

# **Description**

## **M-Bus communication protocol Residia-M.**

### **1 Survey**

**The M-Bus communication layer meets following specifications:  
Hard and software according to DIN EN 1434-3 for inductive interfaces  
Transmission speed 300 / 2400 Baud (via Auto speed Detection)  
Transmission of all relevant data for Residia-M - configuration und readout.**

**Customer ID.**

**Meter ID.**

**Volume.**

**M-Bus-Primary addresses settable.**

**M-Bus-Secondary addresses settable.**

**Supporting secondary addressing mode.**

	M-Bus								Mini-Bus		
<b>U<sub>Bus</sub> [V]</b>	50,0	45,0	40,0	35,0	30,0	25,0	20,0	15,0	10,0	5,0	3,0
<b>I<sub>Bus</sub> [mA]</b>	10,5	1,374	1,249	1,128	1,005	0,881	0,788	0,617	0,489	0,382	0,333

ResidiaM - IEC 870	
68	Start
LL	Length
LL	Length
68	Start
08	C field
00	adress
72	CI Lang Frame
44	Identification
33	Identification
22	Identification
11	Identification
4C	Manu=SEN
AE	Manu=SEN
50	Generation
07	Medium Water
9D	Acces
00	Status
00	Signature
00	Signature
0E	DIF 12Digit BCD
13	Data following is 1 Litre
22	Data
22	Data
22	Data
22	Data
22	Data
22	Data
0C	DIF 12Digit BCD
78	Data following is fabrication Nr
22	Data
22	Data
22	Data
22	Data
22	Data
22	Data

<b>Initialisieren SND - NKE</b> <b>Initialise communication SND_NKE</b>				
<b>Hex</b>	<b>Bytes</b>	<b>field</b>	<b>Meaning</b>	<b>Ref</b>
10h	1	Start	Start character Short frame	A-Documentation
40h	1	C	initialise communication	„
00h	1	A	Adresse	„
40h	1	CS	Checksum	„
16h	1	Stop	End character	„

Slave's answer = E5

<b>Initialisieren SND – UD.</b> <b>Application reset</b>				
<b>Hex</b>	<b>Bytes</b>	<b>field</b>	<b>Meaning</b>	<b>Ref</b>
68h	1	Start	Start character long frame	A-Documentation
03h	1	L	Längenangabe	
03h	1	L	Längenangabe	
68h	1	Start	Startzeichen	
53h	1	C	Send User Data	
FEh	1	A	Adresse	
50h	1	CI	Application reset	
A1h	1	CS	Checksum	
16 h	1	Stop	End character	

Slave's answer = E5

<b>Daten Anforderung Req_UD2</b>				
<b>Antwort auf: DatenTelegramm/Respond User Data( SieheTabelle Resp UD. )</b>				
<b>Hex</b>	<b>Bytes</b>	<b>field</b>	<b>Meaning</b>	<b>Ref</b>
10h	1	Start	Start character Short frame	
5Bh	1	C	Req_UD2 5B/7B alternating	
00h	1	A	Adresse	
5Bh	1	CS	Checksum	
16h	1	Stop	End character	

**Slave´s answer = Respond User Data( iehe Tabelle Resp UD. )**

<b>Antwort ( Resp UD )</b>				
<b>Hex</b>	<b>Bytes</b>	<b>field</b>	<b>Meaning</b>	<b>Ref.</b> A-Documentation
68h	1	Start	Start character long frame	5.2 page 23
LLh	1	L	Längenangabe length	”
LLh	1	L	Längenangabe length	”
68h	1	Start	Startzeichen start	”
08h	1	C	C field for Resp_UD	5.3 page 24
00h	1	A	Bus Address	5.3 page 25
72h	1	CI	Field for variable data structure	5.3 page 26
78h	4	8 Digit BCD Can be set By Manufacturer Or utility	Meter identification NR	6.3 page 34
56h				
34h				
12h				
4C h	2	Man code SEN	Manufacturer code	6.3 page 35
AE h				
50h	1	Generation	Type /SW version	6.3 page 35
07h	1	medium 07= water	medium to be measured	8.4.1 page 67

00h	1	access	access counter	6.3 page 35
00h	1	status	error status information	6.6 page 50
00h	2	Signature And data encryption	reserve for future	
00h				
0Ch	1	DIF	Data following in 8 digit BCD	6.3 page 37
78h	1	VIF	Data following is Meter number	8.4.3 page 69
78h	4	e.g.  Nr=12345678	Meter Identification number	
56h				
34h				
12h				
0Eh	1	DIF	Data following in 12 digit BCD	8.4.3 page 69
<u>13/</u>	1	VIF	000 000 000,001 m <sup>3</sup> (Wertigkeit )	8.4.3 page 69
13	2		e.g.  m <sup>3</sup>  123456789,120	
20	6			
91				
78				
56				
34				
12				
XXh	1	CS	Checksum	
16h	1	Stop	End character	

<b>Sekundäradresse setzen</b>				
<b>Hex</b>	<b>Bytes</b>	<b>field</b>	<b>Meaning</b>	<b>Ref</b>
68h	1	Start	Start character long frame	A-Dokumentation
09h	1	L	Längenangabe	
09h	1	L	Längenangabe	
68h	1	Start	Startzeichen	
53/73h	1	C	Send User Data	
FEh	1	A	Adresse	
51h	1	CI	Daten senden	
0Ch	1	DIF	8 Bit BCD	
79 h	1	VIF	Bus Adresse	
00H	1	Daten	8Bit BCD 00 00 00 00	
00H	1	Daten	„	
00H	1	Daten	„	
00H	1	Daten	„	
4Eh	1	CS	Checksum	
16h	1	Stop	End character	