



HANDBUCH

Modbus RTU/TCP – Hi5, Hi10 V2.0

Urheberrechts-Erklärung

Dieses Installationshandbuch unterliegt dem Urheberrecht von Alpha ESS Europe GmbH, wobei alle Rechte vorbehalten werden.

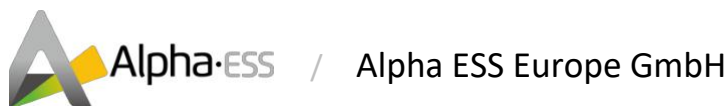
Haftungsbeschränkung

Alpha ESS übernimmt keinerlei Haftung für Personenschäden, Sachschäden, am Produkt entstandene Schäden sowie Folgeschäden, die durch Nichtbeachtung dieser Anleitung, bei nicht bestimmungsgemäßer Verwendung des Produktes, bei Reparaturen, Öffnen des Schrankes und sonstigen jeglichen Handlungen von nicht qualifizierten und nicht von Alpha ESS zertifizierten Elektrofachkräften am Produkt oder bei der Verwendung von nicht zugelassenen Ersatzteilen entstehen oder entstanden sind.

Es ist untersagt, eigenmächtig Umbauten oder technische Veränderungen am Produkt vorzunehmen. Befolgen Sie strikt alle Gebrauchsanweisungen und Warnungen und verwahren Sie dieses Installationshandbuch. Betreiben Sie das System nicht ohne sämtliche Sicherheit- und Betriebshinweise gelesen zu haben.




Alpha ESS strebt unermüdlich danach unseren Kunden innovative Systemlösungen anzubieten. Dieses Installationshandbuch verwendet genaue und zuverlässige Informationen als Ausgangspunkt. Aufgrund des Produkt-Designs und technischer Spezifikations-Updates, behält sich unsere Firma jedoch das Recht auf Änderungen zu jeder Zeit ohne vorherige Ankündigung vor. Dieses Installationshandbuch dient lediglich Referenzzwecken.

© Alpha ESS Europe GmbH 2015-2021



Deutschland

Alpha ESS Europe GmbH

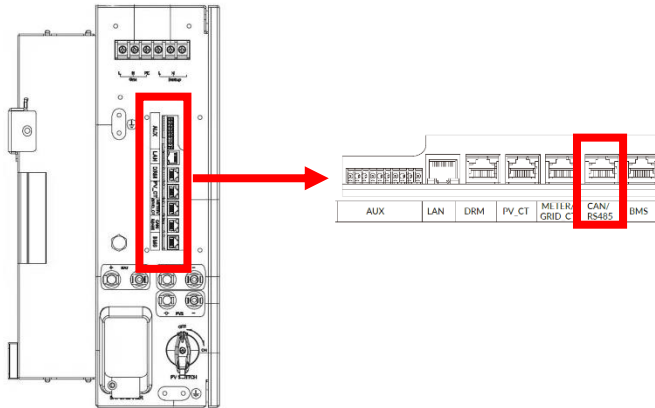
 +49 6103 4591601
 europe@alpha-ess.de
 www.alpha-ess.de
 Paul-Ehrlich-Straße 1a, 63225 Langen

Inhalt

1	Modbus RTU- Schnittstelle	3
1.1	SMILE Hi 5.....	3
1.2	SMILE Hi 10.....	3
2	Modbus RTU- Kommunikation.....	4
2.1	Kommunikationsflussdiagramm.....	4
2.2	Kommunikationsbeschreibung.....	4
2.3	Übertragungsmodus.....	4
3	Modbus TCP (In der Entwicklung).....	6
3.1	Kommunikationsflussdiagramm.....	6
3.2	Kommunikationsbeschreibung.....	6
3.3	Übertragungsmodus.....	6
4	Datenbereich	7
5	Adressregister und Anwendungsdetails	9
6	Anhang.....	57
6.1	Hinweis1: Batteriestatus	57
6.2	Hinweis2: Batterie-Relaisstatus.....	57
6.3	Hinweis3: Batterietyp.....	57
6.4	Hinweis4: Batteriefehler	57
6.5	Hinweis5: Betriebsart Wechselrichter.....	58
6.6	Hinweis6: Systemfehler.....	59
6.7	Hinweis7: Dispatch-Modus	59
6.8	Hinweis8: Netzregulierung	60
6.9	Hinweis9: Sicherheitsmodus aktivieren	61
6.10	Hinweis10: Topbmu-Statusflag	61
6.11	Hinweis11: Topbmu-Reset-Protokoll	62
6.12	Hinweis12: Toperror bmu Warn- und Status-Cluster.....	62
6.13	Hinweis13: Bmu-X Status	62
6.14	Hinweis14: Bmu-X Single Cut Fehlercode	63
6.15	Hinweis15: Bmu-X reset log	63

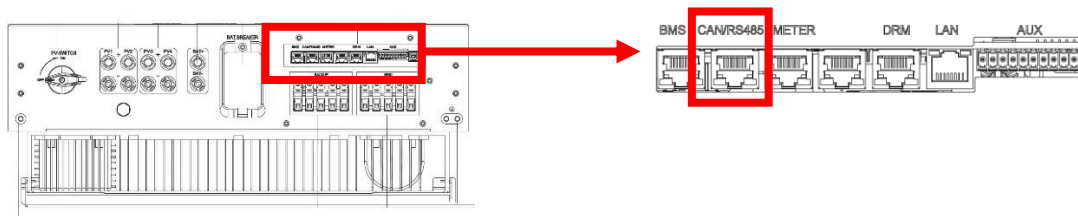
1 Modbus RTU- Schnittstelle

1.1 SMILE Hi 5



Item	Beschreibung
Anschluss	CAN/RS485
Modbus	4B5A RTU
BT	9600
AUX	Ja

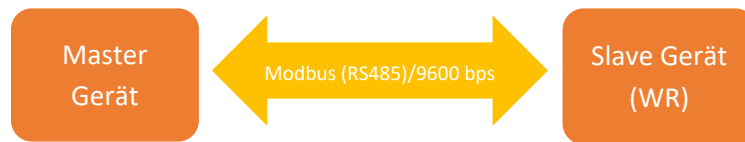
1.2 SMILE Hi 10



Item	Beschreibung
Anschluss	CAN/RS485
Modbus	4B5A RTU
BT	9600
AUX	Ja

2 Modbus RTU- Kommunikation

2.1 Kommunikationsflussdiagramm



2.2 Kommunikationsbeschreibung

RS485/MODBUS-RTU Kommunikation

Schnittstelle:	RS485
Verbindungsmodus:	Zwei-Draht (RS485+, RS485-), geschirmte Twisted-Pair-Leiter
Arbeitsmodus:	Halbduplex
Kommunikationsgeschwindigkeit	9600bps
Reaktionszeit:	<300 ms
Befehlsintervall:	>300 ms
Zeitüberschreitung:	>10 s

2.3 Übertragungsmodus

Die Informationen werden im asynchronen Modus in Bytes übertragen. Die Kommunikationsinformationen, die zwischen dem Host-Computer und dem Slave-Computer übertragen werden, haben das 10-Bit-Format. Die 10 Bits setzen sich aus dem Anfangsbit, 8 Datenbits (zuerst wird das am wenigsten wirksame Bit übertragen) ohne Paritätsprüfbit und 1 Stoppbit zusammen.

Datenbereich Format:

Master

Adresscode	Funktion	Daten	CRC Prüfcode
1 byte	1 byte	N byte	2 byte

Slave

Adresscode	Funktion	Daten	CRC Prüfcode
1 byte	1 byte	N byte	2 byte

Adresscode: Der Adresscode befindet sich am Anfang des Frames, das Dezimalsystem im Umrichter ist 1 ~ 247. **Die Standardadresse ist 0x55. Abbildung des Datenbereichs in Teil 3.**

Funktionscode: Funktionscode, der dem Zielterminal mitteilt, welche Funktion ausgeführt werden soll. In der folgenden Tabelle ist der in diesem Wechselrichter verwendete Funktionscode sowie deren Bedeutung und Funktion aufgeführt.

Datenbereich: Der Datenbereich enthält die Daten, die vom Terminal zur Ausführung einer bestimmten Funktion benötigt werden, oder die gesammelten Daten, wenn das Terminal auf eine Anfrage antwortet.

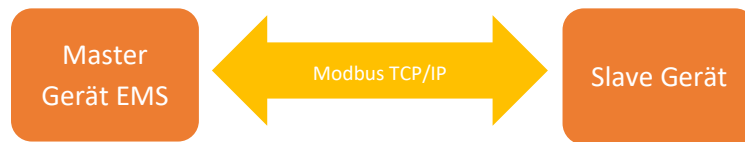
CRC-Prüfcode: Die CRC-Domäne (Error Check) belegt 2 Byte, einschließlich eines 16-Bit-Binärsystemwerts. Der CRC-Wert wird von der Sendeeinrichtung berechnet und dann an den Datenrahmen der Empfangseinrichtung angehängt. Während des Empfangs wird der CRC-Wert erneut berechnet und anschließend mit dem empfangenden CRC-Domänenwert verglichen. Wenn diese beiden Werte nicht gleich sind, tritt ein Fehler auf.

Basis auf C-Sprache für CRC-Prüfcode:

```
u16 CRC16_Check(const u8 *P ,u16 ubCRCNum)    //CRC check code
{
    u8 temp;
    u8 i;
    u16 c;
    u8 TT;
    u16 crc = 0xffff;
    for(c=0;c<ubCRCNum;c++)
    {
        temp = P[c];
        crc =crc^temp;
        for(i=0;i<8;i++)
        {
            /  = crc & 1; crc
            = crc>>1; crc =
            crc&0x7fff; if(TT
            == 1)
            {
                crc = crc^0xa001;
            }
            crc = crc&0xffff;
        }
    }
    return crc;
}
```

3 Modbus TCP (In der Entwicklung)

3.1 Kommunikationsflussdiagramm



3.2 Kommunikationsbeschreibung

MODBUS-TCP Kommunikation

Schnittstelle: TCP/IP

EMS-Gerät ist Server, öffnen Sie einen lokalen Port 0x502

Reaktionszeit: <100 ms

Befehlsintervall: >100 ms

Zeitüberschreitung: >10 s

3.3 Übertragungsmodus

Die Informationen werden im asynchronen Modus in Bytes übertragen. Die Kommunikationsinformationen werden zwischen dem Host-Computer und dem Slave-Computer übertragen. Die Standardadresse ist 0x55. Die Abbildung des Datenbereichs im Abschnitt 3.

Datenbereich Format:

Master:

Transaktions-Identifikator		Protokoll-Identifikator		Länge	Einheit-Identifikator	Funktionscode	Daten
0x00	0x01	0x00	0x00	2 byte	1 byte	1 byte	N byte

Slave:

Transaktions-Identifikator		Protokoll-Identifikator		Länge	Einheit-Identifikator	Funktionscode	Daten
0x00	0x01	0x00	0x00	2 byte	1 byte	1 byte	N byte

4 Datenbereich

Funktionscode: Funktionscode, der dem Zielterminal mitteilt, welche Funktion ausgeführt werden soll. In der folgenden Tabelle ist der in diesem Wechselrichter verwendete Funktionscode sowie deren Bedeutung und Funktion aufgeführt.

Datenregister lesen (0x03)

Rahmenformat – Master:

Daten	Erklärung
0x03H (Hexadezimal)	Datenregister lesen
High-Byte der Startregister-Adr.	
Low-Byte der Startregister-Adr.	
High-Byte der Registernummer	
Low-Byte der Registernummer	

Rahmenformat – Slave (Daten lesen erfolgreich):

Daten	Erklärung
03H (Hexadezimal)	Datenregister lesen
Anzahl der Bytes (2*N)	Länge der wiedergegebenen Daten
Nr.1 High-Bytes der Daten	Data1 High-Byte.
Nr.1 Low-Bytes der Daten	Data1 Low-Byte.
.....	
.....	
Nr.N High Byte der Daten	DataN High-Byte.
Nr.N Low-Byte der Daten	DataN Low-Byte.

Datenregister schreiben (0x10)

Rahmenformat – Master:

Daten	Erklärung
0x10H (Hexadezimal)	Datenregister schreiben
High-Byte der Startregister-Adr.	
Low-Byte der Startregister-Adr.	
High-Byte der Registernummer	
Low-Byte der Registernummer	
Anzahl der Bytes	
Nr.1 High-Bytes der Daten	Data1 High-Byte.
Nr.1 Low-Bytes der Daten	Data1 Low-Byte.
.....	
.....	
Nr.N High Byte der Daten	DataN High-Byte.
Nr.N Low-Byte der Daten	DataN Low-Byte.

Rahmenformat – Slave (Daten schreiben erfolgreich):

Daten	Erklärung
0x10H (Hexadezimal)	Datenregister schreiben
High-Byte der Startregister-Adr.	
Low-Byte der Startregister-Adr.	
High-Byte der Registernummer	
Low-Byte der Registernummer	

Einzelregister schreiben (0x06)
Rahmenformat – Master:

Daten	Erklärung
0x06H (Hexadezimal)	Einzelregister schreiben
High-Byte der Startregister-Adr.	
Low-Byte der Startregister-Adr.	
High-Bytes der Daten	High-Byte
Low-Bytes der Daten	Low-Byte

Rahmenformat – Slave (Daten schreiben erfolgreich):

Daten	Erklärung
0x06H (Hexadezimal)	Datenregister schreiben
High-Byte der Startregister-Adr.	
Low-Byte der Startregister-Adr.	
High-Bytes der Daten	High-Byte
Low-Bytes der Daten	Low-Byte

Fehlerbetrieb – Slave Return:

Daten	Erklärung
Geräteadresse	
Funktionscode + 0x80	
Fehlercode	

5 Adressregister und Anwendungsdetails

Adress- register	Variable	Gehört zu R/W	Daten- Format	Daten- Modell	Bemerkung / Einheit
Meter					
Netzzähler - Konfiguration					
0000H	Grid Meter CT Enable <i>Netzzähler CT Aktivieren</i>	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1/bit
0001H	Grid Meter CT Rate <i>Netzzähler CT Verhältnis</i>	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1/bit
Netzzähler - Betrieb					
0010H 0011H	Total energy feed to grid(Grid) <i>Gesamte Netzeinspeisung (Netz)</i>	RO	<i>Belegt 4 Bytes</i>	unsigned int	0.01KWh/bit
0012H 0013H	Total energy consume from grid(Grid) <i>Gesamter Netzbezug (Netz)</i>	RO	<i>Belegt 4 Bytes</i>	unsigned int	0.01KWh/bit
0014H	Voltage of A phase(Grid) <i>Spannung Phase A (Netz)</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	1V
0015H	Voltage of B phase(Grid) <i>Spannung Phase B (Netz)</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	1V
0016H	Voltage of C phase(Grid) <i>Spannung Phase C (Netz)</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	1V
0017H	Current of A phase(Grid) <i>Strom Phase A (Netz)</i>	RO	<i>Belegt 2 Bytes</i>	short	0.1A
0018H	Current of B phase(Grid) <i>Strom Phase B (Netz)</i>	RO	<i>Belegt 2 Bytes</i>	short	0.1A
0019H	Current of C phase(Grid) <i>Strom Phase C (Netz)</i>	RO	<i>Belegt 2 Bytes</i>	short	0.1A
001AH	Frequency(Grid) <i>Frequenz (Netz)</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.01HZ
001BH 001CH	Active power of A phase(Grid) <i>Wirkleistung Phase A (Netz)</i>	RO	<i>Belegt 4 Bytes</i>	int	1w/bit
001DH 001EH	Active power of B phase(Grid) <i>Wirkleistung Phase B (Netz)</i>	RO	<i>Belegt 4 Bytes</i>	int	1w/bit
001FH 0020H	Active power of C phase(Grid) <i>Wirkleistung Phase C (Netz)</i>	RO	<i>Belegt 4 Bytes</i>	int	1w/bit
0021H 0022H	Total Active power(Grid Meter) <i>Gesamte Wirkleistung (Netzzähler)</i>	RO	<i>Belegt 4 Bytes</i>	int	1w/bit

