Kalibox

Commands

Dokument Revisionen

| **Rev.** | **Änderungen** | **Author** | **Datum** |
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| 1 | Herstellung | P. Miguelito | 08.01.2019 |
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# Ansprechspartern

## Hersteller / Lieferant

## IE MTPRO

## IT MTPRO

## F&E MTPRO

# Firmware Versionierung

| **Versionsnummer** | **Beschreibung** | **Datum** |
| --- | --- | --- |
| 1.0.0.0 | Erste Version (Demo) |  |
| 01.01.01-9 |  |  |
| 02.01.00-0 | Implementation of Communcation Protocoll Complile: Feb 1 2019, 08:51:11 | 01.02.2019 |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

# Software Vorbereitung

## Laufwerke Verbindung

| **Nr** | **Bemerkung** | **Printscreens** |
| --- | --- | --- |
|  | X: | \\ch04sf0000\......... |

## ODBC Verbindung

| **Nr** | **Bemerkung** | **Printscreens** |
| --- | --- | --- |
|  | TEST |  |
|  | Produktion |  |
|  | Service |  |

# Hardware

## Treiber

### Installation

| **Nr** | **Bemerkung** | **Printscreens** |
| --- | --- | --- |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

### Konfiguration

| **Nr** | **Bemerkung** | **Printscreens** |
| --- | --- | --- |
|  |  |  |
|  |  |  |

# Firmware

## Installation

| **Nr** | **Bemerkung** | **Printscreens** |
| --- | --- | --- |
|  |  |  |
|  |  |  |
|  |  |  |

## Konfiguration

| **Nr** | **Bemerkung** | **Printscreens** |
| --- | --- | --- |
|  |  |  |
|  |  |  |

# State Diagramme for Calibration



# Commands

BaudRate = 19200Baud

## Commands in calibration Mode

### Get BoxStatus G100

Values appear comma separated

| **Command** | **Code** | **Description** | **Parameters** | **No. Of bytes** | **Format** |
| --- | --- | --- | --- | --- | --- |
| Get Status | "G100" | Box Status information | none | 2 |  |
|  |  | BoxStatus |  | 1 | Hex |
|  |  | CalibrationStatus |  | 1 | Hex |

//\*\*\*\*\*\*\*\*\* BoxMode definitions

#define CalibMode\_674mV\_Low\_1 0

#define CalibMode\_674mV\_Low\_2 1

#define CalibMode\_674mV\_High\_1 2

#define CalibMode\_674mV\_High\_2 3

#define CalibMode\_500mV\_Low\_1 4

#define CalibMode\_500mV\_Low\_2 5

#define CalibMode\_500mV\_High\_1 6

#define CalibMode\_500mV\_High\_2 7

#define VerifyMode\_674mV\_Low\_1 8

#define VerifyMode\_674mV\_Low\_2 9

#define VerifyMode\_674mV\_High\_1 10

#define VerifyMode\_674mV\_High\_2 11

#define VerifyMode\_500mV\_Low\_1 12

#define VerifyMode\_500mV\_Low\_2 13

#define VerifyMode\_500mV\_High\_1 14

#define VerifyMode\_500mV\_High\_2 15

#define VerifyTemp 16

#define CalibMode\_674CalculationLow 51

#define CalibMode\_674CalculationHigh 52

#define CalibMode\_500CalculationLow 53

#define CalibMode\_500CalculationHigh 54

#define SuccessfullSensorCalibration 55

#define Box\_SensorCheckUpol\_500 56

#define ShowErrorValues 57

#define DebugUpolOnCathode 58

#define DebugUpolOnAnode 59

#define ReadPage16 60

#define Box\_Idle 50

#define Box\_WritePage\_00 17

#define Box\_WritePage\_01 18

#define Box\_WritePage\_12 19

#define Box\_WritePage\_15 20

#define Box\_SensorCheckUpol\_674 21

#define Box\_SensorVerification 22

#define Box\_SensorError 23

#define Box\_SensorWriteCalData674 24

#define Box\_SensorWriteCalData500 25

#define Box\_StartSensorCalibration26

#define SensorFail 27

#define SensorCalibFinalise 28

#define Box\_Calibration 29

#define WEP\_Test 30

#define WEP\_674mV\_Low\_1 31

#define WEP\_674mV\_Low\_2 32

#define WEP\_500mV\_Low\_1 33

#define WEP\_500mV\_Low\_2 34

#define WEP\_674mV\_High\_1 35

#define WEP\_674mV\_High\_2 36

#define WEP\_500mV\_High\_1 37

#define WEP\_500mV\_High\_2 38

#define WEP\_SensorError 39

#define WEPSensorFail 40

#define SensorWepFinalise 41

#define WEP\_SensorCheckUpol 42

#define WEP\_TempCheck 43

### Get Page G015

| **Command** | **Code** | **Description** | **Parameters** | **No. Of bytes** | **Format** |
| --- | --- | --- | --- | --- | --- |
|  | "G015" | Reads Page 15 in State:  Box\_StartSensorCalibration!!! | ascii | 32 |  |

