExportReactiveInductiveEnergy;(VAr/sec)
UInt48 phase3ExportReactiveInductiveEnergy;(VAr/sec)
UInt48 phase1ExportReactiveCapacitiveEnergy;(VAr/sec)
UInt48 phase2ExportReactiveCapacitiveEnergy;(VAr/sec)
UInt48 phase3ExportReactiveCapacitiveEnergy;(VAr/sec)
UInt48 VectoralSumExportActiveEnergy;(watt/sec)
UInt48 VectoralSumExportReactiveInductiveEnergy;(VAr/sec)
UInt48 VectoralSumExportCapacitiveEnergy;(VAr/sec)
UInt48 totalVA SecAppearedEnerji;(VA/sec)
UInt48 Phase1 ApparentEnergy;(VA/sec)
UInt48 Phase2GorunenEnergy;(VA/sec)
UInt48 Phase3GorunenEnergy;(VA/sec)
UInt48 unlockedImportActiveEnergy;(watt/sec)
UInt48 unlockedExportActiveEnergy;(watt/sec)
UInt48 unlockedVectoralPositiveReactiveEnergy;(VAr/sec)
UInt48 unlockedVectoralNegativeReactiveEnergy;(VAr/sec)
UInt48 unlockedVectoralApparentEnergy;(VA/sec)

```

```

byte relayPositions;
byte relayAccesses;
byte relayAlarms;
byte relayRealTimePositions;
UInt16 publicAlarmsalarmRelay0EnableBits;
UInt16 phaseAlarmsalarmRelay0EnableBits;
UInt16 publicAlarmsAlarmBitsforRelay0;
UInt16 phase0Alarms_alarmbitsforRelay0;
UInt16 phase1Alarms_alarmbitsforRelay0;
UInt16 phase2Alarms_alarmbitsforRelay0;
UInt16 publicAlarmsalarmRelay1EnableBits;
UInt16 phaseAlarmsalarmRelay1EnableBits;
UInt16 publicAlarmsAlarmBitsforRelay1;
UInt16 phase0Alarms_alarmbitsforRelay1;
UInt16 phase1Alarms_alarmbitsforRelay1;
UInt16 phase2Alarms_alarmbitsforRelay1;

byte Pin_OR_GinControl_genaratorInputs;
byte Pin_OR_GinControl_alarmInputs;
}

```

For EA04 device

The structure is the same for all the versions for the EA04 device.

```

struct T1EA04File {
    Header header;
    T1EA04Record[] records;
}

struct T1EA04Record { //113 datas in 492 bytes

    UInt16 LastRealTime_yearMonth
    UInt16 LastRealTime_dayHour
    UInt16 LastRealTime_minuteSecond
    float vtrf;
    UInt16 ctrf;
    float frequancy;
    UInt16 systemPhasesAndCurrentsBitInfo;
    float phase1DisplayVoltage;
    float phase2DisplayVoltage;
    float phase3DisplayVoltage;
    float displayPPVoltage1;
    float displayPPVoltage2;
    float displayPPVoltage3;
    float voltajUnbalance;
    float phase1DisplayCurrent;
    float phase2DisplayCurrent;
    float phase3DisplayCurrent;
    float displayPPCurrent1;
    float displayPPCurrent2;
    float displayPPCurrent3;
    float currentUnbalanceDisplayValue;
    float notrcurrentsum;
    UInt16 deviceWorkingInformationBits;
    float displayActivePower1;
    float displayActivePower2;
    float displayActivePower3;
    float displayReaktivePower1;
    float displayReaktivePower2;
    float displayReaktivePower3;
    float displayApparentPower1;
    float displayApparentPower2;
    float displayApparentPower3;
    float Phase1cosfi;
    float Phase2cosfi;
    float Phase3cosfi;
    float vectorelSumCosfiValue;
    float displayPowerfactor1;
    float displayPowerfactor2;
    float displayPowerfactor3;
    float vectorelSumPowerFactor;
    float totalActivePower;
    float totalImportReactivepower;
    float totalExportReactivepower;
    float vectorelSumReactivepower;
    float vectorelSumAppearedPower;
    UInt32 timeOfEnerjiCounter(second);
}

```

```

UInt48 toplamImportActiveEnergy;(watt/sec)
UInt48 toplamImportReactiveInductiveEnergy;(VAr/sec)
UInt48 toplamImportReactiveCapacitiveEnergy;(VAr/sec)
UInt48 phase1ImportActiveEnergy;(watt/sec)
UInt48 phase2ImportActiveEnergy;(watt/sec)
UInt48 phase3ImportActiveEnergy;(watt/sec)
UInt48 phase1ImportReactiveInductiveEnergy;(VAr/sec)
UInt48 phase2ImportReactiveInductiveEnergy;(VAr/sec)
UInt48 phase3ImportReactiveInductiveEnergy;(VAr/sec)
UInt48 phase1ImportReactiveCapacitiveEnergy;(VAr/sec)
UInt48 phase2ImportReactiveCapacitiveEnergy;(VAr/sec)
UInt48 phase3ImportReactiveCapacitiveEnergy;(VAr/sec)
UInt48 VectoralSumImportActiveEnergy;(watt/sec)
UInt48 VectoralSumImportReactiveInductiveEnergy;(VAr/sec)
UInt48 VectoralSumImportReactiveCapacitiveEnergy;(VAr/sec)

```