0023H 0024H	Reactive power of A phase(Grid) <i>Blindleistung Phase A (Netz)</i>	RO	<i>Belegt 4 Bytes</i>	int	1Var
0025H 0026H	Reactive power of B phase(Grid) <i>Blindleistung Phase B (Netz)</i>	RO	<i>Belegt 4 Bytes</i>	int	1Var
0027H 0028H	Reactive power of C phase(Grid) <i>Blindleistung Phase C (Netz)</i>	RO	<i>Belegt 4 Bytes</i>	int	1Var
0029H 002AH	Total reactive power(Grid) <i>Gesamte Blindleistung (Netz)</i>	RO	<i>Belegt 4 Bytes</i>	int	1Var
002BH 002CH	Apparent power of A phase(Grid) <i>Scheinleistung Phase A (Netz)</i>	RO	<i>Belegt 4 Bytes</i>	int	1VA
002DH 002EH	Apparent power of B phase(Grid) <i>Scheinleistung Phase B (Netz)</i>	RO	<i>Belegt 4 Bytes</i>	int	1VA
002FH 0030H	Apparent power of C phase(Grid) <i>Scheinleistung Phase C (Netz)</i>	RO	<i>Belegt 4 Bytes</i>	int	1VA
0031H 0032H	Total apparent power(Grid) <i>Gesamte Scheinleistung (Netz)</i>	RO	<i>Belegt 4 Bytes</i>	int	1VA
0033H	Power factor of A phase(Grid) <i>Leistungsfaktor Phase A (Netz)</i>	RO	<i>Belegt 2 Bytes</i>	short	0.01
0034H	Power factor of B phase(Grid) <i>Leistungsfaktor Phase B (Netz)</i>	RO	<i>Belegt 2 Bytes</i>	short	0.01
0035H	Power factor of C phase(Grid) <i>Leistungsfaktor Phase C (Netz)</i>	RO	<i>Belegt 2 Bytes</i>	short	0.01
0036H	Total Power factor(Grid) <i>Leistungsfaktor Gesamt (Netz)</i>	RO	<i>Belegt 2 Bytes</i>	short	0.01
PV-Zähler - Konfiguration					
0080H	PV Meter CT Enable <i>PV-Zähler CT Aktivieren</i>	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1/bit
0081H	PV Meter CT Rate <i>PV-Zähler CT Verhältnis</i>	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1/bit
PV-Zähler - Betrieb					
0090H 0091H	Total energy feed to Grid(PV) <i>Gesamte Netzeinspeisung (PV)</i>	RO	<i>Belegt 4 Bytes</i>	unsigned int	0.01kWh/bit
0092H 0093H	Total energy consume from Grid(PV) <i>Gesamter Netzbezug (PV)</i>	RO	<i>Belegt 4 Bytes</i>	unsigned int	0.01KWh/bit

0094H	Voltage of A phase(PV) <i>Spannung Phase A (PV)</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	1V
0095H	Voltage of B phase(PV) <i>Spannung Phase B (PV)</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	1V
0096H	Voltage of C phase(PV) <i>Spannung Phase C (PV)</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	1V
0097H	Current of A phase(PV) <i>Strom Phase A (PV)</i>	RO	<i>Belegt 2 Bytes</i>	short	0.1A
0098H	Current of B phase(PV) <i>Strom Phase B (PV)</i>	RO	<i>Belegt 2 Bytes</i>	short	0.1A
0099H	Current of C phase(PV) <i>Strom Phase C (PV)</i>	RO	<i>Belegt 2 Bytes</i>	short	0.1A
009AH	Frequency(PV) <i>Frequenz (PV)</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.01HZ
009BH 009CH	Active power of A phase(PV) <i>Wirkleistung Phase A (PV)</i>	RO	<i>Belegt 4 Bytes</i>	int	1w/bit
009DH 009EH	Active power of B phase(PV) <i>Wirkleistung Phase B (PV)</i>	RO	<i>Belegt 4 Bytes</i>	int	1w/bit
009FH 00A0H	Active power of C phase(PV) <i>Wirkleistung Phase C (PV)</i>	RO	<i>Belegt 4 Bytes</i>	int	1w/bit
00A1H 00A2H	Total Active power(PV Meter) <i>Gesamte Wirkleistung (PV)</i>	RO	<i>Belegt 4 Bytes</i>	int	1w/bit
00A3H 00A4H	Reactive power of A phase(PV) <i>Blindleistung Phase A (PV)</i>	RO	<i>Belegt 4 Bytes</i>	int	1Var
00A5H 00A6H	Reactive power of B phase(PV) <i>Blindleistung Phase B (PV)</i>	RO	<i>Belegt 4 Bytes</i>	int	1Var
00A7H 00A8H	Reactive power of C phase(PV) <i>Blindleistung Phase C (PV)</i>	RO	<i>Belegt 4 Bytes</i>	int	1Var
00A9H 00AAH	Total reactive power(PV) <i>Gesamte Blindleistung (PV)</i>	RO	<i>Belegt 4 Bytes</i>	int	1Var
00ABH 00ACH	Apparent power of A phase(PV) <i>Scheinleistung Phase A (PV)</i>	RO	<i>Belegt 4 Bytes</i>	int	1VA
00ADH 00AEH	Apparent power of B phase(PV) <i>Scheinleistung Phase B (PV)</i>	RO	<i>Belegt 4 Bytes</i>	int	1VA
00AFH 00B0H	Apparent power of C phase(PV) <i>Scheinleistung Phase C (PV)</i>	RO	<i>Belegt 4 Bytes</i>	int	1VA
00B1H 00B2H	Total apparent power(PV) <i>Gesamte Scheinleistung (PV)</i>	RO	<i>Belegt 4 Bytes</i>	int	1VA
00B3H	Power factor of A phase(PV) <i>Leistungsfaktor Phase A (PV)</i>	RO	<i>Belegt 2 Bytes</i>	short	0.01
00B4H	Power factor of B phase(PV) <i>Leistungsfaktor Phase B (PV)</i>	RO	<i>Belegt 2 Bytes</i>	short	0.01

00B5H	Power factor of C phase(PV) <i>Leistungsfaktor Phase C (PV)</i>	RO	<i>Belegt 2 Bytes</i>	short	0.01
00B6H	Total Power factor(PV) <i>Leistungsfaktor Gesamt (PV)</i>	RO	<i>Belegt 2 Bytes</i>	short	0.01
Batterie – HOME-Serie					
0100H	Battery voltage <i>Batteriespannung</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1V/bit
0101H	Battery current <i>Batteriestrom</i>	RO	<i>Belegt 2 Bytes</i>	short	0.1A/bit
0102H	Battery SOC <i>Batterie-Ladezustand</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1/bit
0103H	Battery status <i>Batteriestatus</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	Hinweis1
0104H	Battery relay status <i>Batterierelaistatus</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	Hinweis2
0105H	Pack ID of min cell voltage <i>Pack ID der min.Zellenspannung</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.001V/bit
0106H	Cell ID of min cell voltage <i>Zellen-ID der min.Zellenspannung</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.001V/bit
0107H	Min cell voltage <i>Min. Zellenspannung</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.001V/bit
0108H	Pack ID of max cell voltage <i>Pack ID der max.Zellenspannung</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.001V/bit
0109H	Cell ID of max cell voltage <i>Zellen-ID der max.Zellenspannung</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.001V/bit
010AH	Max cell voltage <i>Max. Zellenspannung</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.001V/bit
010BH	Pack ID of min cell temperature <i>Pack ID der min. Zelltemperatur</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1°C/bit
010CH	Cell ID of min cell temperature <i>Zell-ID der min.Zelltemperatur</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1°C/bit
010DH	Min cell temperature <i>Min. Zelltemperatur</i>	RO	<i>Belegt 2 Bytes</i>	short	0.1°C/bit
010EH	Pack ID of max cell temperature <i>Pack ID der max. Zelltemperatur</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1°C/bit
010FH	Cell ID of max cell temperature	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1°C/bit

	<i>Zellen-ID der max.Zelltemperatur</i>				
0110H	Max cell temperature <i>Max. Zelltemperatur</i>	RO	<i>Belegt 2 Bytes</i>	short	0.1°C/bit
0111H	Battery max charge current <i>Max. Ladestrom der Batterie</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1A/bit
0112H	Battery max discharge current <i>Max. Entladestrom der Batterie</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1A/bit
0113H	Battery charge cut-off voltage <i>Abschaltspannung für Batterieladung</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1V/bit
0114H	Battery discharge cut-off voltage <i>Abschaltspannung für Batterieentladung</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1V/bit
0115H	BMU software version <i>BMU-Softwareversion</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	
0116H	LMU software version <i>LMU-Softwareversion</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	
0117H	ISO software version <i>ISO-Softwareversion</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	
0118H	Battery num <i>Batterienummer</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	Battery module number
0119H	Battery capacity <i>Batteriekapazität</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1KWH/bit
011AH	Battery type <i>Batterietyp</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	Hinweis3
011BH	Battery SOH <i>Batterie SOH</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1/bit
011CH 011DH	Battery warning <i>Batteriewarnung</i>	RO	<i>Belegt 4 Bytes</i>	unsigned int	Reserve
011EH 011FH	Battery fault <i>Batteriefehler</i>	RO	<i>Belegt 4 Bytes</i>	unsigned int	Hinweis4
0120H 0121H	Battery charge energy <i>Batterieladeenergie</i>	RO	<i>Belegt 4 Bytes</i>	unsigned int	0.1KWH/bit
0122H 0123H	Battery discharge energy <i>Batterieentladeenergie</i>	RO	<i>Belegt 4 Bytes</i>	unsigned int	0.1KWH/bit
0124H 0125H	Battery energy charge from grid <i>Batterieladung aus Netz</i>	RO	<i>Belegt 4 Bytes</i>	unsigned int	0.1KWH/bit
0126H	Battery Power <i>Batterieleistung</i>	RO	<i>Belegt 2 Bytes</i>	short	1W/bit (-: Charge, +: Discharge)
0127H	Battery remaining time	RO	<i>Belegt 2 Bytes</i>	unsigned short	1Minute/bit

0128H	Battery Implementation Charge SOC	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1/bit(Rate_SOC-UPS_SOC)
0129H	Battery Implementation Discharge SOC	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1/bit(Rate_SOC-UPS_SOC)
012AH	Battery Remaining Charge SOC	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1/bit(Rate_SOC-Remain_SOC)
012BH	Battery Remaining Discharge SOC	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1/bit(Remain_SOC - UPS_SOC)
012CH	Battery Max charge power	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/bit
012DH	Battery Max Discharge power	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/bit
012EH	Battery MOS Control	RO	<i>Belegt 2 Bytes</i>	unsigned short	0:Open, 1:Close
012FH	Battery SOC Calibration	RO	<i>Belegt 2 Bytes</i>	unsigned short	0:Disable, 1: Enable
0130H	Battery Single cut error code	RO	<i>Belegt 2 Bytes</i>	unsigned short	
0131H 0132H	Battery fault1	RO	<i>Belegt 4 Bytes</i>	unsigned int	
0133H 0134H	Battery fault2	RO	<i>Belegt 4 Bytes</i>	unsigned int	
0135H 0136H	Battery fault3	RO	<i>Belegt 4 Bytes</i>	unsigned int	
0137H 0138H	Battery fault4	RO	<i>Belegt 4 Bytes</i>	unsigned int	
0139H 013AH	Battery fault5	RO	<i>Belegt 4 Bytes</i>	unsigned int	
013BH 013CH	Battery fault6	RO	<i>Belegt 4 Bytes</i>	unsigned int	
013DH 013EH	Battery warning1	RO	<i>Belegt 4 Bytes</i>	unsigned int	
013FH 0140H	Battery warning2	RO	<i>Belegt 4 Bytes</i>	unsigned int	
0141H 0142H	Battery warning3	RO	<i>Belegt 4 Bytes</i>	unsigned int	
0143H 0144H	Battery warning4	RO	<i>Belegt 4 Bytes</i>	unsigned int	
0145H 0146H	Battery warning5	RO	<i>Belegt 4 Bytes</i>	unsigned int	
0147H 0148H	Battery warning6	RO	<i>Belegt 4 Bytes</i>	unsigned int	
Wechselrichter – HOME-Serie					
0400H	Inverter_Voltage_L1 WR-Spannung L1	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1V/bit
0401H	Inverter_Voltage_L2 WR-Spannung L2	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1V/bit

0402H	Inverter_Voltage_L3 <i>WR-Spannung L3</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1V/bit
0403H	Inverter_Current_L1 <i>WR-Strom L1</i>	RO	<i>Belegt 2 Bytes</i>	short	0.1A/bit
0404H	Inverter_Current_L2 <i>WR-Strom L2</i>	RO	<i>Belegt 2 Bytes</i>	short	0.1A/bit
0405H	Inverter_Current_L3 <i>WR-Strom L3</i>	RO	<i>Belegt 2 Bytes</i>	short	0.1A/bit
0406H 0407H	Inverter_Power_L1 <i>WR-Leistung L1</i>	RO	<i>Belegt 4 Bytes</i>	int	1W/bit
0408H 0409H	Inverter_Power_L2 <i>WR-Leistung L2</i>	RO	<i>Belegt 4 Bytes</i>	int	1W/bit
040AH 040BH	Inverter_Power_L3 <i>WR-Leistung L3</i>	RO	<i>Belegt 4 Bytes</i>	int	1W/bit
040CH 040DH	Inverter_Power_Total <i>WR-Gesamtleistung</i>	RO	<i>Belegt 4 Bytes</i>	int	1W/bit
040EH	Inverter_Backup_Voltage_L1 <i>WR-Backupspannung L1</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1V/bit
040FH	Inverter_Backup_Voltage_L2 <i>WR-Backupspannung L2</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1V/bit
0410H	Inverter_Backup_Voltage_L3 <i>WR-Backupspannung L3</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1V/bit
0411H	Inverter_Backup_Current_L 1 <i>WR-Backupstrom L1</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1A/bit
0412H	Inverter_Backup_Current_L2 <i>WR-Backupstrom L2</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1A/bit
0413H	Inverter_Backup_Current_L3 <i>WR-Backupstrom L3</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1A/bit
0414H 0415H	Inverter_Backup_Power_L1 <i>WR-Backupleistung L1</i>	RO	<i>Belegt 4 Bytes</i>	unsigned int	1W/bit
0416H 0417H	Inverter_Backup_Power_L2 <i>WR-Backupleistung L2</i>	RO	<i>Belegt 4 Bytes</i>	unsigned int	1W/bit
0418H 0419H	Inverter_Backup_Power_L3 <i>WR-Backupleistung L3</i>	RO	<i>Belegt 4 Bytes</i>	unsigned int	1W/bit
041AH 041BH	Inverter_Backup_Power_Total <i>WR-Gesamtbackupleistung</i>	RO	<i>Belegt 4 Bytes</i>	unsigned int	1W/bit
041CH	Inverter Grid Frequency <i>WR-Netzfrequenz</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.01Hz/bit

041DH	PV1 Voltage <i>PV1-Spannung</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1V/bit
041EH	PV1 Current <i>PV1-Strom</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1A/bit
041FH 0420H	PV1 power <i>PV1-Leistung</i>	RO	<i>Belegt 4 Bytes</i>	unsigned int	1w/bit
0421H	PV2 Voltage <i>PV2-Spannung</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1V/bit
0422H	PV2 Current <i>PV2-Strom</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1A/bit
0423H 0424H	PV2 power <i>PV2-Leistung</i>	RO	<i>Belegt 4 Bytes</i>	unsigned int	1w/bit
0425H	PV3 Voltage <i>PV3-Spannung</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1V/bit
0426H	PV3 Current <i>PV3-Strom</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1A/bit
0427H 0428H	PV3 power <i>PV3-Leistung</i>	RO	<i>Belegt 4 Bytes</i>	unsigned int	1w/bit
0429H	PV4 Voltage <i>PV4-Spannung</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1V/bit
042AH	PV4 Current <i>PV4-Strom</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1A/bit
042BH 042CH	PV4 power <i>PV4-Leistung</i>	RO	<i>Belegt 4 Bytes</i>	unsigned int	1w/bit
042DH	PV5 Voltage <i>PV5-Spannung</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1V/bit
042EH	PV5 Current <i>PV5-Strom</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1A/bit
042FH 0430H	PV5 power <i>PV5-Leistung</i>	RO	<i>Belegt 4 Bytes</i>	unsigned int	1w/bit
0431H	PV6 Voltage <i>PV6-Spannung</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1V/bit
0432H	PV6 Current <i>PV6-Strom</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1A/bit
0433H 0434H	PV6 power <i>PV6-Leistung</i>	RO	<i>Belegt 4 Bytes</i>	unsigned int	1w/bit
0435H	INV Temperature <i>WR-Temperatur</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1°C/bit
0436H 0437H	Inverter warning1 <i>WR-Warnung1</i>	RO	<i>Belegt 4 Bytes</i>	unsigned int	Reserve
0438H 0439H	Inverter warning2 <i>WR-Warnung2</i>	RO	<i>Belegt 4 Bytes</i>	unsigned int	Reserve
043AH 043BH	Inverter fault1 <i>WR-Fehler1</i>	RO	<i>Belegt 4 Bytes</i>	unsigned int	Reserve
043CH 043DH	Inverter fault2 <i>WR-Fehler2</i>	RO	<i>Belegt 4 Bytes</i>	unsigned int	Reserve
043EH 043FH	Inverter Total PV Energy <i>PV-Gesamtenergie</i>	RO	<i>Belegt 4 Bytes</i>	unsigned int	0.1KWH/bit