### Finalise Aktive Senor S200

| **Command** | **Code** | **Description** | **Parameters** | **No. Of bytes** | **Format** |
| --- | --- | --- | --- | --- | --- |
| Finalise | "S200" | Prepare for next calibration | ascii | None |  |

### Get Errovalues G200

Values appear comma separated

If ErrorCode = 0 - NoError

If ErrorCode = 1 - Standard Deviation was out of range (Noisy Signal)

If ErrorCode = 2 - Calculated Mean was out of range (Offset Error)

If ErrorCode = 3 - Standard Deviation & Calculated Mean were out of range

| **Command** | **Code** | **Description** | **Parameters** | **No. Of bytes** | **Format** |
| --- | --- | --- | --- | --- | --- |
|  | "G200" | Get error values | ascii | 2 |  |
|  |  | BoxStatus | ascii | 1 | Hex |
|  |  | ErrorCode | ascii | 1 | Hex |
|  |  | ReferenzValue | ascii |  | Float |
|  |  | Mean of Measured Value | ascii |  | Float |
|  |  | StdDeviation | ascii |  | Float |
|  |  | Error (abs(Mean-Ref)) | ascii |  | Float |

### BoxReset S999

| **Command** | **Code** | **Description** | **Parameters** | **No. Of bytes** | **Format** |
| --- | --- | --- | --- | --- | --- |
| Reset | "S999" | Box Reset | ascii | None |  |

### S100

| **Command** | **Code** | **Description** | **Parameters** | **No. Of bytes** | **Format** |
| --- | --- | --- | --- | --- | --- |
|  | "S100" | A Inpro6850i will be Calibrated. Two Calibration Sets (Upol=674mV and Upol=500mV) will be generated  Set CalibrationStatus = 0 | ascii | None |  |

### S500

| **Command** | **Code** | **Description** | **Parameters** | **No. Of bytes** | **Format** |
| --- | --- | --- | --- | --- | --- |
| Reset | "S500" | A Inpro69xxi will be Calibrated. (Upol=500mV)  Set CalibrationStatus = 2 | ascii | None |  |

### Debug G901

| **Command** | **Code** | **Description** | **Parameters** | **No. Of bytes** | **Format** |
| --- | --- | --- | --- | --- | --- |
| Debug | "G901" | Enables the print out of Calculated Mean /StdDev and Error while Calibration | ascii | None |  |
|  |  | ReferenzValue | ascii |  | Float |
|  |  | Mean of Measured Value | ascii |  | Float |
|  |  | StdDeviation | ascii |  | Float |
|  |  | Error (abs(Mean-Ref)) | ascii |  | Float |

### Debug G902

| **Command** | **Code** | **Description** | **Parameters** | **No. Of bytes** | **Format** |
| --- | --- | --- | --- | --- | --- |
| Debug | "G902" | Enables the print out of Measurment Data while Calibration every second | ascii | None |  |

### Debug G903

| **Command** | **Code** | **Description** | **Parameters** | **No. Of bytes** | **Format** |
| --- | --- | --- | --- | --- | --- |
| Debug | "G903" | Enables the print out of Calculated Gain and Offset while Calibration | ascii | None |  |

### Debug G904

| **Command** | **Code** | **Description** | **Parameters** | **No. Of bytes** | **Format** |
| --- | --- | --- | --- | --- | --- |
| Debug | "G904" | Measures the Polarization Voltage on Cathode to GND | ascii | None |  |

### Debug G905

| **Command** | **Code** | **Description** | **Parameters** | **No. Of bytes** | **Format** |
| --- | --- | --- | --- | --- | --- |
| Debug | "G905" | Measures the Polarization Voltage on Anode to GND | ascii | None |  |

### Debug G906

| **Command** | **Code** | **Description** | **Parameters** | **No. Of bytes** | **Format** |
| --- | --- | --- | --- | --- | --- |
| Debug | "G906" | Read and Decode Page 16 | ascii | None |  |

### Read Page from Sensor

Master Request to read Page 10 from Sensor:

"#RDPG 10 "

CalibBox Answer:

"#rdpg 0A 1F0102030405060708090A0B0C0D0E0F101112131415161718191A1B1C1D1E10"

### Write Page To Sensor

Master command to overwrite page 10 of connected Sensor:

"#WRPG 10 1F0102030405060708090A0B0C0D0E0F101112131415161718191A1B1C1D1E10"

CalibBox Answer:

Correct communication and corect checksum

#wrpg 0A 1F0102030405060708090A0B0C0D0E0F101112131415161718191A1B1C1D1E10 - CS OK

If there is a wrong Checksum !

#wrpg 0A 110102030405060708090A0B0C0D0E0F101112131415161718191A1B1C1D1E1F - CS Error: 11 expected CS: 10

If there is a wrong length of data's !

#wrpg 0A Wrong Data length