```

UInt48 toplamExportActiveEnergy;(watt/sec)
UInt48 toplamExportReactiveInductiveEnergy;(VAr/sec)
UInt48 toplamExportReactiveCapacitiveEnergy;(VAr/sec)
UInt48 phase1ExportActiveEnergy;(watt/sec)
UInt48 phase2ExportActiveEnergy;(watt/sec)
UInt48 phase3ExportActiveEnergy;(watt/sec)
UInt48 phase1ExportReactiveInductiveEnergy;(VAr/sec)
UInt48 phase2ExportReactiveInductiveEnergy;(VAr/sec)
UInt48 phase3ExportReactiveInductiveEnergy;(VAr/sec)
UInt48 phase1ExportReactiveCapacitiveEnergy;(VAr/sec)
UInt48 phase2ExportReactiveCapacitiveEnergy;(VAr/sec)
UInt48 phase3ExportReactiveCapacitiveEnergy;(VAr/sec)
UInt48 VectoralSumExportActiveEnergy;(watt/sec)
UInt48 VectoralSumExportReactiveInductiveEnergy;(VAr/sec)
UInt48 VectoralSumExportCapacitiveEnergy;(VAr/sec)
UInt48 totalVASEcAppearedEnerji;(VA/sec)
UInt48 Phase1ApparentEnergy;(VA/sec)
UInt48 Phase2GorunenEnergy;(VA/sec)
UInt48 Phase3GorunenEnergy;(VA/sec)
UInt48 unlockedImportActiveEnergy;(watt/sec)
UInt48 unlockedExportActiveEnergy;(watt/sec)
UInt48 unlockedVectoralPositiveReactiveEnergy;(VAr/sec)
UInt48 unlockedVectoralNegativeReactiveEnergy;(VAr/sec)
UInt48 unlockedVectoralApparentEnergy;(VA/sec)

```

```

byte relayPositions;
byte relayAccesses;
byte relayAlarms;
byte relayRealTimePositions;
UInt16 publicAlarmsalarmRelay0EnableBits;
UInt16 phaseAlarmsalarmRelay0EnableBits;
UInt16 publicAlarmsAlarmBitsforRelay0;
UInt16 phase0Alarms_alarmbitsforRelay0;
UInt16 phase1Alarms_alarmbitsforRelay0;
UInt16 phase2Alarms_alarmbitsforRelay0;
UInt16 publicAlarmsalarmRelay1EnableBits;
UInt16 phaseAlarmsalarmRelay1EnableBits;
UInt16 publicAlarmsAlarmBitsforRelay1;
UInt16 phase0Alarms_alarmbitsforRelay1;
UInt16 phase1Alarms_alarmbitsforRelay1;
UInt16 phase2Alarms_alarmbitsforRelay1;

```

```

byte Pin_OR_GinControl_generatorInputs;
byte Pin_OR_GinControl_alarmInputs;
UInt48 totalImportActiveEnergyT1; (watt/sec)
UInt48 totalImportActiveEnergyT2; (watt/sec)
UInt48 totalImportActiveEnergyT3; (watt/sec)

```

```

UInt48 totalExportActiveEnergyT1; (watt/sec)
UInt48 totalExportActiveEnergyT2; (watt/sec)
UInt48 totalExportActiveEnergyT3; (watt/sec)

```

```

UInt48 totalImportReactiveEnergyT1T2T3; (VAr/sec)
UInt48 totalExportReactiveEnergyT1T2T3; (Var/sec)

```

```

UInt32 input0LowtoHighCounter;
UInt32 input1LowtoHighCounter;

```

```

}

```

For EA05 device

The structure is the same as in the EA04 device.

Timed Data Index file - i_t1.dat

This is the index file. It is used to make searching for data records in the t1 timed data files.

```
struct T1IndexFile {
    Header header;
    T1IndexRecord[] records;
}

struct T1IndexRecord {
    byte minute
    byte second
}
```

For All Device Type Daily Graphic Data Files

The graphic data file names are

C1,C2,C3,cTHD1,cTHD2,cTHD3,P1,P2,P3,Q1,Q2,Q3,S1,S2,S3,V1,V2,V3,V12,V23,V31,vTHD1,vTHD2,vTHD3

The daily graphics data files are designed by the device graphical view.

```
struct GraphicDataFile {
    Header header;
    Uint16 GraphicsPointData[240]
}
```

NOTE:

Uint48 data type is of little endian type. All energy data are from the seconder side of the transformer measured in watt/seconds.

Uint16 L_ Uint48 //LowU16Data of Uint48
Uint16 H_ Uint48 //HighU16Data of Uint48
Uint16 EH_ Uint48 //ExtendedHighU16Data of Uint48

When calculating the Uint48 data, you must use minimum 64bit integer and the value is in wattseconds.

U64 EnergyDataWattSecond;

EnergyDataWattSecond= (2^32)*EH_ Uint48 + (2^16)*H_ Uint48 +L_ Uint48;

If this data is to be converted to kw/h, you should use the formula below:

$$EnergyDataKWH = EnergyDataWattSecond \times \frac{CurrentTransformerRate \times VoltageTransformerRate}{3600000}$$

Note2:

All index data are read from the seconder side of the transformer, if the transformer is used. For this reason, you must include the voltage transformer ratio, when calculating voltage values. The same applies to the current data values. You need to use the current transformer ratio to calculate the current data value. If you use power, and energy data, you must use both, the voltage tranformer rate and the current transformer rate (as shown above) to calculate the real power and real energy value.