

Universal Measuring Device

UMG96S

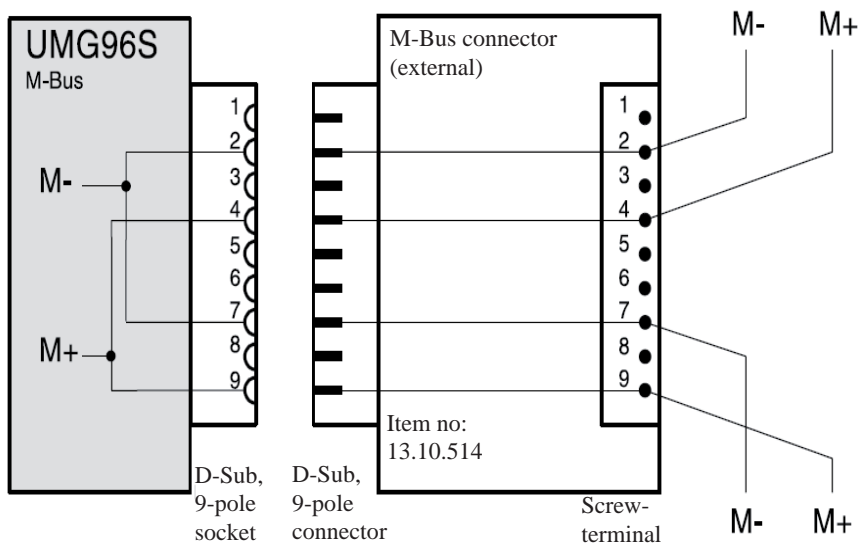
Description of functions

M-BUS



Allgemein

The UMG96S offers various communication possibilities using the Modbus RTU, Profibus DP V0 and the M-BUS journals. This description of functions is a supplement to the handbook and describes the necessary setup stages for the M-BUS journal step-by-step.



Illus. 1 Connection with the M-Bus connector included in the standard delivery

Applicable norms

EN60870-5 replacement for 1434-3 (heat meter)

Physical interface: EN13757-2

Journal: DIN EN 62056-21: January 2003

Release information:

26.11.2008 Initial release / Wagner

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M-BUS implementation

Functions

- Addressing using the primary addresses (0..250)
- Baud rates: 200, 2400, 9600 baud
- Selectable number of data points (0..27)
- Supported journal types: SND_NKE/\$E5, REQ_UD2/RSP_UD2

Connecting the bus cable:

Connection takes place using the 9-pole sub socket on the UNG96S. Please use the connectors provided. Connect the incoming cable "M+" to clamp 4 in the connector and "M-" to clamp 2. Any further bus cable should be connected with "M+" to clamp 9 and "M-" to clamp 7. The 4/2 and 9/7 clamps are internally bridged in the UMG96S.

Parameter settings:

The parameters for the address, baud rate and the number of data points are set directly on the UMG96S:

Parameter no:	Meaning:	Range:
080	M-BUS address	0..250
081	M-BUS baud rate	0..2 (0 = 300 Baud; 1 = 2400 Baud; 2 = 9600 Baud)
082	Number of data points	0..27 (for RSP_UD2)

The meaning of the number of data points

With the "number of data points", the number of data points which are to be transferred in the RSP_UD2 telegram are programmed. Setting 0 means that all available data points are transmitted. Example: parameter 82=003; only the values of active energy are transmitted (see below table).