0440H	Inverter work mode <i>WR-Arbeitsmodus</i>	RO	<i>Belegt 2 Bytes</i>	unsigned short	Hinweis5
Wechselrichter – Information					
0640H~ 0644H	Inverter master software version <i>WR (Master) Software-Version</i>	RO	<i>Belegt 10 Bytes</i>	unsigned char	
0645H~ 0649H	Inverter slave software version <i>WR (Slave) Software-Version</i>	RO	<i>Belegt 10 Bytes</i>	unsigned char	
064AH~ 0653H	Inverter SN <i>WR-SN</i>	RO	<i>Belegt 20 Bytes</i>	unsigned char	
System (Nur anwendbar auf HHE MEC)					
0700H	Feed into grid percent Einspeisung ins Netz Prozent	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1%/bit
0701H 0702H	System fault Systemfehler	RO	<i>Belegt 4 Bytes</i>	unsigned int	Hinweis6
0703H	System_time: (year)-(month) System_Zeit: (Jahr)-(Monat)	R/W	<i>Belegt 2 Bytes</i>	unsigned short	Data format hex; 0xYMM, example: Send 0x1109; year:0x11(2017) month:0x09(09);
0704H	System_time: (day)-(hour) System_time: (Tag)-(Stunde)	R/W	<i>Belegt 2 Bytes</i>	unsigned short	Data format hex; 0xDDHH, example: Send 0x1109; day:0x11(The 17 day) hour:0x09(09);
0705H	System_time : (minute)-(second) System_Zeit : (Minute)-(Sekunde)	R/W	<i>Belegt 2 Bytes</i>	unsigned short	Data format hex; 0xmmss, example: Send 0x1109; min:0x11(17) second:0x09(09);
0706H	EMS SN byte1-2	RO	<i>Belegt 2 Bytes</i>	unsigned short	EMS SN: ASCII 0x414C=='AL'
0707H	EMS SN byte3-4	RO	<i>Belegt 2 Bytes</i>	unsigned short	EMS SN: ASCII 0x3132=='12'
0708H	MS SN byte5-6	RO	<i>Belegt 2 Bytes</i>	unsigned short	EMS SN: ASCII 0x3132=='12'
0709H	EMS SN byte7-8	RO	<i>Belegt 2 Bytes</i>	unsigned short	EMS SN: ASCII 0x3132=='12'
070AH	EMS SN byte9-10	RO	<i>Belegt 2 Bytes</i>	unsigned short	EMS SN: ASCII 0x3132=='12'
070BH	EMS SN byte11-12	RO	<i>Belegt 2 Bytes</i>	unsigned short	EMS SN: ASCII 0x3132=='12'

070CH	EMS SN byte13-14	RO	<i>Belegt 2 Bytes</i>	unsigned short	EMS SN: ASCII 0x3132=='12'
070DH	EMS SN byte15-16	RO	<i>Belegt 2 Bytes</i>	unsigned short	EMS SN: ASCII 0x3132=='12'
070EH	EMS DO0	WO	<i>Belegt 2 Bytes</i>	unsigned short	Bypass Control function
070FH	EMS DO1	WO	<i>Belegt 2 Bytes</i>	unsigned short	System fault output.
0710H	EMS DI0	RO	<i>Belegt 2 Bytes</i>	unsigned short	EPO, Battery MOS cut off.
0711H	EMS DI1	RO	<i>Belegt 2 Bytes</i>	unsigned short	Reserved
0712H	UPS Reserve Soc	R/W	<i>Belegt 2 Bytes</i>	unsigned short	0.1%/bit
0713H	Time discharge start time1 Zeit Entladebeginn1	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1h/bit
0714H	Time discharge stop time1 Zeit Entladestopp1	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1h/bit
0715H	Time discharge start time2 Zeit Entladebeginn2	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1h/bit
0716H	Time discharge stop time2 Zeit Entladestopp2	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1h/bit
0717H	Charge Cut Soc Ladung Schnitt Soc	R/W	<i>Belegt 2 Bytes</i>	unsigned short	0.1%/bit
0718H	Time charge start time1 Zeit Ladebeginn1	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1h/bit
0719H	Time charge stop time1 Zeit Ladestopp1	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1h/bit
071AH	Time charge start time2 Zeit Ladebeginn2	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1h/bit
071BH	Time charge stop time2 Zeit Ladestopp2	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1h/bit
071CH	System mode System-Modus	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1/bit
071DH	System language System-Sprache	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1/bit
071EH 071FH	PV Capacity of pv inverter PV Leistung des Wechselrichters	R/W	<i>Belegt 4 Bytes</i>	unsigned int	1W/bit
0720H 0721H	PV Inverter Total PV Energy PV-Wechselrichter Total PV Energy	R/W	<i>Belegt 4 Bytes</i>	unsigned int	0.1kWh/bit
0722H	Dispatch Start	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1:start; 0: stop
0723H 0724H	Dispatch Active power	R/W	<i>Belegt 4 Bytes</i>	int	1var/bit Offset:32000 charge:<32000 discharge:>32000

0725H 0726H	Dispatch Reactive power	R/W	<i>Belegt 4 Bytes</i>	int	1var/bit Offset:32000 charge:<32000 discharge:>32000
0727H	Dispatch Mode	R/W	<i>Belegt 2 Bytes</i>	unsigned short	Hinweis7
0728H	Dispatch SOC	R/W	<i>Belegt 2 Bytes</i>	unsigned short	0.4%/bit example: Send SOC=95, corresponding to the SOC of 38%.
0729H	EMS Version High EMS-Version Hoch	RO	<i>Belegt 2 Bytes</i>	unsigned short	
072AH	EMS Version Middle EMS-Version Mittel	RO	<i>Belegt 2 Bytes</i>	unsigned short	
072BH	EMS Version Low EMS-Version Niedrig	RO	<i>Belegt 2 Bytes</i>	unsigned short	
Echonet-Konfiguration (Japan)					
072CH	User Mode Benutzer-Modus	R/W	<i>Belegt 2 Bytes</i>	unsigned short	0: Green mode 1: Economic model 2: Secure mode
072DH	Battery Mode Batterie-Modus	R/W	<i>Belegt 2 Bytes</i>	unsigned short	0: Auto mode 1: Charge mode 2: Discharge mode 3: Standby mode
072EH	Set Battery Power Batterieleistung einstellen	R/W	<i>Belegt 2 Bytes</i>	short	1W/bit Charge mode or Discharge mode Set Battery Power
072FH	Set Inverter output Power Einstellen der Ausgangsleistung des Wechselrichters	R/W	<i>Belegt 2 Bytes</i>	unsigned short	Set Photovoltaic (pv) power
0730H	Echonet Enable Echonet Aktivieren	R/W	<i>Belegt 2 Bytes</i>	unsigned short	0: Disable 1: Enable
System Info					
0740H	System_time : (year)-(month) Systemzeit: (Jahr)-(Monat)	R/W	<i>Belegt 2 Bytes</i>	unsigned short	Data format hex; 0xYYMM, example: Send0x1109; year:0x11(2017) month:0x09(09);
0741H	System_time : (day)-(hour) Systemzeit: (Tag)-(Stunde)	R/W	<i>Belegt 2 Bytes</i>	unsigned short	Data format hex; 0xDDHH, example: Send0x1109; day:0x11(The 17 day) hour:0x09(09);

0742H	System_time : (minute)- (second) <i>Systemzeit: (Minute)- (Sekunde)</i>	R/W	<i>Belegt 2 Bytes</i>	unsigned short	Data format hex; 0xmmss, example: Send 0x1109; min:0x11(17) second:0x09(09);
0743H	EMS SN byte1-2	RO	<i>Belegt 2 Bytes</i>	unsigned short	EMS SN: ASCII 0x414C=='AL'
0744H	EMS SN byte3-4	RO	<i>Belegt 2 Bytes</i>	unsigned short	EMS SN: ASCII 0x3132=='12'
0745H	EMS SN byte5-6	RO	<i>Belegt 2 Bytes</i>	unsigned short	EMS SN: ASCII 0x3132=='12'
0746H	EMS SN byte7-8	RO	<i>Belegt 2 Bytes</i>	unsigned short	EMS SN: ASCII 0x3132=='12'
0747H	EMS SN byte9-10	RO	<i>Belegt 2 Bytes</i>	unsigned short	EMS SN: ASCII 0x3132=='12'
0748H	EMS SN byte11-12	RO	<i>Belegt 2 Bytes</i>	unsigned short	EMS SN: ASCII 0x3132=='12'
0749H	EMS SN byte13-14	RO	<i>Belegt 2 Bytes</i>	unsigned short	EMS SN: ASCII 0x3132=='12'
074AH	EMS SN byte15-16	RO	<i>Belegt 2 Bytes</i>	unsigned short	EMS SN: ASCII 0x3132=='12'
074BH	EMS Version High	R	<i>Belegt 2 Bytes</i>	unsigned short	
074CH	EMS Version Middle	R	<i>Belegt 2 Bytes</i>	unsigned short	
074DH	EMS Version Low	R	<i>Belegt 2 Bytes</i>	unsigned short	
074EH	Protocol Version	RO	<i>Belegt 2 Bytes</i>	unsigned short	
System-Konfiguration					
0800H	MAX Feed into grid percent	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1%/bit
0801H 0802H	PV Capacity Storage	R/W	<i>Belegt 4 Bytes</i>	unsigned int	1W/bit
0803H 0804H	PV Capacity of Grid Inverter	R/W	<i>Belegt 4 Bytes</i>	unsigned int	1W/bit
0805H	System mode	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1: AC Mode 2: DC Mode 3: Hybird Mode
0806H	Meter CT Select	R/W	<i>Belegt 2 Bytes</i>	unsigned short	0: Grid&PV use CT; ; 1: Grid use CT, PV use Meter; 2: Grid use Meter, PV use CT; 3: Grid&PV use Meter;

0807H	Battery Ready	R/W	<i>Belegt 2 Bytes</i>	unsigned short	0: OFF 1: ON
0808H	IP Method	R/W	<i>Belegt 2 Bytes</i>	unsigned short	0:DHCP 1:STATIC
0809H 080AH	Local IP	R/W	<i>Belegt 4 Bytes</i>	unsigned short	0xC0, 0xA8, 0x01, 0x01 192.168.1.1
080BH 080CH	Subnet Mask	R/W	<i>Belegt 4 Bytes</i>	unsigned short	0xFF, 0xFF, 0xFF, 0x01 255.255.255.1
080DH 080EH	Gateway	R/W	<i>Belegt 4 Bytes</i>	unsigned short	0xC0, 0xA8, 0x01, 0x01 192.168.1.1
080FH	Modbus Address	R/W	<i>Belegt 2 Bytes</i>	unsigned short	default 0x55
0810H	Modbus Baud rate	R/W	<i>Belegt 2 Bytes</i>	unsigned short	0: 9600 1: 115200 (nur für Haushalt) 2: 256000 (nur für Haushalt) 3: 19200 (nur für Industrie)
Zeitsteuerung					
084FH	Time period control flag	R/W	<i>Belegt 2 Bytes</i>	unsigned short	0: Disable Time period control 1: Enable Charge Time period control 2: Enable discharge Time period control 3: Enable Time period control
0850H	UPS Reserve Soc	R/W	<i>Belegt 2 Bytes</i>	unsigned short	0.1/bit
0851H	Time discharge start time1	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1h/bit
0852H	Time discharge stop time1	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1h/bit
0853H	Time discharge start time2	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1h/bit
0854H	Time discharge stop time2	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1h/bit

				short	
0855H	Charge Cut Soc	R/W	<i>Belegt 2 Bytes</i>	unsigned short	0.1/bit
0856H	Time charge start time1	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1h/bit
0857H	Time charge stop time1	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1h/bit
0858H	Time charge start time2	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1h/bit
0859H	Time charge stop time2	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1h/bit
Dispatch					
0880H	Dispatch Start	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1:start; 0:stop
0881H 0882H	Dispatch Active power	R/W	<i>Belegt 4 Bytes</i>	Int	1W/bit 1W/bit Offset:32000 Offset:32000 charge:<32000 discharge:>32000
0883H 0884H	Dispatch Reactive power	R/W	<i>Belegt 4 Bytes</i>	Int	1Var/bit Offset:32000 Offset:32000 charge:<32000 discharge:>32000
0885H	Dispatch Mode	R/W	<i>Belegt 2 Bytes</i>	unsigned short	Hinweis7
0886H	Dispatch SOC	R/W	<i>Belegt 2 Bytes</i>	unsigned short	0.4%/bit example: Send SOC=95, corresponding to the SOC of 38%.
0887H 0888H	Dispatch Time	R/W	<i>Belegt 4 Bytes</i>	unsigned int	1S/bit
AUX					
08B0H	EMS DO0	WO	<i>Belegt 2 Bytes</i>	unsigned short	Bypass Control function
08B1H	EMS DO1	WO	<i>Belegt 2 Bytes</i>	unsigned short	System fault output.
08B2H	EMS DO2	WO	<i>Belegt 2 Bytes</i>	unsigned short	

08B3H	EMS DO3	WO	<i>Belegt 2 Bytes</i>	unsigned short	
08B4H	EMS DO4	WO	<i>Belegt 2 Bytes</i>	unsigned short	
08B5H	EMS DO5	WO	<i>Belegt 2 Bytes</i>	unsigned short	
08B6H	EMS DO6	WO	<i>Belegt 2 Bytes</i>	unsigned short	
08B7H	EMS DO7	WO	<i>Belegt 2 Bytes</i>	unsigned short	
08B8H	EMS DO8	WO	<i>Belegt 2 Bytes</i>	unsigned short	
08B9H	EMS DO9	WO	<i>Belegt 2 Bytes</i>	unsigned short	
08BAH	EMS DO10	WO	<i>Belegt 2 Bytes</i>	unsigned short	
08BBH	EMS DO11	WO	<i>Belegt 2 Bytes</i>	unsigned short	
08BCH	EMS DO12	WO	<i>Belegt 2 Bytes</i>	unsigned short	
08BDH	EMS DO13	WO	<i>Belegt 2 Bytes</i>	unsigned short	
08BEH	EMS DO14	WO	<i>Belegt 2 Bytes</i>	unsigned short	
08BFH	EMS DO15	WO	<i>Belegt 2 Bytes</i>	unsigned short	
08C0H	EMS DI0	RO	<i>Belegt 2 Bytes</i>	unsigned short	EPO, Battery MOS cut off.
08C1H	EMS DI1	RO	<i>Belegt 2 Bytes</i>	unsigned short	Reserved
08C2H	EMS DI2	RO	<i>Belegt 2 Bytes</i>	unsigned short	
08C3H	EMS DI3	RO	<i>Belegt 2 Bytes</i>	unsigned short	
08C4H	EMS DI4	RO	<i>Belegt 2 Bytes</i>	unsigned short	
08C5H	EMS DI5	RO	<i>Belegt 2 Bytes</i>	unsigned short	
08C6H	EMS DI6	RO	<i>Belegt 2 Bytes</i>	unsigned short	
08C7H	EMS DI7	RO	<i>Belegt 2 Bytes</i>	unsigned short	
08C8H	EMS DI8	RO	<i>Belegt 2 Bytes</i>	unsigned short	
08C9H	EMS DI9	RO	<i>Belegt 2 Bytes</i>	unsigned short	
08CAH	EMS DI10	RO	<i>Belegt 2 Bytes</i>	unsigned short	

08CBH	EMS DI11	RO	Belegt 2 Bytes	unsigned short	
08CCH	EMS DI12	RO	Belegt 2 Bytes	unsigned short	
08CDH	EMS DI13	RO	Belegt 2 Bytes	unsigned short	
08CEH	EMS DI14	RO	Belegt 2 Bytes	unsigned short	
08CFH	EMS DI15	RO	Belegt 2 Bytes	unsigned short	
System - Betriebsdaten					
08D0H 08D1H	PV Inverter Energy	RO	Belegt 4 Bytes	unsigned int	0.1kWh/bit
08D2H 08D3H	The system total PV energy	RO	Belegt 4 Bytes	unsigned int	0.1kWh/bit
08D4H 08D5H	System fault	RO	Belegt 4 Bytes	unsigned int	Hinweis6
Sicherheit TEST					
1000H	Grid_Regulation	R/W	Belegt 2 Bytes	unsigned short	Hinweis8
1001H	Safety Test Enable	R/W	Belegt 2 Bytes	unsigned short	Safety Test Enable 0: Disable 1: Enable
1002H 1003H	Safety Mode Enable	R/W	Belegt 4 Bytes	unsigned int	Hinweis9
1004H	Starting_slope	R/W	Belegt 2 Bytes	unsigned short	0.01%Pn/min
1005H	Phase state	R/W	Belegt 2 Bytes	unsigned short	0: advance 1: phase lag
1006H	PF Value	R/W	Belegt 2 Bytes	short	0.01
1007H	Volt-WATT Starting	R/W	Belegt 2 Bytes	unsigned short	0.1V
1008H	Volt-WATT Stop	R/W	Belegt 2 Bytes	unsigned short	0.1V
1009H	Set Battery Power	R/W	Belegt 2 Bytes	short	1W/bit Charge mode or Dis charge mode Set Battery Power
100AH	Set PV Power	R/W	Belegt 2 Bytes	unsigned short	Set Photovoltaic (pv) power supply network
100BH	Ovp	R/W	Belegt 2 Bytes	unsigned short	0.1V
100CH	OvpT	R/W	Belegt 2 Bytes	unsigned short	1ms
100DH	Ovp10	R/W	Belegt 2 Bytes	unsigned short	0.1V

