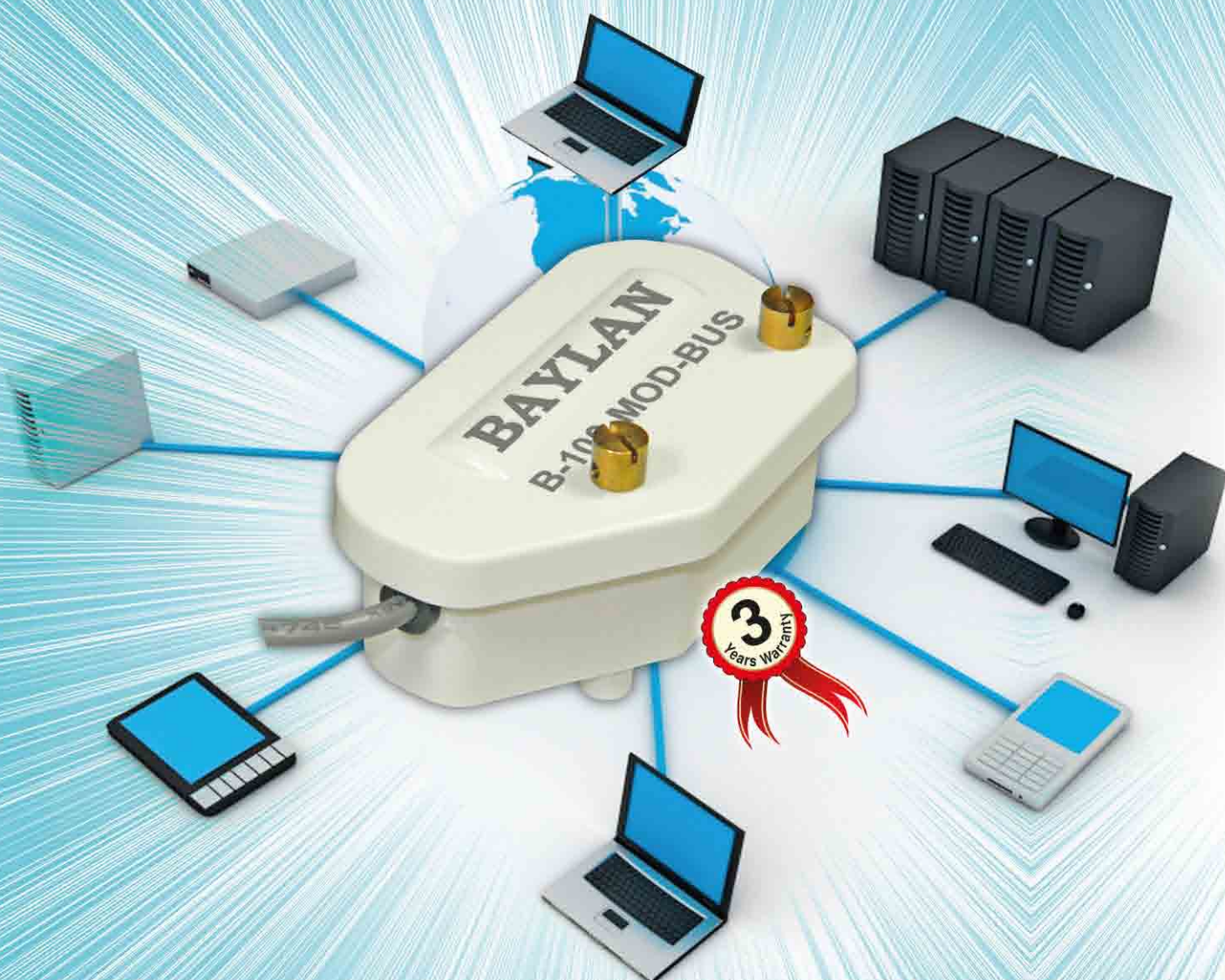


BAYLAN

WATER METERS

Modbus Module



ELECTRONIC

- *RS485 Modbus communication*
- *Internal RTC*
- *Direct connection to Modbus system*
- *Protection against removal*
- *Inductive sensor reading*

MODBUS MODULE

Modbus modules; which is designed to calculate value of Baylan mechanical water meter reading coil compatible. Counted values of consumption in the memory module saved and can be read with Modbus communication protocol.

PROPERTIES

- RS485 Modbus communication
- Direct connection to Modbus system
- IP68 Protection class
- Inductive sensor reading
- Internal RTC
- Protection against removal
- 3 years guaranty



Model Type	Definition
Modbus Module	Mechanical counter the consumption of to be counted and recorded.
Technical Information	
Power	Built-in Lithium battery 3V
Battery Consumption	10uA (Average)
Reading Pals	inductive sensor reading
Reading Maximum	99999,9 m3
Maximum Reading Period	1 minute
RS485 MODBUS COMMUNICATION	
Parameters	8N1 9600 bps
Protocol	Modbus – ASCII or RTU
Adress	1...247
The maximum distance	1000 m

MODBUS REGISTER MEMORY

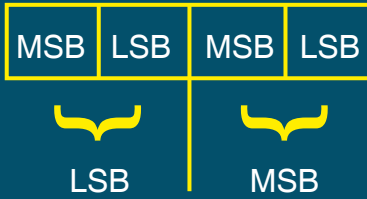
Register *	Definition	Data Type	Property
4001 - 4002	Module Id Number	Float	Read only
4003 - 4004	Consumption (m3)	Float	Read/write
4005	Slave ID number	Int	Read/write
4006	interference info	Int	Read/write
4007	Second	Int	Read/write
4008	Minute	Int	Read/write
4009	Hour	Int	Read/write
4010	Day	Int	Read/write
4011	Month	Int	Read/write
4012	Year	Int	Read/write
4013	Maximum flowrate	Int	Read/write
4014	Battery status	Int	Read/write
4015	Version	Int	Readonly
4016	Reserved for future use	Int	Readonly