Data point	Name	Unit	Resolution	Tariff	Device	Format
1	Active energy	Wh	10	0	0	6 byte binary
2	Active energy (reference or highest tariff)	Wh	10	1	0	6 byte binary
3	Active energy (supply or lowest tariff)	Wh	10	2	0	6 byte binary
4	Reactive energy	varh	10	0	1	6 byte binary
5	Reactive energy (capacitive or highest tariff)	varh	10	1	1	6 byte binary
6	Reactive energy (inductive or lowest tariff)	varh	10	2	1	6 byte binary
7	Apparent energy	VAh	10	0	2	6 byte binary
8	Running time of comparator 1a	sek	1	0	1	4 byte binary
9	Running time of comparator 1b	sek	1	0	2	4 byte binary
10	Running time of comparator 1c	sek	1	0	3	4 byte binary
11	Running time of comparator 2a	sek	1	0	4	4 byte binary
12	Running time of comparator 2b	sek	1	0	5	4 byte binary
13	Running time of comparator 2a	sek	1	0	6	4 byte binary
14	Operating hours meter	sek	1	0	0	4 byte binary
15	I_sum,	mA	10	0	4	4 byte binary
16	P_sum	W	1	0	5	4 byte binary
17	Q_sum	var	1	0	6	4 byte binary
18	S_sum	VA	1	0	7	4 byte binary
19	Uln - phase 1	mV	100	0	1	4 byte binary
20	Uln - phase 2	mV	100	0	2	4 byte binary
21	Uln - phase 3	mV	100	0	3	4 byte binary
22	I - phase 1	mA	10	0	1	4 byte binary
23	I - phase 2	mA	10	0	2	4 byte binary
24	I - phase 3	mA	10	0	3	4 byte binary
25	P - phase 1	W	1	0	1	4 byte binary
26	P - phase 2	W	1	0	2	4 byte binary
27	P - phase 3	W	1	0	3	4 byte binary

Configuration of the RSP_UD2 telegram:

Byte	1	2	3	4	5	6	7	8	9	10	11	12	13
Name	Start	Length	Length	Start	C	A	CI	ID1	ID2	ID3	ID4	MAN1	MAN2
Contents	68			68	8		72					46	40
Byte	14	15	16	17	18	19	20					N-1	N
Name	GEN	MED	TC	Status	SIG1	SIG2	DIF	Data	Data	Data	Data	SC	Stop
Contents	8	2		0	0	0							16

The data is defined as follows:

Name	DIF	DIFE	DIFE	DIFE	VIF	VIFE
Active energy	0x06	X	X	X	0x04	X
Active energy (reference or highest tariff)	0x86	0x10	X	X	0x04	X
Active energy (supply or lowest tariff)	0x86	0x20	X	X	0x04	X
Reactive energy	0x86	0x40	X	X	0x04	X
Reactive energy (capacitive or highest tariff)	0x86	0x50	X	X	0x04	X
Reactive energy (inductive or lowest tariff)	0x86	0x60	X	X	0x04	X
Apparent energy	0x86	0x80	0x40	X	0x04	X
Running time of comparator 1a	0x84	0x40	X	X	0x24	X
Running time of comparator 1b	0x84	0x80	0x40	X	0x24	X
Running time of comparator 1c	0x84	0xC0	0x40	X	0x24	X
Running time of comparator 2a	0x84	0x80	0x80	0x40	0x24	X
Running time of comparator 2b	0x84	0xC0	0x80	0x40	0x24	X
Running time of comparator 2c	0x84	0x80	0xC0	0x40	0x24	X
Operating hours meter	0x84	X	X	X	0x24	X
I_sum	0x84	0x80	0x80	0x40	0xFD	0x59
P_sum	0x84	0xC0	0x80	0x40	0x2B	X
Q_sum	0x84	0x80	0xC0	0x40	0x2B	X
S_sum	0x84	0xC0	0xC0	0x40	0x2B	X
Uln phase 1	0x84	0x40	X	X	0xFD	0x48
Uln phase 2	0x84	0x80	0x40	X	0xFD	0x48
Uln phase 3	0x84	0xC0	0x40	X	0xFD	0x48
I-phase 1	0x84	0x40	X	X	0xFD	0x59
I-phase 2	0x84	0x80	0x40	X	0xFD	0x59
I-phase 3	0x84	0xC0	0x40	X	0xFD	0x59
P-phase 1	0x84	0x40	X	X	0x2B	X
P-phase 2	0x84	0x80	0x40	X	0x2B	X

(X = no value available)