100EH	Ovp10T	R/W	Belegt 2 Bytes	unsigned short	1S
100FH	Uvp	R/W	Belegt 2 Bytes	unsigned short	0.1V
1010H	UvpT	R/W	Belegt 2 Bytes	unsigned short	1ms
1011H	Uvp2	R/W	Belegt 2 Bytes	unsigned short	0.1V
1012H	Uvp2T	R/W	Belegt 2 Bytes	unsigned short	1ms
1013H	Ofp	R/W	Belegt 2 Bytes	unsigned short	0.01HZ
1014H	OfpT	R/W	Belegt 2 Bytes	unsigned short	1ms
1015H	Ofp2	R/W	Belegt 2 Bytes	unsigned short	0.01HZ
1016H	Ofp2T	R/W	Belegt 2 Bytes	unsigned short	1ms
1017H	Ufp	R/W	Belegt 2 Bytes	unsigned short	0.01HZ
1018H	UfpT	R/W	Belegt 2 Bytes	unsigned short	1ms
1019H	Ufp2	R/W	Belegt 2 Bytes	unsigned short	0.01HZ
101AH	Ufp2T	R/W	Belegt 2 Bytes	unsigned short	1ms
101BH	Ufp2T	R/W	Belegt 2 Bytes	unsigned short	1ms
ATE TEST					
1100H	Reset Mode	WO	Belegt 2 Bytes	unsigned short	0: None 1: Energy Reset 2: Meter Reset 4: Factory Reset 8: restart EMS
1101H	EMS SN byte1-2	R/W	Belegt 2 Bytes	unsigned short	EMS SN :ASCII 0x414C=='AL'
1102H	EMS SN byte3-4	R/W	Belegt 2 Bytes	unsigned short	EMS SN :ASCII 0x3132=='12'
1103H	EMS SN byte5-6	R/W	Belegt 2 Bytes	unsigned short	EMS SN :ASCII 0x3132=='12'
1104H	EMS SN byte7-8	R/W	Belegt 2 Bytes	unsigned short	EMS SN :ASCII 0x3132=='12'
1105H	EMS SN byte9-10	R/W	Belegt 2 Bytes	unsigned short	EMS SN :ASCII 0x3132=='12'
1106H	EMS SN byte11-12	R/W	Belegt 2 Bytes	unsigned short	EMS SN :ASCII 0x3132=='12'

1107H	EMS SN byte13-14	R/W	<i>Belegt 2 Bytes</i>	unsigned short	EMS SN :ASCII 0x3132=='12'
1108H	EMS SN byte15-16	R/W	<i>Belegt 2 Bytes</i>	unsigned short	EMS SN :ASCII 0x3132=='12'
1109H	EMS MAC byte1-2	R/W	<i>Belegt 2 Bytes</i>	unsigned short	EMS MAC :HEX 0x70B3=0x70,0xB3
110AH	EMS MAC byte3-4	R/W	<i>Belegt 2 Bytes</i>	unsigned short	EMS MAC : HEX 0xD57A=0xD5,0x7A
110BH	EMS MAC byte5-6	R/W	<i>Belegt 2 Bytes</i>	unsigned short	EMS MAC : HEX 0x2C11=0x2C,0x11
110CH	Pointing to the server	R/W	<i>Belegt 2 Bytes</i>	unsigned short	0: Formal Server 1: RD test 2: Production test
110DH	Network type	R/W	<i>Belegt 2 Bytes</i>	unsigned short	
110EH	System language	R/W	<i>Belegt 2 Bytes</i>	unsigned short	0: English 1: German
110FH	Inverter model	R/W	<i>Belegt 2 Bytes</i>	unsigned short	0: INVERTER_NULL, 1: KELONG_S5, 2: KELONG_B5, 3: GINLONG_T10,
CT-Kalibrierung					
11B9H	Grid voltage	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1V/Bit
11BAH	Grid CT Current	RO	<i>Belegt 2 Bytes</i>	short	0.1A/Bit
11BBH	PV CT Current	RO	<i>Belegt 2 Bytes</i>	short	0.1A/Bit
11BCH	Grid CT Power	RO	<i>Belegt 2 Bytes</i>	short	1W/Bit
11BDH	PV CT Power	RO	<i>Belegt 2 Bytes</i>	short	1W/Bit
11BEH	Volt calibration point1	R/W	<i>Belegt 2 Bytes</i>	unsigned short	0.01V/Bit
11BFH	Volt calibration coef1	R/W	<i>Belegt 2 Bytes</i>	short	0.0001/Bit
11C0H	Volt calibration offset1	R/W	<i>Belegt 2 Bytes</i>	short	0.01V/Bit
11C1H	Volt calibration point2	R/W	<i>Belegt 2 Bytes</i>	unsigned short	0.01V/Bit
11C2H	Volt calibration coef2	R/W	<i>Belegt 2 Bytes</i>	short	0.0001/Bit
11C3H	Volt calibration offset2	R/W	<i>Belegt 2 Bytes</i>	short	0.01V/Bit
11C4H	Grid current calibration point1	R/W	<i>Belegt 2 Bytes</i>	unsigned short	0.1A/Bit
11C5H	Grid current calibration coef1	R/W	<i>Belegt 2 Bytes</i>	short	0.0001/Bit

11C6H	Grid current calibration offset1	R/W	<i>Belegt 2 Bytes</i>	short	0.1A/Bit
11C7H	Grid current calibration point2	R/W	<i>Belegt 2 Bytes</i>	unsigned short	0.1A/Bit
11C8H	Grid current calibration coef2	R/W	<i>Belegt 2 Bytes</i>	short	0.0001/Bit
11C9H	Grid current calibration offset2	R/W	<i>Belegt 2 Bytes</i>	short	0.1A/Bit
11CAH	Grid current calibration point3	R/W	<i>Belegt 2 Bytes</i>	unsigned short	0.1A/Bit
11CBH	Grid current calibration coef3	R/W	<i>Belegt 2 Bytes</i>	short	0.0001/Bit
11CCH	Grid current calibration offset3	R/W	<i>Belegt 2 Bytes</i>	short	0.1A/Bit
11CDH	Grid current calibration point4	R/W	<i>Belegt 2 Bytes</i>	unsigned short	0.1A/Bit
11CEH	Grid current calibration coef4	R/W	<i>Belegt 2 Bytes</i>	short	0.0001/Bit
11CFH	Grid current calibration offset4	R/W	<i>Belegt 2 Bytes</i>	short	0.1A/Bit
11D0H	Grid current calibration point5	R/W	<i>Belegt 2 Bytes</i>	unsigned short	0.1A/Bit
11D1H	Grid current calibration coef5	R/W	<i>Belegt 2 Bytes</i>	short	0.0001/Bit
11D2H	Grid current calibration offset5	R/W	<i>Belegt 2 Bytes</i>	short	0.1A/Bit
11D3H	Grid power calibration point1	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
11D4H	Grid power calibration coef1	R/W	<i>Belegt 2 Bytes</i>	short	0.0001/Bit
11D5H	Grid power calibration offset1	R/W	<i>Belegt 2 Bytes</i>	short	1W/Bit
11D6H	Grid power calibration point2	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
11D7H	Grid power calibration coef2	R/W	<i>Belegt 2 Bytes</i>	short	0.0001/Bit
11D8H	Grid power calibration offset2	R/W	<i>Belegt 2 Bytes</i>	short	1W/Bit
11D9H	Grid power calibration point3	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
11DAH	Grid power calibration coef3	R/W	<i>Belegt 2 Bytes</i>	short	0.0001/Bit
11DBH	Grid power calibration offset3	R/W	<i>Belegt 2 Bytes</i>	short	1W/Bit
11DCH	Grid power calibration point4	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
11DDH	Grid power calibration coef4	R/W	<i>Belegt 2 Bytes</i>	short	0.0001/Bit

11DEH	Grid power calibration offset4	R/W	<i>Belegt 2 Bytes</i>	short	1W/Bit
11DFH	Grid power calibration point5	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
11E0H	Grid power calibration coef5	R/W	<i>Belegt 2 Bytes</i>	short	0.0001/Bit
11E1H	Grid power calibration offset	R/W	<i>Belegt 2 Bytes</i>	short	1W/Bit
11E2H	PV current calibration point1	R/W	<i>Belegt 2 Bytes</i>	unsigned short	0.1A/Bit
11E3H	PV current calibration coef1	R/W	<i>Belegt 2 Bytes</i>	short	0.0001/Bit
11E4H	PV current calibration offset1	R/W	<i>Belegt 2 Bytes</i>	short	0.1A/Bit
11E5H	PV current calibration point2	R/W	<i>Belegt 2 Bytes</i>	unsigned short	0.1A/Bit
11E6H	PV current calibration coef2	R/W	<i>Belegt 2 Bytes</i>	short	0.0001/Bit
11E7H	PV current calibration offset2	R/W	<i>Belegt 2 Bytes</i>	short	0.1A/Bit
11E8H	PV current calibration point3	R/W	<i>Belegt 2 Bytes</i>	unsigned short	0.1A/Bit
11E9H	PV current calibration coef3	R/W	<i>Belegt 2 Bytes</i>	short	0.0001/Bit
11EAH	PV current calibration offset3	R/W	<i>Belegt 2 Bytes</i>	short	0.1A/Bit
11EBH	PV current calibration point4	R/W	<i>Belegt 2 Bytes</i>	unsigned short	0.1A/Bit
11ECH	PV current calibration coef4	R/W	<i>Belegt 2 Bytes</i>	short	0.0001/Bit
11EDH	PV current calibration offset4	R/W	<i>Belegt 2 Bytes</i>	short	0.1A/Bit
11EEH	PV current calibration point5	R/W	<i>Belegt 2 Bytes</i>	unsigned short	0.1A/Bit
11EFH	PV current calibration coef5	R/W	<i>Belegt 2 Bytes</i>	short	0.0001/Bit
11F0H	PV current calibration offset5	R/W	<i>Belegt 2 Bytes</i>	short	0.1A/Bit
11F1H	PV power calibration point1	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
11F2H	PV power calibration coef1	R/W	<i>Belegt 2 Bytes</i>	short	0.0001/Bit
11F3H	PV power calibration offset1	R/W	<i>Belegt 2 Bytes</i>	short	1W/Bit
11F4H	PV power calibration point2	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
11F5H	PV power calibration coef2	R/W	<i>Belegt 2 Bytes</i>	short	0.0001/Bit

11F6H	PV power calibration offset2	R/W	Belegt 2 Bytes	short	1W/Bit
11F7H	PV power calibration point3	R/W	Belegt 2 Bytes	unsigned short	1W/Bit
11F8H	PV power calibration coef3	R/W	Belegt 2 Bytes	short	0.0001/Bit
11F9H	PV power calibration offset3	R/W	Belegt 2 Bytes	short	1W/Bit
11FAH	PV power calibration point4	R/W	Belegt 2 Bytes	unsigned short	1W/Bit
11FBH	PV power calibration coef4	R/W	Belegt 2 Bytes	short	0.0001/Bit
11FCH	PV power calibration offset4	R/W	Belegt 2 Bytes	short	1W/Bit
11FDH	PV power calibration point5	R/W	Belegt 2 Bytes	unsigned short	1W/Bit
11FEH	PV power calibration coef5	R/W	Belegt 2 Bytes	short	0.0001/Bit
11FFH	PV power calibration offset5	R/W	Belegt 2 Bytes	short	1W/Bit
Industrie Fernsteuerung Parameter					
4000H	Energy dispatching mode	R/W	Belegt 2 Bytes	unsigned short	0: AC dispatching 1: DC dispatching
4001H	AC control mode	R/W	Belegt 2 Bytes	unsigned short	0: Fixed active power
4002H 4003H	AC power setting	R/W	Belegt 4 Bytes	int	1W/Bit
4004H	DC control mode	R/W	Belegt 2 Bytes	unsigned short	0: Fixed current 1: Fixed power
4005H 4006H	DC current setting	R/W	Belegt 4 Bytes	int	0.1A/Bit
4007H 4008H	DC power setting	R/W	Belegt 4 Bytes	int	1W/Bit
4009H	Mode on/off	R/W	Belegt 2 Bytes	unsigned short	0: Mode off 1: Mode on
400AH	Grid interconnection mode	R/W	Belegt 2 Bytes	unsigned short	0: Grid-tied 1: Off-grid
400BH	Clear fault	R/W	Belegt 2 Bytes	unsigned short	0: False 1: True
400CH	Emergency power off	R/W	Belegt 2 Bytes	unsigned short	0: False 1: True
400DH	Start up mode	R/W	Belegt 2 Bytes	unsigned short	0: Auto 1: Manual
400EH	Reactive power control mode	R/W	Belegt 2 Bytes	unsigned short	0: Fixed PF 1: Fixed reactive power

400FH	PF setting	R/W	<i>Belegt 2 Bytes</i>	short	0.01/Bit
4010H~ 4011H	Reactive power setting	R/W	<i>Belegt 4 Bytes</i>	Int	1var/Bit
4012H~ 407FH	Reserved		<i>Belegt 220 Bytes</i>		
Industrie Lokale Steuerungsparameter					
4080H	System model	R/W	<i>Belegt 2 Bytes</i>	unsigned short	0: Storion-T30 1: Storion-T50 2: Storion-T100 3: Storion-T150 4: Storion-TB250 5: Storion-TB500
4081H	Send closing relay instruction (send end mark automatic cleanup)	R/W	<i>Belegt 2 Bytes</i>	unsigned short	0: False 1: True
4082H 4083H	Maximum power through meter	R/W	<i>Belegt 4 Bytes</i>	unsigned int	1W/Bit
4084H 4085H	Charging power during charging period	R/W	<i>Belegt 4 Bytes</i>	unsigned int	1W/Bit
4086H	Load cut soc	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1%/Bit
4087H	Load tied soc	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1%/Bit
4088H	AC access type	R/W	<i>Belegt 2 Bytes</i>	unsigned short	0: generator 1: grid
4089H	Generator mode enable	R/W	<i>Belegt 2 Bytes</i>	unsigned short	0: False 1: True
408AH	Startup mode(Generator)	R/W	<i>Belegt 2 Bytes</i>	unsigned short	0: SOC 1: Time period 2: Manual
408BH	Start SOC(SOC mode)	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1%/Bit
408CH	Stop SOC(SOC mode)	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1%/Bit
408DH	Start time(Time period mode)	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1h/Bit
408EH	Stop time(Time period mode)	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1h/Bit
408FH	Power output mode(Generator)	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1: GC charge 2: GC rated
4090H 4091H	Charge power set(Generator)	R/W	<i>Belegt 4 Bytes</i>	unsigned int	1W/Bit
4092H 4093H	Rated power(Generator)	R/W	<i>Belegt 4 Bytes</i>	unsigned int	1W/Bit
4094H	Rated output percent(Generator)	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1%/Bit

4095H	Pmeter offset enable	R/W	Belegt 2 Bytes	unsigned short	0: False 1: True
4096H 4097H	Pmeter offset power setting	R/W	Belegt 4 Bytes	unsigned int	1W/Bit
4098H	Start time1(Pmeter offset)	R/W	Belegt 2 Bytes	unsigned short	1h/Bit
4099H	End time1(Pmeter offset)	R/W	Belegt 2 Bytes	unsigned short	1h/Bit
409AH	Start time2(Pmeter offset)	R/W	Belegt 2 Bytes	unsigned short	1h/Bit
409BH	End time2(Pmeter offset)	R/W	Belegt 2 Bytes	unsigned short	1h/Bit
409CH	Peak shaving and valley filling enable	R/W	Belegt 2 Bytes	unsigned short	0: False 1: True
409DH 409EH	Peak value setting	R/W	Belegt 4 Bytes	unsigned int	1W/Bit
409FH 40A0H	Valley value setting	R/W	Belegt 4 Bytes	unsigned int	1W/Bit
40A1H 40A2H	Delta	R/W	Belegt 4 Bytes	unsigned int	1W/Bit
40A3H	Peak shaving start time1	R/W	Belegt 2 Bytes	unsigned short	1h/Bit
40A4H	Peak shaving end time1	R/W	Belegt 2 Bytes	unsigned short	1h/Bit
40A5H	Peak shaving start time2	R/W	Belegt 2 Bytes	unsigned short	1h/Bit
40A6H	Peak shaving end time2	R/W	Belegt 2 Bytes	unsigned short	1h/Bit
40A7H	Valley filling start time1	R/W	Belegt 2 Bytes	unsigned short	1h/Bit
40A8H	Valley filling end time2	R/W	Belegt 2 Bytes	unsigned short	1h/Bit
40A9H	Valley filling start time2	R/W	Belegt 2 Bytes	unsigned short	1h/Bit
40AAH	Valley filling end time2	R/W	Belegt 2 Bytes	unsigned short	1h/Bit
40ABH	SOC directional calibration enable	R/W	Belegt 2 Bytes	unsigned short	0: False 1: True
40ACH	Calibration value	R/W	Belegt 2 Bytes	unsigned short	1%/Bit
40ADH	Pv inverter type	R/W	Belegt 2 Bytes	unsigned short	
40AEH	Pv inverter num	R/W	Belegt 2 Bytes	unsigned short	
40AFH	Air condition type	R/W	Belegt 2 Bytes	unsigned short	
40B0H	Air condition num	R/W	Belegt 2 Bytes	unsigned short	

