

Technical description

QALCASONIC W1 Wireless MBus specification

Radio parameters

Communication type	wMBus T1 mode
Meter to Other:	
Power	< 25mW (868MHz) or < 10mW (433Mhz)
Frequency	868,95MHz or 434,475MHz
Band	50kHz
Bit rate	100kbps

Data telegram structure

Table no. 1 – reading data telegram structure

Reading telegram (direction: meter→other)						
Field code	Byte pos.	Byte N°	Value (hex)	Description	Note	
L field	1	1	xx	Message length		
C field	2	1	44	Control Field: indicates mono – directional transmission from slave to master		
M field	3-4	2	xx xx	Manufacturer code:		
A field	5-8	4	xx xx xx xx	Serial number of the device (8digit)		
Generation	9	1	xx	WMBUS generation of the device		
Medium	10	1	xx	Device type		
CI field	11	1	7A	Control Information: 4 byte header followed by variable data format response		
Count	12	1	xx	Progressive count (aka Access number = transmission counter)		
Status	13	1	xx	Contains flag of alarms (if 1 = alarm is present) Bit 5-7: 01 – Burst 02 – not used 03 – Backflow 04 – Water Freeze 05 – Leakage 06 – Tamper Bit 4: Temporary error Bit 3: Permanent error Bit 2: Low Power 00 – no errors Bit 1: 01 – not used Bit 0: 02 – not used 03 – abnormal condition		
Signature	14-15	2	xx xx	Configuration word (was signature field): 00 00: no ciphering xx xx: AES 128 CBC – encryption mode 5 or mode 7 (OMS security profile A)		
AES-Verify	16-17	2	2F 2F	Encryption verification field (if the transmission is not enable this field is missing)	Opt	
DIF	18	1	04	Actual date and time		DATE
VIF	19	1	6D	Date and time Type F		
Date	20-23	4	xx xx xx xx	Date point		
DIF	24	1	04	32bit integer	Opt	ON TIME
VIF	25	1	20	On time (seconds)	Opt	
Working Time	26-29	4	xx xx xx xx	On time	Opt	
DIF	30	1	04	Actual value of Volume (32 bit integer)		TOTAL VOLUME
VIF	31	1	13	Volume (0.001 m ³)		
Total Volume	32-35	4	xx xx xx xx	Accumulated Total volume		
DIF	36	1	04	Actual value of positive Volume (32 bit integer)	Opt	POSITIVE VOLUME
VIF	37	2	93 3B	Volume positive (0.001 m ³)	Opt	
Positive volume	38-41	4	xx xx xx xx	Accumulated positive volume	Opt	

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DIF	42	1	04	Actual value of negative Volume (32 bit integer)	Opt	NEGATIVE VOLUME
VIF	43	2	93 3C	Volume negative (0.001 m ³)	Opt	
Negative volume	44-47	4	xx xx xx xx	Accumulated negative volume	Opt	
DIF	48	1	02	16 bit integer	Opt	FLOW
VIF	49	1	3B	Flow rate in l/h	Opt	
Flow rate	50-51	2	xx xx	Flow rate value	Opt	
DIF	52	1	02	16 bit integer	Opt	TEMPERATURE
VIF	53	1	59	Flow temperature in 0.01 °C	Opt	
Supply temperature	54-55	2	xx xx	Supply pipe temperature (hundredth of degree 0.0x°)	Opt	
DIF	65	1	44	Storage value 32bit integer (Storage nr.1)	Opt	MONTH DATA
VIF	66	1	6D	Date and time Type F	Opt	
Date	67-70	4	xx xx xx xx	Date point	Opt	
DIF	71	1	44	Storage value 32bit integer (Storage nr.1)	Opt	
VIF	72	1	13	Volume (0.001 m ³)	Opt	
Volume of last month	73-76	4	xx xx xx xx	Storage value of volume	Opt	
DIF	77	1	44	Storage value 32bit integer (Storage nr.1)	Opt	
VIF	78	2	93 3B	Volume positive (0.001 m ³)	Opt	
Positive volume of last month	79-82	4	xx xx xx xx	Storage positive volume	Opt	
DIF	83	1	44	Storage value 32bit integer (Storage nr.1)	Opt	
VIF	84	2	93 3C	Volume negative (0.001 m ³)	Opt	
Negative volume of last month	85-88	4	xx xx xx xx	Storage negative volume	Opt	
DIF	89	1	34	32bit integer	Opt	ERROR
VIF	90	1	FD	Actual VIF in VIFE	Opt	
VIFE	91	1	17	Error code	Opt	
Instantaneous error code	92-95	4	xx xx xx xx	Instantaneous error code	Opt	
DIF	96	1	04	32bit integer	Opt	ERROR FREE TIME
VIF	97	1	24	Error free time (seconds)	Opt	
Working Time	98-101	4	xx xx xx xx	Error free time	Opt	
DIF	102	1	04	32 bit		BATTERY
VIF	103	1	FD	Extended VIF		
VIFE	104	1	74	Remaining battery capacity		
Remaining battery capacity	105	4	xx xx xx xx	Remaining battery capacity (days)		
AES FILL	106-xx	(xx)	(xx)	2F2F (present only if the encryption is available)	Opt	