*	Minus Offset	= 4001
*	Default Slave ID	= 1
**	Module ID	= The module ID that's been assigned to the AMR device during manufacture.
**	Consumption	= Represents the mechanical index, the value recognized by the inductive sensor. For ex : 1234 recognized determines the 123,4 m3 value.
**	Slave Id	= Address of module used in the Modbus communication
**	Interference info	= Value is "1" meter removed
**	Second, minute, hour	= Time info of module
**	Day, month, year	= Date info of module
**	Maximum flowrate	= The value of the maximum flow through the meter.
**	Battery status :	= Battery voltage level of the module. If the level 0xFF is full and 0x00 is empty
**	Version	= Embedded software version of the module.
**	Reserved	= Was left empty for future applications.

FORMAT OF THE INFORMATION PACKAGE SENT

** Module Id and consumption format

4 Byte Format

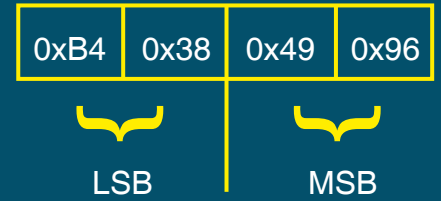


For ex: 1234567 define as float

Low = 46136 = 0xB438

High = 18838 = 0x4996

MSB LSB MSB LSB



** Cable connection



** Other information

2 Byte Format

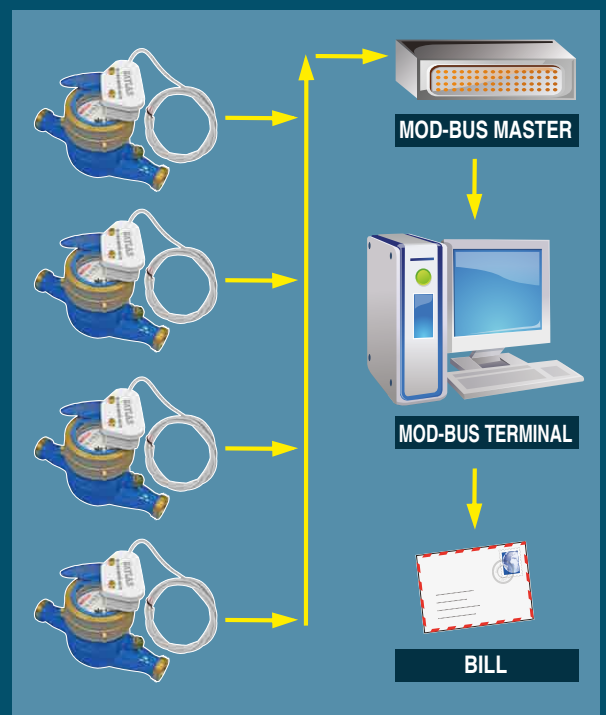


For ex: 0x01 value

Low = 0x01

High = 0x00

MSB LSB



THE USING FORMAT OF 06 AND 16 COMMANDS

NOTE: Consumption register and command 06 cannot be changed. Should be use command 16.

For ex: Tüketim maksimum 999999 değerini alabilir

High = 18804 = 0x4974

Low = 9200 = 0x23F0

Initially the low value(0x23F0) from high(0x23) to low(0xF0) must be written to 4003 address.

Also to the 4004 address high value(0x4974) from high(0x49) to low (0x74) must be written.



Command

Response

Field name	ASCII	Field name	ASCII
Starting	:	Starting	:
Modbus Address	0 1	Modbus Adress	0 1
Function	1 0	Function	1 0
Starting Address MSB	0 0	Starting Address MSB	0 0
Starting Address LSB	0 2	Starting Address LSB	0 2
Register No MSB	0 0	Register No MSB	0 0
Register No LSB	0 2	Register No LSB	0 2
Byte count	0 4	LRC	E B
Data High	2 3		CR-LF
Data Low	F 0		
Data High	4 9		
Data Low	7 4		
LRC	1 7		
	CR-LF		

NOTE = The parts which are outside of consumption should be written in integer format.

For ex : While changing slave id at address 4005.

Slave Id = 56 = 0x38

High = 0 = 0x00

Low = 56 = 0x38

while writing to 4005, at first 0x00 and then 0x38 should be sent.

Command		Response	
Field name	ASCII	Field name	ASCII
Starting	:	Starting	:
Modbus Address	0 1	Modbus Address	0 1
Function	0 6	Function	0 6
Register No MSB	0 0	Register No MSB	0 0
Register No LSB	0 4	Register No LSB	0 4
Data High	0 0	Data High	0 0
Data Low	3 8	Data Low	3 8
LRC		LRC	
	CR-LF		CR-LF

** 03 Read the data of the module with command 03

Command		Response	
Field name	ASCII	Field name	ASCII
Starting	:	Starting	:
Modbus Address	0 1	Modbus Address	0 1
Function	0 3	Function	0 6
Starting No MSB	0 0	BYTE count	0 4
Starting No LSB	0 4	Data High (Register 4005)	0 0
Register No MSB	0 0	Data Low (Register 4005)	3 8
Register No LSB	0 2	Data High (Register 4006)	0 0
LRC		Data Low (Register 4006)	0 0
	CR-LF	LRC	
			CR-LF

NOTE: Maximum number of registers that can be read is 16. The properties defined above may vary according to the mechanical structure/type of the water meter.

“Due to continuous development of our products, we reserve the right to modify our product design or construction without prior notice.”

BAYLAN ÖLÇÜ ALETLERİ SAN. ve TİC. LTD. ŞTİ.

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