40B1H	PV combiner box type	R/W	Belegt 2 Bytes	unsigned short	
40B2H	PV combiner box num	R/W	Belegt 2 Bytes	unsigned short	
40B3H	Local remote mode	R/W	Belegt 2 Bytes	unsigned short	0: Local 1: Remote
40B4H	EMS communication timeout	R/W	Belegt 2 Bytes	unsigned short	1s/bit
40B5H~ 40FFH	Reserved		Belegt 150 Bytes		
Industrie-Klimaanlage					
4100H	Working status(AirCon01)	RO	Belegt 2 Bytes	unsigned short	0: standby 1: run
4101H	Condenser temperature(AirCon01)	RO	Belegt 2 Bytes	short	0.1°C/Bit
4102H	Indoor temperature(AirCon01)	RO	Belegt 2 Bytes	short	0.1°C/Bit
4103H	Indoor humidity(AirCon01)	RO	Belegt 2 Bytes	unsigned short	1%/Bit
4104H	exhaust temperature(AirCon01)	RO	Belegt 2 Bytes	short	0.1°C/Bit
4105H	Ac input voltage(AirCon01)	RO	Belegt 2 Bytes	unsigned short	0.1V/Bit
4106H	Ac input current(AirCon01)	RO	Belegt 2 Bytes	short	0.1A/Bit
4107H	Refrigeration stopping point (AirCon01)	RO	Belegt 2 Bytes	short	0.1°C/Bit
4108H	Refrigeration return difference (AirCon01)	RO	Belegt 2 Bytes	short	0.1°C/Bit
4109H	Heating stop point(AirCon01)	RO	Belegt 2 Bytes	short	0.1°C/Bit
410AH	Heating return difference (AirCon01)	RO	Belegt 2 Bytes	short	0.1°C/Bit
410BH	High humidity warning point (AirCon01)	RO	Belegt 2 Bytes	unsigned short	1%/Bit
410CH	High temperature warning point (AirCon01)	RO	Belegt 2 Bytes	short	0.1°C/Bit
410DH	Low temperature warning point (AirCon01)	RO	Belegt 2 Bytes	short	0.1°C/Bit
410EH 410FH	Fault info1(AirCon01)	RO	Belegt 4 Bytes	unsigned int	
4110H 4111H	Fault info2(AirCon01)	RO	Belegt 4 Bytes	unsigned int	
4112H~ 413FH	Reserved(AirCon01)		Belegt 92 Bytes		
4140H~ 417FH	Reserved(AirCon02)		Belegt 128 Bytes		

4180H~ 41BFH	Reserved(AirCon03)		<i>Belegt 128 Bytes</i>		
41C0H~ 41FFH	Reserved(AirCon04)		<i>Belegt 128 Bytes</i>		
Industrie-Dieselmotor					
4200H 4201H	Line voltage between A to B (Diesel Engine01)	RO	<i>Belegt 4 Bytes</i>	unsigned int	0.1V/Bit
4202H 4203H	Line voltage between B to C (Diesel Engine01)	RO	<i>Belegt 4 Bytes</i>	unsigned int	0.1V/Bit
4204H 4205H	Line voltage between C to A (Diesel Engine01)	RO	<i>Belegt 4 Bytes</i>	unsigned int	0.1V/Bit
4206H	Phase A current(Diesel Engine01)	RO	<i>Belegt 2 Bytes</i>	short	0.1A/Bit
4207H	Phase B current(Diesel Engine01)	RO	<i>Belegt 2 Bytes</i>	short	0.1A/Bit
4208H	Phase C current(Diesel Engine01)	RO	<i>Belegt 2 Bytes</i>	short	0.1A/Bit
4209H	Frequency(Diesel Engine01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.01Hz/Bit
420AH 420BH	Phase A active power (Diesel Engine01)	RO	<i>Belegt 4 Bytes</i>	int	1W/Bit
420CH 420DH	Phase B active power (Diesel Engine01)	RO	<i>Belegt 4 Bytes</i>	int	1W/Bit
420EH 420FH	Phase C active power (Diesel Engine01)	RO	<i>Belegt 4 Bytes</i>	int	1W/Bit
4210H 4211H	Phase A reactive power (Diesel Engine01)	RO	<i>Belegt 4 Bytes</i>	int	1var/Bit
4212H 4213H	Phase B reactive power (Diesel Engine01)	RO	<i>Belegt 4 Bytes</i>	int	1var/Bit
4214H 4215H	Phase C reactive power (Diesel Engine01)	RO	<i>Belegt 4 Bytes</i>	int	1var/Bit
4216H 4217H	Phase A apparent power (Diesel Engine01)	RO	<i>Belegt 4 Bytes</i>	int	1VA/Bit
4218H 4219H	Phase B apparent power (Diesel Engine01)	RO	<i>Belegt 4 Bytes</i>	int	1VA/Bit
421AH 421BH	Phase C apparent power (Diesel Engine01)	RO	<i>Belegt 4 Bytes</i>	int	1VA/Bit
421CH	Phase A factor(Diesel Engine01)	RO	<i>Belegt 2 Bytes</i>	short	0.01/Bit
421DH	Phase B factor(Diesel Engine01)	RO	<i>Belegt 2 Bytes</i>	short	0.01/Bit
421EH	Phase C factor(Diesel Engine01)	RO	<i>Belegt 2 Bytes</i>	short	0.01/Bit
421FH 4220H	Total active power(Diesel Engine01)	RO	<i>Belegt 4 Bytes</i>	int	1W/Bit
4221H 4222H	Total reactive power (Diesel Engine01)	RO	<i>Belegt 4 Bytes</i>	int	1var/Bit
4223H 4224H	Total apparent power (Diesel Engine01)	RO	<i>Belegt 4 Bytes</i>	int	1VA/Bit

4225H	Total factor(Diesel Engine01)	RO	<i>Belegt 2 Bytes</i>	short	0.01/Bit
4226H	Oil pressure(Diesel Engine01)	RO	<i>Belegt 2 Bytes</i>	short	1kPa/Bit
4227H	Coolant temperature (Diesel Engine01)	RO	<i>Belegt 2 Bytes</i>	short	0.1°C/Bit
4228H	Engine temperature (Diesel Engine01)	RO	<i>Belegt 2 Bytes</i>	short	0.1°C/Bit
4229H	Fuel temperature(Diesel Engine01)	RO	<i>Belegt 2 Bytes</i>	short	0.1°C/Bit
422AH	Engine speed(Diesel Engine01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1rpm/Bit
422BH 422CH	Power generation energy (Diesel Engine01)	RO	<i>Belegt 4 Bytes</i>	unsigned int	1kVAh/Bit
422DH	Coolant level(Diesel Engine01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1%/Bit
422EH	Fuel level(Diesel Engine01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1%/Bit
422FH	Engine battery voltage (Diesel Engine01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1V/Bit
4230H 4231H	Fault info1(Diesel Engine01)	RO	<i>Belegt 4 Bytes</i>	unsigned int	
4232H 4233H	Fault info2(Diesel Engine01)	RO	<i>Belegt 4 Bytes</i>	unsigned int	
4234H 4235H	Fault info3(Diesel Engine01)	RO	<i>Belegt 4 Bytes</i>	unsigned int	
4236H 4237H	Fault info4(Diesel Engine01)	RO	<i>Belegt 4 Bytes</i>	unsigned int	
4238H~ 427FH	Reserved(Diesel Engine01)		<i>Belegt 144 Bytes</i>		
4280H~ 42FFH	Reserved(Diesel Engine02)		<i>Belegt 256 Bytes</i>		
4300H~ 437FH	Reserved(Diesel Engine03)		<i>Belegt 256 Bytes</i>		
4380H~ 43FFH	Reserved(Diesel Engine04)		<i>Belegt 256 Bytes</i>		
4400H~ 447FH	Reserved(Diesel Engine05)		<i>Belegt 256 Bytes</i>		
4480H~ 44FFH	Reserved(Diesel Engine06)		<i>Belegt 256 Bytes</i>		
Industrie PV Combiner Box					
4500H 4501H	Switch state of each branch (PV Combiner Box01)	RO	<i>Belegt 4 Bytes</i>	unsigned int	
4502H	Box temperature (PV Combiner Box01)	RO	<i>Belegt 2 Bytes</i>	short	0.1°C/Bit
4503H	Total bus voltage (PV Combiner Box01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1V/Bit
4504H 4505H	Total power generation (PV Combiner Box01)	RO	<i>Belegt 4 Bytes</i>	unsigned int	1W/Bit

4506H	PV1 power(PV Combiner Box01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
4507H	PV2 power(PV Combiner Box01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
4508H	PV3 power(PV Combiner Box01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
4509H	PV4 power(PV Combiner Box01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
450AH	PV5 power(PV Combiner Box01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
450BH	PV6 power(PV Combiner Box01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
450CH	PV7 power(PV Combiner Box01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
450DH	PV8 power(PV Combiner Box01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
450EH	PV9 power(PV Combiner Box01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
450FH	PV10 power(PV Combiner Box01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
4510H	PV11 power(PV Combiner Box01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
4511H	PV12 power(PV Combiner Box01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
4512H	PV13 power(PV Combiner Box01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
4513H	PV14 power(PV Combiner Box01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
4514H	PV15 power(PV Combiner Box01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
4515H	PV16 power(PV Combiner Box01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
4516H	PV17 power(PV Combiner Box01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
4517H	PV18 power(PV Combiner Box01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
4518H	PV19 power(PV Combiner Box01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
4519H	PV20 power(PV Combiner Box01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
451AH	PV21 power(PV Combiner Box01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
451BH	PV22 power(PV Combiner Box01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
451CH	PV23 power(PV Combiner Box01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
451DH	PV24 power(PV Combiner Box01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit

451EH	PV25 power(PV Combiner Box01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
451FH	PV26 power(PV Combiner Box01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
4520H	PV27 power(PV Combiner Box01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
4521H	PV28 power(PV Combiner Box01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
4522H	PV29 power(PV Combiner Box01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
4523H	PV30 power(PV Combiner Box01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
4524H	PV31 power(PV Combiner Box01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
4525H	PV32 power(PV Combiner Box01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
4526H 4527H	Fault info1(PV Combiner Box01)	RO	<i>Belegt 4 Bytes</i>	unsigned int	
4528H~ 453FH	Reserved (PV Combiner Box01)		<i>Belegt 48 Bytes</i>		
4540H~ 457FH	Reserved (PV Combiner Box02)		<i>Belegt 128 Bytes</i>		
4580H~ 45BFH	Reserved (PV Combiner Box03)		<i>Belegt 128 Bytes</i>		
45C0H~ 45FFH	Reserved (PV Combiner Box04)		<i>Belegt 128 Bytes</i>		
4600H~ 463FH	Reserved (PV Combiner Box05)		<i>Belegt 128 Bytes</i>		
4640H~ 467FH	Reserved (PV Combiner Box06)		<i>Belegt 128 Bytes</i>		
4680H~ 46BFH	Reserved (PV Combiner Box07)		<i>Belegt 128 Bytes</i>		
46C0H~ 46FFH	Reserved (PV Combiner Box08)		<i>Belegt 128 Bytes</i>		
4700H~ 473FH	Reserved (PV Combiner Box09)		<i>Belegt 128 Bytes</i>		
4740H~ 477FH	Reserved (PV Combiner Box10)		<i>Belegt 128 Bytes</i>		
4780H~ 47BFH	Reserved (PV Combiner Box11)		<i>Belegt 128 Bytes</i>		
47C0H~ 47FFH	Reserved (PV Combiner Box12)		<i>Belegt 128 Bytes</i>		
Industrie PV Inv					
4800H	PV1 power (PV INV01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
4801H	PV2 power (PV INV01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
4802H	PV3 power (PV INV01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit

4803H	PV4 power (PV INV01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
4804H	PV5 power (PV INV01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
4805H	PV6 power (PV INV01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
4806H	PV7 power (PV INV01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
4807H	PV8 power (PV INV01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
4808H	PV9 power (PV INV01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
4809H	PV10 power (PV INV01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
480AH	PV11 power (PV INV01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
480BH	PV12 power (PV INV01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1W/Bit
480CH	Phase A voltage (PV INV01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1V/Bit
480DH	Phase B voltage (PV INV01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1V/Bit
480EH	Phase C voltage (PV INV01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1V/Bit
480FH	Phase A current (PV INV01)	RO	<i>Belegt 2 Bytes</i>	short	0.1A/Bit
4810H	Phase B current (PV INV01)	RO	<i>Belegt 2 Bytes</i>	short	0.1A/Bit
4811H	Phase C current (PV INV01)	RO	<i>Belegt 2 Bytes</i>	short	0.1A/Bit
4812H	Frequency (PV INV01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.01HZ
4813H 4814H	Total active power (PV INV01)	RO	<i>Belegt 4 Bytes</i>	int	1W/Bit
4815H 4816H	Total reactive power (PV INV01)	RO	<i>Belegt 4 Bytes</i>	int	1var/Bit
4817H 4818H	Total apparent power (PV INV01)	RO	<i>Belegt 4 Bytes</i>	int	1VA/Bit
4819H	Total factor (PV INV01)	RO	<i>Belegt 2 Bytes</i>	short	0.01/Bit
481AH	Feed energy to grid in today (PV INV01)	RO	<i>Belegt 2 Bytes</i>	unsigned int	1kWh/Bit
481BH	Workmode (PV INV01)	RO	<i>Belegt 2 Bytes</i>	unsigned short	
481CH	Internal temperature (PV INV01)	RO	<i>Belegt 2 Bytes</i>	short	0.1°C/Bit
481DH 481EH	Total feed energy to grid (PV INV01)	RO	<i>Belegt 4 Bytes</i>	unsigned int	1kWh/Bit

481FH 4820H	Fault info1 (PV INV01)	RO	Belegt 4 Bytes	unsigned int	
4821H 4822H	Fault info2 (PV INV01)	RO	Belegt 4 Bytes	unsigned int	
4823H~ 483FH	Reserved (PV INV01)		Belegt 58 Bytes		
4840H~ 487FH	(Same as above) (PV INV02)		Belegt 128 Bytes		
4880H~ 48BFH	(Same as above) (PV INV03)		Belegt 128 Bytes		
48C0H~ 48FFH	(Same as above) (PV INV04)		Belegt 128 Bytes		
4900H~ 493FH	(Same as above) (PV INV05)		Belegt 128 Bytes		
4940H~ 497FH	(Same as above) (PV INV06)		Belegt 128 Bytes		
4980H~ 49BFH	(Same as above) (PV INV07)		Belegt 128 Bytes		
49C0H~ 49FFH	(Same as above) (PV INV08)		Belegt 128 Bytes		
4A00H~ 4A3FH	(Same as above) (PV INV09)		Belegt 128 Bytes		
4A40H~ 4A7FH	(Same as above) (PV INV10)		Belegt 128 Bytes		
4A80H~ 4ABFH	(Same as above) (PV INV11)		Belegt 128 Bytes		
4AC0H~ 4AFFH	(Same as above) (PV INV12)		Belegt 128 Bytes		
4B00H~ 4B3FH	(Same as above) (PV INV13)		Belegt 128 Bytes		
4B40H~ 4B7FH	(Same as above) (PV INV14)		Belegt 128 Bytes		
4B80H~ 4BBFH	(Same as above) (PV INV15)		Belegt 128 Bytes		
4BC0H~ 4BFFH	(Same as above) (PV INV16)		Belegt 128 Bytes		
Industrie Feuerkontrolle					
4C00H~ 4C0FH	Reserved		Belegt 32 Bytes		
Industrie Reserviert Gerät					
4C10H~ 4CFFH	Reserved		Belegt 480 Bytes		
Industrie Meter					
4D00H	CT Enable(Grid meter)	R/W	Belegt 2 Bytes	unsigned short	1/bit
4D01H	CT Rate(Grid meter)	R/W	Belegt 2 Bytes	unsigned short	1/bit
4D02H	PT Enable(Grid meter)	R/W	Belegt 2 Bytes	unsigned short	1/bit

4D03H	PT Rate(Grid meter)	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1/bit
4D04H 4D05H	Total energy feed to grid(Grid meter)	RO	<i>Belegt 4 Bytes</i>	unsigned int	0.01kWh/bit
4D06H 4D07H	Total energy consume from grid(Grid meter)	RO	<i>Belegt 4 Bytes</i>	unsigned int	0.01kWh/bit
4D08H	Voltage of A phase(Grid meter)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1V/bit
4D09H	Voltage of B phase(Grid meter)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1V/bit
4D0AH	Voltage of C phase(Grid meter)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1V/bit
4D0BH	Current of A phase(Grid meter)	RO	<i>Belegt 2 Bytes</i>	short	0.1A/bit
4D0CH	Current of B phase(Grid meter)	RO	<i>Belegt 2 Bytes</i>	short	0.1A/bit
4D0DH	Current of C phase(Grid meter)	RO	<i>Belegt 2 Bytes</i>	short	0.1A/bit
4D0EH	Frequent(Grid meter)	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.01HZ
4D0FH 4D10H	Active power of A phase(Grid meter)	RO	<i>Belegt 4 Bytes</i>	int	1W/bit
4D11H 4D12H	Active power of B phase(Grid meter)	RO	<i>Belegt 4 Bytes</i>	int	1W/bit
4D13H 4D14H	Active power of C phase(Grid meter)	RO	<i>Belegt 4 Bytes</i>	int	1W/bit
4D15H 4D16H	Total Active power(Grid Meter)	RO	<i>Belegt 4 Bytes</i>	int	1W/bit
4D17H 4D18H	Reactive power of A phase(Grid meter)	RO	<i>Belegt 4 Bytes</i>	int	1var/bit
4D19H 4D1AH	Reactive power of B phase(Grid meter)	RO	<i>Belegt 4 Bytes</i>	int	1var/bit
4D1BH 4D1CH	Reactive power of C phase(Grid meter)	RO	<i>Belegt 4 Bytes</i>	int	1var/bit
4D1DH 4D1EH	Total reactive power(Grid meter)	RO	<i>Belegt 4 Bytes</i>	int	1var/bit
4D1FH 4D20H	Apparent power of A phase(Grid meter)	RO	<i>Belegt 4 Bytes</i>	int	1VA/bit
4D21H 4D22H	Apparent power of B phase(Grid meter)	RO	<i>Belegt 4 Bytes</i>	int	1VA/bit
4D23H 4D24H	Apparent power of C phase(Grid meter)	RO	<i>Belegt 4 Bytes</i>	int	1VA/bit
4D25H 4D26H	Total apparent power(Grid meter)	RO	<i>Belegt 4 Bytes</i>	int	1VA/bit
4D27H	Power factor of A phase(Grid meter)	RO	<i>Belegt 2 Bytes</i>	short	0.01/bit
4D28H	Power factor of B phase(Grid meter)	RO	<i>Belegt 2 Bytes</i>	short	0.01/bit

4D29H	Power factor of C phase(Grid meter)	RO	<i>Belegt 2 Bytes</i>	short	0.01/bit
4D2AH	Total Power factor(Grid meter)	RO	<i>Belegt 2 Bytes</i>	short	0.01/bit
4D2BH~ 4D7FH	Reserved(Grid meter)		<i>Belegt 170 Bytes</i>		
4D80H	CT Enable(Pv meter)	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1/bit
4D81H	CT Rate(Pv meter)	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1/bit
4D82H	PT Enable(Pv meter)	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1/bit
4D83H	PT Rate(Pv meter)	R/W	<i>Belegt 2 Bytes</i>	unsigned short	1/bit
4D84H 4D85H	Total energy feed to grid(Pv meter)	RO	<i>Belegt 4 Bytes</i>	unsigned int	0.01kWh/bit
4D86H 4D87H	Total energy consume from grid(Pv meter)	RO	<i>Belegt 4 Bytes</i>	unsigned int	0.01kWh/bit
4D88H	Voltage of A phase(Pv meter)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1V/bit
4D89H	Voltage of B phase(Pv meter)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1V/bit
4D8AH	Voltage of C phase(Pv meter)	RO	<i>Belegt 2 Bytes</i>	unsigned short	1V/bit
4D8BH	Current of A phase(Pv meter)	RO	<i>Belegt 2 Bytes</i>	short	0.1A/bit
4D8CH	Current of B phase(Pv meter)	RO	<i>Belegt 2 Bytes</i>	short	0.1A/bit
4D8DH	Current of C phase(Pv meter)	RO	<i>Belegt 2 Bytes</i>	short	0.1A/bit
4D8EH	Frequent(Pv meter)	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.01HZ
4D8FH 4D90H	Active power of A phase(Pv meter)	RO	<i>Belegt 4 Bytes</i>	int	1W/bit
4D91H 4D92H	Active power of B phase(Pv meter)	RO	<i>Belegt 4 Bytes</i>	int	1W/bit
4D93H 4D94H	Active power of C phase(Pv meter)	RO	<i>Belegt 4 Bytes</i>	int	1W/bit
4D95H 4D96H	Total Active power(Pv meter)	RO	<i>Belegt 4 Bytes</i>	int	1W/bit
4D97H 4D98H	Reactive power of A phase(Pv meter)	RO	<i>Belegt 4 Bytes</i>	int	1var/bit
4D99H 4D9AH	Reactive power of B phase(Pv meter)	RO	<i>Belegt 4 Bytes</i>	int	1var/bit
4D9BH 4D9CH	Reactive power of C phase(Pv meter)	RO	<i>Belegt 4 Bytes</i>	int	1var/bit

4D9DH 4D9EH	Total reactive power(Pv meter)	RO	<i>Belegt 4 Bytes</i>	int	1var/bit
4D9FH 4DA0H	Apparent power of A phase(Pv meter)	RO	<i>Belegt 4 Bytes</i>	int	1VA/bit
4DA1H 4DA2H	Apparent power of B phase(Pv meter)	RO	<i>Belegt 4 Bytes</i>	int	1VA/bit
4DA3H 4DA4H	Apparent power of C phase(Pv meter)	RO	<i>Belegt 4 Bytes</i>	int	1VA/bit
4DA5H 4DA6H	Total apparent power(Pv meter)	RO	<i>Belegt 4 Bytes</i>	int	1VA/bit
4DA7H	Power factor of A phase(Pv meter)	RO	<i>Belegt 2 Bytes</i>	short	0.01/bit
4DA8H	Power factor of B phase(Pv meter)	RO	<i>Belegt 2 Bytes</i>	short	0.01/bit
4DA9H	Power factor of C phase(Pv meter)	RO	<i>Belegt 2 Bytes</i>	short	0.01/bit
4DAAH	Total Power factor(Pv meter)	RO	<i>Belegt 2 Bytes</i>	short	0.01/bit
4DABH~ 4DFFH	Reserved(Pv meter)		<i>Belegt 170 Bytes</i>		
4E00H~ 4E7FH	Reserved(Meter03)		<i>Belegt 256 Bytes</i>		
4E80H~ 4EFFH	Reserved(Meter04)		<i>Belegt 256 Bytes</i>		
4F00H~ 4F7FH	Reserved(Meter05)		<i>Belegt 256 Bytes</i>		
4F80H~ 4FFFH	Reserved(Meter06)		<i>Belegt 256 Bytes</i>		
5000H~ 507FH	Reserved(Meter07)		<i>Belegt 256 Bytes</i>		
5080H~ 50FFH	Reserved(Meter08)		<i>Belegt 256 Bytes</i>		
5100H~ 517FH	Reserved(Meter09)		<i>Belegt 256 Bytes</i>		
5180H~ 51FFH	Reserved(Meter10)		<i>Belegt 256 Bytes</i>		
Industrie STS					
5200H	Line voltage between A to B(Grid)	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1V/Bit
5201H	Line voltage between B to C(Grid)	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1V/Bit
5202H	Line voltage between C to A(Grid)	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1V/Bit
5203H	Phase A current(Grid)	RO	<i>Belegt 2 Bytes</i>	short	1A/Bit
5204H	Phase B current(Grid)	RO	<i>Belegt 2 Bytes</i>	short	1A/Bit

5205H	Phase C current(Grid)	RO	<i>Belegt 2 Bytes</i>	short	1A/Bit
5206H	Frequency(Grid)	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.01Hz/Bit
5207H 5208H	Phase A active power(Grid)	RO	<i>Belegt 4 Bytes</i>	int	1W/Bit
5209H 520AH	Phase B active power(Grid)	RO	<i>Belegt 4 Bytes</i>	int	1W/Bit
520BH 520CH	Phase C active power(Grid)	RO	<i>Belegt 4 Bytes</i>	int	1W/Bit
520DH 520EH	Phase A reactive power(Grid)	RO	<i>Belegt 4 Bytes</i>	int	1var/Bit
520FH 5210H	Phase B reactive power(Grid)	RO	<i>Belegt 4 Bytes</i>	int	1var/Bit
5211H 5212H	Phase C reactive power(Grid)	RO	<i>Belegt 4 Bytes</i>	int	1var/Bit
5213H 5214H	Phase A apparent power(Grid)	RO	<i>Belegt 4 Bytes</i>	int	1VA/Bit
5215H 5216H	Phase B apparent power(Grid)	RO	<i>Belegt 4 Bytes</i>	int	1VA/Bit
5217H 5218H	Phase C apparent power(Grid)	RO	<i>Belegt 4 Bytes</i>	int	1VA/Bit
5219H	Phase A factor(Grid)	RO	<i>Belegt 2 Bytes</i>	short	0.01/Bit
521AH	Phase B factor(Grid)	RO	<i>Belegt 2 Bytes</i>	short	0.01/Bit
521BH	Phase C factor(Grid)	RO	<i>Belegt 2 Bytes</i>	short	0.01/Bit
521CH 521DH	Total active power(Grid)	RO	<i>Belegt 4 Bytes</i>	int	1W/Bit
521EH 521FH	Total reactive power(Grid)	RO	<i>Belegt 4 Bytes</i>	int	1var/Bit
5220H 5221H	Total apparent power(Grid)	RO	<i>Belegt 4 Bytes</i>	int	1VA/Bit
5222H	Total PF (Grid)	RO	<i>Belegt 2 Bytes</i>	short	0.01/Bit
5223H	Line voltage between A to B(Load)	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1V/Bit
5224H	Line voltage between B to C(Load)	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1V/Bit
5225H	Line voltage between C to A(Load)	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1V/Bit
5226H	Phase A current(Load)	RO	<i>Belegt 2 Bytes</i>	short	1A/Bit
5227H	Phase B current(Load)	RO	<i>Belegt 2 Bytes</i>	short	1A/Bit
5228H	Phase C current(Load)	RO	<i>Belegt 2 Bytes</i>	short	1A/Bit

5229H	Frequency(Load)	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.01Hz/Bit
522AH 522BH	Phase A active power(Load)	RO	<i>Belegt 4 Bytes</i>	int	1W/Bit
522CH 522DH	Phase B active power(Load)	RO	<i>Belegt 4 Bytes</i>	int	1W/Bit
522EH 522FH	Phase C active power(Load)	RO	<i>Belegt 4 Bytes</i>	int	1W/Bit
5230H 5231H	Phase A reactive power(Load)	RO	<i>Belegt 4 Bytes</i>	int	1var/Bit
5232H 5233H	Phase B reactive power(Load)	RO	<i>Belegt 4 Bytes</i>	int	1var/Bit
5234H 5235H	Phase C reactive power(Load)	RO	<i>Belegt 4 Bytes</i>	int	1var/Bit
5236H 5237H	Phase A apparent power(Load)	RO	<i>Belegt 4 Bytes</i>	int	1VA/Bit
5238H 5239H	Phase B apparent power(Load)	RO	<i>Belegt 4 Bytes</i>	int	1VA/Bit
523AH 523BH	Phase C apparent power(Load)	RO	<i>Belegt 4 Bytes</i>	int	1VA/Bit
523CH	Phase A factor(Load)	RO	<i>Belegt 2 Bytes</i>	short	0.01/Bit
523DH	Phase B factor(Load)	RO	<i>Belegt 2 Bytes</i>	short	0.01/Bit
523EH	Phase C factor(Load)	RO	<i>Belegt 2 Bytes</i>	short	0.01/Bit
523FH 5240H	Total active power(Load)	RO	<i>Belegt 4 Bytes</i>	int	1W/Bit
5241H 5242H	Total reactive power(Load)	RO	<i>Belegt 4 Bytes</i>	int	1var/Bit
5243H 5244H	Total apparent power(Load)	RO	<i>Belegt 4 Bytes</i>	int	1VA/Bit
5245H	Total PF (Load)	RO	<i>Belegt 2 Bytes</i>	short	0.01/Bit
5246H	Communication timeout	RO	<i>Belegt 2 Bytes</i>	unsigned short	1s/Bit
5247H 5248H	Fault info1	RO	<i>Belegt 4 Bytes</i>	unsigned int	
5249H 524AH	Fault info2	RO	<i>Belegt 4 Bytes</i>	unsigned int	
524BH~ 52BFH	Reserved		<i>Belegt 234 Bytes</i>		
Industrie PCS(DCAC)					
52C0H	AC line voltage A to B	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1V/Bit
52C1H	AC line voltage B to C	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1V/Bit
52C2H	AC line voltage C to A	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1V/Bit

52C3H	Phase A current	RO	<i>Belegt 2 Bytes</i>	short	1A/Bit
52C4H	Phase B current	RO	<i>Belegt 2 Bytes</i>	short	1A/Bit
52C5H	Phase C current	RO	<i>Belegt 2 Bytes</i>	short	1A/Bit
52C6H	Frequency	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.01Hz/Bit
52C7H 52C8H	Phase A active power	RO	<i>Belegt 4 Bytes</i>	int	1W/Bit
52C9H 52CAH	Phase B active power	RO	<i>Belegt 4 Bytes</i>	int	1W/Bit
52CBH 52CCH	Phase C active power	RO	<i>Belegt 4 Bytes</i>	int	1W/Bit
52CDH 52CEH	Phase A reactive power	RO	<i>Belegt 4 Bytes</i>	int	1var/Bit
52CFH 52D0H	Phase B reactive power	RO	<i>Belegt 4 Bytes</i>	int	1var/Bit
52D1H 52D2H	Phase C reactive power	RO	<i>Belegt 4 Bytes</i>	int	1var/Bit
52D3H 52D4H	Phase A apparent power	RO	<i>Belegt 4 Bytes</i>	int	1VA/Bit
52D5H 52D6H	Phase B apparent power	RO	<i>Belegt 4 Bytes</i>	int	1VA/Bit
52D7H 52D8H	Phase C apparent power	RO	<i>Belegt 4 Bytes</i>	int	1VA/Bit
52D9H	Phase A factor	RO	<i>Belegt 2 Bytes</i>	short	0.01/Bit
52DAH	Phase B factor	RO	<i>Belegt 2 Bytes</i>	short	0.01/Bit
52DBH	Phase C factor	RO	<i>Belegt 2 Bytes</i>	short	0.01/Bit
52DCH 52DDH	Total active power	RO	<i>Belegt 4 Bytes</i>	int	1W/Bit
52DEH 52DFH	Total reactive power	RO	<i>Belegt 4 Bytes</i>	int	1var/Bit
52E0H 52E1H	Total apparent power	RO	<i>Belegt 4 Bytes</i>	int	1VA/Bit
52E2H	Total factor	RO	<i>Belegt 2 Bytes</i>	short	0.01/Bit
52E3H 52E4H	Accumulative charged energy through AC port	RO	<i>Belegt 4 Bytes</i>	unsigned int	1kWh/Bit
52E5H 52E6H	Accumulative discharged energy through AC port	RO	<i>Belegt 4 Bytes</i>	unsigned int	1kWh/Bit
52E7H	Module temperature	RO	<i>Belegt 2 Bytes</i>	short	0.1°C/Bit
52E8H	Ambient temperature	RO	<i>Belegt 2 Bytes</i>	short	0.1°C/Bit

52E9H	Grid interconnection mode	RO	<i>Belegt 2 Bytes</i>	unsigned short	0: Grid-tied 1: Off-grid
52EAH	Start stop state	RO	<i>Belegt 2 Bytes</i>	unsigned short	0: Mode off 1: Mode on
52EBH	Fault state	RO	<i>Belegt 2 Bytes</i>	unsigned short	0: Normal 1: Alert 2: Fault
52ECH	Control mode	RO	<i>Belegt 2 Bytes</i>	unsigned short	1: Local manual 2: Local auto 3: Remote
52EDH 52EEH	Fault info1	RO	<i>Belegt 4 Bytes</i>	unsigned int	
52EFH 52FOH	Fault info2	RO	<i>Belegt 4 Bytes</i>	unsigned int	
52F1H 52F2H	Fault info3	RO	<i>Belegt 4 Bytes</i>	unsigned int	
52F3H 52F4H	Fault info4	RO	<i>Belegt 4 Bytes</i>	unsigned int	
52F5H 52F6H	Status info1	RO	<i>Belegt 4 Bytes</i>	unsigned int	
52F7H 52F8H	Status info2	RO	<i>Belegt 4 Bytes</i>	unsigned int	
52F9H 52FAH	Status info3	RO	<i>Belegt 4 Bytes</i>	unsigned int	
52FBH 52FCH	Status info4	RO	<i>Belegt 4 Bytes</i>	unsigned int	
52FDH 52FEH	Status info5	RO	<i>Belegt 4 Bytes</i>	unsigned int	
52FFH 5300H	Status info6	RO	<i>Belegt 4 Bytes</i>	unsigned int	
5301H 5302H	Status info7	RO	<i>Belegt 4 Bytes</i>	unsigned int	
5303H 5304H	Status info8	RO	<i>Belegt 4 Bytes</i>	unsigned int	
5305H 5306H	Status info9	RO	<i>Belegt 4 Bytes</i>	unsigned int	
5307H 5308H	Status info10	RO	<i>Belegt 4 Bytes</i>	unsigned int	
5309H 530AH	Daily accumulative charged energy through AC port	RO	<i>Belegt 4 Bytes</i>	unsigned int	1kWh/Bit
530BH 530CH	Daily accumulative discharged energy through AC port	RO	<i>Belegt 4 Bytes</i>	unsigned int	1kWh/Bit
530DH~ 537FH	Reserved		<i>Belegt 230 Bytes</i>		
Industrie PCS(DCDC)					
5380H	Start stop state	RO	<i>Belegt 2 Bytes</i>	unsigned short	0: Mode off 1: Mode on

5381H	Fault state	RO	<i>Belegt 2 Bytes</i>	unsigned short	0: Normal 1: Alert 2: Fault
5382H 5383H	Battery power	RO	<i>Belegt 4 Bytes</i>	int	1W/Bit
5384H	Battery voltage	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1V/Bit
5385H	Battery current	RO	<i>Belegt 2 Bytes</i>	short	1A/Bit
5386H 5387H	Battery charged energy	RO	<i>Belegt 4 Bytes</i>	unsigned int	1kWh/Bit
5388H 5389H	Battery discharged energy	RO	<i>Belegt 4 Bytes</i>	unsigned int	1kWh/Bit
538AH 538BH	PV power	RO	<i>Belegt 4 Bytes</i>	int	1W/Bit
538CH	PV voltage	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1V/Bit
538DH	PV current	RO	<i>Belegt 2 Bytes</i>	short	1A/Bit
538EH 538FH	PV total energy	RO	<i>Belegt 4 Bytes</i>	unsigned int	1kWh/Bit
5390H 5391H	Fault info1	RO	<i>Belegt 4 Bytes</i>	unsigned int	
5392H 5393H	Fault info2	RO	<i>Belegt 4 Bytes</i>	unsigned int	
5394H 5395H	Fault info3	RO	<i>Belegt 4 Bytes</i>	unsigned int	
5396H 5397H	Fault info4	RO	<i>Belegt 4 Bytes</i>	unsigned int	
5398H 5399H	Status info1	RO	<i>Belegt 4 Bytes</i>	unsigned int	
539AH 539BH	Status info2	RO	<i>Belegt 4 Bytes</i>	unsigned int	
539CH 539DH	Status info3	RO	<i>Belegt 4 Bytes</i>	unsigned int	
539EH 539FH	Status info4	RO	<i>Belegt 4 Bytes</i>	unsigned int	
53A0H 53A1H	Status info5	RO	<i>Belegt 4 Bytes</i>	unsigned int	
53A2H 53A3H	Status info6	RO	<i>Belegt 4 Bytes</i>	unsigned int	
53A4H 53A5H	Status info7	RO	<i>Belegt 4 Bytes</i>	unsigned int	
53A6H 53A7H	Status info8	RO	<i>Belegt 4 Bytes</i>	unsigned int	
53A8H 53A9H	Status info9	RO	<i>Belegt 4 Bytes</i>	unsigned int	
53AAH 53ABH	Status info10	RO	<i>Belegt 4 Bytes</i>	unsigned int	

53ACH~ 53FFH	Reserved		<i>Belegt 168 Bytes</i>		
Industrie-Batterie (Informationen zum Parallel-Cluster)					
5400H 5401H	Topbmu SN byte1~4	RO	<i>Belegt 4 Bytes</i>	unsigned int	
5402H 5403H	Topbmu SN byte5~8	RO	<i>Belegt 4 Bytes</i>	unsigned int	
5404H 5405H	Topbmu SN byte9~12	RO	<i>Belegt 4 Bytes</i>	unsigned int	
5406H 5407H	Topbmu SN byte13~16	RO	<i>Belegt 4 Bytes</i>	unsigned int	
5408H	Topbmu soft version	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.01/bit
5409H	Topbmu protocol version	RO	<i>Belegt 2 Bytes</i>	unsigned short	
540AH	Topbmu hard version	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.01/bit
540BH	Topbmu max charge current	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1A /bit
540CH	Topbmu max discharge current	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1A /bit
540DH	Topbmu status flag	RO	<i>Belegt 2 Bytes</i>	unsigned short	Hinweis10
540EH	Topbmu max pole temperature	RO	<i>Belegt 2 Bytes</i>	short	0.1°C/bit -40
540FH	Topbmu voltage	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1 V/bit
5410H	Topbmu current	RO	<i>Belegt 2 Bytes</i>	short	0.1 A/bit
5411H	Topbmu insulated resistance	RO	<i>Belegt 2 Bytes</i>	unsigned short	1 kΩ/bit
5412H	Topbmu SOC	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.4 %/bit
5413H	Topbmu SOH	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.4 %/bit
5414H	Topbmu min cell voltage	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.001v/bit
5415H	Topbmu min cell voltage ID	RO	<i>Belegt 2 Bytes</i>	unsigned short	
5416H	Topbmu max cell voltage	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.001v/bit
5417H	Topbmu max cell voltage ID	RO	<i>Belegt 2 Bytes</i>	unsigned short	
5418H	Topbmu min cell temperature	RO	<i>Belegt 2 Bytes</i>	short	0.1°C/bit -40
5419H	Topbmu min cell temperature ID	RO	<i>Belegt 2 Bytes</i>	unsigned short	

541AH	Topbmu max cell temperature	RO	<i>Belegt 2 Bytes</i>	short	0.1°C/bit -40
541BH	Topbmu max cell temperature ID	RO	<i>Belegt 2 Bytes</i>	unsigned short	
541CH	Topbmu max pole temperature ID	RO	<i>Belegt 2 Bytes</i>	unsigned short	
541DH	Topbmu version	RO	<i>Belegt 2 Bytes</i>	unsigned short	22:TOPBMU-M48112-S/0: No TOPBMU 42: TOPBMU-M38344-S/57: TOPBMU-M48240-S
541EH	Topbmu BMU version	RO	<i>Belegt 2 Bytes</i>	unsigned short	15: BMU-HV900112/26: BMU-HV50056/38:BMU-HV900105/50:HV900120/41: BMU-HV90086/56:HV900120-HE
541FH	Topbmu ISO version	RO	<i>Belegt 2 Bytes</i>	unsigned short	14: LMU-M48112-S/25: LMU-M4856-S/37:LMU-M38210-S/49:M19360-S/40: LMU-M38344-S/55: LMU-M48240-S
5420H	Topbmu LMU version	RO	<i>Belegt 2 Bytes</i>	unsigned short	14: LMU-M48112-S/25: LMU-M4856-S/37:LMU-M38210-S/49:M19360-S/40: LMU-M38344-S/55: LMU-M48240-S
5421H	Topbmu reset log	RO	<i>Belegt 2 Bytes</i>	unsigned short	Hinweis11
5422H	Topbmu restarts number	RO	<i>Belegt 2 Bytes</i>	unsigned short	
5423H	Topbmu clusters number	RO	<i>Belegt 2 Bytes</i>	unsigned short	
5424H 5425H	Fault info1	RO	<i>Belegt 4 Bytes</i>	unsigned int	
5426H 5427H	Fault info2	RO	<i>Belegt 4 Bytes</i>	unsigned int	
5428H 5429H	Fault info3	RO	<i>Belegt 4 Bytes</i>	unsigned int	

542AH 542BH	Fault info4	RO	<i>Belegt 4 Bytes</i>	unsigned int	
542CH~ 547FH	Reserved		<i>Belegt 168 Bytes</i>		
Industrie-Batterie (paralleler Cluster-Fehler)					
5480H 5481H	Toperror charge over current cluster high	RO	<i>Belegt 4 Bytes</i>	unsigned int	
5482H 5483H	Toperror charge over current cluster low	RO	<i>Belegt 4 Bytes</i>	unsigned int	
5484H 5485H	Toperror discharge over current cluster high	RO	<i>Belegt 4 Bytes</i>	unsigned int	
5486H 5487H	Toperror discharge over current cluster low	RO	<i>Belegt 4 Bytes</i>	unsigned int	
5488H 5489H	Toperror pole over current cluster high	RO	<i>Belegt 4 Bytes</i>	unsigned int	
548AH 548BH	Toperror pole over current cluster low	RO	<i>Belegt 4 Bytes</i>	unsigned int	
548CH 548DH	Toperror cell over temperature cluster high	RO	<i>Belegt 4 Bytes</i>	unsigned int	
548EH 548FH	Toperror cell over temperature cluster low	RO	<i>Belegt 4 Bytes</i>	unsigned int	
5490H 5491H	Toperror charge low temperature cluster high	RO	<i>Belegt 4 Bytes</i>	unsigned int	
5492H 5493H	Toperror charge low temperature cluster low	RO	<i>Belegt 4 Bytes</i>	unsigned int	
5494H 5495H	Toperror discharge low temperature cluster high	RO	<i>Belegt 4 Bytes</i>	unsigned int	
5496H 5497H	Toperror discharge low temperature cluster low	RO	<i>Belegt 4 Bytes</i>	unsigned int	
5498H 5499H	Toperror cell over voltage cluster high	RO	<i>Belegt 4 Bytes</i>	unsigned int	
549AH 549BH	Toperror cell over voltage cluster low	RO	<i>Belegt 4 Bytes</i>	unsigned int	
549CH 549DH	Toperror cell under voltage cluster high	RO	<i>Belegt 4 Bytes</i>	unsigned int	
549EH 549FH	Toperror cell under voltage cluster low	RO	<i>Belegt 4 Bytes</i>	unsigned int	
54A0H 54A1H	Toperror cell temperature difference cluster high	RO	<i>Belegt 4 Bytes</i>	unsigned int	
54A2H 54A3H	Toperror cell temperature difference cluster low	RO	<i>Belegt 4 Bytes</i>	unsigned int	
54A4H 54A5H	Toperror cell voltage difference cluster high	RO	<i>Belegt 4 Bytes</i>	unsigned int	
54A6H 54A7H	Toperror cell voltage difference cluster low	RO	<i>Belegt 4 Bytes</i>	unsigned int	
54A8H 54A9H	Toperror insulation cluster high	RO	<i>Belegt 4 Bytes</i>	unsigned int	

54AAH 54ABH	Toperror insulation cluster low	RO	<i>Belegt 4 Bytes</i>	unsigned int	
54ACH 54ADH	Toperror LMU communication failure cluster high	RO	<i>Belegt 4 Bytes</i>	unsigned int	
54AEH 54AFH	Toperror LMU communication failure cluster low	RO	<i>Belegt 4 Bytes</i>	unsigned int	
54B0H 54B1H	Toperror temperature sensor failure cluster high	RO	<i>Belegt 4 Bytes</i>	unsigned int	
54B2H 54B3H	Toperror temperature sensor failure cluster low	RO	<i>Belegt 4 Bytes</i>	unsigned int	
54B4H 54B5H	Toperror Wireharness failure cluster high	RO	<i>Belegt 4 Bytes</i>	unsigned int	
54B6H 54B7H	Toperror Wireharness failure cluster low	RO	<i>Belegt 4 Bytes</i>	unsigned int	
54B8H 54B9H	Toperror high voltage box communication failure cluster high	RO	<i>Belegt 4 Bytes</i>	unsigned int	
54BAH 54BBH	Toperror high voltage box communication failure cluster low	RO	<i>Belegt 4 Bytes</i>	unsigned int	
54BCH 54BDH	Toperror total pressure detect cluster high	RO	<i>Belegt 4 Bytes</i>	unsigned int	
54BEH 54BFH	Toperror total pressure detect cluster low	RO	<i>Belegt 4 Bytes</i>	unsigned int	
54C0H 54C1H	Toperror relay failure cluster high	RO	<i>Belegt 4 Bytes</i>	unsigned int	
54C2H 54C3H	Toperror relay failure cluster low	RO	<i>Belegt 4 Bytes</i>	unsigned int	
54C4H 54C5H	Toperror cluster excision cluster high	RO	<i>Belegt 4 Bytes</i>	unsigned int	
54C6H 54C7H	Toperror cluster excision cluster low	RO	<i>Belegt 4 Bytes</i>	unsigned int	
54C8H 54C9H	Toperror ISO communication failure cluster high	RO	<i>Belegt 4 Bytes</i>	unsigned int	
54CAH 54CBH	Toperror ISO communication failure cluster low	RO	<i>Belegt 4 Bytes</i>	unsigned int	
54CCH 54CDH	Toperror LMU SN repeat cluster high	RO	<i>Belegt 4 Bytes</i>	unsigned int	
54CEH 54CFH	Toperror LMU SN repeat cluster low	RO	<i>Belegt 4 Bytes</i>	unsigned int	
54D0H 54D1H	Toperror LMU ID repeat cluster high	RO	<i>Belegt 4 Bytes</i>	unsigned int	
54D2H 54D3H	Toperror LMU ID repeat cluster low	RO	<i>Belegt 4 Bytes</i>	unsigned int	
54D4H 54D5H	Toperror LMU ID discontinuity cluster high	RO	<i>Belegt 4 Bytes</i>	unsigned int	
54D6H 54D7H	Toperror LMU ID discontinuity cluster low	RO	<i>Belegt 4 Bytes</i>	unsigned int	

54D8H 54D9H	Toperror current sensor failure cluster high	RO	Belegt 4 Bytes	unsigned int	
54DAH 54DBH	Toperror current sensor failure cluster low	RO	Belegt 4 Bytes	unsigned int	
54DCH 54DDH	Toperror no LMU failure cluster high	RO	Belegt 4 Bytes	unsigned int	
54DEH 54DFH	Toperror no LMU failure cluster low	RO	Belegt 4 Bytes	unsigned int	
54E0H 54E1H	Toperror no bottom failure cluster high	RO	Belegt 4 Bytes	unsigned int	
54E2H 54E3H	Toperror no bottom failure cluster low	RO	Belegt 4 Bytes	unsigned int	
54E4H 54E5H	Toperror force close relay failure cluster high	RO	Belegt 4 Bytes	unsigned int	
54E6H 54E7H	Toperror force close relay failure cluster low	RO	Belegt 4 Bytes	unsigned int	
54E8H 54E9H	Toperror force close relay mode cluster high	RO	Belegt 4 Bytes	unsigned int	
54EAH 54EBH	Toperror force close relay mode cluster low	RO	Belegt 4 Bytes	unsigned int	
54ECH 54EDH	Toperror factory test mode cluster high	RO	Belegt 4 Bytes	unsigned int	
54EEH 54EFH	Toperror factory test mode cluster low	RO	Belegt 4 Bytes	unsigned int	
54F0H 54F1H	Toperror bmu warn and state cluster	RO	Belegt 4 Bytes	unsigned short	Hinweis12
54F2H~ 557FH	Reserved		Belegt 284 Bytes		
Industrie-Batterie (Informationen zu einzelnen Clustern)					
5580H 5581H	Bmu01 SN byte1~4	RO	Belegt 4 Bytes	unsigned int	
5582H 5583H	Bmu01 SN byte5~8	RO	Belegt 4 Bytes	unsigned int	
5584H 5585H	Bmu01 SN byte9~12	RO	Belegt 4 Bytes	unsigned int	
5586H 5587H	Bmu01 SN byte13~16	RO	Belegt 4 Bytes	unsigned int	
5588H	Bmu01 soft version	RO	Belegt 2 Bytes	unsigned short	0.01/bit
5589H	Bmu01 hard version	RO	Belegt 2 Bytes	unsigned short	0.01/bit
558AH	Bmu01 state	RO	Belegt 2 Bytes	unsigned short	Hinweis13
558BH	Bmu01 cluster voltage	RO	Belegt 2 Bytes	unsigned short	0.1 V/bit
558CH	Bmu01 cluster current	RO	Belegt 2 Bytes	short	0.1 A/bit
558DH	Bmu01 insulated resistance	RO	Belegt 2 Bytes	unsigned short	1 kΩ/bit

558EH	Bmu01 SOC	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.4 %/bit
558FH	Bmu01 SOH	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.4 %/bit
5590H 5591H	Bmu01 LMU communication failure high	RO	<i>Belegt 4 Bytes</i>	unsigned int	
5592H 5593H	Bmu01 LMU communication failure low	RO	<i>Belegt 4 Bytes</i>	unsigned int	
5594H 5595H	Bmu01 temperature sensor failure high	RO	<i>Belegt 4 Bytes</i>	unsigned int	
5596H 5597H	Bmu01 temperature sensor failure low	RO	<i>Belegt 4 Bytes</i>	unsigned int	
5598H 5599H	Bmu01 wireharness failure high	RO	<i>Belegt 4 Bytes</i>	unsigned int	
559AH 559BH	Bmu01 wireharness failure low	RO	<i>Belegt 4 Bytes</i>	unsigned int	
559CH 559DH	Bmu01 equalization failure high	RO	<i>Belegt 4 Bytes</i>	unsigned int	
559EH 559FH	Bmu01 equalization failure low	RO	<i>Belegt 4 Bytes</i>	unsigned int	
55A0H 55A1H	Bmu01 equalization mos failure high	RO	<i>Belegt 4 Bytes</i>	unsigned int	
55A2H 55A3H	Bmu01 equalization mos failure low	RO	<i>Belegt 4 Bytes</i>	unsigned int	
55A4H	Bmu01 ISO soft version	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.01
55A5H	Bmu01 ISO hard version	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.01
55A6H 55A7H	Bmu01 Passive equalization high	RO	<i>Belegt 4 Bytes</i>	unsigned int	
55A8H 55A9H	Bmu01 Passive equalization low	RO	<i>Belegt 4 Bytes</i>	unsigned int	
55AAH 55ABH	Bmu01 BOOST equalization high	RO	<i>Belegt 4 Bytes</i>	unsigned int	
55ACH 55ADH	Bmu01 BOOST equalization low	RO	<i>Belegt 4 Bytes</i>	unsigned int	
55AEH 55AFH	Bmu01 BUCK equalization high	RO	<i>Belegt 4 Bytes</i>	unsigned int	
55B0H 55B1H	Bmu01 BUCK equalization low	RO	<i>Belegt 4 Bytes</i>	unsigned int	
55B2H	Bmu01 LMU number	RO	<i>Belegt 2 Bytes</i>	unsigned short	
55B3H	Bmu01 single cut fault code	RO	<i>Belegt 2 Bytes</i>	unsigned short	Hinweis14

55B4H	Bmu01 reset log	RO	<i>Belegt 2 Bytes</i>	unsigned short	Hinweis15
55B5H	Bmu01 restarts number	RO	<i>Belegt 2 Bytes</i>	unsigned short	
55B6H	Bmu01 version	RO	<i>Belegt 2 Bytes</i>	unsigned short	15: BMU-HV900112/26: BMU-HV50056/38:BMU-HV900105/50:HV900120/41: BMU-HV90086
55B7H	Bmu01 min cell voltage	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.001V
55B8H	Bmu01 min cell voltage ID	RO	<i>Belegt 2 Bytes</i>	unsigned short	
55B9H	Bmu01 max cell voltage	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.001V
55BAH	Bmu01 max cell voltage ID	RO	<i>Belegt 2 Bytes</i>	unsigned short	
55BBH	Bmu01 min cell temperature	RO	<i>Belegt 2 Bytes</i>	short	
55BCH	Bmu01 min cell temperature ID	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1°C/bit -40
55BDH	Bmu01 max cell temperature	RO	<i>Belegt 2 Bytes</i>	short	
55BEH	Bmu01 max cell temperature ID	RO	<i>Belegt 2 Bytes</i>	unsigned short	0.1°C/bit -40
55BFH~55FFH	Reserved(Bmu01)		<i>Belegt 130 Bytes</i>		
5600H~567FH	Bmu02...(Same as above)		<i>Belegt 256 Bytes</i>		
5680H~56FFH	Bmu03...(Same as above)		<i>Belegt 256 Bytes</i>		
5700H~577FH	Bmu04...(Same as above)		<i>Belegt 256 Bytes</i>		
5780H~57FFH	Bmu05...(Same as above)		<i>Belegt 256 Bytes</i>		
5800H~587FH	Bmu06...(Same as above)		<i>Belegt 256 Bytes</i>		
5880H~58FFH	Bmu07...(Same as above)		<i>Belegt 256 Bytes</i>		
5900H~597FH	Bmu08...(Same as above)		<i>Belegt 256 Bytes</i>		
5980H~59FFH	Bmu09...(Same as above)		<i>Belegt 256 Bytes</i>		
5A00H~5A7FH	Bmu10...(Same as above)		<i>Belegt 256 Bytes</i>		

5A80H~ 5AFFH	Bmu11...(Same as above)		<i>Belegt 256 Bytes</i>		
5B00H~ 5B7FH	Bmu12...(Same as above)		<i>Belegt 256 Bytes</i>		
5B80H~ 5BFFH	Bmu13...(Same as above)		<i>Belegt 256 Bytes</i>		
5C00H~ 5C7FH	Bmu14...(Same as above)		<i>Belegt 256 Bytes</i>		
5C80H~ 5CFFH	Bmu15...(Same as above)		<i>Belegt 256 Bytes</i>		
5D00H~ 5D7FH	Bmu16...(Same as above)		<i>Belegt 256 Bytes</i>		
5D80H~ 5DFFH	Bmu17...(Same as above)		<i>Belegt 256 Bytes</i>		
5E00H~ 5E7FH	Bmu18...(Same as above)		<i>Belegt 256 Bytes</i>		
5E80H~ 5EFFH	Bmu19...(Same as above)		<i>Belegt 256 Bytes</i>		
5F00H~ 5F7FH	Bmu20...(Same as above)		<i>Belegt 256 Bytes</i>		
5F80H~ 5FFFH	Bmu21...(Same as above)		<i>Belegt 256 Bytes</i>		
6000H~ 607FH	Bmu22...(Same as above)		<i>Belegt 256 Bytes</i>		
6080H~ 60FFH	Bmu23...(Same as above)		<i>Belegt 256 Bytes</i>		
6100H~ 617FH	Bmu24...(Same as above)		<i>Belegt 256 Bytes</i>		
6180H~ 61FFH	Bmu25...(Same as above)		<i>Belegt 256 Bytes</i>		
6200H~ 627FH	Bmu26...(Same as above)		<i>Belegt 256 Bytes</i>		
6280H~ 62FFH	Bmu27...(Same as above)		<i>Belegt 256 Bytes</i>		
6300H~ 637FH	Bmu28...(Same as above)		<i>Belegt 256 Bytes</i>		
6380H~ 63FFH	Bmu29...(Same as above)		<i>Belegt 256 Bytes</i>		
6400H~ 647FH	Bmu30...(Same as above)		<i>Belegt 256 Bytes</i>		
6480H~ 64FFH	Bmu31...(Same as above)		<i>Belegt 256 Bytes</i>		
6500H~ 657FH	Bmu32...(Same as above)		<i>Belegt 256 Bytes</i>		
6580H~ 65FFH	Bmu33...(Same as above)		<i>Belegt 256 Bytes</i>		

6600H~ 667FH	Bmu34...(Same as above)		<i>Belegt 256 Bytes</i>		
6680H~ 66FFH	Bmu35...(Same as above)		<i>Belegt 256 Bytes</i>		
6700H~ 677FH	Bmu36...(Same as above)		<i>Belegt 256 Bytes</i>		
6780H~ 67FFH	Bmu37...(Same as above)		<i>Belegt 256 Bytes</i>		
6800H~ 687FH	Bmu38...(Same as above)		<i>Belegt 256 Bytes</i>		
6880H~ 68FFH	Bmu39...(Same as above)		<i>Belegt 256 Bytes</i>		
6900H~ 697FH	Bmu40...(Same as above)		<i>Belegt 256 Bytes</i>		
6980H~ 69FFH	Bmu41...(Same as above)		<i>Belegt 256 Bytes</i>		
6A00H~ 6A7FH	Bmu42...(Same as above)		<i>Belegt 256 Bytes</i>		
6A80H~ 6AFFH	Bmu43...(Same as above)		<i>Belegt 256 Bytes</i>		
6B00H~ 6B7FH	Bmu44...(Same as above)		<i>Belegt 256 Bytes</i>		
6B80H~ 6BFFH	Bmu45...(Same as above)		<i>Belegt 256 Bytes</i>		
6C00H~ 6C7FH	Bmu46...(Same as above)		<i>Belegt 256 Bytes</i>		
6C80H~ 6CFFH	Bmu47...(Same as above)		<i>Belegt 256 Bytes</i>		
6D00H~ 6D7FH	Bmu48...(Same as above)		<i>Belegt 256 Bytes</i>		
6D80H~ 6DFFH	Bmu49...(Same as above)		<i>Belegt 256 Bytes</i>		
6E00H~ 6E7FH	Bmu50...(Same as above)		<i>Belegt 256 Bytes</i>		
6E80H~ 6EFFH	Bmu51...(Same as above)		<i>Belegt 256 Bytes</i>		
6F00H~ 6F7FH	Bmu52...(Same as above)		<i>Belegt 256 Bytes</i>		
6F80H~ 6FFFH	Bmu53...(Same as above)		<i>Belegt 256 Bytes</i>		
7000H~ 707FH	Bmu54...(Same as above)		<i>Belegt 256 Bytes</i>		
7080H~ 70FFH	Bmu55...(Same as above)		<i>Belegt 256 Bytes</i>		
7100H~ 717FH	Bmu56...(Same as above)		<i>Belegt 256 Bytes</i>		

7180H~ 71FFH	Bmu57...(Same as above)		<i>Belegt 256 Bytes</i>		
7200H~ 727FH	Bmu58...(Same as above)		<i>Belegt 256 Bytes</i>		
7280H~ 72FFH	Bmu59...(Same as above)		<i>Belegt 256 Bytes</i>		
7300H~ 737FH	Bmu60...(Same as above)		<i>Belegt 256 Bytes</i>		
7380H~ 73FFH	Bmu61...(Same as above)		<i>Belegt 256 Bytes</i>		
7400H~ 747FH	Bmu62...(Same as above)		<i>Belegt 256 Bytes</i>		
7480H~ 74FFH	Bmu63...(Same as above)		<i>Belegt 256 Bytes</i>		
7500H~ 757FH	Bmu64...(Same as above)		<i>Belegt 256 Bytes</i>		

6 Anhang

6.1 Hinweis1: Batteriestatus

	Beschreibung	
Wert	Laden	Entladen
0	0	0
1	0	1
256	1	0
257	1	1
512	2	0
513	2	1

6.2 Hinweis2: Batterie-Relaisstatus

Wert	Beschreibung
0	Lade- Entladerelais sind nicht angeschlossen
1	Nur das Entladerelais ist geschlossen
2	Nur das Laderelais ist geschlossen
3	Lade- und Entladerelais sind geschlossen

6.3 Hinweis3: Batterietyp

Batterie_ID	Batterie-Produktmodell
2	M4860
3	M48100
13	48112-P
16	Smile5-BAT
24	M4856-P
27	Smile-BAT-10.3P
30	Smile-BAT-10.1P
33	Smile-BAT-5.8P
34	Smile-BAT5-JP
35	Smile-BAT-13.7P

6.4 Hinweis4: Batteriefehler

Fehlercode	Beschreibung
Bit 0	
Bit 1	
Bit 2	Zellentemperaturdifferenz
Bit 3	Balancer-Fehler
Bit 4	Ladung Überstrom
Bit 5	Balancer Mos-Fehler

Bit 6	Entladung Überstrom
Bit 7	Polübertemperatur
Bit 8	Zelle Überspannung
Bit 9	Zellspannungsdifferenz
Bit 10	Entladung Niedertemperatur
Bit 11	
Bit 12	Zelle Niederspannung
Bit 13	ISO-Kommunikationsfehler
Bit 14	LMU-Seriennummer Wiederholung
Bit 15	
Bit 16	IR-Fehler
Bit 17	LMU-Kommunikationsfehler
Bit 18	Zell-Übertemperatur
Bit 19	BMU-Kommunikationsfehler
Bit 20	
Bit 21	Ladung – zu niedrige Temperatur
Bit 22	
Bit 23	Spannungserkennungsfehler
Bit 24	Kabelbaumfehler
Bit 25	
Bit 26	Relaisfehler
Bit 27	LMU-ID Wiederholung
Bit 28	LMU-ID diskontinuierlich
Bit 29	Stromsensor-Fehler
Bit 30	
Bit 31	Temperatursensor-Fehler

6.5 Hinweis5: Betriebsart Wechselrichter

Wert	Beschreibung
0	Warte-Modus
1	Online-Modus
2	UPS-Modus
3	Bypass-Modus
4	Fehler-Modus
5	DC-Modus
6	Selbsttest-Modus
7	Check-Modus
8	Update Master-Modus
9	Update Slave-Modus
10	Update ARM-Modus

6.6 Hinweis6: Systemfehler

Alarm code	Beschreibung		
	EMS SN byte1-2	AL	AE
Bit 0		Network Card_Fault	Wechselrichter getrennt
Bit 1		Rtc_Fault	Netzzähler getrennt
Bit 2		E2prom_Fault	Batterie getrennt
Bit 3		INV_Comms_Error	System nicht eingestellt
Bit 4		Grid_Meter_Lost	PV-Zähler getrennt
Bit 5		PV_Meter_Lost	Zähler nicht eingestellt
Bit 6		BMS_Lost	Falsche Anschluss-Richtung des PV-Zählers
Bit 7		UPS_Battery_Volt_Low	SD nicht eingefügt oder SD-Schreibfehler
Bit 8		Backup_Overload	RTC-Fehler
Bit 9		INV_Slave_Lost	SDRAM-Fehler
Bit 10		INV_Master_Lost	MMC-Fehler (CH376)
Bit 11		Parallel_Comm_Error	Netzwerkkartenfehler
Bit 12		Parallel_Mode_Differ	Erweiterungs-CAN-Fehler (MCP2515)
Bit 13		Flash_Fault	DRED-Fehler
Bit 14		SDRAM error	Android LCD getrennt
Bit 15		Extension CAN error	STS_Lost
Bit 16		inv type not specified	STS_Fault
Bit 17			PV_INV_Lost:n
Bit 18			DG_PV_Conflict
Bit 19			PV_INV_Fault:n
Bit 20			AirConFault
Bit 21			Fire_Fault
Bit 22			FireControllerErr
Bit 23			GC_Fault
Bit 24			AirConLost
Bit 25			OverCurr
Bit 26			PcsModeFault
Bit 27			BatEnergyLow
Bit 28			
Bit 29			
Bit 30			
Bit 31			

6.7 Hinweis7: Dispatch-Modus

Moduswert	Beschreibung
1	Der Akku wird nur über PV aufgeladen
2	Ladezustandskontrolle;
3	Load Following;

4	Maximize Output;
5	Normaler Modus;
6	Verbrauch optimieren;
7	Verbrauch maximieren;
8	ECO-Modus;
9	FCAS-Modus;
10	PV-Leistungseinstellung;

6.8 Hinweis8: Netzregulierung

Sicherheitscode	Netzregulierung	
	AL	AE
0	VDE0126-50Hz	
1	VDE4105/11.18	
2	AS4777.2	
3	G83_2	
4	C10/C11	
5	TOR Erzeuger	
6	EN50549-NL	
7	EN50549-DK	
8	CEB	
9	CEI-021	
10	NRS097-2-1	
11	EN50549-GR	
12	UTE_C15_712	
13	IEC61727	
14	G59_3	
15	RD1699	
16	G99	
17		
18	VDE0126-60Hz	
19	AS4777.2-SA	
20	G98	
21	EN50549-CZ	
22	PEA	
23	MEA	
24	BISI	
25	JET-GR Series	
26		
27		
28	50Hz Default	
29	60Hz Default	

30	WAREHOUSE	
31	AS4777.2-NZ	
32	Korea	
33	G98/G99-IE	
34	NC Rfg	
35	UL 1741	
36	UL1741-Rule 21	
37	UL1741-Hawaiian	

6.9 Hinweis9: Sicherheitsmodus aktivieren

Bit NO	Name	Beschreibung
Bit0	Volt-WATT Mode	Volt-watt response mode
Bit1	Volt-VAR Mode	Volt-var response mode
Bit2	Volt-Freq Mode	Volt-Freq response mode
Bit3	Power Factor Curve Mode	Fixed power factor mode
Bit4	Volt-WATT when Charging Mode	Charakteristische Leistungsfaktorkurve für $\cos \varphi (P)$
Bit5	Reactive power mode	Blindleistungsregelungsmodus
Bit6		
Bit7		
Bit8		
Bit9		
Bit10		
Bit11		
Bit12		
Bit13		
Bit14		
Bit15		

6.10 Hinweis10: Topbmu-Statusflag

Bit NO	Name	Description		
Bit0	Charge flag	00: nicht erlauben	01: erlauben	10: Zwangsladung
Bit1				
Bit2	Discharge flag	0: nicht erlauben		1: erlauben
Bit3	SOC calibration mode	0: exit		1: entry
Bit4~7	reserve			

6.11 Hinweis11: Topbmu-Reset-Protokoll

Bit NO	Name	Description
Bit0	Error code	Power on reset
Bit1		Under voltage reset
Bit2		Main reset pin reset
Bit3		Soft reset
Bit4		Configuration mismatch reset
Bit5		Watchdog timer reset
Bit6~7	type	1:reset
Bit8~15	reset log	1~20

6.12 Hinweis12: Toperror bmu Warn- und Status-Cluster

Bit NO	Name	Description	
Bit0	Bmu SN repeat	0:normal	1:fault
Bit1	Bmu ID repeat	0:normal	1:fault
Bit2	Bmu ID discontinuity	0:normal	1:fault
Bit3	Lmu number inconsistent	0:normal	1:fault
Bit4	EMS communication lose	0:normal	1:fault
Bit5	total pressure anomaly detection	0:normal	1:fault
Bit6	Parallel failure detection	0:normal	1:fault
Bit7	No bmu warning	0:normal	1:fault
Bit8	Ems communication lose enable flag	0:disable	1:enable
Bit9	LMU Version inconsistency	0: consistent	1: inconsistent
Bit10	ISO Version inconsistency	0: consistent	1: inconsistent
Bit11	BMU Version inconsistency	0: consistent	1: inconsistent
Bit12~15	reserve		

6.13 Hinweis13: Bmu-X Status

Bit NO	Name	Description	
Bit0	Main relay status	0:off	1:on
Bit1	Precharge relay status	0:off	1:on
Bit2	Status of breaker	0:off	1:on
Bit3	Negative relay status	0:off	1:on
Bit4~7	reserve		

6.14 Hinweis14: Bmu-X Single Cut Fehlercode

Bit NO	Name	Description		
Bit0~1	Resection state	00:normal	10:single cut	11:three cut
Bit3~8	single cut fault code	0:normal	12:topbmu communicate fail	
		1: Pole over temperature	13:temp sensor fail	
		2: cell over temperature	14:relay fail	
		3: charge low temperature	15:pcs communicate fail	
		4: discharge low temperature	16: Under voltage shutdown failure	
		5: Temperature difference	17: total pressure anomaly detection	
		6: cell over voltage	18: ISO communicate lose	
		7: cell low voltage	19:LMU SN repeat	
		8: charge over current	20:LMU ID repeat	
		9: discharge over current	21:LMU ID discontinuity	
		10: Insulation fail	22:current sensor fail	
		11: LMU communicate fail	23:EMS communicate lose	

6.15 Hinweis15: Bmu-X reset log

Bit NO	Name	Description
Bit0	Error code	Power on reset
Bit1		Under voltage reset
Bit2		Main reset pin reset
Bit3		Soft reset
Bit4		Configuration mismatch reset
Bit5		Watchdog timer reset
Bit6~7	type	1:reset

Vielen Dank für das Lesen des Alpha ESS Handbuchs Modbus RTU/TCP – Hi5, Hi10. Falls Sie Probleme haben, senden Sie uns einfach eine E-Mail an service@alpha-ess.de.